2817 Canal Street
New Orleans, LA 70119

New Orleans Regional Transit Authority

Finance Committee

Meeting Agenda - Final

Thursday, June 11, 2026 **11:00 AM** **RTA Board Room**

The New Orleans Regional Transit Authority (RTA) Board of Commissioners will hold an in-person public meeting on Thursday, June 11, 2026, at 11:00 am. The meeting will begin at the scheduled time but may be delayed until a quorum is present and will be live streamed on the RTA website; masks are optional. Written public comments on agenda items may be submitted by 1) completing a speaker card on the day of the meeting; 2) email to rtaboard@rtaforward.org prior to the meeting; 3) U.S. mail to RTA, Office of Board Affairs, 2817 Canal Street, New Orleans, LA 70119. This meeting is accessible to persons with disabilities, and accommodation requests must be made at least 72 hours in advance by contacting the Office of Board Affairs at 504-827-8341 or rtaboard@rtaforward.org.

1. Call To Order

2. Roll Call

3. Consideration of Meeting Minutes (Public Comment will be taken prior to Board vote in accordance with La. R.S. 42:14 (D)

[05.14.26 Ops Committee Meeting Minutes] **26-084**

4. Committee Chairman's Report

5. Chief Executive Officer's Report

6. Chief Financial Officer's Report

7. DBE Report

8. Chief Planning and Capital Project Officer's Report

9. Committee Action Items (Public Comment will be taken prior to Board vote in accordance with La. R.S. 42:14 (D)

A. Authorizations:

Renewal of Excess Liability, Automobile Physical Damage, and Cyber Insurance [2026-2027] **26-082**

Cooperative Endeavor Agreement with Algiers Economic Development Foundation for Commercial Lease of Algiers Ferry Terminal **26-052**

B. Procurements:

Algiers Barge Replacement-Contract Award (IFB 2026-007) **26-051**

Board and Conference Room Technology Upgrades **26-059**

Replacement of Handheld Radios **26-074**

C. Amendments:

Change Order for Transit Security Services - SEAL **26-075**

Emergency Change Order for Streetcar Substation Repairs **26-085**

10. New Business

11. General Public Comments (informational Items)

12. Adjournment

[06.11.26 Fin Powerpoint] **26-090**

Board Report and Staff Summary

File #: 26-084 **Finance Committee**

[05.14.26 Ops Committee Meeting Minutes]

2817 Canal Street
New Orleans, LA 70119

New Orleans Regional Transit Authority

Finance Committee

Meeting Minutes - Draft

Thursday, May 14, 2026	11:00 AM	RTA Board Room

The New Orleans Regional Transit Authority (RTA) Board of Commissioners will hold an in-person public meeting on Thursday, May 14, 2026 at 11:00 am. The meeting will begin at the scheduled time but may be delayed until a quorum is present and will be live streamed on the RTA website; masks are optional. Written public comments on agenda items may be submitted by 1) completing a speaker card on the day of the meeting; 2) email to rtaboard@rtaforward.org prior to the meeting; 3) U.S. mail to RTA, Office of Board Affairs, 2817 Canal Street, New Orleans, LA 70119. This meeting is accessible to persons with disabilities, and accommodation requests must be made at least 72 hours in advance by contacting the Office of Board Affairs at 504-827-8341 or rtaboard@rtaforward.org.

1. Call To Order

2. Roll Call

Commissioners Present: Commissioner Duplessis, Commissioner Guidry and Commissioner Mann

Commissioner Absent: Commissioner Major

Present:	Chairman Ann Duplessis and Mitchell Guidry
Absent:	Barbara Major and Erika Mann

3. Consideration of Meeting Minutes (02.12.26)

Commissioner Guidry moved and Commissioner Mann seconded to approve the Meeting Minutes of February 12, 2026, but stated that they moved to accept the minutes of the previous committee meeting as presented, recognizing that the current committee membership differs from the prior committee body and that the minutes reflect the official record prepared by the Office of Board Affairs.
A motion was made by Commissioner Guidry and seconded by Commissioner Mann to Accept the minutes. The motion carried by the following vote:

Aye: Chairman Duplessis and Commissioner Guidry

Aye: Chairman Duplessis and Commissioner Guidry
Absent: Commissioner Major

Absent: Commissioner Major

[Finance Committee Meeting] **26-062**

4. Committee Chairman's Report

None.

5. Chief Executive Officer's Report

The monthly Chief Executive Officer's Report was given and can be found in the PowerPoint Presentation for the Finance Committee Meeting.

General Discussion - Summary Minutes

It was noted that APTA is expected to release a report addressing the use of artificial intelligence (AI) within the transit industry. Discussion included the recommendation that the agency consider adopting a formal policy governing the use of AI.

Concerns were raised regarding the need for a strict operational policy to guide staff use of AI and ensure appropriate oversight and controls.

Staff noted that transit ridership is increasing across the industry, driven in part by higher fuel costs. Discussion also highlighted potential future diesel fuel supply challenges affecting transit agencies that rely on diesel-powered fleets.

Staff reported that the agency's current fuel contract allows for bulk diesel purchases. The Procurement Department is also exploring opportunities to collaborate with other agencies on joint purchasing strategies to help secure future fuel supplies and manage costs.

6. Chief Financial Officer's Report

The monthly Chief Financial Officer's Report was given and can be found in the PowerPoint Presentation for the Finance Committee Meeting.

Finance Discussion - Summary Minutes

Staff reported that, after applying governmental assistance, the agency reflected a $14 million operating deficit. The deficit was offset through the use of reserve funds to balance the budget.

Staff explained that the Operating Reserve Account is used to hold funds remaining after annual revenues exceed expenditures and may be utilized as needed. A formal Reserve Policy is currently under review by the Executive Leadership Team and is expected to be presented to the Board in June. Staff noted that no Board-approved reserve policy currently

exists.

Staff discussed the agency's budget position, noting that bus and streetcar operations do not reflect an operating deficit. However, when maritime operations are included, the overall budget reflects a deficit.

Additional discussion addressed the impact of debt service and capital expenditures on the agency's overall financial position.

Staff reported that the agency has accumulated approximately $8.9 million in reserves, consisting of both cash and net income.

Staff confirmed that the agency maintains investment accounts.
Concerns were raised regarding malfunctioning fare boxes on buses and the resulting loss of fare revenue. Staff advised that a fare collection study is underway to evaluate modernization of the fare payment system.

Staff confirmed that TMSEL maintains a Defined Benefit Pension Plan that remains active and recognized by the IRS.

Staff noted that the agency provides financial support for Chalmette Ferry operations.

Staff reported that the agency's National Transit Database (NTD) report was submitted on time.

[Financial Statements March 2026] **26-067**

7. DBE Report

The monthly DBE Report was given and can be found in the PowerPoint Presentation for the Finance Committee Meeting.

A Small Business must be Economically Disadvantaged, and their Net Worth can't be over $30.4Million and their personnel Net Worth can't be over $2Million.

8. Chief Planning and Capital Project Officer's Report

The monthly Chief Planning and Capital Project Officer's Report was given and can be found in the PowerPoint Presentation for the Finance Committee Meeting.

Capital Projects Discussion - Summary Minutes

Staff reported that the Ferry Building will be approximately 5,000 square feet upon completion of the planned second-floor addition. The facility is expected to accommodate approximately 500 to 600 passenger movements per day.

Staff advised that the agency is exploring membership in an association of transit agencies operating zero-emission buses to support performance benchmarking, knowledge sharing, and service improvements. An implementation plan related to the initiative will be presented to

the Board for consideration.

Staff emphasized the importance of ongoing employee training on new bus technologies to ensure the agency is prepared to effectively operate and maintain incoming fleet vehicles and provide reliable service.

Staff noted that ferry service will be temporarily suspended during construction of the Algiers Terminal Project. Management stated its commitment to providing timely and ongoing communication to riders regarding service impacts and alternative transportation options.

9. An Update on RTA's Various Insurance Coverages 2026-2027

There has been a 12.8% decrease in coverage from last year and the biggest decrease is Property Increase with a variance of $200,000 and there was an increase in the Public Official Policy of 22.4%.

Insurance Discussion - Summary Minutes

Staff reported that the agency's Errors and Omissions (E&O) insurance policy includes a 20-year look-back period.

Discussion focused on the agency's current insurance limits, with concerns expressed that the existing $5 million coverage level may be insufficient. Staff was requested to evaluate higher coverage limits and return to the Board with additional options and associated costs.

Staff explained that Parametric Insurance provides business interruption protection by triggering payments based on predetermined storm conditions, such as wind speeds, rather than documented financial losses. This coverage helps the agency recover revenue losses during service disruptions when traditional business interruption losses may be difficult to quantify.

Board members expressed interest in increasing the agency's Errors and Omissions insurance coverage.

Staff advised that the agency's liability insurance program is scheduled for renewal in August.

Staff reported that the deductible for Public Officials Liability Insurance increased as a result of a claim filed against the agency.

10. Committee Action Items (Public Comment will be taken prior to Board vote on each item in accordance with La. R.S. 42:14 (D)

A. Procurements:

Replacement Modems for Fixed Route **26-038**

No Public Comments

Commissioner Mann moved and Commissioner Guidry seconded to approve the Replacement Modems for Fixed Route. The motion was

approved unanimously.

A motion was made by Mann, seconded by Commissioner Guidry and approved. The motion carried by the following vote:

Aye: Chairman Duplessis, Commissioner Guidry and Commissioner Mann

Absent:

Enactment No: 26-028

B. Renewals:

Oracle Cloud Solution Annual Subscription **26-050**

No Public Comments

Commissioner Guidry moved and Commissioner Mann seconded to approve the Oracle Cloud Solution Annual Subscription. The motion was approved unanimously.

A motion was made by Commissioner Guidry, seconded by Mann and approved. The motion carried by the following vote:

Aye: Chairman Duplessis, Commissioner Guidry and Commissioner Mann

Absent:

Enactment No: 26-029

C. Authorizations:

CY 2025 Louisiana Compliance Questionnaire **26-054**

No Public Comments

Commissioner Guidry moved and Commissioner Mann seconded to approve the 2025 Louisiana Compliance Questionnaire. The motion was approved unanimously.

A motion was made by Commissioner Guidry, seconded by Mann and approved. The motion carried by the following vote:

Aye: Chairman Duplessis, Commissioner Guidry and Commissioner Mann

Absent:

Enactment No: 26-030

11. New Business

None

12. General Public Comment (Informational Items)

Jim Goodwin -Algiers - There is no Ferry funding money for a Study.

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13. Adjournment

Commissioner Mann moved and Commissioner Guidry seconded to adjourn the Finance Committee Meeting on Thursday, May 14, 2026. The motion was adjourned unanimously.

A motion was made by Mann, seconded by Commissioner Guidry and adjourned. The motion carried by the following vote:

Aye: Chairman Duplessis, Commissioner Guidry and Commissioner Mann

Absent:

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New Orleans Regional Transit Authority

Board Report and Staff Summary

File #: 26-082 **Board of Commissioners**

Renewal of Excess Liability, Automobile Physical Damage, and Cyber Insurance [2026-2027]

DESCRIPTION: Renewal of Excess Liability, Automobile Physical Damage, and Cyber Insurance for Policy Period 2026-2027.	AGENDA NO: Click or tap here to enter text.
ACTION REQUEST: ☒ Approval ☐ Review Comment ☐ Information Only ☐ Other	

RECOMMENDATION:

Authorize the Interim Chief Executive Officer to approve the renewal of specified insurance coverages for the policy period 8/1/26-7/31/27.

ISSUE/BACKGROUND:

RTA annually renews its Excess Automobile Liability/General Liability [“Excess AL/GL”], Automobile Physical Damage [“APD”], and Cyber insurance coverages on August 1st.The policies are marketed and placed by the RTA insurance broker of record, Relation Insurance Services, Inc. and provide optimal coverage at the most competitive cost.

DISCUSSION:

It is necessary that RTA proceed with the renewal of the Excess AL/GL, APD and Cyber insurance coverages through the RTA broker of record, Relation Insurance Services, Inc., on a timely basis. Historically, renewals for Excess AL/GL, APD and Cyber insurance coverages are presented to the RTA Board of Commissioners at its July board meeting. Because the RTA Board of Commissioners is not scheduled to convene in July 2026, staff seeks authorization to allow the Chair to approve the 2026-2027 renewals to avoid lapses in coverages.

For informational purposes only, the below chart summarizes the 2025 - 2026 insurance types and coverages:

Type and Coverage	Company	2025-2026 Premium
Excess Automobile Liability/ General Liability Limit of Liability: $5,000,000 Excess of Retained Amount ["SIR"] Automobile - $1,500,000 General Liability - $ 500,000 **TOTAL FOR EXCESS AL/GL:**	Princeton E&S	**$3,810.458.70**
Automobile Physical Damage Including Flood Total Insured Value $112,952,354 $65m Flood limit $65m Earthquake limit $50,000 All Other Peril per vehicle per occurrence [Lloyds/primary] and $25,000 All Other Peril [other carriers] Named Windstorm 3% per affected TIV/Flood 2% per affected TIV, subject to a per occurrence minimum of $250,000 **TOTAL FOR APD RENEWAL, INCLUDING FLOOD:**	London Lexington Core/StarStone Markel/Evanston Sompo/Endurance Swiss Re RSUI/Landmark General Star Starr Surplus LloydsTerrorism	**$2,084,532.00**
Cyber Liability Limit of Liability: $2,000,000 Retention: $10,000	Lexington	**$18,339.31**
TOTAL:		**$5,913,330.01**

FINANCIAL IMPACT:

TBD

Funds for these contracts and related endorsements are available from the RTA Operational budget:

Excess Automobile /General Liability: 01-8300-02-9131-169-00-00-00000-00000

Automobile Physical Damage: 01-8300-02-9132-169-00-00-00000-00000

Cyber Liability 01-8300-02-9181-169-89-00-00000-00000

NEXT STEPS:

Proceed with the renewal of insurance coverages as indicated above.

ATTACHMENTS:

Resolution for Renewal of Excess Liability, Automobile Physical Damage, and Cyber Insurance Coverages for Policy Year August 1, 2026 to July 31, 2027

Prepared By: Tracy Tyler
Title: Chief Legal Officer

Reviewed By: Gizelle Banks
Title: Chief Financial Officer

Click or tap to enter a date.

Ronald G. Baptiste
Interim Chief Executive Officer

Date

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RESOLUTION NO. _____

FILE ID NO. **26-082**

STATE OF LOUISIANA

PARISH OF ORLEANS

RESOLUTION AUTHORIZING THE CHAIR OF THE BOARD OF COMMISSIONERS TO APPROVE THE RENEWAL OF EXCESS LIABILITY, AUTOMOBILE PHYSICAL DAMAGE, AND CYBER INSURANCE COVERAGES FOR POLICY YEAR AUGUST 1, 2026 TO JULY 31, 2027

Introduced by Commissioner _____, seconded by Commissioner _____.

WHEREAS, the Regional Transit Authority's (RTA) insurance broker of record, Relation Insurance Services, Inc., is currently receiving and reviewing offers to provide excess liability, automobile physical damage, and cyber insurance coverage(s);

WHEREAS, the Board of Commissioners of the Regional Transit Authority (RTA) has historically considered the matter of contract award for excess liability, automobile physical damage, and cyber insurance coverages annually at it July board meeting;

WHEREAS, the Board of Commissioners is not scheduled to convene in the month of July 2026;

WHEREAS, to avoid coverage lapses for excess liability, automobile physical damage, and cyber insurance for policy year August 1, 2026 to July 31, 2027, staff seeks authorization from the Board of Commissioners to grant the Chair authority to approve the annual renewals, subject to the recommendations of the RTA's insurance broker of record and general counsel; and

WHEREAS, funds for these respective coverages are available from the operational budget.

NOW THEREFORE BE IT RESOLVED by the Board of Commissioners of the Regional Transit Authority authorizes the Chair of the Board of Commissioners to approve the excess liability, automobile physical damage, and cyber insurance coverage(s) subject to the recommendation of the insurance broker of record and general counsel.

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THE FOREGOING WAS READ IN FULL, THE ROLL WAS CALLED ON THE ADOPTION THEREOF AND RESULTED AS FOLLOWS:

YEAS:

NAYS:

ABSTAIN:

ABSENT:

AND THE RESOLUTION WAS ADOPTED ON THE ___ DAY OF _____, 2026.

ANN D. DUPLESIS
CHAIRMAN
BOARD OF COMMISSIONERS

2817 Canal Street
New Orleans, LA 70119

New Orleans Regional Transit Authority

Board Report and Staff Summary

File #: 26-052 **Finance Committee**

Cooperative Endeavor Agreement with Algiers Economic Development Foundation for Commercial Lease of Algiers Ferry Terminal

DESCRIPTION: Click or tap here to enter text.	AGENDA NO: Click or tap here to enter text.
ACTION REQUEST: ☐ Approval ☐ Review Comment ☒ Information Only ☐ Other	

RECOMMENDATION:

On this request, staff will give the committee a verbal update. Before the board meeting on June 23, 2026, further details, including a comprehensive board report, will be available.

ISSUE/BACKGROUND:

Click or tap here to enter text.

DISCUSSION:

Click or tap here to enter text.

FINANCIAL IMPACT:

Click or tap here to enter text.

NEXT STEPS:

Click or tap here to enter text.

ATTACHMENTS:

Click or tap here to enter text.

Prepared By: Click or tap here to enter text.
Title: Click or tap here to enter text.

Reviewed By: Click or tap here to enter text.
Title: Click or tap here to enter text.

Reviewed By: Click or tap here to enter text.
Title: Click or tap here to enter text.

Click or tap to enter a date.

Ronald G. Baptiste
Interim Chief Executive Officer

Date

File #: 26-051 **Finance Committee**

Algiers Barge Replacement-Contract Award (IFB 2026-007)

DESCRIPTION: Requesting board authorization to award a construction contract for the manufacture and installation of two (2) Algiers Ferry barges to CDW Services LLC	AGENDA NO: Click or tap here to enter text.
ACTION REQUEST: ☒ Approval ☐ Review Comment ☐ Information Only ☐ Other	

RECOMMENDATION:

Authorize the Interim Chief Executive Officer to execute a contract with **CDW Services LLC** in the amount of $11,780,000 as the lowest responsive and responsible bidder for the Algiers Barge Replacement project (IFB 2026-007).

ISSUE/BACKGROUND:

The Algiers Barge Replacement project is a critical component of RTA's ongoing efforts to improve passenger ferry infrastructure for both the Algiers Point and Chalmette ferries. The Canal Street Ferry Terminal and Canal Street Barge were both completed in 2023, and the Algiers Ferry Terminal is currently under renovation with an anticipated substantial completion date at the end of 2026. These projects, including the new Algiers barges, are improving operational efficiency, the safety and comfort of ferry staff, and the quality, comfort, and convenience of the rider experience.

The two barges that will be replaced-one at Algiers Point and the other in Lower Algiers-have exceeded their useful life. The FTA prescribed "useful life benchmark" for steel-built ferry infrastructure is 25 years. The approximate age of the current barges is 50 years. As capital assets exceed their useful life, the cost to maintain them increases substantially; their reliability decreases; and they typically fail to comply with modern codes and best practices. In the case of these two barges, the hull at Algiers Point is in poor condition; the mooring system at Lower Algiers would require a major overhaul to continue operations; both barges have numerous leaks and have to be pumped out often; and electrical components at Algiers Point are beyond the point of economical repair. Furthermore, RTA executed a Cooperative Endeavor Agreement with Plaquemines Parish allowing RTA to use one of Plaquemines' ferries to ensure continuous ferry service in the event that RTA's Lower Algiers ferry is out of service. However, the Plaquemines ferries are not compatible with the ramping system of the existing Lower Algiers barge. The new Lower Algiers barge will be designed with a ramping system that will be compatible with RTA's ferry as well as with the Plaquemines ferries as backup.

Surveys of the conditions of both ferries were completed in 2013 documenting these and other conditions and have been included here as attachments.

Key improvements that these new barges will provide include:

- Improved accessibility for mobility impaired passengers
- Improved lighting and new security cameras for passenger and operator safety
- Reduced likelihood of slips and falls due to greater rain protection and slip resistant surfaces
- New ballast pumps to maintain proper barge elevation
- New basic infrastructure including electrical systems and sewerage conveyance
- Improved, enclosed, on-barge staff work spaces, ensuring protection from the elements
- Improved storage for equipment and materials

The contract includes fabrication of the barges, installation of the new barges, relocation of the old barges (which will be used for ferry maintenance purposes), and connection of the new barges to land-side infrastructure.

The scope of work for this project is aligned with the Agency's *Strategic Mobility Plan*, Action Item #UP4 - *Complete renovation of Algiers Point Ferry Terminal and replacement of Algiers barges.*

DISCUSSION:

The project was publicly advertised through an Invitation for Bids (IFB 2026-007) in accordance with RTA procurement policies and federal requirements. The design process, led by Infinity Engineering Consultants, was completed in early 2026. The bid documents were issued on February 26, 2026, and the bids were opened on April 23, 2026.

Two bids were received and evaluated for responsiveness and responsibility. CDW Services LLC submitted the lowest bid at $11,780,000 and was determined to be both responsive and responsible by Procurement. This cost compares favorably with the Independent Cost Estimate prepared by RTA Capital Projects, which was $13,050,000.

The IFB method was utilized as the appropriate procurement method, allowing for award to the lowest responsive and responsible bidder without negotiations.

The project is ready to proceed to contract award upon Board approval. The expected duration of the construction of the Algiers Point barge is nine months. The Lower Algiers barge is expected to be completed three months afterward. The total duration of the entire scope-both barges plus the installation of the new barges is 390 days from notice to proceed. The construction contract has been structured in such a way to minimize impacts to riders. The contract stipulates a maximum period of only four days for installation of each of the two barges. If the contractor exceeds this installation period, the contractor will be subject to liquidated damages of $10,000 per day. Thus, there is a strong incentive for the contractor to complete the installation within the prescribed four-day period.

FINANCIAL IMPACT:

The total cost for the project is $11,780,000. The project will be funded by two grants and their associated local match portions. Grant LA2022-006 will cover $5,655,916 of the project cost ($4,524,733 in grant funds and 1,131,183 in local match). Grant LA2022-030 will cover the remaining $6,124,084 of the project cost ($4,899,267 in grant funds and $1,224,817 in local match). These funds are in account 01-6100-00-1501-000-00-00-00000-00000.

RTA anticipates minimal to no cost overruns during fabrication. Because the barges will be built in a controlled environment with no existing conditions or site conditions to contend with, unforeseen conditions--which are frequently the source of construction change orders--should be minimal to nonexistent. To further mitigate the possibility of cost overruns, RTA contracted with a third-party naval architecture firm to review the design documents and highlight any potential ambiguities or gaps in the documents. The third-party firm's recommendations were incorporated into the final bid set of construction drawings. Finally, RTA is employing a variety of standard practices to mitigate budget risk. These include maintaining a healthy construction contingency and subjecting proposed change orders to rigorous reviews by the engineer of record and RTA capital projects staff prior to approval.

NEXT STEPS:

Upon Board approval, staff will execute the contract with CDW Services LLC, issue the Notice to Proceed (NTP), and commence construction activities.

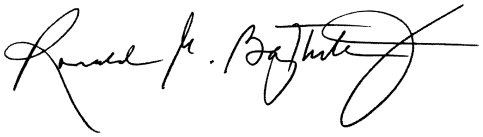
ATTACHMENTS:

1. Resolution
2. Procurement Summary IFB 2026-007
3. Independent Cost Estimate
4. Administrative Review Form IFB 2026-007
5. Invitation to Bid (IFB) 2026-007
6. 2013 Algiers Point Barge Survey
7. 2013 Lower Algiers Barge Survey

Prepared By: Rafe Rabalais, rrabalais@rtaforward.org
Title: Director of Capital Projects

Reviewed By: Dwight Norton. dnorton@rtaforward.org
Title: Chief Planning and Capital Projects Officer

Reviewed By: Gizelle Johnson Banks, gbanks@rtaforward.org
Title: Chief Financial Officer



6/9/2026

Ronald G. Baptiste
Interim Chief Executive Officer

Date

Regional Transit Authority
2817 Canal Street
New Orleans, LA 70119-6301

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RESOLUTION NO. _____
STATE OF LOUISIANA
PARISH OF ORLEANS

AUTHORIZATION TO AWARD CONTRACT TO CDW SERVICES LLC FOR ALGIERS BARGE REPLACEMENT (IFB 2026-007)

Introduced by Commissioner _____, seconded by Commissioner _____.

WHEREAS, the Regional Transit Authority (RTA) operates and maintains critical ferry infrastructure necessary to provide safe, reliable, and efficient public transportation service; and

WHEREAS, the Algiers Point and Lower Algiers ferry barges are key components of passenger ferry infrastructure that support operational safety, efficiency, and comfort; and

WHEREAS, the Algiers Point and Lower Algiers barges are at the end of their useful life and new barges are necessary to enhance accessibility, improve safety, maintain efficient operations, and ensure a proper work environment for ferry operations staff; and

WHEREAS, a design package was prepared and released for public bid on February 26, 2026, Invitation to Bid (IFB) No. 2026-007; and

WHEREAS, two (2) bids were received and evaluated, and the bid from CDW Services LLC in the amount of **$11,780,000** was determined to be the lowest responsive and responsible bid; and

WHEREAS, this bid is below the engineer's Opinion of Probable Cost and the Independent Cost Estimate prepared by RTA Capital Projects staff; and

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WHEREAS, $4,524,733 from FTA grant LA2022-006 and $4,899,267 from FTA grant LA2022-030 will be allocated to the cost of the project, with the balance of funding totaling $2,356,000 coming from local match funds from account 01-6100-00-1501-000-00-00-00000-00000; and

NOW, THEREFORE, BE IT RESOLVED the RTA Board of Commissioners authorizes the CEO to award a contract to CDW Services LLC in the amount of $11,780,000 for the Algiers Barge Replacement project.

THE FOREGOING WAS READ IN FULL; THE ROLL WAS CALLED ON THE ADOPTION THEREOF AND RESULTED AS FOLLOWS:

YEAS: _____
NAYS: _____
ABSTAIN: _____
ABSENT: _____

AND THE RESOLUTION WAS ADOPTED ON THE 23rd OF JUNE 2026.

_____
ANN D. DUPLESSIS
CHAIR
BOARD OF COMMISSIONERS

PROCUREMENT SUMMARY - IFB 2026-007

REQUIREMENTS

Board approval is required for this solicitation for Algiers Barge Replacement.
There was no DBE goal of established for this solicitation per the RTA Routing Sheet.

Procurement Policy:
The Independent Cost Estimate for this procurement is $13,050,000.00, which exceeds the Small Purchase threshold of $25,000.00 therefore in compliance with the Regional Transit Authority of New Orleans Procurement Policies and Procedures Manual, Section VII.B. This procurement shall be conducted through formal advertising (competitive means).

Procurement Method:
More than one responsive and responsible offeror can meet the solicitation requirements. Specifications furnished by the user department are complete, adequate, precise and realistic. No discussions or negotiations will be needed to address technical requirements; an award will be made on lowest responsible/responsive bidder. Therefore, the IFB method of solicitation is selected as the method of procurement.

SOLICITATION

Invitation for Bids (IFB) No. 2026-007 Public Notice was published in The Advocate, on RTA's website, & RTA's Procureware site beginning 2/26/2026.

IFB SUBMITTAL

The IFB submittal deadline was 4/23/2026 at 2:00pm.
Leah LeBlanc handled the receipt of all submissions received. Two (2) proposals were received.

DETERMINATION

Two (2) responsible bids were received. Two (2) bids were received and determined responsive.

SUBMITTAL ANALYSIS

RESPONDENTS	RESPONSIVENESS
CDW	$11,780,000.00
Woodward	$12,990,000.00

SUMMARY

An Administrative Review Form was prepared by Briana Howze, Senior Contract Administrator.

Senior Contract Administrator, Briana Howze, deemed CDW responsive and responsible and recommended CDW for award.

Independent Cost Estimate (ICE)

INDEPENDENT COST ESTIMATE SUMMARY FORM

Project Name:	Algiers Ferry Barge Replacement Project
Project Number:	2023-MA-01
Date of Estimate:	9-2-2025
Description of Goods/Services:	Fabrication/construction and installation of two replacement ferry barges—one at Algiers Point and the other at Lower Algiers. These new barges will replace two aging, obsolete barges and will enable continuous quality ferry service at both locations.

☒New Procurement

☐Contract Modification (Change Order – task order for on-call contract)

☐Exercise of Option

Method of Obtaining Estimate:

☐Published Price List (attach source and date)

☐Historical Pricing (attach copy of documentation from previous PO/Contract)

☐Comparable Purchases by Other Agencies (attach email correspondence)

☒Engineering or Technical Estimate (attach)

☐Independent Third-Party Estimate (attach)

☐Other (specify) ___**typical market value of A&E contracts in relation to capital costs**_____ attach documentation

☐Pre-established pricing resulting from competition (Contract Modification only)

Attach additional documentation such as previous pricing, documentation, emails, internet screen shots, estimates on letterhead, etc.

Summary of Method: The basis for the estimate is an Opinion of Probable Cost that was prepared by the Engineer of Record, Infinity Engineering Consultants, with substantial input from their naval architecture sub, TAI. The estimate was completed on July 10, 2025 based on the 100% construction documents and takes into account—to the best, most accurate degree possible—the impact of recent federal tariffs on imported materials. This Opinion of Probable Cost, which includes a 15% design contingency, comes to $13,050,000 for the two barges.

Through the method(s) stated above, it has been determined the estimated total cost of the goods/services is $13,050,000.

The preceding independent cost estimate was prepared by:

Rafe Rabalais, Director of Capital Projects

Name



Signature

ALGIERS FERRY BARGES REPLACEMENT
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
100% DESIGN PHASE - CLASS 2 ESTIMATE (ACCURACY RANGE -15% TO +20%)

ALGIERS POINT

Area	Item No.	Cost Item	Quantity	UOM	Unit Price	Amount	Subtotals (7/10/2025)
Demo & Misc.	1.00	Disconnect utilities between barge and existing ramp	1	EA	$ 2,000.00	$ 2,000.00	
	1.01	Remove transition plate from existing ramp	1	EA	$ 1,000.00	$ 1,000.00	
	1.02	Remove utility lines to be replaced (sewer, water, fuel)	1	EA	$ 5,000.00	$ 5,000.00	
	1.03	Transport barge to Lower Algiers Landing	1	EA	$ 20,000.00	$ 20,000.00	
	1.04	Remove steel support shoes from existing ramp	1	EA	$ 7,000.00	$ 7,000.00	$ 35,000.00
Barge Superstructure	2.00	Guardrail	380	LF	$ 110.00	$ 41,800.00	
	2.01	Steel Support Shoes w/UHMW Plate	5	EA	$ 840.00	$ 4,200.00	
	2.02	Prefabricated Operator's Shelter	1	EA	$ 38,500.00	$ 38,500.00	
	2.03	Prefabricated Operator's Shelter Shipping & Installation	1	EA	$ 7,700.00	$ 7,700.00	
	2.04	Roofing - 22 ga Tee Panel Standing Seam	2246.4	SF	$ 12.00	$ 26,956.80	
	2.05	Roofing Installation	2246.4	SF	$ 14.00	$ 31,449.60	
	2.06	Canopy Structure	32000	T	$ 4.25	$ 136,000.00	
	2.07	Ramps and Stairs Structure	24000	T	$ 4.25	$ 102,000.00	
	2.08	UHMW Plate, 1", 3'x30', material and installation	1	LS	$ 8,640.00	$ 8,640.00	
	2.09	Grating	950	SF	$ 20.00	$ 19,000.00	
	2.10	Grating Installation	950	SF	$ 10.00	$ 9,500.00	
	2.11	FRP Plate, non slip	30	sheets	$ 320.00	$ 9,600.00	
	2.12	FRP Shipping	1	LS	$ 880.00	$ 880.00	
	2.13	RFP Installation	30	sheets	$ 160.00	$ 4,800.00	
	2.14	Signage (wayfinding, illuminated signs, etc.)	1	LS	$ 22,500.00	$ 22,500.00	
	2.15	Boarding ramps w/counterweight system	3	EA	$ 11,500.00	$ 34,500.00	
	2.16	Boarding ramps w/counterweight system installation	3	EA	$ 2,875.00	$ 8,625.00	$ 506,651.40
Barge Structure	3.00	Hull Structure	1	EA	$ 851,256.13	$ 851,256.13	
	3.01	Outfit & Furnishing	1	EA	$ 98,047.83	$ 98,047.83	
	3.02	Integration	1	EA	$ 241,972.99	$ 241,972.99	
	3.03	Assembly	1	EA	$ 218,365.87	$ 218,365.87	
	3.04	Engineering	1	EA	$ 514,527.67	$ 514,527.67	
	3.05	Construction Labor	1	EA	$2,072,160.82	$ 2,072,160.82	$ 3,996,331.31
Barge Mechanical	4.00	Tank Air Vent, Fills, & Manifolds	1	EA	$28,000.00	$ 28,000.00	
	4.01	Ballast System	1	EA	$150,000.00	$ 150,000.00	
	4.02	Fire Extinguishers	1	EA	$3,600.00	$ 3,600.00	
	4.03	Bitts	1	EA	$13,500.00	$ 13,500.00	
	4.04	Oily Water System	1	EA	$5,000.00	$ 5,000.00	
	4.05	Fresh Water	1	EA	$10,000.00	$ 10,000.00	
	4.06	Chocks	1	EA	$6,000.00	$ 6,000.00	
	4.07	Sewage System	1	EA	$7,500.00	$ 7,500.00	
	4.08	Construction Labor	1	EA	$348,032.85	$ 348,032.85	$ 571,632.85
Barge Electrical	5.00	Ballast Pump Panel	1	EA	$ 20,000.00	$ 20,000.00	
	5.01	Sewage Pump Panel	1	EA	$ 20,000.00	$ 20,000.00	
	5.02	Power & Control Cables	1	EA	$ 70,000.00	$ 70,000.00	
	5.03	Cable Trays, Conduit, Ties, Straps	1	EA	$ 35,000.00	$ 35,000.00	
	5.04	Shore Power Connection Receptacle 3 PH,208 V,100A	1	EA	$ 2,000.00	$ 2,000.00	
	5.05	Shore Power Connection Receptacle 3 PH,208 V, 50A	1	EA	$ 1,500.00	$ 1,500.00	
	5.06	Main Power Distribution Board 208VAC,3PH,4W	1	EA	$ 90,000.00	$ 90,000.00	
	5.07	Disconnect Switch 600V 100A	2	EA	$ 1,500.00	$ 3,000.00	
	5.08	XFMR 75kVA 480:208/120V 3-Phase	1	EA	$ 6,500.00	$ 6,500.00	
	5.09	Lighting Contactor	1	EA	$ 5,000.00	$ 5,000.00	
	5.10	Lighting (Includes Poles)	1	EA	$ 85,000.00	$ 85,000.00	
	5.11	UPS w/Integral Lighting Panel	1	EA	$ 30,000.00	$ 30,000.00	
	5.12	200A Manual Transfer Switch	1	EA	$ 12,000.00	$ 12,000.00	
	5.13	Fire Alarm	1	EA	$ 10,000.00	$ 10,000.00	
	5.14	Security Camera System	1	EA	$ 15,000.00	$ 15,000.00	
	5.15	Construction Labor	1	EA	$ 100,000.00	$ 100,000.00	$ 505,000.00
Mechanical	6.01	Diesel Tank - double wall 3000 gallon + accessories	1	ea	$ 100,000.00	$ 100,000.00	
	6.02	Diesel Dispenser Station	1	ea	$ 10,000.00	$ 10,000.00	
	6.03	Oily water line from levee to barge	1	ea	$ 20,000.00	$ 20,000.00	
	6.04	Diesel supply line from levee to barge	1	ea	$ 25,000.00	$ 25,000.00	
	6.05	Diesel supply line from tank to dispenser station	1	ea	$ 10,000.00	$ 10,000.00	
	6.06	HVAC - window unit, fresh air louver, exh fan for mechanical room	1	ea	$ 10,000.00	$ 10,000.00	
	6.07	Waterline from levee to barge	1	ea	$ 10,000.00	$ 10,000.00	
	6.08	Sewer Forced main connection from levee to barge	1	ea	$ 15,000.00	$ 15,000.00	
	6.09	Field verify sewer force main connects to city and leak test	1	ea	$ 5,000.00	$ 5,000.00	$ 205,000.00
						Contingency 15%	$ 872,942.33
						ALGIERS POINT SUBTOTAL	**$ 6,700,000**

ALGIERS FERRY BARGES REPLACEMENT
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
100% DESIGN PHASE - CLASS 2 ESTIMATE (ACCURACY RANGE -15% TO +20%)

LOWER ALGIERS

Area	Item No.	Cost Item	Quantity	UOM	Unit Price	Amount	Subtotals (7/10/2025)
Demo & Misc.	7.01	Temporarily Support Existing Ramp	1	EA	$ 20,000.00	$ 20,000.00	
	7.02	Disconnect utilities between barge and existing ramp	1	EA	$ 2,000.00	$ 2,000.00	
	7.03	Crane barge to temporarily support Maintenance Facility Ramp	1	Day	$ 30,000.00	$ 30,000.00	
	7.04	Transport existing barge to Middle Maintenance Landing	1	EA	$ 30,000.00	$ 30,000.00	$ 82,000.00
Barge Structure	8.00	Hull Structure	1	EA	$ 829,209.01	$ 829,209.01	
	8.01	Outfit & Furnishing	1	EA	$ 147,496.86	$ 147,496.86	
	8.02	Integration	1	EA	$ 241,973.00	$ 241,973.00	
	8.03	Assembly Support	1	EA	$ 218,365.88	$ 218,365.88	
	8.04	Engineering	1	EA	$ 514,527.70	$ 514,527.70	
	8.05	Construction Labor	1	EA	$ 2,339,603.91	$ 2,339,603.91	$ 4,291,176.37
Barge Mechanical	9.00	Tank Air Vent, Fills, and Manifolds	1	EA	$28,000.00	$ 28,000.00	
	9.01	Ballast System	1	EA	$150,000.00	$ 150,000.00	
	9.02	Fire Extinguishers	1	EA	$3,600.00	$ 3,600.00	
	9.03	Ramp Hydraulic System	1	EA	$13,500.00	$ 13,500.00	
	9.04	Ramp	1	EA	$6,000.00	$ 6,000.00	
	9.05	Fuel System	1	EA	$100,000.00	$ 100,000.00	
	9.06	Fresh Water System	1	EA	$75,000.00	$ 75,000.00	
	9.07	Bitts	1	EA	$3,541.07	$ 3,541.07	
	9.08	Chocks	1	EA	$3,541.07	$ 3,541.07	
	9.09	Construction Labor	1	EA	$347,063.67	$ 347,063.67	$ 730,245.81
Barge Electrical	10.00	Ballast Pump Panel	1	EA	$ 15,000.00	$ 15,000.00	
	10.01	Power & Control Cables	1	EA	$ 60,000.00	$ 60,000.00	
	10.02	Cable Trays, Conduit, Ties, Straps	1	EA	$ 25,000.00	$ 25,000.00	
	10.03	Shore Power Connection Receptacle 3 PH,208 V,100A	1	EA	$ 2,000.00	$ 2,000.00	
	10.04	Shore Power Connection Receptacle 3 PH,208 V, 50A	1	EA	$ 1,500.00	$ 1,500.00	
	10.05	Main Power Distribution Board 208VAC,3PH,4W	1	EA	$ 80,000.00	$ 80,000.00	
	10.06	Disconnect Switch 600V 100A	2	EA	$ 1,500.00	$ 3,000.00	
	10.07	XFMR 75kVA 480:208/120V 3-Phase	1	EA	$ 6,500.00	$ 6,500.00	
	10.08	Lighting (Including Poles)	1	EA	$ 38,000.00	$ 38,000.00	
	10.09	UPS	1	EA	$ 30,000.00	$ 30,000.00	
	10.10	200A Manual Transfer Switch	1	EA	$ 12,000.00	$ 12,000.00	
	10.11	Fire Alarm	1	EA	$ 8,000.00	$ 8,000.00	
	10.12	Security Camera System	1	EA	$ 9,000.00	$ 9,000.00	
	10.13	Construction Labor .	1	EA	$ 80,000.00	$ 80,000.00	$ 370,000.00
Mch	11.00	Diesel supply line from levee to barge	1	ea	$ 35,000.00	$ 35,000.00	
	11.01	Waterline from levee to barge	1	ea	$ 12,000.00	$ 12,000.00	$ 47,000.00
					Contingency	15%	$ 828,063.33
						LOWER ALGIERS SUBTOTAL	**$ 6,350,000**
					TOTAL 100% Opinion of Probable Construction Cost	**$**	**13,050,000**

Regional Transit Authority
Administrative Review Form

Project Name: Algiers Barge Replacement

Type of Solicitation: IFB 2026-007 DBE/SBE Participation Goal: 0 % Number of Respondents: 2

Prime, Primary Contact and Phone Number	DBE and non-DBE Subconsultants	DBE Commitment Percentage	Price (RFP and ITB ONLY)
CDW	N/A	N/A	$11,780,000.00
Woodward	N/A	N/A	$12,990,000.00

*Indicates certified DBE or SLDBE firm that will contribute to the project's participation goal

Prime Firm	Required Forms								
	Letter of Interest	Debarment Prime	Debarment Lower	Restrictions on Lobbying	Buy America Compliance	Non-Collusion Affidavit	Participant Info	Consultant Questionnaire Form	Addenda
CDW	Y	Y	Y	Y	Y	Y	Y	Y	Y
Woodward	Y	Y	Y	Y	Y	Y	Y	Y	Y

Review and verification of the above required forms, the below listed vendor is hereby found responsive to this procurement.
Vendor Name: CDW

Procurement Personnel Only

Prime Firm Name	Bid Bond	Insurance	Responsiveness Determination	Responsible Determination					
			Certifications /Licenses	Facilities/ Personnel	SAM.Gov	Previous Experience	Years in Business	Financial Stability	LA License No. if required
CDW	Y	Y	N/A	Y	Y	Y	15	N/A	N/A

Woodward	Y	Y	N/A	Y	Y	Y	23	Y	N/A

Review and verification of the above "checked" forms, the below listed vendor is hereby found responsible for award of this procurement.
Vendor Name: ___CDW_____

Certified by: Name and Title: Briana Howze, Senior Contract Administrator

Construction Specifications and
Contract Documents

FOR

New Orleans Regional Transit Authority

ALGIERS FERRY BARGES REPLACEMENT

ISSUED FOR BID

Prepared by:

Infinity Engineering Consultants, LLC
4001 Division Street
Metairie, Louisiana 70002
License #EF.0003109
Phone (504) 304-0548

TAI ENGINEERS, LLC
An EHE Family Company
2021 Lakeshore Drive, Suite 414
New Orleans, Louisiana 70122
Phone (504) 282-6166

March 11, 2026

SEALS PAGE

1. DESIGN PROFESSIONALS OF RECORD



A. CIVIL / STRUCTURAL ENGINEER:

1. MS. RACHEL A. KENNEY, P.E.
2. LA LICENSE # 37666
3. RESPONSIBLE FOR SPECIFICATIONS:

SECTION 024116	STRUCTURE DEMOLITION
SECTION 024119	SELECTIVE DEMOLITION
SECTION 051200	STRUCTURAL STEEL FRAMING
SECTION 055119	METAL GRATING STAIRS
SECTION 055313	BAR GRATINGS
SECTION 074113.16	STANDING-SEAM METAL ROOF PANELS
SECTION 101419	DIMENSIONAL LETTER SIGNAGE
SECTION 101423	PANEL SIGNAGE

B. MECHANICAL ENGINEER:

1. MR. STEPHEN GHOLSTON, P.E.
2. LA LICENSE # 41257
3. RESPONSIBLE FOR SPECIFICATIONS:

SECTION 220719	PLUMBING PIPING INSULATION
SECTION 221116	DOMESTIC WATER PIPING
SECTION 221316	SANITARY WASTE AND VENT PIPING
SECTION 231113	FACILITY FUEL-OIL PIPING
SECTION 231323	FACILITY ABOVEGROUND FUEL-OIL STORAGE TANKS



C. ELECTRICAL ENGINEER:

1. MR. MATTHEW TORRES, P.E.
2. LA LICENSE # 47208
3. RESPONSIBLE FOR SPECIFICATIONS:



SECTION 260519	Low-Voltage Electrical Power Conductors and Cables
SECTION 260526	Grounding and Bonding for Electrical Systems
SECTION 260529	Hangers and Supports for Electrical Systems
SECTION 260533.13	Conduits for Electrical Systems
SECTION 260533.16	Boxes and Covers for Electrical Systems
SECTION 260553	Identification for Electrical Systems
SECTION 260923	Lighting Control Devices
SECTION 262416	Panelboards
SECTION 262726	Wiring Devices
SECTION 262726.41	Pin-and-Sleeve Receptacles
SECTION 263323	Central Battery Equipment
SECTION 263600	Manual Transfer Switches
SECTION 265613	Lighting Poles and Standards
SECTION 265619	Led Exterior Lighting

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SECTION 002113 - Instructions to Bidders

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SECTION 004100 – Louisiana Uniform Public Work Bid Form

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SECTION 007200 - General Conditions

SECTION 007300 - Supplementary Conditions

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SECTION 011000 – Summary

SECTION 012200 – Unit Prices

SECTION 012500 – Substitution Procedures

SECTION 012900 – Payment Procedures

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SECTION 013200 – Construction Progress Documentation

SECTION 013233 – Photographic Documentation

SECTION 013300 – Submittal Procedures

SECTION 014000 – Quality Requirements

SECTION 017300 – Execution

SECTION 017700 – Closeout Procedures

SECTION 017823 – Operation and Maintenance Data

SECTION 017839 – Project Record Documents

DIVISION 02 - EXISTING CONDITIONS

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SECTION 024119 – Selective Demolition

DIVISION 05 - METALS

SECTION 051200 – Structural Steel Framing

SECTION 055119 – Metal Grating Stairs

SECTION 055313 – Bar Gratings

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

SECTION 074113.16 – Standing-Seam Metal Roof Panels

DIVISION 10 - SPECIALTIES

SECTION 101419 – Dimensional Letter Signage

SECTION 101423 – Panel Signage

DIVISION 22 - PLUMBING

SECTION 220719 – Plumbing Piping Insulation

SECTION 221116 – Domestic Water Piping

SECTION 221316 – Sanitary Waste and Vent Piping

DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

SECTION 231113 – Facility Fuel Oil Piping

SECTION 231323 – Facility Aboveground Fuel-Oil Storage Tanks

DIVISION 26 - ELECTRICAL

SECTION 260519 – Low-Voltage Electrical Power Conductors and Cables

SECTION 260526 – Grounding and Bonding for Electrical Systems

SECTION 260529 – Hangers and Supports for Electrical Systems

SECTION 260533.13 – Conduits for Electrical Systems

SECTION 260533.16 – Boxes and Covers for Electrical Systems

SECTION 260553 – Identification for Electrical Systems

SECTION 260923 – Lighting Control Devices

SECTION 262416 – Panelboards

SECTION 262726 – Wiring Devices

SECTION 262726.41 – Pin-and-Sleeve Receptacles

SECTION 263323 – Central Battery Equipment

SECTION 263600 – Manual Transfer Switches

SECTION 265613 – Lighting Poles and Standards

SECTION 265619 – Led Exterior Lighting

DIVISION 35 – NAVAL ARCHITECTURE

SECTION 350000 – Barge Specifications

Landing Barge Paint Specification

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BIDDER SUBMISSION CHECKLIST

The following items must be submitted in order to be considered responsive and are due on the bid submittal date.

Louisiana Uniform Public Work Bid Form (Attachment 1)

Buy America Certificate of Compliance

Certificate on Primary Debarment

Certificate Regarding Debarment– Lower Tier

Certification of Restrictions on Lobbying

Non-Collusion Affidavit

DBE Form 4 – DBE Participation Plan (For IFBs and RFQs)

INSTRUCTIONS FOR OBTAINING FORMS

Go to RTA's official web site at:
https://www.norta.com/get-to-know-us/doing-business-with-us/procurements-contracts

Click on "Vendor Form Library"

INSTRUCTIONS TO BIDDERS

1.1 SCOPE

The contract awarded pursuant to this Invitation for Bids shall be a fixed price contract. The contract price shall include all labor, materials, supplies, service tools, equipment, etc. All which are necessary for the ALGIERS FERRY BARGES REPLACEMENT.

1.2 CONTRACT DOCUMENTATION

Any contract resulting from this solicitation shall contain the terms and conditions included in this Invitation for Bids and any addenda issued pursuant hereto.

1.3 BID REQUIREMENTS (ELECTRONIC BID SUBMITTAL)

Electronic Bids shall be uploaded online at https://norta.procureware.com/home

1.4 PRICING

Regional Transit Authority is exempt from all taxes; however, only Louisiana State Sales Tax Exemption for materials incorporated into the final product will be transferrable to the Contractor. The Contractor shall pay all other sales, use, and other similar taxes that are enacted as of the Contract execution or subsequently revised or added. Regional Transit Authority Ferry Service will pay no sales taxes or for any increase in sales taxes, unless such increase in sales tax is due to a change in the interpretation of the Louisiana Tax Code by the Louisiana State Tax Commission and such increase in sales tax is the subject of an authorized change order. Whenever there is a discrepancy between a unit price and any extension, the unit price shall govern. Bidders are hereby notified that discount terms shall not be used in the determination of award of this contract.

1.5 BRAND NAMES

Wherever in the specifications the name of a certain brand, make, manufacturer, or definite specification is utilized, these specifications are used only to denote the quality standard of product, style type, and character of product desired and do not restrict bidders to the specific brand, make, manufacturer or specification named. Any deviation from named brands shall approved by Owner.

1.6 QUALIFICATIONS FOR AWARD

Award of this contract shall be made to the lowest responsible bidder, provided the bid is responsive in all respects to the terms and conditions of the contract, and the requirements, conditions, specifications as provided in this Invitation for Bids. To be responsible the Contractor shall be a person, firm, or corporation that:

Has in operation, or has the capability to have in operation, or has access to a manufacturing plant adequate to ensure delivery of all services, goods and supplies within the time specified under this contract.

Has adequate engineering and service personnel, or has the capability to obtain such personnel, to satisfy any engineering or service problems that may arise during the contract period.

Has adequate construction management and construction craft personnel, or has the capability to obtain such personnel, to satisfy any construction or service problems that may arise during the contract period.

Has the necessary facilities and financial resources or has the capability to obtain such facilities and financial resources, to complete the contract in a satisfactory manner within the required time.

Regional Transit Authority shall have the right to conduct a pre-award survey of each bidder and to conduct a cost/price analysis and/or audit to determine if the prices bid are fair and reasonable.

1.7 BIDDER REVIEW PROCEDURE

For the purposes of this paragraph, all submissions must be received by the RTA no later than 2:30 p.m. (Central time) on the date specified as the deadline for the submission.

a. Request for Modification or Clarification

This section establishes procedures for Bidders to seek review of this Invitation for Bids and any addenda. A bidder may discuss this Invitation for Bids and any addenda with the RTA. Such discussions do not, however, relieve Bidders from the responsibility of submitting written, documented requests.

Bidders may submit to the RTA requests for interpretations, clarifications or modifications concerning any term, condition and/or specification included in this Invitation for Bids and/or in any addendum hereto. Any such request must be received by the RTA, in writing, not less than **SEVEN (7) calendar days** before the date of scheduled proposal receipt deadline. All requests must be accompanied by all relevant information supporting the request for modification, interpretation, clarification or addendum of this solicitation.

All requests for clarification and/or modification should be submitted through email at email@rtaforward.org.

RTA will issue a written determination relative to each request made pursuant to this procedure. The written determination must be mailed or otherwise furnished

to all Bidders at least **THREE (3) calendar days** before the date scheduled as the proposal receipt deadline.

b. Protest Procedures

The following is an explanation of the RTA protest procedures which must be followed completely before all administrative remedies are exhausted.

Any person who is aggrieved in connection with the solicitation or award of a contract may protest to the Director of Procurement/RTA. Protests shall be submitted in writing specifically identifying the area of protest and containing any support data, test results, or other pertinent information substantiating the appeal. A protest with respect to a solicitation must be submitted in writing to the RTA at least seven (7) calendar days prior to proposal receipt deadline. A protest with regard to the award of a contract shall be submitted, in writing, within seven (7) calendar days after award of the contract.

Prior to any action in court, the Director of Procurement/RTA shall have the authority to settle or resolve a protest from an aggrieved person concerning the solicitation or award of a contract.

If the protest is not resolved by mutual agreement, the Director of Procurement/RTA or his designee shall, within thirty (30) calendar days of protest issue a decision in writing. The decision shall:

1. State the reasons for the action taken; and
2. Inform the protestor of his/her right to administrative and judicial review.

A copy of this decision shall be mailed or otherwise furnished immediately to the protestant and any other party intervening. This decision shall be final and conclusive unless:

1. The decision is fraudulent; or
2. The person adversely affected by the decision has submitted a timely administrative appeal to the CEO/RTA.

In the event of a timely protest under these regulations, the RTA shall not proceed further with the solicitation or with the award of the contract unless the Director of Procurement/RTA makes a written determination that the award of the contract is necessary without delay to protect the substantial interests of the RTA.

The CEO/RTA shall have the authority to review and determine any appeal by an aggrieved person from a determination by the Director of Procurement/RTA or his designee.

The aggrieved person must file an appeal within five (5) calendar days of receipt of a decision from the Director of Procurement/RTA.

On any appeal of the decision of the Director of Procurement/RTA, the CEO/RTA shall decide within thirty (30) calendar days whether the solicitation or award was made in accordance with the constitution, statutes, regulations, and the terms and conditions of the solicitation. Any prior determination by the Director of Procurement/RTA or his designee shall not be final or conclusive.

A copy of the CEO's/RTA decision shall be mailed or otherwise furnished immediately to the protestant or any other party intervening.

The decision of the CEO/RTA shall be final and conclusive unless:

1. The decision is fraudulent; or
2. The person adversely affected by the decision has timely appealed to FTA after having exhausted the local protest procedures stated above.

The RTA reserves the right to designate any person(s) other than the CEO/RTA or the Director of Procurement/RTA to perform the duties provided for in this Paragraph.

Any appeal to FTA under these protest procedures will be made pursuant to Circular 4220.1F, as amended.

1.8 BID PREPARATION

Each bid offer shall be made online at https://norta.procureware.com/home. Any costs incurred by Bidders responding to this Invitation for Bids will not be reimbursed by the RTA. Payments will only be made pursuant to a contract between the RTA and the successful proposer.

1.9 BID POSTPONEMENT AND ADDENDA

The RTA reserves the right to amend the instructions, general conditions, special conditions, plans, scope of work, and specifications of this solicitation up to the time set for bid opening. Copies of such addenda shall be furnished to all prospective Bidders. Where such addenda require changes in the services or prices quoted, the final date set for proposal receipt may be postponed by such number of days as in the opinion of the RTA shall enable prospective Bidders to revise proposals, in conformance with Louisiana Public Bid Law.

1.10 CANCELLATION OF INVITATION FOR BIDS

The RTA reserves the right to cancel this Invitation for Bids in whole or in part upon written determination by the Director of Procurement/RTA that such cancellation is in the best interest of the RTA.

1.11 PUBLIC BID OPENING

Bids shall be publicly opened at the time specified herein. The content of all bids, including documents marked proprietary, shall be made public for the information of bidders and other interested parties. Bidders are required to submit all administrative submittals, including SBE Forms. This does not supersede the requirement for a fully executed Invitation for Bid LA Public Bid Form, at the time of the Bid Opening.

1.12 BID REJECTION

The RTA reserves the right to waive any minor informality or irregularities in the bids received which do not prejudice other bidders. The RTA also reserves the right to reject any and all bids in whole or in part, and to award by items, parts of items, or by any group of items specified, in conformance with Louisiana Public Bid Law. Conditional bids, or those which take exception to the specifications, shall be considered non-responsive and shall be rejected.

1.13 SINGLE BID RESPONSE

If only one bid is received in response to this Invitation for Bids, a detailed cost proposal may be requested of the single bidder. A cost/price analysis and evaluation and/or audit may be performed in order to determine if the price is fair and reasonable. Award of a contract to the bidder submitting the only bid received in response to this Invitation for Bids may be subject to approval by the FTA.

1.14 BID WITHDRAWL

Prior to the date and time set for bid opening, bids may be modified or withdrawn by the bidder's authorized representative in person, or by written or telegraphic notice. After the bid opening, bids may not be withdrawn for ninety (90) calendar days.

1.15 AWARD PROCEDURE

Within a reasonable time after the proposal receipt deadline, the RTA will transmit the contract documents to the Contractor. The contract documents will, at a minimum, consist of this Invitation for Bids and any addenda thereto, the Contractor's proposal, RTA's standard contract provisions and provisions required by FTA.

1.16 UTILIZATION OF MINORITY AND WOMEN OWNED BANKS

All bidders are hereby encouraged to utilize the services of minority and women owned banks. Regional Transit Authority DBE Specialist is knowledgeable about such services. Any questions or concerns should be directed to the Chief Transit Officer.

1.17 ADDENDA

Bidders shall acknowledge receipt of all addenda to this Invitation for Bids. Acknowledged receipt of each addendum shall be clearly established and included with each proposal, in the location provided on the bid form. The undersigned acknowledges receipt of the following addenda.

Addendum No._____, dated _____

Addendum No._____, dated _____

Addendum No._____, dated _____

_____
Company Name

_____
Company Representative

_____
IFB 2026-007

RTA's GENERAL PROVISIONS

1. WRITTEN CHANGE ORDERS/AMENDMENTS

This contract may be changed/ amended in any particular allowed by law upon the written mutual agreement of both parties.

2. CHANGE ORDER/AMENDMENT PROCEDURE

Within ten (10) calendar days after receipt of the written change order to modify the contract, the Contractor shall submit to the RTA a detailed price and schedule proposal for the work to be performed. This proposal shall be accepted or modified by negotiations between the Contractor and the RTA. At that time, a detailed modification shall be executed in writing by both parties. In the event that federal funds are used in this procurement, the FTA may reserve the right to concur in any change order or any dispute arising under such change order. Disagreements that cannot be resolved by negotiation shall be resolved in accordance with the contract disputes clauses. Regardless of any disputes, the Contractor shall proceed with the work ordered, if the RTA has obtained the concurrence of FTA, should such concurrence be required. Regardless of any other requirement herein, RTA shall negotiate profit as a separate element of cost for any change order or amendment to any contract awarded pursuant to this solicitation.

3. OMISSIONS

Notwithstanding the provision of drawings, technical specifications or other data by the RTA, the Contractor shall supply all resources and details required to make the supplies complete and ready for utilization even though such details may not be specifically mentioned in the drawings and specifications.

4. PRIORITY

In the event of any conflicts between the description of the supplies and/or services in the Technical Specifications and drawings and other parts of this Invitation for Bids, the Technical Specifications and drawings shall govern.

5. COMMUNICATIONS

All official communications in connection with this contract shall be in writing. Solicitation or persons acting on their behalf may not contact, between the release of the solicitation and award, any employee or officer of Transdev or the Regional Transit Authority, including the Board of Commissioners, concerning any aspect of this solicitation, except in writing to the procurement officer or as provided in the solicitation documents. Violation of this provision may be grounds for rejecting a response.

6. INTEREST OF MEMBERS OF, OR DELEGATES TO CONGRESS

In accordance with 18 U.S.C. Subsection 431, no member of, or delegates to, the Congress of the United States shall be admitted to a share or part of this contract or to any benefit arising there from.

7. CONFLICT OF INTEREST

No Board Member, employee, officer or agent, or employee of such agent of the RTA shall participate in the selection or in the award or administration of a contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when:

a. The Board Member, employee, officer or agent, or employee of such agent;

b. Any member of his immediate family;

c. His or her partner; or

d. An organization that employs, or is about to employ any of the above, has a direct or indirect, present or future financial or other interest in the firm selected for award.

The RTA's Board Members, officers, employees or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from contractors, potential contractors or parties of sub agreements.

Each entity that enters into a contract with the RTA is required, prior to entering into such contract, to inform the RTA of any real or apparent organizational conflicts of interest. An organizational conflict of interest exists when the contractor is unable or potentially unable to provide objective assistance or advice to the RTA due to other activities, relationships, contracts, or circumstances; when the contractor has an unfair competitive advantage through obtaining access to nonpublic information during the performance of an earlier contract; and during the conduct of an earlier procurement, the contractor has established the ground rules for a future procurement by developing specifications, evaluation factors, or similar documents, in accordance with Chapter VI, 2.a.(4)(h) of FTA C 4220.1F.

8. EQUAL EMPLOYMENT OPPORTUNITY

The Contractor shall comply with Executive Order No. 11246 as amended, entitled "Equal Employment Opportunity" as supplemented in Department of Labor Regulations (41 C.F.R. Paragraph 60). In connection with the execution of this Agreement, the Contractor shall not discriminate against any employees or applicant for employment because of race, religion, color, sex, age, or national origin. The Contractor shall take affirmative action to ensure that applicants are employed and that employees are treated during their employment without regard to their race, religion, color, sex, age, or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination, rates of pay or other forms of compensation, and selection for training,

including apprenticeship. Contractor further agrees to insert a similar provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials.

9. PRIVACY REQUIREMENTS

The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any contract:

(1) The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor or its employees operate a system of records on behalf of the Federal Government. The Contractor understand that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying contract.

(2) The Contractor also agrees to include these requirements in each subcontract to administer any system of records on behalf of the Federal Government financed in whole or in part with Federal assistance provided by FTA.

10. INDEMNIFICATION

The Contractor covenants and agrees to fully defend, protect, indemnify and hold harmless the RTA, their directors, officers, employees, agents, and assigns from and against all liability, including strict liability, claims, demands, and causes of action brought by others against RTA, and expenses, including but not limited to reasonable attorney's fees; and expense incurred in defense of RTA, arising out of, or in any way incidental to, or in connection with the work hereunder, and other activities by contractor; provided, however, that such indemnification shall apply only to the extent permitted by applicable law, and except and to the extent such liability, claim, demand or cause of action results from RTA's negligence.

11. PERFORMANCE

Contractor shall perform all work diligently, carefully and in a good and workmanlike manner and shall furnish all labor, supervision, machinery, equipment, material and supplies necessary therefore. Contractor shall obtain and maintain all permits and licenses required by public authorities in connection with performance of the work, and, if permitted to subcontract, shall be fully responsible for all work performed by subcontractors. Contractor shall conduct all operations in Contractor's own name and as an independent contractor, and not in the name of, or agent for RTA.

12. STATUS OF CONTRACTOR AND ITS EMPLOYEES

For all purposes specified under the terms of this Agreement the Contractor shall be considered an independent contractor as defined in R.S. 23:1021 (5), and as such, the RTA shall not be liable to the Contractor for benefits or coverage provided by the Workers' Compensation Law of the State of Louisiana (R.S. 23:1021 et seq.), and further, under the provisions of R.S. 23:1034, no person employed by the Contractor shall be considered an employee of the RTA for the purpose of Workers' Compensation coverage.

13. INSURANCES AND LICENSES

The contractor shall, upon request by the RTA, submit a copy of their standard insurance certificates for this project.

14. SUBCONTRACTORS

No portion of this contract may be, reassigned, transferred, or sublet without the written approval of the RTA. If allowed to subcontract, no subcontractor may be replaced without the written approval of the RTA.

15. SHIPPING

The goods shall be delivered by the Contractor to the RTA's selected project site located in New Orleans. The RTA's Project Manager will coordinate the delivery address with the Contractor prior to the shipment. The goods shall be delivered in excellent condition ready for utilization and/or installation. Contractor shall be responsible for unlading the goods at the specified location and assume all responsibility and liability incident to said delivery.

16. CERTIFICATE OF CONFORMANCE

The Contractor shall submit with each shipment a Certificate of Conformance signed by an authorized Contractor's Representative, stating that the materials furnished to Regional Transit Authority (RTA) are in conformance with applicable requirements of the Contract, drawings and specifications, and that supporting documentation is on file and will be made available to RTA or Federal Transit Representatives upon request. Certifications shall include name of Contractor for materials being supplied, quantity shipped, lot number, and Contract Number. An example of an acceptable statement of conformance is as follows:

"This is to certify that all items are noted in conformance with the Contract, drawings, specifications, and other applicable documentation."

17. ACCEPTANCE

Within 7 days after delivery, the RTA, its agents or assigns will conduct acceptance inspection. Acceptance shall be conditioned upon satisfactory results of such inspection, promptly

communicated in writing to the Contractor, subject however, to revocation upon discovery of defects.

18. QUALITY INSPECTION

All goods and services installed and supplied shall be good quality and free from any defects and shall at all times be subject to RTA's inspection; but neither RTA's inspection nor failure to inspect shall relieve Contractor of any obligation hereunder. If, in RTA's opinion, any goods or service (or component thereof) fails to conform to specifications or is otherwise defective, Contractor shall promptly replace or correct same at Contractor's sole expense. No acceptance or payment by RTA shall constitute a waiver of the foregoing, and nothing herein shall exclude or limit any warranties implied by law.

19. CORRECTION BY CONTRACTOR

After non-acceptance of the work, the Contractor shall begin implementing correction procedures within five (5) calendar days after receiving notification from the RTA. The RTA will make the site timely with Contractor's correction schedule. The Contractor shall bear all expense incurred to complete correction of the work after non-acceptance, and Contractor shall diligently implement correction procedures.

20. MATERIALS/ACCESSORIES RESPONSIBILITY

The Contractor shall provide and warranty all parts materials, equipment and workmanship associated with the supplies and related materials and equipment used, whether the same are manufactured by the Contractor or purchased from suppliers.

21. UNAVOIDABLE DELAYS

If completion of the work furnished under this contract should be unavoidably delayed, the RTA may extend the time for satisfaction of the Contractor's obligations pursuant thereto for a number of days determined by RTA to be excusable due to unavoidability. A delay is unavoidable only if the delay was not reasonably expected to occur in connection with or during the Contractor's performance, and was not caused directly of substantially by acts, omissions, negligence or mistakes of the Contractor, the Contractor's suppliers or their agents and was substantial and in fact caused the Contractor to miss completion dates and could not adequately have been guarded against by contractual or legal means.

22. NOTIFICATION OF DELAY

The Contractor shall notify the RTA as soon as the Contractor has, or should have, knowledge that an event has occurred or will occur which will delay progress or completion. Within five (5) days there from, the Contractor shall confirm such notice in writing furnishing as much detailed information as is available.

23. REQUESTS FOR EXTENSION

The Contractor agrees to supply, as soon as such data are available, any/all reasonable proof required by the RTA to make a decision relative to any request for extension. The RTA shall examine the request and any documents supplied by the Contractor, and RTA shall determine if the Contractor is entitled to an extension and the duration of such extension. The RTA shall notify the Contractor of this decision in writing. It is expressly understood and agreed that the Contractor shall not be entitled to damages or compensation, and shall not be reimbursed for losses on account of delays resulting from any cause under this provision.

24. ACCESS REQUIREMENTS FOR INDIVIDUALS WITH DISABILITIES

During the performance of this contract, the contractor, for itself, its assignees and successors in interest agree to comply with all applicable requirements of the Americans with Disabilities Act of 1990 (ADA), 42 U.S.C. sections 12101 et seq.; section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. section 794; section 16 of the Federal Transit Act, as amended, 49 U.S.C. app. section 1612; and the following regulations and any amendments thereto:

(a) U.S. DOT regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 C.F.R. Part 37;

(b) U.S. DOT regulations, "Nondiscrimination on the Basis of Handicap in Programs and Activities Receiving or Benefiting from Federal Financial Assistance," 49 C.F.R. Part 27;

(c) U.S. DOT regulations, "American With Disabilities (ADA) Accessibility Specifications for Transportation Vehicles," 49 C.F.R. Part 38;

(d) Department of Justice (DOJ) regulations, "Nondiscrimination on the Basis of Disability in State and Local Government Services," 28 C.F.R. Part 35;

(e) DOJ regulations, "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities," 28 C.F.R. Part 36;

(f) General Services Administration regulations, "Accommodations for the Physically Handicapped," 41 C.F.R. Subpart 101-19;

(g) Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provision of the Americans with Disabilities Act," 29 C.F.R. Part 1630;

(h) Federal Communications Commission regulations, "Telecommunications Relay Services and Related Customer Premises Equipment for the Hearing and Speech Disabled," 47 C.F.R. Part 64, Subpart F; and

(i) FTA regulations, "Transportation of Elderly and Handicapped Persons," 49 C.F.R. Part 609.

25. APPLICATION OF FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS

(a) Federal Laws and Regulations

The Federal requirements (laws, regulations policies, and related administratively) contained in this contract may change (from time to time) after the date the contract has been executed. Any changes in federal requirements shall apply to this contract and be incorporated therein.

(b) State or Territorial Law and Local Law

This contract shall be entered into in the State of Louisiana and shall be governed and/or construed in accordance with the laws and jurisprudence of the State of Louisiana, except to the extent that a Federal Statute or regulation preempts State or territorial law.

26. CONTRACT PERIOD

THE PERIOD OF THIS CONTRACT SHALL BE FROM THE DATE THE CONTRACT IS ISSUED UNTIL ALL GOODS AND ITEMS ARE RECEIVED AND APPROVED BY RTA, UNLESS THE CONTRACT PERFORMANCE PERIOD IS EXTENDED BY WRITTEN AMENDMENT/CHANGE ORDER AND EXECUTED BY THE PARTIES.

27. NO OBLIGATION BY THE FEDERAL GOVERNMENT

(1) The Purchaser and Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the Purchaser, Contractor, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

(2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the subcontractor who will be subject to its provisions.

28. FEDERAL CHANGES

Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Agreement (Form FTA MA (2) dated October, 1995) between RTA and FTA, as they may be

amended or promulgated from time to time during the term of this contract. Contractor's failure to so comply shall constitute a material breach of this contract.

29. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS

The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1F, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any RTA requests which would cause RTA to be in violation of the FTA terms and conditions":https://www.transit.dot.gov/regulations-and-guidance/fta-circulars/third-party-contracting-guidance

30. EXCLUSIONARY OR DISCRIMINATORY SPECIFICATIONS

Apart from inconsistent requirements imposed by federal statute or regulations, the RTA will comply with the requirements of 49 U.S.C. § 5323(h) (2) by refraining from using any Federal assistance awarded by FTA to support procurements using exclusionary or discriminatory specifications.

31. GEOGRAPHIC RESTRICTIONS

Except as expressly mandated, encouraged or permitted by FTA or Federal statute, RTA will refrain from using state or local geographic preferences.

32. PROMPT PAYMENT

The prime contractor payment terms will be set forth in the contract agreement. The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than five (5) days from the receipt of each payment the prime contractor receives from the RTA. The prime contractor further agrees to return retainage payment to each subcontractor within five (5) days after the subcontractors work is satisfactorily completed and accepted by RTA, and all lien delay's under applicable laws have expired. Any delay or postponement of payment from the above-referenced time frame may occur only for good cause following written approval of the RTA. This clause applies to both DBE and non-DBE subcontractors.

Identification of subcontractors: All prime contractors submitting offers in response to this Invitation for Bids must provide the following information for All subcontractors whether the firm is identified as a Disadvantaged Business Enterprise or not. The required information is:

(1) Firm Name

(2) Firm Address
(3) Firm's status as a DBE or non DBE
(4) The age of the firm
(5) The annual gross receipts of the firm

Additionally, each contract RTA enters into with a contractor (and each subcontract) the prime contractor signs with a subcontractor shall include the following assurance:

The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the RTA deems appropriate.

Further, each contract RTA enters into with a contractor (and each subcontract the prime contractor signs with a subcontractor shall include the following assurance:

The contractor, sub recipient or subcontractor shall make prompt payments for all satisfactory work performed under this agreement. The contractor shall within thirty (30) days of receipt of payment from RTA make all payments due subcontractors and suppliers. This requirement shall flow down to all levels including subcontractors making payments to sub subcontractors and suppliers, etc. Additionally, upon release of retainage(s) by RTA, Contractor shall in turn within thirty (30) days release retainage(s) it holds. The requirement for release of retainage(s) within thirty (30) days shall flow down to all subcontractors, etc. performing under this contract. Contractor or any of its subcontractors, etc. may not delay or postpone payments or release of retainage without prior RTA written approval. RTA may delay, or withhold up to twenty-five percent of *Contractor's payments, retainage, etc. if there is evidence that Contractor is not complying with any provision hereunder. RTA may withhold monies due Contractor until such time as Contractor by its actions or assurances has, to RTA satisfaction, proven that it will or has complied with all the requirements hereunder.*

33. CONFIDENTIALITY

Contractor agrees that any and all information, in oral or written form, whether obtained from RTA, its agents or assigns, or other sources, or generated by Contractor pursuant to this contract shall not be used for any purpose other than fulfilling the requirements of this contract. Contractor further agrees to keep in absolute confidence all data relative to the business of RTA and Transdev, their agents or assigns. No news release, including but not limited to photographs and film, public announcement, denial or confirmation of any part of the subject matter of any phase of any program hereunder shall be made by Contractor without written approval of RTA.

34. DISPUTES

Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the Director of Procurement. The decision of the Director of Procurement shall be final and conclusive unless within [seven (7)] days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the Vice President-Transdev. In connection with any such appeal, the Contractor may be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of the Vice President-Transdev shall be binding upon the Contractor and the Contractor shall abide by the decision.

Performance During Dispute. Unless otherwise directed by RTA, Contractor shall continue performance under this contract while matters in dispute are being resolved.

Claims for Damages. Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

Remedies. Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the RTA and the Contractor arising out of or relating to this agreement or its breach will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State of Louisiana.

Rights and Remedies. The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the RTA, (its agents or assigns) or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

35. OWNERSHIP OF DOCUMENTS

Any documents, drawings, specifications, reports or data generated by the Contractor in connection with this project shall become the sole property of the RTA, subject to any rights asserted by FTA of the U.S. Department of Transportation. The Contractor may retain copies of such items for its files. The Contractor shall not release any documents, reports or data from this project without prior written permission from the RTA.

36. STATE AND LOCAL LAW DISCLAIMER

The use of many of the Clauses herein are not governed by federal law, many of the clauses contained herein contain FTA suggested language in certain instances these clauses may be affected by State Law.

37. PARTICIPANT INFORMATION FORM

All participants and their subcontractors are required to submit a completely executed, Participant Information Form available on http://www.norta.com.

38. NON-COLLUSION AFFIDAVIT

The Non-Collusion Affidavit is a required submittal. The necessary form is available on http://www.norta.com.

39. REGIONAL TRANSIT AUTHORITY GENERAL PROVISIONS

The Regional Transit Authority's General Provisions shall apply to this solicitation and resulting contract.

FEDERAL REQUIREMENTS

1. ACCESS TO RECORDS

The following access to records requirements apply to this Contract:

(1) RTA is a grantee of the FTA and as such in accordance with 49 C.F.R. 18.36(I), the Contractor agrees to provide the RTA, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C.F.R. 633.17 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311.

(2) Where the Purchaser is a State and is the RTA or a subgrantee of RTA in accordance with 49 C.F.R. 633.17, Contractor agrees to provide the Purchaser, the FTA Administrator or his authorized representatives, including PMP Contractor, access to Contractor's records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a) 1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311. By definition, a major capital project excludes contracts of less than the simplified acquisition threshold currently set at $100,000.

(3) Where the RTA enters into a negotiated contract for other than a small purchase or under the simplified acquisition threshold and is an institution of higher education, an hospital or other non-profit organization and is the FTA grantee or a subgrantee of the RTA in accordance with 49 C.F.R. 19.48, Contractor agrees to provide the RTA, FTA Administrator, the Comptroller General of the United States or any of their duly authorized representatives with access to any books, documents, papers and record of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions.

(4) Where RTA or a subgrantee of the RTA in accordance with 49 U.S. C. 5325(a) enters into a contract for a capital project or improvement (defined at 49 U.S. C. 5302(a) 1) through other than competitive bidding, the Contractor shall make available records related to the contract to the RTA, the Secretary of Transportation and the Comptroller General or any authorized officer or employee of any of them for the purposes of conducting an audit and inspection.

(5) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(6) The Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three (3) years after the date of termination of expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until the RTA, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions thereto. Reference 49 CFR 18.39(i) (11).

2. BUY AMERICA

This Contract is subject to the Federal Transit Administration Buy America Requirements in 49 CFR 660. The bidder is required to submit a signed Buy America certification with the bid. If the bidder takes exception to the Buy America requirements a certificate of non-compliance must be signed and submitted with the bid as it applies to the IFB request. The necessary forms are available on http://www.norta.com. A waiver from the Buy America Provision may be sought by the RTA if grounds for the waiver exist. Section 165(a) of the Surface Transportation Act of 1982 permits FTA participation on this contract only if steel, and manufactured products used in the contract are produced in the United States.

3. PRE-AWARD AND POST-DELIVERY AUDITS

Federal funds may not be obligated unless steel, iron, and manufactured products used in the projects are produced in the United States, unless FTA has granted a waiver, or the product is subject to a general waiver. Rolling stock must have sixty-five percent domestic content and final assembly must take place in the United States. Metropolitan Transportation Services 15 Dec. 09 v. 2 3 2 1 4. Buy America 5 6 9 8 7 12 10 13 11 FTA Requirement Subrecipient Responsibility Final assembly. The final assembly of rolling stock must take place in the United States. The Buy America Requirements, 49 CFR Part 661.11(r), define final assembly as “the creation of the end product from individual elements brought together for that purpose through application of manufacturing processes.”

4. CARGO PREFERENCE

The Contractor Agrees:

a. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners and tankers) involved, whenever shipping any equipment, materials, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels;

b. To furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of-lading in English for each shipment of cargo

described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, D.C. 20590 and to the RTA (through the prime contractor in the case of subcontractor's bills-of-lading).

c. To include these requirements in all subcontracts issued pursuant to this contract when the contract may involve the transportation of equipment, material or commodities by ocean vessel.

5. CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. The Contractor agrees to report each violation to the RTA and understands and agrees that the RTA will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FTA.

(3) The Contractor agrees to comply with applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. The Contractor agrees to report each violation to the RTA and understands and agrees that the RTA will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(4) The Contractor also agrees to include these requirements in each subcontract exceeding $100,000 financed in whole or in part with Federal assistance provided by FTA.

(5) 14 CFR § 1274.926 Clean Air-Water Pollution Control Acts.
If this contract or supplement thereto is in excess of $100,000, the Recipient agrees to notify the Agreement Officer promptly of the receipt, whether prior or subsequent to the Recipient 's acceptance of this agreement, of any communication from the Director, Office of Federal Activities, Environmental Protection Agency (EPA), indicating that a facility to be utilized under or in the performance of this agreement or any subcontract thereunder is under consideration to be listed on the EPA "List of Violating Facilities" published pursuant to 40 CFR 15.20. By acceptance of agreement in excess of $100,000, the Recipient

(a) Stipulates that any facility to be utilized thereunder is not listed on the EPA "List of Violating Facilities" as of the date of acceptance;

(b) Agrees to comply with all requirements of section 114 of the Clean Air Act, as amended (42 U.S.C. 1857et seq. as amended by Public Law 91-604) and section 308 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251et

seq. as amended by Public Law 92-500) relating to inspection, monitoring, entry, reports and information, and all other requirements specified in the aforementioned sections, as well as all regulations and guidelines issued thereunder after award of and applicable to the contract; and

(c) Agrees to include the criteria and requirements of this clause in every subcontract hereunder in excess of $100,000, and to take such action as the Contracting or Grant Officer may direct to enforce such criteria and requirements.

6. CIVIL RIGHTS ACT

The following requirements apply to the underlying contract:

(1) Nondiscrimination. In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing requirements FTA may issue.

(2) Equal Employment Opportunity: The following equal employment opportunity requirements apply to the underlying contract:

(a) Race, Color, Creed, National Origin, Sex. In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the Contractor agrees to comply with all applicable equal employment opportunity requirements of U. S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S. C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, disability or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(b) Age. In accordance with section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. §§ 623 and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees to refrain from discrimination against present and prospective employees

for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(c) Disabilities. In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S. C. § 12112, the Contractor agrees that it will comply with the requirements of U. S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act", 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

(3) The Contractor also agrees to include these requirements in each Subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

7. EMPLOYEE PROTECTION

Construction Activities. The Recipient agrees to comply, and assures the compliance of each subrecipient, lessee, third party contractor, and other participant at any tier of the Project, with the following Federal laws and regulations providing protections for construction employees: (1) Davis-Bacon Act, as amended, 40 U.S.C. §§ 3141 et seq., pursuant to FTA enabling legislation requiring compliance with the Davis-Bacon Act at 49 U.S.C. § 5333(a), and implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5; (2) Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 3701 et seq., specifically, the wage and hour requirements of section 102 of that Act at 40 U.S.C. § 3702, and implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5; and the safety requirements of section 107 of that Act at 40 U.S.C. § 3704, and implementing U.S. DOL regulations, "Safety and Health Regulations for Construction," 29 C.F.R. Part 1926; and (3) Copeland "Anti-Kickback" Act, as amended, 18 U.S.C. § 874 and 40 U.S.C. § 3145, and implementing U.S. DOL regulations, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in part by Loans or Grants from the United States," 29 C.F.R. Part 3. b. Activities Not Involving Construction. The Recipient agrees to comply, and assures the compliance of each subrecipient, lessee, third party contractor, and other participant at any tier of the Project, with the employee protection requirements for nonconstruction employees of the Contract Work Hours and Safety Standards Act, as amended, 40 U.S.C. §§ 3701 et seq., in FTA Master Agreement MA(17), 10-1-2010 58 particular with the wage and hour requirements of section 102 of that Act at 40 U.S.C. § 3702, and with implementing U.S. DOL regulations, "Labor Standards Provisions Applicable to Contracts Governing Federally Financed and Assisted Construction (also Labor Standards Provisions Applicable to Nonconstruction Contracts Subject to the Contract Work Hours and Safety Standards Act)," 29 C.F.R. Part 5. c. Activities Involving Commerce. The Recipient agrees to comply with the Fair Labor Standards Act, 29 U.S.C. §§ 201 et seq., to the extent that it applies to employees performing Project work involving commerce. d. Public Transportation Employee Protective Arrangements. If the Contract Agreement for the Project indicates that public transportation employee protective

arrangements required by U.S. DOL apply to public transportation operations performed in connection with the Project, the Recipient agrees to comply with the following requirements:

(1) Standard Public Transportation Employee Protective Arrangements. To the extent that the Project involves public transportation operations and to the extent required by Federal law, the Recipient agrees to implement the Project in accordance with the terms and conditions that the U.S. Secretary of Labor has determined to be fair and equitable to protect the interests of any employees affected by the Project and that comply with the requirements of 49 U.S.C. § 5333(b), in accordance with U.S. DOL guidelines, "Section 5333(b), Federal Transit Law," 29 C.F.R. Part 215, and any amendments thereto.

For compliance with Section 3.8 (below) concerning the Davis-Bacon Act, all contractors must register with and use LCPTracker software to submit compliance documents and details for any RTA projects where Davis-Bacon Act compliance is required.

8. ENERGY CONSERVATION

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6321 et seq.).

9. FLY AMERICA

Contractor and all subcontractors at every tier shall comply with the requirements of 49 U.S.C. 40118 and 4 CFR Part 52. Specifically, whenever work under this agreement may involve international transportation of goods, equipment or personnel by air, only U.S. flag air carriers shall be utilized, to the extent service by these carriers is available. Additionally, Contractor and any subcontractors at every tier shall include this requirement in all subcontracts. Further, in every instance where Contractor or any subcontractor(s) cannot comply with the requirements herein, a certification, in proper form, stating the reasons for non-compliance shall accompany the request for reimbursement or payment.

10. GOVERNMENT WIDE DEBARMENT AND SUSPENSION (NONPROCUREMENT)

Certification Regarding Debarment, Suspension, and other Responsibility Matters - Lower Tier Covered Transactions (Third Party Contracts over $100,000)

The following language and Debarment certificates (http://www.norta.com) must be completed and submitted as a prerequisite for consideration for award. This language and certification must also be included for all sub-contracts issued pursuant to any contract awarded hereunder.

Instructions for Certification

1. By signing and submitting this bid or proposal, the prospective lower tier participant is providing the signed certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transactions was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other

remedies available to the Federal Government, RTA may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to RTA if at any time the prospective lower tier participant learns that it certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction", "debarred", "suspended", "ineligible", "lower tier covered transaction", "participant", "persons", "lower tier covered transaction", "principal", "proposal",
and "voluntarily excluded", as used in this clause, have meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549 [49 CFR Part 29].

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized in writing by RTA.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction", without modification, in all lower tier covered transactions and in all solicitation for lower tier covered transaction.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier coveted transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which determines the eligibility of its principals. Each participant may, but is not required to, check the Non-procurement List issued by U.S. General Service Administration.

8. Nothing contained in the foregoing shall be construed to require establishment of system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under Paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to all remedies available to the Federal Government, RTA may pursue available remedies including suspension and/or Debarment.

11. RESTRICTIONS ON LOBBYING

Byrd Anti-Lobbying Amendment, 31 U.S.C. 1352, as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65 [to be codified at 2 U.S.C. § 1601, et seq.] Contractors who

apply or bid for an award of $100,000 or more shall file the certification required by 49 CFR parts 20, “New Restrictions on Lobbying.” Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tier up to the RTA. The necessary form is available on http://www.norta.com.

12. NO FEDERAL GOVERNMENT OBLIGATIONS TO THIRD PARTIES

The federal government shall not be subject to any obligations or liabilities to any third-party Contractor, or any other person not a party to the Grant Agreement or Cooperative Agreement in connection with the performance of this contract. Notwithstanding any concurrence provided by the federal government in or approval of any solicitation, subagreement, or third-party contract, the federal government continues to have no obligations or liabilities to any party, including the third-party Contractor.

13. PATENT AND RIGHTS IN DATA

These following requirements apply to each contract involving experimental, developmental or research work: 1. The term "subject data" used in this clause means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the contract. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as punched cards, magnetic tape, or computer memory printouts; and information retained in computer memory. Examples include, but are not limited to: computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to contract administration. 2. The following restrictions apply to all subject data first produced in the performance of the contract to which this Attachment has been added: a. Except for its own internal use, the Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may the Contractor authorize others to do so, without the written consent of the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public; this restriction on publication, however, does not apply to any contract with an academic institution. b. In accordance with 49 C.F.R. § 18.34 and 49 C.F.R. § 19.36, the Federal Government reserves a royalty-free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for "Federal Government purposes," any subject data or copyright described in subsections (2)(b)1 and (2)(b)2 of this clause below. As used in the previous sentence, "for Federal Government purposes," means use only for the direct purposes of the Federal Government. Without the copyright owner's consent, the Federal Government may not extend its Federal license to any other party. (1). Any subject data developed under that contract, whether or not a copyright has been obtained; and (2). Any rights of copyright purchased by the

Contractor using Federal assistance in whole or in part provided by FTA. c. When FTA awards Federal assistance for experimental, developmental, or research work, it is FTA's general intention to increase transportation knowledge available to the public, rather than to restrict the benefits resulting from the work to participants in that work. Therefore, unless FTA determines otherwise, the Contractor performing experimental, developmental, or research work required by the underlying contract to which this Attachment is added agrees to permit FTA to make available to the public, either FTA's license in the copyright to any subject data developed in the course of that contract, or a copy of the subject data first produced under the contract for which a copyright has not been obtained. If the experimental, developmental, or research work, which is the subject of the underlying contract, is not completed for any reason whatsoever, all data developed under that contract shall become subject data as defined in subsection (a) of this clause and shall be delivered as the Federal Government may direct. This subsection (c), however, does not apply to adaptations of automatic data processing equipment or programs for the Contractor's use whose costs are financed in whole or in part with Federal assistance provided by FTA for transportation capital projects. d. Unless prohibited by state law, upon request by the Federal Government, the Contractor agree to indemnify, save, and hold harmless the Federal Government, its officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by the Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under that contract. Contractor shall not be required to indemnify the Federal Government for any such liability arising out of the wrongful act of any employee, official, or agents of the Federal Government. e. Nothing contained in this clause on rights in data shall imply a license to the Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Federal

Government under any patent. f. Data developed by Contractor and financed entirely without using Federal assistance provided by the Federal Government that has been incorporated into work required by the underlying contract to which this Attachment has been added is exempt from the requirements of subsections (b), (c), and (d) of this clause, provided that the Contractor identifies that data in writing at the time of delivery of the contract work. g. Unless FTA determines otherwise, the Contractor agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA. 3. Unless the Federal Government later makes a contrary determination in writing, irrespective of the Contractor's status (i.e., a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual, etc.), Contractor agrees to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401. 4. The Contractor also agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

14. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTSUPPER AND LOWER TIERTRANSACTIONS

(1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. §§3801 et. seq. and U.S. DOT regulations, "Program Fraud Civil Remedies", 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S. C. §5307, the Government reserves the right to impose the penalties of 18 U.S.C. §1001 and 49 U.S.C. §5307(n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

15. RECYCLED PRODUCTS

Recovered Materials. The contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

16. SAFE OPERATION OF MOTOR VEHICLE

The Recipient agrees as follows: a. Seat Belt Use. In accordance with the provisions of Executive Order No. 13043, "Increasing Seat Belt Use in the United States," April 16, 1997, 23 U.S.C. § 402 note, the Recipient is encouraged to adopt and promote on-the-job seat belt use policies and programs for its employees and other personnel that operate company-owned, rented, or personally operated vehicles, and to include this provision in any subagreements, leases, third party contracts, or other similar documents in connection with the Project. b. Distracted Driving, Including Text Messaging While Driving. In accordance with Executive Order No. 13513, "Federal Leadership on Reducing Text Messaging While Driving," October 1, 2009, and DOT

Order 3902.10, "Text Messaging While Driving," December 30, 2009, the Recipient is encouraged to comply with the terms of the following Special Provision: (1) Definitions. As used in this Special Provision: (a) "Driving" means operating a motor vehicle on a roadway, including while temporarily stationary because of traffic, a traffic light, stop sign, or otherwise. "Driving" does FTA Master Agreement MA(17), 10-1-2010 67 not include being in your vehicle (with or without the motor running) in a location off the roadway where it is safe and legal to remain stationary. (b) "Text Messaging" means reading from or entering data into any handheld or other electronic device, including for the purpose of short message service texting, e-mailing, instant messaging, obtaining navigational information, or engaging in any other form of electronic data retrieval or electronic data communication. The term does not include the use of a cell phone or other electronic device for the limited purpose of entering a telephone number to make an outgoing call or answer an incoming call, unless the practice is prohibited by State or local law. (2) Safety. The Recipient is encouraged to: (a) Adopt and enforce workplace safety policies to decrease crashes caused by distracted drivers including policies to ban text messaging while driving— (b) Recipient-owned or Recipient-rented vehicles or Government-owned, leased or rented vehicles; (c) Privately-owned vehicles when on official Project related business or when performing any work for or on behalf of the Project; or (d) Any vehicle, on or off duty, and using an employer supplied electronic device. (3) Recipient Size. The Recipient is encouraged to conduct workplace safety initiatives in a manner commensurate with the Recipient's size, such as: (a) Establishment of new rules and programs or re-evaluation of existing programs to prohibit text messaging while driving; and (b) Education, awareness, and other outreach to employees about the safety risks associated with texting while driving. (4) Extension of Provision. The Recipient is encouraged to include this Special Provision in its subagreements with its subrecipients, its leases, and its third party contracts, and also encourage its subrecipients, lessees, and third party contractors to comply with the terms of this Special Provision, and include this Special Condition in each subagreement, lease, and third party contract at each tier financed with Federal assistance provided by the Federal Government.

17. SUBSTANCE ABUSE REQUIREMENTS

To the extent applicable, the Recipient agrees to comply with the following Federal regulations and guidance: a. Drug-Free Workplace. U.S. OMB guidance, "Governmentwide Requirements for Drug-Free Workplace (Financial Assistance)," 2 C.F.R. Part 182, and U.S. DOT regulations, "Governmentwide Requirements for Drug-Free Workplace (Financial Assistance)," 49 C.F.R. Part 32, that implement the Drug-Free Workplace Act of 1988, as amended, 41 U.S.C. §§ 702 et seq., including any amendments to these U.S. DOT regulations when they are promulgated. b. Alcohol Misuse and Prohibited Drug Use. FTA regulations, "Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations," 49 C.F.R. Part 655, that implement 49 U.S.C. § 5331.

18. TERMINATION

a. Termination for Convenience (General Provision) The RTA may terminate this contract, in whole or in part, at any time by written notice to the Contractor when it is in the RTA's and/or the Government's best interest. The Contractor shall be paid its costs, including contract closeout costs, and profit on work performed up to the time of termination. The Contractor shall promptly

submit its termination claim to RTA to be paid the Contractor. If the Contractor has any property in its possession belonging to the RTA, the Contractor will account for the same, and dispose of it in the manner the RTA directs.

b. Termination for Default [Breach or Cause] (General Provision) If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the RTA may terminate this contract for default. Termination shall be affected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract. If it is later determined by the RTA that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the RTA, after setting up a new delivery or performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

c. Opportunity to Cure (General Provision) The RTA in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions. If Contractor fails to remedy to RTA's satisfaction the breach or default or any of the terms, covenants, or conditions of this Contract within [ten (10) days] after receipt by Contractor of written notice from RTA setting forth the nature of said breach or default, (RTA) shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude (RTA) from also pursuing all available remedies against Contractor and its sureties for said breach or default.

d. Waiver of Remedies for any Breach. In the event that RTA elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by RTA shall not limit RTA's remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

19. CONTRACT WORK HOURS AND SAFETY STANDARD ACT

The Contract Work Hours and Safety Standards Act is codified at 40 USC 3701, et seq. The Act applies to grantee contracts and subcontracts "financed at least in part by loans or grants from … the [Federal] Government." 40 USC 3701(b) (1) (B) (iii) and (b) (2), 29 CFR 5.2(h), 49 CFR 18.36(i) (6). The Act applies to construction contracts and, in very limited circumstances, non-construction projects that employ "laborers or mechanics on a public work" with a value greater than $100,000. These nonconstruction applications do not generally apply to transit procurements because transit procurements (to include rail cars and buses) are deemed "commercial items." 40 USC 3707, 41 USC 403 (12) Flow down Requirements: Applies to third party contractors and sub-contractors. (1) Overtime requirements - No contractor or sub-contractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in

any workweek in which he or she is employed on such work to work in excess of forty (40) hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half (1.5) times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek. (2) Violation; liability for unpaid wages; liquidated damages - In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any sub-contractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and sub-contractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty (40) hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section. (3) Withholding for unpaid wages and liquidated damages - NCTD shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or sub-contractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or sub-contractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section. (4) Subcontracts - The Contractor or sub-contractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the sub-contractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any sub-contractor or lower tier sub-contractor with the clauses set forth in paragraphs (1) through (4) of this section. overtime wages required by the clause set forth in paragraph (1) of this section. (3) Withholding for unpaid wages and liquidated damages - NCTD shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or sub-contractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or sub-contractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section. (4) Subcontracts - The Contractor or sub-contractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the sub-contractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any sub-contractor or lower tier sub-contractor with the clauses set forth in paragraphs (1) through (4) of this section.

LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO: **Regional Transit Authority**
2817 Canal Street
New Orleans, Louisiana 70119

(Owner to provide name and address of owner)

BID FOR: IFB 2026-007 Algiers Ferry Barges Replacement

(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: Infinity Engineering Consultants, LLC and dated: February 25, 2026
(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging)_____.

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of:

_____ Dollars ($_____)

ALTERNATES: For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

Alternate No. 1 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

N/A Dollars ($ N/A)

Alternate No. 2 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

N/A Dollars ($ N/A)

Alternate No. 3 *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

N/A Dollars ($ N/A)

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

_____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER:** _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

**** A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

TO: **Regional Transit Authority**
2817 Canal Street
New Orleans, Louisiana 70119

(Owner to provide name and address of owner)

BID FOR: **IFB 2026-007 Algiers Ferry Barges Replacement**

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	■ Base Bid or ❑ Alt.#____ALGIERS POINT BARGE			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
1	1	LUMP SUM		

DESCRIPTION:	■ Base Bid or ❑ Alt.#____LOWER ALGIERS BARGE			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*
2	1	LUMP SUM		

DESCRIPTION:	❑ Base Bid or ❑ Alt.#____N/A			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.#____N/A			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.#____N/A			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.#____N/A			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.#____N/A			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

DESCRIPTION:	❑ Base Bid or ❑ Alt.#____N/A			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION *(Quantity times Unit Price)*

Wording for "DESCRIPTION" is to be provided by the Owner.
All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner.

CONTRACT TO RENOVATE THE ALGIERS FERRY TERMINAL AND FERRY MAINTENANCE BUILDING

Regional
Transit
Authority

BY AND BETWEEN

REGIONAL TRANSIT AUTHORITY
A Political Subdivision of the
State of Louisiana
2817 Canal St.
New Orleans, Louisiana 70119

AND

«Contractor Name»
«Contractor Address»
«Contractor City, State, Zip code»

2817 Canal Street,
New Orleans,
Louisiana
70119-6301

Administration
504.827.8300

A. SCOPE OF WORK	As specified herein.
B. CONTRACT PRICE:	As specified herein.
C. PERIOD OF PERFORMANCE:	As specified herein.

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EXHIBIT "B"	**Bid Submitted by Contractor dated, «Bid Date»**	**Submission**

AGREEMENT

BY AND BETWEEN

THE REGIONAL TRANSIT AUTHORITY

AND

«CONTRACTOR NAME»

STATE OF LOUISIANA
PARISH OF ORLEANS

This AGREEMENT made and entered into this day of_____, 2026 by and between the REGIONAL TRANSIT AUTHORITY (hereinafter referred to as the "RTA"), a political subdivision of the State of Louisiana, herein represented by its Chief Executive Officer, Lona Hankins and **«Contractor Name»** (hereinafter also referred to as "Consultant" or "Contractor") a **Limited Liability Company,** herein represented by its **«Contractor Agent»** authorized to do and doing business in the State of Louisiana.

WITNESSETH

WHEREAS, the RTA is a political subdivision of the State of Louisiana, charged with the responsibility of providing, maintaining, and administering a transit system in the areas within its jurisdiction; and

WHEREAS, in accordance with state and federal laws and regulations, RTA issued Invitation for Bid (IFB) No. 2026-007, as amended, (attached hereto, made a part hereof and designated Exhibit "A", RTA IFB No. 2026-007, as amended,) to solicit a contractor for ALGIERS FERRY BARGES REPLACEMENT and

WHEREAS, **«Contractor Name», a «Contractor Legal Entity Type»,** submitted a bid response to Exhibit "A" attached hereto, made a part hereof and designated as Exhibit "B", Contractor's Bid Submittal dated, **«Bid Submittal Date»,** made a part hereof and attached hereto; and

WHEREAS, after evaluation of Contractor's offer, RTA determined that Contractor was responsible and had submitted the responsive offer.

NOW, THEREFORE, IN CONSIDERATION of the promises and mutual covenants and agreements herein contained, the parties hereto agree as follows:

I.
SUPERSEDING EFFECT

This Agreement supersedes all prior oral or written Agreements, if any, between the parties and constitutes the entire Agreement between the parties relative to the work to be performed under this Agreement. Any changes or modifications to this Agreement shall be accomplished solely by written amendment signed by both parties.

II.
SCOPE OF SERVICES

Contractor shall provide ALGIERS FERRY BARGES REPLACEMENT in accordance with the terms and conditions set forth in Exhibit "A" and Exhibit "B". Contractor agrees that all goods and services under this Agreement shall be delivered in a professional, timely manner and shall conform to or exceed in all respects the prevailing industry standards.

III.
COMPENSATION

The RTA will compensate Contractor for the goods and services to be provided under this Agreement, as specified in this agreement and pursuant to Exhibit "A". The compensation due Contractor shall not exceed **«Contract Value»** unless properly authorized. Payment terms are Net 30 days after receipt and acceptance of materials and/or services or after receipt of a proper invoice, whichever is later.

IV.
TERM OF AGREEMENT

This Agreement shall be deemed effective on the date first above written and shall continue in effect until the occurrence of one of the following events:

A. The certification by RTA or its agents that the requirements of this Agreement have been satisfactorily completed by Contractor, or;

B. The termination of this Agreement as provided in Article V, herein below. The duration of this agreement may be extended by mutual agreement of the parties.

V.
TERMINATION

Termination under this Agreement shall be in accordance with Exhibit "A", Article IV, Federal Requirements, Paragraph 4.19, Termination; Section A – Termination for Convenience and Section B – Termination for Default of the Federal Requirements.

VI.
INTEREST OF CONTRACTOR

Contractor covenants that it currently has no interest and shall acquire no interest, direct or indirect, which would conflict in any manner or degree with the delivery of the goods called for under this Agreement. RTA and Contractor further covenant that in the performance of this Agreement no persons having any such interest shall be employed.

VII.

IDENTIFICATION OF DOCUMENTS

Any document, memorandum or report prepared under this Agreement for publication and not merely for internal use shall contain the following or a similar stipulation deemed acceptable to the RTA:

A. The preparation of this document has been financed in part through a grant from the United States Department of Transportation under the provisions of the Urban Mass Transportation Act of 1964, as amended.

B. The opinions, findings, and conclusions expressed in this publication are those of the author and not necessarily those of RTA or the United States Department of Transportation, Federal Transit Administration.

VIII.
OWNERSHIP OF DOCUMENTS

All documents, reports or data generated by or provided to the Contractor under this Agreement shall be the sole property of RTA for a period of up to three years after acceptance of the goods. Contractor shall not use any such documents, reports or data for any purpose other than to perform services pursuant to this Agreement.

IX.

MEDIA COVERAGE

The Contractor shall be prohibited from participating in or directing any third-party media coverage, in any form, of this project without first submitting a written request to RTA's Procurement representative noted in Article XI of this contract and receiving written approval from the same in advance of any such coverage.

X.
APPLICABLE LAW

This Agreement shall be entered into the State of Louisiana and shall be governed and/or construed in accordance with the laws and jurisprudence of the State of Louisiana.

XI.
NOTICES

Any notice required or permitted under the Agreement shall be either hand delivered to the party to whom the notice is directed or sent to same by certified mail, return receipt requested, and addressed as follows:

A. REGIONAL TRANSIT AUTHORITY
2817 Canal St.
New Orleans, Louisiana 70119

ATTN:
Gizelle Johnson-Banks
Chief Financial Officer

XII.
DOCUMENTS INCORPORATED BY REFERENCE

The following documents are hereby incorporated by reference:

EXHIBIT "A" RTA Invitation for Bid (IFB 2026-007), as amended.

EXHIBIT "B" Bid Submittal by Contractor dated, **«Bid Submission Date».**

XIII.
ORDER OF PRECEDENCE

The following order of precedence shall govern in the event of a conflict between documents of this contract.

Articles I through XV hereof.

Exhibit "A", RTA IFB No. 2026-007.

Exhibit "B" Contractor's Bid submittal in response to RTA's IFB No. 2026-007, dated A**«Bid Submission Date»..**

XIV.
INSURANCE

To protect RTA against liability in connection with, or resulting from the carrying out of this contract, Contractor shall provide, before the work is commenced hereunder, and shall at all time during the life of the contract carry at the expense of the Contractor, with a reliable insurance company, and approved to do business in the State of Louisiana,

all insurance required by local, state or federal laws should there be any such requirement(s). Any subcontractor employed by the Contractor shall be governed by the same insurance requirements as stated herein. The Contractor shall deliver to RTA a Certificate of Insurance.

During the term of this Agreement the Contractor shall obtain and maintain the following types and amounts of insurance. The Contractor shall furnish to RTA Certificates showing types, amounts, class of operations covered, effective dates and dates of expiration of policies:

- Worker's Compensation Insurance as required by applicable Louisiana Law.
- Vehicle Liability Insurance in the amount of $1,000,000.00.
- General Liability Insurance in the amount of $1,000,000.00.

XV.
DBE COMPLIANCE

It is the policy of the RTA to ensure access to the economic opportunity the agency offers in a manner that is fair and equitable and that affords participation to all citizens regardless of race, gender, ethnicity, age, religious background, sexual orientation and disability. Accordingly, the RTA's DBE Program is designed to increase small and disadvantaged business participation in RTA contracts and procurements. The growth and development of small and disadvantaged businesses is important to the New Orleans regional economy.

The RTA works to support that growth and development, in part, by providing business opportunities under its DBE Program Legal Authority.

The RTA is a recipient of federal transit funds from the U.S. Department of Transportation Federal Transit Administration (FTA). As a condition of receiving this federal funding, RTA is legally required to establish and maintain a DBE program in

compliance with Title 49 of the U.S. Code of Federal Regulation, Part 26 (49 CFR Part 26).

Contractor Assurance

The contractor, subcontractor or sub-recipient (hereinafter contractor) shall not discriminate on the basis of race, color, national origin, sexual orientation, age or disability in the performance of this contract. Additionally, the Contractor must comply with all requirements of the RTA DBE Program as authorized by the Code of Federal Regulations 49 CFR Part 26. Failure by Contractor to carry out these requirements is a material breach of this Agreement, which shall result in such remedy as the RTA, deems appropriate and may include the termination of this Agreement.

Contracting With Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms

a) Any party to this Contract, when expending any Federal funds received under this Agreement, must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. These steps are required for the hiring of any subcontractors under this Contract.

b) Affirmative steps must include:

1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and

5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

DBE Participation

Contractor shall count only the value of the work performed by its DBE subcontractor toward attainment of the DBE goal. Contractor shall also ensure that any work that its DBE subcontractor has subcontracted to a non-DBE firm does not count toward attainment of the DBE goal. Finally, Contractor shall ensure that any fees or expenses paid to its DBE subcontractor are only counted toward attainment of the DBE goal if the DBE subcontractor is performing a commercially useful function under this Agreement.

Prompt Payment of Subcontractors

Contractor shall pay each subcontractor under this Agreement, especially DBE firms, no later than five (5) business days from the receipt of each payment Contractor receives from the RTA. Contractor further agrees to return retainage payments to each subcontractor, within five (5) business days after the subcontractor's work is satisfactorily completed and accepted by the RTA, and all delays under applicable laws have expired. Any delay or postponement of payment from the above-referenced time frame may occur only for good cause, following written approval of the RTA.

DBE Contract Termination

Contractor shall not terminate for convenience the contract of its DBE subcontractor and subsequently perform the work of the terminated DBE subcontractor with its own forces or those of an affiliate, without prior written consent from the RTA. In addition, if a DBE subcontractor is justifiably terminated, or fails to complete its work for any reason, Contractor must make good faith efforts (also referred to as best efforts) to find another certified DBE firm to substitute for the original DBE subcontractor. The good faith efforts must be directed towards finding a substitute DBE subcontractor to perform at least the amount of work needed to meet the DBE goal.

Monthly Reporting

Contractor must complete and submit to the DBE Liaison Officer for the RTA (DBELO) monthly and quarterly reports of DBE firm participation under this Agreement. Failure to report DBE activity is a material breach of this agreement that shall result in such remedy

as the RTA deems appropriate and may include withholding payment of invoices until such time as the monthly reports are received or penalties of $100 per day. All RTA contract awarded, vendors are required to register contract information including their subcontractor information into the B2GNOW database.
https://norta.dbesystem.com

Access to Books and Records
Contractor must grant the DBELO reasonable access to its books and records for the purpose of verifying Contractor's compliance with the RTA DBE Program requirements.

IN WITNESS WHEREOF, the parties have executed this Agreement in duplicate originals in the presence of the undersigned competent witnesses.

ATTEST:

REGIONAL TRANSIT AUTHORITY

_____

_____

BY: _____

LONA HANKINS
CHIEF EXECUTIVE OFFICER

ATTEST:

_____

_____

BY: _____

«Contractor Agent» «Contractor Agent Title»
«Contractor Name»

Certification By Officer of

«CONTRACTOR NAME»

Approved as to legal form and adequacy and as to the authorization of the signatory hereto on behalf of **«CONTRACTOR NAME»** on the date herein shown above.

Dated this_____day of_____, 2026.

_____

Signature

_____

Title

ACKNOWLEDGMENT

STATE OF _____

PARISH/COUNTY OF _____

ON THIS_____day of_____, 2026 before me, **«Contractor Agent»** appeared, to me personally known, who being by me duly sworn, did say that he is the **«Contractor Agent Title» of «Contractor Name»** and that this Agreement was signed on behalf of said **«Contractor Legal Entity Type»** by authority of its **«Contractor Agent Title», «Contractor Name»** by said appearer acknowledged said instrument to be the free act and deed **«Contractor Agent».**

IN WITNESS WHEREOF I have hereunto set my official hand and seal on the date above written.

_____

NOTARY PUBLIC IN AND FOR

_____

PARISH (COUNTY), STATE

ACKNOWLEDGMENT

STATE OF LOUISIANA

PARISH/COUNTY OF ORLEANS

ON THIS day of_____, 2026 before me, appeared Lona Hankins, to me personally known, who being by me duly sworn, did say that she is the Chief Executive Officer of the Regional Transit Authority (RTA), a political subdivision of the State of Louisiana, and that the attached Agreement was signed on behalf of the RTA by authority of its Board of Commissioners, and said appearer acknowledged said instrument to be the free act and deed of the RTA.

IN WITNESS WHEREOF I have hereunto set my official hand and seal on the date above written.

_____

Chief Financial Officer

_____

NOTARY PUBLIC IN AND FOR
ORLEANS PARISH, LOUISIANA

EXHIBIT A
Invitation for Bid (IFB) No. 2026-007, as amended.

EXHIBIT B
Bid Submittal by Contractor

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.1 Defined Terms

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. Claim

a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

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requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

d. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

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recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.

23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.

    a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.

    b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.

    c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.

25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.

28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.

32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

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33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.

34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.

36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.

39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

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43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.

44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

46. Technical Data

    a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

    b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

    c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. *Unit Price Work*—Work to be paid for on the basis of unit prices.

49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

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1.2 Terminology

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*: The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*: The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;

2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

3. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. Furnish, Install, Perform, Provide

1. The word "furnish," when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

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F. *Contract Price or Contract Times*: References to a change in "Contract Price or Contract Times" or "Contract Times or Contract Price" or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term "or both" is not expressed.

G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.1 Delivery of Performance and Payment Bonds; Evidence of Insurance

A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).

B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. *Evidence of Owner's Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.2 Copies of Documents

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.3 Before Starting Construction

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

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into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.4 Preconstruction Conference; Designation of Authorized Representatives

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.5 Acceptance of Schedules

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.6 Electronic Transmittals

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

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ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.1 Intent

A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

G. Nothing in the Contract Documents creates:

1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or

2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.2 Reference Standards

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

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inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.3 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

   a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

   b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.4 Requirements of the Contract Documents

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

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B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.5 Reuse of Documents

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.1 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.2 Starting the Work

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.3 Reference Points

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

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established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.4 Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.5 Delays in Contractor's Progress

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. Abnormal weather conditions;

3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and

4. Acts of war or terrorism.

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D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.

2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.

3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

1. The circumstances that form the basis for the requested adjustment;

2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;

3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;

4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and

5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.1 Availability of Lands

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

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B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.2 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

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and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.3 Subsurface and Physical Conditions

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;

3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or

4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

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5.4 Differing Subsurface or Physical Conditions

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;

2. is of such a nature as to require a change in the Drawings or Specifications;

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. Possible Price and Times Adjustments

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

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Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;

b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.5 Underground Facilities

A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

2. complying with applicable state and local utility damage prevention Laws and Regulations;

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3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;

4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. *Engineer's Review*: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;

2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;

3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and

4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. Possible Price and Times Adjustments

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

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or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and

c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.6 Hazardous Environmental Conditions at Site

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;

2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

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of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

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conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.1 Performance, Payment, and Other Bonds

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

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Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.2 Insurance—General Provisions

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

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Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and

2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

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L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.3 Contractor's Insurance

A. *Required Insurance*: Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. *General Provisions*: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;

4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

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4. not seek contribution from insurance maintained by the additional insured; and

5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.4 Builder's Risk and Other Property Insurance

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.5 Property Losses; Subrogation

A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

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Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

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6.6 Receipt and Application of Property Insurance Proceeds

A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.1 Contractor's Means and Methods of Construction

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.2 Supervision and Superintendence

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.3 Labor; Working Hours

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

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B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.4 Services, Materials, and Equipment

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.5 "Or Equals"

A. *Contractor's Request; Governing Criteria*: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that the proposed item:

1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

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2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) has a proven record of performance and availability of responsive service; and

4) is not objectionable to Owner.

b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.6 Substitutes

A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

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3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:

    a. will certify that the proposed substitute item will:

        1) perform adequately the functions and achieve the results called for by the general design;

        2) be similar in substance to the item specified; and

        3) be suited to the same use as the item specified.

    b. will state:

        1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;

        2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

        3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

    c. will identify:

        1) all variations of the proposed substitute item from the item specified; and

        2) available engineering, sales, maintenance, repair, and replacement services.

    d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

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E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.7 Concerning Subcontractors and Suppliers

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

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H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.8 Patent Fees and Royalties

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

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7.9 Permits

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 Taxes

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 Laws and Regulations

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 Record Documents

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

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7.13 Safety and Protection

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.

C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

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I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).

J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 Hazard Communication Programs

A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 Emergencies

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 Submittals

A. Shop Drawing and Sample Requirements

1. Before submitting a Shop Drawing or Sample, Contractor shall:

    a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

    b. determine and verify:

        1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

        2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

        3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;

    c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

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3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. Shop Drawings

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. Samples

a. Contractor shall submit the number of Samples required in the Specifications.

b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Engineer's Review of Shop Drawings and Samples

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

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document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

   a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

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d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03. 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 Contractor's General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.

B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and

2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;

2. Recommendation by Engineer or payment by Owner of any progress or final payment;

3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. Use or occupancy of the Work or any part thereof by Owner;

5. Any review and approval of a Shop Drawing or Sample submittal;

6. The issuance of a notice of acceptability by Engineer;

7. The end of the correction period established in Paragraph 15.08;

8. Any inspection, test, or approval by others; or

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9. Any correction of defective Work by Owner.

E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 Delegation of Professional Design Services

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

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D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;

2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and

3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.

G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.1 Other Work

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

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E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.2 Coordination

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.3 Legal Relationships

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

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B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.

2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.

C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.1 Communications to Contractor

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.2 Replacement of Engineer

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.3 Furnish Data

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.4 Pay When Due

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

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9.5 Lands and Easements; Reports, Tests, and Drawings

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.6 Insurance

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.7 Change Orders

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.8 Inspections, Tests, and Approvals

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.9 Limitations on Owner's Responsibilities

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 Undisclosed Hazardous Environmental Condition

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 Evidence of Financial Arrangements

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 Safety Programs

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

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ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.1 Owner's Representative

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.2 Visits to Site

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.3 Resident Project Representative

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.4 Engineer's Authority

A. Engineer has the authority to reject Work in accordance with Article 14.

B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.

C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

D. Engineer's authority as to changes in the Work is set forth in Article 11.

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E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.5 Determinations for Unit Price Work

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.6 Decisions on Requirements of Contract Documents and Acceptability of Work

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.7 Limitations on Engineer's Authority and Responsibilities

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.8 Compliance with Safety Program

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

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ARTICLE 11—CHANGES TO THE CONTRACT

11.1 Amending and Supplementing the Contract

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (1) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.2 Change Orders

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.3 Work Change Directives

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

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B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.4 Field Orders

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.5 Owner-Authorized Changes in the Work

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.6 Unauthorized Changes in the Work

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.7 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

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1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or

2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;

b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;

c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and

f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

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11.8 Change of Contract Times

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.9 Change Proposals

A. *Purpose and Content*: Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. Change Proposal Procedures

1. *Submittal*: Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. *Supporting Data*: The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.

    a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.

    b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

    The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review*: Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. *Engineer's Full Review and Action on the Change Proposal*: Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

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Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 Notification to Surety

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.1 Claims

A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

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and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. Mediation

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.1 Cost of the Work

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

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2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.

5. Other costs consisting of the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

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consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. Construction Equipment Rental

1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.

2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

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g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. The cost of purchasing, renting, or furnishing small tools and hand tools.

3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. Contractor's Fee

1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:

a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:

1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.

2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

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Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.2 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.3 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

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thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. Adjustments in Unit Price

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

    a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

    b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.1 Access to Work

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.2 Tests, Inspections, and Approvals

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

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D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.3 Defective Work

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

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losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.4 Acceptance of Defective Work

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.5 Uncovering Work

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.6 Owner May Stop the Work

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

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or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.7 Owner May Correct Defective Work

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.1 Progress Payments

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

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establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

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4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

    a. to supervise, direct, or control the Work;

    b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;

    c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;

    d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or

    e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

    a. the Work is defective, requiring correction or replacement;

    b. the Contract Price has been reduced by Change Orders;

    c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

    d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

    e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. Reductions in Payment by Owner

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

    a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

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b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.2 Contractor's Warranty of Title

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.3 Substantial Completion

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

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submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.4 Partial Use or Occupancy

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

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significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.

2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.5 Final Inspection

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.6 Final Payment

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents;

   b. consent of the surety, if any, to final payment;

   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

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d. a list of all duly pending Change Proposals and Claims; and

e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Final Application and Recommendation of Payment*: If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.7 Waiver of Claims

A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

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appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.8 Correction Period

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such adjacent areas;
2. correct such defective Work;
3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.1 Owner May Suspend Work

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.2 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

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attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.3 Owner May Terminate for Convenience

A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.4 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

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provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.1 Methods and Procedures

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and

2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.1 Giving Notice

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.2 Computation of Times

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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18.3 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.4 Limitation of Damages

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.5 No Waiver

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.6 Survival of Obligations

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.7 Controlling Law

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

18.8 Assignment of Contract

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.9 Successors and Assigns

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 Headings

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, “Paragraph SC-4.05.”

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

SC-2.01 Delete Paragraphs 2.01.B. and C. in their entirety and insert the following in their place:

B. *Evidence of Contractor’s Insurance:* When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by Contractor in this Contract. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

C. *Evidence of Owner’s Insurance:* After receipt from Contractor of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner in this Contract (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 *Copies of Documents*

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

A. Owner shall furnish to Contractor **4** printed copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

2.06 *Electronic Transmittals*

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

B. *Electronic Documents Protocol:* The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol (“EDP” or “Protocol”) for exchange of electronic transmittals.

1. *Basic Requirements*

a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures

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described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.

b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.

c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.

d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.

e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party's use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.

f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions ("System Infrastructure") at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.

1) The maximum size of an email attachment for exchange of Electronic Documents under this EDP is **[number]** MB. Attachments larger than that may be exchanged using large file transfer functions or physical media.

2) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.

b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology ("IT") for

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maintaining operations of its System Infrastructure during the Project, including coordination with the party's individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.

c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.

d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.

e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.

f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.

g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the Electronic Document or use an alternative delivery method to complete the communication.

h. The Owner will operate a Project information management system (also referred to in this EDP as "Project Website") for use of Owner, Engineer and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this EDP or the General Conditions, use of the Project Website by the parties as described in this Paragraph will be mandatory for exchange of Project documents, communications, submittals, and other Project-related information. The following conditions and standards will govern use of the Project Website:

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1) Describe the period of time during which the Project Website will be operated and be available for reliance by the parties;

2) Provide any minimum system infrastructure, software licensing and security standards for access to and use of the Project Website;

3) Describe the types and extent of services to be provided at the Project Website (such as large file transfer, email, communication and document archives, etc.); and

4) Include any other Project Website attributes that may be pertinent to Contractor's use of the facility and pricing of such use.

C. *Software Requirements for Electronic Document Exchange; Limitations*

1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.

a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.

2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.

3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

SC-2.06 Supplement Paragraph 2.06 of the General Conditions by adding the following paragraph:

D. *Requests by Contractor for Electronic Documents in Other Formats*

1. Release of any Electronic Document versions of the Project documents in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be at the sole discretion of the Owner.

2. To extent determined by Owner, in its sole discretion, to be prudent and necessary, release of Electronic Documents versions of Project documents and other Project information requested by Contractor ("Request") in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be subject to the provisions of the Owner's response to the Request, and to the following conditions to which Contractor agrees:

a. The content included in the Electronic Documents created by Engineer and covered by the Request was prepared by Engineer as an internal working document for Engineer's purposes solely, and is being provided to Contractor on an "AS IS" basis without any warranties of any kind, including, but not limited to any implied warranties of fitness for any purpose. As such, Contractor is advised and

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acknowledges that the content may not be suitable for Contractor's application, or may require substantial modification and independent verification by Contractor. The content may include limited resolution of models, not-to-scale schematic representations and symbols, use of notes to convey design concepts in lieu of accurate graphics, approximations, graphical simplifications, undocumented intermediate revisions, and other devices that may affect subsequent reuse.

b. Electronic Documents containing text, graphics, metadata, or other types of data that are provided by Engineer to Contractor under the request are only for convenience of Contractor. Any conclusion or information obtained or derived from such data will be at the Contractor's sole risk and the Contractor waives any claims against Engineer or Owner arising from use of data in Electronic Documents covered by the Request.

c. Contractor shall indemnify and hold harmless Owner and Engineer and their subconsultants from all claims, damages, losses, and expenses, including attorneys' fees and defense costs arising out of or resulting from Contractor's use, adaptation, or distribution of any Electronic Documents provided under the Request.

d. Contractor agrees not to sell, copy, transfer, forward, give away or otherwise distribute this information (in source or modified file format) to any third party without the direct written authorization of Engineer, unless such distribution is specifically identified in the Request and is limited to Contractor's subcontractors. Contractor warrants that subsequent use by Contractor's subcontractors complies with all terms of the Contract Documents and Owner's response to Request.

3. In the event that Owner elects to provide or directs the Engineer to provide to Contractor any Contractor-requested Electronic Document versions of Project information that is not explicitly identified in the Contract Documents as being available to Contractor, the Owner shall be reimbursed by Contractor on an hourly basis (at $**[number]** per hour) for any engineering costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Engineer.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.05 *Delays in Contractor's Progress*

SC-4.05 Amend Paragraph 4.05.C by adding the following subparagraphs:

5. *Weather-Related Delays*

a. If "abnormal weather conditions" as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled.

b. The existence of abnormal weather conditions will be determined on a month-by-month basis in accordance with the following:

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1) Every workday on which one or more of the following conditions exist will be considered a "bad weather day":

   i) Total precipitation (as rain equivalent) occurring between 7:00 p.m. on the preceding day (regardless of whether such preceding day is a workday) through 7:00 p.m. on the workday in question equals or exceeds 1.5" of precipitation (as rain equivalent, based on the snow/rain conversion indicated in the table entitled Foreseeable Bad Weather Days; such table is hereby incorporated in this SC-4.05.C by reference.

   ii) Ambient outdoor air temperature at 11:00 a.m. is equal to or less than the following low temperature threshold: 25 degrees Fahrenheit; or, at 3:00 p.m. the ambient outdoor temperature is equal to or greater than the following high temperature threshold: 98 degrees Fahrenheit.

2) Determination of actual bad weather days during performance of the Work will be based on the weather records measured and recorded by National Weather Service (NOAA) weather monitoring station at New Orleans.

3) Contractor shall anticipate the number of foreseeable bad weather days per month indicated in the table in Exhibit B—Foreseeable Bad Weather Days.

4) In each month, every bad weather day exceeding the number of foreseeable bad weather days established in the table in Exhibit B – Foreseeable Bad Weather Days will be considered as "abnormal weather conditions." The existence of abnormal weather conditions will not relieve Contractor of the obligation to demonstrate and document that delays caused by abnormal weather are specific to the planned work activities or that such activities thus delayed were on Contractor's then-current Progress Schedule's critical path for the Project.

ARTICLE 6 – BONDS AND INSURANCE

6.02 *Insurance—General Provisions*

SC-6.02 Replace 6.02 – 6.06 with the following provisions:

A. Until the Vessel has been completed, delivered to and accepted by Owner, the Vessel and all materials, outfitting, equipment, and appliances to be installed in the Vessel, including all materials, outfitting, equipment, and appliances provided by Owner and delivered to Contractor's yard for and to be used in the construction thereof, shall be declared under the Builder's Risk Policy of Contractor in force and effect at the time that the Vessel's keel is laid, all at Contractor's expense. Contractor will have Owner named as loss payee on Builder's Risk Policy as Owner's interest may appear.

Partial losses, if any, shall be payable to Contractor and the proceeds thereof devoted by Contractor to the repair or replacement of the damage associated with such losses. Contractor shall advise Owner promptly of any such occurrence.

B. Contractor shall also purchase and maintain, at its expense, during the life of this Contract

1. Statutory Worker's Compensation insurance covering all of Contractor's employees engaged in the work to be performed hereunder, in accordance with the laws of the

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State of Louisiana, the United States Longshoremen's and Harbor Worker's Compensation Act, and any other applicable workers' compensation law. The policy will also include Employer's Liability (other than Maritime) for a limit not less than $1,000,000 each accident, and shall contain the "Alternate Employer Endorsement" stipulating that any claim made against Owner by any employee of Contractor or its subcontractors shall be covered under this policy and that Owner shall have the benefit of this insurance with respect to any such claim.

2. Commercial General Liability Insurance against property damage, death and bodily injury in an amount of not less than $1,000,000.00, including products and completed operations coverage, non-owned watercraft coverage, and contractual coverage for all liability assumed by Contractor under the terms of this Contract with limits of liability not less than those set out herein;
3. Builder's Risk Insurance (including protection and indemnity clauses and covering all periods up to Delivery and Acceptance of the Vessel after tests and trials) for loss of or damage to the Vessel and Work hereunder, including materials and equipment to be furnished by the parties other than Contractor.
4. Environmental Remediation coverage as per The Water Quality Insurance Syndicate PolicyForm 1992, with aggregate limits of liability per Section A, Part II, of $5,000,000.00 and statutory,
5. Business Auto Liability insurance with a combined bodily injury and property damage limit of not less than $1,000,000 each occurrence.
6. Excess Liability insurance with a combined bodily injury and property damage limit of not less than $5,000,000 each occurrence.
7. Professional Error & Omissions Liability at a limit of $5,000,000 on a claims made basis

C. With respect to Workers' Compensation, Employer's Liability, and Maritime Employer's Liability insurance, Contractor agrees that all of the policies shall contain waivers of underwriters' rights of subrogation against Owner. With respect to CGL, Business Auto Liability, and Excess Liability insurance, Contractor agrees that all of the policies shall contain waivers of underwriters' rights of subrogation against Owner, and that Owner shall be named an additional insured on such policies. It is agreed that such naming and waiving shall apply to the extent and only to the extent of the valid and legally enforceable indemnity obligations and risks assumed by Contractor in this Contract. It is further understood and agreed that that the indemnity obligations of Owner to Contractor shall be considered primary to any obligation of Contractor's CGL insurer, Business Auto Liability insurer, and Excess Liability insurer, to afford coverage to Owner. With respect to Builder's Risk insurance, Contractor agrees that such policy shall contain waivers of underwriters' rights of subrogation against Owner, that Owner shall be named an additional insured, and that Owner shall be named as a loss payee as its interests may appear.

D. Owner shall be furnished a certificate of insurance as to all insurance policies required hereunder. The original of the said Builder's Risk Policy shall be available in Contractor's office, for review by Owner upon reasonable request. All of the policies of insurance and certificates referred to herein shall contain a provision requiring the insurer at risk to give Owner thirty (30) days' notice in writing prior to the cancellation of any such insurance.

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ARTICLE 7 - CONTRACTOR'S RESPONSIBILITIES

7.03 *Labor; Working Hours*

SC-7.03 Delete Paragraph 7.03.C in its entirety, and insert the following:

C. In the absence of any Laws or Regulations to the contrary, Contractor may perform the Work on holidays, during any or all hours of the day, and on any or all days of the week, at Contractor's sole discretion.

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

D. Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

7.10 *Taxes*

SC-7.10 Add a new paragraph immediately after Paragraph 7.10.A:

A. Owner is exempt from payment of sales and compensating use taxes of the State of Louisiana and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.03 *Resident Project Representative*

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.B:

C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:

1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.

2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.

3. *Liaison*

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a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.

b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.

c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.

4. *Review of Work; Defective Work*

a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.

b. Observe whether any Work in place appears to be defective.

c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.

5. *Inspections and Tests*

a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.

b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.

6. *Payment Requests:* Review Applications for Payment with Contractor.

7. *Completion*

a. Participate in Engineer's visits regarding Substantial Completion.

b. Assist in the preparation of a punch list of items to be completed or corrected.

c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.

d. Observe whether items on the final punch list have been completed or corrected.

D. The RPR will not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.

5 Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

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6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 13 – COST OF WORK; ALLOWANCES, UNIT PRICE WORK

13.01 *Cost of the Work*

SC-13.01 Supplement Paragraph 13.01.B.5.c.(2) by adding the following sentence:

The equipment rental rate book that governs the included costs for the rental of machinery and equipment owned by Contractor (or a related entity) under the Cost of the Work provisions of this Contract is the most current edition of the Rental Rate Blue Book for Construction Equipment.

ARTICLE 15 - PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 *Progress Payments*

SC-15.01 Delete Paragraph 15.01.D.1 in its entirety, and substitute the following in its place:

1. Forty Five (45) days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

SC-15.06 Delete Paragraph 15.06.D in its entirety, and substitute the following in its place:

D. *Payment Becomes Due*: Forty Five (45) days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.03 *Substantial Completion*

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

ARTICLE 17 - FINAL RESOLUTIONS OF DISPUTES

17.02 *Arbitration*

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

17.02 *Arbitration*

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A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of $100,000 or less will be settled in accordance with the American Arbitration Association's supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.

C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.

D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.

E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.

F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:

   1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;

   2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;

   3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and

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4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.

H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.

I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

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EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contactors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG	
a.6	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
a.8	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	DB	

Notes	
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.

Key	
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)
PDF	Portable Document Format readable by Bluebeam Revu 21 or newer
DWG	Autodesk® AutoCAD .dwg format Version 2023
DOC	Microsoft® Word .docx format Version for Microsoft 365
EXC	Microsoft® Excel .xls or .xml format Version for Microsoft 365
DB	Microsoft® Access .mdb format Version for Microsoft 365

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EXHIBIT B—FORESEEABLE BAD WEATHER DAYS

Month	Number of Foreseeable Bad Weather Days in Month Based on Precipitation as Rain Equivalent (inches) (1)	Ambient Outdoor Air Temperature (degrees F)	
		Number of Foreseeable Bad Weather Days in Month Based on Low Temperature (at 11:00 a.m.)	Number of Foreseeable Bad Weather Days in Month Based on High Temperature (at 3:00 p.m.)
January	6	1	0
February	5	0	0
March	5	0	0
April	5	0	0
May	8	0	0
June	9	0	1
July	11	0	2
August	8	0	3
September	6	0	1
October	3	0	0
November	6	0	0
December	6	0	0

Notes:

1. Two inches of sleet equal one inch of rain. Five inches of wet, heavy snow equal one inch of rain. Fifteen inches of “dry” powder snow equals one inch of rain.

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.

2. Work covered by Contract Documents.

3. Contractor's use of site and premises.

4. Coordination with occupants.

5. Work restrictions.

6. Specification and Drawing conventions.

7. Miscellaneous provisions.

1.2 DEFINITIONS

A. Work Package: A group of specifications, drawings, and schedules prepared by the design team to describe a portion of the Project Work for pricing, permitting, and construction.

1.3 PROJECT INFORMATION

A. Project Identification: Algiers Ferry Barges Replacement.

1. Project Location: Algiers Ferry Terminal and Lower Algiers Ferry Terminal, 7320 Patterson St

B. Owner: Regional Transit Authority of New Orleans, 2817 Canal Street, New Orleans, LA.

C. Engineer: Infinity Engineering Consultants, LLC, 4001 Division Street, Metairie, LA 70002.

D. Engineer's Consultants: Engineer has retained the following design professionals, who have prepared designated portions of the Contract Documents:

1. TAI Engineers

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and includes, but is not limited to, the following:

1. Removal and replacement of the existing steel deck barges at the Algiers Ferry Terminal and the Lower Algiers Ferry Terminal, and associated utility connections and improvements.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 CONTRACTOR'S USE OF SITE AND PREMISES

A. Unrestricted Use of Site: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.

B. Limits on Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.

b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

C. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

A. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

A. Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work to between 8 a.m. to 10 p.m., Monday through Friday, unless otherwise indicated. Work hours may be modified to meet Project requirements if approved by Owner and authorities having jurisdiction.

1. Early Morning Hours: Comply with local ordinances.

C. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.

D. Smoking and Controlled Substance Restrictions: Use of tobacco products and other controlled substances on Project site is not permitted.

E. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.

3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.

4. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 00 Contracting Requirements: General provisions of the Contract, including General and Supplementary Conditions, apply to all Sections of the Specifications.

C. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

D. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.

2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: ALGIERS POINT BARGE.

1. Description: All work associated with the Algiers Point Barge and at the Algiers Point Terminal site.
2. Unit of Measurement: LUMP SUM

B. Unit Price No. 2: LOWER ALGIERS BARGE.

1. Description: All work associated with the Lower Algiers Barge and at the Lower Algiers Ferry site.
2. Unit of Measurement: LUMP SUM

END OF SECTION 012200

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

1.2 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.3 ACTION SUBMITTALS

A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form acceptable to Engineer.

2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation method cannot be provided, if applicable.

b. Coordination of information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitutions with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes, such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

e. Samples, where applicable or requested.

f. Certificates and qualification data, where applicable or requested.

g. List of similar installations for completed projects, with project names and addresses as well as names and addresses of Engineers and owners.

h. Material test reports from a qualified testing agency, indicating and interpreting test results for compliance with requirements indicated.

i. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.

j. Cost information, including a proposal of change, if any, in the Contract Sum.

k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents, except as indicated in substitution request, is compatible with related materials and is appropriate for applications indicated.

l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Engineer will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Engineer's Supplemental Instructions for minor changes in the Work.

b. Use product specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.

1.4 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.5 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.6 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.

b. Substitution request is fully documented and properly submitted.

c. Requested substitution will not adversely affect Contractor's construction schedule.

d. Requested substitution has received necessary approvals of authorities having jurisdiction.

e. Requested substitution is compatible with other portions of the Work.

f. Requested substitution has been coordinated with other portions of the Work.

g. Requested substitution provides specified warranty.

B. Substitutions for Convenience:

1. Engineer will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Engineer.

a. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Engineer will return requests without action, except to record noncompliance with these requirements:

1) Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

2) Requested substitution does not require extensive revisions to the Contract Documents.

3) Requested substitution is consistent with the Contract Documents and will produce indicated results.

4) Substitution request is fully documented and properly submitted.

5) Requested substitution will not adversely affect Contractor's construction schedule.

6) Requested substitution has received necessary approvals of authorities having jurisdiction.

7) Requested substitution is compatible with other portions of the Work.

8) Requested substitution has been coordinated with other portions of the Work.

9) Requested substitution provides specified warranty.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.2 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.3 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor's construction schedule.

2. Submit the schedule of values to Engineer at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

3. Subschedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide subschedules showing values coordinated with each element.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

a. Project name and location.

b. Owner's name.

c. Owner's Project number.

d. Name of Engineer.

e. Engineer's Project number.

f. Contractor's name and address.

g. Date of submittal.

2. Arrange schedule of values consistent with format of EJCDC Document C-620.

3. Arrange the schedule of values in tabular form, with separate columns to indicate the following for each item listed:

a. Related Specification Section or division.

b. Description of the Work.

c. Name of subcontractor.

d. Name of manufacturer or fabricator.

e. Name of supplier.

f. Change Orders (numbers) that affect value.

g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent. Round dollar amounts to whole dollars, with total equal to Contract Sum.

1) Labor.

2) Materials.

3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.

5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

a. Differentiate between items stored on-site and items stored off-site.

6. Purchase Contracts: Provide a separate line item in the schedule of values for each Purchase contract. Show line-item value of Purchase contract. Indicate Owner payments or deposits, if any, and balance to be paid by Contractor.

7. Overhead Costs, Proportional Distribution: Include total cost and proportionate share of general overhead and profit for each line item.

8. Overhead Costs, Separate Line Items: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.

9. Temporary Facilities: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.

10. Closeout Costs. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.

11. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments, as certified by Engineer and paid for by Owner.

B. Payment Application Times: The date for each progress payment is indicated in the Owner/Contractor Agreement. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Submit Application for Payment to Engineer by the 10th of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

1. Submit draft copy of Application for Payment seven days prior to due date for review by Engineer.

D. Application for Payment Forms: Use EJCDC Document C-620 as form for Applications for Payment.

1. Other Application for Payment forms proposed by the Contractor may be acceptable to Engineer and Owner. Submit forms for approval with initial submittal of schedule of values.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Engineer will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.

2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.

3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment for stored materials.

2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.

3. Provide summary documentation for stored materials indicating the following:

a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.

b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.

c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Engineer by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.

2. Schedule of values.

3. Contractor's construction schedule (preliminary if not final).

4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.

5. Products list (preliminary if not final).

6. Sustainable design action plans, including preliminary project materials cost data.

7. Schedule of unit prices.

8. Submittal schedule (preliminary if not final).

9. List of Contractor's staff assignments.

10. List of Contractor's principal consultants.

11. Copies of building permits.

12. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.

13. Initial progress report.

14. Report of preconstruction conference.

15. Certificates of insurance and insurance policies.

16. Performance and payment bonds.

17. Data needed to acquire Owner's insurance.

I. Application for Payment at Substantial Completion: After Engineer issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

    a. Complete administrative actions, submittals, and Work preceding this application, as described in Section 017700 "Closeout Procedures."

2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.

2. Certification of completion of final punch list items.

3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.

4. Updated final statement, accounting for final changes to the Contract Sum.

5. Evidence that claims have been settled.

6. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

7. Final liquidated damages settlement statement.

8. Proof that taxes, fees, and similar obligations are paid.

9. Waivers and releases.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:

1. General coordination procedures.

2. RFIs.

3. Digital project management procedures.

4. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

C. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.

2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.2 DEFINITIONS

A. BIM: Building Information Modeling.

B. RFI: Request for Information. Request from Owner, Engineer, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.

2. Number and title of related Specification Section(s) covered by subcontract.

3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities, list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room and in temporary field office. Keep list current at all times.

1.4 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence are required to obtain the best results, where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.

2. Preparation of the schedule of values.

3. Installation and removal of temporary facilities and controls.

4. Delivery and processing of submittals.

5. Progress meetings.

6. Preinstallation conferences.

7. Project closeout activities.

8. Startup and adjustment of systems.

1.5 REQUEST FOR INFORMATION (RFI)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Engineer will return without response those RFIs submitted to Engineer by other entities controlled by Contractor.

2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.

2. Owner name.

3. Owner's Project number.

4. Name of Engineer.

5. Engineer's Project number.

6. Date.

7. Name of Contractor.

8. RFI number, numbered sequentially.

9. RFI subject.

10. Specification Section number and title and related paragraphs, as appropriate.

11. Drawing number and detail references, as appropriate.

12. Field dimensions and conditions, as appropriate.

13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.

14. Contractor's signature.

15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Engineer.

1. Attachments shall be electronic files in PDF format.

D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

    a. Requests for approval of submittals.

    b. Requests for approval of substitutions.

    c. Requests for approval of Contractor's means and methods.

    d. Requests for coordination information already indicated in the Contract Documents.

    e. Requests for adjustments in the Contract Time or the Contract Sum.

    f. Requests for interpretation of Engineer's actions on submittals.

    g. Incomplete RFIs or inaccurately prepared RFIs.

2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt by Engineer of additional information.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.

2. Name and address of Contractor.

3. Name and address of Engineer.

4. RFI number, including RFIs that were returned without action or withdrawn.

5. RFI description.

6. Date the RFI was submitted.

7. Date Engineer's response was received.

8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

F. On receipt of Engineer's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Engineer within three days if Contractor disagrees with response.

1.6 DIGITAL PROJECT MANAGEMENT PROCEDURES

A. Engineer's Data Files Not Available: Engineer will not provide Engineer's CAD drawing digital data files for Contractor's use during construction.

B. PDF Document Preparation: Where PDFs are required to be submitted to Engineer, prepare as follows:

1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.

2. Name file with submittal number or other unique identifier, including revision identifier.

3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times a minimum of seven days prior to meeting.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.

3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within three days of the meeting.

B. Preconstruction Conference: Engineer will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Responsibilities and personnel assignments.

b. Tentative construction schedule.

c. Phasing.

d. Critical work sequencing and long lead items.

e. Designation of key personnel and their duties.

f. Lines of communications.

g. Use of web-based Project software.

h. Procedures for processing field decisions and Change Orders.

i. Procedures for RFIs.

j. Procedures for testing and inspecting.

k. Procedures for processing Applications for Payment.

l. Distribution of the Contract Documents.

m. Submittal procedures.

n. Sustainable design requirements.

o. Preparation of Record Documents.

p. Use of the premises.

q. Work restrictions.

r. Working hours.

s. Owner's occupancy requirements.

t. Responsibility for temporary facilities and controls.

u. Procedures for moisture and mold control.

v. Procedures for disruptions and shutdowns.

w. Construction waste management and recycling.

x. Parking availability.

y. Office, work, and storage areas.

z. Equipment deliveries and priorities.

aa. First aid.

bb. Security.

cc. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other Sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Engineer of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.

b. Options.

c. Related RFIs.

d. Related Change Orders.

e. Purchases.

f. Deliveries.

g. Submittals.

h. Sustainable design requirements.

i. Review of mockups.

j. Possible conflicts.

k. Compatibility requirements.

l. Time schedules.

m. Weather limitations.

n. Manufacturer's written instructions.

o. Warranty requirements.

p. Compatibility of materials.

q. Acceptability of substrates.

r. Temporary facilities and controls.

s. Space and access limitations.

t. Regulations of authorities having jurisdiction.

u. Testing and inspecting requirements.

v. Installation procedures.

w. Coordination with other work.

x. Required performance results.

y. Protection of adjacent work.

z. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.

5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Engineer, but no later than 90 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.

2. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of Record Documents.

b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.

c. Procedures for completing and archiving web-based Project software site data files.

d. Submittal of written warranties.

e. Requirements for completing sustainable design documentation.

f. Requirements for preparing operations and maintenance data.

g. Requirements for delivery of material samples, attic stock, and spare parts.

h. Requirements for demonstration and training.

i. Preparation of Contractor's punch list.

j. Procedures for processing Applications for Payment at Substantial Completion and for final payment.

k. Submittal procedures.

l. Coordination of separate contracts.

m. Owner's partial occupancy requirements.

n. Installation of Owner's furniture, fixtures, and equipment.

o. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: Conduct progress meetings at weekly intervals.

1. Coordinate dates of meetings with preparation of payment requests.

2. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Interface requirements.

2) Sequence of operations.

3) Resolution of BIM component conflicts.

4) Status of submittals.

5) Status of sustainable design documentation.

6) Deliveries.

7) Off-site fabrication.

8) Access.

9) Site use.

10) Temporary facilities and controls.

11) Progress cleaning.

12) Quality and work standards.

13) Status of correction of deficient items.

14) Field observations.

15) Status of RFIs.

16) Status of Proposal Requests.

17) Pending changes.

18) Status of Change Orders.

19) Pending claims and disputes.

20) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.

   a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Startup construction schedule.
2. Contractor's Construction Schedule.
3. Construction schedule updating reports.
4. Daily construction reports.
5. Material location reports.
6. Site condition reports.
7. Unusual event reports.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for schedule of values and requirements for use of cost-loaded schedule for Applications for Payment.
2. Section 014000 "Quality Requirements" for schedule of tests and inspections.

1.2 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Event: The starting or ending point of an activity.

1.3 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file.

2. PDF file.

3. Two paper copies, of sufficient size to display entire period or schedule, as required.

B. Startup construction schedule.

1. Submittal of cost-loaded startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working digital copy of schedule, using software indicated, and labeled to comply with requirements for submittals.

D. Construction Schedule Updating Reports: Submit with Applications for Payment.

E. Daily Construction Reports: Submit at weekly intervals.

F. Material Location Reports: Submit at monthly intervals.

G. Site Condition Reports: Submit at time of discovery of differing conditions.

H. Unusual Event Reports: Submit at time of unusual event.

I. Qualification Data: For scheduling consultant.

1.4 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Engineer's request.

B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.

2. Verify availability of qualified personnel needed to develop and update schedule.

3. Discuss constraints, including interim milestones and partial Owner occupancy.

4. Review delivery dates for Owner-furnished products.

5. Review schedule for work of Owner's separate contracts.

6. Review submittal requirements and procedures.

7. Review time required for review of submittals and resubmittals.

8. Review requirements for tests and inspections by independent testing and inspecting agencies.

9. Review time required for Project closeout and Owner startup procedures.

10. Review and finalize list of construction activities to be included in schedule.

11. Review procedures for updating schedule.

1.5 COORDINATION

A. Coordinate Contractor's Construction Schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.

2. Coordinate each construction activity in the network with other activities, and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Computer Scheduling Software: Prepare schedules using current version of a program that is capable of managing construction schedules.

1. Use Microsoft Project for current Windows operating system.

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.

1. Contract completion date to not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities, comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Engineer.

2. Temporary Facilities: Indicate start and completion dates for the following as applicable:

a. Securing of approvals and permits required for performance of the Work.

b. Temporary facilities.

c. Construction of mock-ups, prototypes and samples.

d. Owner interfaces and furnishing of items.

e. Interfaces with Separate Contracts.

f. Regulatory agency approvals.

g. Punch list.

3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with submittal schedule.

4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Engineer's administrative procedures necessary for certification of Substantial Completion.

6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and Final Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.

2. Work under More Than One Contract: Include a separate activity for each contract.

3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.

4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.

5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.

6. Work Restrictions: Show the effect of the following items on the schedule:

a. Coordination with existing construction.

b. Limitations of continued occupancies.

c. Uninterruptible services.

d. Partial occupancy before Substantial Completion.

e. Use-of-premises restrictions.

f. Provisions for future construction.

g. Seasonal variations.

h. Environmental control.

7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:

a. Subcontract awards.

b. Submittals.

c. Purchases.

d. Fabrication.

e. Deliveries.

f. Installation.

g. Tests and inspections.

h. Adjusting.

i. Startup and placement into final use and operation.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.

2. Unanswered Requests for Information.

3. Rejected or unreturned submittals.

4. Notations on returned submittals.

5. Pending modifications affecting the Work and the Contract Time.

G. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.

2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.

3. As the Work progresses, indicate Final Completion percentage for each activity.

H. Recovery Schedule: When periodic update indicates the Work is Insert number or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

I. Distribution: Distribute copies of approved schedule to Engineer Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.

2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.7 STARTUP CONSTRUCTION SCHEDULE

A. Gantt-Chart Schedule: Submit startup, horizontal, Gantt-chart-type construction schedule within seven days of date established for the Notice to Proceed.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

1.8 GANTT-CHART SCHEDULE REQUIREMENTS

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's Construction Schedule within 30 days of date established for the Notice to Proceed.

1. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

C. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall Project schedule.

D. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.

2. Description of activity.

3. Main events of activity.

4. Immediate preceding and succeeding activities.

5. Early and late start dates.

6. Early and late finish dates.

7. Activity duration in workdays.

8. Total float or slack time.

9. Average size of workforce.

10. Dollar value of activity (coordinated with the schedule of values).

E. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.

2. Changes in early and late start dates.

3. Changes in early and late finish dates.

4. Changes in activity durations in workdays.

5. Changes in the critical path.

6. Changes in total float or slack time.

7. Changes in the Contract Time.

1.9 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.

2. List of separate contractors at Project site.

3. Approximate count of personnel at Project site.

4. Equipment at Project site.

5. Material deliveries.

6. High and low temperatures and general weather conditions, including presence of rain or snow.

7. Testing and inspection.

8. Accidents.

9. Meetings and significant decisions.

10. Unusual events.

11. Stoppages, delays, shortages, and losses.

12. Meter readings and similar recordings.

13. Emergency procedures.

14. Orders and requests of authorities having jurisdiction.

15. Change Orders received and implemented.

16. Work Change Directives received and implemented.

17. Services connected and disconnected.

18. Equipment or system tests and startups.

19. Partial completions and occupancies.

20. Substantial Completions authorized.

B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List to be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.

2. Material stored prior to previous report and since removed from storage and installed.

3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

D. Unusual Event Reports: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

1. Submit unusual event reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.

2. Concealed Work photographs.

3. Periodic construction photographs.

4. Final Completion construction photographs.

5. Preconstruction video recordings.

6. Periodic construction video recordings.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

2. Section 024116 "Structure Demolition" for photographic documentation before building demolition operations commence.

1.2 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph and video recording. Indicate elevation. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within three days of taking photographs.

1. Submit photos by uploading to web site established by Engineer. Include copy of key plan indicating each photograph's location and direction.

2. Identification: Provide the following information with each image description in file metadata tag:

a. Name of Project.

b. Name and contact information for photographer.

c. Name of Engineer.

d. Name of Contractor.

e. Date photograph was taken.

f. Description of location, vantage point, and direction.

g. Unique sequential identifier keyed to accompanying key plan.

C. Video Recordings: Submit video recordings within seven days of recording.

1. Submit video recordings by uploading to web site established by Engineer. Include copy of key plan indicating each video's location and direction.

2. Identification: With each submittal, provide the following information in file metadata tag:

a. Name of Project.

b. Name and contact information for photographer.

c. Name of Engineer.

d. Name of Contractor.

e. Date video recording was recorded.

f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.3 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with minimum sensor size of 12 megapixels, and at an image resolution of not less than 3200 by 2400 pixels. Use flash in low light levels or backlit conditions.

B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full high-definition mode. Provide supplemental lighting in low light levels or backlit conditions.

C. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

D. Metadata: Record accurate date and time from camera.

E. File Names: Name media files with date and sequential numbering suffix.

1.4 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer to take construction photographs.

B. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Preconstruction Photographs: Before commencement of the Work, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Engineer.

1. Take 20 photographs to show existing conditions adjacent to property before starting the Work.

2. Take 20 photographs of existing buildings either on or adjoining property, to accurately record physical conditions at start of construction.

3. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Concealed Work Photographs: Before proceeding with installing work that will conceal other work, take photographs sufficient in number, with annotated descriptions, to record nature and location of concealed Work, including, but not limited to, the following:

1. Underground utilities.

2. Under slab services.

3. Piping.

4. Electrical conduit.

5. Waterproofing and weather-resistant barriers.

E. Periodic Construction Photographs: Take 20 photographs weekly. Select vantage points to show status of construction and progress since last photographs were taken.

F. Final Completion Construction Photographs: Take 20 photographs after date of Substantial Completion for submission as Project Record Documents. Engineer will inform photographer of desired vantage points.

G. Additional Photographs: Engineer may request photographs in addition to periodic photographs specified. Additional photographs will be paid for by Change Order and are not included in the Contract Sum.

1. Three days' notice will be given, where feasible.

2. In emergency situations, take additional photographs within 24 hours of request.

3. Circumstances that could require additional photographs include, but are not limited to, the following:

   a. Special events planned at Project site.

   b. Immediate follow-up when on-site events result in construction damage or losses.

   c. Photographs are to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.

   d. Substantial Completion of a major phase or component of the Work.

   e. Extra record photographs at time of final acceptance.

   f. Owner's request for special publicity photographs.

1.5 CONSTRUCTION VIDEO RECORDINGS

A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings.

B. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.

   1. Confirm date and time at beginning and end of recording.

   2. Begin each video recording with name of Project, Contractor's name, videographer's name, and Project location.

C. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video recording opposite the corresponding narration segment.

D. Preconstruction Video Recording: Before starting demolition, record video recording of Project site and surrounding properties from different vantage points, as directed by Engineer.

   1. Flag construction limits before recording construction video recordings.

   2. Show existing conditions adjacent to Project site before starting the Work.

   3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of demolition.

   4. Show protection efforts by Contractor.

E. Periodic Construction Video Recordings: Record video recording monthly. Select vantage points to show status of construction and progress since last video recordings were recorded. Minimum recording time to be 30 minutes(s).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.

2. Administrative and procedural requirements for submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.

2. Section 013100 "Project Management and Coordination" for submitting coordination drawings and subcontract list and for requirements for web-based Project software.

3. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.

4. Section 013233 "Photographic Documentation" for submitting preconstruction photographs, periodic construction photographs, and Final Completion construction photographs.

5. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.

6. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.

7. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.

8. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.

2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.

    b. Specification Section number and title.

    c. Submittal Category: Action; informational.

    d. Name of subcontractor.

    e. Description of the Work covered.

    f. Scheduled date for Engineer's final release or approval.

    g. Scheduled dates for purchasing.

    h. Scheduled date of fabrication.

    i. Scheduled dates for installation.

    j. Activity or event number.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.

2. Date.

3. Name of Engineer.

4. Name of Construction Manager.

5. Name of Contractor.

6. Name of firm or entity that prepared submittal.

7. Names of subcontractor, manufacturer, and supplier.

8. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.

9. Category and type of submittal.

10. Submittal purpose and description.

11. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.

12. Drawing number and detail references, as appropriate.

13. Indication of full or partial submittal.

14. Location(s) where product is to be installed, as appropriate.

15. Other necessary identification.

16. Remarks.

17. Signature of transmitter.

B. Options: Identify options requiring selection by Engineer.

C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.

D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

E. Submittals Utilizing Web-Based Project Software: Prepare submittals as PDF files or other format indicated by Project management software.

1.5 SUBMITTAL PROCEDURES

A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Email: Prepare submittals as PDF package and transmit to Engineer by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Engineer.

a. Engineer will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.

3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.

3. Resubmittal Review: Allow 15 days for review of each resubmittal.

D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.

2. Note date and content of revision in label or title block, and clearly indicate extent of revision.

3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.

E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.

1.6 SUBMITTAL REQUIREMENTS

A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.

3. Include the following information, as applicable:

a. Manufacturer's catalog cuts.

b. Manufacturer's product specifications.

c. Standard color charts.

d. Statement of compliance with specified referenced standards.

e. Testing by recognized testing agency.

f. Application of testing agency labels and seals.

g. Notation of coordination requirements.

h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams that show factory-installed wiring.

    b. Printed performance curves.

    c. Operational range diagrams.

    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before Shop Drawings, and before or concurrently with Samples.

B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.

    b. Schedules.

    c. Compliance with specified standards.

    d. Notation of coordination requirements.

    e. Notation of dimensions established by field measurement.

    f. Relationship and attachment to adjoining construction clearly indicated.

    g. Seal and signature of professional engineer if specified.

C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.

1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.

2. Identification: Permanently attach label on unexposed side of Samples that includes the following:

    a. Project name and submittal number.

    b. Generic description of Sample.

    c. Product name and name of manufacturer.

    d. Sample source.

e. Number and title of applicable Specification Section.

f. Specification paragraph number and generic name of each item.

3. Email Transmittal: Provide PDF transmittal. Include digital image file illustrating Sample characteristics and identification information for record.

4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.

   b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available.

   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return submittal with options selected.

6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

   a. Number of Samples: Submit three sets of Samples. Engineer will retain two Sample sets; remainder will be returned.

      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

D. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.

2. Manufacturer and product name, and model number if applicable.

3. Number and name of room or space.

4. Location within room or space.

E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.

F. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.

G. Certificates:

1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.

2. Installer Certificates: Submit written statements on manufacturer's letterhead, certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

4. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.

5. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.

6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.

H. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.

2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

    a. Name of evaluation organization.

    b. Date of evaluation.

    c. Time period when report is in effect.

    d. Product and manufacturers' names.

    e. Description of product.

    f. Test procedures and results.

    g. Limitations of use.

1.7 DELEGATED DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Engineer.

B. Delegated Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.8 CONTRACTOR'S REVIEW

A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.

B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

1. Engineer will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ENGINEER'S REVIEW

A. Action Submittals: Engineer will review each submittal, indicate corrections or revisions required, and return.

1. PDF Submittals: Engineer will indicate, via markup on each submittal, the appropriate action.

B. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Engineer will discard submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Engineer without action.

1.10 ENGINEER'S AND CONSTRUCTION MANAGER'S REVIEW

A. Action Submittals: Engineer and Construction Manager will review each submittal, indicate corrections or revisions required.

1. PDF Submittals: Engineer and Construction Manager will indicate, via markup on each submittal, the appropriate action.

B. Informational Submittals: Engineer and Construction Manager will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer and Construction Manager will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer and Construction Manager.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Engineer and Construction Manager will discard submittals received from sources other than Contractor.

F. Submittals not required by the Contract Documents will be returned by Engineer without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.

2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.

3. Requirements for Contractor to provide quality-assurance and quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.

1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.

E. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) in accordance with 29 CFR 1910.7, by a testing agency accredited in accordance with NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).

G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" has the same meaning as the term "testing agency."

H. Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

I. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work, to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Engineer.

1.3 DELEGATED DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

B. Delegated Design Services Statement: Submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.4 CONFLICTING REQUIREMENTS

A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Engineer regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Engineer for clarification before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified is the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits.

To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Qualification Data: For Contractor's quality-control personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.

2. Primary wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.

D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.

2. Entity responsible for performing tests and inspections.

3. Description of test and inspection.

4. Identification of applicable standards.

5. Identification of test and inspection methods.

6. Number of tests and inspections required.

7. Time schedule or time span for tests and inspections.

8. Requirements for obtaining samples.

9. Unique characteristics of each quality-control service.

F. Reports: Prepare and submit certified written reports and documents as specified.

G. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee

payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.6 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Engineer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities and to coordinate Owner's quality-assurance and quality-control activities. Coordinate with Contractor's Construction Schedule.

B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections, including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.

2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.

3. Owner-performed tests and inspections indicated in the Contract Documents.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring the Work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports, including log of approved and rejected results. Include Work Engineer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming Work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.

2. Project title and number.

3. Name, address, telephone number, and email address of testing agency.

4. Dates and locations of samples and tests or inspections.

5. Names of individuals making tests and inspections.

6. Description of the Work and test and inspection method.

7. Identification of product and Specification Section.

8. Complete test or inspection data.

9. Test and inspection results and an interpretation of test results.

10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.

12. Name and signature of laboratory inspector.

13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of technical representative making report.

2. Statement on condition of substrates and their acceptability for installation of product.

3. Statement that products at Project site comply with requirements.

4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

5. Results of operational and other tests and a statement of whether observed performance complies with requirements.

6. Statement of whether conditions, products, and installation will affect warranty.

7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, telephone number, and email address of factory-authorized service representative making report.

2. Statement that equipment complies with requirements.

3. Results of operational and other tests and a statement of whether observed performance complies with requirements.

4. Statement of whether conditions, products, and installation will affect warranty.

5. Other required items indicated in individual Specification Sections.

1.8 QUALITY ASSURANCE

A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities be performed by entities who are recognized experts in those operations. Specialists will satisfy qualification requirements indicated and engage in the activities indicated.

1. Requirements of authorities having jurisdiction supersede requirements for specialists.

G. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect, demonstrate, repair, and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor's Responsibilities:

a. Provide test specimens representative of proposed products and construction.

b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.

c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.

d. Build site-assembled test assemblies and mockups, using installers who will perform same tasks for Project.

e. When testing is complete, remove test specimens and test assemblies, and mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Engineer, with copy to Contractor. Interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from the Contract Documents.

1.9 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.

2. Costs for retesting and reinspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Contractor.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

2. Engage a qualified testing agency to perform quality-control services.

a. Contractor will not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.

4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.

3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.

4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.

5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.

6. Do not perform duties of Contractor.

E. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."

F. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in pre-installation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

G. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.

2. Incidental labor and facilities necessary to facilitate tests and inspections.

3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.

4. Facilities for storage and field curing of test samples.

5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that require control by testing agency.

7. Security and protection for samples and for testing and inspection equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's Construction Schedule. Update and submit with each Application for Payment.

1. Schedule Contents: Include tests, inspections, and quality-control services, including Contractor- and Owner-retained services, commissioning activities, and other Project-required services paid for by other entities.

2. Distribution: Distribute schedule to Owner, Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.10 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures, and reviewing the completeness and adequacy of those procedures to perform the Work.

2. Notifying Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.

3. Submitting a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.

4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.

5. Interpreting tests and inspections, and stating in each report whether tested and inspected Work complies with or deviates from the Contract Documents.

6. Retesting and reinspecting corrected Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.

2. Description of the Work tested or inspected.

3. Date test or inspection results were transmitted to Engineer.

4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's and authorities' having jurisdiction reference during normal working hours.

1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:

1. Installation.
2. Progress cleaning.
3. Starting and adjusting.
4. Protection of installed construction.
5. Correction of the Work.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting surveys.
2. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.

1.2 INFORMATIONAL SUBMITTALS

A. Qualification Data: For professional engineer.

1.3 QUALITY ASSURANCE

A. Professional Engineer Qualifications: Refer to Section 014000 "Quality Requirements."

B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of specified products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Comply with requirements specified in other Sections.

B. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.

2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work, including Specification Section number and paragraph, and Drawing sheet number and detail, where applicable.

2. List of detrimental conditions, including substrates.

3. List of unacceptable installation tolerances.

4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Engineer in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb, and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.

3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces, unless otherwise indicated on Drawings.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Engineer. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.

2. Allow for building movement, including thermal expansion and contraction.

3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Engineer. Fit exposed connections together to form hairline joints.

3.4 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.

2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.

3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, in accordance with regulations.

a. Use containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.

2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces in accordance with written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

I. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.5 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

3.7 CORRECTION OF THE WORK

A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Restore permanent facilities used during construction to their specified condition.

D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.

E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final Completion procedures.
3. List of incomplete items.
4. Submittal of Project warranties.
5. Final cleaning.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
2. Section 013233 "Photographic Documentation" for submitting Final Completion construction photographic documentation.
3. Section 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
4. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.

1.2 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Engineer's use prior to Engineer's inspection, to determine if the Work is substantially complete.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of cleaning agent.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

C. Field Report: For pest-control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.

3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer. Label with manufacturer's name and model number.

    a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Engineer's signature for receipt of submittals.

5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.

2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.

3. Complete startup and testing of systems and equipment.

4. Perform preventive maintenance on equipment used prior to Substantial Completion.

5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings.

6. Advise Owner of changeover in utility services.

7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.

8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.

9. Complete final cleaning requirements.

10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for Final Completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:

1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."

2. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list will state that each item has been completed or otherwise resolved for acceptance.

3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.

4. Submit pest-control final inspection report.

5. Submit Final Completion photographic documentation.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Include the following information at the top of each page:

a. Project name.

b. Date.

c. Name of Engineer.

d. Name of Contractor.

e. Page number.

2. Submit list of incomplete items in the following format:

a. MS Excel Electronic File: Engineer will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit by email to Engineer.

E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site of rubbish, waste material, litter, and other foreign substances.

b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.

c. Remove tools, construction equipment, machinery, and surplus material from Project site.

d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

e. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

f. Clean flooring, removing debris, dirt, and staining; clean in accordance with manufacturer's instructions.

g. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.

h. Remove labels that are not permanent.

i. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

j. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

k. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

l. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.

m. Clean strainers.

n. Leave Project clean and ready for occupancy.

3.2 CORRECTION OF THE WORK

A. Complete repair and restoration operations required by "Correction of the Work" Article in Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manuals.
2. Emergency manuals.
3. Systems and equipment operation manuals.
4. Systems and equipment maintenance manuals.
5. Product maintenance manuals.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.2 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.3 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Engineer will comment on whether content of operation and maintenance submittals is acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:

1. Submit by email to Engineer. Enable reviewer comments on draft submittals.

C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Engineer will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Engineer will return copy with comments.

1. Correct or revise each manual to comply with Engineer's comments. Submit copies of each corrected manual within 15 days of receipt of Engineer's comments and prior to commencing demonstration and training.

E. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.4 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

1.5 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual to contain the following materials, in the order listed:

1. Title page.

2. Table of contents.

3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.

2. Name and address of Project.

3. Name and address of Owner.

4. Date of submittal.

5. Name and contact information for Contractor.

6. Name and contact information for Construction Manager.

7. Name and contact information for Engineer.

8. Name and contact information for Commissioning Authority.

9. Names and contact information for major consultants to the Engineer that designed the systems contained in the manuals.

10. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation in accordance with ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.6 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY MANUAL

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals. List items and their location to facilitate ready access to desired information. Include the following:

1. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

2. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

3. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

1.7 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.

2. Emergency instructions.

3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.

2. Flood.

3. Gas leak.

4. Water leak.

5. Power failure.

6. Water outage.

7. System, subsystem, or equipment failure.

8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.

2. Shutdown instructions for each type of emergency.

3. Operating instructions for conditions outside normal operating limits.

4. Required sequences for electric or electronic systems.

5. Special operating instructions and procedures.

1.8 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.

2. Performance and design criteria if Contractor has delegated design responsibility.

3. Operating standards.

4. Operating procedures.

5. Operating logs.

6. Wiring diagrams.

7. Control diagrams.

8. Piped system diagrams.

9. Precautions against improper use.

10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.

2. Manufacturer's name.

3. Equipment identification with serial number of each component.

4. Equipment function.

5. Operating characteristics.

6. Limiting conditions.

7. Performance curves.

8. Engineering data and tests.

9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.

2. Equipment or system break-in procedures.

3. Routine and normal operating instructions.

4. Regulation and control procedures.

5. Instructions on stopping.

6. Normal shutdown instructions.

7. Seasonal and weekend operating instructions.

8. Required sequences for electric or electronic systems.

9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.9 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.

3. Identification and nomenclature of parts and components.

4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.

2. Troubleshooting guide.

3. Precautions against improper maintenance.

4. Disassembly; component removal, repair, and replacement; and reassembly instructions.

5. Aligning, adjusting, and checking instructions.

6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.

2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of maintenance manuals.

1.10 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:

1. Product name and model number.

2. Manufacturer's name.

3. Color, pattern, and texture.

4. Material and chemical composition.

5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.

2. Types of cleaning agents to be used and methods of cleaning.

3. List of cleaning agents and methods of cleaning detrimental to product.

4. Schedule for routine cleaning and maintenance.

5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.

2. Record specifications.

3. Record Product Data.

4. Miscellaneous record submittals.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for general closeout procedures.

2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.

2. Number of Copies: Submit copies of Record Drawings as follows:

a. Initial Submittal:

1) Submit one paper-copy set(s) of marked-up record prints.

2) Submit PDF electronic files of scanned record prints.

3) Submit Record Digital Data Files.

4) Engineer will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

b. Final Submittal:

1) Submit three paper-copy set(s) of marked-up record prints.

2) Submit PDF electronic files of scanned Record Prints.

c. Final Submittal:

1) Submit one paper-copy set(s) of marked-up record prints.

2) Submit Record Digital Data Files.

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and Contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

1.3 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.

b. Accurately record information in an acceptable drawing technique.

c. Record data as soon as possible after obtaining it.

d. Record and check the markup before enclosing concealed installations.

e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.

b. Revisions to details shown on Drawings.

c. Depths of foundations.

d. Locations and depths of underground utilities.

e. Revisions to routing of piping and conduits.

f. Revisions to electrical circuitry.

g. Actual equipment locations.

h. Duct size and routing.

i. Locations of concealed internal utilities.

j. Changes made by Change Order or Work Change Directive.

k. Changes made following Engineer's written orders.

l. Details not on the original Contract Drawings.

m. Field records for variable and concealed conditions.

n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

5. Mark important additional information that was either shown schematically or omitted from original Drawings.

6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Engineer. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Same digital data software program, version, and operating system as for the original Contract Drawings.

2. Format: DWG, Version AutoCad 2025, Microsoft Windows operating system.

3. Format: Annotated PDF electronic file with comment function enabled.

4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.

5. Refer instances of uncertainty to Engineer for resolution.

6. Engineer will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.

    a. See Section 013100 "Project Management and Coordination" for requirements related to use of Engineer's digital data files.

    b. Engineer will provide data file layer information. Record markups in separate layers.

C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2. Format: Annotated PDF electronic file with comment function enabled.

3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.

4. Identification: As follows:

    a. Project name.

    b. Date.

    c. Designation "PROJECT RECORD DRAWINGS."

    d. Name of Engineer.

    e. Name of Contractor.

1.4 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

C. Format: Submit Record Product Data as annotated PDF electronic file.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.5 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

1.6 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

SECTION 024116 - STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section Includes:

1. Demolition and removal of site improvements.
2. Disconnecting, capping or sealing, and abandoning in-place site utilities.
3. Disconnecting, capping or sealing, and removing site utilities.
4. Salvaging items for reuse by Owner.

B. Related Requirements:

1. Section 024119 "Selective Demolition" for partial demolition of buildings, structures, and site improvements.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner as indicated. Include fasteners or brackets needed for reattachment elsewhere.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.4 INFORMATIONAL SUBMITTALS

A. Survey of Existing Conditions: Submit survey.

B. Schedule of Building Demolition Activities: Indicate the following:

1. Detailed sequence of demolition work, with starting and ending dates for each activity.
2. Temporary interruption of utility services. Indicate how long services will be interrupted.
3. Coordination for shutoff and capping or re-routing of utility services.

1.5 FIELD CONDITIONS

A. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.

1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.

2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.

a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Hazardous Materials:

1. It is not expected that hazardous materials will be encountered in the Work.

a. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.

D. On-site sale of removed items or materials is not permitted.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting demolition operations.

B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.

1. Inventory and record the condition of items to be removed and salvaged. Photograph or video conditions that might be misconstrued as damage caused by removal.

2. Photograph or video existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by demolition operations or removal of items for salvage.

3.2 PREPARATION

A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.

B. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated.

1. Protect adjacent buildings and facilities from damage due to demolition activities.

2. Protect existing site improvements, appurtenances, and landscaping to remain.

C. Existing Utilities to Remain: Maintain utility services to remain and protect against damage during demolition operations.

1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.

a. Provide at least 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.

D. Existing Utilities to Be Disconnected: Locate, identify, disconnect, and seal or cap off utilities serving buildings and structures to be demolished.

1. Owner will arrange to shut off utilities when requested by Contractor.

2. Arrange to shut off utilities with utility companies.

3. If disconnection of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.

4. Cut off pipe or conduit a minimum of 24 inches below grade at or outside the building or structure to be demolished and cap, valve, or plug and seal remaining portion of pipe or conduitin accordance with requirements of authorities having jurisdiction.

5. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing by authorities having jurisdiction.

3.3 SALVAGE

A. Items to be removed and salvaged are indicated on Drawings.

B. Comply with the following for salvaged items:

1. Clean salvaged items of dirt and demolition debris.

2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.

3. Store items in a secure area until delivery to Owner.

4. Transport items to storage area designated by Owner.

5. Protect items from damage during transport and storage.

3.4 DEMOLITION, GENERAL

A. General: Demolish indicated buildings and site improvements completely. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.

2. Maintain fire watch during and for at least 24 hours after flame-cutting operations.

3. Maintain adequate ventilation when using cutting torches.

B. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.

2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

C. Explosives: Use of explosives is not permitted.

3.5 DEMOLITION BY MECHANICAL MEANS

A. Existing Utilities:

1. Abandon existing utilities and below-grade utility structures. Cut utilities flush with grade.

3.6 REPAIRS

A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site

1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Do not burn demolished materials.

3.8 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

1. Clean roadways of debris caused by debris transport.

END OF SECTION 024116

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section Includes:

1. Removal and salvage of existing items for delivery to Owner and removal of existing items for reinstallation.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner as indicated.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage; prepare for reuse; and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed.

1.3 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.4 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

1.5 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.6 FIELD CONDITIONS

A. Owner will [not]occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials:

1. It is not expected that hazardous materials will be encountered in the Work.

a. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. On-site sale of removed items or materials is not permitted.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.

1. Inventory and record the condition of items to be removed for salvage or reinstallation. Photograph or video conditions that might be misconstrued as damage caused by removal.

2. Photograph or video existing conditions of adjoining construction including finish surfaces, that might be misconstrued as damage caused by selective demolition operations or removal of items for salvage or reinstallation.

3.2 UTILITY SERVICES AND BUILDING SYSTEMS

A. Existing Services/Systems to Remain: Maintain utilities and building systems and equipment to remain and protect against damage during selective demolition operations.

1. Maintain fire-protection facilities in service during selective demolition operations.

3.3 SALVAGE/REINSTALL

A. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.

2. Pack or crate items after cleaning and repairing. Identify contents of containers.

3. Protect items from damage during transport and storage.

4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.

3. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.

4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide

alternate routes around closed or obstructed trafficways if required by authorities having jurisdiction.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site

1. Do not allow demolished materials to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Structural-steel materials.

1.2 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

1.3 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

1.4 ACTION SUBMITTALS

A. Product Data:

1. Structural-steel materials.
2. High-strength, bolt-nut-washer assemblies.
3. Shop primer.
4. Galvanized-steel primer.
5. Etching cleaner.
6. Galvanized repair paint.

B. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
3. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.

4. Identify members not to be shop primed.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer fabricator testing agency.

B. Welding certificates.

C. Mill test reports for structural-steel materials, including chemical and physical properties.

D. Product Test Reports: For the following:

1. Bolts, nuts, and washers, including mechanical properties and chemical analysis.

2. Direct-tension indicators.

1.6 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1/D1.1M.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.

2. Clean and relubricate bolts and nuts that become dry or rusty before use.

3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125/F3125M, Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with applicable provisions of the following specifications and documents:

1. ANSI/AISC 303.

2. ANSI/AISC 360.

3. RCSC's "Specification for Structural Joints Using High-Strength Bolts."

B. Connection Design Information:

1. Option 1: Connection designs have been completed and connections indicated on the Drawings.

C. Moment Connections: Type FR, fully restrained.

D. Construction: Combined system of moment frame and braced frame.

2.2 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A992/A992M.

B. Channels, Angles, M-Shapes: ASTM A572/A572M, Grade 50.

C. Channels, Angles, S-Shapes: ASTM A36/A36M.

D. Plate and Bar: ASTM A572/A572M, Grade 50.

2.3 BOLTS AND CONNECTORS

A. High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers; all with plain finish.

B. Zinc-Coated High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436/F436M, Type 1, hardened carbon-steel washers.

1. Finish: Hot-dip zinc coating.

2.4 PRIMER

A. Galvanized-Steel Primer: MPI#134.

1. Etching Cleaner: MPI#25, for galvanized steel.

2. Galvanizing Repair Paint: ASTM A780/A780M.

2.5 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

1. Identify high-strength structural steel in accordance with ASTM A6/A6M and maintain markings until structural-steel framing has been erected.

2. Mark and match-mark materials for field assembly.

3. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

2.6 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened.

2.7 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel in accordance with ASTM A123/A123M.

1. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.

2.8 SHOP PRIMING

A. Shop prime steel surfaces, except the following:

1. Surfaces to be field welded.

2. Galvanized surfaces .

B. Surface Preparation of Galvanized Steel: Prepare galvanized-steel surfaces for shop priming by thoroughly cleaning steel of grease, dirt, oil, flux, and other foreign matter, and treating with etching cleaner.

C. Priming: Immediately after surface preparation, apply primer in accordance with manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

2.9 SOURCE QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform shop tests and inspections.

1. Allow testing agency access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

2. Welded Connections: Visually inspect shop-welded connections in accordance with AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

a. Liquid Penetrant Inspection: ASTM E165/E165M.

b. Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.

c. Ultrasonic Inspection: ASTM E164.

d. Radiographic Inspection: ASTM E94/E94M.

3. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated on Drawings.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.

B. Baseplates, Bearing Plates, and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.

2. Weld plate washers to top of baseplate.

C. Maintain erection tolerances of structural steel within ANSI/AISC 303.

D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Drawings.

2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. Splice members only where indicated.

F. Do not use thermal cutting during erection.

G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.

1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.

2. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

3.5 REPAIR

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing, and repair galvanizing to comply with ASTM A780/A780M.

B. Touchup Painting:

1. Immediately after erection, clean exposed areas where primer is damaged or missing, and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

a. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

3.6 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform the following special inspections:

1. Verify structural-steel materials and inspect steel frame joint details.

2. Verify weld materials and inspect welds.

3. Verify connection materials and inspect high-strength bolted connections.

B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

1. Bolted Connections: Inspect bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."

2. Welded Connections: Visually inspect field welds in accordance with AWS D1.1/D1.1M.

a. In addition to visual inspection, test and inspect field welds in accordance with AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:

1) Liquid Penetrant Inspection: ASTM E165/E165M.

2) Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.

3) Ultrasonic Inspection: ASTM E164.

4) Radiographic Inspection: ASTM E94/E94M.

END OF SECTION 051200

SECTION 055119 - METAL GRATING STAIRS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal grating stairs.

2. Steel railings and guards.

1.2 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another.

1.3 ACTION SUBMITTALS

A. Product Data: For metal grating stairs and the following:

1. Gratings.

2. Shop primer products.

B. Sustainable Design Submittals:

C. Shop Drawings:

1. Include plans, elevations, sections, details, and attachment to other work.

2. Indicate sizes of metal sections, thickness of metals, profiles, holes, and field joints.

3. Include plan at each level.

1.4 INFORMATIONAL SUBMITTALS

A. Welding certificates.

B. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Fabricator of products.

B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification.

1. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers.

2. Protect steel members and packaged materials from corrosion and deterioration.

3. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures.

a. Repair or replace damaged materials or structures as directed.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces: Provide materials with smooth, flat surfaces unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Bars for Grating Treads: ASTM A36/A36M or steel strip, ASTM A1011/A1011M or ASTM A1018/A1018M.

C. Steel Wire Rod for Grating Crossbars: ASTM A510/A510M.

D. Steel Pipe for Railings and Guards: ASTM A53/A53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.

E. Provide galvanized finish for exterior installations and where indicated.

2.2 MISCELLANEOUS MATERIALS

A. Welding Electrodes: Comply with AWS requirements.

B. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.

C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with ASTM A780/A780M and compatible with paints specified to be used over it.

2.3 FABRICATION, GENERAL

A. Provide complete stair assemblies, including metal framing, hangers, railings, guards, clips, brackets, bearing plates, and other components necessary to support and anchor stairs and platforms on supporting structure.

1. Join components by welding unless otherwise indicated.

2. Use connections that maintain structural value of joined pieces.

B. Assemble stairs, railings, and guards in shop to greatest extent possible.

1. Disassemble units only as necessary for shipping and handling limitations.

2. Clearly mark units for reassembly and coordinated installation.

C. Cut, drill, and punch metals cleanly and accurately.

1. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated.

2. Remove sharp or rough areas on exposed surfaces.

D. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

E. Form exposed work with accurate angles and surfaces and straight edges.

F. Weld connections to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.

4. Weld exposed corners and seams continuously unless otherwise indicated.

5. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #4 - Good quality, uniform undressed weld with minimal splatter.

G. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible.

1. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts unless otherwise indicated.

2. Locate joints where least conspicuous.

3. Fabricate joints that are exposed to weather in a manner to exclude water.

4. Provide weep holes where water may accumulate internally.

2.4 FABRICATION OF STEEL-FRAMED STAIRS

A. NAAMM Stair Standard: Comply with NAAMM AMP 510, "Metal Stairs Manual," for Industrial Class, unless more stringent requirements are indicated.

B. Stair Framing:

1. Fabricate stringers of steel channels.

a. Stringer Size: As indicated on Drawings.

b. Provide closures for exposed ends of channel stringers.

c. Finish: Galvanized.

2. Construct platforms and tread supports of steel channel headers and miscellaneous framing members as indicated on Drawings.

a. Provide closures for exposed ends of channel framing.

b. Finish: Galvanized.

3. Weld stringers to headers; weld framing members to stringers and headers.

C. Risers: Open.

D. Toe Plates: Provide toe plates around openings and at edge of open-sided floors and platforms, and at open ends and open back edges of treads.

1. Material and Finish: Steel plate to match finish of other steel items.

2. Fabricate to dimensions and details indicated.

2.5 FABRICATION OF STAIR RAILINGS AND GUARDS

A. Fabricate railings and guards to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of member, post spacings, wall bracket spacing, and anchorage, but not less than that needed to withstand indicated loads.

1. Picket Infill: round pickets spaced to prohibit the passage of a 4-inch diameter sphere.

B. Welded Connections: Fabricate railings and guards with welded connections.

1. Fabricate connections that are exposed to weather in a manner that excludes water.

a. Provide weep holes where water may accumulate internally.

2. Cope components at connections to provide close fit, or use fittings designed for this purpose.

3. Weld all around at connections, including at fittings.

4. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

5. Obtain fusion without undercut or overlap.

6. Remove flux immediately.

7. Finish welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #4 - Good quality, uniform undressed weld with minimal splatter as shown in NAAMM AMP 521.

C. Form changes in direction of railings and guards as follows:

1. As detailed.

D. For changes in direction made by bending, use jigs to produce uniform curvature for each repetitive configuration required.

1. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

E. Connect posts to stair framing by direct welding unless otherwise indicated.

2.6 FINISHES

A. Finish metal stairs after assembly.

B. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153/A153M for steel and iron hardware and with ASTM A123/A123M for other steel and iron products.

1. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

C. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

1. Exterior Stairs: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

D. Apply shop primer to uncoated surfaces of metal stair components, except those with galvanized finishes and those to be embedded in concrete or masonry unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify elevations of floors, bearing surfaces and locations of bearing plates, and other embedments for compliance with requirements.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF METAL STAIRS

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.

B. Install metal stairs by welding stair framing to steel structure or to weld plates cast into concrete unless otherwise indicated.

C. Fit exposed connections accurately together to form hairline joints.

1. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations.

2. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

3. Comply with requirements for welding in "Fabrication, General" Article.

3.3 INSTALLATION OF RAILINGS AND GUARDS

A. Adjust railing and guard systems before anchoring to ensure matching alignment at abutting joints with tight, hairline joints.

1. Space posts at spacing indicated or, if not indicated, as required by design loads.

2. Plumb posts in each direction, within a tolerance of 1/16 inch in 3 feet.

3. Align rails and guards so variations from level for horizontal members and variations from parallel with rake of stairs for sloping members do not exceed 1/4 inch in 12 feet.

4. Secure posts, rail ends, and guard ends to building construction as follows:

a. Anchor posts to steel by welding to steel supporting members.

3.4 REPAIR

A. Touchup Painting:

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780/A780M.

END OF SECTION 055119

SECTION 055313 - BAR GRATINGS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal bar gratings.

2. Grating frames and supports.

B. Related Requirements:

1. Section 051200 "Structural Steel Framing" for structural-steel framing system components.

2. Section 055119 "Metal Grating Stairs" for grating treads and landings of steel-framed stairs.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Clips and anchorage devices for gratings.

2. Paint products.

B. Shop Drawings:

1. Include plans, sections, and attachment details.

2. Signed and sealed by the qualified professional engineer responsible for their preparation.

1.3 INFORMATIONAL SUBMITTALS

A. Welding certificates.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following welding codes:

1. AWS D1.1/D1.1M.

1.5 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with gratings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 FASTENERS

A. Anchor Bolts: ASTM F1554, Grade 36, of dimensions indicated; with nuts, ASTM A563, and, where indicated, flat washers.

1. Hot-dip galvanize or provide mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.

2.2 MISCELLANEOUS MATERIALS

A. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.

B. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

2.3 FERROUS METALS

A. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

B. Steel Bars for Bar Gratings: ASTM A36/A36M or steel strip, ASTM A1011/A1011M or ASTM A1018/A1018M.

C. Wire Rod for Bar Grating Crossbars: ASTM A510/A510M.

2.4 FABRICATION

A. Shop Assembly: Fabricate grating sections in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch material cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form from materials of size, thickness, and shapes indicated, but not less than that needed to support indicated loads.

D. Fit exposed connections accurately together to form hairline joints.

E. Welding: Comply with AWS recommendations and the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.

F. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space the anchoring devices to secure gratings, frames, and supports rigidly in place and to support indicated loads.

1. Fabricate toeplates to fit grating units and weld to units in shop unless otherwise indicated.

2. Toeplate Height: 4 inches unless otherwise indicated.

G. Removable Grating Sections: Fabricate with banding bars attached by welding to entire perimeter of each section. Include anchors and fasteners of type indicated or, if not indicated, as recommended by manufacturer for attaching to supports.

1. Provide no fewer than four weld lugs for each heavy-duty grating section, with each lug shop welded to two bearing bars.

2. Furnish threaded bolts with nuts and washers for securing grating to supports.

H. Fabricate cutouts in grating sections for penetrations indicated. Arrange cutouts to permit grating removal without disturbing items penetrating gratings.

1. Edge-band openings in grating that interrupt four or more bearing bars with bars of same size and material as bearing bars.

I. Do not notch bearing bars at supports to maintain elevation.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing gratings to in-place construction. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors.

B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing gratings. Set units accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.

C. Fit exposed connections accurately together to form hairline joints.

1. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

D. Attach toeplates to gratings by welding at locations indicated.

E. Field Welding: Comply with AWS recommendations and the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.

3. Remove welding flux immediately.

3.2 INSTALLATION OF METAL BAR GRATINGS

A. Install gratings to comply with recommendations of referenced metal bar grating standards that apply to grating types and bar sizes indicated, including installation clearances and standard anchoring details.

B. Attach removable units to supporting members with type and size of clips and fasteners indicated or, if not indicated, as recommended by grating manufacturer for type of installation conditions shown.

C. Attach nonremovable units to supporting members by welding where both materials are same; otherwise, fasten by bolting as indicated above.

3.3 REPAIR

A. Repair Painting:

B. Repair of Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780/A780M.

END OF SECTION 055313

SECTION 074113.16 - STANDING-SEAM METAL ROOF PANELS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Trapezoidal-rib, seamed-joint, standing-seam metal roof panels.

B. Related Requirements:

1.2 DEFINITIONS

A. Structural Standing-Seam Metal Roof Panel System: A roof system designed to resist positive and negative loads applied normal to the metal roof panel surface without the benefit of a supporting deck or sheathing.

1.3 COORDINATION

A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

B. Coordinate metal roof panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.4 ACTION SUBMITTALS

A. Product Data:

1. For standing-seam metal roof panels. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:

1. Include fabrication and installation layouts of metal roof panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.

2. Accessories: Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches.

C. Samples for Initial Selection: Manufacturer's standard color charts, showing full range of available colors for each type of exposed finish.

1. Include similar Samples of trim and accessories involving color selection.

1.5 INFORMATIONAL SUBMITTALS

A. Certificates for portable roll-forming equipment.

B. Product Test Reports: For standing-seam metal roof panels, for tests performed by a qualified testing agency.

C. Field quality-control reports.

D. Qualification Statements: For roof installers.

E. Sample warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal roof panels.

1.7 QUALITY ASSURANCE

A. Roof Installer Qualifications: Entity that employs a supervisor who is an NRCA ProCertified Roofing Foreman or installers who are NRCA ProCertified Metal Panel Roof Systems Installers.

B. Portable Roll-Forming Equipment Certification: UL-certified, portable roll-forming equipment capable of producing metal roof panels warranted by manufacturer to be the same as factory-formed products. Maintain UL certification of portable roll-forming equipment for duration of Work.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal roof panels, and other manufactured items so as not to be damaged or deformed. Package metal roof panels for protection during transportation and handling.

B. Unload, store, and erect metal roof panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal roof panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof panels to ensure dryness, with positive slope for drainage of water. Do not store metal roof panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Retain strippable protective covering on metal roof panels during installation.

1.9 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal roof panels to be performed in accordance with manufacturers' written installation instructions and warranty requirements.

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of metal roof panel systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including rupturing, cracking, or puncturing.

b. Deterioration of metal and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer agrees to repair finish or replace metal roof panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Finish Warranty Period: 20 years from date of Substantial Completion.

C. Special Weathertightness Warranty: Manufacturer agrees to repair or replace standing-seam metal roof panel systems that fail to remain weathertight, including leaks, within specified warranty period.

1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal roof panel systems capable of withstanding the effects of the following loads when tested in accordance with ASTM E1592:

1. Wind Loads: As indicated on Drawings.

2. Other Design Loads: As indicated on Drawings.

3. Deflection Limits: For wind loads, no greater than 1/240 of the span.

4. Structural Standing-Seam Steel Roof Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1514.

B. Air Infiltration: Air leakage of not more than 0.06 cfm/sq. ft. when tested in accordance with ASTM E1680 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft..

C. Water Penetration under Static Pressure: No water penetration when tested in accordance with ASTM E1646 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft..

D. Watertightness: No water penetration when tested in accordance with ASTM E2140 for hydrostatic-head resistance.

E. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.

1. Uplift Rating: UL 90.

F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 STANDING-SEAM METAL ROOF PANELS, GENERAL

A. Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with seamed joint type indicated and mechanically attaching panels to supports using concealed fasteners in side laps. Include all accessories required for weathertight installation.

2.3 VERTICAL-RIB, SEAMED-JOINT, STANDING-SEAM METAL ROOF PANELS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Berridge Manufacturing Company

2. CENTRIA, a Nucor Brand

3. Everlast Metals

4. McElroy Metal, Inc

B. Metal Roof Panels: Formed with vertical ribs at panel edges; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one side of panels, engaging opposite edge of adjacent panels, and mechanically seaming panels together.

1. Structural Support: Over open framing.

2. Material: Metallic-coated steel.

3. Seam Type: Manufacturer's standard.

4. Panel Profile: Intermediate stiffening ribs symmetrically spaced between ribs.

5. Panel Coverage: 18 inches.

6. Panel Height: 2.0 inches.

7. Clips: Two piece, floating, designed to accommodate thermal movement.

   a. Steel Clips: 0.064-inch- nominal thickness, zinc-coated (galvanized) or aluminum-zinc alloy-coated steel sheet.

   b. Clip Spacing: As indicated on approved Shop Drawings.

2.4 METAL ROOF PANEL MATERIAL

A. Metallic-Coated Steel Sheet: Zinc-coated (galvanized) steel sheet complying with minimum ASTM A653/A653M, G90 coating designation, or aluminum-zinc alloy-coated steel sheet complying with minimum ASTM A792/A792M, Class AZ50 coating designation; structural quality. Sheet prepainted by the coil-coating process to comply with ASTM A755/A755M.

1. Nominal Thickness: 0.052 inch.

2. Surface: Embossed texture.

2.5 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Subframing and Furring: ASTM C645; cold-formed, metallic-coated steel sheet, minimum ASTM A653/A653M, G90 hot-dip galvanized coating designation or ASTM A792/A792M, Class AZ50 coating designation. Provide manufacturer's standard sections as required for support and alignment of metal panel system.

B. Roof Panel Accessories: Provide components required for a complete, weathertight metal roof panel system including trim, copings, fasciae, mullions, sills, corner units, fasteners, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal roof panels.

2. Backing Plates: Provide metal backing plates at roof panel end splices, fabricated from material recommended by manufacturer.

3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

C. Flashing and Trim: Provide flashing and trim formed from same material as metal roof panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal roof panels.

D. Gutters: Formed from same material as metal roof panels, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- long sections, of size and metal thickness in accordance with manufacturer's recommendations. Furnish gutter supports spaced a maximum of 36 inches o.c., fabricated from same metal as gutters. Provide wire ball strainers of compatible metal at outlets. Finish gutters to match metal roof panels.

E. Downspouts: Formed from same material as metal roof panels. Fabricate in 10 ft. long sections, complete with formed elbows and offsets, of size and metal thickness in accordance with manufacturer's recommendations. Finish downspouts to match gutters.

F. Roof Panel Fasteners: Self-tapping screws designed to withstand design loads.

G. Roof Panel Sealants: Provide sealant type recommended by manufacturer that are compatible with metal roof panel materials, are nonstaining, and do not damage panel finish.

1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.

2. Joint Sealant: ASTM C920; elastomeric polyurethane or silicone sealant; of type, grade, class, and use classifications required to seal joints in metal roof panels and remain weathertight; and as recommended in writing by metal roof panel manufacturer.

3. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

2.6 FABRICATION

A. Fabricate and finish metal roof panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. On-site Fabrication: Subject to compliance with requirements of this Section, metal roof panels may be fabricated on-site using UL-certified, portable roll-forming equipment if panels are of same profile and warranted by manufacturer to be equal to factory-formed panels. Fabricate in accordance with equipment manufacturer's written instructions and to comply with details shown.

C. Provide roof panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

D. Fabricate metal roof panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

E. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

2. Seams for other than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.

3. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate sealant and to comply with manufacturer's recommendations.

4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not permitted on faces of accessories exposed to view.

5. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal roof panel manufacturer.

a. Size: As recommended by metal roof panel manufacturer for application, but not less than thickness of metal being secured.

2.7 FINISHES

A. Protect finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are unacceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal roof panel supports, and other conditions affecting performance of the Work.

1. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.

B. Examine roughing-in for components and systems penetrating metal roof panels to verify actual locations of penetrations relative to seam locations of metal roof panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages in accordance with ASTM C754 and metal roof panel manufacturer's written installation instructions.

3.3 INSTALLATION OF STANDING-SEAM METAL ROOF PANELS

A. Install metal roof panels in accordance with manufacturer's written installation instructions and approved Shop Drawings in orientation, sizes, and locations indicated. Anchor metal roof panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal roof panels.

2. Flash and seal metal roof panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal roof panels are installed.

3. Install screw fasteners in predrilled holes.

4. Locate and space fastenings in uniform vertical and horizontal alignment.

5. Install flashing and trim as metal roof panel work proceeds.

6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.

7. Align bottoms of metal roof panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.

8. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:

1. Steel Roof Panels: Use stainless steel fasteners for surfaces exposed to the exterior; use galvanized-steel fasteners for surfaces exposed to the interior.

C. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal roof panel manufacturer.

D. Concealed Clip, Standing-Seam Metal Roof Panel Installation: Fasten metal roof panels to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended in writing by manufacturer.

1. Install clips to supports with self-tapping fasteners.

2. Install pressure plates at locations indicated in manufacturer's written installation instructions.

E. Roof Panel Joints: Fasten panel joints to substrate in accordance with manufacturer's instructions.

1. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.

2. Watertight Installation:

a. Apply a continuous ribbon of sealant or tape to seal joints of metal roof panels, using sealant or tape as recommended in writing by manufacturer as needed to make panels watertight.

b. Provide sealant or tape between panels and protruding equipment, vents, and accessories.

c. At panel splices, nest panels with minimum 6-inch end lap, sealed with sealant and fastened together by interlocking clamping plates.

F. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal roof panel system including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal roof panel manufacturers; or, if not indicated, types recommended by metal roof panel manufacturer.

G. Flashing and Trim: Comply with performance requirements and manufacturer's written installation instructions. Provide concealed fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve waterproof and weather-resistant performance.

2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft. with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

H. Gutters: Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eave with gutter hangers spaced not more than 36 inches o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

I. Downspouts: Join sections with telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c. in between.

1. Provide elbows at base of downspouts to direct water away from building.

J. Pipe and Conduit Penetrations: Fasten and seal to metal roof panels as recommended by manufacturer.

3.4 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal roof panels within installed tolerance of 1/4 inch in 20 ft. on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect metal roof panel installation, including accessories. Report results in writing.

B. Remove and replace applications of metal roof panels where tests and inspections indicate that they do not comply with specified requirements.

C. Additional tests and inspections, at Contractor's expense, are performed to determine compliance of replaced or additional work with specified requirements.

D. Prepare test and inspection reports.

3.6 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal roof panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal roof panel installation, clean finished surfaces as recommended by metal roof panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal roof panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074113.16

SECTION 101419 - DIMENSIONAL LETTER SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Dimensional characters.

a. Illuminated, fabricated channel dimensional characters.

1.2 DEFINITIONS

A. Illuminated: Illuminated by lighting source integrally constructed as part of the sign unit.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For signs.

1. Include fabrication and installation details and attachments to other work.

2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.

3. Show message list, typestyles, graphic elements, and layout for each sign at least half size.

4. Show locations of electrical service connections.

5. Include diagrams for power, signal, and control wiring.

C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.

1. Include representative Samples of available typestyles and graphic symbols.

D. Product Schedule: For dimensional letter signs. Use same designations indicated on Drawings or specified.

E. Delegated Design Submittal: For signs indicated in "Performance Requirements" Article.

1. Include structural analysis calculations for signs indicated to comply with design loads; signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Sample Warranty: For special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.6 FIELD CONDITIONS

A. Field Measurements: Verify locations of electrical service embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering.

b. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, to design sign structure and anchorage of dimensional character sign type(s) according to structural performance requirements.

B. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.

1. Uniform Wind Load: As indicated on Drawings.

C. Thermal Movements: For exterior fabricated channel dimensional characters, allow for thermal movements from ambient and surface temperature changes.

D. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.2 DIMENSIONAL CHARACTERS

A. Fabricated Channel Characters: Translucent face with metal side returns, formed free from warp and distortion; with uniform faces, sharp corners, and precisely formed lines and profiles; internally braced for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners; and as follows.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product by ASI Sign Systems, Inc., or comparable.

2. Illuminated Characters: Backlighted character construction with LED lighting, including transformers, insulators, and other accessories for operability, with provision for servicing and concealing connections to building electrical system. Use tight or sealed joint construction to prevent unintentional light leakage. Space lamps apart from each other and away from character surfaces as needed to illuminate evenly.

a. Power: As indicated on electrical Drawings.

b. Weeps: Provide weep holes to drain water at lowest part of exterior characters. Equip weeps with permanent baffles to block light leakage without inhibiting drainage.

3. Character Material: Sheet or plate aluminum.

4. Material Thickness: Manufacturer's standard for size and design of character.

5. Translucent Face Sheet: Acrylic sheet with integral color as selected by Engineer from manufacturer's full range.

a. Sheet Thickness: Manufacturer's standard thickness for size of character.

6. Character Height: 12".

7. Character Depth: 2.5".

8. Finishes:

a. Integral Aluminum Finish: Medium bronze anodized.

9. Mounting: Manufacturer's standard for size and design of character.

10. Typeface: Helvetica Neue.

2.3 DIMENSIONAL CHARACTER MATERIALS

A. Aluminum Castings: ASTM B26/B26M, alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.

B. Aluminum Sheet and Plate: ASTM B209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

C. Aluminum Extrusions: ASTM B221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

D. Acrylic Sheet: ASTM D4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

E. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.4 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:

1. Use concealed fasteners and anchors unless indicated to be exposed.

2. Exposed Metal-Fastener Components, General:

a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.

3. Sign Mounting Fasteners:

a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.

b. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.

c. Through Fasteners: Exposed metal fasteners matching sign finish, with type of head indicated, installed in predrilled holes.

B. Adhesive: As recommended by sign manufacturer.

2.5 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.

2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.

3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.

4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.

5. Internally brace dimensional characters for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.

6. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

7. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing.

B. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

1. Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match sign-background color color unless otherwise indicated.

2. Stainless Steel Brackets: Factory finish brackets to match sign background finish unless otherwise indicated.

2.6 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.7 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

B. Color Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

C. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF DIMENSIONAL CHARACTERS

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.

2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Mounting Methods:

1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

a. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.

2. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

   a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.

   b. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.

3. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.

4. Back Bar and Brackets: Remove loose debris from substrate surface and install backbar or bracket supports in position, so that signage is correctly located and aligned.

5. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.

6. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101419

SECTION 101423 - PANEL SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Panel signs.

B. Related Requirements:

1. Section 220553 "Identification for Plumbing Piping and Equipment" for labels, tags, and nameplates for plumbing systems and equipment.

2. Section 230553 "Identification for HVAC Piping and Equipment" for labels, tags, and nameplates for HVAC systems and equipment.

3. Section 260553 "Identification for Electrical Systems" for labels, tags, and nameplates for electrical equipment.

1.2 DEFINITIONS

A. Accessible: In accordance with the accessibility standard.

1.3 COORDINATION

A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

1.4 ACTION SUBMITTALS

A. Product Data:

1. Panel signs.

B. Shop Drawings: For panel signs.

1. Include fabrication and installation details and attachments to other work.

2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.

3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.

C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.

1. Include representative Samples of available typestyles and graphic symbols.

D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

1. Panel Signs: Not less than 12 inches square, including corner.

2. Variable Component Materials: 8-inch Sample of each base material, character (letter, number, and graphic element) in each exposed color and finish not included in Samples above.

3. Full-size Samples, if approved, will be returned to Contractor for use in Project.

E. Product Schedule: For panel signs. Use same designations indicated on Drawings or specified.

1.5 FIELD CONDITIONS

A. Field Measurements: Verify locations of anchorage devices embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Deterioration of finishes beyond normal weathering.

b. Deterioration of embedded graphic image.

c. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Signs and supporting elements are to withstand the effects of gravity and other loads within limits and under conditions indicated.

1. Uniform Wind Load: As indicated on Drawings.

B. Thermal Movements: For exterior signs, allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

C. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" the ABA standards of the Federal agency having jurisdiction and ICC A117.1.

2.2 PANEL SIGNS

A. Panel Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ACE Sign Systems, Inc.

b. ASI Sign Systems, Inc

c. Mohawk Sign Systems

2. Solid-Sheet Sign: Aluminum Steel Stainless steel Acrylic Fiberglass sheet and returns, returns, and back with finish specified in "Surface Finish and Applied Graphics" Subparagraph and as follows:

a. Thickness: Manufacturer's standard for size of sign.

b. Surface-Applied, Flat Graphics: Applied baked enamel or powder coat.

c. Surface-Applied, Raised Graphics: Applied polymer characters and Braille.

d. Etched and Filled Graphics: Sign face etched or routed to receive enamel-paint infill.

3. Laminated Aluminum-Sheet Sign: Aluminum sheet laminated to both sides of acrylic core sheet with painted edges.

a. Composite-Sheet Thickness: Manufacturer's standard for size of sign.

b. Surface-Applied, Flat Graphics: Applied paint.

c. Surface-Applied, Raised Graphics: Applied polymer characters and Braille.

4. Laminated-Sheet Sign: Sandblasted polymer face sheet with raised graphics laminated over subsurface graphics to acrylic backing sheet to produce composite sheet.

    a. Composite-Sheet Thickness: Manufacturer's standard for size of sign.

    b. Surface-Applied, Flat Graphics: Applied vinyl film.

    c. Surface-Applied, Raised Graphics: Applied polymer characters and Braille.

5. Composite Phenolic-Core Sign: Solid phenolic panel core with integral subsurface graphic image covered with integral, polymeric face layer.

    a. Composite-Sheet Thickness: Manufacturer's standard for size of sign.

6. Laminated Polycarbonate-Sheet Sign: Polycarbonate face sheet laminated to each side of phenolic base sheet to produce composite sheet.

    a. Composite-Sheet Thickness: Manufacturer's standard for size of sign.

    b. Surface-Applied, Raised Graphics: Applied polymer characters and Braille.

7. Engraved Plastic-Laminate Sign: Plastic-laminate face laminated to contrasting phenolic core to produce composite sheet.

    a. Composite-Sheet Thickness: Manufacturer's standard for size of sign.

    b. Engraved Graphics: Characters engraved through plastic-laminate face sheet to expose contrasting phenolic core.

    c. Plastic-Laminate Color and Pattern: As indicated by manufacturer's designation.

    d. Core Color: Manufacturer's standard dark color.

8. Sign-Panel Perimeter: Finish edges smooth.

    a. Edge Condition:

        1) Vertical Edges: Square cut Beveled.

        2) Horizontal Edges: Beveled.

    b. Corner Condition in Elevation: Rounded to radius indicated.

9. Mounting: Manufacturer's standard method for substrates indicated with concealed anchors.

10. Surface Finish and Applied Graphics:

    a. Integral Metal Finish: Mill.

11. Text and Typeface: Accessible raised characters and Braille. Finish raised characters to contrast with background color, and finish Braille to match background color.

2.3 PANEL-SIGN MATERIALS

A. Aluminum Sheet and Plate: ASTM B209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

B. Aluminum Extrusions: ASTM B221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

C. Steel Materials:

1. Metallic-Coated Steel Sheet: ASTM A653/A653M, G90 coating, either commercial or forming steel.

2. Steel Sheet: electrolytic zinc-coated, ASTM A879/A879M, Coating Designation 08Z, with steel-sheet substrate according to ASTM A1008/A1008M, commercial steel, exposed.

3. Steel Members Fabricated from Plate or Bar Stock: ASTM A529/A529M or ASTM A572/A572M, 42,000-psi minimum yield strength.

4. For steel exposed to view on completion, provide materials having flat, smooth surfaces without blemishes. Do not use materials whose surfaces exhibit pitting, seam marks, roller marks, rolled trade names, or roughness.

D. Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 316, stretcher-leveled standard of flatness.

E. Acrylic Sheet: ASTM D4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

F. Fiberglass Sheet: Multiple laminations of glass-fiber-reinforced polyester resin with UV-light stable, colorfast, nonfading, weather- and stain-resistant, colored polyester gel coat, and with manufacturer's standard finish.

G. Polycarbonate Sheet: ASTM C1349, Appendix X1, Type II (coated, mar-resistant, UV-stabilized polycarbonate), with coating on both sides.

H. Vinyl Film: UV-resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive on back; die cut to form characters or images as indicated on Drawings and suitable for exterior applications.

I. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.4 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following unless otherwise indicated:

1. Use concealed fasteners and anchors unless indicated to be exposed.

2. Exposed Metal-Fastener Components, General:

a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.

b. Fastener Heads: For nonstructural connections, use oval countersunk screws and bolts with tamper-resistant Allen-head slots unless otherwise indicated.

3. Sign Mounting Fasteners:

a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material or screwed into back of sign assembly unless otherwise indicated.

b. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material or screwed into back of sign assembly, unless otherwise indicated.

c. Through Fasteners: Exposed metal fasteners matching sign finish, with type of head indicated, and installed in predrilled holes.

B. Power-Actuated Anchors: Fastener systems with working capacity greater than or equal to the design load, according to an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

2.5 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.

2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.

3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.

4. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.

5. Internally brace signs for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.

6. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

B. Shop- and Subsurface-Applied Vinyl: Align vinyl film in final position and apply to surface. Firmly press film from the middle outward to obtain good bond without blisters or fishmouths.

C. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.

1. Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match sign-background color color unless otherwise indicated.

2. Stainless Steel Brackets: Factory finish brackets to match sign background finish unless otherwise indicated.

2.6 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Directional Finishes: Run grain with long dimension of each piece and perpendicular to long dimension of finished trim or border surface unless otherwise indicated.

D. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.7 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

B. Color Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

C. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils. Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

2.8 METALLIC-COATED STEEL FINISHES

A. Surface Preparation: Clean surfaces of oil and other contaminants. Use cleaning methods that do not leave residue. After cleaning, apply a conversion coating compatible with the organic coating to be applied over it. Clean welds, mechanical connections, and abraded areas and apply galvanizing repair paint, complying with SSPC-Paint 20, to comply with ASTM A780/A780M.

B. Factory Prime Finish: After cleaning and pretreating, apply an air-dried primer compatible with the organic coating to be applied over it.

C. Baked-Enamel or Powder-Coat Finish: After cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat to a minimum dry film thickness of 2 mils.

2.9 STEEL FINISHES

A. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, and prepare for coating according to coating manufacturer's written instructions.

1. For Baked-Enamel or Powder-Coat Finish: After cleaning, apply a conversion coating compatible with the organic coating to be applied over it.

B. Factory Prime Finish: After surface preparation and pretreatment, apply manufacturer's standard, fast-curing, lead- and chromate-free, universal primer.

C. Baked-Enamel or Powder-Coat Finish: After cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat to a minimum dry film thickness of 2 mils.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Verify that anchorage devices embedded in permanent construction are correctly sized and located to accommodate signs.

D. Verify that electrical service is correctly sized and located to accommodate signs.

E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.

2. Install signs so they do not protrude or obstruct according to the accessibility standard.

3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

4. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Accessible Signage: Install in locations on walls as indicated on Drawings.

C. Mounting Methods:

1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.

b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.

2. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.

b. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.

3. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.

4. Brackets: Remove loose debris from substrate surface and install backbar or bracket supports in position so that signage is correctly located and aligned.

5. Shim-Plate Mounting: Provide 1/8-inch- thick, concealed aluminum shim plates with predrilled and countersunk holes, at locations indicated, and where other direct mounting methods are impractical. Attach plate with fasteners and anchors suitable for secure attachment to substrate. Attach signs to plate using method specified above.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 101423

SECTION 220719 - PLUMBING PIPING INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes insulating the following plumbing piping services:

1. Domestic water piping.

2. Supplies and drains for handicap-accessible lavatories and sinks.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 COORDINATION

A. Coordinate clearance requirements with piping Installer for piping insulation application. Before preparing piping Shop Drawings, establish and maintain clearance requirements for installation of insulation and field-applied jackets and finishes and for space required for maintenance.

1.4 SCHEDULING

A. Schedule insulation application after pressure testing systems and, where required, after installing. Insulation application may begin on segments that have satisfactory test results.

PART 2 - PRODUCTS

1.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products in accordance with ASTM E84, by a testing agency acceptable to authorities having jurisdiction. Factory label insulation, jacket materials, adhesive, mastic, tapes, and cement material containers with appropriate markings of applicable testing agency.

1. All Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.

2.2 INSULATION MATERIALS

A. Products shall not contain asbestos, lead, mercury, or mercury compounds.

B. Flexible Elastomeric: Closed-cell or expanded-rubber materials; suitable for maximum use temperature between minus 70 deg F and 220 deg F. Comply with ASTM C534/C534M, Type I for tubular materials.

2.3 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.

B. Flexible Elastomeric and Polyolefin Adhesive: Solvent-based adhesive.

1. Flame-spread index is 25 or less and smoke-developed index is 50 or less as tested in accordance with ASTM E84.

2. Wet Flash Point: Below 0 deg F

3. Service Temperature Range: 40 to 200 deg F

4. Color: Black

C. ASJ Adhesive and FSK Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A, for bonding insulation jacket lap seams and joints.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Childers Brand; H. B. Fuller Construction Products.

b. Foster Brand; H. B. Fuller Construction Products.

c. Mon-Eco Industries, Inc.

2.4 SEALANTS

A. Materials shall be as recommended by the insulation manufacturer and shall be compatible with insulation materials, jackets, and substrates.

B. Joint Sealants:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Childers Brand; H. B. Fuller Construction Products.

b. Foster Brand; H. B. Fuller Construction Products.

c. Mon-Eco Industries, Inc.

d. Owens Corning.

2. Permanently flexible, elastomeric sealant.

3. Service Temperature Range: Minus 58 to plus 176 deg F.

4. Color: White or gray.

5. For indoor applications, sealants shall have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. ASJ Flashing Sealants and PVC Jacket Flashing Sealants:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Childers Brand; H. B. Fuller Construction Products.

b. Foster Brand; H. B. Fuller Construction Products.

2. Fire- and water-resistant, flexible, elastomeric sealant.

3. Service Temperature Range: Minus 40 to plus 250 deg F.

4. Color: White.

5. For indoor applications, sealants shall have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.5 FIELD-APPLIED FABRIC-REINFORCING MESH

A. Woven Polyester Mesh: Approximately 1 oz./sq. yd. with a thread count of 10 strands by 10 strands/sq. in., in a Leno weave, for pipe.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Foster Brand; H. B. Fuller Construction Products.

b. Vimasco Corporation.

2.6 TAPES

A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C1136.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. 3M Industrial Adhesives and Tapes Division.

b. Avery Dennison Corporation, Specialty Tapes Division.

c. Ideal Tape Co., Inc., an American Biltrite Company.

d. Knauf Insulation.

2. Width: 3 inches.

3. Thickness: 11.5 mils.

4. Adhesion: 90 ounces force/inch width.

5. Elongation: 2 percent.

6. Tensile Strength: 40 lbf/inch width.

7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.

2.7 SECUREMENTS

A. Bands:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Johns Manville; a Berkshire Hathaway company.

b. RPR Products, Inc.

2. Aluminum: ASTM B209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 1/2 inchwide with wing seal or closed seal.

B. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.

C. Wire: 0.080-inchnickel-copper alloy.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. C & F Wire Products.

    b. Johns Manville; a Berkshire Hathaway company.

    c. RPR Products, Inc.

D. Protective Shielding Piping Enclosures:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Truebro; IPS Corporation.

    b. Zurn Industries, LLC.

2. Description: Manufactured plastic enclosure for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with ADA requirements.

PART 3 - EXECUTION

3.1 PREPARATION

A. Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

B. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless steel surfaces, use demineralized water.

3.2 GENERAL INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping, including fittings, valves, and specialties.

B. Install insulation materials, forms, vapor barriers or retarders, jackets, and of thicknesses required for each item of pipe system, as specified in insulation system schedules.

C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, compress, or otherwise damage insulation or jacket.

D. Install insulation with longitudinal seams at top and bottom (12 o'clock and 6 o'clock positions) of horizontal runs.

E. Install multiple layers of insulation with longitudinal and end seams staggered.

F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

G. Keep insulation materials dry during storage, application, and finishing. Replace insulation materials that get wet during storage or in the installation process before being properly covered and sealed in accordance with the contract documents.

H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

I. Install insulation with least number of joints practical.

J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.

1. Install insulation continuously through hangers and around anchor attachments.

2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends attached to structure with vapor-barrier mastic.

3. Install insert materials and insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.

4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.

K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

L. Install insulation with factory-applied jackets as follows:

1. Draw jacket tight and smooth, but not to the extent of creating wrinkles or areas of compression in the insulation.

2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward-clinching staples along both edges of strip, spaced 4 inches o.c.

3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward-clinching staples along edge at 4 inches o.c.

a. For below-ambient services, apply vapor-barrier mastic over staples.

4. Cover joints and seams with tape, in accordance with insulation material manufacturer's written instructions, to maintain vapor seal.

5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.

M. Cut insulation in a manner to avoid compressing insulation.

N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches in similar fashion to butt joints.

P. For above-ambient services, do not install insulation to the following:

1. Vibration-control devices.

2. Testing agency labels and stamps.

3. Nameplates and data plates.

4. Cleanouts.

3.3 PENETRATIONS

A. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.

1. Seal penetrations with flashing sealant.

2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.

3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least 2 inches.

4. Seal jacket to wall flashing with flashing sealant.

B. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

C. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.

D. Insulation Installation at Floor Penetrations:

1. Pipe: Install insulation continuously through floor penetrations.

3.4 INSTALLATION OF GLASS-FIBER AND MINERAL WOOL INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands, and tighten bands without deforming insulation materials.

2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.

3. For insulation with jackets on above-ambient surfaces, secure laps with outward-clinched staples at 6 inches o.c.

4. For insulation with jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive, as recommended by insulation material manufacturer, and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install prefabricated pipe insulation to outer diameter of pipe flange.

2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.

3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with glass-fiber or mineral-wool blanket insulation.

4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install prefabricated sections of same material as that of straight segments of pipe insulation when available.

2. When prefabricated insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install prefabricated sections of same material as that of straight segments of pipe insulation when available.

2. When prefabricated sections are not available, install fabricated sections of pipe insulation to valve body.

3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.

4. Install insulation to flanges as specified for flange insulation application.

3.5 INSTALLATION OF FIELD-APPLIED JACKETS

A. Where glass-cloth jackets are indicated, install directly over bare insulation or insulation with factory-applied jackets.

1. Draw jacket smooth and tight to surface with 2-inch overlap at seams and joints.

2. Embed glass cloth between two 0.062-inch-thick coats of lagging adhesive.

3. Completely encapsulate insulation with coating, leaving no exposed insulation.

3.6 FINISHES

A. Insulation with ASJ, Glass-Cloth, or Other Paintable Jacket Material: Paint jacket with paint system identified below:

1. Flat Acrylic Finish: Two finish coats over a primer that is compatible with jacket material and finish coat paint. Add fungicidal agent to render fabric mildew proof.

a. Finish Coat Material: Interior, flat, latex-emulsion size.

B. Color: Final color as selected by Engineer. Vary first and second coats to allow visual inspection of the completed Work.

3.7 FIELD QUALITY CONTROL

A. Owner will engage a qualified testing agency to perform tests and inspections.

B. Engage a qualified testing agency to perform tests and inspections.

C. Perform tests and inspections with the assistance of a factory-authorized service representative.

D. Tests and Inspections: Inspect pipe, fittings, strainers, and valves, randomly selected by Engineer, by removing field-applied jacket and insulation in layers in reverse order of their installation. Extent of inspection shall be limited to three locations of straight pipe, three locations of threaded fittings, three locations of welded fittings, two locations of threaded strainers, two locations of welded strainers, three locations of threaded valves, and three locations of flanged valves for each pipe service defined in the "Piping Insulation Schedule, General" Article.

E. All insulation applications will be considered defective if they do not pass tests and inspections.

F. Prepare test and inspection reports.

3.8 PIPING INSULATION SCHEDULE, GENERAL

A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.

3.9 OUTDOOR, ABOVEGROUND PIPING INSULATION SCHEDULE

A. Domestic Water Piping:

1. All Pipe Sizes: Insulation is the following:

a. Flexible Elastomeric: 2 inches thick.

3.10 OUTDOOR, FIELD-APPLIED JACKET SCHEDULE

A. Install jacket over insulation material. For insulation with factory-applied jacket, install the field-applied jacket over the factory-applied jacket.

B. If more than one material is listed, selection from materials listed is Contractor's option.

C. Piping, Exposed:

1. Stainless Steel, Type 316, 0.024 inch thick.

END OF SECTION 220719

SECTION 221116 - DOMESTIC WATER PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. PEX tube and fittings - domestic water.

2. Piping joining materials - domestic water.

3. Transition fittings - domestic water.

B. Related Requirements:

1.2 ACTION SUBMITTALS

A. Product Data:

1. PEX tube and fittings - domestic water.

2. Piping joining materials - domestic water.

3. Transition fittings - domestic water.

4. Dielectric fittings - domestic water.

B. Sustainable Design Submittals:

1. Third-Party Certifications: For each product.

2. Third-Party Certified Life Cycle Assessment: For each product.

1.3 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Piping layout, or BIM model, drawn to scale, showing the items described in this Section, and coordinated with all building trades.

B. System purging and disinfecting activities report.

C. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Installers of pressure-sealed joints are to be certified by pressure-seal joint manufacturer as having been trained and qualified to join piping with pressure-seal pipe couplings and fittings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Domestic water piping, tubing, fittings, joints, and appurtenances intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act, with requirements of authorities having jurisdiction, and with NSF 61 and NSF 372, or be certified in compliance with NSF 61 and NSF 372 by an ANSI-accredited third-party certification body, in that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.

2.2 PIPING MATERIALS

A. Potable-water piping and components are to comply with NSF 14, NSF 61, and NSF 372. Include marking "NSF-pw" on piping.

2.3 PEX TUBE AND FITTINGS - DOMESTIC WATER

A. PEX Tube - Domestic Water:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. NIBCO INC.

b. Sioux Chief Manufacturing Company, Inc.

c. Uponor Inc.

d. Watts Radiant; A WATTS Brand0

e. Zurn Industries, LLC

2. Source Limitations: Obtain PEX tube from single manufacturer.

3. Tube Material: PEX plastic in accordance with ASTM F876 and ASTM F877.

B. PEX Tube Fittings - Domestic Water:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. NIBCO INC.

b. Oatey Co.

c. Uponor Inc.

d. Zurn Industries, LLC

2. Source Limitations: Obtain PEX tube fittings from single manufacturer.

3. Fittings: ASTM F1807, metal insert and copper crimp rings ASTM F1960, cold expansion fittings and reinforcing rings.

C. Manifold: Multiple-outlet, plastic or corrosion-resistant-metal assembly complying with ASTM F876; with plastic or corrosion-resistant-metal valve for each outlet.

2.4 TRANSITION FITTINGS - DOMESTIC WATER

A. General Requirements:

1. Same size as pipes to be joined.

2. Pressure rating at least equal to pipes to be joined.

3. End connections compatible with pipes to be joined.

B. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.

C. Plastic-to-Metal Transition Fittings - Domestic Water:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Uponor Inc. or comparable product by one of the following:

a. aquatherm

b. Charlotte Pipe and Foundry Company

c. Sioux Chief Manufacturing Company, Inc.

d. Spears Manufacturing Company

2. Source Limitations: Obtain plastic-to-metal transition fittings from single source.

3. Description:

a. PVC one-piece fitting with manufacturer's Schedule 80 equivalent dimensions.

b. One end with threaded brass insert and one solvent-cement-socket or threaded end.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS

A. Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below unless otherwise indicated.

B. Flanges and unions may be used for aboveground piping joints unless otherwise indicated.

C. Fitting Option: Extruded-tee connections and brazed joints may be used on aboveground copper tubing.

D. Aboveground domestic water piping, NPS 2 (DN 50) and smaller is to be the following:

1. PEX tube, NPS 2 and smaller.

a. Fittings for PEX tube:

1) ASTM F1807, metal insert and copper crimp rings.

2) ASTM F1960, cold expansion fittings and reinforcing rings.

3) ASSE 1061, push-fit fittings.

3.2 INSTALLATION OF PIPING

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of domestic water piping. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.

B. Install domestic water piping level without pitch and plumb.

C. Rough-in domestic water piping for water-meter installation in accordance with utility company's requirements.

D. Install piping concealed from view and protected from physical contact by building occupants unless otherwise indicated and except in equipment rooms and service areas.

E. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

F. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal, and coordinate with other services occupying that space.

G. Install piping to permit valve servicing.

H. Install nipples, unions, special fittings, and valves with pressure ratings the same as or higher than the system pressure rating used in applications below unless otherwise indicated.

I. Install piping free of sags and bends.

J. Install fittings for changes in direction and branch connections.

K. Install PEX tube with loop at each change of direction of more than 90 degrees.

L. Install unions in copper tubing at final connection to each piece of equipment, machine, and specialty.

3.3 JOINT CONSTRUCTION

A. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.

B. Joints for PEX Tubing, ASTM: Join in accordance with ASTM F1807 for metal insert and copper crimp ring fittings and ASTM F1960 for cold expansion fittings and reinforcing rings.

C. Joints for PEX Tubing, ASSE: Join in accordance with ASSE 1061 for push-fit fittings.

D. Joints for Dissimilar-Material Piping: Make joints using adapters compatible with materials of both piping systems.

3.4 INSTALLATION OF TRANSITION FITTINGS

A. Install transition couplings at joints of dissimilar piping.

B. Transition Fittings in Underground Domestic Water Piping:

1. Fittings for NPS 1-1/2 (DN 40) and Smaller: Fitting-type coupling.

2. Fittings for NPS 2 (DN 50) and Larger: Sleeve-type coupling.

C. Transition Fittings in Aboveground Domestic Water Piping NPS 2 (DN 50) and Smaller: Plastic-to-metal transition fittings.

3.5 INSTALLATION OF DIELECTRIC FITTINGS

A. Install dielectric fittings in piping at connections of dissimilar metal piping and tubing.

B. Dielectric Fittings for NPS 2 (DN 50) and Smaller: Use dielectric couplings or nipples.

3.6 INSTALLATION OF HANGERS AND SUPPORTS

A. Install vinyl-coated hangers for PEX tube, with maximum horizontal spacing and minimum rod diameters, to comply with manufacturer's written instructions, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.

B. Support horizontal piping within 12 inches of each fitting.

C. Support vertical runs of PEX tube to comply with manufacturer's written instructions, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.

3.7 PIPING CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. When installing piping adjacent to equipment and machines, allow space for service and maintenance.

C. Connect domestic water piping to exterior water-service piping. Use transition fitting to join dissimilar piping materials.

D. Connect domestic water piping to water-service piping with shutoff valve; extend and connect to the following:

1. Domestic Water Booster Pumps: Cold-water suction and discharge piping.

2. Water Heaters: Cold-water inlet and hot-water outlet piping in sizes indicated, but not smaller than sizes of water heater connections.

3. Plumbing Fixtures: Cold- and hot-water-supply piping in sizes indicated, but not smaller than that required by plumbing code.

3.8 CLEANING

A. Clean and disinfect potable domestic water piping as follows:

1. Purge new piping and parts of existing piping that have been altered, extended, or repaired before using.

2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction; if methods are not prescribed, use procedures described in either AWWA C651 or AWWA C652 or follow procedures described below:

a. Flush piping system with clean, potable water until dirty water does not appear at outlets.

b. Fill and isolate system in accordance with either of the following:

1) Fill system or part thereof with water/chlorine solution with at least 50 ppm of chlorine. Isolate with valves and allow to stand for 24 hours.

c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.

d. Repeat procedures if biological examination shows contamination.

e. Submit water samples in sterile bottles to authorities having jurisdiction.

B. Clean non-potable domestic water piping as follows:

1. Purge new piping and parts of existing piping that have been altered, extended, or repaired before using.

2. Use purging procedures prescribed by authorities having jurisdiction or; if methods are not prescribed, follow procedures described below:

a. Flush piping system with clean, potable water until dirty water does not appear at outlets.

b. Submit water samples in sterile bottles to authorities having jurisdiction. Repeat procedures if biological examination shows contamination.

C. Prepare and submit reports of purging and disinfecting activities. Include copies of water-sample approvals from authorities having jurisdiction.

D. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.

3.9 ADJUSTING

A. Perform the following adjustments before operation:

1. Close drain valves, hydrants, and hose bibbs.

2. Open shutoff valves to fully open position.

3. Open throttling valves to proper setting.

4. Adjust balancing valves in hot-water-circulation return piping to provide adequate flow.

a. Manually adjust ball-type balancing valves in hot-water-circulation return piping to provide hot-water flow in each branch.

b. Adjust calibrated balancing valves to flows indicated.

5. Remove plugs used during testing of piping and for temporary sealing of piping during installation.

6. Remove and clean strainer screens. Close drain valves and replace drain plugs.

7. Remove filter cartridges from housings and verify that cartridges are as specified for application where used and are clean and ready for use.

8. Check plumbing specialties and verify proper settings, adjustments, and operation.

3.10 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Piping Inspections:

a. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction.

b. During installation, notify authorities having jurisdiction at least one day before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction:

1) Roughing-in Inspection: Arrange for inspection of piping before concealing or closing in after installation and before setting fixtures.

2) Final Inspection: Arrange for authorities having jurisdiction to observe tests specified in "Piping Tests" Subparagraph below and to ensure compliance with requirements.

c. Reinspection: If authorities having jurisdiction find that piping will not pass tests or inspections, make required corrections and arrange for reinspection.

d. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

2. Piping Tests:

a. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.

b. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit a separate report for each test, complete with diagram of portion of piping tested.

c. Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.

d. Cap and subject piping to static water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow it to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.

e. Repair leaks and defects with new materials, and retest piping or portion thereof until satisfactory results are obtained.

f. Prepare reports for tests and for corrective action required.

B. Domestic water piping will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

END OF SECTION 221116

SECTION 221316 - SANITARY WASTE AND VENT PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Galvanized steel pipe and fittings.
2. Specialty pipe fittings.
3. Encasement for underground metal piping.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Sustainable Design Submittals:

C. Shop Drawings: For hubless, single-stack drainage system. Include plans, elevations, sections, and details.

1.3 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Plans and elevations, or Building Information Model (BIM) drawn to scale, showing items described in this Section and coordinated with all building trades.

B. Field quality-control reports.

1.4 WARRANTY

A. Listed manufacturers to provide labeling and warranty of their respective products.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Components and installation are capable of withstanding the following minimum working pressure unless otherwise indicated:

1. Waste, Force-Main Piping: 50 psig.

2.2 PIPING MATERIALS

A. Piping materials to bear label, stamp, or other markings of specified testing agency.

B. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.3 GALVANIZED-STEEL PIPE AND FITTINGS

A. Galvanized-Steel Pipe: ASTM A53/A53M, Type E, standard-weight cast iron. Include square-cut-grooved or threaded ends matching joining method.

B. Cast-Iron Drainage Fittings: Galvanized; ASME B16.12, threaded.

C. Steel Pipe Pressure Fittings:

1. Steel Pipe Nipples: Galvanized; ASTM A733, made of ASTM A53/A53M or ASTM A106/A106M, Schedule 40, seamless steel pipe. Include ends matching joining method.
2. Malleable-Iron Unions: ASME B16.39, Class 150, hexagonal-stock body with ball-and-socket, metal-to-metal, bronze seating surface; and female threaded ends.
3. Gray-Iron, Threaded Fittings: Galvanized; ASME B16.4, Class 125, standard pattern.

D. Cast-Iron Flanges: ASME B16.1, Class 125.

1. Flange Gasket Materials: ASME B16.21, full-face, flat, nonmetallic, asbestos-free, 1/8-inch (maximum thickness unless thickness or specific material is indicated.
2. Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.

E. Grooved-Joint, Galvanized-Steel-Pipe Appurtenances:

1. Galvanized, Grooved-End Fittings for Galvanized-Steel Piping: ASTM A536, ductile-iron castings; ASTM A47/A47M, malleable-iron castings; ASTM A234/A234M, forged steel fittings; or ASTM A106/A106M, steel pipes with dimensions matching ASTM A53/A53M, steel pipe, and complying with AWWA C606 for grooved ends.

2. Grooved Mechanical Couplings for Galvanized-Steel Piping: ASTM F1476, Type I. Include ferrous housing sections with continuous curved keys, EPDM-rubber gasket suitable for hot and cold water, and bolts and nuts.

2.4 SPECIALTY PIPE FITTINGS

A. Transition Couplings:

1. General Requirements: Fitting or device for joining piping with small differences in ODs or of different materials. Include end connections of same size as and compatible with pipes to be joined.

2. Fitting-Type Transition Couplings: Manufactured piping coupling or specified piping system fitting.

B. Dielectric Fittings:

1. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.

PART 3 - EXECUTION

3.1 INSTALLATION OF PIPING

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems.

1. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations.

2. Install piping as indicated unless deviations to layout are approved on coordination drawings.

B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

E. Install piping to permit valve servicing.

F. Install piping at indicated slopes.

G. Install piping free of sags and bends.

H. Install fittings for changes in direction and branch connections.

I. Install piping to allow application of insulation.

J. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends.

1. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical.

2. Use long-turn, double Y-branch, and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe.

a. Straight tees, elbows, and crosses may be used on vent lines.

3. Do not change direction of flow more than 90 degrees.

4. Use proper size of standard increasers and reducers if pipes of different sizes are connected.

    a. Reducing size of waste piping in direction of flow is prohibited.

K. Lay buried building waste piping beginning at low point of each system.

1. Install true to grades and alignment indicated, with unbroken continuity of invert. Place hub ends of piping upstream.

2. Install required gaskets according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

3. Maintain swab in piping and pull past each joint as completed.

L. Install aboveground ABS piping in accordance with ASTM D2661.

M. Install force mains at elevations indicated.

N. Plumbing Specialties:

O. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

3.2 INSTALLATION OF SPECIALTY PIPE FITTINGS

A. Transition Couplings:

1. Install transition couplings at joints of piping with small differences in ODs.

2. In Aboveground Force Main Piping: Fitting-type transition couplings.

3.3 INSTALLATION OF HANGERS AND SUPPORTS

A. Comply with requirements for pipe hanger and support devices and installation specified in .

1. Install stainless steel pipe hangers for horizontal piping in corrosive environments.

2. Install stainless steel pipe support clamps for vertical piping in corrosive environments.

3. Vertical Piping: MSS Type 8 or Type 42 clamps.

4. Install individual, straight, horizontal piping runs:

    a. 100 Ft. (30 m) and Less: MSS Type 1, adjustable, steel clevis hangers.

    b. Longer Than 100 Ft. (30 m): MSS Type 43, adjustable roller hangers.

c. Longer Than 100 Ft. (30 m) if Indicated: MSS Type 49, spring cushion rolls.

5. Multiple, Straight, Horizontal Piping Runs 100 Ft. (30 m) or Longer: MSS Type 44 pipe rolls. Support pipe rolls on trapeze.

6. Base of Vertical Piping: MSS Type 52 spring hangers.

B. Install hangers for ABS piping, with maximum horizontal spacing and minimum rod diameters, to comply with manufacturer's written instructions, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.

C. Support horizontal piping and tubing within 12 inches of each fitting and coupling.

D. Support vertical runs of ABS piping to comply with manufacturer's written instructions, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.

3.4 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect soil and waste piping to exterior sanitary sewerage piping. Use transition fitting to join dissimilar piping materials.

C. Connect waste and vent piping to the following:

1. Plumbing Fixtures: Connect waste piping in sizes indicated, but not smaller than required by plumbing code.

2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.

3. Plumbing Specialties: Connect waste and vent piping in sizes indicated, but not smaller than required by plumbing code.

4. Install test tees (wall cleanouts) in conductors near floor and floor cleanouts with cover flush with floor.

D. Connect force-main piping to the following:

1. Sanitary Sewer: To exterior force main.

2. Sewage Pump: To sewage pump discharge.

E. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.

3.5 IDENTIFICATION

A. Identify exposed sanitary waste and vent piping.

3.6 FIELD QUALITY CONTROL

A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.

2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.

B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.

C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

D. Test sanitary waste and vent piping in accordance with procedures of authorities having jurisdiction or, in absence of published procedures, as follows:

1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired.

a. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.

2. Leave uncovered and unconcealed new, altered, extended, or replaced waste and vent piping until it has been tested and approved.

a. Expose work that was covered or concealed before it was tested.

3. Roughing-in Plumbing Test Procedure: Test waste and vent piping except outside leaders on completion of roughing-in.

a. Close openings in piping system and fill with water to point of overflow, but not less than 10 ft. head of water.

b. From 15 minutes before inspection starts to completion of inspection, water level must not drop.

c. Inspect joints for leaks.

4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight.

    a. Plug vent-stack openings on roof and building drains where they leave building. Introduce air into piping system equal to pressure of 1 inch wg.

    b. Use U-tube or manometer inserted in trap of water closet to measure this pressure.

    c. Air pressure must remain constant without introducing additional air throughout period of inspection.

    d. Inspect plumbing fixture connections for gas and water leaks.

5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.

6. Prepare reports for tests and required corrective action.

E. Test force-main piping in accordance with procedures of authorities having jurisdiction or, in absence of published procedures, as follows:

1. Leave uncovered and unconcealed new, altered, extended, or replaced force-main piping until it has been tested and approved.

    a. Expose work that was covered or concealed before it was tested.

2. Cap and subject piping to static-water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials.

    a. Isolate test source and allow to stand for four hours.

    b. Leaks and loss in test pressure constitute defects that must be repaired.

3. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.

4. Prepare reports for tests and required corrective action.

3.7 CLEANING AND PROTECTION

A. Clean interior of piping. Remove dirt and debris as work progresses.

B. Protect sanitary waste and vent piping during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

C. Place plugs in ends of uncompleted piping at end of day and when work stops.

D. Exposed Plastic Piping: Protect ABS plumbing vents exposed to sunlight with two coats of water-based latex paint.

E. Repair damage to adjacent materials caused by waste and vent piping installation.

3.8 PIPING SCHEDULE

A. Aboveground sanitary-sewage force mains NPS 1-1/2 and NPS 2 (DN 40 and DN 50) are to be the following:

1. Hard copper tube, Type L; copper pressure fittings; and soldered joints.

2. Galvanized-steel pipe, pressure fittings, and threaded joints.

B. Aboveground sanitary-sewage force mains NPS 2-1/2 to NPS 6 (DN 65 to DN 150) are to be the following:

1. Hard copper tube, Type L; copper pressure fittings; and soldered joints.

2. Galvanized-steel pipe, pressure fittings, and threaded joints.

3. Grooved-end, galvanized-steel pipe; grooved-joint, galvanized-steel-pipe appurtenances; and grooved joints.

END OF SECTION 221316

SECTION 231113 - FACILITY FUEL-OIL PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fuel-oil pipes, tubes, and fittings.
2. Piping specialties.
3. Joining materials.
4. Specialty valves.
5. Mechanical leak-detection valves.
6. Leak-detection and monitoring system.
7. Labels and identification.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Fuel-oil pipes, tubes, and fittings.
2. Double-containment pipe and fittings.
3. Piping specialties.
4. Joining materials.
5. Specialty valves.
6. Mechanical leak-detection valves.
7. Leak-detection and monitoring system.
8. Labels and identification.

B. Product Data Submittals:

1. Include construction details, material descriptions, and dimensions of individual components and profiles.
2. Include rated capacities, pressure ratings, operating characteristics, electrical

characteristics, settings, and furnished specialties and accessories.

C. Shop Drawings: For fuel-oil piping.

1. Include plans, elevations sections, hangers, and supports for multiple pipes.

2. Include details of location of anchors, alignment guides, and expansion joints and loops.

3. Scale: 1/4 inch per foot.

1.3 INFORMATIONAL SUBMITTALS

A. Coordination Drawings:

1. Plans and details, or Building Information Model (BIM), drawn to scale, on which fuel-oil piping and tanks are shown and coordinated with other installations, using input from installers of the items involved.

B. Brazing certificates.

C. Welding certificates.

D. Seismic qualification certificate.

E. Field quality-control reports.

F. Sample Warranty: For special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fuel-oil equipment and accessories.

1. Indicate actual installed items by marking submittals with an arrow or box.

1.5 QUALITY ASSURANCE

A. Brazing: Qualify processes and operators in accordance with ASME Boiler and Pressure Vessel Code: Section IX.

B. Steel Support Welding Qualifications: Qualify procedures and personnel in accordance with 0AWS D1.1/D1.1M, "Structural Welding Code - Steel."

C. Pipe Welding Qualifications: Qualify procedures and personnel in accordance with ASME Boiler and Pressure Vessel Code.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Lift and support fuel-oil storage tanks only at designated lifting or supporting points, as indicated on Shop Drawings. Do not move or lift tanks unless empty.

B. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.

C. Store PE and PE-coated pipes, tubes, and valves in manner to avoid damaging the coating and to protect from direct sunlight.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and use.

B. Comply with ASME B31.9, "Building Services Piping," for fuel-oil piping materials, installation, testing, and inspecting.

C. Fuel-Oil Valves: Comply with UL 842 and have service mark initials "WOG" permanently marked on valve body.

D. Comply with requirements of the EPA and of state and local authorities having jurisdiction.

2.2 FUEL-OIL PIPES, TUBES, AND FITTINGS

A. Steel Pipe: ASTM A53/A53M, black steel, Schedule 40, Type E or S, Grade B.

1. Wrought-Steel Welding Fittings: ASTM A234/A234M, for butt and socket welding.

2. Forged-Steel Flanges and Flanged Fittings: ASME B16.5, minimum Class 150, including bolts, nuts, and gaskets of the following material group, end connections, and facings:

a. Material Group: 1.1.

b. End Connections: Threaded or butt welding to match pipe.

c. Lapped Face: Not permitted underground.

d. Gasket Materials: Asbestos free, ASME B16.20 metallic, or ASME B16.21 nonmetallic; gaskets compatible with fuel oil.

e. Bolts and Nuts: ASME B18.2.1, zinc alloy-plated steel.

3. Protective Coating for Underground Piping: Factory-applied, three-layer coating of epoxy, adhesive, and PE.

a. Joint Cover Kits: Epoxy paint, adhesive, and heat-shrink PE sleeves.

2.3 PIPING SPECIALTIES

A. Strainers - Y-Pattern:

1. Body: ASTM A126, Class B, cast iron with bolted cover and bottom drain connection.

2. End Connections: Threaded ends for NPS 2 and smaller; flanged ends for NPS 2-1/2 and larger.

3. Strainer Screen: 60-mesh startup strainer and perforated stainless steel basket with 50 percent free area.

4. CWP Rating: 125 psig.

B. Strainers - Basket:

1. Body: ASTM A126, Class B, high-tensile cast iron with bolted cover and bottom drain connection.

2. End Connections: Threaded ends for NPS 2 and smaller; flanged ends for NPS 2-1/2 and larger.

3. Strainer Screen: 60-mesh startup strainer and perforated stainless steel basket with 50 percent free area.

4. CWP Rating: 125 psig.

C. Strainers - T-Pattern:

1. Body: Ductile or malleable iron with removable access coupling and end cap for strainer maintenance.

2. End Connections: Grooved ends.

3. Strainer Screen: 60-mesh startup strainer and perforated stainless steel basket with 57 percent free area.

4. CWP Rating: 750 psig.

D. Air Vents - Manual:

1. Body: Bronze.

2. Internal Parts: Nonferrous.

3. Operator: Screwdriver or thumbscrew.

4. Inlet Connection: NPS 1/2.

5. Discharge Connection: NPS 1/8.

6. CWP Rating: 150 psig.

7. Maximum Operating Temperature: 225 deg F.

2.4 JOINING MATERIALS

A. Welding Filler Metals: Comply with AWS D10.12/D10.12M for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

B. Brazing Filler Metals: Alloy with melting point greater than 1000 deg F complying with AWS A5.8/A5.8M. Brazing alloys containing more than 0.05 percent phosphorus are prohibited.

C. Bonding Adhesive for RTRP and RTRF: As recommended by piping and fitting manufacturer.

2.5 LABELS AND IDENTIFICATION

A. Detectable Warning Tape: Acid- and alkali-resistant PE-film warning tape manufactured for marking and identifying underground utilities, minimum of 6 inches wide and 4 mils thick, continuously inscribed with description of utility, with metallic core encased in a protective jacket for corrosion protection, and detectable by metal detector when tape is buried up to 30 inches deep; colored yellow.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas for compliance with requirements for installation tolerances and other conditions affecting performance of fuel-oil piping.

B. Examine installation of fuel-burning equipment and fuel-handling and storage equipment to verify actual locations of piping connections before installing fuel-oil piping.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Close equipment shutoff valves before turning off fuel oil to premises or piping section.

B. Comply with NFPA 30 and NFPA 31 requirements for prevention of accidental ignition.

3.3 INSTALLATION OF OUTDOOR PIPING

A. Steel Piping with Protective Coating:

1. Apply joint cover kits to pipe after joining, to cover, seal, and protect joints.

2. Repair damage to PE coating on pipe, complying with protective coating manufacturer's written instructions. Review protective coating damage with Engineer prior to repair.

3. Replace pipe having damaged PE coating with new pipe.

B. Install vent pipe at a minimum slope of 2 percent downward toward fuel-oil storage tank sump.

C. Assemble and install entry boots for pipe penetrations through sump sidewalls for liquidtight joints.

D. Install metal pipes and tubes, fittings, valves, and flexible connectors at piping connections to aboveground storage tanks and underground storage tanks.

E. Install fittings for changes in direction in rigid pipe.

F. Install system components with pressure rating equal to or greater than system operating pressure.

3.4 INSTALLATION OF INDOOR PIPING

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements are used to size pipe and calculate friction loss, expansion, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.

B. Arrange for pipe spaces, chases, slots, sleeves, and openings in building structure during progress of construction to allow for mechanical installations.

C. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

E. Install piping above accessible ceilings at a height that allows sufficient space for ceiling panel removal.

F. Install piping free of sags and bends.

G. Install fittings for changes in direction and branch connections.

H. Comply with requirements for equipment specifications for roughing-in requirements.

I. Conceal pipe installations in walls, pipe spaces, or utility spaces; above ceilings; below grade or floors; and in floor channels unless indicated to be exposed to view.

J. Prohibited Locations:

1. Do not install fuel-oil piping in or through HVAC ducts and plenums, clothes or trash chutes, chimneys or gas vents (flues), ventilating ducts, or dumbwaiter or elevator shafts.

2. Do not install fuel-oil piping in solid walls or partitions.

K. Use eccentric reducer fittings to make reductions in pipe sizes. Install fittings with level side down.

L. Connect branch piping from top or side of horizontal piping.

M. Install unions in pipes NPS 2 and smaller at final connection to each piece of equipment and elsewhere as indicated. Unions are not required on flanged devices.

N. Do not use fuel-oil piping as grounding electrode.

3.5 INSTALLATION OF VALVES

A. Install manual fuel-oil shutoff valves on branch connections to fuel-oil appliance.

B. Install valves in accessible locations.

C. Install oil safety valves at inlet of each oil-fired appliance.

D. Install pressure relief valves in distribution piping between the supply and return lines.

E. Install manual air vents at high points in fuel-oil piping.

F. Install emergency shutoff valves at dispensers.

3.6 PIPING JOINT CONSTRUCTION

A. Ream ends of pipes and tubes and remove burrs.

B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

C. Welded Joints: Construct joints in accordance with AWS D10.12/D10.12M, using qualified processes and welding operators in accordance with "Quality Assurance" Article.

1. Bevel plain ends of steel pipe.

2. Patch factory-applied protective coating as recommended in writing by manufacturer at field welds and where damage to coating occurs during construction.

D. Flanged Joints: Install gasket material, size, type, and thickness for service application. Install gasket concentrically positioned.

3.7 INSTALLATION OF HANGERS AND SUPPORTS

A. Install hangers for steel piping, with maximum horizontal spacing and minimum rod diameters, to comply with MSS SP-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.

B. Support horizontal piping within 12 inches of each fitting and coupling.

C. Support vertical runs of steel piping to comply with MSS SP-58, locally enforced codes, and authorities having jurisdiction requirements, whichever are most stringent.

3.8 PIPING CONNECTIONS

A. Where installing piping adjacent to equipment, allow space for service and maintenance.

B. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment having flanged pipe connection.

C. Connect piping to equipment with shutoff valve and union. Install union between valve and equipment.

D. Install flexible piping connectors at final connection to burners, oil-fired appliances, and day tanks.

3.9 LABELING AND IDENTIFYING

A. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplates and signs on or near each service regulator, service meter, and earthquake valve.

1. Text: In addition to identifying unit, distinguish between multiple units; inform operator of operational requirements; indicate safety and emergency precautions; and warn of hazards and improper operations.

3.10 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Piping Pressure Test: Minimum hydrostatic or pneumatic test-pressures measured at highest point in system.

a. Fuel-Oil Distribution Piping:

1) Hydrostatic: Minimum 150 percent of maximum anticipated pressure or 5 psig.

2) Pneumatic: Minimum 110 percent of maximum anticipated pressure.

3) Pressure to be maintained while complete visual inspection of all joints and connections is conducted.

4) In no case is test pressure to be less than a gauge pressure of 5 psi measured at the highest point of the system.

5) In no case is test pressure to be maintained for less than 10 minutes.

b. Suction Piping: Minimum 20 in. Hg for minimum 30 minutes.

c. Isolate storage tanks if test pressure in piping will cause pressure in storage tanks to exceed 10 psig.

B. Inspect and test fuel-oil piping in accordance with NFPA 31, "Tests of Piping" Paragraph; and in accordance with requirements of authorities having jurisdiction.

C. Test leak-detection and monitoring system for accuracy by manually operating sensors and checking against alarm panel indication.

D. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Bleed air from fuel-oil piping using manual air vents.

F. Fuel-oil piping and equipment will be considered defective if they do not pass tests and inspections.

G. Prepare test and inspection reports.

3.11 OUTDOOR PIPING SCHEDULE

A. Aboveground fuel-oil piping to be the following:

1. NPS 2 (DN 50) Pipe Size and Smaller: Steel pipe, steel or malleable-iron threaded fittings, and threaded joints.

2. NPS 2-1/2 (DN 65) Pipe Size and Larger: Steel pipe, steel welding fittings, and welded joints.

3.12 SHUTOFF VALVE SCHEDULE

A. Valves for aboveground distribution piping NPS 2 (DN 50) and smaller to be the following:

1. One-piece, bronze ball valve with bronze trim.

2. Two-piece, full-port, bronze ball valves with bronze trim.

B. Distribution piping valves for pipe NPS 2-1/2 (DN 65) and larger to be the following:

1. Two-piece, full-port, bronze ball valves with bronze trim.

2. Bronze, lubricated plug valve.

C. Valves in branch piping for single appliance to be the following:

1. One-piece, bronze ball valve with bronze trim.

2. Two-piece, full-port, bronze ball valves with bronze trim.

END OF SECTION 231113

SECTION 231323 - FACILITY ABOVEGROUND FUEL-OIL STORAGE TANKS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Aboveground fuel-oil storage tanks, horizontal, steel.

2. Aboveground fuel-oil storage tanks, steel, with containment dike.

3. Aboveground fuel-oil storage tank, shop painting.

4. Aboveground fuel-oil storage tank accessories.

5. Fuel oil.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, and dimensions of individual components and profiles.

2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

3. Fuel-oil storage tank accessories.

4. Fuel-oil leak-detection and monitoring system.

B. Shop Drawings: For aboveground fuel-oil storage tanks.

1. Include plans, elevations, sections, concrete bases, anchors, and lifting or supporting points.

2. Indicate details of equipment assemblies. Indicate dimensions, components, and location and size of each field connection.

3. Shop Drawing Scale: 1/4 inch per foot.

1.3 INFORMATIONAL SUBMITTALS

A. Site Survey: Plans, drawn to scale, on which fuel-oil storage tanks are indicated and coordinated with other services and utilities.

B. Welding certificates.

C. Field quality-control reports.

D. Sample Warranty: For special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fuel-oil equipment and accessories to include in emergency, operation, and maintenance manuals.

1.5 QUALITY ASSURANCE

A. Steel Support Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Lift and support fuel-oil storage tanks only at designated lifting or supporting points, as shown on Shop Drawings. Do not move or lift tanks unless empty.

1.7 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of fuel-oil storage tanks that fail in materials or workmanship within specified warranty period.

1. Storage Tanks:

a. Failures include, but are not limited to, the following when used for storage of fuel oil at temperatures not exceeding 150 deg F:

1) Structural failures including cracking, breakup, and collapse.

2) Corrosion failure including external and internal corrosion of steel tanks.

b. Warranty Period: 30 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Wind Performance: Aboveground fuel-oil storage tanks are to withstand the effects of wind determined in accordance with ASCE/SEI 7. See .

2.2 ABOVEGROUND FUEL-OIL STORAGE TANKS, HORIZONTAL, STEEL

A. Source Limitations: Obtain horizontal, steel, aboveground fuel-oil storage tanks from single manufacturer.

B. Description:

1. UL 142 and STI F921, double-wall, horizontal steel tank; with primary- and secondary-containment walls and interstitial space.

C. Construction: Fabricated with welded carbon steel; suitable for operation at atmospheric pressure and for storing fuel oil with specific gravity up to 1.1 and with maintained temperature up to 150 deg F.

D. Supports:

1. Manufacturer's standard structural steel welded to tank.

E. Capacities and Characteristics:

1. Capacity: 3000 gal.

2. Manholes:

a. Number Required: 1.

3. Fuel: Diesel.

2.3 ABOVEGROUND FUEL-OIL STORAGE TANK ACCESSORIES

A. Tank Manholes:

1. 22-inch- minimum diameter; bolted, flanged, and gasketed; centered on top of tank.

B. Threaded pipe connection fittings on top of tank, for fill, supply, return, vent, sounding, and gauging. Include cast-iron plugs for shipping.

C. Striker Plates: Inside tank, on bottom below fill, vent, sounding, gauge, and other tube openings.

D. Lifting Lugs: For handling and installation.

E. Ladders:

1. Carbon-steel ladder inside tank, anchored to top and bottom, and located as indicated. Include reinforcement of tank at bottom of ladder.

F. Supply Tube: Extension of supply piping fitting into tank, terminating 6 inches above tank bottom and cut at a 45-degree angle.

G. Sounding and Gauge Tubes: Extension of fitting into tank, terminating 6 inches above tank bottom and cut at a 45-degree angle.

2.4 SOURCE QUALITY CONTROL

A. Pressure test and inspect fuel-oil storage tanks, after fabrication and before shipment, in accordance with ASME and the following:

1. Horizontal, Double-Wall Steel Aboveground Fuel-Oil Storage Tanks: UL 142, STI F921, and STI R931.

B. Affix standards organization's code stamp.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in for aboveground fuel-oil storage tanks to verify actual locations.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF ABOVEGROUND FUEL-OIL STORAGE TANKS

A. Install tank in accordance with NFPA 30 and 31 by a tank-manufacturer-trained and -certified contractor.

B. Install tank bases and supports.

C. Connect piping and vent fittings.

D. Install ground connections.

E. Install tank leak-detection and monitoring devices.

F. Install steel aboveground fuel-oil storage tanks in accordance with STI R912.

G. Fill storage tanks with fuel oil.

3.3 INSTALLATION OF LEAK-DETECTION AND MONITORING SYSTEM

A. Install leak-detection and monitoring system. Install alarm panel where indicated on Drawings.

1. Double-Wall, Fuel-Oil Storage Tanks: Use factory-installed integral probes in interstitial space.

2. Install liquid-level gauge.

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

B. Perform the following tests and inspections with the assistance of a factory-authorized service representative:

1. Tanks: Minimum hydrostatic or compressed-air test pressures for fuel-oil storage tanks that have not been factory tested and do not bear the ASME code stamp or a listing mark acceptable to authorities having jurisdiction:

a. Double-Wall Tanks:

1) Inner Tanks: Minimum 3 psig and maximum 5 psig.

2) Interstitial Space: Minimum 3 psig and maximum 5 psig, or 5.3-in. Hg vacuum.

b. Where vertical height of fill and vent pipes is such that the static head imposed on the bottom of the tank is greater than 10 psig, hydrostatically test the tank and fill and vent pipes to a pressure equal to the static head thus imposed.

c. Maintain the test pressure for one hour.

C. Aboveground fuel-oil storage tanks will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 231323

SECTION 260519 – LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Copper building wire rated 600 V or less.

2. Metal-clad cable, Type MC, rated 600 V or less.

3. Connectors, splices, and terminations rated 600 V and less.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Product Schedule: Indicate type, use, location, and termination locations.

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

PART 2 - PRODUCTS

2.1 COPPER BUILDING WIRE

A. Description: Flexible, insulated and uninsulated, drawn copper current-carrying conductor with an overall insulation layer or jacket, or both, rated 600 V or less.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Alpha Wire; brand of Belden, Inc.

2. Belden Inc.

3. General Cable; Prysmian Group North America.

4. Okonite Company (The).

5. Southwire Company, LLC.

C. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

2. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

E. Conductor Insulation:

1. Type NM: Comply with UL 83 and UL 719.

2. Type RHH and Type RHW-2: Comply with UL 44.

3. Type USE-2 and Type SE: Comply with UL 854.

4. Type THHN and Type THWN-2: Comply with UL 83.

5. Type THW and Type THW-2: Comply with NEMA WC-70/ICEA S-95-658 and UL 83.

6. Type XHHW-2: Comply with UL 44.

2.2 METAL-CLAD CABLE, TYPE MC

A. Description: A factory assembly of one or more current-carrying insulated conductors in an overall metallic sheath.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Alpha Wire; brand of Belden, Inc.

2. Belden Inc.

3. Okonite Company (The).

4. Southwire Company, LLC.

C. Standards:

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

2. Comply with UL 1569.

3. Conductor and Cable Marking: Comply with wire and cable marking according to UL's "Wire and Cable Marking and Application Guide."

D. Circuits:

1. Single circuit.

2. Power-Limited Fire-Alarm Circuits: Comply with UL 1424.

E. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.

F. Ground Conductor: Bare.

G. Conductor Insulation:

1. Type TFN/THHN/THWN-2: Comply with UL 83.

2. Type XHHW-2: Comply with UL 44.

H. Armor: Aluminum, interlocked.

I. Jacket: PVC applied over armor.

2.3 CONNECTORS AND SPLICES

A. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. 3M Electrical Products.

2. ABB, Electrification Business.

3. O-Z/Gedney; brand of Emerson Electric Co., Automation Solutions, Appleton Group.

C. Jacketed Cable Connectors: For steel and aluminum jacketed cables, zinc die-cast with set screws, designed to connect conductors specified in this Section.

D. Lugs: One piece, seamless, designed to terminate conductors specified in this Section.

1. Material: Copper.

2. Type: One hole with standard barrels.

3. Termination: Compression.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Feeders:

1. Copper; solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

B. Branch Circuits:

1. Copper, Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

A. Exposed Feeders: Type XHHW-2, single conductors in raceway.

B. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspaces: Metal-clad cable, Type MC.

C. Exposed Branch Circuits, Including in Crawlspaces: Type THHN/THWN-2, single conductors in raceway.

D. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Metal-clad cable, Type MC.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.

B. Complete raceway installation between conductor and cable termination points according to Section 260533 "Identification for Electrical Systems" prior to pulling conductors and cables.

C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.

F. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."

3.4 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.

1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.

B. Wiring at Outlets: Install conductor at each outlet, with at least 6 inch of slack.

3.5 IDENTIFICATION

A. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

B. Identify each spare conductor at each end with identity number and location of other end of conductor and identify as spare conductor.

END OF SECTION 260519

SECTION 260526 – GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 – GENERAL

1.1 DESCRIPTION

A. The work of this section consists of providing labor, materials, tools, appliances and miscellaneous accessories associated with grounding of the electrical system as required by and as is indicated herein and/or on the Drawings.

B. Main electric service equipment, raceways, motors, panelboards and other electrical equipment shall be effectively and permanently grounded to a grounding electrode. This electrode shall be the nearest available effectively grounded structural metal member of the structure or the nearest available effectively grounded metal water pipe and also a driven rod. Grounding connections and conductor sizes shall be in accordance with requirements of the National Electrical Code, Article 250, and local ordinances, and as described herein.

C. A separate grounding conductor, sized in accordance with NEC Table 250-95 shall be provided in the conduit with the circuit conductors for all feeder and branch circuits. The grounding conductor may be bare or insulated copper; however, if this conductor is insulated, the insulating covering shall be a green color. Conduit runs shall be increased in size where necessary to accommodate the grounding conductor in addition to circuit conductors. The electrical continuity of all conduit runs shall be verified and corrected where necessary.

D. Isolated Ground Connectors shall be insulated.

E. Additional grounding conductors and conduit shall be provided as specified herein or shown on the drawings. All conduit for grounding system conductors, not run in conduit with circuit conductors, shall be rigid steel conduit.

F. All electrical equipment enclosures and conductor enclosures shall be grounded. This includes but is not limited to metal raceways, outlet boxes, cabinets, switch boxes, motor frames, transformer cases and metallic enclosure for all electrical equipment.

G. Under no circumstances shall neutral conductors again be grounded after they have been grounded once at the transformer secondary.

H. Panelboards shall be equipped with a neutral bar which is insulated from the enclosure, and a grounding bar which is bonded to the enclosure. The grounding bar shall provide for terminating the green equipment grounding conductors in the panelboard or motor control center cabinets. The grounding bar shall be bonded to the cabinet. Neutral busses shall be isolated from ground except at the transformer ground connection.

I. Types of grounding in this section includes the following:

1. Underground metal water piping.

2. Grounding electrodes.

3. Service equipment.

4. Enclosures.

5. Systems.

6. Equipment.

J. Requirements of this section apply to electrical grounding work specified elsewhere in these specifications.

K. Provide Bonding Jumper across water meter.

PART 2 - PRODUCTS

2.1 GROUNDING

A. Materials and Components:

1. General: Except as otherwise indicated, provide electrical grounding and bonding systems indicated, with assembly of materials including, but not necessarily limited to, cables/wires, connectors, terminals (solderless lugs), grounding rods/electrodes, bonding jumper braid, surge arrestors and other items and accessories needed for complete installation.

2. Where more than one type meets indicated requirements, selection is Installer's option.

3. Where materials or components are not otherwise indicated, comply with NEC, UL and IEEE requirements and with established industry standards for applications indicated.

4. Bonding Jumper Braid: Copper braided tape, constructed of 30-gage bare copper wires and properly sized for indicated applications.

5. Flexible Jumper Strap: Flexible flat conductor, 480 strands of 30-gage bare copper wire, 3/4" wide, 9-1/2" long, 48, 250 CM. Protect braid with copper bolt hole ends with holes sized for 3/8" dia. bolts.

6. Grounding Conductors: Unless otherwise indicated, provide electrical grounding conductors for grounding connections matching power supply wiring materials and sized according to NEC.

7. Connectors, Terminals and Clamps: Provide electrical bonding plates, connectors terminals and clamps as recommended by bonding plate, connector, terminal and clamp manufacturers for indicated applications.

8. Ground Electrodes: Ground Rods: Steel with copper welded exterior, 5/8" dia. X 10'.

9. Electrical Grounding Connection Accessories: Provide electrical insulating tape, heat-shrinkable insulating tubing, solder, soldering flux, bonding straps, as recommended by accessories manufacturers for type services indicated.

10. Field Welding: Comply with AWS code for procedures, appearance, and quality of welds and methods used in connecting welding work. Provide welded connections where grounding conductors connect to underground grounding rods/electrodes.

PART 3 - EXECUTION

3.1 INSTALLATION OF GROUNDING SYSTEMS

A. Install electrical grounding and bonding systems as indicated, in accordance with manufacturer's written instructions and with recognized industry practices to ensure grounding and ground-fault protection devices comply with requirements. Comply with requirements of ENTERGY, NEC and NECA's "standard of Installation".

B. Install ground rods and construct ground grid as per the contract drawings. Install additional ground rods or grounding electrodes and extend ground grid to achieve the minimum resistance to ground.

C. Coordinate with other electrical work as necessary to interface installation of grounding system and ground fault protection devices with other work.

D. Weld grounding conductors to underground grounding electrodes. The building equipment grounding system shall consist of the ground wire, and electrically continuous metallic conduit system. Every item of equipment served by the electrical system shall be bonded to the building equipment ground. Portions of metallic piping and duct systems which are electrically isolated shall be bonded to the equipment grounding system with a flexible bonding jumper.

E. The neutral shall be grounded to the grounding electrode system at the service entrance only, and shall be kept isolated from the building grounding system throughout the building. The neutral of separately derived systems shall be grounded at one point as specified hereinbelow.

F. Provide bonding and grounding wires run in conduit and sized per the NEC in accordance with the local electrical inspection department and the NEC. Metallic piping and duct systems which enter the building shall be grounded at the point of entry to the building, in accordance with the NEC.

G. Continuity of the building equipment grounding system shall be maintained throughout the project. Grounding jumpers shall be installed across conduit expansion fittings, all liquid-tight flexible metal and flexible metal conduit, light fixture pigtails in excess of 6', and all other nonelectrically continuous raceway fittings.

H. All main grounding conductors shall be stranded copper conductors, sized as shown and/or required, and run in a suitable raceway. All main grounding conductors shall be continuous without joints or splices over their entire length.

I. Bond the case and neutral of each transformer directly to the nearest available effectively grounded structural metal member of the structure, the nearest available effectively grounded metal water pipe, or in accordance with the local electrical inspection department. Flexible conduit shall not be used as a ground path to a transformer.

J. Carefully and securely ground all fluorescent fixture bodies to the conduit grounding system. Flexible conduit longer than 6' shall not be considered a ground path.

K. Ground all grounding-type receptacles with a separate ground wire.

L. Grounding of all motors or equipment connected to terminal box with flexible conduit shall be made with separate grounding conductor between motor frame or equipment cabinet and rigid conduit system. Grounding conductor shall be sized in accordance with table 250-95 of the NEC.

M. All grounding conductors shall be amply protected from mechanical injury and shall be supported in an approved manner. Where conductors are located in concrete, they shall be installed in conduit. Where ground conductors enter or emerge from slabs bearing directly on fill or soil, the voids between the conductor and surrounding conduit shall be filled with compound to provide an effective water seal.

N. Grounding conductors shall be not smaller than #12 AWG. Conductors shall be high conductivity copper, and sizes larger than #10 shall be stranded.

O. Insulated bushings shall be installed on all raceways at transformers, switchboards, motor-control centers, dry-type transformers, as well as switches used as service equipment.

P. Install braided type bonding jumpers with clamps on water meter piping to electrically bypass water meter.

Q. Install clamp-on connectors only on thoroughly cleaned metal contact surfaces, to ensure electrical conductivity and circuit integrity.

3.2 GROUNDING REQUIREMENTS FOR ENTERGY ELECTRIC SERVICE

A. For Street lighting do not permit ground connection to the neutral conductor of ENTERGY Co. feeders.

B. Do not ground Street Light Luminaires to OCS Poles, provide separate ground rods and connections for Lighting. Lighting ground connections shall be identified as lighting ground only.

3.3 FIELD QUALITY CONTROL

A. Upon completion of installation of electrical grounding system, test ground resistance with ground resistance tester. Where tests show resistance-to-ground is over 5 ohms, take appropriate action to reduce resistance to 5 ohms or less by driving additional ground rods

and/or by chemically treating soil encircling ground rods with sodium chloride, calcium chloride, copper sulphate, or magnesium. Then retest to demonstrate compliance.

END OF SECTION 260526

SECTION 260529 – HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work of this section consists of providing labor, material, tools, appliances and miscellaneous accessories associated with the electrical box and electrical fitting work indicated by drawings and schedules.

B. Types of electrical boxes and fittings in this section include the following:

1. Outlet boxes.

2. Junction boxes.

3. Pull boxes.

4. Bushings.

5. Locknuts.

6. Knockout closures.

PART 2 - PRODUCTS

2.1 OUTLET BOXES

A. Provide galvanized coated flat rolled sheet-steel outlet wiring boxes, of shapes, cubic inch capacities, and sizes, including box depths, suitable for installation at respective locations. Construct outlet boxes with mounting holes, and with cable and conduit-size knockout openings in bottom and sides. Provide boxes with threaded screw holes, with corrosion-resistant cover and grounding screws for fastening surface and device type box covers, and for equipment type grounding. Sizes and minimum depths shall be as follows:

1. Surface: Type FS or FD box with surface cover.

2. Special: Where above types are not suitable, furnish boxes to suit the use taking into account space available, appearance, and Code requirements.

B. Weatherproof Outlet Boxes:

1. Provide corrosion resistant cast metal raintight outlet and wiring device boxes, of types, shapes and sizes required for each application, including depth of boxes with threaded conduit holes for fast owning. Electrical conduit and cast metal faceplates where weatherproof devices are indicated. Provide spring hinged watertight caps suitably

configured for each application including faceplate gaskets and corrosion resistant plugs and fasteners.

2.2 JUNCTION AND PULL BOXES

A. Provide underground enclosures Composite or approved equal. Enclosures and covers shall be concrete gray color and rated for no less than 2268 kg (5,000 lbs.) over a 254mm x254mm (10” x10”) area (or H20 when required) and be designed and tested to temperatures of -50°F. Material compressive strength should be no less than 11,000 psi. Covers shall have a minimum coefficient of friction of .5. Boxes shall be stackable for extra depth. Provide locking cover with “Street Lighting” logo.

B. Type for Various Locations:

1. 1639 cubic centimeters (100 Cubic Inches) in volume or Smaller: Standard outlet boxes with stamped knockouts.

2. 2458 cubic centimeters (150 Cubic Inches) in volume or Larger: code gage steel with sides formed and welded, screw covers unless shown to have hinged doors. Hinged doors with locking device same as furnished on panelboards. Knockouts factory stamped or formed in field with a cutting tool to provide a clean symmetrically cut hole.

3. Exterior or Wet Areas: Nema- type 4, hot-dip Galvanized cast iron complying with ASTM A48 and A153

4. Underground pullboxes: Full vehicular traffic American Associations of State Highway and Transportation Officials (AASHTO) Standard Specifications,H-20 loading

2.3 BUSHINGS, KNOCKOUT CLOSURES AND LOCKNUTS

A. Provide corrosion-resistant punched-steel knockout closures, conduit locknuts and plastic conduit bushings, and offset connectors, of types and sizes to suit respective uses and installation.

PART 3 - EXECUTION

3.1 INSTALLATION OF ELECTRICAL BOXES AND FITTINGS

A. General: Install electrical boxes and fittings where indicated, complying with manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation", and in compliance with recognized industry practices to ensure that products fulfill requirements.

B. Coordinate installation of electrical boxes and fittings with wire/cable and raceway installation work.

C. Provide weathertight outlet boxes for interior and exterior locations exposed to weather or moisture.

D. Provide knockout closures to cap unused knockout holes where blanks have been removed.

E. Install boxes and conduit bodies in those locations which ensure ready accessibility of electrical wiring.

F. Avoid installing boxes back-to-back in walls. Provide not less than 152.4mm (6") separation.

G. Avoid installing aluminum products in concrete.

H. Position recessed boxes accurately to allow for surface finish thickness.

I. Round boxes are not acceptable where conduit must enter box through side of box, which would result in difficult and insecure connections when fastened with locknut or bushing on rounded surface.

J. Fasten boxes rigidly to substrates or structural surfaces to which attached, or solidly embed electrical boxes in concrete or masonry.

3.2 GROUNDING

A. Upon completion of installation work, properly ground electrical boxes and demonstrate compliance with requirements.

END OF SECTION 260529

SECTION 260533.13 - CONDUITS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Type EMT-A and Type EMT-SS duct raceways and elbows.

2. Type ERMC-A and Type ERMC-SS duct raceways, elbows, couplings, and nipples.

3. Type PVC duct raceways and fittings.

4. Type IMC duct raceways.

5. Type LFMC duct raceways.

6. Fittings for conduit, tubing, and cable.

7. Electrically conductive corrosion-resistant compounds for threaded conduit.

B. Products Installed, but Not Furnished, under This Section:

1. See Section 260553 "Identification for Electrical Systems" for electrical equipment labels.

C. Related Requirements:

1. Section 260519 "Low-Voltage for Electrical Power Conductors and Cables" for nonmetallic underground conduit with conductors (Type NUCC).

1.2 DEFINITIONS

A. Conduit: A structure containing one or more duct raceways.

B. Duct Raceway: A single enclosed raceway for conductors or cable.

C. Duct Bank: An arrangement of conduit providing one or more continuous duct raceways between two points.

1.3 ACTION SUBMITTALS

A. Product Data:

1. Type ERMC-A and Type ERMC-SS duct raceways, elbows, couplings, and nipples.

2. Type PVC duct raceways and fittings.

3. Fittings for conduit, tubing, and cable.

4. Electrically conductive corrosion-resistant compounds for threaded conduit.

1.4 INFORMATIONAL SUBMITTALS

A. Manufacturers' Published Instructions:

1. Type ERMC-A and Type ERMC-SS duct raceways, elbows, couplings, and nipples.

2. Type PVC duct raceways and fittings.

3. Fittings for conduit, tubing, and cable.

4. Electrically conductive corrosion-resistant compounds for threaded conduit.

PART 2 - PRODUCTS

2.1 TYPE ERMC-A DUCT RACEWAYS, ELBOWS, COUPLINGS, AND NIPPLES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2. Listing Criteria: UL CCN DYWV; including UL 6A.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

C. Aluminum Electrical Rigid Metal Conduit (ERMC-A), Elbows, Couplings, and Nipples:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Material: Aluminum.

3. Options:

a. Minimum Trade Size: 3/4.

2.2 TYPE IMC DUCT RACEWAYS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2. Listing Criteria: UL CCN DYBY; including UL 1242.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. Steel Intermediate Metal Conduit (IMC):

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Options:

a. Exterior Coating: Zinc.

b. Interior Coating: Zinc with organic top coating.

c. Minimum Trade Size: Metric designator 21 (trade size 3/4).

d. Colors: As indicated on Drawings.

2.3 TYPE LFMC DUCT RACEWAYS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2. Listing Criteria: UL CCN DXHR; including UL 360.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. Steel Liquidtight Flexible Metal Conduit (LFMC-S):

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Material: Steel.

3. Options:

a. Minimum Trade Size: Metric designator 21 (trade size 3/4).

b. Colors: As indicated on Drawings.

D. Stainless Steel Liquidtight Flexible Metal Conduit (LFMC-SS):

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Material: Stainless steel.

3. Options:

a. Minimum Trade Size: Metric designator 21 (trade size 3/4).

b. Colors: As indicated on Drawings.

2.4 TYPE PVC DUCT RACEWAYS AND FITTINGS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2. Listing Criteria: UL CCN DZYR; including UL 651.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. Schedule 40 Rigid PVC Conduit (PVC-40) and Fittings:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Dimensional Specifications: Schedule 40.

3. Options:

a. Minimum Trade Size: Metric designator 21 (trade size 3/4).

b. Markings: For use with maximum 90 deg C wire.

D. UL DZYR - Schedule 80 Rigid PVC Conduit (PVC-80) and Fittings:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Dimensional Specifications: Schedule 80.

3. Options:

a. Minimum Trade Size: Metric designator 21 (trade size 3/4).

b. Markings: For use with maximum 90 deg C wire.

E. Type A Rigid PVC Concrete-Encased Conduit (PVC-A) and Fittings:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Dimensional Specifications: Type A.

3. Options:

a. Minimum Trade Size: Metric designator 21 (trade size 3/4).

F. Type EB Rigid PVC Concrete-Encased Underground Conduit (PVC-EB) and Fittings:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Dimensional Specifications: Type EB.

3. Options:

a. Minimum Trade Size: Metric designator 103 (trade size 4).

2.5 FITTINGS FOR CONDUIT, TUBING, AND CABLE

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. Duct Fittings for Hazardous (Classified) Locations:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Listing Criteria: UL CCN EBMB; including UL 1203.

D. Fittings for Type ERMC, Type IMC, Type PVC, Type HDPE, Type EPEC, and Type RTRC Duct Raceways:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Listing Criteria: UL CCN DWTT; including UL 514B.

3. Options:

a. Material: Steel.

b. Coupling Method: Raintight compression coupling with distinctive color gland nut.

c. Expansion and Deflection Fittings: UL 651 with flexible bonding jumper.

E. Fittings for Type EMT Duct Raceways:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Listing Criteria: UL CCN FKAV; including UL 514B.

3. Options:

a. Material: Steel.

b. Coupling Method: Raintight compression coupling with distinctive color gland nut.

c. Expansion and Deflection Fittings: UL 651 with flexible bonding jumper.

F. Fittings for Type LFMC Duct Raceways:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

2. Listing Criteria: UL CCN DXAS; including UL 514B.

2.6 ELECTRICALLY CONDUCTIVE CORROSION-RESISTANT COMPOUNDS FOR THREADED CONDUIT

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2. Listing Criteria: UL CCN FOIZ; including UL Subject 2419.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. Electrically Conductive Corrosion-Resistant Compound for Threaded Conduit:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB, Electrification Business.

b. Allied Tube & Conduit; Atkore International.

c. American Conduit; Norsk Hydro ASA, Hydro Extrusion USA LLC.

d. Appleton; Emerson Electric Co., Automation Solutions.

e. Calconduit; Atkore International.

f. Crouse-Hinds; brand of Eaton, Electrical Sector.

g. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated.

PART 3 - EXECUTION

3.1 SELECTION OF CONDUITS FOR ELECTRICAL SYSTEMS

A. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NFPA 70 for selection of duct raceways. Consult Engineer for resolution of conflicting requirements.

B. Outdoors:

1. Exposed and Subject to Severe Physical Damage: IMC.

2. Exposed and Subject to Physical Damage: IMC.

a. Locations less than 2.5 m (8 ft) above finished floor.

3. Exposed and Not Subject to Physical Damage: IMC.

4. Concealed Aboveground: IMC.

5. Direct Buried: PVC-80.

6. Concrete Encased Not in Trench: PVC-A.

7. Concrete Encased in Trench: PVC-EB.

8. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.

C. Indoors:

1. Hazardous Classified Locations: IMC.

2. Exposed and Subject to Severe Physical Damage: IMC. Locations include the following:

a. Loading docks.

b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.

c. Mechanical rooms.

d. Gymnasiums.

3. Exposed and Subject to Physical Damage: IMC. Locations include the following:

a. Locations less than 2.5 m (8 ft) above finished floor.

b. Stub-ups to above suspended ceilings.

4. Exposed and Not Subject to Physical Damage: IMC or EMT.

5. Concealed in Ceilings and Interior Walls and Partitions: IMC or EMT.

6. Damp or Wet Locations: IMC or Corrosion-resistant EMT.

7. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.

D. Duct Fittings: Select fittings in accordance with NEMA FB 2.10 guidelines.

1. ERMC and IMC: Provide threaded-type fittings unless otherwise indicated.

3.2 INSTALLATION OF CONDUITS FOR ELECTRICAL SYSTEMS

A. Comply with manufacturer's published instructions.

B. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:

1. Type EMT-A: Article 358 of NFPA 70 and NECA NEIS 102.

2. Type EMT-SS: Article 358 of NFPA 70 and NECA NEIS 101.

3. Type ERMC-A: Article 344 of NFPA 70 and NECA NEIS 102.

4. Type ERMC-SS: Article 344 of NFPA 70 and NECA NEIS 101.

5. Type IMC: Article 342 of NFPA 70 and NECA NEIS 101.

6. Type LFMC: Article 350 of NFPA 70 and NECA NEIS 101.

7. Type PVC: Article 356 of NFPA 70 and NECA NEIS 111.

8. Expansion Fittings: NEMA FB 2.40.

9. Consult Engineer for resolution of conflicting requirements.

C. Special Installation Techniques:

1. General Requirements for Installation of Duct Raceways:

a. Complete duct raceway installation before starting conductor installation.

b. Provide stub-ups through floors with coupling threaded inside for plugs, set flush with finished floor. Plug coupling until conduit is extended above floor to final destination or a minimum of 2 ft above finished floor.

c. Install no more than equivalent of three 90-degree bends in conduit run. Support within 12 inches of changes in direction.

d. Make bends in duct raceway using large-radius preformed ells except for parallel bends. Field bending must be in accordance with NFPA 70 minimum radii requirements. Provide only equipment specifically designed for material and size involved.

e. Conceal conduit within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.

f. Support conduit within 12 inches of enclosures to which attached.

g. Install duct sealing fittings at accessible locations in accordance with NFPA 70 and fill them with listed sealing compound. For concealed duct raceways, install fitting in flush steel box with blank cover plate having finish similar to that of adjacent plates or surfaces. Install duct sealing fittings in accordance with NFPA 70.

h. Install devices to seal duct raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal interior of duct raceways at the following points:

1) Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.

2) Where an underground service duct raceway enters a building or structure.

3) Conduit extending from interior to exterior of building.

4) Conduit extending into pressurized duct raceway and equipment.

5) Conduit extending into pressurized zones that are automatically controlled to maintain different pressure set points.

6) Where otherwise required by NFPA 70.

i. Do not install duct raceways or electrical items on "explosion-relief" walls or rotating equipment.

j. Do not install conduits within 2 inches of the bottom side of a metal deck roof.

k. Keep duct raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal duct raceway runs above water and steam piping.

l. Cut conduit perpendicular to the length. For conduits metric designator 53 (trade size 2) and larger, use roll cutter or a guide to make cut straight and perpendicular to the length. Ream inside of conduit to remove burrs.

m. Install pull wires in empty duct raceways. Provide polypropylene or monofilament plastic line with not less than 200 lbs. tensile strength. Leave at least 12 inches of slack at both ends of pull wire. Cap underground duct raceways designated as spare above grade alongside duct raceways in use.

n. Install duct raceways square to the enclosure and terminate at enclosures without hubs with locknuts on both sides of enclosure wall. Install locknuts hand tight, plus one-quarter turn more.

1) Termination fittings with shoulders do not require two locknuts.

o. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to metric designator 35 (trade size 1-1/4) and insulated throat metal bushings on metric designator 41 (trade size 1-1/2) and larger conduits terminated with locknuts.

2. Types EMT-A, ERMC-A, and FMC-A: Do not install aluminum duct raceways or fittings in contact with concrete or earth.

3. Types ERMC and IMC:

    a. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound that maintains electrical conductivity to threads of duct raceway and fittings before making up joints. Follow compound manufacturer's published instructions.

4. Types LFMC:

    a. Provide a maximum of 36 inches of flexible conduit for subject to vibration, noise transmission, or movement; and for transformers and motors.

5. Duct Raceways Embedded in Slabs:

    a. Run duct raceways larger than metric designator 27 (trade size 1) below concrete slab.

    b. Arrange duct raceways to cross building expansion joints with expansion fittings at right angles to the joint.

    c. Arrange duct raceways to ensure that each is surrounded by minimum of 1 inch concrete without voids.

    d. Do not embed threadless fittings in concrete unless locations have been specifically approved by Engineer.

    e. Change from ENT to PVC-80 before rising above floor.

6. Stub-ups to Above Recessed Ceilings:

    a. Provide EMT, IMC, or ERMC for duct raceways.

    b. Provide a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

7. Duct Raceway Terminations at Locations Subject to Moisture or Vibration:

    a. Provide insulating bushings to protect conductors, including conductors smaller than 4 AWG.

8. Duct Fittings: Install fittings in accordance with NEMA FB 2.10 guidelines.

    a. EMT: Provide compression, steel fittings. Comply with NEMA FB 2.10.

b. Flexible Conduit: Provide only fittings listed for use with flexible conduit type. Comply with NEMA FB 2.20.

9. Expansion-Joint Fittings:

a. Install in runs of aboveground PVC that are located where environmental temperature change may exceed 30 deg F and that have straight-run length that exceeds 25 ft. Install in runs of aboveground ERMC and EMT conduit that are located where environmental temperature change may exceed 100 deg F and that have straight-run length that exceeds 100 ft.

b. Install type and quantity of fittings that accommodate temperature change listed for the following locations:

1) Outdoor Locations Not Exposed to Direct Sunlight: 125 deg F temperature change.

2) Outdoor Locations Exposed to Direct Sunlight: 155 deg F temperature change.

3) Indoor Spaces Connected with Outdoors without Physical Separation: 125 deg F temperature change.

4) Attics: 135 deg F temperature change.

c. Install fitting(s) that provide expansion and contraction for at least 0.00041 inch per foot of length of straight run per deg F of temperature change for PVC conduits. Install fitting(s) that provide expansion and contraction for at least 0.000078 inch per foot of length of straight run per deg G of temperature change for metal conduits.

d. Install expansion fittings at locations where conduits cross building or structure expansion joints.

e. Install expansion-joint fitting with position, mounting, and piston setting selected in accordance with manufacturer's published instructions for conditions at specific location at time of installation. Install conduit supports to allow for expansion movement.

10. Duct Raceways Penetrating Rooms or Walls with Acoustical Requirements: Seal duct raceway openings on both sides of rooms or walls with acoustically rated putty or firestopping.

11. Identification: Provide labels for conduit assemblies, duct raceways, and associated electrical equipment.

a. Provide warning signs.

3.3 PROTECTION

A. Protect coatings, finishes, and cabinets from damage and deterioration.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.

2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533.13

SECTION 260533.16 - BOXES AND COVERS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metallic outlet boxes, device boxes, rings, and covers.
2. Junction boxes and pull boxes.
3. Cover plates for device boxes.
4. Hoods for outlet boxes.

B. Products Installed, but Not Furnished, under This Section:

1. See Section 260553 "Identification for Electrical Systems" for electrical equipment labels.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Metallic outlet boxes, device boxes, rings, and covers.
2. Junction boxes and pull boxes.
3. Cover plates for device boxes.
4. Hoods for outlet boxes.

B. Shop Drawings:

1. Shop drawings for floor boxes.

C. Samples:

1. Floor box samples for initial selection.
2. Raised floor box samples for initial selection.
3. Recessed access-floor box samples for initial selection.
4. Concrete box samples for initial selection.

D. Sustainable design submittals.

1. Junction boxes and pull boxes.

2. Cover plates for device boxes.

1.3 INFORMATIONAL SUBMITTALS

A. Manufacturers' Published Instructions:

1. Metallic outlet boxes, device boxes, rings, and covers.

2. Junction boxes and pull boxes.

3. Cover plates for device boxes.

4. Hoods for outlet boxes.

PART 2 - PRODUCTS

2.1 METALLIC OUTLET BOXES, DEVICE BOXES, RINGS, AND COVERS

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2. Listing Criteria: UL CCN QCIT; including UL 514A.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

3. Samples:

a. Floor Box Samples for Initial Selection: Manufacturer's standard color sheets, showing full range of available colors and flooring inserts for each type of floor box.

b. Raised Floor Box Samples for Initial Selection: Manufacturer's standard color sheets, showing full range of available colors and flooring inserts for each type of floor box.

c. Recessed Access-Floor Box Samples for Initial Selection: Manufacturer's standard color sheets, showing full range of available colors and flooring inserts for each type of floor box.

d. Concrete Box Samples for Initial Selection: Manufacturer's standard color sheets, showing full range of available colors and flooring inserts for each type of floor box.

C. UL QCIT - Metallic Outlet Boxes and Covers:

1. Description: Box having pryout openings, knockouts, threaded entries, or hubs in either the sides of the back, or both, for entrance of conduit, conduit or cable fittings, or cables, with provisions for mounting outlet box cover, but without provisions for mounting wiring device directly to box.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

3. Options:

a. Material: Cast metal.

b. Cast-Metal Depth: Minimum 2.4 inch (60.3 mm).

c. Luminaire Outlet Boxes and Covers: Nonadjustable, listed and labeled for attachment of luminaire weighing up to 50 lbs.

d. Paddle Fan Outlet Boxes and Covers: Nonadjustable, designed for attachment of paddle fan weighing up to 70 lbs.

D. UL QCIT - Metallic Conduit Bodies:

1. Description: Means for providing access to interior of conduit or tubing system through one or more removable covers at junction or terminal point. In the United States, conduit bodies are listed in accordance with outlet box requirements.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

E. UL QCIT - Metallic Device Boxes:

1. Description: Box with provisions for mounting wiring device directly to box.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

3. Options:

a. Material: Cast metal.

b. Cast-Metal Depth: minimum 2.4 inches

F. UL QCIT - Metallic Extension Rings:

1. Description: Ring intended to extend sides of outlet box or device box to increase box depth, volume, or both.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

G. UL QCIT - Metallic Floor Boxes and Floor Box Covers:

1. Description: Box mounted in floor with floor box cover and other components to complete floor box enclosure.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

H. UL QCIT - Metallic Raised-Floor Boxes and Floor Box Covers:

1. Description: Box mounted in raised-floor with floor box cover and other components to complete floor box enclosure.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

I. UL QCIT - Metallic Recessed Access-Floor Boxes and Recessed Floor Box Covers:

1. Description: Floor box with provisions for mounting wiring devices below floor surface and floor box cover with provisions for passage of cords to recessed wiring devices mounted within floor box.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

J. UL QCIT - Metallic Concrete Boxes and Covers:

1. Description: Box intended for use in poured concrete.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

2.2 JUNCTION BOXES AND PULL BOXES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.

2. Listing Criteria: UL CCN BGUZ; including UL 50 and UL 50E.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. UL BGUZ - Indoor Sheet Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

3. Options:

a. Degree of Protection: Type 12.

D. UL BGUZ - Indoor Cast-Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

3. Options:

a. Degree of Protection: Type 12.

E. UL BGUZ - Indoor Polymeric Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

3. Options:

a. Degree of Protection: Type 12K.

F. UL BGUZ - Outdoor Sheet Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

3. Options:

a. Degree of Protection: Type 4X.

G. UL BGUZ - Outdoor Cast-Metal Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

3. Options:

a. Degree of Protection: Type 4X.

H. UL BGUZ - Outdoor Polymeric Junction and Pull Boxes:

1. Description: Box with a blank cover that serves the purpose of joining different runs of raceway or cable.

2. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

3. Options:

a. Degree of Protection: Type 6P.

2.3 COVER PLATES FOR DEVICES BOXES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.

2. Listing Criteria: UL CCN QCIT or UL CCN QCMZ; including UL 514D.

3. Wallplate-Securing Screws: Metal with head color to match wallplate finish.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. UL QCIT or QCMZ - Metallic Cover Plates for Device Boxes:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

2. Options:

a. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.

b. Wallplate Material: As indicated on architectural Drawings.

D. UL QCIT or QCMZ - Illuminating Cover Plates for Device Boxes:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Crouse-Hinds; brand of Eaton, Electrical Sector

c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

2. Options:

a. Damp and Wet Locations: Listed, labeled, and marked for location and use. Provide gaskets and accessories necessary for compliance with listing.

b. Wallplate Material: As indicated on architectural Drawings.

c. Color: Gray.

2.4 HOODS FOR OUTLET BOXES

A. Performance Criteria:

1. Regulatory Requirements: Listed and labeled in accordance with NFPA 70 and marked for intended location and use.

2. Listing Criteria:

   a. UL CCN QCIT or UL CCN QCMZ; including UL 514D.

   b. Receptacle, Hood, Cover Plate, Gaskets, and Seals: UL 498 Supplement SA when mated with box or enclosure complying with UL 514A, UL 514C, or UL 50E.

3. Mounts to box using fasteners different from wiring device.

B. Source Quality Control:

1. Product Data: Prepare and submit catalog cuts, brochures, and performance data illustrating size, physical appearance, and other characteristics of product.

2. Manufacturer's Published Instructions: Prepare and submit installation, testing, and operating instructions for product.

C. UL QCIT or QCMZ - Retractable or Reattachable Hoods for Outlet Boxes:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. ABB Electrification Installations Products

   b. Crouse-Hinds; brand of Eaton, Electrical Sector

   c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

2. Options:

   a. Provide clear, weatherproof, "while-in-use" cover.

D. UL QCIT or QCMZ - Extra-Duty, While-in-Use Hoods for Outlet Boxes:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. ABB Electrification Installations Products

   b. Crouse-Hinds; brand of Eaton, Electrical Sector

   c. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell

2. Additional Characteristics: Marked "Extra-Duty" in accordance with UL 514D.

3. Options:

a. Provide clear, weatherproof, "while-in-use" cover.

PART 3 - EXECUTION

3.1 PREPARATION

A. Shop Drawings: Prepare and submit the following:

1. Shop Drawings for Floor Boxes: Show that floor boxes are located to avoid interferences and are structurally allowable. Indicate floor thickness [**at location**]where boxes are embedded in concrete floors and underfloor clearances where boxes are installed in raised floors.

3.2 SELECTION OF BOXES AND COVERS FOR ELECTRICAL SYSTEMS

A. Unless more stringent requirements are specified in Contract Documents or manufacturers' published instructions, comply with NFPA 70 for selection of boxes and enclosures. Consult Engineer for resolution of conflicting requirements.

B. Degree of Protection:

1. Outdoors:

a. Type 4 unless otherwise indicated.

b. Locations Exposed to Hosedown: Type 6P.

c. Locations Subject to Potential Flooding: Type 6P.

d. Locations Aboveground Where Mechanism Must Operate When Ice Covered: Type 3S.

e. Locations in-Ground or Exposed to Corrosive Agents: Type 4X.

f. Locations in-Ground or Exposed to Corrosive Agents Where Mechanism Must Operate When Ice Covered: Type 3SX.

2. Indoors:

a. Type 1 unless otherwise indicated.

b. Damp or Dusty Locations: Type 12.

c. Surface Mounted in Kitchens and Other Locations Exposed to Oil or Coolants: Type 12.

d. Flush Mounted in Kitchens and Other Locations Exposed to Oil or Coolants: Type 12K.

e. Locations Exposed to Airborne Dust, Lint, Fibers, or Flyings: Type 4.

f. Locations Exposed to Hosedown: Type 6P

g. Locations Exposed to Brief Submersion: Type 6P.

h. Locations Exposed to Prolonged Submersion: Type 6P.

i. Locations Exposed to Corrosive Agents: Type 4X.

j. Locations Exposed to Spraying Oil or Coolants: Type 13.

C. Exposed Boxes Installed Less Than 2.5 m (8 ft) Above Floor:

1. Provide cast-metal boxes.

2. Provide exposed cover. Flat covers with angled mounting slots or knockouts are prohibited.

3.3 INSTALLATION OF BOXES AND COVERS FOR ELECTRICAL SYSTEMS

A. Comply with manufacturer's published instructions.

B. Reference Standards for Installation: Unless more stringent installation requirements are specified in Contract Documents or manufacturers' published instructions, comply with the following:

1. Outlet, Device, Pull, and Junction Boxes: Article 314 of NFPA 70.

2. Consult Engineer for resolution of conflicting requirements.

C. Special Installation Techniques:

1. Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures.

2. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.

3. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box, whether installed indoors or outdoors.

4. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

5. Locate boxes so that cover or plate will not span different building finishes.

6. Support boxes in recessed ceilings independent of ceiling tiles and ceiling grid.

7. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for purpose.

8. Fasten junction and pull boxes to, or support from, building structure. Do not support boxes by conduits.

9. Set metal floor boxes level and flush with finished floor surface.

10. Do not install aluminum boxes, enclosures, or fittings in contact with concrete or earth.

11. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to ensure a continuous ground path.

12. Boxes and Enclosures in Areas or Walls with Acoustical Requirements:

    a. Seal openings and knockouts in back and sides of boxes and enclosures with acoustically rated putty.

    b. Provide gaskets for wallplates and covers.

13. Identification: Provide labels for boxes and associated electrical equipment.

    a. Identify field-installed conductors, interconnecting wiring, and components.

    b. Provide warning signs.

    c. Label each box with engraved metal or laminated-plastic nameplate.

3.4 CLEANING

A. Remove construction dust and debris from boxes before installing wallplates, covers, and hoods.

3.5 PROTECTION

A. After installation, protect boxes from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

END OF SECTION 260533.16

260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Color and legend requirements for raceways, conductors, and warning labels and signs.
2. Labels.
3. Bands and tubes.
4. Tapes and stencils.
5. Tags.
6. Signs.
7. Cable ties.
8. Paint for identification.
9. Fasteners for labels and signs.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each type of label and sign to illustrate composition, size, colors, lettering style, mounting provisions, and graphic features of identification products.

C. Delegated-Design Submittal: For arc-flash hazard study.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with ASME A13.1 and IEEE C2.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

D. Comply with ANSI Z535.4 for safety signs and labels.

E. Comply with NFPA 70E

F. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

G. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 COLOR AND LEGEND REQUIREMENTS

A. Raceways and Cables Carrying Circuits at 600 V or Less:

1. Black letters on an orange field.

2. Legend: Indicate voltage.

B. Color-Coding for Phase- and Voltage-Level Identification, 600 V or Less: Use colors listed below for ungrounded service feeder and branch-circuit conductors.

1. Color shall be factory applied or field applied for sizes larger than No. 8 AWG if authorities having jurisdiction permit.

2. Colors for 208/120-V Circuits:

a. Phase A: Black.

b. Phase B: Red.

c. Phase C: Blue.

3. Colors for 240-V Circuits:

a. Phase A: Black.

b. Phase B: Red.

4. Colors for 480/277-V Circuits:

a. Phase A: Brown.

b. Phase B: Orange.

c. Phase C: Yellow.

5. Color for Neutral: White or gray.

6. Color for Equipment Grounds: Green or Green with a yellow stripe .

7. Colors for Isolated Grounds: Green two or more yellow stripes.

C. Warning Label Colors:

1. Identify system voltage with black letters on an orange background.

D. Warning labels and signs shall include, but are not limited to, the following legends:

1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."

2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

E. Equipment Identification Labels:

1. Black letters on a white field.

2.3 LABELS

A. Vinyl Wraparound Labels: Preprinted, flexible labels laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing label ends.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.

b. Champion America.

c. emedco.

d. HellermannTyton.

e. Marking Services, Inc.

B. Snap-around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeves, with diameters sized to suit diameter and that stay in place by gripping action.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.

b. HellermannTyton.

c. Marking Services, Inc.

C. Self-Adhesive Wraparound Labels: Preprinted, 3-mil-thick, vinyl flexible label with acrylic pressure-sensitive adhesive.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. A'n D Cable Products.

b. Brady Corporation.

c. Brother International Corporation.

d. Ideal Industries, Inc.

e. LEM Products Inc.

f. Marking Services, Inc.

2. Self-Lamination: Clear; UV-, weather- and chemical-resistant; self-laminating, protective shield over the legend. Labels sized such that the clear shield overlaps the entire printed legend.

3. Marker for Labels: Permanent, waterproof, black ink marker recommended by tag manufacturer.

4. Marker for Labels: Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.

D. Self-Adhesive Labels: Vinyl, thermal, transfer-printed, 3-mil-thick, multicolor, weather- and UV-resistant, pressure-sensitive adhesive labels, configured for intended use and location.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. A'n D Cable Products.

b. Brady Corporation.

c. emedco.

d. HellermannTyton.

e. Ideal Industries, Inc.

f. LEM Products Inc.

g. Marking Services, Inc.

2. Minimum Nominal Size:

a. 1-1/2 by 6 inchesfor raceway and conductors.

b. 3-1/2 by 5 inchesfor equipment.

c. As required by authorities having jurisdiction.

2.4 BANDS AND TUBES

A. Snap-around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeves, 2 inches long, with diameters sized to suit diameter and that stay in place by gripping action.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.

b. HellermannTyton.

B. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tubes with machine-printed identification labels, sized to suit diameters of and shrunk to fit firmly around item being identified. Full shrink recovery occurs at a maximum of 200 deg F. Comply with UL 224.

2.5 TAPES AND STENCILS

A. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

B. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; not less than 3 mils thick by 1 to 2 inches wide; compounded for outdoor use.

C. Tape and Stencil: 4-inch-wide black stripes on 10-inch centers placed diagonally over orange background and is 12 inches wide. Stop stripes at legends.

D. Floor Marking Tape: 2-inch-wide, 5-mil pressure-sensitive vinyl tape, with black and white stripes and clear vinyl overlay.

E. Underground-Line Warning Tape:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Brady Corporation.

b. Ideal Industries, Inc.

c. LEM Products Inc.

d. Marking Services, Inc.

2. Tape:

a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.

b. Printing on tape shall be permanent and shall not be damaged by burial operations.

c. Tape material and ink shall be chemically inert and not subject to degradation when exposed to acids, alkalis, and other destructive substances commonly found in soils.

3. Color and Printing:

a. Comply with ANSI Z535.1, ANSI Z535.2, ANSI Z535.3, ANSI Z535.4, and ANSI Z535.5.

b. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE".

c. Inscriptions for Orange-Colored Tapes: "TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE".

4. Tag: Type I:

a. Pigmented polyolefin, bright colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.

b. Width: 3 inches.

c. Thickness: 4 mils.

d. Weight: 18.5 lb/1000 sq. ft..

e. Tensile according to ASTM D882: 30 lbf and 2500 psi.

5. Tag: Type ID:

a. Detectable three-layer laminate, consisting of a printed pigmented polyolefin film, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core; bright colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.

b. Width: 3 inches.

c. Overall Thickness: 5 mils.

d. Foil Core Thickness: 0.35 mil.

e. Weight: 28 lb/1000 sq. ft..

f. Tensile according to ASTM D882: 70 lbf and 4600 psi.

F. Stenciled Legend: In nonfading, waterproof, black ink or paint. Minimum letter height shall be 1 inch.

2.6 TAGS

A. Write-on Tags:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Carlton Industries, LP.

2. Polyester Tags: 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment.

3. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.

4. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

2.7 SIGNS

A. Baked-Enamel Signs:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Carlton Industries, LP.

b. Champion America.

2. Preprinted aluminum signs, high-intensity reflective, punched or drilled for fasteners, with colors, legend, and size required for application.

3. 1/4-inch grommets in corners for mounting.

4. Nominal Size: 7 by 10 inches.

B. Laminated Acrylic or Melamine Plastic Signs:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Carlton Industries, LP.

a. Brady Corporation.

b. Marking Services, Inc.

2. Engraved legend.

3. Thickness:

a. For signs up to 20 sq. in., minimum 1/16 inch thick.

b. For signs larger than 20 sq. in., 1/8 inch thick.

c. Engraved legend with black letters on white face.

d. Punched or drilled for mechanical fasteners with 1/4-inch grommets in corners for mounting.

e. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

2.8 CABLE TIES

A. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Ideal Industries, Inc.

a. HellermannTyton.

b. Marking Services, Inc.

a. Panduit, Corp.

2. Minimum Width: 3/16 inch.

3. Tensile Strength at 73 Deg F according to ASTM D638: 12,000 psi.

4. Temperature Range: Minus 40 to plus 185 deg F.

5. Color: Black, except where used for color-coding.

B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Ideal Industries, Inc.

b. HellermannTyton.

c. Marking Services, Inc.

d. Panduit, Corp.

2. Minimum Width: 3/16 inch.

3. Tensile Strength at 73 Deg F according to ASTM D638: 12,000 psi.

4. Temperature Range: Minus 40 to plus 185 deg F.

5. Color: Black.

C. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Ideal Industries, Inc.

b. HellermannTyton.

c. Marking Services, Inc.

d. Panduit, Corp.

2. Minimum Width: 3/16 inch.

3. Tensile Strength at 73 Deg F according to ASTM D638: 7000 psi.

4. UL 94 Flame Rating: 94V-0.

5. Temperature Range: Minus 50 to plus 284 deg F.

6. Color: Black.

2.9 MISCELLANEOUS IDENTIFICATION PRODUCTS

A. Paint: Comply with requirements in painting Sections for paint materials and application requirements. Retain paint system applicable for surface material and location (exterior or interior).

B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Verify and coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and operation and maintenance manual. Use consistent designations throughout Project.

B. Install identifying devices before installing acoustical ceilings and similar concealment.

C. Verify identity of each item before installing identification products.

D. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and operation and maintenance manual.

E. Apply identification devices to surfaces that require finish after completing finish work.

F. Install signs with approved legend to facilitate proper identification, operation, and maintenance of electrical systems and connected items.

G. Self-Adhesive Identification Products: Before applying electrical identification products, clean substrates of substances that could impair bond, using materials and methods recommended by manufacturer of identification product.

H. System Identification for Raceways and Cables under 600 V: Identification shall completely encircle cable or conduit. Place identification of two-color markings in contact, side by side.

1. Secure tight to surface of conductor, cable, or raceway.

I. System Identification for Raceways and Cables over 600 V: Identification shall completely encircle cable or conduit. Place adjacent identification of two-color markings in contact, side by side.

1. Secure tight to surface of conductor, cable, or raceway.

J. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.

K. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch-high letters for emergency instructions at equipment used for power transfer.

L. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.

M. Accessible Fittings for Raceways: Identify the covers of each junction and pull box of the following systems with the wiring system legend and system voltage. System legends shall be as follows:

1. "EMERGENCY POWER."

2. "POWER."

3. "UPS."

N. Vinyl Wraparound Labels:

1. Secure tight to surface at a location with high visibility and accessibility.

2. Attach labels that are not self-adhesive type with clear vinyl tape, with adhesive appropriate to the location and substrate.

O. Snap-around Labels: Secure tight to surface at a location with high visibility and accessibility.

P. Self-Adhesive Wraparound Labels: Secure tight to surface of raceway or cable at a location with high visibility and accessibility.

Q. Self-Adhesive Labels:

1. On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and operation and maintenance manual.

2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on 1-1/2-inch-high label; where two lines of text are required, use labels 2 inches high.

R. Snap-around Color-Coding Bands: Secure tight to surface at a location with high visibility and accessibility.

S. Heat-Shrink, Preprinted Tubes: Secure tight to surface at a location with high visibility and accessibility.

T. Marker Tapes: Secure tight to surface at a location with high visibility and accessibility.

U. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.

1. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding.

V. Tape and Stencil: Comply with requirements in painting Sections for surface preparation and paint application.

W. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's written instructions.

X. Underground Line Warning Tape:

1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.

2. Limit use of underground-line warning tape to direct-buried cables.

3. Install underground-line warning tape for direct-buried cables and cables in raceways.

Y. Write-on Tags:

1. Place in a location with high visibility and accessibility.

2. Secure using UV-stabilized cable ties.

Z. Baked-Enamel Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on minimum 1-1/2-inch-high sign; where two lines of text are required, use signs minimum 2 inches high.

AA. Metal-Backed Butyrate Signs:

1. Attach signs that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on minimum 1-1/2-inch-high sign; where two lines of text are required, use signs minimum 2 inches high.

BB. Laminated Acrylic or Melamine Plastic Signs:

1. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

2. Unless otherwise indicated, provide a single line of text with 1/2-inch-high letters on minimum 1-1/2-inch-high sign; where two lines of text are required, use signs minimum 2 inches high.

CC. Cable Ties: General purpose, for attaching tags, except as listed below:

1. Outdoors: UV-stabilized nylon.

2. In Spaces Handling Environmental Air: Plenum rated.

3.2 IDENTIFICATION SCHEDULE

A. Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment. Install access doors or panels to provide view of identifying devices.

B. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.

C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits, More Than 30 A and 120 V to Ground: Identify with self-adhesive raceway labels.

1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

D. Accessible Fittings for Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive labels containing the wiring system legend and system voltage. System legends shall be as follows:

1. "EMERGENCY POWER."

2. "POWER."

3. "UPS."

E. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use vinyl wraparound labels to identify the phase.

1. Locate identification at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

F. Control-Circuit Conductor Identification: For conductors and cables in pull and junction boxes, manholes, and handholes, use self-adhesive wraparound labels with the conductor or cable designation, origin, and destination.

G. Control-Circuit Conductor Termination Identification: For identification at terminations, provide self-adhesive wraparound labels with the conductor designation.

H. Conductors to Be Extended in the Future: Attach write-on tags to conductors and list source.

I. Auxiliary Electrical Systems Conductor Identification: Self-adhesive vinyl tape that is uniform and consistent with system used by manufacturer for factory-installed connections.

1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.

J. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.

K. Workspace Indication: Apply floor marking tape to finished surfaces. Show working clearances in the direction of access to live parts. Workspace shall comply with NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.

L. Instructional Signs: Self-adhesive labels, including the color code for grounded and ungrounded conductors.

M. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive equipment labels.

1. Apply to exterior of door, cover, or other access.

2. For equipment with multiple power or control sources, apply to door or cover of equipment, including, but not limited to, the following:

a. Power-transfer switches.

b. Controls with external control power connections.

N. Arc Flash Warning Labeling: Self-adhesive labels.

O. Operating Instruction Signs: Laminated acrylic or melamine plastic signs.

P. Emergency Operating Instruction Signs: Laminated acrylic or melamine plastic signs with white legend on a red background with minimum 3/8-inch-high letters for emergency instructions at equipment used for power transfer.

Q. Equipment Identification Labels:

1. Indoor Equipment: Laminated acrylic or melamine plastic sign.

2. Outdoor Equipment: Laminated acrylic or melamine sign.

END OF SECTION 260553

SECTION 260923 - LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Time switches.
2. Indoor Occupancy Sensors.
3. Photoelectric switches.
4. Lighting Contactors.

A. Related Requirements:

1. Section 262726 "Wiring Devices" for wall-box dimmers and manual light switches.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data

PART 2 - PRODUCTS

2.1 TIME SWITCHES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Cooper Industries, Inc.
2. Intermatic, Inc.
3. Invensys Controls.
4. Leviton Manufacturing Co., Inc.
5. NSi Industries LLC; TORK Products.

6. Tyco Electronics; ALR Brand.

B. Electronic Time Switches: Solid state, programmable, with alphanumeric display; complying with UL 917.

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2. Contact Configuration: SPST.

3. Contact Rating: 30-A inductive or resistive, 240-V ac.

4. Programs: Two on-off set points on a 24-hour schedule, allowing different set points for each day of the week.

5. Circuitry: Allow connection of a photoelectric relay as substitute for on-off function of a program.

6. Astronomic Time: All channels.

7. Automatic daylight savings time changeover.

8. Battery Backup: Not less than seven days reserve, to maintain schedules and time clock.

C. Electromechanical-Dial Time Switches: Comply with UL 917.

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2. Contact Configuration: SPST.

3. Contact Rating: 30-A inductive or resistive, 240-V ac.

4. Circuitry: Allows connection of a photoelectric relay as a substitute for the on-off function of a program.

5. Astronomic time dial.

6. Eight-Day Program: Uniquely programmable for each weekday and holidays.

7. Skip-a-day mode.

8. Wound-spring reserve carryover mechanism to keep time during power failures, minimum of 16 hours.

2.2 INDOOR OCCUPANCY SENSORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Bryant Electric; a Hubbell company.
2. Cooper Industries, Inc.
3. Hubbell Building Automation, Inc.
4. Leviton Mfg. Company Inc.
5. Lightolier Controls.
6. Lithonia Lighting; Acuity Lighting Group, Inc.
7. Lutron Electronics Co., Inc.
8. NSi Industries LLC; TORK Products.
9. RAB Lighting.
10. Sensor Switch, Inc.
11. Square D; a brand of Schneider Electric.
12. Watt Stopper.

B. General Requirements for Sensors: Wall- or ceiling-mounted, solid-state indoor occupancy sensors with a separate power pack.

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Operation: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn them off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
3. Sensor Output: Contacts rated to operate the connected relay, complying with UL 773A. Sensor is powered from the power pack.
4. Power Pack: Dry contacts rated for 20-A ballast load at 120- and 277-V ac, for 13-A tungsten at 120-V ac, and for 1 hp at 120-V ac. Sensor has 24-V dc, 150-mA, Class 2 power source, as defined by NFPA 70.
5. Mounting:
    a. Sensor: Suitable for mounting in any position on a standard outlet box.

b. Relay: Externally mounted through a 1/2-inch knockout in a standard electrical enclosure.

c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.

6. Indicator: Digital display, to show when motion is detected during testing and normal operation of sensor.

7. Bypass Switch: Override the "on" function in case of sensor failure.

8. Automatic Light-Level Sensor: Adjustable from 2 to 200 fc; turn lights off when selected lighting level is present.

C. PIR Type: Ceiling mounted; detect occupants in coverage area by their heat and movement.

1. Detector Sensitivity: Detect occurrences of 6-inch-minimum movement of any portion of a human body that presents a target of not less than 36 sq. in..

2. Detection Coverage (Room): Detect occupancy anywhere in a circular area of 1000 sq. ft. when mounted on a 96-inch-high ceiling.

3. Detection Coverage (Corridor): Detect occupancy within 90 feet when mounted on a 10-foot-high ceiling.

D. Ultrasonic Type: Ceiling mounted; detect occupants in coverage area through pattern changes of reflected ultrasonic energy.

1. Detector Sensitivity: Detect a person of average size and weight moving not less than 12 inches in either a horizontal or a vertical manner at an approximate speed of 12 inches/s.

2. Detection Coverage (Small Room): Detect occupancy anywhere within a circular area of 600 sq. ft. when mounted on a 96-inch-high ceiling.

3. Detection Coverage (Standard Room): Detect occupancy anywhere within a circular area of 1000 sq. ft. when mounted on a 96-inch-high ceiling.

4. Detection Coverage (Large Room): Detect occupancy anywhere within a circular area of 2000 sq. ft. when mounted on a 96-inch-high ceiling.

5. Detection Coverage (Corridor): Detect occupancy anywhere within 90 feet when mounted on a 10-foot-high ceiling in a corridor not wider than 14 feet.

E. Dual-Technology Type: Ceiling mounted; detect occupants in coverage area using PIR and ultrasonic detection methods. The particular technology or combination of technologies that control on-off functions is selectable in the field by operating controls on unit.

1. Sensitivity Adjustment: Separate for each sensing technology.

2. Detector Sensitivity: Detect occurrences of 6-inch-minimum movement of any portion of a human body that presents a target of not less than 36 sq. in., and detect a person of average size and weight moving not less than 12 inches in either a horizontal or a vertical manner at an approximate speed of 12 inches/s.

3. Detection Coverage (Standard Room): Detect occupancy anywhere within a circular area of 1000 sq. ft. when mounted on a 96-inch-high ceiling.

2.3 OUTDOOR PHOTOELECTRIC SWITCHES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Cooper Industries, Inc.

2. Intermatic, Inc.

3. NSi Industries LLC; TORK Products.

4. Tyco Electronics; ALR Brand.

B. Description: Solid state, with SPST dry contacts rated for 1800 VA, to operate connected load, complying with UL 773.

1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2. Light-Level Monitoring Range: 1.5 to 10 fc, with an adjustment for turn-on and turn-off levels within that range.

3. Time Delay: Thirty-second minimum, to prevent false operation.

4. Lightning Arrester: Air-gap type.

5. Mounting: Twist lock complying with NEMA C136.10, with base.

2.4 LIGHTING CONTACTORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1. Allen-Bradley/Rockwell Automation.

2. ASCO Power Technologies, LP.

3. Eaton Corporation.

4. General Electric Company; GE Consumer & Industrial - Electrical Distribution; Total Lighting Control.

5. Square D.

C. Description: Electrically operated and electrically held, combination-type lighting contactors with nonfused disconnect, complying with NEMA ICS 2 and UL 508.

1. Current Rating for Switching: Listing or rating consistent with type of load served, including tungsten filament, inductive, and high-inrush ballast (ballast with 15 percent or less total harmonic distortion of normal load current).

2. Fault Current Withstand Rating: Equal to or exceeding the available fault current at the point of installation.

3. Enclosure: Comply with NEMA 250.

4. Provide with control and pilot devices as indicated on Drawings, matching the NEMA type specified for the enclosure.

2.5 CONDUCTORS AND CABLES

A. Power Wiring to Supply Side of Remote-Control Power Sources: Not smaller than No. 12 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

B. Classes 2 and 3 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 18 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

C. Class 1 Control Cable: Multiconductor cable with stranded-copper conductors not smaller than No. 14 AWG. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

B. Mount electrically held lighting contactors with elastomeric isolator pads to eliminate structure-borne vibration, unless contactors are installed in an enclosure with factory-installed vibration isolators.

C. Wiring Method: Comply with Section 260519 "Low-Voltage Electrical Power Conductors and Cables." Minimum conduit size is 2 inches.

D. Identify components and power and control wiring according to Section 260553 "Identification for Electrical Systems."

3.2 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to evaluate lighting control devices and perform tests and inspections.

B. Perform the following tests and inspections:

1. Operational Test: After installing time switches and sensors, and after electrical circuitry has been energized, start units to confirm proper unit operation.

2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Lighting control devices will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

END OF SECTION 260923

SECTION 262416 – PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Distribution panelboards.

2. Lighting and appliance branch-circuit panelboards.

1.3 DEFINITIONS

A. SVR: Suppressed voltage rating.

B. TVSS: Transient voltage surge suppressor.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of panelboard, switching and overcurrent protective device, transient voltage suppression device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.

2. Detail enclosure types and details for types other than NEMA 250, Type 1.

3. Detail bus configuration, current, and voltage ratings.

4. Short-circuit current rating of panelboards and overcurrent protective devices.

5. Include evidence of NRTL listing for series rating of installed devices.

6. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

7. Include wiring diagrams for power, signal, and control wiring.

8. Include time-current coordination curves for each type and rating of overcurrent protective device included in panelboards. Submit on translucent log-log graft paper; include selectable ranges for each type of overcurrent protective device.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified testing agency.

B. Field Quality-Control Reports:

1. Test procedures used.

2. Test results that comply with requirements.

3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

C. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specifie, include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.

2. Time-current curves, including selectable ranges for each type of overcurrent protective device that allows adjustments.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Keys: Two spares for each type of panelboard cabinet lock.

2. Circuit Breakers Including GFCI and Ground Fault Equipment Protection (GFEP) Types: Two spares for each panelboard.

3. Fuses for Fused Switches: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

4. Fuses for Fused Power-Circuit Devices: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.

1.8 QUALITY ASSURANCE

A. Testing Agency Qualifications: Member company of NETA or an NRTL.

1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.

B. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.

C. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards and adjacent surfaces and other items. Comply with indicated maximum dimensions.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Comply with NEMA PB 1.

F. Comply with NFPA 70.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Remove loose packing and flammable materials from inside panelboards; install temporary electric heating (250 W per panelboard) to prevent condensation.

B. Handle and prepare panelboards for installation according to NECA 407.

1.10 PROJECT CONDITIONS

A. Environmental Limitations:

1. Do not deliver or install panelboards until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above panelboards is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

2. Rate equipment for continuous operation under the following conditions unless otherwise indicated:

a. Ambient Temperature: Not exceeding minus 22 deg F (minus 30 deg C) to plus 104 deg F (plus 40 deg C).

b. Altitude: Not exceeding 6600 feet (2000 m).

B. Service Conditions: NEMA PB 1, usual service conditions, as follows:

1. Ambient temperatures within limits specified.

2. Altitude not exceeding 6600 feet (2000 m).

C. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:

1. Notify Owner no fewer than two days in advance of proposed interruption of electric service.

2. Do not proceed with interruption of electric service without Owner's written permission.

3. Comply with NFPA 70E.

1.11 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

B. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.

1.12 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

A. Enclosures: Surface-mounted cabinets.

1. Rated for environmental conditions at installed location.

a. Indoor Dry and Clean Locations: NEMA 250, Type 1.

b. Outdoor Locations: NEMA 250, Type 3R.

2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.

3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.

4. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.

5. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.

6. Finishes:

   a. Panels and Trim: Steel and galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.

   b. Back Boxes: Same finish as panels and trim.

   c. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.

7. Directory Card: Inside panelboard door, mounted in transparent card holder.

B. Incoming Mains Location: Top.

C. Phase, Neutral, and Ground Buses:

1. Material: Tin-plated aluminum.

2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.

3. Isolated Ground Bus: Adequate for branch-circuit isolated ground conductors; insulated from box.

4. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads.

5. Split Bus: Vertical buses divided into individual vertical sections.

D. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Tin-plated aluminum.

2. Main and Neutral Lugs: Compression type.

3. Ground Lugs and Bus-Configured Terminators: Compression type.

4. Feed-Through Lugs: Compression type, suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device.

5. Subfeed (Double) Lugs: Compression type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.

6. Gutter-Tap Lugs: Compression type suitable for use with conductor material. Locate at same end of bus as incoming lugs or main device.

7. Extra-Capacity Neutral Lugs: Rated 200 percent of phase lugs mounted on extra-capacity neutral bus.

E. Service Equipment Label: NRTL labeled for use as service equipment for panelboards or load centers with one or more main service disconnecting and overcurrent protective devices.

F. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.

G. Panelboard Short-Circuit Current Rating: Rated for series-connected system with integral or remote upstream overcurrent protective devices and labeled by an NRTL. Include size and type of allowable upstream and branch devices, listed and labeled for series-connected short-circuit rating by an NRTL.

H. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.2 DISTRIBUTION PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.

2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.

3. Siemens Energy & Automation, Inc.

4. Square D; a brand of Schneider Electric.

B. Panelboards: NEMA PB 1, power and feeder distribution type.

C. Doors: Secured with vault-type latch with tumbler lock; keyed alike.

1. For doors more than 36 inches (914 mm) high, provide two latches, keyed alike.

D. Mains: Circuit breaker.

E. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Plug-in circuit breakers.

F. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes Larger Than 125 A: Bolt-on circuit breakers; plug-in circuit breakers where individual positive-locking device requires mechanical release for removal.

G. Branch Overcurrent Protective Devices: Fused switches.

H. Contactors in Main Bus: NEMA ICS 2, Class A, electrically held, general-purpose controller, with same short-circuit interrupting rating as panelboard.

1. Internal Control-Power Source: Control-power transformer, with fused primary and secondary terminals, connected to main bus ahead of contactor connection.

2. External Control-Power Source: 120-V branch circuit.

2.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.

2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.

3. Siemens Energy & Automation, Inc.

4. Square D; a brand of Schneider Electric.

B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.

C. Mains: Circuit breaker.

D. Branch Overcurrent Protective Devices: Plug-in circuit breakers, replaceable without disturbing adjacent units.

E. Contactors in Main Bus: NEMA ICS 2, Class A, electrically held, general-purpose controller, with same short-circuit interrupting rating as panelboard.

1. Internal Control-Power Source: Control-power transformer, with fused primary and secondary terminals, connected to main bus ahead of contactor connection.

2. External Control-Power Source: 120-V branch circuit.

F. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

G. Column-Type Panelboards: Narrow gutter extension, with cover, to overhead junction box equipped with ground and neutral terminal buses.

2.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.

2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.

3. Siemens Energy & Automation, Inc.

4. Square D; a brand of Schneider Electric.

B. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.

1. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads, and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.

2. Adjustable Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

3. Electronic trip circuit breakers with rms sensing; field-replaceable rating plug or field-replicable electronic trip; and the following field-adjustable settings:

a. Instantaneous trip.

b. Long- and short-time pickup levels.

c. Long- and short-time time adjustments.

d. Ground-fault pickup level, time delay, and I^2t response.

4. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller; let-through ratings less than NEMA FU 1, RK-5.

5. GFCI Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).

6. Ground-Fault Equipment Protection (GFEP) Circuit Breakers: Class B ground-fault protection (30-mA trip).

7. Arc-Fault Circuit Interrupter (AFCI) Circuit Breakers: Comply with UL 1699; 120/240-V, single-pole configuration.

8. Molded-Case Circuit-Breaker (MCCB) Features and Accessories:

a. Standard frame sizes, trip ratings, and number of poles.

b. Lugs: Compression style, suitable for number, size, trip ratings, and conductor materials.

c. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge (HID) lighting circuits.

d. Ground-Fault Protection: Integrally mounted relay and trip unit with adjustable pickup and time-delay settings, push-to-test feature, and ground-fault indicator.

e. Shunt Trip: 120-V trip coil energized from separate circuit, set to trip at 75 percent of rated voltage.

f. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.

g. Auxiliary Contacts: One SPDT switch with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts and "b" contacts operate in reverse of circuit-breaker contacts.

h. Alarm Switch: Single-pole, normally open contact that actuates only when circuit breaker trips.

i. Key Interlock Kit: Externally mounted to prohibit circuit-breaker operation; key shall be removable only when circuit breaker is in off position.

j. Zone-Selective Interlocking: Integral with electronic trip unit; for interlocking ground-fault protection function with other upstream or downstream devices.

k. Multipole units enclosed in a single housing or factory assembled to operate as a single unit.

l. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in on or off position.

m. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.

C. Fused Switch: NEMA KS 1, Type HD; clips to accommodate specified fuses; lockable handle.

1. Fused Switch Features and Accessories: Standard ampere ratings and number of poles.

2. Auxiliary Contacts: One normally open and normally closed contact(s) that operate with switch handle operation.

2.5 ACCESSORY COMPONENTS AND FEATURES

A. Accessory Set: Include tools and miscellaneous items required for overcurrent protective device test, inspection, maintenance, and operation.

B. Portable Test Set: For testing functions of solid-state trip devices without removing from panelboard. Include relay and meter test plugs suitable for testing panelboard meters and switchboard class relays.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Receive, inspect, handle, and store panelboards according to NECA 407.

B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.

C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install panelboards and accessories according to NECA 407.

B. Equipment Mounting: Install panelboards as shown on drawings.

1. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch (450-mm) centers around full perimeter of base.

2. For panelboards, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.

3. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

4. Install anchor bolts to elevations required for proper attachment to panelboards.

5. Attach panelboard to the vertical finished or structural surface behind the panelboard.

C. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from panelboards.

D. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.

E. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.

F. Install overcurrent protective devices and controllers not already factory installed.

1. Set field-adjustable, circuit-breaker trip ranges.

G. Install filler plates in unused spaces.

H. Stub four 1-inch (27-GRC) empty conduits from panelboard into accessible ceiling space or space designated to be ceiling space in the future. Stub four 1-inch (27-GRC) empty conduits into raised floor space or below slab not on grade.

I. Arrange conductors in gutters into groups and bundle and wrap with wire ties after completing load balancing.

J. Comply with NECA 1.

3.3 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Section 260553 "Identification for Electrical Systems."

B. Create a directory to indicate installed circuit loads after balancing panelboard loads; incorporate Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

C. Perform tests and inspections.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

D. Acceptance Testing Preparation:

1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.

2. Test continuity of each circuit.

E. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.

2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

3. Perform the following infrared scan tests and inspections and prepare reports:

a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each panelboard. Remove front panels so joints and connections are accessible to portable scanner.

b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each panelboard 11 months after date of Substantial Completion.

c. Instruments and Equipment:

1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

F. Panelboards will be considered defective if they do not pass tests and inspections.

G. Prepare test and inspection reports, including a certified report that identifies panelboards included and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

A. Adjust moving parts and operable component to function smoothly, and lubricate as recommended by manufacturer.

B. Set field-adjustable circuit-breaker trip ranges as indicated

C. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.

1. Measure as directed during period of normal system loading.

2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.

3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.

4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.6 PROTECTION

A. Temporary Heating: Apply temporary heat to maintain temperature according to manufacturer's written instructions.

END OF SECTION 262416

SECTION 262726 – WIRING DEVICES

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work of this section consists of providing labor, materials, tools, appliances and miscellaneous accessories for wiring device work indicated by Drawings and schedules. Wiring devices are defined as single discrete units of electrical distribution systems which are intended to carry but not utilize electric energy.

B. Types of electrical wiring devices in this section include the following:

1. Receptacles.

2. Switches.

PART 2 - PRODUCTS

2.1 WIRING DEVICES

A. General: Provide factory-fabricated wiring devices, in types, colors, and electrical ratings for applications indicated and complying with NEMA Stds. Pub.

B. No. WD1. Where types and grades are not indicated, provide proper selection as determined by Installer to fulfill wiring requirements. Wiring device shall be Approved by Construction Manager prior installation.

C. Receptacles:

1. Duplex: - Provide duplex "specification grade" receptacles, 2-pole, 3-wire grounding, with green hexagonal equipment ground screw, ground terminals and poles internally connected to mounting yoke and mounting yoke provided without grounding feature between mounting screws and yoke, 20-amperes, 125-volts, with metal plaster ears, back and side wiring, NEMA configuration 5-2OR unless otherwise indicated. Leviton 5352 series, Hubbell 5362 series.

2. Simplex: Provide single "specification grade" receptacles, 2-pole, 3-wire grounding, with green hexagonal equipment ground screw, ground terminals and poles internally connected to mounting yoke and mounting yoke provided with automatic grounding feature between mounting screws and yoke, 20-amperes, 125 volts, with metal plate ears, (back and) side wiring, NEMA configuration 5-20R unless otherwise indicated. Leviton 5362 series, Hubbell 5362 series

D. Plugs and Connectors:

1. Plugs: Refer to drawings.

2. Connectors: Refer to drawings.

E. Switches:

1. Single Pole Toggle: Provide "specification grade" flush, quiet, AC-type, single-pole toggle switches, 20-amperes, 277/125 volts AC, with mounting yoke insulated from mechanism; equip with plaster ears, switch handle, side-wired screw terminals (and backwiring with clamp type terminals). Leviton 5501 series, Hubbell 1121 series.

2. Double-Pole Toggle: Provide "specification grade" flush, quiet, AC type, double-pole toggle switches, 20-amperes, 277/125 volts AC, with mounting yoke insulated from mechanism, equip with plaster ears, switch handle, side-wired screw terminals (and backwiring with clamp type terminals) and ground screw. Leviton 5502 series, Hubbell 1122 series.

3. Three-Way Toggle: Provide "specification grade" flush, quiet, AC-type, three-way toggle switches, 20-amperes, 277/125 volts AC, with mounting yoke insulated from mechanism, equip with plaster ears, switch handle, side-wired screw terminals (and backwiring with clamp type terminals). Leviton 54503 series, Hubbell 1123 series.

4. Four-Way Toggle: Provide "specification grade" flush, quiet, AC-type, four-way toggle switches, 20-amperes, 277/125 volts AC, with mounting yoke insulated from mechanism; equip with plaster ears, switch handle, side-wired screw terminals (and backwiring with clamp type terminals). Leviton 54504 series, Hubbell 1124 series.

F. Photo Cells:

1. The controller shall be rated 2000 watts tungsten at 120, 240 or 277 volts. The cell shall be cadmium sulfide, 1" diameter. The enclosure shall be die cast zinc, gasketed for maximum weather proofing. The enclosure shall include the positioning lug on the top of the enclosure. The unit shall have a delay of up to two minutes to prevent false switching. ON/Off adjustment shall be done by moving a light selector with a range from 2 to 50 foot-candles. Mounting shall be for a 1/2" conduit nipple. The unit shall have a 5 year warranty.

2. The contacts shall be SPST normally closed. The operational temperature range shall be -40 to 140 degrees F.

2.2 WIRING DEVICE ACCESSORIES

A. Wall Plates: Provide wall plates for wiring devices, of types, sizes, and with ganging and cutouts as indicated on drawings (or schedules). Construct with metal screws with tamperproof heads for securing plates to devices, screw heads colored to match finish of plates.

1. Material and Finish (Comfort Station): Nylon, high abuse, smooth, white in color.

B. Raintight: Provide flush weather proof while-in-use enclosures, UV stabilized Lexan, with lockable hasp. Mulberry catalog #30904 or equivalent.

PART 3 - EXECUTION

3.1 INSTALLATION OF WIRING DEVICES/PLATES

A. Install wiring devices as indicated, in compliance with manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation", and in accordance with recognized industry practices to fulfill project requirements.

B. Coordinate with other work, including painting, electrical box and wiring work, as necessary to interface installation of wiring devices with other work, furniture locations, and door swings.

C. Verify location of all devices with Construction Manager before beginning construction.

D. Install wiring devices only in electrical boxes which are clean, free from excess building materials, dirt, and debris.

E. Install galvanized steel wall plates in unfinished spaces.

F. Install weatherproof covers at all damp or exposed locations, as indicated on drawings.

G. Delay installation of wiring devices until wiring work is completed.

H. Delay installation of wall plates until after painting work is completed.

I. Protect wiring devices during painting.

J. All 20a/z pole and 15a/z poles, 3-wire receptacles shall be mounted with a “u” shaped grounding connection at the top, except for weatherproof receptacles.

K. Where duplex receptacles are indicated to be located as required for electric water cooler, they shall be located where indicated on electric water cooler shop drawings.

L. Plates shall be installed with all four edges in continuous contact with finished wall surfaces without the use of mats or similar devices. Plaster fillings will not be permitted. Plates shall be installed with an alignment tolerance of 1/16" from the vertical or horizontal.

3.2 PROTECTION OF WALL PLATES AND RECEPTACLES

A. Upon installation of wall plates and receptacles, advise Contractor regarding proper and cautious use of convenience outlets. At time of Substantial Completion, replace those items which have been damaged, including those burned and scored by faulty plugs.

3.3 GROUNDING

A. Provide electrically continuous, tight grounding connections for wiring devices, unless otherwise indicated. Tighten connections to comply with tightening torque's specified in UL standard 486A to assure permanent and effective grounds.

3.4 TESTING

A. Prior to energizing circuitry, test wiring devices for electrical continuity and proper polarity connections. After energizing circuitry, test wiring devices to demonstrate compliance with requirements.

3.5 ADJUSTING

A. Adjust devices and wall plates to be flush and level (within 1/16"). Mark all conductors with the panel and circuit number serving the device, at the device. Mark the panel and circuit number serving the device on the backside of the device plate with a permanent marking system that does not show through the front of the plate.

END OF SECTION 262726

SECTION 262726.41 - PIN-AND-SLEEVE RECEPTACLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pin-and-sleeve type receptacles.

B. Related Requirements:

1. Section 260553 "Identification for Electrical Systems" specifies equipment identification products installed by this Section.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product, submit the following:

1. Product Listing: Include copy of unexpired approval letter, on letterhead of qualified electrical testing agency, certifying product's compliance with specified listing criteria.

2. Include manufacturer's sample extended warranty language.

B. Samples: For each type of product that requires samples for source quality control.

C. Field quality-control reports.

1.3 INFORMATIONAL SUBMITTALS

A. Manufacturer's published instructions.

B. Field Reports:

1. Manufacturer's field reports for field quality-control support.

1.4 CLOSEOUT SUBMITTALS

A. Warranty documentation.

1.5 QUALIFICATIONS

A. Low-Voltage Electrical Testing and Inspecting Agency: Entities possessing active credentials from qualified electrical testing laboratory recognized by authorities having jurisdiction.

1. On-site electrical testing supervisors must have documented certification and experience with testing electrical equipment in accordance with NETA testing standards.

1.6 WARRANTY

A. Special Installer Extended Warranty: Installer warrants that installed devices perform in accordance with specified requirements and agrees to repair or replace products that fail to perform as specified within extended-warranty period. Warranty must convey to Owner upon acceptance of the Work.

1. Extended-Warranty Period: Two years from date of Substantial Completion; full coverage for labor, materials, and equipment.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Products or components listed and labeled in accordance with NFPA 70, by qualified electrical testing laboratory recognized by authorities having jurisdiction, and marked for intended location and application.

2.2 PIN-AND-SLEEVE TYPE RECEPTACLES

A. Description: Pin-and-sleeve type receptacles and other outlet devices intended for direct connection to wiring systems recognized by NFPA 70.

B. Source Quality Control:

1. Samples: One for each kind of pin-and-sleeve receptacle specified, in each finish and color specified.

C. UL QLIW - C2 Series, 125 V, Pin-and-Sleeve Receptacles:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Arrow Hart, Wiring Devices; Eaton, Electrical Sector

c. Crouse-Hinds; brand of Eaton, Electrical Sector

d. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell Incorporated

e. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated

f. Leviton Manufacturing Co., Inc.

g. Pass & Seymour; Legrand North America, LLC

2. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. Pin-and-Sleeve Type Receptacles: UL CCN QLIW; including UL 1682.

3. Standard Features:

    a. Series: UL 1686 Series C2 and IEC 60309-2 Series II.

    b. Voltage Rating: 125 V.

    c. Configuration: 2 pole, 3 wire, 20 A or 30 A, IP67.

D. UL QLIW - C2 Series, 125/250 V, Pin-and-Sleeve Receptacles:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. ABB Electrification Installations Products

    b. Arrow Hart, Wiring Devices; Eaton, Electrical Sector

    c. Crouse-Hinds; brand of Eaton, Electrical Sector

    d. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell Incorporated

    e. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated

    f. Leviton Manufacturing Co., Inc.

    g. Pass & Seymour; Legrand North America, LLC

2. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

    a. Pin-and-Sleeve Type Receptacles: UL CCN QLIW; including UL 1682.

3. Standard Features:

    a. Series: UL 1686 Series C2 and IEC 60309-2 Series II.

    b. Voltage Rating: 125/250 V.

c. Configuration:

1) 3 pole, 4 wire, 30 A, IP67.

E. UL QLIW - C2 Series, 250 V, Pin-and-Sleeve Receptacles:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Arrow Hart, Wiring Devices; Eaton, Electrical Sector

c. Crouse-Hinds; brand of Eaton, Electrical Sector

d. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell Incorporated

e. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated

f. Leviton Manufacturing Co., Inc.

g. Pass & Seymour; Legrand North America, LLC

2. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. Pin-and-Sleeve Type Receptacles: UL CCN QLIW; including UL 1682.

3. Standard Features:

a. Series: UL 1686 Series C2 and IEC 60309-2 Series II.

b. Voltage Rating: 250 V.

c. Configuration: 3 pole, 4 wire, 60 A, IP67.

F. UL QLIW - C2 Series, 480 V, Pin-and-Sleeve Receptacles:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. ABB Electrification Installations Products

b. Arrow Hart, Wiring Devices; Eaton, Electrical Sector

c. Crouse-Hinds; brand of Eaton, Electrical Sector

d. Hubbell Wiring Device-Kellems; brand of Hubbell Electrical Solutions; Hubbell Incorporated

e. Killark; brand of Hubbell Electrical Solutions; Hubbell Incorporated

f. Leviton Manufacturing Co., Inc.

g. Pass & Seymour; Legrand North America, LLC

2. Listing Criteria: Investigated, labeled, and marked by qualified electrical testing laboratory in accordance with guide information and standards specified for the following UL product categories:

a. Pin-and-Sleeve Type Receptacles: UL CCN QLIW; including UL 1682.

3. Standard Features:

a. Series: UL 1686 Series C2 and IEC 60309-2 Series II.

b. Voltage Rating: 480 V.

c. Configuration:

1) 3 pole, 4 wire, 60 A, IP67.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that receptacles to be procured and installed for Owner-furnished equipment are compatible with mating attachment plugs on equipment.

3.2 INSTALLATION

A. Comply with manufacturer's published instructions.

B. Reference Standards:

1. Unless more stringent requirements are specified in the Contract Documents or manufacturer's published instructions, comply with installation instructions in NECA NEIS 130.

2. Mounting Heights: Unless otherwise indicated in the Contract Documents, comply with mounting heights recommended in NECA NEIS 1.

3. Receptacle Orientation: Unless otherwise indicated in the Contract Documents, orient receptacle to match configuration diagram in UL 1686.

4. Consult Engineer for resolution of conflicting requirements.

C. Identification:

1. Identify cover or cover plate for device with panelboard identification and circuit number.

a. Mark cover or cover plate using hot, stamped, or engraved machine printing with black-filled lettering, and provide durable wire markers or tags inside device box or outlet box.

3.3 FIELD QUALITY CONTROL

A. Administrant for Low-Voltage Electrical Tests and Inspections:

1. Engage qualified low-voltage electrical testing and inspecting agency to administer and perform tests and inspections.

B. Field tests and inspections must be witnessed by authorities having jurisdiction.

C. Tests and Inspections:

1. Insert and remove test plug to verify that device is securely mounted.

2. Measure line voltage.

3. Measure percent voltage drop.

4. Measure ground impedance, which must be not greater than 2 ohms.

5. Perform additional installation and maintenance inspections and diagnostic tests in accordance with NECA NEIS 130 and manufacturer's published instructions.

E. Nonconforming Work:

1. Device will be considered defective if it does not pass tests and inspections.

2. Remove and replace defective units and retest.

F. Field Quality-Control Reports: Collect, assemble, and submit test and inspection reports.

G. Manufacturer Services: Engage factory-authorized service representative to support field tests and inspections.

1. Manufacturer's Field Reports for Field Quality-Control Support: Prepare and submit report after each visit by factory-authorized service representative, documenting activities performed at the Project site.

3.4 PROTECTION

A. Schedule and sequence installation to minimize risk of contamination of wires and cables, devices, device boxes, outlet boxes, covers, and cover plates by plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other materials.

B. After installation, protect wires and cables, devices, device boxes, outlet boxes, covers, and cover plates from construction activities. Remove and replace items that are contaminated, defaced, damaged, or otherwise caused to be unfit for use prior to acceptance by Owner.

END OF SECTION 262726.41

SECTION 263323 - CENTRAL BATTERY INVERTERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related Sections include the following:

1. Division 26 Section “Electrical General Requirements.”

1.2 SUMMARY

A. This Section includes fast-transfer central battery inverters.

1.3 DEFINITIONS

A. LCD: Liquid-crystal display.

B. LED: Light-emitting diode.

C. UPS: Uninterruptible power supply.

1.4 SUBMITTALS

A. Product Data: For the following:

1. Electrical ratings, including the following:

a. Capacity to provide power during failure of normal ac.

b. Inverter voltage regulation and total harmonic distortion of output current.

c. Rectifier data.

d. Transfer time of transfer switch.

e. Data for specified optional features.

2. Transfer switch.

3. Inverter.

4. Battery charger.

5. Batteries.

6. Battery monitoring.

7. Manufacturer's anchorage and base recommendations.

8. Physical Size

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, components, and location and identification of each field connection. Show access, workspace, and clearance requirements; details of control panels; and battery arrangement.

1. Wiring Diagrams: Detail internal and interconnecting wiring; and power, signal, and control wiring.

2. Elevation and details of control and indication displays.

3. Output distribution section.

C. Qualification Data: For testing agency.

D. Source quality-control test reports.

E. Field quality-control test reports.

F. Operation and Maintenance Data: For central battery inverter equipment to include in emergency, operation, and maintenance manuals specified in Division 1.

G. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent testing agency, with the experience and capability to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

B. Product Options: Drawings indicate size, profiles, and dimensional requirements of central battery inverter system. Refer to Division 1 Section "Product Requirements."

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

D. Central Battery Inverter System: UL 924 listed.

E. Comply with NFPA 70 and NFPA 101.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver equipment in fully enclosed vehicles.

B. Store equipment in spaces having environments controlled within manufacturers' written instructions for ambient temperature and humidity conditions for nonoperating equipment.

1.7 SPACE RESTRICTIONS

A. The central battery inverter with battery cabinet should be no larger than 26"D x 26"W x 44"H.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace batteries that fail in materials or workmanship within specified warranty period. Special warranty, applying to batteries only, applies to materials only, on a prorated basis, for period specified.

B. Warranty Period: Include the following warranty periods, from date of Substantial Completion.

1. Standard, Valve-Regulated, Recombinant, Lead-Calcium Batteries:

a. Full Warranty: One year.

b. Pro Rata: Nine years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Chloride Systems.

2. Controlled Power Company.

3. Cooper Industries, Inc.; Sure-Lites Division.

4. Dual-Lite.

5. Lithonia Lighting; Emergency Lighting Systems.

6. Myers Power Products, Inc.

7. Staco Energy Products, Inc.

2.2 INVERTER PERFORMANCE REQUIREMENTS

A. Ratings: Provide rated KVA output, input voltage and output voltage as indicated (4.2 KVA, 208V-3PH input, 120V-1PH output). Fast- Transfer Central Battery Inverters: Automatically sense loss of normal ac supply and use a solid-state switch to transfer loads. Transfer in 0.004 second or less from normal supply to battery- inverter supply.

1. Operation: Unit supplies power to output circuits from a single, external, normal supply source. Unit automatically transfers load from normal source to internal battery/inverter source. Retransfer to normal is automatic when normal power is restored.

B. Maximum Acoustical Noise: 50 dB, "A" weighting, emanating from any component under any condition of normal operation, measured 39 inches from nearest surface of component enclosure.

2.3 SERVICE CONDITIONS

A. Environmental Conditions: Inverter system shall be capable of operating continuously in the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

1. Ambient Temperature for Electronic Components: 32 to 98 deg F.

2. Relative Humidity: 0 to 95 percent, noncondensing.

3. Altitude: Sea level to 4000 feet.

2.4 INVERTERS

A. Description: Solid-state type, with the following operational features:

1. Automatically regulate output voltage to within plus or minus 5 percent.

2. Automatically regulate output frequency to within plus or minus 1 Hz, from no load to full load at unit power factor over the operating range of battery voltage.

3. Output Voltage Waveform of Unit: Sine wave with maximum 10 percent THD throughout battery operating-voltage range, from no load to full load.

4. Output power rating: Rated in kVA at unity power factor, and shall be able to supply the rated kW from .5 lagging to .5 leading.

5. Output Protection: Current-limiting and short-circuit protection.

6. Brownout Protection: Produces rated power without draining batteries when input voltage is down to 75 percent of normal.

2.5 BATTERY CHARGER

A. Description: Solid-state, automatically maintaining batteries in fully charged condition when normal power is available, with LED indicators for "float" and "high-charge" modes.

2.6 BATTERIES

A. Description: Standard, valve-regulated, recombinant, lead-calcium hot swappable batteries. Supply and maintain total load for a minimum period of 1.5 hours, without the voltage applied to the load falling below 87% of normal. Provide mid-string disconnects to minimize DC arc flash potential.

2.7 ENCLOSURES

A. NEMA 250, Type 1 steel cabinets with access to components through hinged doors with flush tumbler lock and latch.

B. Finish: Manufacturer's standard baked-enamel finish over corrosion- resistant prime treatment.

2.8 CONTROL AND INDICATION

A. Description: Group displays, indications, and basic system controls on common control panel on front of central battery inverter enclosure.

B. Minimum displays, indicating devices, and controls shall include those in lists below. Provide sensors, transducers, terminals, relays, and wiring required to support listed items. Alarms shall include an audible signal and a visual display. Form C dry contacts shall be provided for “general trouble” and “on battery” remote monitoring.

C. Indications: Labeled LED.

1. Quantitative Indications:

a. Input voltage, each phase, line to line.

b. Input current, each phase, line to line.

c. System output voltage, each phase, line to line.

d. System output current, each phase.

e. System output frequency.

f. DC bus voltage.

g. Battery current and direction (charge/discharge).

h. Elapsed time-discharging battery.

2. Basic Status Condition Indications:

    a. Normal operation.

    b. Load-on bypass.

    c. Load-on battery.

    d. Inverter off.

    e. Alarm condition exists.

3. Alarm Indications:

    a. Battery system alarm.

    b. Control power failure.

    c. Fan failure.

    d. Overload.

    e. Battery-charging control faulty.

    f. Input overvoltage or undervoltage.

    g. Approaching end of battery operation.

    h. Battery undervoltage shutdown.

    i. Inverter fuse blown.

    j. Inverter transformer overtemperature.

    k. Inverter overtemperature.

    l. Static bypass transfer switch overtemperature.

    m. Inverter power supply fault.

    n. Inverter output overvoltage or undervoltage.

    o. System overload shutdown.

    p. Inverter output contactor open.

    q. Inverter current limit.

4. Controls:

    a. Inverter on-off.

    b. Start.

    c. Battery test.

    d. Alarm silence/reset.

    e. Output-voltage adjustment.

    f. Maintenance bypass.

D. Include the following minimum array:

1. Ready, normal-power on light.

2. Charge light.

3. Inverter supply load light.

4. Battery voltmeter.

5. AC output voltmeter with an accuracy within 2 percent of full scale.

6. Load ammeter.

7. Test switch to simulate ac failure.

E. Enclosure: Steel, with hinged lockable doors, suitable for wall/floor mounting. Manufacturer's standard corrosion-resistant finish.

2.9 SOURCE QUALITY CONTROL

A. Factory test complete inverter system, including battery, before shipment. Include the following:

1. Functional test and demonstration of all functions, controls, indicators, sensors, and protective devices.

2. Full-load test.

3. Transient-load response test.

4. Overload test.

5. Power failure test.

B. Observation of Test: Give 14 days' advance notice of tests and provide access for Owner's representative to observe tests at Owner's option.

C. Report test results. Include the following data:

1. Description of input source and output loads used. Describe actions required to simulate source load variation and various operating conditions and malfunctions.

2. List of indications, parameter values, and system responses considered satisfactory for each test action. Include tabulation of actual observations during test.

3. List of instruments and equipment used in factory tests.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions for compliance with requirements for ventilation, temperature, humidity, and other conditions affecting performance.

1. Verify that manufacturer's written instructions for environmental conditions have been permanently established in spaces where equipment will be installed before installation begins.

B. Examine roughing-in for electrical connections to verify actual locations of connections before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install system components and anchor to concrete base according to manufacturer's recommendations and seismic codes as applicable.

B. Maintain minimum clearances and workspace at equipment according to manufacturer's written instructions and NFPA 70.

3.3 CONNECTION

A. Connections: Interconnect system components. Make connections to supply and load circuits according to manufacturer's wiring diagrams, unless otherwise indicated.

B. Ground equipment according to Division 26 Section "Grounding and Bonding."

C. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.4 IDENTIFICATION

A. Identify equipment and components according to Division 26 Section “Electrical Materials and Methods.”

3.5 FIELD QUALITY CONTROL

A. After central battery inverters are installed and electrical circuitry has been energized, test for compliance with requirements.

B. Testing: Perform the following field quality-control testing according to manufacturer's written instructions and as listed below, to demonstrate condition and performance of each component of central battery inverter system:

1. Inspect interiors of enclosures for integrity of mechanical and electrical connections, component type and labeling verification, and ratings of installed components.

2. Test manual and automatic operational features and system protective and alarm functions.

3. Perform each electrical test and visual and mechanical inspection stated in NETA ATS, Sections 7.18 and 7.22.2. Certify compliance with test parameters.

4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field- assembled components and equipment installation, including electrical connections. Report results in writing. Coordinate with Owner’s commissioning agent.

D. Remove malfunctioning units, replace with new units, and retest as specified above.

E. Report results in writing.

3.6 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

B. Verify that central battery inverter is installed and connected according to the Contract Documents.

C. Verify that electrical wiring installation complies with manufacturer's submittal and installation requirements in Division 26 Sections.

D. Complete installation and startup checks according to manufacturer's written instructions.

3.7 ADJUSTING AND CLEANING

A. Set field-adjustable switches and circuit-breaker trip ranges as indicated.

B. Install new filters in each equipment cabinet within 14 days from date of Substantial Completion.

END OF SECTION 263323

SECTION 263600 – MANUAL TRANSFER SWITCHES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Nonautomatic transfer switches.

1.2 ACTION SUBMITTALS

A. Product Data:

1. Nonautomatic transfer switches.

B. Product Data Submittals: For each product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for transfer switches.

2. Include rated capacities, operating characteristics, electrical characteristics, and accessories.

C. Shop Drawings:

1. Include plans, elevations, sections, details showing minimum clearances, conductor entry provisions, gutter space, and installed features and devices.

2. Include material lists for each switch specified.

3. Single-Line Diagram: Show connections between transfer switch, sources, and load; and show interlocking provisions for each combined transfer switch and bypass/isolation switch.

4. Riser Diagram: Show interconnection wiring between transfer switches, bypass/isolation switches, annunciators, and control panels.

1.3 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer-authorized service representative.

B. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals.

1. In addition to items specified, include the following:

a. Features and operating sequences, both automatic and manual.

b. List of all factory settings of relays; provide relay-setting and calibration instructions, including software, where applicable.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications:

1. Member company of NETA.

a. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

1.6 FIELD CONDITIONS

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service:

1. Notify Owner no fewer than two days in advance of proposed interruption of electrical service.

2. Do not proceed with interruption of electrical service without Owner's written permission.

1.7 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of transfer switch or transfer switch components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with NEMA ICS 1.

C. Comply with NFPA 99.

D. Comply with NFPA 110.

E. Comply with UL 1008 unless requirements of these Specifications are stricter.

F. Indicated Current Ratings: Apply as defined in UL 1008 for continuous loading and total system transfer, including tungsten filament lamp loads not exceeding 30 percent of switch ampere rating, unless otherwise indicated.

G. Tested Fault-Current Closing and Short-Circuit Ratings: Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.

1. Where transfer switch includes internal fault-current protection, rating of switch and trip unit combination shall exceed indicated fault-current value at installation location.

2. Short-time withstand capability for three cycles.

H. Resistance to Damage by Voltage Transients: Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.62. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.

I. Service-Rated Transfer Switch:

1. Comply with UL 869A and UL 489.

2. Provide terminals for bonding the grounding electrode conductor to the grounded service conductor.

3. In systems with a neutral, the bonding connection shall be on the neutral bus.

4. Provide removable link for temporary separation of the service and load grounded conductors.

5. Surge Protective Device: Service rated.

6. Ground-Fault Protection: Comply with UL 1008 for normal bus.

7. Service Disconnecting Means: Externally operated, manual mechanically actuated.

J. Neutral Switching: Where four-pole switches are indicated, provide neutral pole switched simultaneously with phase poles.

K. Neutral Terminal: Solid and fully rated unless otherwise indicated.

L. Oversize Neutral: Ampacity and switch rating of neutral path through units indicated for oversize neutral shall be double the nominal rating of circuit in which switch is installed.

M. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, by color-code or by numbered or lettered wire and cable with shrinkable sleeve markers at terminations. Color-coding and wire and cable markers are specified in Section 260553 "Identification for Electrical Systems."

1. Designated Terminals: Pressure type, suitable for types and sizes of field wiring indicated.

2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.

3. Accessible via front access.

N. Enclosures: General-purpose NEMA 250, Type 4X SS, complying with NEMA ICS 6 and UL 508, unless otherwise indicated.

2.2 NONAUTOMATIC TRANSFER SWITCHES

A. Double-Throw Switching Arrangement: Incapable of pauses or intermediate position stops during switching sequence.

B. Pilot Lights: Indicate source to which load is connected.

C. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and alternative-source sensing circuits.

1. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."

2. Emergency Power Supervision: Red light with nameplate engraved "Alternative Source Available."

D. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.

1. Switch Action: Double throw; mechanically held in both directions.

2. Contacts: Silver composition or silver alloy for load-current switching.

3. Conductor Connectors: Suitable for use with conductor material and sizes.

4. Material: Tin-plated aluminum.

5. Main and Neutral Lugs: Compression type.

6. Ground Lugs and Bus-Configured Terminators: Compression type.

7. Ground bar.

8. Connectors shall be marked for conductor size and type according to UL 1008.

2.3 SOURCE QUALITY CONTROL

A. Factory Tests: Test and inspect components, assembled switches, and associated equipment according to UL 1008. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.

B. Prepare test and inspection reports.

1. For each of the tests required by UL 1008, performed on representative devices, for legally required systems. Include results of test for the following conditions:

a. Overvoltage.

b. Undervoltage.

c. Loss of supply voltage.

d. Reduction of supply voltage.

e. Alternative supply voltage or frequency is at minimum acceptable values.

f. Temperature rise.

g. Dielectric voltage-withstand; before and after short-circuit test.

h. Overload.

i. Contact opening.

j. Endurance.

k. Short circuit.

l. Short-time current capability.

m. Receptacle withstand capability.

n. Insulating base and supports damage.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Rack Mounted: Mount on unistrut rack.

1. Install transfer switches on fabricated rack anchored to the ground via concrete base suitable for the provided switch.

2. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases.

3. Provide workspace and clearances required by NFPA 70.

B. Identify components according to Section 260553 "Identification for Electrical Systems."

C. Comply with NECA 1.

3.2 CONNECTIONS

A. Wiring Method: Install cables in raceways and cable trays except within electrical enclosures. Conceal raceway and cables except in unfinished spaces.

B. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.

C. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

D. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

E. Route and brace conductors according to manufacturer's written instructions and Section 260529 "Hangers and Supports for Electrical Systems.” Do not obscure manufacturer's markings and labels.

F. If final connections to equipment shall be made with liquidtight, flexible metallic conduit no more than 18 inches in length shall be used.

3.3 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Visual and Mechanical Inspection:

a. Compare equipment nameplate data with Drawings and Specifications.

b. Inspect physical and mechanical condition.

c. Inspect anchorage, alignment, grounding, and required clearances.

d. Verify that the unit is clean.

e. Verify appropriate lubrication on moving current-carrying parts and on moving and sliding surfaces.

f. Verify that manual transfer warnings are attached and visible.

g. Verify tightness of all control connections.

h. Inspect bolted electrical connections for high resistance using one of the following methods, or both:

1) Use of low-resistance ohmmeter.

2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method according to manufacturer's published data.

i. Perform manual transfer operation.

j. Verify positive mechanical interlocking between normal and alternate sources.

END OF SECTION 263600

SECTION 265613 - LIGHTING POLES AND STANDARDS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Poles and accessories for support of luminaires.

2. Luminaire-lowering devices.

1.2 DEFINITIONS

A. EPA: Equivalent projected area.

B. Luminaire: Complete luminaire.

C. Pole: Luminaire-supporting structure, including tower used for large-area illumination.

D. Standard: See "Pole."

1.3 ACTION SUBMITTALS

A. Product Data: For each pole, accessory, and luminaire-supporting and -lowering device.

B. Shop Drawings:

1. Include plans, elevations, sections, and mounting and attachment details.

2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

3. Detail fabrication and assembly of poles and pole accessories.

4. Foundation construction details, including material descriptions, dimensions, anchor bolts, support devices, and calculations, signed and sealed by a professional engineer licensed in the state of installation.

5. Anchor bolt templates keyed to specific poles and certified by manufacturer.

6. Method and procedure of pole installation. Include manufacturer's written installations.

1.4 INFORMATIONAL SUBMITTALS

A. Pole and Support Component Certificates: Signed by manufacturers of poles, certifying that products are designed for indicated load requirements according to AASHTO LTS-6-M and that load imposed by luminaire and attachments has been included in design. The certification shall be based on design calculations signed and sealed by a professional engineer.

B. Material test reports.

C. Field quality-control reports.

D. Sample warranty.

E. Soil test reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and maintenance data for pole-lowering devices and pole-mounted accessories.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of pole(s) that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within a specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs from special warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, to design pole foundation and pole power system.

B. Structural Characteristics: Comply with AASHTO LTS-6-M.

C. Dead Load: Weight of luminaire and its horizontal and vertical supports, lowering devices, and supporting structure, applied according to AASHTO LTS-6-M.

D. Live Load: Single load of 500 lbf distributed according to AASHTO LTS-6-M.

E. Ice Load: Load of 3 lbf/sq. ft., applied according to AASHTO LTS-6-M for applicable areas on the Ice Load Map.

F. Wind Load: Pressure of wind on pole and luminaire, calculated and applied according to AASHTO LTS-6-M.

1. Basic wind speed for calculating wind load for poles exceeding 50 feet in height is 130 mph.

a. Wind Importance Factor: 1.0.

b. Minimum Design Life: 50 years.

c. Velocity Conversion Factor: 1.0.

2. Basic wind speed for calculating wind load for poles 50 feet high or less is 100 mph.

a. Wind Importance Factor: 1.0.

b. Minimum Design Life: 25 years.

c. Velocity Conversion Factor: 1.0.

G. Strength Analysis: For each pole, multiply the actual EPA of luminaires and brackets by a factor of 1.1 to obtain the EPA to be used in pole selection strength analysis.

H. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.

2.2 ALUMINUM POLES

A. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. American LitePole.

2. Cooper Lighting Solutions; Signify North America Corp.

3. Hubbell Electrical Solutions; Hubbell Incorporated.

4. Holophane Lighting; Acuity Brands Lighting, Inc.

5. Lyte Poles Incorporated.

B. Poles: Seamless, extruded structural tube complying with ASTM B221, Alloy 6061-T6, with access handhole in in pole wall.

1. Shape: Round, tapered.

C. Pole-Top Tenons: Fabricated to support luminaire or luminaires and brackets indicated, and securely fastened to pole top.

D. Grounding and Bonding Lugs: Bolted 1/2-inch threaded lug, complying with requirements in Section 260526 "Grounding and Bonding for Electrical Systems," listed for attaching grounding and bonding conductors of type and size listed in that Section, and accessible through handhole.

E. Fasteners: Stainless steel, size and type as determined by manufacturer. Corrosion-resistant items compatible with support components.

1. Materials: Compatible with poles and standards as well as to substrates to which poles and standards are fastened and shall not cause galvanic action at contact points.

2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication unless otherwise indicated.

F. Handhole: Oval shaped, with minimum clear opening of 2-1/2 by 5 inches, with cover secured by stainless-steel captive screws.

G. Prime-Coat Finish: Manufacturer's standard prime-coat finish ready for field painting.

H. Factory-Painted Finish: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" recommendations for applying and designating finishes.

1. Surface Preparation: Clean surfaces to comply with SSPC-SP 1 to remove dirt, oil, grease, and other contaminants that could impair paint bond. Grind welds and polish surfaces to a smooth, even finish. Remove mill scale and rust, if present, from uncoated steel, according to SSPC-SP 5/NACE No. 1 or SSPC-SP 8.

2. Interior Surfaces of Pole: One coat of bituminous paint, or otherwise treat for equal corrosion protection.

3. Exterior Surfaces: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.

a. Color: As indicated by manufacturer's designations.

2.3 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 POLE FOUNDATION

A. Direct-Buried Poles with Concrete Backfill: Set poles in augered holes to depth below finished grade indicated on Drawings, but not less than as indicated. To ensure a plumb installation, continuously check pole orientation with plumb bob while tamping.

1. Make holes 6 inches in diameter larger than pole diameter.

2. Fill augered hole around pole with air-entrained concrete having a minimum compressive strength of 3000 psi at 28 days and finish in a dome above finished grade.

3. Use a short piece of 1/2-inch diameter pipe to make a drain hole through grout. Arrange to drain condensation from interior of pole.

4. Cure concrete a minimum of 72 hours before performing work on pole.

3.2 POLE INSTALLATION

A. Concrete Pole Foundations: Set anchor bolts according to anchor-bolt templates furnished by pole manufacturer.

B. Foundation-Mounted Poles: Mount pole with leveling nuts and tighten top nuts to torque level according to pole manufacturer's written instructions.

C. Poles and Pole Foundations Set in Concrete-Paved Areas: Install poles with a minimum 6-inch-wide, unpaved gap between the pole or pole foundation and the edge of the adjacent concrete slab. Fill unpaved ring with pea gravel. Insert material to a level 1 inch below top of concrete slab.

D. Raise and set pole using web fabric slings (not chain or cable) at locations indicated by manufacturer.

3.3 CORROSION PREVENTION

A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum using insulating fittings or treatment.

B. Steel Conduits: Comply with requirements in Section 260533 "Raceways and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch-thick, pipe-wrapping plastic tape applied with a 50-percent overlap.

3.4 GROUNDING

A. Ground Metal Poles and Support Structures: Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

1. Install grounding electrode for each pole unless otherwise indicated.

2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

B. Ground Nonmetallic Poles and Support Structures: Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

1. Install grounding electrode for each pole.

2. Install grounding conductor and conductor protector.

3. Ground metallic components of pole accessories and foundation.

END OF SECTION 265613

SECTION 265619 – LED EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Exterior luminaires with lamps and ballasts for shelters.

2. All accessories required for a complete operating system.

1.3 DEFINITIONS

A. CCT: Correlated color temperature.

B. CRI: Color-rendering index.

C. HID: High-intensity discharge.

D. LER: Luminaire efficacy rating.

E. Luminaire: Complete lighting fixture, including ballast housing if provided.

1.4 ACTION SUBMITTALS

A. Product Data: For each luminaire, and support component, include data on features, accessories, finishes, and the following:

1. Physical description of luminaire, including materials, dimensions, effective projected area, and verification of indicated parameters.

2. Details of attaching luminaires and accessories.

3. Details of installation and construction.

4. Luminaire materials.

5. Photometric data based on laboratory tests of each luminaire type, complete with indicated lamps, ballasts, and accessories.

a. Manufacturer Certified Data: Photometric data shall be certified by manufacturer's laboratory with a current accreditation under the National

Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.

6. Ballasts, including energy-efficiency data.

7. Lamps, including life, output, CCT, CRI, lumens, and energy-efficiency data.

8. Means of attaching luminaires to supports, and indication that attachment is suitable for components involved.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

2. Wiring Diagrams: For power, signal, and control wiring.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For luminaires to include in operation, and maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. LED light panels: Four of each type and rating installed.

2. Ballasts: Four of each type and rating installed.

1.7 QUALITY ASSURANCE

A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. Comply with IEEE C2, "National Electrical Safety Code."

D. Comply with NFPA 70.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace products that fail in materials or workmanship; that corrode; or that fade, stain, perforate, erode, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.

1. Warranty Period for Luminaires: Five years from date of Substantial Completion.

2. Warranty Period for Metal Corrosion: Five years from date of Substantial Completion.

3. Warranty Period for Color Retention: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, Basis-of-Design product is: Quadcast LED Parking Garage/Canopy Luminaire by Cooper Industries.

2.2 GENERAL REQUIREMENTS FOR LUMINAIRES

A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.

B. Lateral Light Distribution Patterns: Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated. Form and support to prevent warping and sagging.

E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

F. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

1. Label shall include the following lamp and ballast characteristics:

a. CCT and CRI for all luminaires.

2.3 GENERAL REQUIREMENTS FOR SUPPORT COMPONENTS

A. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.

B. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Shall not cause galvanic action at contact points.

2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication unless otherwise indicated.

3. Anchor-Bolt Template: Plywood or steel.

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

A. Install LED light panels in each luminaire. Provide all raceways, conduits and wiring connected to panel in signage panel. Connect panel to power source.

B. Fasten luminaire to indicated structural supports.

C. Adjust luminaires that require field adjustment or aiming.

3.2 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.

1. Verify operation of photoelectric controls.

C. Measure light intensities at night. Use photometers with calibration referenced to NIST standards. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION 265619

PART 350100 - GENERAL

350100 - INTENT

The intention of these specifications is to describe the scope of work for the construction and outfitting of two (2) all-welded steel Barges intended to be operated on the Mississippi River at Algiers Point and Lower Algiers. The Barges are to be complete and ready for service in all respects as described herein. It will be the responsibility of the shipyard to verify that the specification can be implemented into the design of the Barge. If the shipyard identifies an item within this specification that it is unable to implement into the design, the shipyard shall notify the Owners' Representative of the discrepancy in writing. The Representative will review the discrepancy and initiate changes to the owners' specifications or design as needed. No change resulting in a change to the contract value shall be implemented unless approved by the Owner's designated contracting officer.

These specifications are to be used along with the Drawings attached. Items drawn on the Drawings but not called out in the specifications are considered a part of the Barge. Any conflict between the drawings and the specifications within this document, Barge Specification Section 35000, shall be superseded by these specifications.

All material and workmanship must be of good commercial marine quality. All equipment installed shall be commercial marine grade for heavy duty operations exceeding 6,000 hours per year. The design and construction of the Barge shall in every way conform or exceed all appropriate ABS and USCG regulations for a Barge engaged in the intended service. The Barge will not however be classed by ABS nor built under ABS supervision. Barge will not be inspected by USCG.

The Owner reserves the right to make alterations during the construction of the Barge. If such alterations increase or decrease the cost or affect the date of delivery, they must not be made unless mutually agreed upon in writing. All responsibilities of the shipyard for safety, storage, warranty, insurance etc. will be covered in the Business Contract and may not be covered, nor implied, in this Specification.

350101 - PARTICULARS

101. Description

The Algiers Point and Lower Algiers barges are a steel hull and steel deckhouse design designed to facilitate passenger operations. The drawings provided to the prospective BUILDER serve as Contract and Contract Guidance drawings as listed in Section 350105.1. They are provided for bid purposes only. These drawings are listed in Section 350105.1.

Production level drawings to satisfy these specifications shall be the BUILDER's responsibility. The Barge shall be built at the BUILDER's facility and delivered by the BUILDER to Algiers Point Terminal and Lower Algiers Terminal where final acceptance shall take place.

The BUILDER is responsible for checking all lock and bridge clearances for transit and delivery, which can vary according to the river levels and seasons. The BUILDER is responsible for all

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costs for labor, materials, and fees for delivery to the final locations at Algiers Point Terminal and Lower Algiers Terminal. The design standards for the Barge are listed in this document. The Lower Algiers Barge is equipped with vehicle ramps which are hydraulically actuated through electric over hydraulic pumps. The Algiers Point and Lower Algiers barge shall be built for operation with an unmanned machinery space with occasional crew.

Measures to control vibration should include resiliently mounting the auxiliary equipment. There shall be no adverse vibration impacting the equipment.

102. Barge Dimensions

Table 1: Barge Dimensions

	Algiers Point	Units	Lower Algiers	Units
Length Overall	180	FT	216	FT
Length DWL	178.8	FT	204.3	FT
Hull Breadth,	40	FT	40	FT
Depth, Molded	8.5	FT	8.5	FT
Draft, Design	2.58	FT	4.25	FT

103. Tank Capacities

Table 2: Barge Tank Capacities

Tank Type	Algiers Point	Lower Algiers
Ballast Water	384,860 gallons	449,563 gallons
Oily Water/Waste Oil	500 gallons	N/A

Note 1: Above capacities are approximate only. Capacities of other smaller, bulkhead mounted tanks are noted in individual system descriptions.
Note 2: Ballast tanks are to correct operating heel of the Barge, due to the asymmetric deck house and ramp loading, and to induce trim on the Barge.

104. Hull Scantlings

The scantling sizes shown in the Contract Guidance Drawings are typical, for guidance only and the minimum required. Equivalent flange plates and/or structural sections can be used in lieu of fabricated tees. Stanchions shall be equivalent open sections inside tanks. Substitution of scantlings must be approved by the Owner's Representative and meet applicable required USCG/ABS requirements. Deck scantlings shall also consider maximum wheel/axle loadings in accordance with ABS local deck pressure calculations for wheel loadings.

104.1 Lower Algiers Landing Barge Deck Loading:

The passenger and vehicle deck cargo capacity of the Lower Algiers Landing Barge shall be 10 Short Ton at a vertical center of gravity of 16 feet above baseline. Vehicle cargo/vehicle and tire loadings shall be considered as in Table 5 below.

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Table 3: Barge Cargo/Vehicle Loading

Load Type (Vehicle weights exclude passengers)
Each car (Gross weight up to 4,000 lb.)
Each pick-up, Van or Camper (Gross weight up to 10,000 lb.)

105. Lower Algiers Ramp Design

The ramp is hydraulically driven at both ends for loading and unloading of the vehicles/passengers. The ramp shall include a flap to allow for articulation at the dock, the design of which is similar to the Owner's existing Barges. The ramp must be designed to withstand the vehicle loading shown in Section 104.1.5 and consider the axle loading, and the bearing area of the wheels and the number of vehicles expected to be on the ramp at the same time. Hydraulic capacity of the ramp must consider the time requirement for raising and lowering the ramp and the outside temperatures to be encountered during operations. Care shall be taken to ensure minimalizing water ingress in heavy weather through the ramp hinge, using deflector plating on top of the hinges.

106. Ambient Conditions

The following are the local environment temperatures – low of 32 °F in the winter, high of 95 °F in the summer.

107. Builder Obligations

The BUILDER is responsible for final design, construction, regulatory approval, testing and delivery of a complete and functional set of Barges. BUILDER shall be responsible for interpreting the plans and specifications, interactions with the USCG and Owner's Representative, and all other items as required to deliver a complete Barge to the destination. The figures and information provided in these Specifications are provided for guidance only and shall not release BUILDER from its obligation to complete Barge in accordance with these Specifications and the rules and regulations of the Regulatory Authority and other applicable bodies considering the normal operational area of the Barge.

350102 - DEFINITIONS

101. Organization

350102.1.1 Owner

The term Owner is used synonymously and used to refer to the New Orleans Regional Transit Authority (RTA).

350102.1.2 Contractor, Shipbuilder, or Builder

The term Contractor, Shipbuilder or BUILDER is used synonymously and shall be the contractor who receives an award to engineer, build, test and deliver the Barge.

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350102.1.3 Project Naval Architect/Owner's on-site Representative (Owner's Representative)

The Owner's designated Project Naval Architecture firm and Representative shall be the following:
TAI Engineers LLC.
Contact: Mr. Elliot VanDeren, P.E.
2021 Lakeshore Drive, Ste 414
New Orleans, LA 70122
Ph. 504.282.6166
Email: E.VanDeren@TAIEngineers.com

The Project Naval Architect shall review all drawings and documentations on behalf of the Owner and verify compliance with specified regulatory bodies. Any areas that are non-compliant may be pointed out to the BUILDER, who shall ensure compliance in a timely manner and at no additional charge to the Owner. This does not alleviate BUILDER's responsibilities stated in section 101.10. All technical matters related to the design and construction of the Barge shall be brought to the attention of the Project Naval Architect by the BUILDER, who shall keep the Owner updated on the progress of the Barge's Engineering. The Project Naval Architect shall also act as the Owner's Representative at site. The Owner's Representative is designated to act on the Owner's behalf on all matters related to progress and quality of work performed by BUILDER and compliance with the specifications, drawings, applicable regulations, and the contract. The Owner's Representative or his employees shall be allowed full access to the work, technical information, and to the regulatory authority discussions and correspondence during the BUILDER's normal business hours. Drawings shall be submitted to the Owner's Representative for review at least 15 working days before the need date for approval. Follow on drawing review after comment resolution by Owner's Representative shall be allowed 5 working days prior to construction. Any work started before drawings have been reviewed and approved by the Owner's Representative shall be at the risk of the BUILDER.

Any contractual decisions which relate to any changes in the contract and the contract price are required to be approved by the Owner's Contracting Officer before the commencement of any work on the change. Any work performed prior to the Owner's Contracting Officer's approval shall be at the BUILDER's risk.

350102.1.4 Regulatory Authority

The Barge shall also be built in accordance with ABS Rules for Building and Classing Steel Barges 2025, but shall not receive ABS plan review, ABS survey approvals nor an ABS certificate.

102. Specification Terminology

2.2.1 "Or equal" Materials or Equipment

Where a specific make and model of a piece of equipment is listed in the specification, the specification of that piece of equipment is provided as a basis of quality. Other make and models may be considered as equals. For other make and models may be considered to be

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an equal, the BUILDER must demonstrate to the Owner's Representative that the materials or equipment are equal to or better than those specified in terms of availability of spare parts and service, efficiency, performance, reliability, service life, size, and weight. BUILDER shall also demonstrate that such substitution does not materially affect any other part or system of ship, and the supply and installation of such equipment does not affect the contract price. All 'or equal' substitutions shall be submitted for approval of the Owner's Representative, who shall discuss these with the Owner as necessary. It is the BUILDER's responsibility to provide materials and equipment that meets the specifications. Owner or Owner's Project Naval Architect shall make the final determination of equipment considered as "equal" to the specified materials or equipment, whose decision shall be final.

2.2.2 Good Shipbuilding Practice

"Good Shipbuilding Practice" refers to designs, applications, and procedures proven successful in similar Barges engaged in comparable service.

2.2.3 Language and Units

All documents and drawings for use in construction of this Barge shall be in the English language. All markings, signs, labels, etc., shall be in English for all documentation related to design and construction of Barge. As a minimum Barge shall meet IACS No.47, *Shipbuilding Quality Standard for New Barges.* To the extent practicable, all drawings, documents, gauges, and equipment readout displays shall show dimensions in imperial units.

350103 - SCOPE OF WORK OVERVIEW

The intent of these specifications and guidance drawing is to describe the work to be conducted in connection with the Algiers Point and Lower Algiers Ferry Landing Barges. All work shall be complete in all respects, tested to the satisfaction of the OWNER and ready for operation.

In general, the contract will perform the following:

101. General Construction

Construct both barges and tow the barges to the ferry crossing at Algiers Point & Lower Algiers, respectively, and install the barges as described in Part 350200 of these specifications.

102. Piping Systems

Furnish, install, and/or connect piping systems as described in Part 350400 of this specification.

103. Electrical System

Furnish, install, and/or connect electrical equipment and cables as described in Division 26 of this specification.

104. Coating System

Paint the barge as described in Part 350311 of this specification.

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350105 - GENERAL SERVICES

During the period that the barge will be at the contractor's facility, the contractor shall furnish, at his expense, all necessary services, including, but not limited to, shore power, fresh water and trash disposal. The contractor shall provide a safe and convenient means of boarding the barge at all times. Ladders shall not be permitted.

350106 - MATERIALS

The contractor shall only use materials, supplies, and incidental items which are new, unused, and of good quality, unless noted otherwise in these specifications. All steel shall be grade ASTM A-36 or better. The contractor shall use no asbestos or asbestos containing equipment.

101. Steel

BUILDER shall provide new structural steel, ABS Class standard Grade as applicable for operations specified in this specification, wheel abraded and pre-weld primed, free from lamination, deep rust, black oxide, or other obvious defects, and treated in accordance with the paint schedule. Builder shall provide mil certificates for all steel. Shipyard shall verify and document compatibility of pre-weld primer with welding materials and paint schedule.

350107 - EQUIPMENT

Such items that may be owner furnished shall be specifically noted. Therefore, unless particularly noted in these specifications, the contractor shall purchase, furnish or otherwise provide for all equipment, machinery, connections and all other material necessary to complete the job.

The contractor shall furnish and install any electrical equipment and wiring necessary to complete the specified work, even if not specifically noted in the work item. All electrical equipment and materials shall be of the types suitable for the intended service and shall operate under all expected conditions of vibration, roll and pitch. All electrical equipment shall be compatible with each other. The contractor shall furnish and install all required wire ways, deck penetrations and bulkhead penetrations, to implement the installations.

The following is a list of equipment or machinery specifically identified, but not limited to, as being contractor furnished. This listing is strictly for contractor guidance in preparation for his bid.

The exact manufacturer and model to be furnished shall be detailed at a later date.
Algiers Point:

1. One (1) 3000 GAL. Above Ground Double-wall, fire resistant, steel fuel storage tank.
2. One (1) Heavy Duty 35 GPM, Diesel Transfer Pump
3. One (1) Fuel Meter Cabinet w/ 4 Digit Mechanical Gallon Meter, Switch Lever Nozzle, Retainer, 6-40 GPM Output, and 40' of 1-1/2" hose
4. One (1) Ballast Pump
5. One (1) Sewage Transfer Pump
6. One (1) Dirty Oil Transfer Pump

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Lower Algiers:

1. One (1) Ballast Pump
2. Four (4) Hydraulic Rams
3. Two (2) Electric Hydraulic Power Unit

All equipment, including paint products, shall be submitted in writing and approved in writing by the owner, or the Engineer, before acceptance.

350108 - WORKMANSHIP

The contractor shall perform all work in accordance with good marine practice. All steel work shall be smooth and fair with no protruding sharp edges. All machinery or equipment shall be installed in accordance with the manufacturer's recommendations.

The contractor shall provide any and all equipment (i.e., crane service, welding machines, oxy-acetylene systems, etc.) and facilities (i.e., lighting, scaffolding, etc.) necessary to complete the work.

101. Scheduling

Within 15 days after execution of the construction contract and based upon the best information available at the time, the BUILDER shall prepare a construction schedule for submission to the Owner's Representative. This schedule shall show all pertinent information including construction sequence, critical path of major equipment, testing and other relevant details. This construction schedule shall be updated periodically as the schedule changes and submitted to the Owner's Representative for review.

102. Cleanliness

BUILDER is responsible for maintaining a clean and tidy condition during construction and outfitting, and for thoroughly cleaning bilges, tanks, pockets, and any spaces which may be subsequently rendered inaccessible. BUILDER shall seal and protect all components from ingress of dirt, sand, paint, etc. All pipes shall be flushed, and tanks shall be thoroughly cleaned before closing and Owner's Representative shall inspect before closing.

Prior to delivery, The contractor shall remove from the vessel, on a daily basis, all waste, including dirt, grit, garbage, debris, oil, water ballast, oil for disposal, bilge water (oily or clean), super chlorinated water, treated water ballast, grease, etc., resulting from work by these specifications, in accordance with the requirements of local, state or federal governmental agencies.

350109 - VERIFICATION BY CONTRACTOR

The contractor may use any and all drawings, sketches or illustrations which form part of these specifications only for general guidance. The contractor shall be responsible for verifying all existing physical conditions, dimensions, lengths, quantities, sizes and shapes provided in the specifications and drawings. Dimensions, lengths, quantities, etc., provided in the specifications and drawings are for general guidance only. The Consulting Engineers do not specifically warrant or otherwise certify that such information is accurate or truly representative of existing conditions.

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Inclusion of any such data in these specifications shall not relieve the contractor of his responsibility to check and verify same. The contractor shall be responsible for determining the existing paint millage. The contractor shall be solely responsible for verification and application of any and all information necessary to accomplish the work.

350110 - DOCUMENTS

101. Approval Of Contractor's Design

Wherever required by these specifications, the contractor shall submit the necessary drawings, sketches, designs, calculations, and information to the Engineer for approval before starting the work. The contractor shall be solely responsible for the accuracy, validity and-or workability of the information or design contained in the submittal. The contractor shall make his submittal such that the Engineer has a reasonable amount of time to review it. The completion shall not signify approval, certification or validation of the submittal, but shall only signify that the submittal fulfills the requirements of these specifications.

102. Design Documents

For contract purposes, the Contract and Contract Guidance Drawings for this project are as follows:

Table 4: Barge Design Documentations

Dwg. No.	Name	Drawing Type
N1.0P	LAYOUT	Contract Drawing
N2.0P	OUTBOARD PROFILE & DECK HOUSE	Contract Drawing
N3.0P	TANK ARRANGEMENT	Contract Drawing
N4.0P	HULL LINES	Contract Drawing
N5.0P	OFFSETS	Contract Drawing
N6.0P	LONGITUDINAL STRUCTURE	Contract Drawing
N7.0P	MAIN DECK STRUCTURE	Contract Drawing
N8.0P	BOTTOM STRUCTURE	Contract Drawing
N9.0P	TRANSVERSE STRUCTURE	Contract Drawing
N10.0P	DECK HOUSE AND CANOPY STRUCTURE	Contract Drawing
N11.0P	BRACKET DETAILS	Contract Drawing
N12.0P	MOORING AND FENDERING DETAILS	Contract Drawing
N13.0P	BULLWARK DETAILS	Contract Drawing
N1.0L	LAYOUT & OUTBOARD PROFILE	Contract Drawing
N2.0L	DECK HOUSE SECTION	Contract Drawing
N3.0L	TANK ARRANGEMENT	Contract Drawing
N4.0L	HULL LINES	Contract Drawing
N5.0L	OFFSETS	Contract Drawing

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N6.0L	LONGITUDINAL STRUCTURE	Contract Drawing
N7.0L	MAIN DECK STRUCTURE	Contract Drawing
N8.0L	BOTTOM STRUCTURE	Contract Drawing
N9.0L	TRANSVERSE STRUCTURE	Contract Drawing
N10.0L	DECK HOUSE AND CANOPY STRUCTURE	Contract Drawing
N11.0L	BRACKET DETAILS	Contract Drawing
N12.0L	MOORING AND FENDERING DETAILS	Contract Drawing
N13.0L	BULLWARK DETAILS	Contract Drawing
N14.0L	VEHICLE RAMP DETAILS	Contract Drawing

Contract Drawings are considered non-deviational drawings, and any deviations from these shall require approval of Owner's Representative or Owner as necessary. Contract Guidance drawings are provided to assist the BUILDER, but the BUILDER is required to verify these and ensure that they follow all the requirements of these specifications and obtain applicable approvals.

103. Working Drawings, 'As Built' Drawings and Manuals

Working Drawings: The BUILDER shall prepare all working drawings required for Yard use or for submission to Regulatory Authorities.

"As Built Drawings" shall define the final configuration of the Barge and two sets of As Built scale drawings (24x36 in) in a binder shall be provided with the Barge at the time of final acceptance. Two USB drives, with these drawings in native and pdf format, along with any 3-dimensional models developed, shall be provided in native format to the Owner's Naval Architect.

Three sets of equipment operations and maintenance manuals shall be provided in a properly bound and cataloged hard copy. Two electronic copies of all manuals on a USB drive in pdf format shall be provided to the Owner's Naval Architect.

Upon completion and delivery of Barge, BUILDER shall provide Owner with three (3) bound copies of a complete Tests and Trials Report, containing an organized record of all tests and trials data

104. Contractor Drawings

If the contractor wishes to deviate from the original design the contractor shall prepare drawings and illustrations that define detailed aspects of the proposed modifications. The contractor shall submit the drawings in two phases.

First, the contractor shall furnish two copies of a check print of the drawing to the Engineer for his review. Upon completion, the Engineer shall return the drawing to the contractor. The completion of the review by the Engineer, with or without comments, shall not signify approval, certification or validation of the submittal, but shall only signify that the submittal fulfills the requirements of these specifications. The contractor shall then make all corrections, adjustments, or any other modifications noted by the Engineer.

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Second, the contractor shall furnish the Engineer, for each drawing, one (1) reproducible copy, two (2) prints and one (1) computer file copy. The computer file drawing shall be fully accessible and compatible with the latest version of AutoCAD ™ program by Autodesk, Inc. The computer file copy shall be transmitted via electronic media approved by the Engineer.

The contractor shall be solely responsible for the accuracy, validity and/or workability of the information or design contained in the drawings. The contractor shall be responsible for all costs associated with the preparation of these drawings, including, but not limited to, personnel, program licenses, computer equipment, supplies and reproduction

350111 - MANUFACTURER'S REPRESENTATIVE

Whenever the specifications require that work be performed or accomplished under the supervision or direction of the manufacturer's representative, a manufacturer's representative shall be required to be present during all stages of the work being performed. Furthermore, unless otherwise specified, the contractor shall be liable and responsible for the cost of such supervision or direction, as well as any support furnished to the manufacturer's representative.

350112 - GAS FREE CERTIFICATE

Before starting any work on any compartment on the vessel, the contractor shall obtain, at his expense, a "gas free" or "safe for hot work" certificate for that compartment and for any adjacent compartment which may be affected by the work. The contractor shall furnish a copy of the "gas free" or "safe for hot work" certificate to the owner. The contractor shall maintain such certificates, at his expense, for as long as work continues in that compartment.

350115 - DESIGN CHECK

Prior to commencement of construction of the Barge, the BUILDER shall provide to the Project Naval Architect a detailed estimate of Barge lightship, weight, and CG position reflecting the actual components BUILDER proposes to incorporate into Barge. In the event of discrepancy between the values so determined and those of Naval Architect, there will be a review of the data with Naval Architect to resolve a final agreed weight and CG for Barge, and to determine if any design alterations are required. The cost of any design alterations will be for the account of the BUILDER.

350116. - PRODUCTION

The BUILDER shall conduct a production readiness review (PRR) 30 days prior to the start of construction. The intent of the PRR is to demonstrate to the owner the builder has matured the design from contract level into a production ready package.

The builder shall provide a PRR agenda 14 days prior to the PRR. The agenda topic shall incorporate:

1. Status of Contract Requirements
2. Status of Engineering Change Proposals
3. Request for Waiver

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4. Construction Facilities
5. Production Manning. Graphic depictions of manpower curves showing manpower usage and projections by trade. Potential shortfalls in required manpower levels by trade shall be addressed.
6. Production Information Package

Following the PRR, the builder shall provide minutes. PRR minutes shall identify date, time, and location of the meeting and a chronological listing of each topic discussed. The minutes shall include applicable discussions, concerns, action items assigned and completed, and a list of the documentation discussed. A list of attendees shall be included. Copies of each presentation or document reviewed shall also be included and identified in the minutes by document name, document revision, document date, and the digital file name and date.

350117 - TESTS AND TRIALS

The BUILDER shall perform a comprehensive set of tests and trials throughout construction and/or upon completion of Barge to satisfy the following:

1. Owner, and Owner's Representative that the Barge and all systems and equipment are fit for purpose, and in compliance with all applicable regulations.
2. Prove execution of all work is in accordance with the Specification.
3. Prove the full and satisfactory operation of all shipboard systems.
4. Identify any aspects of workmanship, material, or equipment defect which require rectification prior to acceptance of Barge.
5. Record test configurations, test procedures, and test results and submit report to Owner on all tests conducted

All work shall be performed to the satisfaction of the owner. All equipment shall be furnished, installed and tested to the satisfaction of the owner.

No portion of the work either listed herein or to be negotiated within the scope of these specifications shall be considered complete until approved by the owner. No work shall be sealed or otherwise hidden until such approval has been obtained.

If testing is required to evaluate some portion of the work such testing shall be done to the satisfaction of the owner. The contractor shall furnish any and all services, equipment, material, fuels, fluids and competent personnel are necessary to operate machinery and conduct the tests. At the discretion of the owner, the tests may be conducted at either the contractor's facility or at the Algiers Point/Lower Algiers ferry landing.

All costs associated with any testing, including, but not limited to, preparation, fluids, supplies, connections, equipment, materials, personnel, clean up and reassembly shall be at the contractor's expense.

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ALGIERS POINT LANDING BARGE SPECIFICATION
PART 350200- STRUCTURE

35201 HULL STRUCTURE

The Contractor shall fabricate, complete in all respects, a completely new landing barge as described in the following specifications and as illustrated in the provided contract guidance drawings. All work shall be to the satisfaction of the Owner and attending engineer. All steel work shall be trim and fair and shall be coated as delineated elsewhere in these specifications.

Hull structure shall be constructed in accordance with applicable ABS Rules and Regulations. The Contractor's design shall be approved by the Owner prior to the purchase of any material fixtures or equipment.

Builder shall ensure that plate fairness as-built meet good marine practice for Barges of this type. Where general scantlings interfere with the foundations for equipment or other required structures, the Contractor shall design and fabricate transitions between the two, to furnish a strong, integrated structure.

101. Main Deck

The contractor shall fabricate and complete in all respects a new main deck as described in guidance drawing 23-095-N7.0P. The main deck shall be constructed using ASTM A36 grade steel or better. All stiffener end connections shall be bracketed or lap welded, dependent upon the transverse structure which the stiffeners end at.

102. Bottom

The contractor shall fabricate and complete in all respects a new bottom shell as described in guidance drawing 23-095-N8.0P. The bottom shell shall be constructed using ASTM A36 grade steel or better. All stiffener end connections shall be bracketed, as noted in drawing 23-095-N8.0P.

103. Longitudinal Structure

The contractor shall fabricate and complete in all respects new longitudinal structures as described in guidance drawing 23-095-N6.0P. The longitudinal structures shall be constructed using ASTM A36 grade steel or better.

Side Shell Bulkhead (20' OCL)

The side shell bulkhead shall be 3/8" plate with L5x5x3/8" longitudinal stiffeners equally spaced at 1'-10". All stiffener end connections, at water-tight bulkheads, shall be bracketed, as noted in drawing 23-095-N9.0P. The port side shell plate shall have two cut outs, 10-3/4" by 4'-5", to accommodate the ferry boarding ramps. The location and size of the ramp recesses is described in guidance drawing 23-095-N7.0P.

Swash Bulkhead (10' OCL)

The swash bulkheads shall be of 5/16" steel plate with L5x3x3/8" vertical stiffeners between frames, spacing defined in guidance drawing. All vertical stiffener end connections shall be bracketed. There shall be several 18"x24" access holes throughout the bulkhead as detailed in

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Detail J on guidance drawing 23-095-N6.0P. The locations of all cutouts are defined in guidance drawings.

Centerline Bulkhead

All stiffener end connections, at water-tight bulkheads, shall be bracketed, as noted in drawing 23-095-N9.0P.

104. Transverse Structure

The contractor shall fabricate and complete in all respects new transverse structures as described in guidance drawing 23-095-N9.0P. The transverse structures shall be constructed using ASTM A36 grade steel or better.

Watertight Bulkhead

There shall be water-tight bulkheads at frame 02, 03, 06, 09, 13, 17, 20, 23 and 24. All stiffener end connections shall be lapped.

Truss Web Frame

There shall be truss web frames at frame 01, 04, 05, 10, 11, 12, 14, 15, 18, 19, 21, 22, and 25. Web frames shall be of truss construction and lap welded to one-one another webs shall have cutouts for the longitudinal stiffeners. All stiffener end connections shall be lapped.

Head Log

Head and stern logs shall be of 3/8” steel plate with L5”x3”x3/8” vertical stiffeners at 2’-0” spacing. The vertical stiffeners shall be lap welded to the main deck and bottom shell stiffeners.

Curved Corners

Port side corners shall have a 6’-0” radius of 3/8” rolled steel plate with L5”x3”x3/8” vertical stiffeners at 2’-0” spacing.

Starboard side corners shall have a 10” radius of 3/8” rolled steel plate with L5”x3”x3/8” vertical stiffeners at 2’-0” spacing.

105. Welding

All hull structural materials and welding shall be in accordance with ABS Rules for Materials and Welding. The contractor shall perform non-destructive testing of hull welds under the guidance of ABS Guide for Nondestructive Inspection of Hull Welds, to the satisfaction of the Owner or the Owner’s Representative.

A Weld Schedule shall be submitted 30 days prior to the Start of Construction for review by the Owner’s Project Naval Architect. Welding symbols, showing size and design, shall be shown for towing fittings, machinery foundations, and details of the ramp hinges and support structure for chain supports. The weld schedule shall identify the type and size of welds for all other applications.

350202 HULL STRUCTURAL FITTINGS

101. Integral Tanks

The BUILDER shall provide structural tanks with pipe connections, and fittings as described in the applicable system specification and shall provide tank coating suitable for the application. The BUILDER shall provide one (1) manhole per tank for all tanks. Ballast tanks shall be integral.

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this Specification.

102. Sea Chests

The BUILDER shall fabricate and provide one (1) sea chest for the Ballast system as described in guidance drawing 23-095-M3.0P. Sea chest shall be located as low as possible towards the keel of the Barge as shown in the Contract guidance Drawings.

350203 MACHINERY ROOM

The contractor shall fabricate and complete in all respects a new machinery room as described in guidance drawing 23-095-N10. P. The machinery room shall be constructed using ASTM A36 grade steel or better.

The machinery room shall have a door of which dimensions shall be 2'-6" wide by 6-0"' tall, with a window out of 1/4" wire embedded glass. The machinery room shall include a window on the starboard side, 4'-0" wide by 2'-6" tall with 6" radius corners. The glass shall be1/4" wire embedded glass. The area surrounding the window shall be reinforced by 4x1/4" flat bar. The forward bulkhead shall have a 3'-0" by 3'-0" cut out for an AC unit. The utility house roof shall have a deck drain constructed out of 2" Schedule 40 galvanized pipe as referenced in the guidance drawing.

The contractor shall finish the Machinery Room house fair and smooth to give a pleasing appearance. Add intercostal flat bar stiffeners as required to straighten plate panels. The BUILDER shall keep size and length of welds to minimum Class standards. The BUILDER shall provide minimum 6" radius on all vertical Machinery Room corners and in way of any recesses for hatches and doors. The Machinery Room shall have an awning as indicated on the Contract Drawings.

350204 MOORING CONNECTIONS

The builder shall fabricate, complete, and replace in king all mooring connection parts used to facilitate the connection between the current Algiers Point Landing barge and the permanently installed mooring structure. This shall include but is not limited to all UHMW, wire cable, high tensile chain, and necessary hardware.

101. UPSTREAM CONNECTION

The contractor shall fabricate and complete in all respects a new upstream mooring connection as described in guidance drawing 23-095-N12.0P. The inboard structures of the upstream mooring foundations shall be constructed according to the arrangement shown in the profile and plan views on sheet 1 of the drawing. All structural members shall be constructed using ASTM A36 grade steel or better.

102. DOWN STREAM CONNECTION

The contractor shall fabricate and complete in all respects a new downstream mooring connection as described in guidance drawing 23-095-N12.0P. All structural members shall be constructed using ASTM A36 grade steel or better.

350205 FENDERING

The Contractor shall fabricate, build and complete in all respects a fendering system on the river side of the barge. The fendering system is described in the supplied guidance drawing 23-095-

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N12.0P. Fenders similar in type to Duramax Marine 900 series shall be installed vertically at each frame. A horizontal section shall be installed at the maindeck from frame 16 to frame 19 to facilitate ferry mooring.

350206 BULWARKS

The contractor shall fabricate, build and complete in all respects a bulwarks system as described in the supplied guidance drawing 23-095-N13.0P. The bulwarks shall be installed on the river side of the ferry landing.

350208 AUXILIARY MACHINERY FOUNDATIONS

The BUILDER shall provide auxiliary machinery foundations as required for each piece of equipment in accordance with the equipment manufacture's recommendations. Foundations and brackets for equipment shall be configured to provide access for cleaning, painting, preservation, and maintenance, and to prevent accumulation of water, dirt, and foreign material.

PART 350300 - OUTFIT AND FURNISHINGS

350301. - GENERAL

Builder shall execute work skillfully to present a neat and attractive appearance with tasteful choice of materials and color, to Owner's satisfaction. Builder shall select all construction techniques and materials with both an attractive appearance and minimum maintenance in mind; consequently, materials used must be approved for purpose, attractive, highly durable, and easily cleaned by wiping or washing with mild detergent. All colors shall be approved by Owner and their Representative. Ensure surfaces are free of inaccessible corners or open joints which could collect dirt.

350302. - DOORS

101. Weathertight Doors

Builder shall provide USCG approved hinged type, weathertight doors for deckhouse access to the Machinery Room.

Weathertight doors shall be as follows:

- Steel construction
- Steel frame, weld-in type
- Stainless steel hardware
- Solid core double panel construction with radiused corners
- 2-dog single lever actuated, operable from both sides
- Stainless steel lockset
- Maximum sized 12" fixed circular window.
- Neoprene gasket
- Minimum 6" coaming height to crew spaces
- Provide stainless steel or equal hardware, heavy duty, marine quality
    - lockable (hasp and staple)
    - clear opening per Drawings

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this Specification.

- Fit all deckhouse doors with built-in brass locks and common key. Supply two (2) keys for each door.
- Fit exterior doors with non-rattling stainless-steel holdbacks, complete with rubber-faced position stoppers.
- Fit exterior non-slip steps on any coaming greater than 12" in height.

350303 - MANHOLES, HATCHES, AND ACCESS PLATES

101. Manholes

Manholes or hatches shall not to be placed in a location where a passenger, during normal operations, could walk over them. All manholes placed on the deck shall be flush type as described in section 350303.1.1.

Tank or void entrance manholes shall be placed on the main deck and provide identical multi-bolt manholes, rectangular or oval pattern, approx. 18" x 24" clear opening, on raised angle coaming for all tanks and voids with vertical entry points to comply with ASTM F1166. A 3" sounding plug shall be included in each manhole for ease of sounding tanks and voids.

Multi-bolt manholes on inside tank bulkheads shall be clear of obstructions and at mid height with hand-grabs provided above manholes, both inside and out, with stirrup rungs inside tanks as required for safe access.

101.1 Manholes, Flush Type (FM)

Provide flush type manholes and hatches with top of studs and nuts below top plate surface for manholes located on or above main deck, or in locations where projections are not permissible. Fit lifting rings, and 1/2" steel reinforcing bar rungs below as required

350304 - WINDOWS AND PORTLIGHTS

Marine quality windows shall be installed in all locations indicated on Plans, in accordance with ABS and USCG standards. Water tightness of all fixtures shall be proven in accordance with ABS and USCG standards.

Windows shall be as manufactured by Beclawat, Diamond Sea-Glaze or equivalent, clamp in or bolted, stainless steel frames, windows, with glass thicknesses as required by Class.

350305 - LADDERS, AND STAIRS

101. Ladders

All Ladders shall be constructed in accordance with ASTM F1166. A minimum 7" toe space shall be provided between support structure and ladders. Lateral support shall be installed as required. All burrs, sharp edges, weld spatter, etc. shall be ground smooth.

102. Exterior Ladders

Exterior ladders as shown on the drawings, shall meet applicable ABS and USCG regulations. Vertical stringers shall be integrated with adjacent handrails where applicable and compatible.

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103. Interior Ladders

Fabricate interior ladders with steel flat bar stringers and steel rebar rungs penetrating stringers to ASTM standards, ABS and USCG rules for access and egress from the tanks and voids.

35030 - ASBESTOS

The use of asbestos or asbestos-containing materials either for or during construction of this Barge is not permitted. All insulation, brake linings, and jointing materials must be certified asbestos-free. Use of asbestos-containing protective materials such as fire blankets during construction is not permitted. An "Asbestos-Free" certificate shall be provided to the Owner.

350309 - FIRE SAFETY EQUIPMENT

101. Portable Fire Extinguishers

Supply and install three (3) portable fire extinguishers, one internal to the machinery room, one external to the machinery room, and one at the fueling station

102. Fire Hydrant Stations

Provide a fire hydrant station as shown on contract drawing 23-095-N1.0P. For each hydrant provide one (1) USCG compliant hose, 50' x 1- 1/2" size with brass dual-purpose type nozzle, and hose spanner. Stow nozzles and spanners in racks adjacent to each hydrant. Stow hoses in racks with lids or keeper straps to retain hoses

350310 - LIFESAVING EQUIPMENT

The Barge shall be equipped to meet USCG requirements.

101. Life Rings

The contractor shall provide a minimum of two (2) life rings, painters, and lights, one on each end of the barge.

102. First Aid Kit

The contractor shall supply one (1) USCG approved first aid kit and mount in the machinery room.

350311 - PAINTING AND COATINGS

All non-CRES components and surfaces shall have anti-corrosion treatment or coatings applied, except where such coatings would interfere with a component’s operation. The coating system shall be applied as described below. The contractor shall develop a paint schedule, submit it, and receive approval from the Owner or Owners Representative prior to commencing coating

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application. Coating thickness and application method shall be in accordance with the manufacture recommendations outlined in Annex B.

1. All Steel - Interplate 937 Inorganic zinc silicate pre-construction primer for the protection of the steel during the fabrication and erection phase of new construction.
2. Keel to One foot above design Waterline - An Intergard 7500 anticorrosive scheme for long term protection.
3. One foot above design Waterline to Caprail including overhang - An Intergard 7500 anticorrosive scheme, fooled by Intergard 7500 intermediate coat overcoated with Interthane 990 Polyurethane finish.
4. Exterior Deck in way of designated walkways - An Intergard 7500 anticorrosive scheme with a layer of Intershield 5150LWT overcoated with Interthane 990 Polyurethane Finish.
5. Exterior Deck excluding designated walkways - An Intergard 7500 anticorrosive scheme overcoated with Interthane 990 Polyurethane Finish.
6. Ballast Tanks - An Intergard 7500 anticorrosive scheme suitable for use in Water ballast tanks.
7. Voids and Cofferdams - An Intergard 7500 anticorrosive scheme suitable for use in Water ballast tanks.
8. Sewage Tank - An Interline 975P, two component, solvent free, heavy-duty epoxy lining that provides corrosion protection for the internals of potable water tanks and liquid mud tanks.
9. Oily Water/Waste Oil Tank - An Interline 975P, two component, solvent free, heavy-duty epoxy lining that provides corrosion protection for the internals of potable water tanks and liquid mud tanks.

350312 - SIGNS AND MARKINGS

All markings to be in English, attached by neat, continuous welds. Fillet welds on lettering shall be no larger than 1/8"

101. Barge Name

The barge name, provided by the RTA shall be painted on the bow and stern in twenty-four (24) inch high white block letters. The name shall be made from ¼” plate and welded to the shell.

102. Draft Marks

Provide NC cut draft marks from 1/4" plate and weld to shell on four quarters and at midships LWL. Carefully locate draft marks and obtain approval of Owner's Representative before final welding. Record and transmit location to Owner's Naval Architect, and indicate on as-fitted docking plan referenced to baseline and docking reference line

103. Nameplates and Labels

103.1 Lifesaving Equipment Markings

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Mark lifebuoys and rafts with Barge's name and port of registry per USCG requirements.

103.2 Equipment Markings

Fit brass nameplate discs on all valve handwheels/handles as specified. Fit nameplates and labels where required by Owner's Representative (switchboard, control consoles, instrumentation, doors, warnings), ensuring nameplates are not painted. All electrical starters, and disconnects shall have identifying labels.

PART 350400 – SHIP'S SERVICES

350401 - PIPING GENERAL

The contractor shall fabricate and complete in all respects adequate piping systems to allow for ballasting and deballasting of specified tanks, ventilation of all tanks and voids, drainage of all decks, hydraulic ramp operations, and ferry servicing (fuel, fresh water, and sewage) as described in guidance drawings 23-095-M3.0P, 23-095-M4.0P, and 23-095-M5.0P. All piping shall be installed in accordance with good marine practice and USCG regulations for class II piping.

All piping will be fitted with an adequate number of supports and fasteners to allow for expansion and to prevent vibration. All piping will be of carbon seamless steel, ASTM A-53 grade A or B, with slip-on ASTM A105 welded flanges and butt-welded fittings over 2", N.P.T. screwed connection on 2" and under except as specified for the fuel oil system. Valves shall be bronze, or iron body bronze mounted. All valves are to be category A.

All fuel oil piping will have flanged valves over 2" pipe size and N.P.T. screwed valves 2" and under. Fittings will be butt-welded type over 2", and either socket weld or N.P.T. screwed for 2" and under.

All piping penetrating a bulkhead will be fitted with a doubler plate on the flush side of the bulkhead. Pipe runs inside tanks shall be kept clear of tank access openings.

All water piping shall be installed so that all lines can be drained.

All piping is to be clean and free of foreign matter, weld splatter, scale, etc., before operation. The systems shall be flushed using an owner approved procedure prior to filling or commencing operation. Particular attention shall be given to ensure that the fluids used are compatible with system components.

Plastic nameplates will be provided for all main systems stop and control valves.

System testing shall be at 1-1/2 times the normal working pressure.

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The drawings provided are a schematic diagram of the system and are not meant to show the final location of equipment or items. Some locations may have been altered to better show system arrangement.

350402 - COMPARTMENT AND TANK VENTS

Vents and sounding plugs shall be provided for all voids, oil and water tanks. The landing barge is divided into 16 watertight compartments, 8 ballast tanks and 8 voids. Each compartment shall be provided with a means of venting with a gooseneck vent as prescribed in drawings 23-095-N3.0P. Where required, vent piping shall be 2-1/2" Schedule 40 pipe with stainless-steel screens. Signage shall be provided to indicate proper function and operation of the vent.

350403 - BALLAST

The barge shall have a ballast system capable of filling, transferring and discharging each tank with sea water. One electric motor ballast pump shall be provided to reach the design load of 250 GPM at 130 FT of head. The manifold, also located in the machinery room, is to have a suction header and a fill header. The suction header will allow the pump to pull from the sea chest or any ballast tank. The fill header will allow the pump to feed ballast water to the wash down/fire station, any ballast tank, or overboard. The use of this manifold allows for only one pipe to run to each tank. This single pipe, depending on the valve selection, will act as both the fill and discharge line for the tank. The overboard discharge shall be located at a minimum of 4.0 ft above the baseline.

101. Fire Connection

A fire station shall be connected to the ballast system as prescribed in 23-095-N1.0P.

350404 - DECK DRAINAGE

The landing barge, with its cambered main deck, will provide separate means of drainage for port and starboard sides. The starboard side, or shore side, is to only have handrails along the side which will allow for free drainage over the edge of the barge. The port side, or river side, is to have bulwarks with adequate freeing ports to allow for reasonable drainage. See drawing 23-095-N13.0P. Additionally, two drains are to be provided in the machinery room that will feed to piping leading overboard on the starboard side. The roof of the machinery room will drain to the main deck via downspouts located on the starboard side.

350405 - SEWAGE WATER TRANSFER SYSTEM

The barge shall have a sewage transfer system capable of transferring and discharging sewage from RTA 1 and RTA 2 to the city sewer connection as described in drawing 23-095-M1.1P. One electric motor sewage transfer pump shall be provided to reach the design load of 250 GPM at 130 FT of head. The pump, located in the machinery room, shall have a bypass to allow for a vacuum truck to provide the necessary suction should be pump malfunction. A suction cam lock connection header shall be located on the port side at approximately Frame 12. A discharge flange connection header shall be located on the starboard side at approximately Frame 7.

350406 - DIRTY OIL

The barge shall have a dirty oil transfer system capable of storing and discharging dirty oil from the RTA 1 and RTA 2 to a vacuum truck connection as described in drawing 23-095-M5.0P. The

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tank shall be filled through a 3" fill plug located on top of the dirty oil tank. The tank shall have a minimum capacity of 500 gallons. One electric motor dirty oil transfer pump shall be provided to reach the design load of 250 GPM at 130 FT of head. The pump, located in the machinery room, shall have a bypass to allow for a vacuum truck to provide the necessary suction should be pump malfunction. A discharge flange connection header shall be located on the starboard side at approximately Frame 7.

350407 - FRESH WATER

The barge shall provide means to transfer the ferries' service fluids to and from shore. Two connection locations shall be provided. The port side will house the riverside ferry service connections, and the starboard will house the shore side ferry service connections. Details are located in drawing 23-095-M1.0P.

LOWER ALGIERS LANDING BARGE SPECIFICATION
PART 350200- STRUCTURE

350201 - HULL STRUCTURE

The Contractor shall fabricate, complete in all respects, a completely new landing barge as described in the following specifications and as illustrated in the provided contract guidance drawings. All work shall be to the satisfaction of the Owner and attending engineer. All steel work shall be trim and fair and shall be coated as delineated elsewhere in these specifications.

Hull structure shall be constructed in accordance with applicable ABS Rules and Regulations. The Contractor's design shall be approved by the Owner prior to the purchase of any material fixtures or equipment.

The Deck structure in way of the vehicle pathways shall be designed based on the wheel loading information provided in Section 350100.101.4.

Builder shall ensure that plate fairness as-built meet good marine practice for Barges of this type. Where general scantlings interfere with the foundations for equipment or other required structures, the Contractor shall design and fabricate transitions between the two, in order to furnish a strong, integrated structure.

Lower Algiers Ramp hydraulic cylinder support structures shall be designed to handle loads exerted by the cylinders as well as the dynamic loading in stowed position.

101. Main Deck

The contractor shall fabricate and complete in all respects a new main deck as described in guidance drawing 23-095-N7.0L. The main deck shall be constructed using ASTM A36 grade steel or better. All stiffener end connections shall be bracketed or lap welded, dependent upon the transverse structure which the stiffeners end.

102. Well Deck

The contractor shall fabricate and complete in all respects a new well deck as described in

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guidance drawing 23-095-N7.0L. The well deck shall be constructed using ASTM A36 grade steel or better. All stiffener end connections shall be bracketed or lap welded, dependent upon the transverse structure which the stiffeners end.

103. Bottom

The contractor shall fabricate and complete in all respects a new bottom shell as described in guidance drawing 23-095-N8.0L. The bottom shell shall be constructed using ASTM A36 grade steel or better. All stiffener end connections shall be bracketed, as noted in drawing 23-095-N8.0L.

104. Longitudinal Structure

The contractor shall fabricate and complete in all respects new longitudinal structures as described in guidance drawing 23-095-N6.0L. The longitudinal structures shall be constructed using ASTM A36 grade steel or better.

Side Shell Bulkhead (20' OCL)

The side shell bulkhead shall be 3/8" plate with L5x5x3/8" longitudinal stiffeners equally spaced at 1'-10". Forward of 1'-0" aft of Fr. 3 and aft of 1'-0" forward of Fr. 27, the side shell plate shall be ½" plate. All stiffener end connections, at water-tight bulkheads, shall be bracketed, as noted in drawing 23-095-N6.0L.

Swash Bulkhead (10' OCL)

The swash bulkheads shall be of 5/16" steel plate with L5x3x3/8" vertical stiffeners between frames, spacing defined in guidance drawing. All vertical stiffener end connections shall be bracketed. There shall be several 18"x24" access holes throughout the bulkhead as detailed in Detail J on 23-095-N6.0L. The locations of all cutouts are defined in guidance drawings.

Centerline Bulkhead

All stiffener end connections, at water-tight bulkheads, shall be bracketed, as noted in drawing 23-095-N6.0L.

105. Transverse Structure

The contractor shall fabricate and complete in all respects new transverse structures as described in guidance drawing 23-095-N9.0L. The transverse structures shall be constructed using ASTM A36 grade steel or better.

Watertight Bulkhead

There shall be water-tight bulkheads at frame 02, 03, 06, 09, 12, 15, 18, 21, 27 and 28. All stiffener end connections shall be lapped.

Truss Web Frame

There shall be truss web frames at all other frames. Web frames shall be of truss construction and lap welded to one another. All webs shall have cutouts for the longitudinal stiffeners. All stiffener end connections shall be lapped.

Nonwatertight Bulkheads Below Well Deck

Below the well decks there shall be non-water-tight bulkheads located at each frame. These bulkheads shall be of 3/8" steel plate with L5x3x3/8" vertical stiffeners. End connections of vertical stiffeners shall be lap welded to bottom longitudinals and well deck longitudinals. Non-water-tight bulkheads shall have 18"x24" lighting holes, locations defined in the guidance drawing.

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Head Log

Head and stern logs shall be of 3/8" steel plate with L5"x3"x3/8" vertical stiffeners at 2'-0" spacing. The vertical stiffeners shall be lap welded to the main deck and bottom shell stiffeners.

Curved Corners

Side corners shall have a 6'-0" radius of 3/8" rolled steel plate with L5"x3"x3/8" vertical stiffeners at 2'-0" spacing.

106. Welding

All hull structural materials and welding shall be in accordance with ABS Rules for Materials and Welding. The contractor shall perform non-destructive testing of hull welds under the guidance of ABS Guide for Nondestructive Inspection of Hull Welds, to the satisfaction of the Owner or the Owner's Representative.

A Weld Schedule shall be submitted 30 days prior to the Start of Construction for review by the Owner's Project Naval Architect. Welding symbols, showing size and design, shall be shown for towing fittings, machinery foundations, and details of the ramp hinges and support structure for chain supports. The weld schedule shall identify the type and size of welds for all other applications.

350202 - HULL STRUCTURAL FITTINGS

101. Integral Tanks

The BUILDER shall provide structural tanks with pipe connections, and fittings as described in the applicable system specification and shall provide tank coating suitable for the application. The BUILDER shall provide one (1) manhole per tank for all tanks. Ballast tanks shall be integral.

102. Sea Chests

The BUILDER shall fabricate and provide one (1) sea chest for the Ballast system as described in guidance drawing 23-095-M3.0L. Sea chest shall be located as low as possible towards the keel of the Barge as shown in the Contract guidance Drawings.

350203 - UTILITY HOUSE

The contractor shall fabricate and complete in all respects a new machinery room as described in guidance drawing 23-095-N10.L The utility house shall be constructed using ASTM A36 grade steel or better.

The machinery room shall have a door of which dimensions shall be 2'-6" wide by 6-0"' tall, with a window out of 1/4" wire embedded glass. The utility house shall include a window on the starboard side, 4'-0" wide by 2'-6" tall with 6" radius corners. The glass shall be1/4" wire embedded glass. The area surrounding the window shall be reinforced by 4x1/4" flat bar. The utility house roof shall have a deck drain constructed out of 2" Schedule 40 galvanized pipe as referenced in the guidance drawing.

The contractor shall finish the deckhouse house fair and smooth to give pleasing appearance. Add intercostal flat bar stiffeners as required to straighten plate panels. The BUILDER shall keep size and length of welds to minimum Class standards. The BUILDER shall provide minimum 6" radius

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on all vertical deckhouse corners and in way of any recesses for hatches and doors. The deckhouse shall have an awning as indicated on the Contract Drawings.

350204 - MOORING CONNECTIONS

The builder shall fabricate, complete, and replace in king all mooring connection parts used to facilitate the connection between the current Lower Algiers Landing barge and the permanently installed mooring structure. This shall include but is not limited to all UHMW, wire cable, high tensile chain, and necessary hardware.

101. Upstream Connection

The contractor shall fabricate and complete in all respects a new upstream mooring connection as described in guidance drawing 23-095-N12.0L. The inboard structures of the upstream mooring foundations shall be constructed according to the arrangement shown in the profile and plan views on sheet 1 of the drawing. All structural members shall be constructed using ASTM A36 grade steel or better.

102. Down Stream Connection

The contractor shall fabricate and complete in all respects a new downstream mooring connection as described in guidance drawing 23-095-N12.0L. All structural members shall be constructed using ASTM A36 grade steel or better.

350205 - FENDERING

The Contractor shall fabricate, build and complete in all respects a fendering system on the river side of the barge. The fendering system is described in the supplied guidance drawing 23-095-N12.0L. Fenders similar in type to Duramax Marine 500 series shall be installed vertically from frame 10 to 20. at each frame. A Duramax Marine 300 series or similar horizontal section shall be installed below both well decks from frame 3 to 9 and frame 21 to 27. The forward and aft rakes shall be protected by four rows of horizontal fendering as shown in the contract drawing.

350206 - BULWARKS

The contractor shall fabricate, build and complete in all respects a bulwarks system as described in the supplied 23-095-N13.0L. The bulwarks shall be installed on the river side of the ferry landing.

350207 - HANDRAILS

The Contractor shall fabricate, build and complete in all respects a safety handrail system as shown in the supplied guidance drawing 23-095-N13.0L. All handrails shall be built IAW ASTM F1166.

350208 - Auxiliary Machinery Foundations

The BUILDER shall provide auxiliary machinery foundations as required for each piece of equipment in accordance with the equipment manufacture's recommendations. Foundations and brackets for equipment shall be configured to provide access for cleaning, painting, preservation, and maintenance, and to prevent accumulation of water, dirt, and foreign material.

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PART 350300 - OUTFIT AND FURNISHINGS

350301 - GENERAL

Builder shall execute work skillfully to present a neat and attractive appearance with tasteful choice of materials and color, to Owner's satisfaction. Builder shall select all construction techniques and materials with both an attractive appearance and minimum maintenance in mind; consequently, materials used must be approved for purpose, attractive, highly durable, and easily cleaned by wiping or washing with mild detergent. All colors shall be approved by the Owner and their Representative. Ensure surfaces are free of inaccessible corners or open joints which could collect dirt.

350302 - DOORS

101. Weathertight Doors

Builder shall provide USCG approved hinged type, weathertight doors for Utility House access. Weathertight doors shall be as follows:

- Steel construction
- Steel frame, weld-in type
- Stainless steel hardware
- Solid core double panel construction with radiused corners
- 2-dog single lever actuated, operable from both sides
- Stainless steel lockset
- Maximum sized fixed upper and lower windows, with radiused corners
- Neoprene gasket
- Minimum 6" coaming height to crew spaces
- Provide stainless steel or equal hardware, heavy duty, marine quality
    - lockable (hasp and staple)
    - clear opening per Drawings
- Fit all deckhouse doors with built-in brass locks and common key. Supply two (2) keys for each door.
- Fit exterior doors with non-rattling stainless-steel holdbacks, complete with rubber-faced position stoppers.
- Fit exterior non-slip steps on any coaming greater than 12" in height.

350303 - MANHOLES, HATCHES, AND ACCESS PLATES

101. Manholes

Manholes or hatches shall not to be placed on the car deck in a location where vehicles could possibly drive over them. All manholes placed on the deck shall be flush type as described in Section 101.1. Tank or void entrance manholes shall be placed on deck except for the manholes for access to the voids and tanks below the vehicle deck on the Lower Algiers Barge. The manholes to access these spaces may be placed on the vertical bulkheads below the main deck. Below decks, provide identical multi-bolt manholes, rectangular or oval pattern, approx. 18" x 24" clear opening, on raised angle coaming for all tanks and voids with vertical entry points to

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comply with ASTM F1143. A 3” sounding plug shall be included in each manhole for ease of sounding tanks and voids.

Multi-bolt manholes on inside tank bulkheads shall be clear of obstructions and at mid height with hand-grabs provided above manholes, both inside and out, with stirrup rungs inside tanks as required for safe access.

101.1 Manholes, Flush Type (FM)

Provide flush type manholes and hatches with top of studs and nuts below top plate surface for manholes located on or above main deck, or in locations where projections are not permissible. Fit lifting rings, and 1/2" steel reinforcing bar rungs below as required

350304 - WINDOWS AND PORTLIGHTS

Marine quality windows shall be installed in all locations indicated on Plans, in accordance with ABS and USCG standards. Water tightness of all fixtures shall be proven in accordance with ABS and USCG standards.

Windows shall be as manufactured by Beclawat, Diamond Sea-Glaze or equivalent, clamp in or bolted, stainless steel frames, windows, with glass thicknesses as required by Class.

350305 - LADDERS, STAIRS, AND RAILINGS

101. Ladders

All Ladders shall be constructed in accordance with ASTM F1166. A minimum 7" toe space shall be provided between support structure and ladders. Lateral support shall be installed ass as required. All burrs, sharp edges, weld spatter, etc. shall be ground smooth.

102. Exterior Ladders

Exterior ladders as shown on the drawings, shall meet applicable ABS and USCG regulations. Vertical stringers shall be integrated with adjacent handrails where applicable and compatible.

103. Interior Ladders

Fabricate interior ladders with steel flat bar stringers and steel rebar rungs penetrating stringers to ASTM standards, ABS and USCG rules for access and egress from the tanks and voids.

350308 - ASBESTOS

The use of asbestos or asbestos-containing materials either for or during construction of this Barge is not permitted. All insulation, brake linings, and jointing materials must be certified asbestos-free. Use of asbestos-containing protective materials such as fire blankets during construction is not permitted. An "Asbestos-Free" certificate shall be provided to the Owner.

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350309 - FIRE SAFETY EQUIPMENT

101. Fire Extinguishers

Supply and install two (2) portable fire extinguishers, one inside the utility house and one external to the utility house.

102. Fire Hydrant Stations

Provide fire hydrant stations throughout Barge per Class and USCG regulations. For each hydrant provide one (1) USCG compliant hose, 50' x 1- 1/2" size with brass dual-purpose type nozzle, and hose spanner. Stow nozzles and spanners in racks adjacent to each hydrant. Stow hoses in racks with lids or keeper straps to retain hoses

350310 - LIFESAVING EQUIPMENT

The Barge shall be equipped to meet USCG requirements.

101. Life rings

The BUILDER shall provide one (1) life ring, painter, and light installed on the utility house.

350311 - PAINTING AND COATINGS

All non-CRES components and surfaces shall have anti-corrosion treatment or coatings applied, except where such coatings would interfere with a component's operation. The coating system shall be applied as described below. The contractor shall develop a paint schedule, submit it, and receive approval from the Owner or Owners Representative prior to commencing coating application. Coating thickness and application method shall be in accordance with the manufacture recommendations outlined in Annex B.

1. All Steel - Interplate 937 Inorganic zinc silicate pre-construction primer for the protection of the steel during the fabrication and erection phase of new construction.
2. Keel to One foot above design Waterline - An Intergard 7500 anticorrosive scheme for long term protection.
3. One foot above design Waterline to Caprail including overhang - An Intergard 7500 anticorrosive scheme, fooled by Intergard 7500 intermediate coat overcoated with Interthane 990 Polyurethane finish.
4. Exterior Deck in way of designated walkways - An Intergard 7500 anticorrosive scheme with a layer of Intershield 5150LWT overcoated with Interthane 990 Polyurethane Finish.
5. Exterior Deck excluding designated walkways - An Intergard 7500 anticorrosive scheme overcoated with Interthane 990 Polyurethane Finish.
6. Ballast Tanks - An Intergard 7500 anticorrosive scheme suitable for use in Water ballast tanks.

Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this Specification.

7. Voids and Cofferdams - An Intergard 7500 anticorrosive scheme suitable for use in Water ballast tanks.
8. Sewage Tank - An Interline 975P, two component, solvent free, heavy duty epoxy lining that provides corrosion protection for the internals of potable water tanks and liquid mud tanks.
9. Oily Water/Waste Oil Tank - An Interline 975P, two component, solvent free, heavy-duty epoxy lining that provides corrosion protection for the internals of potable water tanks and liquid mud tanks.

350312 - SIGNS AND MARKINGS

All markings to be in English, attached by neat, continuous welds. Fillet welds on lettering shall be no larger than 1/8"

101. Barge Name

102. Draft Marks

Provide NC cut draft marks from 1/4" plate and weld to shell on four quarters and at midships LWL. Carefully locate draft marks and obtain approval of Owner's Representative before final welding. Record and transmit location to Owner's Naval Architect, and indicate on as-fitted docking plan referenced to baseline and docking reference line

103. Nameplates and Labels

105.1 Lifesaving Equipment Markings

Mark lifebuoys and rafts with Barge's name and port of registry per USCG requirements.

105.2 Equipment Markings

Fit brass nameplate discs on all valve handwheels/handles as specified. Fit nameplates and labels where required by Owner's Representative (switchboard, control consoles, instrumentation, doors, warnings), ensuring nameplates are not painted. All electrical starters and disconnects shall have identifying labels.

350313 - GENERAL OUTFITTING

101. First Aid Equipment

Supply One (1) USCG approved first aid kit and mount in the Utility House.

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350314 - BOARDING RAMP

101. GENERAL

The contractor shall fabricate and complete in all respects a new boarding ramp as described in the included 23-095-N14.0L. The ramp shall be capable of carrying a maximum vehicle load of 10 tons or 2,500 lbs. per tire.

All work shall be to the satisfaction of the Owner and attending engineer. All steel work shall be trim and fair and shall be coated as delineated elsewhere in these specifications.

102. STRUCTURE

Ramp structure shall be constructed in accordance with applicable ABS Rules and Regulations. The ramp shall be constructed using ASTM A36 grade steel or better. The Contractor's design shall be approved by the Owner prior to the purchase of any material fixtures or equipment.

103. MECHANICAL

The ramp shall be raised and lowered by two hydraulic rams powered by an HPU with a minimum of 5.5 horsepower. With both rams functional, the ramp shall go from the raised position to the lowered position and from the lowered position to the raised position in under 10 seconds. In an emergency, a single ram shall be capable of lifting the ramp. The system shall have a redundancy with two HPUs, each with the ability to operate either ramp. The system shall be capable of operating a minimum of 180 cycles per day 365 days per year. The system shall have the necessary grease fittings to facilitate weekly preventative maintenance, and the hydraulic rod shall be internal and watertight in order to prevent corrosion due to the operating environment.

PART 350400 – SHIP'S SERVICES

350401 - PIPING GENERAL

All piping shall be fitted with an adequate number of supports and fasteners. Sanitary, wash water and drinking water supply piping 2" and under shall be cooper tubing with pro press fittings, brass valves and provided with sufficient unions to disconnect appliances. All other piping shall be of steel with slip-on welded flanges and butt-welded fittings over 2", N.P.T. screwed connection on 2" and under except as specified for the fuel oil system. Valves shall be bronze, or iron body bronze mounted.

All fuel oil piping within the fuel bunkers shall have flanged forged steel valves and either socket or butt-welded fittings. The remainder of the fuel oil piping shall have flanged valves over 2" pipe size and N.P.T. screwed valves 2" and under. Fittings shall be butt-welded type over 2", and either socket weld or N.P.T. screwed for 2" and under. All fuel piping penetrating a bulkhead shall be fitted with a doubler plate on the flush side of the bulkhead.

All water piping shall be so installed that all lines can be drained. Aeroquip or equal flexible hose shall be provided at the piping connections to the engines, etc., as required. Vents and sounding shall be provided for all fuel oil, lube oil and water tanks. Plastic nameplates shall be provided for all main systems stop and control valves. All hull compartments shall be vented above deck. Vents

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shall be fitted with a fine mesh stainless steel screens. Scuppers and downspouts shall be provided for proper drainage

350402 - COMPARTMENT AND TANK VENTS

All voids, tanks, and required spaces shall receive vents per class requirements. Where required, gooseneck vent piping shall be 2-1/2" Schedule 40 pipe with screens and ball checks as required. Signage shall be provided to indicate proper function and operation of the vent.

350403 - FUEL OIL SYSTEM

The barge shall provide means to transfer the ferries' fuel oil to and from shore. Two connection locations shall be provided. The port side will house the riverside ferry service connections, and the starboard will house the shore side ferry service connections. Details are located in drawing 23-095-N1.0L. Each location shall provide a spill containment box as per USCG regulations.

350404 - BALLAST

The Ballast system shall be capable of filling, transferring and discharging each tank with sea water. One electric motor ballast pump shall be provided to reach the design load of 250 GPM at 130 FT of head. The manifold, also located in the utility house, is to have a suction header and a fill header. The suction header will allow the pump to pull from the sea chest or any ballast tank. The fill header will allow the pump to feed ballast water to the wash down/fire station, any ballast tank, or overboard. The use of this manifold allows for only one pipe to run to each tank. This single pipe, depending on the valve selection, will act as both the fill and discharge line for the tank. The overboard discharge shall be at a minimum 6 feet above the baseline.

101. Fire Connection

A fire station shall be connected to the ballast system as prescribed 23-095-N1.0L.

350405 - SEWAGE WATER SYSTEM

The barge shall provide means to transfer the sewage to and from shore. Two connection locations shall be provided. The port side will house the riverside ferry service connections, and the starboard will house the shore side ferry service connections. Details are located in drawing 23-095-N1.0L. Each location shall provide a spill containment box as per USCG regulations.

350406 - FRESH WATER

The barge shall provide means to transfer the fresh water to and from shore. Two connection locations shall be provided. The port side will house the riverside ferry service connections, and the starboard will house the shore side ferry service connections. Details are located in drawing 23-095-N1.0L.

350407 - DECK DRAINAGE

The landing barge, with its cambered main deck, will provide separate means of drainage for port and starboard sides. The starboard side, or shore side, is to only have handrails along the side which will allow for free drainage over the edge of the barge. The port side, or river side, is to have bulwarks with adequate freeing ports to allow for reasonable drainage. See drawing 23-095-N13.0L. Additionally, two drains are to be provided in the utility house that will feed to

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piping leading overboard on the starboard side. The roof of the utility house will drain to the main deck via downspouts located on the starboard side.

350408 - LOWER ALGIERS HYDRAULIC SYSTEM

The hydraulic system shall be made up of four hydraulic rams, two per ramp, two remote activation stations, at each end of the barge, and two electric hydraulic power units located within the utility house.

The remote operation stations shall be placed so that a deckhand can operate the ramp from the bow of Thomas Jefferson reaching over the bulwark to activate lowering or raising the ramp. The remote operation station shall be approved by the owner prior to final installation.

The hydraulic system shall consist of primarily hard piping and tubing with limited flexible hose except as furnished by the OEM. Contractor furnished hard piping and tubing shall be fabricated from type 316 stainless steel or type 316L for welded applications. OEM furnished pipe and tube shall be stainless steel, where available, or protected from the marine environment. Contractor-furnished flexible hoses shall be prefabricated hose assemblies conforming to SAE J1942. Flexible hose assemblies shall use stainless steel end fittings conforming to SAE J516. OEM-furnished flexible hose assembly end fittings shall be stainless steel, where available, or protected from the marine environment.

All hoses shall be pressure tested and labeled. Labels shall be attached to the hoses via aluminum or stainless-steel banding. For the hydraulic system, a hydraulic schematic and drawing shall be provided and shall include system design pressures, flowrates, relief/regulating valve pressure settings, and test procedures.

The drawing shall include a flex hose list, should any flex hoses be included, and include a unique hose ID number for each tested hose assembly. All hydraulic systems shall use the same type of hydraulic fluid and be environmentally friendly oil, such as MOBIL SHC AWARE HS 46.

Hydraulic systems shall include the following:

Means for bleeding, draining, venting, and replenishing shall be provided. Pressure taps shall be provided to allow for the installation of pressure gauges for testing and diagnostics. Relieve valve protection shall be installed if the operation of a valve can cause over-pressurization of the system. Fittings shall be 316 stainless steel. Gaskets, seals, rings, and similar parts shall be compatible with the oil for the system.

Tanks shall be welded aluminum construction. Tanks shall be provided with reliable means for visually determining the fluid level (sight glass/tube), arrangements for cleaning and draining, and with baffle plates to minimize aeration. Fill, breather and vent lines shall be fitted with strainers having a 150 micron or less absolute rating. Fills, breathers and vents shall be arranged to prevent fluid spillage due to expected conditions of list and trim or due to boat motions in a seaway.

All filters shall be equipped with an indicator or differential pressure gauge to indicate when

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servicing is required. Filters shall be readily accessible, and all filter elements shall be removable for service and inspection without disconnecting the attached pipe or dismounting the filter housing from its foundation. Filters, bowls, and housing shall be equipped with drains or other devices which will permit changing of elements with minimum spillage of fluid. Filter locations shall be installed in pump suction, discharge and return lines. Filter clean element ratio flow shall be at least 2 times system flow.

The hydraulic fluid tank shall be sized y to maintain the hydraulic fluid temperature below 160°F at the pump discharge when operating. Any additional hydraulic cooling means shall be approved by the owner. Hydraulic systems shall be designed with thermostatically operated controls to bypass heat exchangers, when necessary to prevent overcooling of the hydraulic fluid during operations. Hydraulic systems shall be designed for an operating pressure not in excess of 3000 psi and total pressure under hydraulic shock not exceeding 4500 psi. The design pressure in piping, valves, and fittings in return lines shall be based on fluid supply tank pressure plus an expected pressure drop between operating gear and the fluid supply tank.

High- and low-pressure piping shall be of sufficient diameter to limit hydraulic fluid velocity to 15 feet per second. The fluid velocity in pump suction lines having no positive head shall be limited to four feet per second. Directional and volume control, check, pilot, and servo valves shall be designed for minimum resistance to flow when in the operating position. No valves shall operate improperly because of back pressure of surges. Pressure control valves (e.g. relief, unloading, backpressure, and sequence valves) shall be damped to eliminate hydraulic squeal and chatter. Relief valves shall be set to open at 110 percent of design pressure. Relief valves shall be accurate within 9 percent of setting and shall reseat at not less than 85 percent of setting. Relief valves shall be adjustable. Directional control valves located in the weather shall be approved by the original manufacturer for use in marine applications directly exposed to the weather.

Hydraulic sensors shall be provided and installed for system pressure, temperature and reservoir level. Sensors shall provide 0-5 VDC output with 5 VDC input. Provide and install a minimum of two (2) pressure sensors for purposes of monitoring system pressure and filter differential pressure. The installation of hydraulic system components shall ensure an accurately aligned, tight, and dirt-free installation. The system shall be cleaned, flushed, and pressure tested prior to final delivery.

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Where legislation does not explicitly restrict or limit the use of lead containing coatings it is the responsibility of the client to inform International Paint in writing of their specific requirements

Technical Specification

LABMAR LANDING BARGE REV 2

LABMAR LANDING BARGE REV 2

Louisiana- New Orleans, United States

18-Jul-2020

USTB1-3DX4-QJBT/1

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Main Schemes		
Area	Description	Area (ft^2)
1. All Steel	Interplate 937 Inorganic zinc silicate pre-construction primer for the protection of the steel during the fabrication and erection phase of new construction.	1,000
2. Keel to Waterline	An Intergard 7500 anticorrosive scheme for long term protection.	1,000
3. Waterline to Caprail including overhang	An Intergard 7500 anticorrosive scheme, fooled by Intergard 7500 intermediate coat overcoated with Interthane 990 Polyurethane finish.	1,000
4. Exterior Deck in way of designated walkways	An Intergard 7500 anticorrosive scheme overcoated with Interthane 990 Polyurethane Finish.	1,000
5. Exterior Deck excluding designated walkways	An Intergard 7500 anticorrosive scheme overcoated with Interthane 990 Polyurethane Finish.	1,000
6. Ballast Tanks	An Intergard 7500 anticorrosive scheme suitable for use in Water ballast tanks.	1,000
7. Voids and cofferdams	An Intergard 7500 anticorrosive scheme suitable for use in Water ballast tanks.	1,000
8. Sewage Tank	An Interline 975P, two component, solvent free, heavy duty epoxy lining that provides corrosion protection for the internals of potable water tanks and liquid mud tanks.	1,000

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1. All Steel [1,000 ft²]

Interplate 937 Inorganic zinc silicate pre-construction primer for the protection of the steel during the fabrication and erection phase of new construction.

Surface Preparations

Where necessary remove all weld splatter, smooth weld seams and sharp edges. Fresh water wash to remove all dirt and contamination, as necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application.

Blast to a minimum of near white metal SSPC-SP10 or Sa2½ ISO 8501-1. Steel grit or a mixture of steel grit of particle size 0.6-1.0 mm and steel shot of particle size 0.6-1.4 mm are normally used to give a predominantly angular profile.

Apply the material before visible oxidation occurs. If oxidation does occur, the entire oxidised surface should be re-blasted to the standard specified above.

Product	Sales Code	Colour	Coats	% Loss factor	WFT (mil)	DFT (mil)	PSR (ft²/G)	Pot Life 77°F	Touch Dry 77°F	Hard Dry 77°F	Before Flooding 77°F	Overcoating 77°F		Thinner	Cleaner	Volume (G)
												Min	Max			
Interplate 937	NQA933/NQA936	Grey	FC	45	4.3	1	206.17	24hrs		5mins				GTA820, GTA840	GTA820, GTA840	4.9
					4.3	1										4.9

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2. Keel to Waterline [1,000 ft²]

An Intergard 7500 anticorrosive scheme for long term protection.

Surface Preparations

Where necessary remove all weld splatter, smooth weld seams and sharp edges. Fresh water wash to remove all dirt and contamination, as necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application.

Blast damaged/corroded areas to Sa2½ ISO 8501-1 or SSPC SP10. Grit sweep intact shop primer to AS 2-3 International Paint Sweep Blast Standards.

Apply the material before visible oxidation occurs. If oxidation does occur, the entire oxidised surface should be re-blasted to the standard specified above.

Product	Sales Code	Colour	Coats	% Loss factor	WFT (mil)	DFT (mil)	PSR (ft²/G)	Pot Life 77°F	Touch Dry 77°F	Hard Dry 77°F	Before Flooding 77°F	Overcoating 77°F		Thinner	Cleaner	Volume (G)
												Min	Max			
Intergard 7500	KUA751/KUA759	Light Red	FC	30	6.3	5	182.54	90mins	60mins	3hrs				GTA220	GTA220, GTA822	5.5
Intergard 7500	KUA752/KUA759	Aluminium	FC	30	6.3	5	182.54	90mins	60mins	3hrs				GTA220	GTA220, GTA822	5.5
Intergard 7500	KUA758/KUA759	Black	FC	30	6.3	5	182.54	90mins	60mins	3hrs				GTA220	GTA220, GTA822	5.5
					18.9	15										16.5

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3. Waterline to Caprail including overhang [1,000 ft^2]

An Intergard 7500 anticorrosive scheme, fooled by Intergard 7500 intermediate coat overcoated with Interthane 990 Polyurethane finish.

Surface Preparations

Where necessary remove all weld splatter, smooth weld seams and sharp edges. Fresh water wash to remove all dirt and contamination, as necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application.
Blast damaged/corroded areas to Sa2½ ISO 8501-1 or SSPC SP10. Grit sweep intact shop primer to AS 2-3 International Paint Sweep Blast Standards.
Apply the material before visible oxidation occurs. If oxidation does occur, the entire oxidised surface should be re-blasted to the standard specified above.

Product	Sales Code	Colour	Coats	% Loss factor	WFT (mil)	DFT (mil)	PSR (ft^2/G)	Pot Life 77°F	Touch Dry 77°F	Hard Dry 77°F	Before Flooding 77°F	Overcoating 77°F		Thinner	Cleaner	Volume (G)
												Min	Max			
Intergard 7500	KUA751/KUA759	Light Red	FC	30	3.8	3	304.37	90mins	60mins	3hrs				GTA220	GTA220, GTA822	3.3
Intergard 7500	KUA752/KUA759	Aluminium	15% SC	30	0	0	456.35	90mins	60mins	3hrs				GTA220	GTA220, GTA822	0.3
Intergard 7500	KUA751/KUA759	Light Red	15% SC	30	0	0	456.35	90mins	60mins	3hrs				GTA220	GTA220, GTA822	0.3
Intergard 7500	KUA752/KUA759	Aluminium	FC	30	7.5	6	151.98	90mins	60mins	3hrs		3hrs	5days	GTA220	GTA220, GTA822	6.6
Interthane 990	PHK724/PHA046	Storm Grey	FC	30	5.3	3	216.77	2hrs	1.5hrs	6hrs		6hrs	ext.	GTA056, GTA713, GTA733	GTA056, GTA713, GTA733	4.6
					16.6	12										15.1

Scheme notes

Note: Stripe coat must be brush and roller applied by hand to all weld seams edges of angles cut outs and other sharp edges.

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4. Exterior Deck in way of designated walkways [1,000 ft²]

An Intergard 7500 anticorrosive scheme overcoated with Interthane 990 Polyurethane Finish.

Surface Preparations

Where necessary remove all weld splatter, smooth weld seams and sharp edges. Fresh water wash to remove all dirt and contamination, as necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application.

Blast damaged/corroded areas to Sa2½ ISO 8501-1 or SSPC SP10. Grit sweep intact shop primer to AS 2-3 International Paint Sweep Blast Standards.

Apply the material before visible oxidation occurs. If oxidation does occur, the entire oxidised surface should be re-blasted to the standard specified above.

Product	Sales Code	Colour	Coats	% Loss factor	WFT (mil)	DFT (mil)	PSR (ft²/G)	Pot Life 77°F	Touch Dry 77°F	Hard Dry 77°F	Before Flooding 77°F	Overcoating 77°F		Thinner	Cleaner	Volume (G)
												Min	Max			
Intergard 7500	KUA751/KUA759	Light Red	FC	30	7.5	6	151.98	90mins	60mins	3hrs				GTA220	GTA220, GTA822	6.6
Intergard 7500	KUA752/KUA759	Aluminium	15% SC	30	0	0	151.98	90mins	60mins	3hrs				GTA220	GTA220, GTA822	1.0
Intershield 5150LWT	EGA515/EGA519	Dark Grey	FC	30	30.1	25	37.89								GTA220, GTA415	26.4
Interthane 990	PHK724/PHA046	Storm Grey	FC	30	5.3	3	216.77	2hrs	1.5hrs	6hrs		6hrs	ext.	GTA056, GTA713, GTA733	GTA056, GTA713, GTA733	4.6
					42.9	34										38.6

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5. Exterior Deck excluding designated walkways [1,000 ft²]

An Intergard 7500 anticorrosive scheme overcoated with Interthane 990 Polyurethane Finish.

Surface Preparations

Where necessary remove all weld splatter, smooth weld seams and sharp edges. Fresh water wash to remove all dirt and contamination, as necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application.
Blast damaged/corroded areas to Sa2½ ISO 8501-1 or SSPC SP10. Grit sweep intact shop primer to AS 2-3 International Paint Sweep Blast Standards.
Apply the material before visible oxidation occurs. If oxidation does occur, the entire oxidised surface should be re-blasted to the standard specified above.

Product	Sales Code	Colour	Coats	% Loss factor	WFT (mil)	DFT (mil)	PSR (ft²/G)	Pot Life 77°F	Touch Dry 77°F	Hard Dry 77°F	Before Flooding 77°F	Overcoating 77°F		Thinner	Cleaner	Volume (G)
												Min	Max			
Intergard 7500	KUA751/KUA759	Light Red	FC	30	7.5	6	151.98	90mins	60mins	3hrs				GTA220	GTA220, GTA822	6.6
Intergard 7500	KUA752/KUA759	Aluminium	FC	30	7.5	6	151.98	90mins	60mins	3hrs		3hrs	5days	GTA220	GTA220, GTA822	6.6
Interthane 990	PHK724/PHA046	Storm Grey	FC	30	5.3	3	216.77	2hrs	1.5hrs	6hrs		6hrs	ext.	GTA056, GTA713, GTA733	GTA056, GTA713, GTA733	4.6
					20.3	15										17.8

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6. Ballast Tanks [1,000 ft²]

An Intergard 7500 anticorrosive scheme suitable for use in Water ballast tanks.

Surface Preparations

Where necessary remove all weld splatter, smooth weld seams and sharp edges. Fresh water wash to remove all dirt and contamination, as necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application.
Blast damaged/corroded areas to Sa2½ ISO 8501-1 or SSPC SP10. Grit sweep intact shop primer to AS 2-3 International Paint Sweep Blast Standards.
Remove all dust and surface contamination. Ensure all surfaces are clean, dry and free of contamination prior to the application of each coat of the specified paint system. Apply the first coat of the specified paint system before there is a risk of loss of surface preparation and cleanliness standards.

Product	Sales Code	Colour	Coats	% Loss factor	WFT (mil)	DFT (mil)	PSR (ft²/G)	Pot Life 77°F	Touch Dry 77°F	Hard Dry 77°F	Before Flooding 77°F	Overcoating 77°F		Thinner	Cleaner	Volume (G)
												Min	Max			
Intergard 7500	KUA751/KUA759	Light Red	FC	30	8	6.4	142.61	90mins	60mins	3hrs		3hrs	14days	GTA220	GTA220, GTA822	7.0
Intergard 7500	KUA752/KUA759	Aluminium	15% SC	30	0	0	456.35	90mins	60mins	3hrs		3hrs	14days	GTA220	GTA220, GTA822	0.3
Intergard 7500	KUA751/KUA759	Light Red	15% SC	30	0	0	456.35	90mins	60mins	3hrs		3hrs	14days	GTA220	GTA220, GTA822	0.3
Intergard 7500	KUA752/KUA759	Aluminium	FC	30	8	6.4	142.61	90mins	60mins	3hrs		3hrs	14days	GTA220	GTA220, GTA822	7.0
					16	12.8										14.6

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7. Voids and cofferdams [1,000 ft²]

An Intergard 7500 anticorrosive scheme suitable for use in Water ballast tanks.

Surface Preparations

Where necessary remove all weld splatter, smooth weld seams and sharp edges. Fresh water wash to remove all dirt and contamination, as necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application.

Blast damaged/corroded areas to Sa2½ ISO 8501-1 or SSPC SP10. Grit sweep intact shop primer to AS 2-3 International Paint Sweep Blast Standards.

Remove all dust and surface contamination. Ensure all surfaces are clean, dry and free of contamination prior to the application of each coat of the specified paint system. Apply the first coat of the specified paint system before there is a risk of loss of surface preparation and cleanliness standards.

Product	Sales Code	Colour	Coats	% Loss factor	WFT (mil)	DFT (mil)	PSR (ft²/G)	Pot Life 77°F	Touch Dry 77°F	Hard Dry 77°F	Before Flooding 77°F	Overcoating 77°F		Thinner	Cleaner	Volume (G)
												Min	Max			
Intergard 7500	KUA751/KUA759	Light Red	FC	30	8	6.4	142.61	90mins	60mins	3hrs		3hrs	14days	GTA220	GTA220, GTA822	7.0
Intergard 7500	KUA752/KUA759	Aluminium	15% SC	30	0	0	456.35	90mins	60mins	3hrs		3hrs	14days	GTA220	GTA220, GTA822	0.3
Intergard 7500	KUA751/KUA759	Light Red	15% SC	30	0	0	456.35	90mins	60mins	3hrs		3hrs	14days	GTA220	GTA220, GTA822	0.3
Intergard 7500	KUA752/KUA759	Aluminium	FC	30	8	6.4	142.61	90mins	60mins	3hrs		3hrs	14days	GTA220	GTA220, GTA822	7.0
					16	12.8										14.6

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8. Sewage Tank [1,000 ft²]

An Interline 975P, two component, solvent free, heavy duty epoxy lining that provides corrosion protection for the internals of potable water tanks and liquid mud tanks.

Surface Preparations

Fresh water wash to remove all dirt and contamination, as necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application.
Blast to Sa2½ ISO 8501-1 or SSPC SP10.
Remove all dust and surface contamination. Ensure all surfaces are clean, dry and free of contamination prior to the application of each coat of the specified paint system. Apply the first coat of the specified paint system before there is a risk of loss of surface preparation and cleanliness standards.

Product	Sales Code	Colour	Coats	% Loss factor	WFT (mil)	DFT (mil)	PSR (ft²/G)	Pot Life 77°F	Touch Dry 77°F	Hard Dry 77°F	Before Flooding 77°F	Overcoating 77°F		Thinner	Cleaner	Volume (G)
												Min	Max			
Interline 975P	THA960/THA962	White	FC	30	8	8	142.61	55mins	7hrs	16hrs	7days	16hrs	21days		GTA415, GTA822	7.0
Interline 975P	THA960/THA962	White	15% SC	30	0	0	570.44	55mins	7hrs	16hrs	7days	16hrs	21days		GTA415, GTA822	0.3
Interline 975P	THA960/THA962	White	FC	30	8	8	142.61	55mins	7hrs	16hrs	7days	16hrs	21days		GTA415, GTA822	7.0
					16	16										14.3

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Product List					
Product	Colour	Sales Code	VOC (lb/G)	Volume Solids (%)	Volume (G)
Intergard 7500	Light Red	KUA751/KUA759	1.6	80	36.9
Intergard 7500	Aluminium	KUA752/KUA759	1.6	80	34.6
Intergard 7500	Black	KUA758/KUA759	1.6	80	5.5
Interline 975P	White	THA960/THA962	0	100	14.3
Interplate 937	Grey	NQA933/NQA936	5.4	23	4.9
Intershield 5150LWT	Dark Grey	EGA515/EGA519	1.2	83	26.4
Interthane 990	Storm Grey	PHK724/PHA046	3.5	57	13.8
Total					136.4

Total volume (G): 136.4

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14. MARITIME LIEN: This agreement is subject to the general maritime laws of the United States of America. Such laws shall also govern, without limitation, all issues concerning the enforcement, application and status of maritime liens. No attempt to waive, negate or nullify the supplier's maritime l ien against the vessel or waive the vessel's ultimate liability for the costs of products supplied is acceptable. Any attempt to do so, particularly by endorsing delivery receipts, will be of no effect or validity. Please inform the Owners (if different from you) and the vessel's Master, accordingly.
15. LAW AND DISPUTE RESOLUTION: To the extent this agreement is not subject to the general maritime laws of the United States of America, these Terms and Conditions and all disputes between AkzoNobel and Buyer are governed by the laws of the State of Texas, excluding the United Nations Convention of Contracts for the International Sale of Goods and any choice of law rules that direct the application of the law of any other jurisdiction. Any dispute between AkzoNobel and Buyer that the parties are unable to resolve by agreement will be resolved exclusively in the courts havin g jurisdiction over the subject matter of the dispute located in Houston, Texas. Each party consents and agrees to the jurisdiction and venue of such courts.
16. NOTICE: All notices, request, demands or other communications to or upon the AkzoNobel shall be made in writing to the following address: 6001 Antoine Drive, Houston, Texas, Attn: Commercial Department.

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September 18, 2013

Condition and Valuation
As of
August 23, 2013

ALGIERS POINT FERRY LANDING

SURVEY REPORT NO. 1411-01N13-I

THIS IS TO CERTIFY that the undersigned Marine Surveyor did, on August 23, 2013, at the request of Elliott Bay Design Group and for the account of Veolia Transportation, survey the all welded steel non-self-propelled inland deck barge utilized as the Algiers Point Ferry Landing dock, Louisiana Department of Transportation and Development, Owners and Operators, while the subject vessel lay afloat at the facilities of the Algiers Point Ferry Landing, Algiers, Louisiana, in order to ascertain the general condition of the vessel and her value as of August 23, 2013 for insurance purposes.

Note: All sizes, shapes, dimensions, and capacities are approximate, unless otherwise noted.

GENERAL DESCRIPTION:

The vessel is a non-typical non-self-propelled inland deck barge used as a vehicle ferry landing dock. The vessel has a square raked bow, square box stern, and a flat main deck with a recessed doghouse located forward.

VESSEL PARTICULARS:

Built	:	Unknown
Official Number	:	Unknown

VESSEL PARTICULARS: (continued)

Dimensions	:	151' x 40' x 7' 4"
Weight	:	1,064,000-lbs (also includes ballast water)

Running along the starboard side of the vessel is a 14" coaming constructed of angle iron with support angles spaced approximate every 3'.

The starboard side of the vessel is faced with wooden timbers with plastic guards attached to each timber to act as fendering.

Deck fittings consist of the following:

- Port, starboard, forward, and aft 48" kevels
- Nine starboard side single bitts of varying sizes

Located forward in way of the main deck of the vessel is a hydraulically operated car ramp. The ramp measures approximately 45' to 50' with the starboard portion of the ramp being constructed of steel grating. Hydraulic rams located beneath the ramps were in place for operation. The ramp has been reported as having not been operated in several years.

Located forward in the port side No. 2 void space area is a recessed storage/auxiliary machinery compartment accessed through a doghouse.

Centerline forward is a 500-watt light tower. Navigational light towers are located on the starboard side forward and aft.

The vessel is secured to the starboard side dolphins by means of interlocking bracing systems. Forward and aft are fitted with steel bracings welded to the hull of the barge and slotted into dual I-beams welded to the dolphins themselves. The vessel is additionally secured by means of chain link and wire rope in the vicinities of the securing mechanisms.

A passenger walkway leading from the shore side facility to the ferry landing is welded to the deck in multiple locations.

HULL COMPARTMENTATION:

Hull compartmentation is as follows:

- The vessel's forwardmost compartment is the bow rake compartment
- The next five compartments are divided into port and starboard void spaces
- The last compartment aft is the box stern void space

HULL COMPARTMENTATION: (continued)

Bulkheads are constructed of steel and are designed watertight.

AUXILIARY MACHINERY:

The following auxiliary machinery is located in the recessed storage compartment located in way of the No. 3 port side void compartment:

- One bilge/ballast manifold operated via a 5-HP electric motor *(Non-operational)*
- One hydraulic power unit fitted with two 5-HP electric motors driving pumps and set over a common oil reservoir *(Non-operational)*

CERTIFICATES/DOCUMENTS:

At time of survey, no certificates or documents were sighted onboard the vessel.

SERVICE:

In the opinion of the undersigned, service of this vessel should be limited to lakes, bays, and sounds.

CONDITION:

The vessel was sighted afloat and secured to the dock at the Algiers Point Ferry Landing facility.

The vessel's hull was noted to be in good condition and coated with older and fading coatings. Insets of 0-1" were noted in scattered areas throughout. Light rust and marine growth was noted throughout as well.

The main deck was well coated with older and fading non-slip coatings and sighted with light surface rust in areas throughout. Heavier rust and scale was noted in areas near midships. Insets of 0-1½" were noted just inboard of the starboard coaming with moderate amounts of dirt in way.

The area of the car ramp was note with its forward and aft rubber fenders torn and some partially adrift. The vessel's wooden timbers (approximately 60%) were noted with some degree of damage and splitting. The car ramp was noted to have a slight 0-2" set down on the forward portion.

Note: Almost all of the compartments were noted to be coated with epoxy coatings.

CONDITION: (continued)

Internal Condition:

Bow Rake Compartment:

The compartment was noted to be in good condition but with 0-4" of water at its aft bulkhead. No damages, but light rust, were noted throughout.

Port No. 1 Compartment:

The compartment was not able to be accessed due to 3-4' of water.

Starboard No. 1 Compartment:

The compartment was noted to be well coated and in good condition. The upper outboard side longitudinal was bowed due to a hull set in over the majority of its length. Two side support angles were crimped and crushed 0-4" to conform and corner brackets were also noted to be set in. The compartment contained 0-5" of water throughout.

Port No. 2 Compartment:

The compartment's recessed storage area was noted in good condition.

Starboard No. 2 Compartment:

The compartment was noted in the same condition as the starboard No. 1 compartment with the exception of two side longitudinals being crimped and distorted and no water in the compartment.

Port No. 3 compartment:

The compartment was noted to be in overall good condition with 0-2" of water.

Starboard No. 3 compartment:

The compartment was noted to be in the same condition as starboard No. 2 compartment.

The port and starboard No. 3 compartments were inaccessible due to 3-4' of water.

Port No. 4 Compartment:

The compartment was noted to be dry and well coated but with some light rust and scale on its inboard bulkhead. The compartment also allows access to the No. 5 port side compartment which was located under the car ramp by means of a bolted manhole cover.

CONDITION: (continued)

Internal Condition: (continued)

Port No. 5 Compartment:

The compartment was noted to be in excellent condition.

Starboard No. 5 Compartment:

The compartment was unable to be entered due to the car ramp obstructing access.

Box Stern:

The compartment was noted to be in good condition with 0-1" of water throughout. Light rust and scale were noted in some scattered areas.

As far as may be ascertained from a general examination of this vessel afloat, without removals or opening up to expose parts ordinarily concealed, and without taking drillings to ascertain thickness of structural members, testing for tightness, or opening up the machinery, it is the opinion of the undersigned that her hull, machinery and equipment will be in satisfactory condition for operation after the following recommendations have been complied with.

RECOMMENDATIONS:

1. Replace as found necessary any broken and/or dried and cracked gaskets in way of manhole covers.

VALUATION:

Opinion of **Fair Market Value** as of August 23, 2013: **$345,000**

Opinion of **Orderly Liquidation Value** as of August 23, 2013: **$260,000**

Opinion of **Forced Liquidation Value** as of August 23, 2013: **$205,000**

Opinion of **Replacement Cost** as of August 23, 2013: **$640,000**

NARRATIVE:

The replacement cost of the subject landing barge has been determined to be $640,000. The replacement cost was generated by a quotation from a Gulf Coast barge construction facility for a new construction cost of the landing barge. We also canvassed local hydraulics and machinery vendors to determine replacement costs for the machinery and equipment aboard the subject vessel.

NARRATIVE: (continued)

Once we determined the replacement cost, we considered both the cost and sales comparison approaches in determining fair market value.

Utilizing the sales comparison approach, we canvassed the local marine brokerages seeking similar ferry landing barges currently offered for sale.

It should be noted that these are specialty and dedicated services barges. Our research indicated that of the websites utilized, there are no similar ferry landings or docking barges currently offered for sale. There are numerous deck barges in the size range of the subject vessel; however, these are just straight deck material barges and are not considered as true comparables.

Based upon the foregoing, we utilized the cost approach to determine fair market value.

Utilizing this approach, we applied a formula of depreciation to the replacement cost after deducting a residual value.

Our formula of depreciation was based upon a normal useful life of forty years and a remaining useful life of twenty years based upon the physical conditions present at the time of survey.

We then added back the residual value to the equation to arrive at a figure of $355,000.

It was reported that the machinery aboard the subject vessel, notably the generator and ramp hydraulic system, are not in operation.

Since it was reported that the machinery aboard the subject landing barge is not operational, we have deducted an amount representing a cost to cure from the aforementioned figure.

After the subject deduction, it is our estimate that the estimated present day fair market value of the subject landing barge is in the amount of $345,000.

To determine the orderly liquidation of the subject barge, we applied a discount of 25% to the fair market value to arrive at an orderly liquidation value of $260,000.

To arrive at the forced liquidation value, we applied a discount of 40% to the fair market value to arrive at a forced liquidation value in the amount of $205,000.

The income approach was considered but not utilized due to lack of information.

SPECIFIC REFERENCE MATERIAL:

1. Shipyard quotes

2. Dufour, Laskay & Strouse, Inc. journal

SPECIFIC REFERENCE MATERIAL: (continued)

3. Dufour, Laskay & Strouse, Inc. database
4. Marcon International
5. Damco Marine, Inc.
6. Tassin Marine Transportation, LLC
7. Ocean Marine Brokerage
8. Lee Felterman & Associates

SCOPE OF WORK:

The vessel was sighted afloat and moored to the Algiers Point Landing facility. A visual inspection of both external and internal areas was carried out, where possible.

LIMITING CONDITIONS:

1. This is a limited summary appraisal report which was done for insurance purposes. Supporting documentation concerning the data developed, and the value calculations, is retained in the appraisal file.
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4. The vessel and equipment were appraised under the assumption that there was responsible ownership and management, competent crewing, and ongoing maintenance.
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6. Value is considered to be in cash. Contracts or charters, if any, are not considered in reaching the value.
7. We are unaware of any significant potential environmental hazards associated with this equipment other than normal on board fuel and lubes.
8. The values noted above are based on the unit's existing condition and location.

LIMITING CONDITIONS: (continued)

9. It is assumed that the vessel is in full compliance with all applicable international, federal, state or local regulations unless otherwise stated in the report.

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12. No electronics or vessel systems were operated.

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SURVEYOR'S CERTIFICATION:

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and is my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

SURVEYOR'S CERTIFICATION: (continued)

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8. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice*.

9. I have not made a personal inspection of the property that is the subject of this report. Mr. Ryan Armida inspected the property.

10. No one provided significant personal property appraisal assistance to the person signing this certification.

I, Paul F. Deister, hereby certify that, to the best of my knowledge and belief, the statements of fact contained in this report are true and correct, and this report has been prepared using the guidelines of the Uniform Standards of Professional Appraisal Practice of The Appraisal Foundation and the Principles of Appraisal Practice and Code of Ethics of the American Society of Appraisers.

The American Society of Appraisers has a mandatory re-certification program for all of its Senior Members. I, Paul F. Deister, am in compliance with that program.

Survey made, signed and submitted without prejudice to rights and/or interests of whom it may concern.

Attending Surveyor:
Ryan Armida

DUFOUR, LASKAY & STROUSE, INC.

Ryan Armida, Marine Surveyor

Paul F. Deister, Surveyor
NAMS – CMS; AS

NATIONAL ASSOCIATION OF MARINE SURVEYORS INC. NAMSGLOBAL
PAUL F. DEISTER
NAMS-CMS
118-581
CERTIFIED MARINE SURVEYOR

PFD/dl
Enclosure: Photographs

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Report
Jeremy Rice
Elliott Bay Design Group
Via Email: jrice@ebdg.com

1. HULL AND FENDERING



2. HULL AND FENDERING



3. HULL AND FENDERING



4. MAIN DECK



5. MAIN DECK



6. MAIN DECK



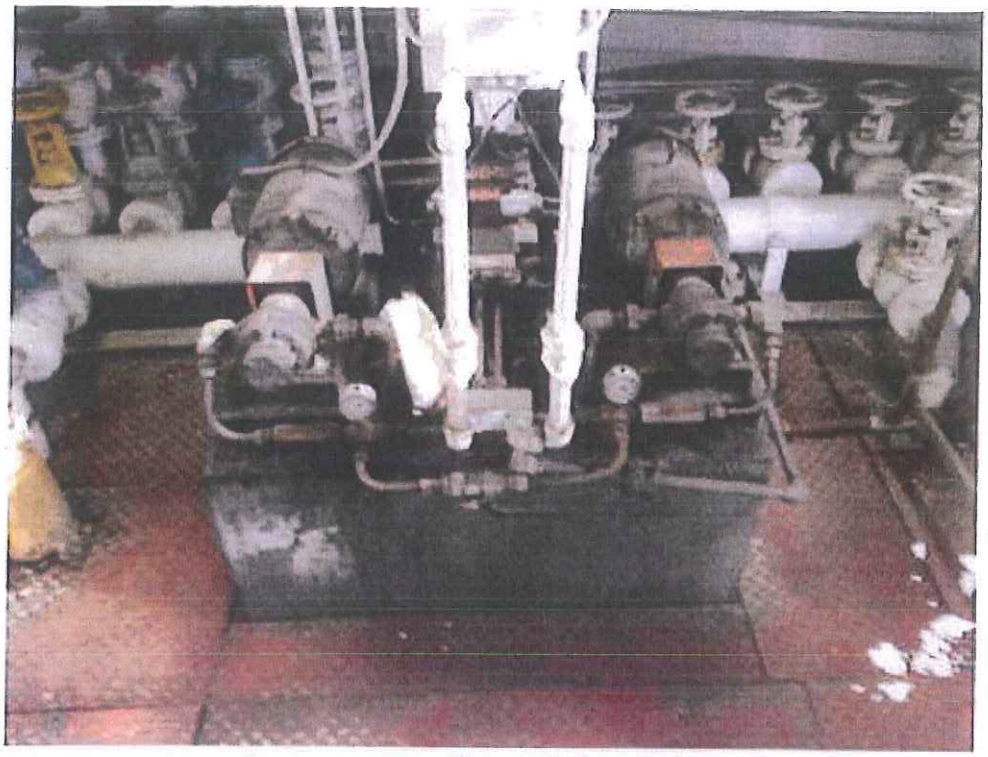
7. MAIN DECK



8. MAIN DECK



9. HPU



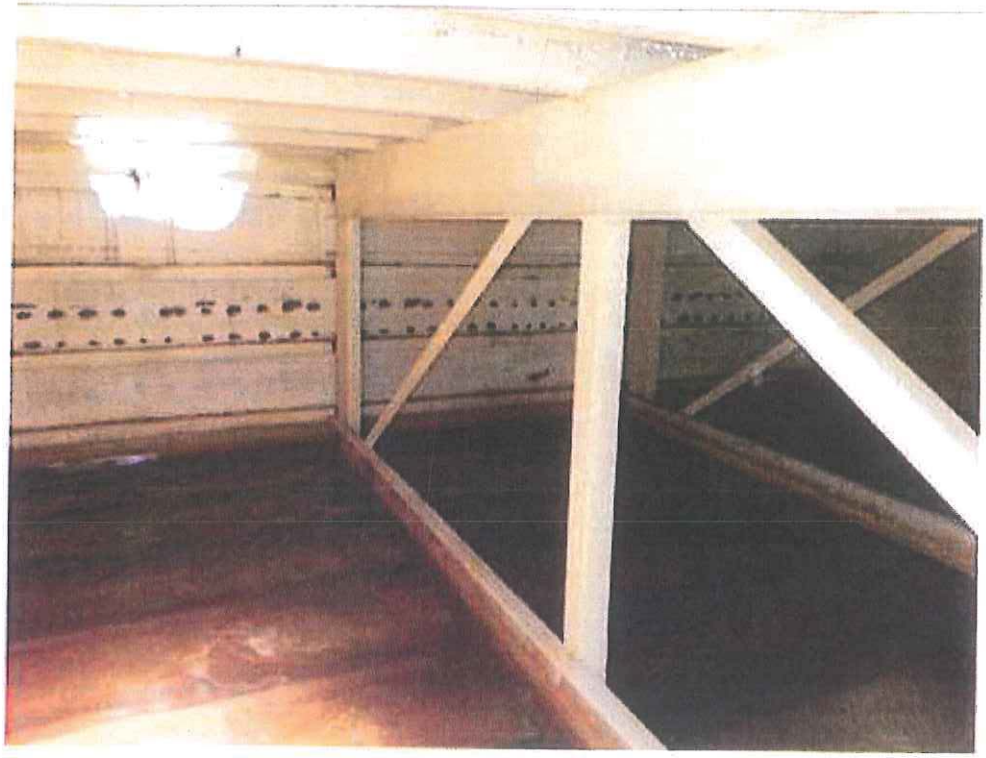
10. INTERNALS



11. INTERNALS



12. INTERNAL



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Dufour, Laskay & Strouse, Inc.

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National Association of Marine Surveyors
and
American Society of Appraisers
Accredited Members
on Staff

September 18, 2013

Condition and Valuation
As of
August 21, 2013

LOWER ALGIERS FERRY LANDING

SURVEY REPORT NO. 1411-01N13-F

THIS IS TO CERTIFY that the undersigned Marine Surveyor did, on August 21, 2013, at the request of Elliott Bay Design Group and for the account of Veolia Transportation, survey the all welded steel non-self-propelled inland deck barge utilized as the Lower Algiers Ferry Landing platform, Louisiana State Department of Transportation and Development, Owners and Operators, while the subject vessel lay afloat at the facilities of the Lower Algiers Ferry Landing, Algiers, Louisiana, in order to ascertain the condition of the vessel and her value as of August 21, 2013 for insurance purposes.

Note: All sizes, shapes, dimensions, and capacities are approximate, unless otherwise noted.

GENERAL DESCRIPTION:

The vessel is a non-typical inland deck barge. The vessel has a square raked bow, square box stern, and a flat main deck with a recessed doghouse structure located aft.

VESSEL PARTICULARS:

Built	:	Unknown
Official Number	:	Unknown

VESSEL PARTICULARS: (continued)

Dimensions : 135' x 35' x 6' 10"

Weight : 1,456,000-lbs (includes ballast water)

The starboard side of the barge is completely faced, above the waterline with five tiers of composite fendering located forward with wooden timbers located aft. The timbers and fendering extend up and above the deck level and secured to 28" open type bulwarks fitted with reinforcing stanchions located approximately every 20".

The main deck is fitted with six large 500-watt deck light stanchions and two small navigation light stanchions.

Deck fittings consist of the following:

- Nine starboard side single bitts
- Port side forward and aft deck welded padeyes fitted with 25-ton shackles and 1" chain link

The aft end of the barge is fitted with port and starboard fantails fitted with 3-tier hand safety rails. Fantails are built to support the aft securing mechanism which is constructed of 16" pipe that fits into brackets on the upriver dolphin. The bracket braces against the starboard side bulwarks and is attached to the port side dolphin. The attaching mechanism allows the barge to ride up and down with the tide and the wakes of passing vessels. The port side forward end of the barge is secured to the downriver dolphin by means of a hull welded bracing system which rides up and down the dual I-beam securing system in place on the dolphin.

The aft end of the vessel's deck was additionally fitted with an approximate 100-gallon fuel drum.

The forward end of the vessel's deck is fitted with a hydraulically operated car ramp which has not been operated in numerous years. The ramp itself measures approximately 45' in length by the entire width of the barge and is made up of two separate sections in order to allow folding when operating. Hydraulic rams are noted beneath the ramp.

HULL COMPARTMENTATION:

Hull compartmentation is as follows:

- The forwardmost compartment is divided into three watertight compartments in way of the bow rake
- The next four compartments aft are port, starboard, and centerline watertight void spaces

HULL COMPARTMENTATION: (continued)

- The last compartment aft is port, starboard, and centerline box stern compartments

AUXILIARY MACHINERY:

The following auxiliary machinery is located in the vessel's doghouse in way of the No. 4 port side hull compartment:

- One hydraulic power unit used for the vessel's car ramp which is operated via two approximate 5-HP electric motors set over a common hydraulic reservoir *(Non-operational)*
- One 30-KW generator run via a Detroit Diesel, model 3-71 *(Non-operational)*
- One bilge ballast manifold operated via a 2-HP electric motor *(Non-operational)*

CERTIFICATES/DOCUMENTS:

At time of survey, no certificates or documents were noted on board the vessel.

SERVICE:

In the opinion of the undersigned, service of this vessel should be limited to lakes, bays, and sounds.

CONDITION:

The vessel was sighted afloat at the facilities of the Lower Algiers Ferry Landing.

Exterior Condition:

At time of survey, the outer portions of the hull that were able to be sighted were noted to be fairly well coated with older and fading coatings. Some light rust and scrapes were noted in the hull coatings in scattered areas throughout. Light 0-½" washboarding between verticals was noted in scattered areas. Light 0-1" insets were noted.

The fendering on the starboard side of the vessel was noted to be in good condition with some of the timbers splintered and/or broken in some areas.

Overall, the main deck was noted to be in good condition and well coated with older and notably fading coatings, with very light rust throughout.

The starboard side of the deck was noted to be set down along the bulwark frames with some sections of framing noted to be crimped 0-2" to varying degrees. There was also some light washboarding noted on the deck between longitudinals of 0-1¼". Some scattered 0-1" insets were also noted.

CONDITION: (continued)

The bulkheads were noted to be set in 0-2" in scattered areas, mostly in way of the aft end.

The vessel's hydraulic car ramp was noted with the starboard side heavily dented and set down, mostly at its forward end of 0-8", to varying degrees.

Interior Condition:

Note: All compartments are coated to varying degrees with epoxy coatings.

Bow Rake:

The compartment was noted to be in good condition with some light rust noted.

Centerline Bow Rake Compartment:

The compartment was noted with moderate rust and considerable scaling in way of the bottom longitudinals. No damages were noted.

Starboard Bow Rake Compartment:

The compartment was noted to be in good condition. Sighted with 0-4" of water against the aft bulkhead. Bottom longitudinals were not able to be viewed in their entirety, but the forward portions appeared to be in good condition. New steel appears to have inserted in some locations in the recent past.

No. 1 Port, Starboard, and Centerline Compartments:

The compartment was not able to be viewed at time of survey due to being under the vessel's car ramp.

No. 2 Port Side Compartment:

The compartment was noted to be in good condition with 0-4" of water throughout. Some light rust and scale were noted in scattered areas throughout.

No. 2 Centerline Compartment:

The compartment was noted to be in good condition with the majority of the compartment seeming to be comprised of newer steel inserts.

No. 2 Starboard Compartment:

The compartment was noted to be in good condition with light rust and scale as well as 0-3" of water and a light film of silt.

CONDITION: (continued)

Interior Condition: (continued)

No. 3 Starboard Side Compartment:

The compartment was noted to be in good condition with 0-1½" of water throughout as well as light rust and scale scattered throughout.

No. 3 Centerline Compartment:

The compartment was noted with light to moderate rust and scale in way of the bottom longitudinals with the upper portions of the compartment noted in good condition.

The No. 3 Port Compartment:

The compartment was not able to be accessed due to excessive water.

The No. 4 Starboard Compartment:

The compartment was noted to be in good condition with light rust and scale in some scattered areas and moderate scale in other areas.

The No. 4 Centerline Compartment:

The compartment was noted to be well coated and in good condition.

The No. 4 Port Compartment:

The compartment was noted to be in good condition with light rust and scale in some scattered areas and moderate scale in other areas.

The Port Box Stern Compartment:

The compartment was noted to be in good condition with 0-6" of water noted throughout. A light silt residue covered the bottom.

The Centerline Box Stern Compartment:

The compartment was noted with 0-3½" of water throughout with a thin film of silt on the bottom. The water was too murky to see the bottom in its entirety, but where visible, was noted to have light rust and scale that was also noted to be moderate in some areas.

As far as may be ascertained from a general examination of this vessel afloat, without removals or opening up to expose parts ordinarily concealed, and without taking drillings to ascertain thickness of structural members, testing for tightness, or opening up the machinery, it is the opinion of the undersigned that her hull, machinery and equipment will be in satisfactory condition for operation after the following recommendations have been complied with.

RECOMMENDATIONS:

1. Replace any old/broken and/or dried and cracking gaskets in way of the manhole covers.

VALUATION:

Opinion of **Fair Market Value** as of August 21, 2013: **$260,000**

Opinion of **Orderly Liquidation Value** as of August 21, 2013: **$195,000**

Opinion of **Forced Liquidation Value** as of August 21, 2013: **$155,000**

Opinion of **Replacement Cost** as of August 21, 2013: **$510,000**

NARRATIVE:

The replacement cost of the subject ferry landing barge has been determined to be $510,000. The replacement cost was generated by a local South Louisiana barge construction facility for a new construction cost of the subject barge.

We also contacted local equipment vendors to obtain replacement costs of the machinery aboard the subject barge.

Once we determined the replacement cost, we considered both the cost and sales comparison approaches in determining fair market value.

Utilizing the sales comparison approach, we canvassed the local marine brokerages seeking similar ferry landing barges currently offered for sale. It should be noted that these are unique and dedicated service barges to the ferry industry. Although the basic hull is a deck barge type hull, these vessels would not be suitable for materials transport in the general industry.

Our research indicated that of the websites utilized, there were no ferry landing barges currently offered for sale. There were numerous deck barges in the size range of the subject barge; however, since they were only dedicated deck materials barges, they are not suitable for comparables.

Based upon the foregoing, we applied the cost approach to determine fair market value. Utilizing this approach, we applied a formula of deprecation to the replacement cost after deducting a residual value. Our formula of depreciation was based upon a normal useful life of

NARRATIVE: (continued)

forty years and a remaining useful life of twenty years based upon the physical conditions present during survey.

We then added back the residual value to the equation to arrive at a value of $280,000.

It should be noted that the machinery aboard the subject barges reportedly is in non-working condition.

From the above figure, we have deducted a cost to cure in the amount of $20,000.

Based upon the foregoing, it is our opinion that the estimated present day fair market value of the subject barge is in the amount of $260,000.

To determine the orderly liquidation of the subject barge, we applied a discount of 25% to the fair market value to arrive at an orderly liquidation value of $195,000.

To arrive at the forced liquidation value, we applied a discount of 40% to the fair market value to arrive at a forced liquidation value in the amount of $155,000.

The income approach was considered, but not utilized due to lack of information.

SPECIFIC REFERENCE MATERIAL:

1. Shipyard quotes
2. Dufour, Laskay & Strouse, Inc. journal
3. Dufour, Laskay & Strouse, Inc. database
4. Marcon International
5. Damco Marine, Inc.
6. Tassin Marine Transportation, LLC
7. Ocean Marine Brokerage
8. Lee Felterman & Associates

SCOPE OF WORK:

The subject survey was conducted for insurance purposes. The vessel was inspected afloat and moored to dolphins at the Algiers Ferry Landing. At time of survey, all compartments were opened and viewed with the exception of those where water levels prevented entry. A visual inspection was conducted of all exterior portions of the vessel.

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11. No one provided significant personal property appraisal assistance to the person signing this certification.

I, Paul F. Deister, hereby certify that, to the best of my knowledge and belief, the statements of fact contained in this report are true and correct, and this report has been prepared using the guidelines of the Uniform Standards of Professional Appraisal Practice of The Appraisal Foundation and the Principles of Appraisal Practice and Code of Ethics of the American Society of Appraisers.

The American Society of Appraisers has a mandatory re-certification program for all of its Senior Members. I, Paul F. Deister, am in compliance with that program.

Survey made, signed and submitted without prejudice to rights and/or interests of whom it may concern.

Attending Surveyor:
Ryan Armida

DUFOUR, LASKAY & STROUSE, INC.

Ryan Armida, Marine Surveyor

Paul F. Deister – Surveyor
NAMS – CMS, ASA

PFD/dl

Enclosure: Photographs

(Please see next page)

Distribution:
Report and Invoice
Alan Moldawer
Executive Vice President/General Counsel
Veolia Transportation
Via Email: alan.moldawer@veoliatransdev.com

Report
Gary Barrios
Veolia Transportation
Via Email: gary.barrios@veoliatransdev.com

Report
Jeremy Rice
Elliott Bay Design Group
Via Email: jrice@ebdg.com

1. AFT PORTION



2. FORWARD PORTION



3. CAR RAMP



4. CAR RAMP



5. FENDERING



6. BULWARKS



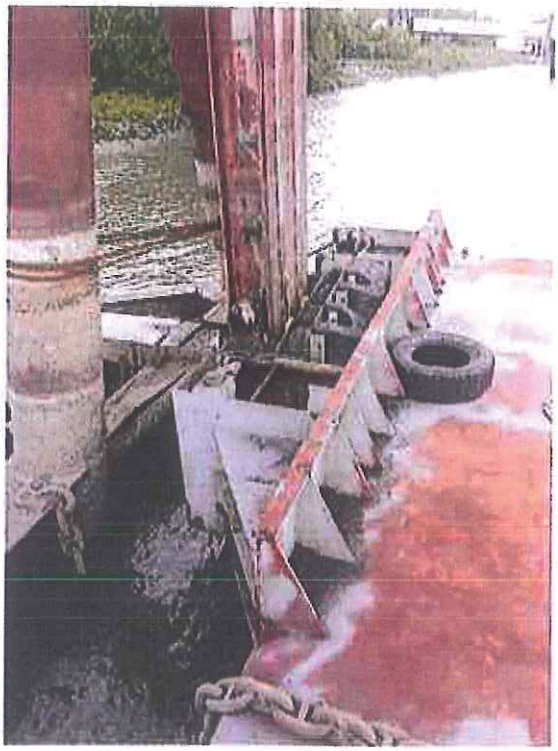
7. BULWARKS



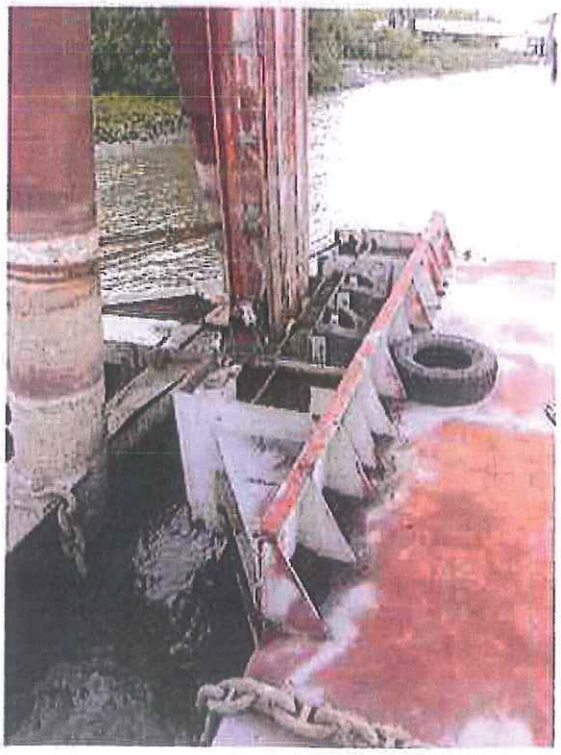
8. BULWARKS



9. MAIN DECK



10. SECURING MECHANISMS



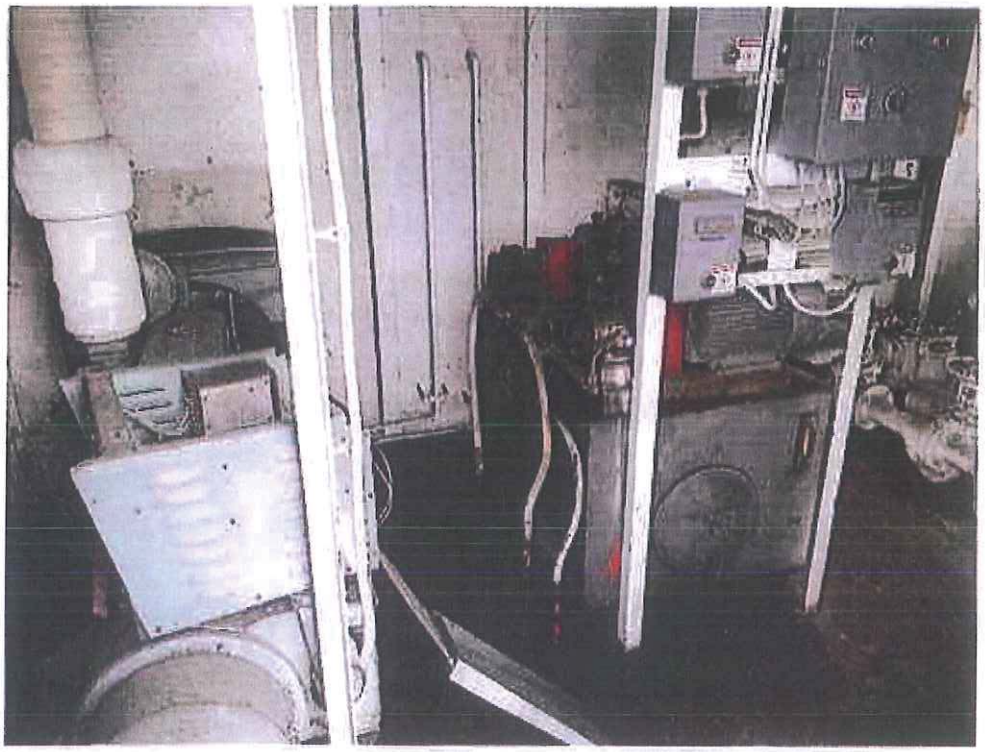
11. SECURING MECHANISMS



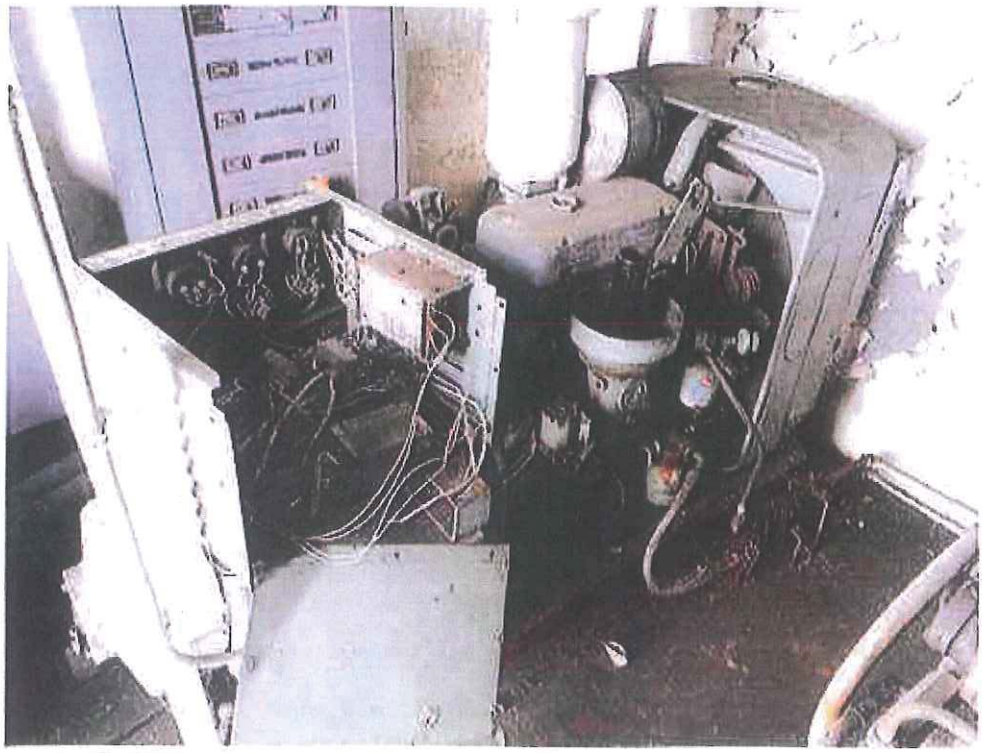
12. SECURING MECHANISMS



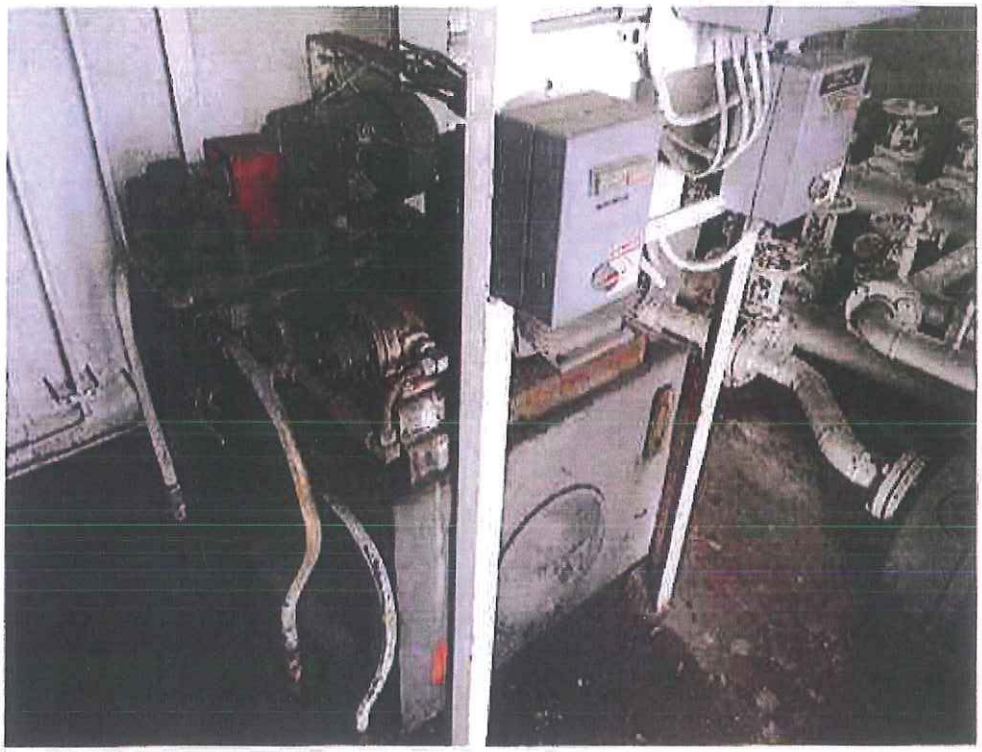
13. AUXILIARY MACHINERY



14. AUXILIARY MACHINERY



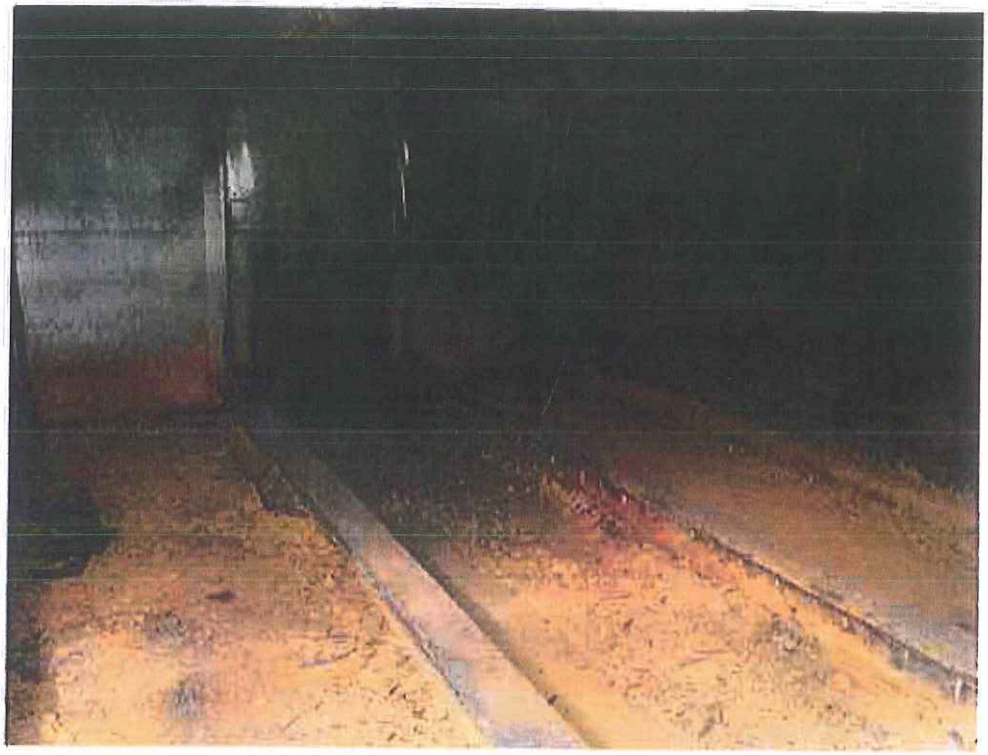
15. AUXILIARY MACHINERY



16. INTERNALS



17. INTERNALS



18. INTERNALS



19. INTERNALS



2817 Canal Street
New Orleans, LA 70119

New Orleans Regional Transit Authority

Board Report and Staff Summary

File #: 26-059 **Finance Committee**

Board and Conference Room Technology Upgrades

DESCRIPTION: This request is to replace outdated audio and visual equipment in the board and conference rooms to improve public access and meeting reliability.	AGENDA NO: Click or tap here to enter text.
ACTION REQUEST: ☒ Approval ☐ Review Comment ☐ Information Only ☐ Other	

RECOMMENDATION:

Authorize the purchase and installation of upgraded audio and visual equipment for the board meeting room and conference room, in an amount not to exceed $150,000.00.

ISSUE/BACKGROUND:

The existing audio and visual systems are outdated and replacement parts for several system components are no longer available, limiting the agency's ability to repair, and maintain the current equipment. Recent meetings have exposed recurring audio quality and reliability issues, particularly during live streams resulting in complaints and limiting accessibility for remote viewers.

DISCUSSION:

The proposed upgrade includes replacement and modernization of microphones, cameras, audio processors, control systems, and integrated audiovisual technology used to support Board and committee meetings, public participation, and live streaming. The system design and specifications for the upgrade were developed internally by the RTA's Information Technology Department to ensure compatibility with the agency's operational and meeting needs.

The equipment and implementation services will be provided through Link Integration Group utilizing Louisiana state contract 4400027449. The procurement is being processed as a sole source procurement because the proposed system components and integration services are specifically designed to work with the agency's existing meeting and streaming infrastructure.

Installation is expected to take approximately one week with minimal operational disruption. Staff anticipates scheduling the work during July 2026 when the Board is expected to be in summer recess and no public meetings are scheduled.

The optional extended warranty included in the proposal is not part of this request. Ongoing support and maintenance of the upgraded system will be managed internally by the Information Technology Department.

In closing, approval of this item will provide reliable and modern meeting technology that supports efficient Board operations, public accessibility, and continued transparency of official proceedings.

FINANCIAL IMPACT:

The project will cost $150,000, which is a one-time fixed cost. Funding for the project is available within the approved FY2026 operating budget through account number 01-1100-02-7150-181-00-00.

NEXT STEPS:

Upon Board approval, staff will:

- Finalize procurement with the selected vendor
- Coordinate installation and systems integration

ATTACHMENTS:

1. Resolution
2. Vendor's Proposal and Scope of Work
3. Procurement Routing Form

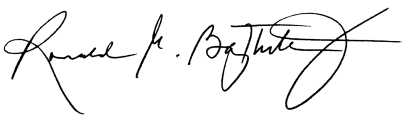
Prepared By: Yolanda Rodriguez
Title: Chief of Board Affairs

Reviewed By: Sterlin Stevens
Title: Director of Information Technology

Reviewed By: Dwight Norton
Title: Chief Planning & Capital Projects Officer

Reviewed By: Gizelle Banks
Title: Chief Financial Officer

Reviewed By: Ronald G. Baptiste, Jr.
Title: Interim Chief Executive Officer



6/2/2026

Click or tap here to enter text.

Regional Transit Authority
2817 Canal Street
New Orleans, LA 70119-6307

RESOLUTION NO.
FILE ID NO. 26-059

STATE OF LOUISIANA
PARISH OF ORLEANS

A RESOLUTION AUTHORIZING THE PURCHASE AND INSTALLATION OF AUDIO AND VISUAL SYSTEM UPGRADES FOR THE BOARD AND CONFERENCE ROOMS TO IMPROVE MEETING RELIABILITY AND PUBLIC ACESS

Introduced by Commissioner _____, seconded by Commissioner _____.

WHEREAS, the New Orleans Regional Transit Authority ("RTA") board and conference room audio and visual systems are outdated and no longer adequately support the agency's operational, governance, and public transparency needs; and

WHEREAS, recent Board and committee meetings have exposed recurring audio quality and reliability issues, particularly during live-streamed meetings, resulting in public complaints and limitations on accessibility for remote viewers; and

WHEREAS, the proposed upgrade will modernize the technology with enhanced microphones, sound systems, and integrated audiovisual equipment designed to improve in-room participation and live-stream quality; and

WHEREAS, the system design and specifications for the upgrade were developed internally by the RTA Information Technology Department to ensure compatibility with the agency's operational and meeting requirements; and

WHEREAS, the equipment and installation services will be provided through Link Integration Group utilizing an existing Louisiana state contract available to public agencies; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the New Orleans Regional Transit Authority that the Chief Executive Officer is hereby authorized to procure and install upgraded audio and visual equipment through Link Integration Group under Louisiana state contract #4400027449, **in an amount not to exceed $150,000.00**; and

BE IT FURTHER RESOLVED that funding for this procurement shall be supported within the approved operating **budget under account number 01-1100-02-7150-181-00-00**; and

THE FOREGOING WAS READ IN FULL, THE ROLL WAS CALLED ON THE ADOPTION THEREOF AND RESULTED AS FOLLOWS:

YEAS: _____
NAYS: _____
ABSTAIN: _____
ABSENT: _____

AND THE RESOLUTION WAS ADOPTED ON THE 22ndth DAY OF June 2026.

_____
ANN D. DUPLESSIS
CHAIR
RTA BOARD OF COMMISSIONERS

LINKINTEGRATION GROUP

RETHINK TECHNOLOGY

We have prepared a quote for you

Boardroom Update

Quote # 009926 Version 1
LA State Contract: 4400027449

Prepared for:

New Orleans Regional Transit Authority

Prepared by:

Patrick Meek

Scope of Work

Scope of Work: Opportunity # 2806 - New Orleans RTA Boardroom AV Updates - Scope of Work

5/1/26 Updates to proposal Per LIG Conversation with Sterlin Stevens:

- **Removed QTY (4) four 75" displays for behind the dais.**
  - **The existing displays will be reused.**
- **Moved LSA (Link System Assurance) WARLIG-5-[0623] Extended Warranty to Optional.**

Provide and Install a updated Audio Visual System for the New Orleans RTA. The system includes the following requested functionality per my onsite meeting:

1. Wireless Mics
2. Automatic Camera Preset Recall (ACPR)
3. Teams/Zoom using Wireless Mics/Ceiling Mic/Cameras
4. AirMedia Wireless Input
5. Mult Box/Press Feed located in rear of room
6. X-Panel from Laptop to Mimic Touch Panel

We were not able to find a good solution for the Desktop Monitors to be able to see both the agenda and presentations. Any solution we found would make the images to small to be usable on the same screen.

An Display Option has been included as an alternate if you choose to replace the displays behind the dais.

Link Integration Group (LIG) will provide the following:

- Remove the existing Taiden microphone system.
- Replace the audio processor with an updated unit which has more processing power.
- Install a wireless microphone conference system. This system will consist of (1) microphone access point, (15) microphone stations, (5) spare batteries, and (2) networked charging stations.
- Utilize the existing lectern microphone.
- Utilize the existing amplifier and speakers for audio distribution.
- Replace the video distribution system with an encoder / decoder-based system.
  - The sources for the system will be as follows:
    1. Dais 1 HDMI / USB
    2. Dais 2 HDMI / USB
    3. Clerk HDMI / USB
    4. Executive Table HDMI / USB
    5. Wireless Presentation
    6. Rack/BIS Computer
- Utilize the existing monitors at the dais and desk locations. The new system will allow for switching the source of these monitors between the Clerk computer (agenda) and the presentation.
- Connect the existing BIS computer and Granicus System to the new system via decoder and USB bridge.

- Install a new digital audio processor to control the room audio.
- Remove the existing camera system and replace it with a tracking system consisting of 3 cameras to catch the members of the board and the desk / podium in front of the dais, and (1) camera for a wide shot of the dais.
- Replace the control processor and touch panel with updated models.
- Install an AV network switch in the equipment rack to allow all equipment to communicate.
- Utilize the existing equipment rack for mounting all headend equipment.
- Test and commission systems.
- Train personnel.

NOTE: The client is responsible for having a network connection available at the equipment rack for connection of the monitoring PC.

LIG will not provide the following:

- Power circuits
- Cable raceway
- Client Network drops

New Orleans RTA Boardroom AV Updates

Qty	Product ID	Product Description	Price	Extended Price
		Audio		
15	MICSHU-22-[0623]	Wireless Touchscreen Conference Unit State Catalog #: 1101	$2,043.00	$30,645.00
15	MICSHU-24-[0623]	Gooseneck Microphone for MICSHU-22 State Catalog #: 1103	$288.00	$4,320.00
5	MICSHU-25-[0623]	Battery Pack for MICSHU-22 State Catalog #: 1104	$243.00	$1,215.00
2	MICSHU-26-[0623]	Networked Charging Station for MICSHU -22 State Catalog #: 1105	$1,530.00	$3,060.00
1	MICSHU-23-[0623]	Access Point Transceiver State Catalog #: 1102	$5,103.00	$5,103.00
1	MICSHU-09-[0623]	Ceiling Array Microphone State Catalog #: 1089	$4,257.00	$4,257.00
1	DSPQSC-01-[0623]	Unified Series Core - w/licenses State Catalog #: 1026	$4,383.00	$4,383.00
1	DSPQSC-26-[0623]	Network 4 Output Module State Catalog #: 1047	$504.00	$504.00
		Video		
8	SWICRE-37-[0623]	Video Decoder State Catalog #: 2077	$1,476.00	$11,808.00

LA State Contract: 4400027449

New Orleans RTA Boardroom AV Updates

Qty	Product ID	Product Description	Price	Extended Price
7	SWICRE-23-[0623]	DM Network 4K Encoder/Decoder w/Downmixing State Catalog #: 2072	$2,277.00	$15,939.00
1	EXTCRE-12-[0623]	HD Video Scaler, HDMI In, HDMI Out State Catalog #: 2038	$567.00	$567.00
2	SWICRE-19-[0623]	1-to-2 4K HDMI Distribution Amplifier State Catalog #: 2069	$450.00	$900.00
1	VIDATL-09-[0623]	4 X 2 Matrix with USB State Catalog #: 2143	$1,935.00	$1,935.00
		Cameras and Multi-Camera Switching Solution		
4	CAMHUD-01-[0623]	USB Autotracking Camera State Catalog #: 2125	$2,970.00	$11,880.00
1	PRODAT-16-[0623]	Rack mount appliance with unlimited licensing	$15,250.00	$15,250.00
		Displays		
4	OFE Displays	Displays behind the Dias will remain.	$0.00	$0.00
		Control		
1	CONCRE-03-[0623]	4 Series Control System Processor State Catalog #: 5016	$2,277.00	$2,277.00
1	CONCRE-56-[0623]	10 in. Tabletop Touch Screen State Catalog #: 5047	$3,411.00	$3,411.00
1	DSPQSC-18-[0623]	48 Port AES67 Switch State Catalog #: 1039	$3,465.00	$3,465.00
1	SWICRE-42-[0623]	USB Receiver State Catalog #: 2082	$684.00	$684.00
		Cabling		
40	CABLIB-08-[0623]	CAT-6 unshielded cable-CMP State Catalog #: 6007	$48.60	$1,944.00
2	CABLIB-04-[0623]	22/2 stranded shielded cable-CMR State Catalog #: 6003	$22.50	$45.00
2	CABLIB-09-[0623]	RG6 CATV/DBS coaxial cable-CMP State Catalog #: 6008	$67.50	$135.00
6	CABLIB-28-[0623]	Commerical Grade HDMI Cable-10FT State Catalog #: 6017	$32.40	$194.40
6	CABLIB-37-[0623]	USB 3.0 Cable 10ft State Catalog #: 6026	$13.50	$81.00

LA State Contract: 4400027449

New Orleans RTA Boardroom AV Updates

Qty	Product ID	Product Description	Price	Extended Price
2	CABLIB-41-[0623]	USB 3.1 C to C 10ft State Catalog #: 6030	$54.00	$108.00
		Racks & Hardware		
1	RACMID-15-[0623]	15A, 9 Outlet, IP Controlled State Catalog #: 4046	$531.00	$531.00
4	RACMID-16-[0623]	15A, 2 Outlet, IP Controlled State Catalog #: 4047	$315.00	$1,260.00
4	CABLIB-51-[0623]	Wallplate State Catalog #: 6040	$45.00	$180.00
		Installation / Programming		
200	INSTALL-1-[0623]	Onsite Installation	$115.00	$23,000.00

Subtotal: **$149,081.40**

LSA

* Optional

Description		Price	Qty	Ext. Price
WARLIG-5-[0623]	**Extended Warranty on Installation - 5 State Catalog #: 7004**	$12,000.00	1	$12,000.00

* Optional Subtotal: **$12,000.00**

LA State Contract: 4400027449

Boardroom Update

Prepared by:

Baton Rouge HQ
Patrick Meek
225-756-2205
Fax 2257562204
pmeek@ligllc.com

Prepared for:

New Orleans Regional Transit Authority
2817 Canal St.
New Orleans, LA 70119
Sterlin Stevens
(504) 606-3354
sstevens@rtaforward.org

Quote Information:

Quote #: 009926
Version: 1
Delivery Date: 05/01/2026
Expiration Date: 05/29/2026

Quote Summary

Description	Amount
New Orleans RTA Boardroom AV Updates	$149,081.40
Total:	**$149,081.40**

*Optional Expenses

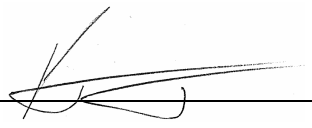
Description	One-Time
LSA	$12,000.00
Optional Subtotal:	**$12,000.00**

Payment Options

Description	Payments	Interval	Amount
Terms			
50% Deposit	1	One-Time	$74,540.70
50% Due Upon Completion	1	One-Time	$74,540.70

Taxes, shipping, handling and other fees may apply. We reserve the right to cancel orders arising from pricing or other errors.

Baton Rouge HQ

Signature: 
Name: Patrick Meek
Title: Account Executive
Date: 05/01/2026

New Orleans Regional Transit Authority

Signature:
Name: Sterlin Stevens
Date:

LA State Contract: 4400027449

LINK INTEGRATION GROUP

RETHINK TECHNOLOGY

Keeping you connected.

LINK SYSTEM ASSURANCE (LSA)

BENEFITS

PRIORITY SERVICE

Call or text Link Integration Group's toll-free number to request service or simply send an email to **support@ligllc.com**. These resources can be used anytime and a technician will respond with basic trouble-shooting, strategic next steps or remote access services **within 4 business hours**. If the problem cannot be resolved by phone or remote access, a technician will be dispatched onsite by the next business day.

ANNUAL AV NETWORK DEVICE SECURITY AUDIT

An audit of network device security utilizing manufacturer best practices (Crestron, QSC, Shure, etc.) will be deployed annually. This service can include **scanning, migration and intrusion prevention** as well as the disabling of services, firmware upgrades, password refortification and other security options.

EXPERT REMOTE SUPPORT SERVICES

Stay up to date with constant **system monitoring** and program changes.

WARRANTY ASSISTANCE FOR AV EQUIPMENT

You have an ally and intermediary when it comes to dealing with warranty issues for any potential system failures. The LSA will provide assistance with **manufacturer support, processing all RMA's, returns and repairs on your behalf.**

QUARTERLY DIAGNOSTIC SERVICES

Quarterly diagnostic services prevent more expensive repairs and unnecessary downtime for your AV systems. These services will be conveniently scheduled to **ensure that your networks and equipment stay online.**

BIANNUAL PREVENTATIVE MAINTENANCE SERVICES

Preventative maintenance can mitigate expenses and headaches. With biannually scheduled preventative maintenance, you can have the **peace of mind that your equipment is always ready when you need it.**

DISCOUNTED INSTALLATION AND PROGRAMMING SERVICES

Platforms, software and equipment are constantly evolving, changing and improving. These are important investments. With the Link System Assurance, you can leverage a **25% discount** on installation and programming charges after five years for system refresh services.

State Contract Procurement Routing Sheet

RESUBMITTAL for REJECTION #1 by Budget Review on May 07 2026 09:10:52

REQUEST ID: 332

This sheet has been submitted for approval it's "not editable"

Mode: Locked Status: In-Progress Stage: Chief Review

Created By: O'SULLIVAN, DORIS Wed May 06 2026 14:19:20 GMT-0500 (Central Daylight Time)

☑ Default Routing Review * ☐ Check to see reject comments ☐ Click to see full-log

EMAIL ROUTING ASSIGMENTS

Dir/Dept Head Personnel Lookup *	Dept Head Full Name	Dept Head RTA Email *
Sterlin Stevens	Sterlin Stevens	sstevens@rtaforward.org
Info Tech Lookup	Info Tech Fullname	Info Tech Email *
	Info Tech Team	InfoTechProcurement@rtafc
Grants Personnel Lookup	Dir Grants Rep Full Name	Dir Grants RTA Email *
	Grants Team	
Budget Personnel Lookup	Budget Analyst Full Name	Budget Analyst RTA Email *
	Budget Team	Budget@rtaforward.org
Safety Personnel Lookup	Chief Safety Full Name	Chief Safety RTA Email *
	Safety Team	SafetyProcurementTeam@r
Risk Personnel Lookup	Risk Analyst Full Name	Risk Analyst RTA Email *
Risk Team	Risk Team	RiskProcurementTeam@rtal
SBE Personnel Lookup	Dir SBE Full Name	Dir SBE RTA Email *
	SBE Team	SBEProcurementTeam@rtaf

DBE Personnel Lookup DBE Team	DBE/EEO Compliance Manager Name #DBE Team	DBE/EEO Compliance Manager RTA Email * DBEProcurementTeam@rta
Procurement Lookup	Dir Procurement Full Name Procurement Team	Dir Procurement RTA Email *
Chief Lookup * Yolanda Rodriguez	Chief Full Name #Yolanda Rodriguez	Chief RTA Email * yrodriguez@rtaforward.org
CFO Lookup CFO Team	CFO Full Name CFO Team	CFO RTA Email * CFO-Procurememt-Approve
CEO Lookup CEO Team	CEO Full Name #CEO Team	CEO RTA Email * CEOProcurementApprovers

Department Representative

A. I have reviewed this form and the attachments provided and by signing below I give authority to the below stated Department Representative to proceed as lead in the procurement process.

PROJECT MANAGER III
O'SULLIVAN, DORIS
dosullivan@rtaforward.org

Ext. *
8380

B. Name of project/service/product *
RTA Boardroom AV Updates

Procurement Justification *
Update the RTA Canal Street Boardroom to improve on-air quality of sound/visual. Using a mixture of both existing and new media, the vendor will improve microphone systems, audio processing, camera systems, and monitor switching capabilities.

Reason to justify the procurement of the product, project or services being requested.

Attachments
(*Indicated Required Items)

Schedule Delivery Date *

May 13, 2026

ICE Or Estimate *

$ 149,081.40

Technical Specs

- ○ Yes
- ● No

Scope of work

- ● Yes
- ○ No

ICE FORM OR OTHER SUPPORT DOCUMENT IS REQUIRED TO CONTINUE...! *

Link ICE 2026.pdf

SCOPE OF WORK ATTACHMENT IS REQUIRED...! *

BoardRoom Modifications Revised_1.pdf

Capital Project Review

☐ Capital project review required?

Funding Source

Funding Type *

☐ Federal ☐ State ☑ Local ☐ Other

Budget Analyst

BUDGET TEAM

Available Federal funding	Available State Funding	Available Local Funding *	Available Other Funding
$	$	$ 149,081.40	$

Projected Federal cost	Projected State Cost	Projected Local Cost *	Projected Other Cost
$	$	$ 149,081.40	$

Total Available Funding	Projected total cost	ICE Amount Entered
$ 149,081.40	$ 149,081.40	$ 149,081.40

Multi-Year (only applies to State + Local + Other)

Need to Input Multi-Year Breakdown?

No

Budget

Note: The default "Budget Team" includes all budget analysts.
They will all get an email, but only one will approve according to the budget code assignment.

Budget lookup List-1 *	Budget code-1 Selected *
01-1100-02-7150-181-00-00-00000-00000	01-1100-02-7150-181-00-00-00000-00000
Budget lookup List-2	Budget code-2 Selected
Budget lookup List-3	Budget code-3 Selected
Budget lookup List-4	Budget code-4 Selected
Budget lookup List-5	Budget code-5 Selected

Safety, Security and Emergency Management -Review and Approval is required

Safety Review and Approval is Required

☑ Yes

Safety Chief

SAFETY TEAM

Safety Attachments

No files uploaded

Risk Management - Review and Approval is required

STD Insurance Provisions is Required

✓ Yes

Risk Management Analyst

RISK TEAM

Risk Attachments

No files uploaded

DBE / SBE Goal - Review and Approval is required

Director of Small Business Development

SBE TEAM

DBE/EEO Compliance Manager

#DBE TEAM

I have reviewed this form and the attachments provided and by inputing my name below I give authority to the above stated department representative to proceed as lead in the procurement process.

Input Rep Fullname *

Doris O'Sullivan

Date *

May 6, 2026

This is the representative submitting the complete sheet to begin the procurement approval process.

2817 Canal Street
New Orleans, LA 70119

New Orleans Regional Transit Authority

Board Report and Staff Summary

File #: 26-074 **Finance Committee**

Replacement of Handheld Radios

DESCRIPTION: Award Purchase Order to Motorola Solutions for the purchase of replacement handheld radios	AGENDA NO: Click or tap here to enter text.
ACTION REQUEST: ☒ Approval ☐ Review Comment ☐ Information Only ☐ Other	

RECOMMENDATION:

To authorize the Chief Executive Officer to award a purchase order to Motorola Solutions for the acquisition of handheld radios in an amount not exceeding $149,742.35.

ISSUE/BACKGROUND:

The handheld radios currently utilized by agency staff have been in service for several years and are no longer meeting required operational standards. As these radios have reached the end of their useful life, they have become increasingly prone to malfunctions, limited functionality, and the absence of critical features necessary to support daily operations. Continued reliance on these outdated devices presents risks to communication effectiveness, employee safety, and overall operational efficiency.

Following a comprehensive radio audit conducted in 2022, the agency developed a multi-year replacement plan to phase out the outdated Motorola XTS handheld radios and transition to the improved Motorola APX product line. These units are utilized operationally by Dispatch, Paratransit, Transit Police, St. Charles Streetcar Operators, Maintenance, Roadway, Traction Power, Marine, Supervisors, and select management. This initiative was established to modernize the agency's communication capabilities, improve reliability, and ensure seamless operations across departments.

The agency is now concluding this multi-year replacement plan with a final purchase of fifteen (15) Motorola APX handheld radios and ten (10) N-series radios. This procurement will complete the full replacement of all XTS handheld radios currently used by agency staff while also introducing the next generation of LTE-capable communication devices for future operational consideration.

DISCUSSION:

Motorola Solutions is a registered vendor under the state contract (state contract #20862), which provides pre-negotiated pricing and items that offer significant cost savings and ensure compliance with state procurement requirements. By utilizing this state contract, we can avoid a lengthy bidding process and immediately access discounted pricing, reducing procurement time and ensuring that we stay within our budget.

FINANCIAL IMPACT:

Funding for this purchase order will be provided through local account code 01-0000-00-1519-000-00-03-00000-00000 in the amount not exceeding $149,742.35.

NEXT STEPS:

Upon RTA Board approval, staff will issue a purchase order to Motorola Solutions and initiate the purchase of the handheld radios.

ATTACHMENTS:

1. Board Resolution
2. RTA State Contract Procurement Routing Sheet
3. State of Louisiana Competitive Contract
4. ICE Form
5. Scope Summary
6. Quote from Motorola Solutions

Prepared By: Elliot Amsbaugh
Title: Fleet Technology Manager

Reviewed By: Ryan Moser
Title: Chief Asset Management Officer

Reviewed By: Gizelle Banks
Title: Chief Financial Officer

Click or tap to enter a date.

Ronald G. Baptiste Date
Interim Chief Executive Officer

Regional Transit Authority
2817 Canal Street
New Orleans, LA 70119-6301
504.827.8300
www.norta.com

RESOLUTION NO. _____
FILE ID NO. 26-074
STATE OF LOUISIANA
PARISH OF ORLEANS

AUTHORIZATION TO AWARD A PURCHASE ORDER TO MOTOROLA SOLUTIONS FOR THE PURCHASE OF REPLACEMENT HANDHELD RADIOS

Introduced by Commissioner _____, seconded by Commissioner _____.

WHEREAS, the Chief Executive Officer of the RTA has the need to award a purchase order to Motorola Solutions for the purchase of replacement handheld radios; and

WHEREAS, the handheld radios currently utilized by agency staff have been in service for several years and are no longer meeting required operational standards due to increased malfunctions, limited functionality, and the absence of critical features necessary to support daily operations; and

WHEREAS, continued reliance on outdated communication equipment presents risks to communication effectiveness, employee safety, and overall operational efficiency; and

WHEREAS, following a comprehensive radio audit conducted in 2022, the agency developed a multi-year replacement plan to phase out outdated Motorola XTS handheld radios and transition to the improved Motorola APX product line; and

WHEREAS, the agency is concluding this multi-year replacement initiative with the purchase of fifteen (15) Motorola APX handheld radios and ten (10) N-series radios, completing the replacement of all XTS handheld radios currently utilized by agency staff while introducing LTE-capable communication devices for future operational considerations; and

Regional Transit Authority
2817 Canal Street
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504.827.8300
www.norta.com

WHEREAS, Motorola Solutions is a registered vendor under State Contract No. 20862, which provides pre-negotiated pricing and products that offer significant cost savings while ensuring compliance with state procurement requirements; and

WHEREAS, funding for the purchase order is made available through account code 01-0000-00-1519-000-00-03-00000-00000, with a total cost not to exceed **ONE HUNDRED FORTY-NINE THOUSAND SEVEN HUNDRED FORTY-TWO DOLLARS AND THIRTY-FIVE CENTS ($149,742.35)**; and

NOW, THEREFORE, BE IS RESOLVED, by the Board of Commissioners of the Regional Transit Authority (RTA) that the Chairman of the Board, or his designee, is authorized to award a purchase order to Motorola Solutions for the purchase of replacement handheld radios.

THE FOREGOING WAS READ IN FULL; THE ROLL CALL WAS CALLED ON THE ADOPTION THEREOF AND RESULTED AS FOLLOWS:

YEAS: _____

NAYS: _____

ABSTAIN: _____

ABSENT: _____

AND THE RESOLUTION WAS ADOPTED ON THE 23rd DAY OF JUNE, 2026.

_____

ANN D. DUPLESSIS
CHAIRMAN
RTA BOARD OF COMMISSIONERS

ROUTING SHEET

Regional Transit Authority
State Contract Procurement Routing Sheet

INSTRUCTION: The user department is responsible for providing all information requested below and securing the requisite signatures.

Solicitation ID	328
ProjectSchedule Delivery Date	7/1/2026 5:00 AM
Technical Specs attached	No
Scope of Work attached	No

A. I have reviewed this form and the attachments provided and by signing below I give authority to the below stated Department Representative to proceed as lead in the procurement process.

Name: AMSBAUGH, ELLIOT
Title: FLEET TECHNOLOGY MANAGER
Ext: 7900

B. **Name of Project, Service or Product:**
Motorola Handheld Radios

C. **Justification of Procurement:**
Final procurement in multi-year plan to replace all XTS models. Equipping agency staff with newer APX models for communication use and introduction into N series LTE capable devices.

D. **Certification of Authorized Grant:**

Is this item/specification consistent with the Authorized Grant?

Director of Grants / Federal compliance:	
Signature	
Date	

E. **Safety, Security and Emergency Management:** Include Standard Safety Provisions Only:

Additional Safety Requirements Attached

false

Chief	Michael J Smith
Signature	*Michael J Smith*
Date	April 29 2026

Risk Management:

ROUTING SHEET

Include Standard Insurance Provisions Only?

true

Include Additional Insurance Requirements Attached ?

false

Risk Management Analyst	Marc L Popkin
Signature	*Marc L Popkin*
Date	April 29 2026

F. Funding Source:

Funds are specifically allocated in the Department's current fiscal year budget or in a grant to cover this expenditure as follows:

ICE Amount: $149,742.35

Total Projected Cost: $149,742.35

Funding Type: Local

Grants or Capital Project ID:

Federal Funding	**State**	**Local**	**Other**
		$200,000.00	
Projected Fed Cost	**State**	**Local**	**Other**
		$149,742.35	

FTA Grant IDs	**Budget Codes**
	01-0000-00-1519-000-00-03-00000-00000

Funds allocated by multi-year and budget codes:

Year	Amount	Budget Code
Year-1		01-0000-00-1519-000-00-03-00000-00000
Year-2		
Year-3		
Year-4		
Year-5		
Total all years		

Budget Analyst	Divya Prem

Signature	Divya Prem
Date	April 29 2026

G. DBE/SBE GOAL:

% DBE	0
% Small Business	0

Director of Small Business Development:	Adonis Charles Expose
Signature	Adonis Charles Expose
Date	April 30 2026

DBE/EE Manager	Adonis Charles Expose'
Signature	Adonis Charles Expose'
Date	April 30 2026

H. Information Technology Dept. vetting.

IT Director	Sterlin J Stevens
Signature	Sterlin J Stevens
Date	4/30/2026 2:47 PM

I. Authorizations: I have reviewed and approved the final solicitation document.

Department Head	Ryan Moser
Signature	Ryan Moser
Date	April 28 2026

Chief	Ryan Moser
Signature	Ryan Moser
Date	April 29 2026

Director of Procurement	Ronald Gerard Baptiste
Signature	Ronald Gerard Baptiste
Date	April 30 2026

FOR PROCUREMENT USE ONLY

Type of Procurement Requested:
SC - State Contract

ROUTING SHEET

Invitation for Bid (IFB) This competitive method of awarding contracts is used for procurements of more than $25,000 in value. The agency knows exactly what and how many of everything it needs in the contract, as well as when and how the products and services are to be delivered. The award is generally based on price.
Request for Quote (RFQ) This type of solicitation is often used to determine current market pricing.
Request for Proposal (RFP) This approach to contracting occurs when the agency isn't certain about what it wants and is looking to you to develop a solution and cost estimate.
Sole Source (SS) this procurement can be defined as any contract entered into without a competitive process, based on a justification that only one known source exists or that only one single supplier can fulfill the requirements.
State Contract (SC) this procurement is via a State competitive procurement
Two-step Procurment - request for qualifications step-one used in the formal process of procuring a product or service, It is typically used as a screening step to establish a pool of vendors that are then qualified, and thus eligible to submit responses to a request for price proposal (RFP). In this two-step process, the response to the RFQ will describe the company or individual's general qualifications to perform a service or supply a product, and RFP will describe specific details or price proposals.

	Required if Total Cost above $15K
Chief Financial Officer	Gizelle Johnson Banks
Signature	*Gizelle Johnson Banks*
Date	May 14 2026

	Required if Total Cost above $50K
Chief Executive Officer	Lona Edwards Hankins
Signature	*Lona Edwards Hankins*
Date	May 14 2026

STATE OF LOUISIANA

Competitive Contract

Vendor: 310015221
Company
MOTOROLA SOLUTIONS INC
500 W MONROE ST
CHICAGO IL 60661
Phone : 337-290-0433
Fax : 847-761-1338

T Number: 92835
Version: 8
LAPS Contract: Yes
Fiscal Year: 2025
Min.Ord.Value: 0.00
Distributor Contract: No
PCard:Yes
Co-op Agreement:Yes

Buyer Information
Name: ADAM COX
Tel Number: 225-219-4690
Email: adam.cox@la.gov

Contract number: 4400030771
Description: Motorola BN Portable Radios - SW

SEBD Vendor: No
SEHI Vendor: No
VSE Vendor: No
DVSE Vendor: No
Contract Valid Dates:
09/30/2024 - 09/29/2026

Supplier Text: Renewal of a Statewide Contract to furnish Motorola Brand Name Portable Radios to the State of Louisiana. This contract will be effective for a period of 12 months beginning September 30, 2025 and ending September 29, 2026. At the option of the State of Louisiana and acceptance by the Contractor, this contract may be renewed for one additional 12 month period at the same prices, terms, and conditions. Total contract time not to exceed 36 months.

Contract Documents Include:
Attachment A - Special Terms and Conditions - Pages 1 - 8
Attachment B - Price Sheet - Pages 1 - 17

For additional information regarding this contract, please contact the State Procurement Analyst responsible for this contract.

Notice to Vendor:

Line	Material No. / Supplier Part No.	Description	Prod. Cat.	UOM	Net Price	Discount
1		Motorola Brand Name Portable Radios Please refer to Attachment B - Price Sheet for	43191510		0.00000	

Recommending Approval: _____ **Approved by:** _____

Line	Material No. --- Supplier Part No.	Description	Prod. Cat.	UOM	Net Price	Discount
		product list and pricing				

Standard Terms and Conditions

1. THIS IS NOT AN ORDER TO SHIP (OR BEGIN SERVICE). A CONTRACT RELEASE OR PURCHASE ORDER MUST BE ISSUED BEFORE YOU ARE AUTHORIZED TO SHIP (OR BEGIN SERVICE).

2. THIS IS NOTICE THAT THE CONTRACT REFERENCED ABOVE HAS BEEN AWARDED TO YOU BASED ON THE BID (OR PROPOSAL) SUBMITTED. ALL TERMS, CONDITIONS, AND SPECIFICATIONS OF THE SOLICITATION WILL APPLY TO ALL ORDERS.

3. ANY AGENCY AUTHORIZED TO PURCHASE FROM THIS CONTRACT MUST ISSUE AN ORDER AND REFERENCE THE CONTRACT NUMBER, LINE NUMBER AND COMMODITY ITEM NUMBER FOR EACH ITEM.

4. CHANGES IN ITEMS TO BE FURNISHED ARE NOT PERMITTED (UNLESS APPROVED BY THE ISSUING AGENCY PRIOR TO DELIVERY). PRIOR APPROVAL MUST ALSO BE OBTAINED BEFORE DISTRIBUTORS CAN BE ADDED OR DELETED.

5. IF A DISTRIBUTOR LIST WAS SUBMITTED, CONTRACTOR MUST SEND COPIES OF THIS AWARD TO EACH DISTRIBUTOR.

6. QUANTITIES LISTED ARE ESTIMATED AND NO QUANTITIES ARE GUARANTEED (UNLESS "COMMITTED VOLUME" IS SPECIFICALLY STATED). CONTRACTOR MUST SUPPLY ACTUAL REQUIREMENTS ORDERED AT THE CONTRACT PRICE AWARDED.

7. COMPLIANCE WITH CIVIL RIGHTS LAWS.

THE CONTRACTOR AGREES TO ABIDE BY THE REQUIREMENTS OF THE FOLLOWING AS APPLICABLE: TITLE IV AND TITLE VII OF THE CIVIL RIGHTS ACT OF 1964, AS AMENDED BY THE EQUAL OPPORTUNITY ACT OF 1972, FEDERAL EXECUTIVE ORDER 11246,THE FEDERAL REHABILITATION ACT OF 1973, AS AMENDED, THE VIETNAM ERA VETERAN'S READJUSTMENT ASSISTANCE ACT OF 1974, TITLE IX OF THE EDUCATION AMENDMENTS OF 1972, THE AGE ACT OF 1975, AND CONTRACTOR AGREES TO ABIDE BY THE REQUIREMENTS OF THE AMERICANS WITH DISIBILITIES ACT OF 1990. CONTRACTOR AGREES TO NOT TO DISCRIMINATE IN ITS EMPLOYMENT PRACTICES, AND WILL RENDER SERVICES UNDER THIS AGREEMENT AND ANY CONTRACT ENTERED INTO AS A RESULT OF THIS AGREEMENT, WITHOUT REGARD TO RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN, VETERAN STATUS, POLITICAL AFFILIATION, OR DISABILITIES. ANY ACT OF DISCRIMINATION COMMITTED BY CONTRACTOR OR FAILURE TO COMPLY WITH THESE STATUTORY OBLIGATIONS WHEN APPLICABLE SHALL BE GROUNDS FOR TERMINATION OF THIS AGREEMENT AND ANY CONTRACT ENTERED INTO AS A RESULT OF THIS AGREEMENT.

8. IN ACCORDANCE WITH LA R.S. 39:1602.1, FOR ANY CONTRACTS WITH A VALUE OF $100,000 OR MORE AND FOR ANY VENDOR WITH 5 OR MORE EMPLOYEES, THE VENDOR CERTIFIES THAT IT IS NOT ENGAGING IN A BOYCOTT OF ISRAEL AND IT WILL, FOR THE DURATION OF ITS CONTRACTUAL OBLIGATIONS, REFRAIN FROM A BOYCOTT OF ISRAEL.

9. CONTRACT CANCELLATION

THE STATE OF LOUISIANA HAS THE RIGHT TO TERMINATE THE CONTRACT IMMEDIATELY FOR ANY OF THE FOLLOWING REASONS: (A) MISREPRESENTATION BY THE CONTRACTOR; (B) CONTRACTOR'S FRAUD, COLLUSION, CONSPIRACY OR OTHER UNLAWFUL MEANS OF OBTAINING ANY CONTRACT WITH THE STATE OF LOUISIANA; (C) CONFLICT OF CONTRACT PROVISIONS WITH CONSTITUTIONAL OR STATUTORY PROVISIONS OF STATE OR FEDERAL LAW; (D) ABUSIVE OR BELLIGERENT CONDUCT BY CONTRACTOR TOWARDS AN EMPLOYEE OR AGENT OF THE STATE; (E) CONTRACTOR'S INTENTIONAL VIOLATION OF THE PROCUREMENT CODE (LA. R.S. 39:1551 ET SEQ.) AND ITS CORRESPONDING REGULATIONS; OR, (F) ANY LISTED REASON FOR DEBARMENT UNDER LA. R.S. 39:1672.

THE STATE OF LOUISIANA MAY TERMINATE THE CONTRACT FOR CONVENIENCE AT ANY TIME (1) BY GIVING THIRTY (30) DAYS WRITTEN NOTICE TO THE CONTRACTOR OF SUCH TERMINATION: OR (2) BY NEGOTIATING WITH THE CONTRACTOR AN EFFECTIVE DATE. THE STATE SHALL PAY CONTRACTOR FOR, IF APPLICABLE: (A) DELIVERABLES IN PROGRESS; (B) THE PERCENTAGE THAT HAS BEEN COMPLETED SATISFACTORILY; AND, (C) FOR TRANSACTION-BASED SERVICES UP

TO THE DATE OF TERMINATION, TO THE EXTENT WORK HAS BEEN PERFORMED SATISFACTORILY.

THE STATE OF LOUISIANA HAS THE RIGHT TO TERMINATE THE CONTRACT FOR CAUSE BY GIVING THIRTY (30) DAYS WRITTEN NOTICE TO THE CONTRACTOR OF SUCH TERMINATION FOR ANY OF THE FOLLOWING NON-EXCLUSIVE REASONS: (A) FAILURE TO DELIVER WITHIN THE TIME SPECIFIED IN THE CONTRACT; (B) FAILURE OF THE PRODUCT OR SERVICE TO MEET SPECIFICATIONS, CONFORM TO SAMPLE QUALITY OR TO BE DELIVERED IN GOOD CONDITION; OR, (C) ANY OTHER BREACH OF CONTRACT.

Independent Cost Estimate (ICE)

INDEPENDENT COST ESTIMATE SUMMARY FORM

Project Name/Number: Motorola Handheld Radios

Date of Estimate: 04/20/2026

Description of Goods/Services:
Culminating order of multi-year replacement plan for handheld radios

_X_ New Procurement
___ Contract Modification (Change Order)
___ Exercise of Option

Method of Obtaining Estimate:

Attach additional documentation such as previous pricing, documentation, emails, internet screenshots, estimates on letterhead, etc.

__X_ Published Price List (attach source and date) STATE CONTRACT

__ Historical Pricing (attach a copy of documentation from previous PO/Contract)

____ Comparable Purchases by Other Agencies (secure email correspondence)

___ Engineering or Technical Estimate (attach)
___ Independent Third-Party Estimate (attach)

___ Other (specify) _____ attach documentation

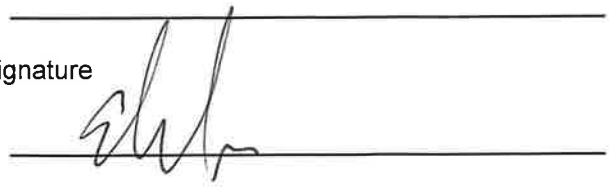
___ Pre-established pricing resulting from competition (Contract Modification only)

Through the method(s) stated above, it has been determined the estimated total cost of the goods/services is $_149,742.35

The preceding independent cost estimate was prepared by:

Name
Elliot Amsbaugh

Signature



Regional Transit Authority may, 27, 2021

Scope Summary

After conducting a radio audit in 2022, a multi-year plan was formulated to replace the outdated XTS handheld radios in favor of the improved APX product line from Motorola. The agency concludes this multi-year purchase plan with a final order of 15 APX units and an additional 10 N-series radios. Successfully marking the full replacement of all XTS handhelds for agency staff and introducing the next generation of LTE capable devices for consideration in the years to come.

MOTOROLA SOLUTIONS

QUOTE-3593185
RTA quote for (15) APX6000 S
radios 4.16.26

Billing Address:
REGIONAL TRANSIT AUTHORITY
2817 CANAL ST
NEW ORLEANS, LA 70119
US

Shipping Address:
REGIONAL TRANSIT AUTHORITY
2817 CANAL ST
NEW ORLEANS, LA 70119
US

Quote Date:04/16/2026
Expiration Date:06/15/2026
Quote Created By:
Wendi Weileman
wendi.weileman@bearcom.com
504.451.3588

End Customer:
REGIONAL TRANSIT AUTHORITY
Mr. Elliot Amsbaugh, Fleet Technology Manager
eamsbaugh@rtaforward.org
504.827.7900

Contract: 20862 - LOUISIANA, STATE OI
4400030770/4400030771
Payment Terms:30 NET

Line #	Item Number	Description	Qty	List Price	Sale Price	Ext. Sale Price
	APX™ 6000 Series	APX6000				
1	H98UCF9PW6BN	PORTABLE RADIO APX6000 700/800 MODEL 2.5	15	$8,326.00	$5,667.05	$85,005.75
1a	H869BZ	SOFTWARE LICENSE ENH: MULTIKEY	15			
1b	HA00691AA	ADD: 7Y ESSENTIAL W ACC DMG HTP	15			
1c	Q361AR	ADD: P25 9600 BAUD TRUNKING	15			
1d	QA09007AA	ADD: OUT OF THE BOX WIFI PROVISIONING	15			
1e	QA09001AB	ADD: WIFI CAPABILITY	15			
1f	H38BT	ADD: SMARTZONE OPERATION	15			
1g	QA07682AA	ADD: SMARTCONNECT	15			
1h	Q806BM	ADD: ASTRO DIGITAL CAI OPERATION	15			
1i	Q629AK	SOFTWARE LICENSE ENH: AES ENCRYPTION AND ADP	15			
2	LSV00Q00202A	DEVICE PROGRAMMING	15	$100.00	$100.00	$1,500.00
Subtotal						$126,390.00

Any sales transaction following Motorola's quote is based on and subject to the terms and conditions of the valid and executed written contract between Customer and Motorola (the ""Underlying Agreement"") that authorizes Customer to purchase equipment and/or services or license software (collectively ""Products""). If no Underlying Agreement exists between Motorola and Customer, then Motorola's Standard Terms of Use and Motorola's Standard Terms and Conditions of Sales and Supply shall govern the purchase of the Products.
Motorola Solutions, Inc.: 500 West Monroe, United States - 60661 ~ #: 36-1115800

Total Discount Amount	$39,884.25
Grand Total	$86,505.75(USD)

Notes:

- Unless otherwise noted, this quote excludes sales tax or other applicable taxes (such as Goods and Services Tax, sales tax, Value Added Tax and other taxes of a similar nature). Any tax the customer is subject to will be added to invoices.

Any sales transaction following Motorola's quote is based on and subject to the terms and conditions of the valid and executed written contract between Customer and Motorola (the ""Underlying Agreement"") that authorizes Customer to purchase equipment and/or services or license software (collectively ""Products""). If no Underlying Agreement exists between Motorola and Customer, then Motorola's Standard Terms of Use and Motorola's Standard Terms and Conditions of Sales and Supply shall govern the purchase of the Products.

Motorola Solutions, Inc.: 500 West Monroe, United States - 60661 ~ #: 36-1115800

MOTOROLA SOLUTIONS

QUOTE-3593257
RTA quote for (10) N70 radi
4.16.26

Billing Address:
REGIONAL TRANSIT AUTHORITY
3901 DESIRE PKWY
NEW ORLEANS, LA 70126
US

Shipping Address:
REGIONAL TRANSIT AUTHORITY
PENSKE TRUCK LEASING/ICO
REG TRANSIT AUTHORITY
2817 CANAL ST
NEW ORLEANS, LA 70119
US

Quote Date:04/16/2026
Expiration Date:06/20/2026
Quote Created By:
Wendi Weileman
wendi.weileman@bearcom.com
504.451.3588

End Customer:
REGIONAL TRANSIT AUTHORITY
Elliot Amsbaugh
eamsbaugh@rtaforward.org
504.827.7900

Contract: 20862 - LOUISIANA, STATE OI
4400030770/4400030771
Payment Terms:30 NET

Summary:

Any sales transaction resulting from Motorola's quote is based on and subject to the applicable Motorola Standard Terms and Conditions, notwithstanding terms and conditions on purchase orders or other Customer ordering documents. Motorola Standard Terms and Conditions are found at www.motorolasolutions.com/product-terms.

Line #	Item Number	Description	Qty	Term	List Price	Sale Price	Ext. Sale Price
	APX™ N70	APX N70					
1	H35UCT9PW8AN	PORTABLE RADIO APX N70 7/800 MODEL 4.5	10		$9,038.00	$5,757.36	$57,573.60
1a	H38DA	ADD: SMARTZONE OPERATION	10				
1b	Q173CA	ADD: SMARTZONE OMNILINK	10				
1c	Q361CD	ADD: P25 9600 BAUD TRUNKING	10				
1d	Q806CH	ADD: ASTRO DIGITAL CAI OPERATION	10				
1e	Q629BD	SOFTWARE LICENSE ENH: AES ENCRYPTION AND ADP	10				
1f	QA09001AM	ADD: WIFI CAPABILITY	10				
1g	QA09016AA	ADD: LTE FOR VERIZON LTE SERVICE	10				
1h	QA08853AA	ADD: CPS ENABLEMENT	10				

Any sales transaction following Motorola's quote is based on and subject to the terms and conditions of the valid and executed written contract between Customer and Motorola (the ""Underlying Agreement"") that authorizes Customer to purchase equipment and/or services or license software (collectively ""Products""). If no Underlying Agreement exists between Motorola and Customer, then Motorola's Standard Terms of Use and Motorola's Standard Terms and Conditions of Sales and Supply shall govern the purchase of the Products.
Motorola Solutions, Inc.: 500 West Monroe, United States - 60661 ~ #: 36-1115800

MOTOROLA SOLUTIONS

QUOTE-3593257
RTA quote for (10) N70 radi
4.16.26

Line #	Item Number	Description	Qty	Term	List Price	Sale Price	Ext. Sale Price
1i	QA09028AA	ADD: VIQI VC RADIO OPERATION	10				
1j	H869DB	SOFTWARE LICENSE ENH: MULTIKEY	10				
2	LSV01S03060A	APX N70 DMS ESSENTIAL	10	warranty 3 YEARS	$205.92	$205.92	$2,059.20
3	PSV01S03059A	APX NEXT PROVISIONING WITH CPS	1		$0.00	$0.00	$0.00
4	LSV00Q00202A	DEVICE PROGRAMMING BearCom to program 10 N70 radios	10		$100.00	$100.00	$1,000.00
5	PMMN4140B	PORTABLE RSM RM760, IP68, 3.5MM JACK, LARGE, UL	10		$140.00	$100.80	$1,008.00
6	PMPN4604A	CHARGER, DESKTOP SINGLE UNIT IMPRES 2 FAST, US/NA	10		$221.64	$159.58	$1,595.80

Subtotal $97,055.60

Total Discount Amount $33,819.00

Grand Total $63,236.60(USD)

Notes:

- The Pricing Summary is a breakdown of costs and does not reflect the frequency at which you will be invoiced.

Motorola's quote (Quote Number: _____ Dated: _____) is based on and subject to the terms and conditions of the valid and executed written contract between Customer and Motorola (the "Underlying Agreement") that authorizes Customer to purchase equipment and/or services or license software (collectively "Products"). If no Underlying Agreement exists between Motorola and Customer, then the following Motorola's Standard Terms of use and Purchase Terms and Conditions govern the purchase of the Products which is found at http://www.motorolasolutions.com/product-terms.

The Parties hereby enter into this Agreement as of the Effective Date.

Motorola Solutions, Inc.

By: _____

Name: _____

Title: _____

Date: _____

Customer

By: _____

Name: _____

Title: _____

Date: _____

Any sales transaction following Motorola's quote is based on and subject to the terms and conditions of the valid and executed written contract between Customer and Motorola (the ""Underlying Agreement"") that authorizes Customer to purchase equipment and/or services or license software (collectively ""Products""). If no Underlying Agreement exists between Motorola and Customer, then Motorola's Standard Terms of Use and Motorola's Standard Terms and Conditions of Sales and Supply shall govern the purchase of the Products.
Motorola Solutions, Inc.: 500 West Monroe, United States - 60661 ~ #: 36-1115800

2817 Canal Street
New Orleans, LA 70119

New Orleans Regional Transit Authority

Board Report and Staff Summary

File #: 26-075 **Finance Committee**

Change Order for Transit Security Services - SEAL

DESCRIPTION: Amendment to the current SEAL Security Contract to continue month-to-month services for Transit Security Services at various New Orleans Regional Transit Authority locations throughout the City of New Orleans.	AGENDA NO: Click or tap here to enter text.
ACTION REQUEST: ☒ Approval ☐ Review Comment ☐ Information Only ☐ Other	

RECOMMENDATION:

Authorize the Interim Chief Executive Officer to amend the current contract with Security Experts and Leaders (SEAL) to allow RTA to continue Transit Security Services to support coverage at existing levels through (approximately) October 31, 2026, at a cost not to exceed $857,896.27.

ISSUE/BACKGROUND:

In preparation of the termination of the Transdev/RTA agreement in late 2020 and in recognition of the fact that the security service contract under the Transdev agreement was due to terminate on August 24, 2020, the RTA Procurement and System Security Departments initiated the solicitation for a transit security services vendor. Pinnacle Security & Investigations, Inc. (“Pinnacle”) was the contractor at the time via Transdev’s agreement.

From approximately late 2020 to present, several attempts to select and award contracts to vendors to provide Transit Security Services, were each formally protested, and consequently cancelled by RTA in accordance with RTA’s Procurement Manual.

RTA is currently evaluating proposals from qualified vendors via RFP #2025-31 while also researching and assessing the feasibility of other staffing models that it may consider for future coverage needs, including but not limited to executing a Cooperative Endeavor Agreement with a duly authorized, independent law enforcement entity and/or bringing the functions in-house (and/or any combination thereof). In the interim, RTA staff is seeking authorization to amend the current contract with SEAL to ensure continuity of security services.

See detailed transactional history, below:

- On June 29, 2020, RTA advertised RFP #2020-009 for Transit Security Services. Eleven (11) proposals were received and subsequently evaluated by the designated technical evaluation committee which resulted in Security Experts and Leaders (SEAL) having the highest evaluation score. On August 25, 2020, the RTA Board of Commissioners approved the recommendation to award the contract for security services to SEAL. Staff executed the contract for services on September 7, 2020. On September 29, 2020, the RTA received a

protest regarding the awarding of the contract to SEAL from another bidder. As a result of the protest, RTA sent a Termination for Convenience notice to SEAL and the requirement for security services provided by SEAL were modified to Month-to-Month.

- On December 17, 2020, RTA advertised a new Request for Proposal - RFP #2020-032. Twelve (12) proposals were received and evaluated. The evaluation resulted in SEAL scoring the highest evaluation score. In May 2021, the RTA Board approved the recommendation to award the contract for security services to SEAL. On May 26, 2021, staff issued SEAL a Notification of Award. On June 2, 2021, before the contract with SEAL was fully executed, RTA received a protest from another bidder regarding the award to SEAL. As a result of the protest, RTA sent SEAL a Cancellation Notice and the security services provided by SEAL were continued on a Month-to-Month basis as supported through a series of Board-approved amendments.

- On January 19, 2022, the 3rd Request for Proposal - RFP #2022-003 was advertised. Eleven (11) proposals were received and subsequently evaluated. Orleans Security, LLC dba Force 1 Protection (Force 1) scored the highest evaluation score. The proposal submitted by the bidding firm that had protested the previous RFPs was determined to be non-responsive. On May 24,2022, the RTA Board approved the recommendation to award the contract for security services to Force 1. The contract between the RTA and Force 1 was executed effective August 1, 2022. RTA subsequently received two protests regarding the awarding of the contract to Force 1; these protests were from the firm that RTA had deemed non-responsive and a second firm. As a result, RTA sent a Termination for Convenience notice to Force 1. SEAL continued to provide security services on a Month-to-Month basis as supported through a series of Board-approved amendments.

- On January 18, 2023, the 4th Request for Proposal - RFP #2023-001 was advertised. Eleven (11) proposals were received and evaluated via a two-step process (proposal assessment/oral presentations) consistent with RTA's Procurement Manual. This evaluation resulted in Allied Universal Protection (Allied) having the highest combined evaluation score. Staff submitted the recommendation for award to the RTA Board of Commissioners for consideration for the July 2023 meeting. On the morning of July 25th (prior to the meeting), RTA's General Counsel received notification of a protest claim from SEAL's attorney regarding the award of the security services contract agenda item. The agenda item was then deferred. RTA reviewed the protest, supporting documentation, and procurement records, and determined the best course of action was to suspend the award process under RFP #2023-001 and continue Month-to-Month services with the current vendor, SEAL. This arrangement remains in effect today and has been supported by successive authorizations to amend the 2020 contract with SEAL. (See attached Board-approved SEAL change order history which is provided as reference.) Contract amendments with SEAL have been necessary to maintain uninterrupted transit security services while procurement activities, protest reviews, and long-term security planning efforts were completed.

- In 2025, staff developed a comprehensive Scope of Work, including substantive revisions based on previous lessons learned, and issued RFP #2025-31 through which RTA is actively evaluating proposals at this time.

In Spring 2024, at the request of the Chief Executive Officer (CEO), staff commenced research into a variety of system-wide security plan options and industry best practices for the agency to consider, ranging from continuing to outsource services to bringing the functions in-house. Staff have taken several key steps toward issuing a formal recommendation to the CEO, including consulting with peer transit agencies, Transit Police, and other law enforcement agencies, as well as estimating costs that would be associated with staffing security posts in-house (inclusive of training; staff certification; firearm issuance, certification, and storage; equipment; non-revenue vehicle; and information technology requirements). Staff have also begun researching hybrid models consisting of one or more of the above. Additionally, staff are evaluating the feasibility of turning over at least one existing post-the Canal Street Ferry Terminal-to the current ferry operator, under the existing agreement for ferry services.

Proposals submitted under RFP #2025-31 are currently under evaluation.

To avoid any lapse in security coverage, staff are requesting an additional extension with SEAL to support coverage at existing levels through (approximately) October 31, 2026, at a cost not to exceed $857,896.27.

DISCUSSION:

Maintaining a secure transit environment is one of RTA's top priorities. RTA selected SEAL to provide armed, uniform security personnel to aid in securing all property owned, leased, operated, and/or maintained by RTA (i.e., facilities, and vehicles). SEAL is expected to assist employees, contractors, patrons, and the citizens of New Orleans and surrounding parishes by maintaining order, providing excellent customer service, and rendering assistance as needed. SEAL works closely with local, state, and federal emergency response agencies always rendering aid as needed. This amendment is needed to continue services at existing levels pending either the outcome of RFP #2025-31-in progress-or the decision to implement another security plan, whichever comes first.

The security services under this contract include security coverage for transit facilities, assets, and areas designated for transit operations. Under existing agreements and protocols, the vendor coordinates closely with RTA’s Operations Control Center, Transit Police Unit, and System Security Department to ensure comprehensive and uninterrupted services. These services are required 24 hours a day, 365 days a year to maintain a safe and secure transit system.

FINANCIAL IMPACT:

Funds for this contract are available from the RTA Operational Budget. Operating Account Number: 01-3300-99-7650-161-00-00-00000-00000. The total cost for the extension is not to exceed $857,896.27.

NEXT STEPS:

Upon RTA Board approval, staff will submit and process a change order modification to the purchase order.

ATTACHMENTS:

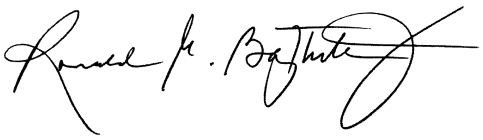
1. Resolution

2. Independent Cost Estimate Summary Form (ICE)
3. Change Order Routing Sheet
4. Change Order Justification
5. Original SEAL Purchase Order
6. Recent SEAL Purchase Order
7. Board-Approved SEAL Change Order History

Prepared By: Ivana C. Butler
Title: Administrative Analyst Safety, Security, and Emergency Management

Reviewed By: Michael J. Smith
Title: Chief Safety, Security, and Emergency Management Officer

Reviewed By: Gizelle Johnson Banks
Title: Chief Financial Officer



6/8/2026

Ronald G. Baptiste
Interim Chief Executive Officer

Date

RESOLUTION NO. _____

STATE OF
LOUISIANA PARISH
OF ORLEANS

AMENDMENT TO THE PREVIOUS SEAL SECURITY CONTRACT TO ALLOW MONTH-TO-MONTH SERVICES FOR TRANSIT SECURITY SERVICES AT VARIOUS NEW ORLEANS REGIONAL TRANSIT AUTHORITY LOCATIONS THROUGHOUT THE CITY OF NEW ORLEANS

Introduced by Commissioner _____, seconded by Commissioner _____.

WHEREAS, the Regional Transit Authority (RTA) executed contract # 2020-009 with Security Experts and Leaders (SEAL) for Transit Security Services on September 7th, 2020; and

WHEREAS, the RTA Board of Commissioners subsequently authorized staff to solicit proposals for a new Transit Security Services provider through Request for Proposals (RFP) # 2023-001; and

WHEREAS, RTA staff convened a technical evaluation committee and evaluated all elements of the submittals in accordance with requirements prescribed by the RTA, Louisiana Public Bid Law and the Federal Transit Administration (FTA); and

WHEREAS, the selected proposal was from Allied Universal Security Corporation; and

WHEREAS, the RTA Board of Commissioners authorized staff to execute a contract with Allied Universal Security Corporation through RFP # 2023-001, however the Procurement process was formally protested; and

WHEREAS, in order to maintain Transit Security Services at existing levels, the RTA Board of Commissioners authorized staff to extend Transit Security Services with SEAL through a series of month-to-month extensions from October 2022 to April 2026;

WHEREAS, SEAL has since been operating on an interim month-to-month basis to provide Transit Security Services; and

WHEREAS, prior efforts to procure long-term Transit Security Services were unsuccessful, requiring continuation of interim security coverage to avoid disruption of critical services; and

WHEREAS, RTA subsequently issued RFP No. 2025-31 for Transit Security Services, and proposals are currently under evaluation; and

WHEREAS, RTA staff have determined that an additional extension of the current interim agreement is necessary to maintain uninterrupted security coverage while the evaluation, vendor selection, and implementation processes are completed; and

WHEREAS, RTA staff have determined that the extension of Transit Security Services at existing levels will cost approximately EIGHT HUNDRED FIFTY-FIVE THOUSAND EIGHT HUNDRED NINETY-SIX DOLLARS AND TWENTY-SEVEN CENTS ($857,896.27) for this time period; and

WHEREAS, funding is available through RTA Operating Account 01-3300-99-7650-161-00-00-00000-00000 for a total cost not to exceed EIGHT HUNDRED FIFTY-FIVE THOUSAND EIGHT HUNDRED NINETY-SIX DOLLARS AND TWENTY-SEVEN CENTS ($857,896.27).

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Regional Transit Authority (RTA) that the Chairman of the Board, or his designee, authorize the CEO to approve the continuation of transit security services on a month-to-month basis provided by Security Experts and Leaders (SEAL).

THE FOREGOING WAS READ IN FULL, THE ROLL WAS CALLED ON THE ADOPTION THEREOF AND RESULTED AS FOLLOWS:

YEAS:_____
NAYS:_____
ABSTAIN:_____
ABSENT: _____

AND THE RESOLUTION WAS ADOPTED ON THE th DAY OF MAY, 2026.

_____
ANN DUPLESSIS
CHAIRWOMAN
RTA BOARD OF COMMISSIONERS

Independent Cost Estimate (ICE)

INDEPENDENT COST ESTIMATE SUMMARY FORM

Project Name/Number: 2020-009

Date of Estimate: 5/15/2026

Description of Goods/Services:

Contract to provide security services, PO #912771

___ New Procurement
_X_ Contract Modification (Change Order)
___ Exercise of Option

Method of Obtaining Estimate:

Attach additional documentation such as previous pricing, documentation, emails, internet screen shots, estimates on letterhead, etc.

___ Published Price List (attach source and date)

_X_ Historical Pricing (attach copy of documentation from previous PO/Contract)

___ Comparable Purchases by Other Agencies (attach email correspondence)

___ Engineering or Technical Estimate (attach)
___ Independent Third-Party Estimate (attach)

___ Other (specify) _____ attach documentation

___ Pre-established pricing resulting from competition (Contract Modification only)

Through the method(s) stated above, it has been determined the estimated total cost of the goods/services is $ 857,896.27

The preceding independent cost estimate was prepared by:

Ivana C. Butler

Name

Ivana C. Butler

Signature

Security Experts and Leaders 1

Invoice

6600 Plaza Drive
Suite 301
New Orleans, LA 70127

Ivana Butler

5/11/26

Date	Invoice #
4/13/2026	11863

Bill To	Ship To
Reginonal Transit Authority Michael J Smith Security 2817 Canal ST New Orleans, LA 70119	

Job Code	P.O. No.	Terms	Due Date
		Net 30	5/13/2026

Service	Hours	Description	Rate	Amount
Security..	24	Security Officer Admin Front Desk 04-06-26 06:00AM 06:00 AM	22.00	528.00
Security..	24	Security Officer Admin Front Desk 04-07-26 06:00AM 06:00 AM	22.00	528.00
Security..	24	Security Officer Admin Front Desk 04-08-26 06:00AM 06:00 AM	22.00	528.00
Security..	24	Security Officer Admin Front Desk 04-09-26 06:00AM 06:00 AM	22.00	528.00
Security..	24	Security Officer Admin Front Desk 04-10-26 06:00AM 06:00 AM	22.00	528.00
Security..	24	Security Officer Admin Front Desk 04-11-26 06:00AM 06:00 AM	22.00	528.00
Security..	24	Security Officer Admin Front Desk 04-12-26 06:00AM 06:00 AM	22.00	528.00

Thank you for your business.

Total	$3,696.00
Payments/Credits	$0.00
Balance Due	$3,696.00

Phone #	E-mail	Web Site
504-248-7174	thesealgroup@sealsecuritygroup.com	www.sealsecuritygroup.com

Security Experts and Leaders 1

Invoice

Ivana Butler

5/11/26

6600 Plaza Drive
Suite 301
New Orleans, LA 70127

Date	Invoice #
4/13/2026	11858

Bill To	Ship To
Reginonal Transit Authority Michael J Smith Security 2817 Canal ST New Orleans, LA 70119	

Job Code	P.O. No.	Terms	Due Date
		Net 30	5/13/2026

Service	Hours	Description	Rate	Amount
Canal St Ferry	18.5	Security Officer 04-06-26 05:45 AM 12:15 AM	22.00	407.00
Canal St Ferry	18.5	Security Officer 04-07-26 05:45 AM 12:15 AM	22.00	407.00
Canal St Ferry	18.5	Security Officer 04-08-26 05:45 AM 12:15 AM	22.00	407.00
Canal St Ferry	18.5	Security Officer 04-09-26 05:45 AM 12:15 AM	22.00	407.00
Canal St Ferry	18.5	Security Officer 04-10-26 05:45 AM 12:15 AM	22.00	407.00
Canal St Ferry	18.5	Security Officer 04-11-26 05:45 AM 12:15 AM	22.00	407.00
Canal St Ferry	18.5	Security Officer 04-12-26 05:45 AM 12:15 AM	22.00	407.00

Thank you for your business.

Total	$2,849.00
Payments/Credits	$0.00
Balance Due	$2,849.00

Phone #	E-mail	Web Site
504-248-7174	thesealgroup@sealsecuritygroup.com	www.sealsecuritygroup.com

Security Experts and Leaders 1

Ivana Butler

Invoice

6600 Plaza Drive
Suite 301
New Orleans, LA 70127

5/11/26

Date	Invoice #
4/13/2026	11865

Bill To	Ship To
Reginonal Transit Authority Michael J Smith Security 2817 Canal ST New Orleans, LA 70119	

Job Code	P.O. No.	Terms	Due Date
		Net 30	5/13/2026

Service	Hours	Description	Rate	Amount
Security Officer.	9.5	Security Officer Stationary/Mobile Patrol Money Room 04-06-26 06:30 AM 04:00 PM	22.00	209.00
Security Officer.	8	Security Officer Stationary/Mobile Patrol Money Room 04-07-26 06:30 AM 02:30 PM	22.00	176.00
Security Officer.	9.42	Security Officer Stationary/Mobile Patrol Money Room 04-08-26 06:30 AM 03:55 PM	22.00	207.24
Security Officer.	8.5	Security Officer Stationary/Mobile Patrol Money Room 04-09-26 06:30 AM 03:00 PM	22.00	187.00
Security Officer.	8.25	Security Officer Stationary/Mobile Patrol Money Room 04-10-26 06:30 AM 02:45 PM	22.00	181.50

Thank you for your business.

Total	$960.74
Payments/Credits	$0.00
Balance Due	$960.74

Phone #	E-mail	Web Site
504-248-7174	thesealgroup@sealsecuritygroup.com	www.sealsecuritygroup.com

Security Experts and Leaders 1

Invoice

Ivana Butler

5/11/26

6600 Plaza Drive
Suite 301
New Orleans, LA 70127

Date	Invoice #
4/13/2026	11859

Bill To	Ship To
Reginonal Transit Authority Michael J Smith Security 2817 Canal ST New Orleans, LA 70119	

Job Code	P.O. No.	Terms	Due Date
		Net 30	5/13/2026

Service	Hours	Description	Rate	Amount
Mobile Security	24	Mobile Security Lake Forest Hub 04-06-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-07-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-08-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-09-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-10-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-11-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-12-26 06:00AM 06:00 AM	22.00	528.00

Thank you for your business.

Total	$3,696.00
Payments/Credits	$0.00
Balance Due	$3,696.00

Phone #	E-mail	Web Site
504-248-7174	thesealgroup@sealsecuritygroup.com	www.sealsecuritygroup.com

Security Experts and Leaders 1

Invoice

Ivana Butler

5/11/26

6600 Plaza Drive
Suite 301
New Orleans, LA 70127

Date	Invoice #
4/13/2026	11859

Bill To	Ship To
Reginonal Transit Authority Michael J Smith Security 2817 Canal ST New Orleans, LA 70119	

Job Code	P.O. No.	Terms	Due Date
		Net 30	5/13/2026

Service	Hours	Description	Rate	Amount
Mobile Security	24	Mobile Security Lake Forest Hub 04-06-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-07-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-08-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-09-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-10-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-11-26 06:00AM 06:00 AM	22.00	528.00
Mobile Security	24	Mobile Security Lake Forest Hub 04-12-26 06:00AM 06:00 AM	22.00	528.00

Thank you for your business.

Total	$3,696.00
Payments/Credits	$0.00
Balance Due	$3,696.00

Phone #	E-mail	Web Site
504-248-7174	thesealgroup@sealsecuritygroup.com	www.sealsecuritygroup.com

Security Experts and Leaders 1

Ivana Butler

Invoice

5/11/26

6600 Plaza Drive
Suite 301
New Orleans, LA 70127

Date	Invoice #
4/13/2026	11862

Bill To	Ship To
Reginonal Transit Authority Michael J Smith Security 2817 Canal ST New Orleans, LA 70119	

Job Code	P.O. No.	Terms	Due Date
		Net 30	5/13/2026

Service	Hours	Description	Rate	Amount
Security Officer*	24	Security Officer New Orleans East 04-06-26 06:00AM 06:00 AM	22.00	528.00
Security Officer*	24	Security Officer New Orleans East 04-07-26 06:00AM 06:00 AM	22.00	528.00
Security Officer*	24	Security Officer New Orleans East 04-08-26 06:00AM 06:00 AM	22.00	528.00
Security Officer*	24	Security Officer New Orleans East 04-09-26 06:00AM 06:00 AM	22.00	528.00
Security Officer*	24	Security Officer New Orleans East 04-10-26 06:00AM 06:00 AM	22.00	528.00
Security Officer*	24	Security Officer New Orleans East 04-11-26 06:00AM 06:00 AM	22.00	528.00
Security Officer*	24	Security Officer New Orleans East 04-12-26 06:00AM 06:00 AM	22.00	528.00

Thank you for your business.

Total	$3,696.00
Payments/Credits	$0.00
Balance Due	$3,696.00

Phone #	E-mail	Web Site
504-248-7174	thesealgroup@sealsecuritygroup.com	www.sealsecuritygroup.com

Security Experts and Leaders 1

Ivana Butler

Invoice

6600 Plaza Drive
Suite 301
New Orleans, LA 70127

5/11/26

Date	Invoice #
4/13/2026	11860

Bill To	Ship To
Reginonal Transit Authority Michael J Smith Security 2817 Canal ST New Orleans, LA 70119	

Job Code	P.O. No.	Terms	Due Date
		Net 30	5/13/2026

Service	Hours	Description	Rate	Amount
Security Officer .	24	Security Officer Rear Gate 04-06-26 06:00AM 06:00 AM	22.00	528.00
Security Officer .	24	Security Officer Rear Gate 04-07-26 06:00AM 06:00 AM	22.00	528.00
Security Officer .	24	Security Officer Rear Gate 04-08-26 06:00AM 06:00 AM	22.00	528.00
Security Officer .	24	Security Officer Rear Gate 04-09-26 06:00AM 06:00 AM	22.00	528.00
Security Officer .	24	Security Officer Rear Gate 04-10-26 06:00AM 06:00 AM	22.00	528.00
Security Officer .	24	Security Officer Rear Gate 04-11-26 06:00AM 06:00 AM	22.00	528.00
Security Officer .	24	Security Officer Rear Gate 04-12-26 06:00AM 06:00 AM	22.00	528.00

Thank you for your business.

Total	$3,696.00
Payments/Credits	$0.00
Balance Due	$3,696.00

Phone #	E-mail	Web Site
504-248-7174	thesealgroup@sealsecuritygroup.com	www.sealsecuritygroup.com

Ivana Butler
5/11/26

Security Experts and Leaders 1

Invoice

6600 Plaza Drive
Suite 301
New Orleans, LA 70127

Date	Invoice #
4/13/2026	11861

Bill To	Ship To
Reginonal Transit Authority Michael J Smith Security 2817 Canal ST New Orleans, LA 70119	

Job Code	P.O. No.	Terms	Due Date
		Net 30	5/13/2026

Service	Hours	Description	Rate	Amount
Security ..	24	Security Officer Willow Barn 04-06-26 06:00AM 06:00 AM	22.00	528.00
Security ..	24	Security Officer Willow Barn 04-07-26 06:00AM 06:00 AM	22.00	528.00
Security ..	24	Security Officer Willow Barn 04-08-26 06:00AM 06:00 AM	22.00	528.00
Security ..	24	Security Officer Willow Barn 04-09-26 06:00AM 06:00 AM	22.00	528.00
Security ..	24	Security Officer Willow Barn 04-10-26 06:00AM 06:00 AM	22.00	528.00
Security ..	24	Security Officer Willow Barn 04-11-26 06:00AM 06:00 AM	22.00	528.00
Security ..	24	Security Officer Willow Barn 04-12-26 06:00AM 06:00 AM	22.00	528.00

Thank you for your business.

Total	$3,696.00
Payments/Credits	$0.00
Balance Due	$3,696.00

Phone #	E-mail	Web Site
504-248-7174	thesealgroup@sealsecuritygroup.com	www.sealsecuritygroup.com

Regional Transit Authority
Change Order Routing Sheet

INSTRUCTION: The user department is responsible for providing the information requested below (all parts), securing the requisite signatures, attaching a justification for the change order, and providing a responsibility determination, with pertinent contact information.

Date Created	**May 18, 2026**
Change Order ID	**435**

A. **Department Representative to participate in procurement process**.

Name: **BUTLER, IVANA**
Title: **ADMINISTRATIVE ANALYST PHYSICAL SECURITY**
Ext: **2479**

B. **Contract Information:**

Contract Number	**2020-009**
PO Number	**912771**
Contract Title	**Contract to Provide Security Services at RTA Facilities**

Contract-History:

Original Award Value	**1008920**
Previously Executed Change Order Value	**907655.72**
Adjusted Contract Value	**1916575.72**
Current Change Order Value	**857896.27**
Revised Contract Value	**2774471.99**

C. **Justification of Change Order**

Security Experts and Leaders (SEAL) has continued to provide uninterrupted transit security services on a month-to-month basis to support the Regional Transit Authority's (RTA) ongoing operational security needs while the competitive Procurement process for a replacement security services contract remains underway. The Security Department has been advised by the Legal and Procurement Departments that additional time is required to complete the competitive Procurement process under RFP # 2025-31. The previous Board-authorized amendment via # 25-101 (September 23, 2025) has been exhausted. To avoid any lapse in security coverage, staff are requesting an additional extension with SEAL to support coverage at existing levels through (approximately) October 31, 2026, at a cost not to exceed $858,000.00.

D. **Type of Change Request**: **Administrative**

E. **Certification of Authorized Grant:**

Is this item/specification consistent with the Authorized Grant?	
Are there any amendments pending?	

If yes see explanation (attachments are in the SharePoint folder for this request)	

Director of Grants/ Federal Compliance:
Signature:
Date:

F. **Safety, Security, And Emergency Management:** Include Standard Safety Provisions Only:

Additional Safety Requirements Attached: **false**

Chief: **Michael J Smith**
Signature: *Michael J Smith*
Date: **May 19 2026**

Risk Management:

Include Standard Insurance Provisions Only?	**No**
Include Additional Insurance Requirements Attached ?	**false**

Risk Management Analyst: **Marc L Popkin**
Signature: *Marc L Popkin*
Date: **May 19 2026**

G. **Funding Source:**

Independent Cost Estimate (ICE): **$857,896.27**
Projected Total Cost: **$857,896.27**
Funding Type: **Local**

Federal Funding	**State**	**Local**	**Other**
		$857,896.27	
Projected Fed Cost	**State**	**Local**	**Other**
		$857,896.27	

FTA Grant IDs	**Budget Codes**
	01-3300-99-7650-161-00-00-00000-00000

Capital Project Approval if required signature ID#:
Dir Capital Projects:
Signature:
Date:

Budget Analyst: Erin Ghalayini
Signature: *Erin Ghalayini*
Date: May 19 2026

H. **Prime firm's DBE/SLDBE Commitment (NOTE: The Prime Firm must be notified by the Project Manager that the DBE Commitment percentage applies to the Total Contract Value after all amendments and change orders.):**

DBE % Goal	**0**
SLDBE % Goal	**0**
SBE % Goal	**0**

Director of Small Business Development: Adonis Charles Expose
Signature: *Adonis Charles Expose*
Date: May 19 2026

DBE/EEO Compliance Manager Adonis Charles Expose
Signature: *Adonis Charles Expose*
Date: May 19 2026

I. **Authorizations**: I have reviewed and approved the final solicitation document.

Department Head: Michael J Smith
Signature: *Michael J Smith*
Date: May 18 2026

Chief: Michael J Smith
Signature: *Michael J Smith*
Date: May 19 2026

Director of Procurement: Ronald Gerard Baptiste
Signature: *Ronald Gerard Baptiste*
Date: May 20 2026

Required if Total Cost above $15K
Chief Financial Officer: Gizelle Johnson-Banks
Signature: *Gizelle Johnson-Banks*
Date: May 22 2026

Required if Total Cost above $50K
Chief Executive Officer: Lona Edwards Hankins
Signature: *Lona Edwards Hankins*
Date: 5/22/2026 6:54 PM

5/15/2026

Justification to Extend Transit Security Service with Security Experts and Leaders (SEAL)

Explanation

Security Experts and Leaders (SEAL) has continued to provide uninterrupted transit security services on a month-to-month basis to support the Regional Transit Authority's (RTA) ongoing operational security needs while the competitive Procurement process for a replacement security services contract remains underway.

The Security Department has been advised by the Legal and Procurement Departments that additional time is required to complete the competitive Procurement process under RFP # 2025-31.

The previous Board-authorized amendment via # 25-101 (September 23, 2025) has been exhausted. To avoid any lapse in security coverage, staff are requesting an additional extension with SEAL to support coverage at existing levels through (approximately) October 31, 2026, at a cost not to exceed **$857,896.27**.

Calculation

With this service agreement, the projected total cost to continue services at current levels through October 31, 2026 is approximately **$857,896.27**. This is the estimated amount needed for services from **April 13, 2026 through October 31, 2026**, based on the current scope of services for a total of twenty-nine (29) weeks. In keeping with previous Board authorizations and to support fees associated with occasional, surge services for special events and other ad hoc assignments, staff recommend continuing with a 3% contingency added to the base (estimated) amount.

See calculation below:

Fixed Site Coverage (7 Hubs):
$22.00/hour × 24 hours per day = **$528.00 per day**
$528.00 × 7 days = **$3,696.00 per week**

$3,696.00 × 7 locations (Willow Barn, Duncan Plaza, Lake Forest, Admin Front Desk, New Orleans East, Rear Gate, Money Room) = **$25,872.00 per week**

Canal Street Ferry Terminal Coverage:
18.5 hours per day × $22.00/hour = **$407.00 per day**
$407.00 × 7 days = **$2,849.00 per week**

Total Weekly Cost:
$25,872.00 + $2,849.00 = **$28,721.00 per week**

Total Estimated Cost:
$28,721.00 × 29 weeks = **$832,909.00**

3% Contingency:

$832,909.00 + $24,987.27 = $857,896.27

Total requested change order amount not to exceed: $857,896.27.

Regional Transit Authority
INV.: Accounting Dept (504) 827-8407
TO : 2817 Canal Street
New Orleans, Louisiana 70119

Page - 1
Date - 12/14/21
Order No. - 912771-002
Brn/Plt - 1330099

SECURITY EXPERTS AND LEADERS
6600 PLAZA DRIVE
NEW ORLEANS LA 70127

SHIP REGIONAL TRANSIT AUTHORITY
TO R. Hickman
2817 CANAL STREET
NEW ORLEANS, LA 70119

Ordered - 09/22/20 Vendor No. 8922810 Security Services
Delivery - 09/22/20 Taken By - REQ #104058
Freight - Default - Handling Code PROMISED DELIVERY DATE - 10/22/20

Description / Supplier Item		UM	Unit Cost		Extension
transit security services 3 years with two 1 year opt 1330099.7650.161	1008920.0000	EA	1.0000	EA	1,008,920.00
Change Order 1 Non Stock Inventory Purchas 1330099.7650.161 Change Order 1 to add additional funds to cover invoices from sep to dec 2021		EA		EA	253,240.00

Terms Net 30 Tax Rt Sales Tax Total Order
1,262,160.00

DATE RECEIVED _____

RECEIVED BY _____

CHECKED BY _____

APPROVED BY _____

ORDER NUMBER AND PERSON TO WHOM ADDRESSED MUST APPEAR ON ALL PACKAGES AND INVOICES

REGIONAL TRANSIT AUTHORITY
TAX EXEMPT

BY Brigane Bouye 12/14/21
MANAGER, PURCHASING DEPT.

CFO 12/14/21

ANY CONFLICT, DISPUTE, LEGAL PROCEEDING, SETTLEMENT OR OTHER MATTER HAVING A LEGALLY BINDING IMPACT ON THE PARTIES HERETO SHALL BE RESOLVED PURSUANT TO THE LAWS AND JURISPRUDENCE OF THE STATE OF LOUISIANA.

INV. DATE	INV. NUMBER	INV. AMOUNT	TAX	FREIGHT	INV. TOTAL

Purchase Order 912771, Change Order 6

Supplier Details:

Company	SECURITY EXPERTS AND LEADERS
Contact	
Address	6600 PLAZA DRIVE SUITE 301 NEW ORLEANS, LA 70127

Submit your response to:

Company	Regional Transit Authority
Contact	Briana Howze
Address	2817 Canal Street NEW ORLEANS, LA 70119
Phone	
Fax	
E-mail	bhowze@rtaforward.org

This document has important legal consequences. The information contained in this document is proprietary of Regional Transit Authority. It shall not be used, reproduced, or disclosed to others without the express and written consent of Regional Transit Authority.

This amendment supersedes the agreement 912771 and all its prior modifications. This agreement can be changed only by a signed agreement between the affected parties.

funds

The parties hereto have read and executed this contract modification as of Wednesday, March 04, 2026.

Purchase Order 912771 Change Order 6

Order	**912771**
Order Date	**01-OCT-2023**
Change Order	**6**
Change Order Date	**04-MAR-2026**
Revision	**5**
Ordered	**3,531,833.08 USD**

Sold To
Regional Transit Authority
2817 Canal Street
NEW ORLEANS, LA 70119

Supplier
SECURITY EXPERTS AND LEADERS
6600 PLAZA DRIVE
SUITE 301
NEW ORLEANS, LA 70127

Bill To
RTABU
Attn: Accounts Payable
2817 CANAL STREET
NEW ORLEANS, LA 70119
UNITED STATES

Ship To
2817 CANAL STREET
NEW ORLEANS, LA 70119
UNITED STATES

Notes USD = US Dollar

Customer Account Number	Supplier Number	Payment Terms	Freight Terms	FOB	Shipping Method
	8922810	**Net 30**			

Confirm To		Deliver To Contact
Briana Howze		**Ivana Butler** E-mail**butler@rtaforward.org**

Line	Item		Price	Quantity	UOM	Ordered	Taxable
8	Law Enforce./Physical Sec.		1.00		EA		
		Promised		3.34	EA	3.34	
		Requested 9/30/23					
	Requested and Promised Dates correspond to the date of arrival at the Ship-to Location.						
					Line Total	**3.34**	
12	Private Security Services		1.00		EA		
		Promised		280	EA	280.00	
		Requested					

Purchase Order 912771 Change Order 6

Line	Item	Price	Quantity	UOM	Ordered	Taxable
		9/30/23				
	Requested and Promised Dates correspond to the date of arrival at the Ship-to Location.					
				Line Total	**280.00**	
13	Private Security Services	1.00		EA		
		Promised	330,278.74	EA	330,278.74	
		Requested 9/30/23				
	Requested and Promised Dates correspond to the date of arrival at the Ship-to Location.					
				Line Total	**330,278.74**	
14	Private Security Services	1.00		EA		
		Promised	15,048	EA	15,048.00	
		Requested 9/30/23				
	Requested and Promised Dates correspond to the date of arrival at the Ship-to Location.					
				Line Total	**15,048.00**	
16	SEAL Security Services Ref. PO 912771	760,016.00				
	Ship To Attn: Accounts Payable 2817 CANAL STREET NEW ORLEANS, LA 70119 UNITED STATES	**Promised** **Requested** 2/28/24			760,016.00	
	Requested and Promised Dates correspond to the date of arrival at the Ship-to Location.					
				Line Total	**760,016.00**	
17	Private Security Service	1.00		EA		
		Promised 8/13/24	1,520,033	EA	1,520,033.00	
		Requested				

Purchase Order 912771 Change Order 6

Line	Item	Price	Quantity	UOM	Ordered	Taxable
		8/13/24				
	Requested and Promised Dates correspond to the date of arrival at the Ship-to Location.					
				Line Total	**1,520,033.00**	
18	SEAL Security Services Ref. PO 912771	643,091.00				
	Ship To Attn: Accounts Payable 2817 CANAL STREET NEW ORLEANS, LA 70119 UNITED STATES	**Promised** **Requested** 9/29/25			643,091.00	
	Requested and Promised Dates correspond to the date of arrival at the Ship-to Location.					
				Line Total	**643,091.00**	
19	SEAL Security Services Ref. PO 912771	263,083.00				
	Ship To Attn: Accounts Payable 2817 CANAL STREET NEW ORLEANS, LA 70119 UNITED STATES	**Promised** **Requested** 3/1/26			263,083.00	
	Requested and Promised Dates correspond to the date of arrival at the Ship-to Location.					
				Line Total	**263,083.00**	
				Total	**3,531,833.08**	

Board-Approved SEAL Change Order History – REFERENCE ONLY

Submitted by: M. Smith, Chief Safety, Security & Emergency Management Officer

June 3, 2026

The attached summary reflects the known change orders executed under the SEAL Security Services contract from September 7, 2020 (date of contract execution) to present.

The information was compiled from Board-approved items, procurement records, contract files, and internal tracking documents maintained by staff. While every effort was made to verify the information, the summary should be considered the best available historical accounting of contract modifications based on records available at the time of review. Minor discrepancies may exist due to historical recordkeeping practices and document availability.

Year	Change Order	Amount	Running Total
2020	Original Contract	$1,008,920.00	$1,008,920.00
2021	CO #1	$253,240.00	$1,262,160.00
2021	CO #2	$253,240.00	$1,515,400.00
2022	CO #3	$140,000.00	$1,655,400.00
2022	CO #4	$174,646.72	$1,830,046.72
2022	CO #5	$77,624.00	$1,907,670.72
2022	CO #6	$284,616.00	$2,192,286.72
2022	CO #7	$336,336.00	$2,528,622.72
2022	CO #8	$68,366.77	$2,596,989.49
2023	CO #9	$92,585.62	$2,689,575.11
2023	CO #10	$724,416.00	$3,413,991.11
2023	CO #11	$15,048.00	$3,429,039.11
2024	CO #12	$760,016.00	$4,189,055.11
2024	CO #13	$1,520,033.00	$5,709,088.11
2024	CO #14	$85,140.00	$5,794,228.11
2025	CO #15	$496,934.00	$6,291,162.11
2025	CO #16	$643,091.00	$6,934,253.11
2026	CO #17	$263,083.00	$7,179,336.11
2026	CO #18	$857,846.27	$8,055,182.38

2817 Canal Street
New Orleans, LA 70119

New Orleans Regional Transit Authority

Board Report and Staff Summary

File #: 26-085 **Finance Committee**

Emergency Change Order for Streetcar Substation Repairs

DESCRIPTION: Requesting Board authorization to approve a change order to an electrical substation repair and improvement contract.	AGENDA NO: Click or tap here to enter text.
ACTION REQUEST: ☒ Approval ☐ Review Comment ☒ Information Only ☐ Other	

RECOMMENDATION:

Authorize the Chief Executive Officer to execute a change order with **Powell Electrical Systems, Inc.** in the amount of **$277,555.81** for the electrical substation repair and improvement project (2023-PM-01).

ISSUE/BACKGROUND:

The St. Charles streetcar line is served by three electrical substations: Calliope, Valence, and Dublin. The substations are essential to streetcar operations as they are relied upon to provide a consistent electrical feed to the St. Charles line.

In August of 2024, the RTA Board passed resolution 24-038, authorizing a contract with Powell Electrical Systems, Inc. in the amount of $1,046,565. The purpose of the contract was to replace electrical switchgear at each of the substations that had become obsolete. By replacing six electrical breakers at the three substations, RTA would reduce repair costs, mitigate the possibility of power interruptions to the St. Charles line, and ensure a robust, redundant electrical feed for the foreseeable future.

Due to the lead time associated with ordering the replacement breakers and associated equipment, Powell began their work in March of 2026. However, during the course of the installation, an issue was discovered that would prevent the new electrical breakers from functioning properly. Critical electrical equipment upstream of the breaker boxes-specifically the Microprocessor Protective Relays or MPRs-was determined to be incompatible with the replacement breaker boxes. The MPRs serve as the “brain” of the electrical system and communicate with the breaker boxes and tells the breakers to open in the event of a problem. In order for the new breaker boxes to function properly, the old protective relay equipment would either have to be either repaired or replaced. This incompatibility was not discovered until the installation of the new breakers had started. In May 2026, Powell presented to RTA a comparison of the repair vs. replace option. While the repair option is less expensive, it presents two substantial risks. First, in the near term, the repair process would actually take considerably longer than the replacement process-up to 215 days vs. 131 days for replacement-nearly three months longer than the replacement option. Currently, one of the three substations, Valence, is offline due to the breaker replacement process that has been underway since March. As

long as this substation is offline, there is a very real risk to streetcar operations. Any loss of power from either of the other two substations (which are temporarily powering the entire line) would take the St. Charles streetcar offline. Thus, in the near term, speed is of the essence in completing the replacement of the six electrical breakers across the three substations.

The second risk with the repair option is the greater possibility of failure in the years ahead. Recent experience with obsolete breaker components has demonstrated the limitations and risks of relying on aging, non-repairable equipment. A full replacement and upgrade support future reliability and reduces the likelihood of similar failures.

Because of the near-term and long-term issues associated with the repair path because in the opinion of RTA staff, the replacement option is the best way to ensure the long-term reliability and redundancy of the substations, RTA is recommending full replacement of the MPR and associated equipment.

Replacing the MPR equipment comprises the vast majority of the proposed $277,555.81 change order. The change order also includes an approximately $29,000 cost for the replacement of electrical test cabinets. The current test cabinets, which are a critical diagnostic tool, were deemed to be incompatible with the new breaker equipment.

DISCUSSION:

The contractor, Powell, presented to RTA staff a comparison of the repair and replacement options. The repair option has a cost of $177,852.30 and as discussed above, an estimated timeline of up to 215 days.

The replacement option has a cost of $277,555.81 and an estimated time to completion of 131 days.

For the reasons stated above minimizing the possibility of near-term disruptions to streetcar service and ensuring long-term reliability, RTA staff recommend the replacement option. RTA staff has completed an Independent Cost Estimate, examining each line item in the proposed change order, and has determined that the change order amount is consistent with that estimate.

Staff will authorize Powell to order the additional equipment and schedule the installation of the equipment upon Board approval. The expected duration of the work is 131 days. No service disruptions to the streetcar are anticipated as long as the work proceeds expeditiously and according to schedule. Only one of the three substations will be offline at any one time, allowing the other two to provide power to the St. Charles streetcar. The risk to streetcar service is if one of the remaining two substations goes offline for an unexpected reason. Thus, while no service disruptions are expected to occur as a result of this work, it is important that the work proceeds expeditiously in order to preserve service redundancy.

FINANCIAL IMPACT:

The total cost for change order is $277,555.81. The project will be funded by a federal grant and its associated local match. Grant LA2023-001 and the accompanying local match will cover 100% of the project cost ($222,044.65 in grant funds and $55,511.16 in local match). These funds are in account 01-0000-00-1515-000-00-00-00000-00000. Grant LA2023-001 (including the local match) has

adequate surplus funds to fully cover the change order.

NEXT STEPS:

Upon Board approval, staff will approve the change order with Powell Electrical Systems, Inc. and issue the Notice to Proceed (NTP) on the work covered by the change order.

ATTACHMENTS:

1. Resolution
2. Resolution 24-038 approved in August 2024 authorizing the contract with Powell Electrical Systems, Inc.
3. Independent Cost Estimate
4. Change Order Summary - note that this is pending at the time of the Finance Committee Meeting on 6-11-26; change order summary will be provided in advance of the full Board meeting on 6-23-26

Prepared By: Rafe Rabalais, rrabalais@rtaforward.org
Title: Director of Capital Projects

Reviewed By: Dwight Norton, dnorton@rtaforward.org
Title: Chief Planning and Capital Projects Officer

Reviewed By: Gizelle Johnson Banks
Title: Chief Financial Officer

Click or tap to enter a date.

Ronald G. Baptiste
Interim Chief Executive Officer

Date

Regional Transit Authority
2817 Canal Street
New Orleans, LA 70119-6301

504.827.8300

www.norta.com

RESOLUTION NO. _____
STATE OF LOUISIANA
PARISH OF ORLEANS

AUTHORIZATION TO APPROVE A CHANGE ORDER TO POWELL ELECTRICAL SYSTEMS, INC. FOR ELECTRICAL SUBSTATION REPAIR AND IPROVEMENT PROJECT

Introduced by Commissioner _____, seconded by Commissioner _____.

WHEREAS, electrical power to the Regional Transit Authority's (RTA) St. Charles Streetcar Line is provided by three electrical substations; and

WHEREAS, those three substations must be kept in optimal condition to ensure a reliable and redundant electrical feed to the St. Charles Line to ensure its continuous and reliable operation; and

WHEREAS, the RTA Board of Commissions approved Resolution #24-038 in August of 2024 to authorize a contract for Powell Electrical Systems, Inc. (Powell) to replace outdated and outmoded electrical breakers at each of the three substations; and

WHEREAS, Powell's work on the substations commenced in March 2026 due to long lead times in ordering equipment; and

WHEREAS, during the course of this work, Powell and RTA staff determined that there is ancillary electrical equipment at the substations, including Microprocessor Protective Relays and electrical test cabinets, that must be repaired or replaced to ensure compatibility with and the safe and effective use of the updated breaker equipment that Powell is installing; and

Regional Transit Authority
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New Orleans, LA 70119-6301

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WHEREAS, Powell presented both a repair and replacement option for this ancillary equipment for RTA's review; and

WHEREAS, RTA staff have determined that the replacement option is the preferred alternative to restore power redundancy at the substations more quickly and to ensure the long-term operating resilience of the substations; and

WHEREAS, $222,044.65 from FTA grant LA2023-001 will be allocated to the cost of the project, with the balance of funding totaling $55,511.16 coming from local match funds from account 01-0000-00-1515-000-00-00-00000-00000; and

NOW, THEREFORE, BE IT RESOLVED the RTA Board of Commissioners authorizes the Interim CEO to approve a change order for Powell Electrical Systems, Inc. in the amount of $277,555.81 for the Electrical Substation Repair and Improvement project.

THE FOREGOING WAS READ IN FULL; THE ROLL WAS CALLED ON THE ADOPTION THEREOF AND RESULTED AS FOLLOWS:

YEAS: _____
NAYS: _____
ABSTAIN: _____
ABSENT: _____

AND THE RESOLUTION WAS ADOPTED ON THE 23rd OF JUNE 2026.

_____
ANN DUPLESSIS
CHAIR

Regional Transit Authority
2817 Canal Street
New Orleans, LA 70119-6301

504.827.8300

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BOARD OF COMMISSIONERS

Regional Transit Authority
2817 Canal Street
New Orleans, LA 70119-

RESOLUTION NO. 24-038

STATE OF LOUISIANA
PARISH OF ORLEANS

AUTHORIZATION TO AWARD A CONTRACT TO POWELL ELECTRICAL SYSTEMS TO REPAIR/UPDATE THREE SUBSTATIONS

Introduced by Commissioner **Daniels**, seconded by Commissioner **Neal**.

WHEREAS, the Chief Executive Officer of the RTA needs to make operational critical; repairs to Dublin, Calliope, and Valance substations; and

WHEREAS, the repair of these three substations will enable the RTA to effectively carry out its day-to-day operation; and

WHEREAS, RTA's Disadvantage Business Compliance Manager determined that there was no DBE goal set for this project; and

WHEREAS, staff evaluated all cost components submitted by Powell Electrical Systems as a sole source and determined the price to be fair and reasonable; and

WHEREAS, it is the opinion of the RTA Board of Commissioners that the repair of these three substations is critical to maintaining the function, reliability, and support of streetcar operations on behalf of the Regional Transit Authority; and

WHEREAS, funding is not to exceed **ONE MILLION FORTY-SIX THOUSAND FIVE HUNDRED AND SIXTY-FIVE DOLLARS** $1,046,565.00 from grant funds for the above repairs is made available through Grant LA-2023-001 ALI 12.42.06.

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Regional Transit Authority (RTA) that the Chairman of the Board, or his designee, is authorized to award a contract for the substation upgrade.

THE FOREGOING WAS READ IN FULL, THE ROLL WAS CALLED ON THE ADOPTION THEREOF AND RESULTED AS FOLLOWS:

YEAS:	**7**
NAYS:	**0**
ABSTAIN:	**0**
ABSENT:	**1**

AND THE RESOLUTION WAS ADOPTED ON THE 8th DAY OF August, 2024.



Mark Raymond Jr.
CHAIRMAN
RTA BOARD OF COMMISSIONERS

Independent Cost Estimate (ICE)

INDEPENDENT COST ESTIMATE SUMMARY FORM

Project Name:	All Stations Accessibility Program – St. Charles Streetcar
Project Number:	2023-PM-01
Date of Estimate:	6-9-2026
Description of Goods/Services:	Change order covering custom equipment for electrical substation repairs for the St. Charles streetcar line plus labor and engineering.

☐New Procurement

☒Contract Modification (Change Order – task order for on-call contract)

☐Exercise of Option

Method of Obtaining Estimate:

☐Published Price List (attach source and date)

☐Historical Pricing (attach copy of documentation from previous PO/Contract)

☐Comparable Purchases by Other Agencies (attach email correspondence)

☒Engineering or Technical Estimate (attach)

☐Independent Third-Party Estimate (attach)

☐Other (specify) ___attach documentation

☐Pre-established pricing resulting from competition (Contract Modification only)

Attach additional documentation such as previous pricing, documentation, emails, internet screen shots, estimates on letterhead, etc.

Summary of Method: The proposed change order from Powell Electrical Systems, Inc. (Powell) is for new parts to support newly installed breaker boxes at the three substations that provide power to the St. Charles Streetcar line. In addition to the parts themselves, the quote also includes installation of the parts, as-built drawings, O&M updates, field technical support, and engineering. Preparing an ICE for this work is difficult in that the parts are customized and the work is extremely specialized. It is hard to point to a project undertaken by the RTA or another agency that is similar in scope to the proposed work.

That being said, this ICE first attempted to ground the unit pricing in publicly available data. The unit costs of publicly available, reasonably comparable equipment has been provided as well as an adjustment factor to account for the customized nature of the

equipment. Customized electrical equipment from OEMs can reasonably be adjusted by a factor of 2x-5x in relation to the cost basis. This is entirely reasonable given the unique application of this equipment—traction power substations serving an urban streetcar system.

The table below provides this information for the major components of the change order:

Name	Quantity	Publicly Available Pricing	Adjusted Pricing (adjusted by factor of 3)	Total Cost
Microprocessor Protective Relays	6	$5,270	$15,810	$94,860
Surge Suppressors	30	$273.37	$820.11	$24,603.30
Low Z 64 Relay	3	$1584.26	$4,752.78	$14,258.34
Test Boxes 125 VDC NDC Breaker	3	$8,717.91	$26,153.73	$78,461.19
TOTAL				$212,182.83

The change order also includes an estimated 97 hours of engineering time. Using a standard rate of $205 per hour (see attached source materials), this engineering time would add another $19,855 to the total cost.

The scope for the change order also includes an unspecified number of hours for updated as built drawings, O&M updates, and field technical support. Based on level of effort for similar undertakings, we have estimated a total of 150 hours for this effort, also at a standard rate of $205 per hour, adding $30,750 to the cost.

Finally, there is the cost of installing the ancillary equipment. While Powell will already be mobilized under their existing contract to install breaker boxes, we estimate that this equipment install will comprise another 20 hours per substation for installation. Assuming a team of three and the three substations where this work will occur, this will yield another 180 hours. At a $100 per hour labor rate, this adds another $18,000 to the cost of the project.

Thus, adding materials and the three above labor components together yields an ICE of $280,787.83. Rounding up, we arrive at an ICE of $285,000.

Through the method(s) stated above, it has been determined the estimated total cost of the goods/services is $285,000.

The preceding independent cost estimate was prepared by:

Rafe Rabalais, Director of Capital Projects

Name

Signature

OEM Electrical Replacement Parts: Complete Sourcing and Manufacturing Guide

Published April 12, 2026 By David

Table of Contents

1. Understanding OEM Replacement Part Challenges
2. When to Use OEM vs Aftermarket Parts
3. Reverse Engineering Electrical Components
4. Quality and Safety Considerations
5. Documentation and Specifications
6. Manufacturing Custom Replacement Parts
7. Intellectual Property and Legal Considerations
8. Cost Comparison: OEM vs Custom Manufacturing
    1. OEM Replacement Part Costs
    2. Custom Manufacturing Costs
    3. Break-Even Analysis
    4. Total Cost of Ownership
9. Lead Time Reduction Strategies
10. Building Strategic Replacement Part Inventory
11. Conclusion

When critical electrical equipment fails in industrial facilities, the urgency to restore operations creates intense pressure. Original equipment manufacturers (OEMs) may

Warranty terms and limitations
Liability limitations
Intellectual property indemnification

Customer-Provided Specifications: When customers provide specifications, obtain written acknowledgment:

Customer responsibility for specification accuracy
Customer approval of samples
Customer acceptance of completed parts

Confidentiality: Protect customer equipment information:

Non-disclosure agreements for proprietary information
Secure storage of drawings and specifications
Limited information sharing on need-to-know basis

Request Legal Compliance Support

Cost Comparison: OEM vs Custom Manufacturing

Understanding cost drivers helps make informed sourcing decisions.

OEM Replacement Part Costs

Original manufacturer pricing includes multiple factors.

Component Costs:

Base manufacturing cost (materials, labor, overhead)
Quality control and testing
Certification and compliance costs
Packaging and shipping

Overhead and Margin:

Engineering support allocation
Sales and marketing costs
Warranty reserves
Profit margin (often 50-100% for replacement parts)

Typical OEM Pricing Examples:

Simple busbar: $200-800 (cost basis $40-150) 5x - 5.3x
Custom enclosure: $1,500-5,000 (cost basis $300-1,000) 5x
Control panel assembly: $5,000-25,000 (cost basis $2,000-10,000) 2.5x

Hidden Costs:

Minimum order quantities forcing excess purchase
Expedite fees (25-100% premium)
Rush shipping charges
Restocking fees for returns

Custom Manufacturing Costs

Aftermarket manufacturing has different cost structures.

Engineering and Setup:

Reverse engineering: $500-2,000
Drawing creation: $200-1,000
Tooling/setup: $200-2,000 (varies by process)
First article inspection: $200-500

Production Costs:

Raw materials: 20-40% of total cost
Labor: 30-50% of total cost
Overhead: 20-30% of total cost
Profit margin: 15-30% (competitive vs OEM's 50-100%)

Typical Custom Manufacturing Pricing:

Simple busbar: $80-300 (40-60% of OEM)
Custom enclosure: $600-2,000 (40-50% of OEM)
Control panel assembly: $2,500-12,000 (50-60% of OEM)

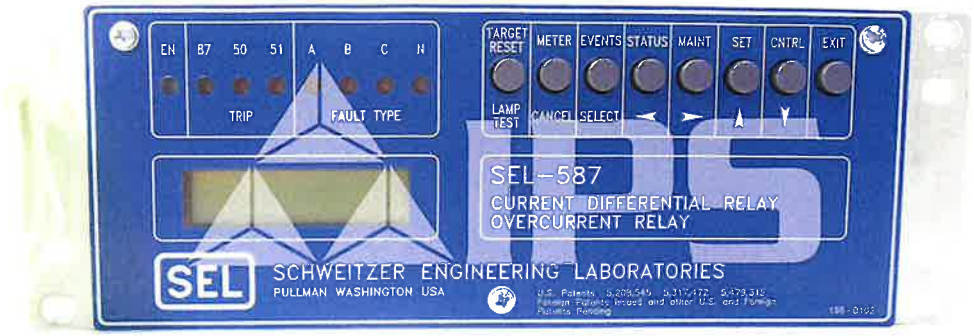
Volume Advantages:

Engineering costs amortize over quantities
Setup costs spread across units
Material volume discounts
Manufacturing efficiency gains

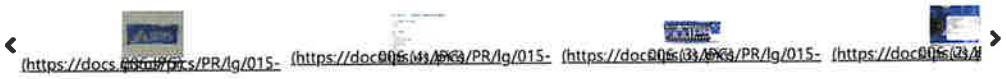
Break-Even Analysis

SCHWEITZER SEL-587 PROTECTION RELAY CURRENT DIFFERENTIAL / OVER CURRENT, 125-240VAC/DC

Schweitzer 0587003X5X1



Hover to zoom



ITEM
SCHWEITZER SEL-587 PROTECTION RELAY
CURRENT DIFFERENTIAL / OVER CURRENT, 125-240VAC/DC

MANUFACTURER
Schweitzer

MANUFACTURER PART NUMBER
0587003X5X1

NOTES:
Solid State or Microprocessor based relays are generally equipped with a large variable of settings and curve options and some Electromechanical relays provide for adjustable calibrated settings. If the unit displayed is such a relay, the pricing you see published for this product will include basic general function testing similar to what the OEM would perform. If you require specific settings and would like the device tested with your specific data we can accommodate that with an additional value added fee. The fee will be variable based on the type and manufacturer of relay. Please consult with a technical account sales representative for a quote on this value added service.

HAVE A QUESTION ABOUT THIS ITEM?
✉ EMAIL US
(MAILTO:WEB.RFQ@NATLSWGR.COM?SUBJECT=INQUIRY ABOUT PART NUMBER 015-006&BODY=I HAVE A QUESTION ABOUT THE FOLLOWING ITEM:%0D%0A%0D%0ASCHWEITZER SEL-587 PROTECTION RELAY, CURRENT DIFFERENTIAL / OVER CURRENT, 125-240VAC/DC%0D%0ASCHWEITZER PART NUMBER 0587003X5X1%0D%0A%0D%0AHTTPS://STORE.IPS.US/BVMODULES/PRODUCTTEMPLATES/NPRODUCTID=89A03AB3-DAAE-4917-9D63-04A7D0AFBA49&UTM_SOURCE=CHATGPT.COM)

YOUR PRICE
$5,270.00
LIST PRICE
$5,270.00

SIGN IN (/LOGIN.ASPX?RETURNURL=%2FPRODUCTS%2FSCHWEITZER-SEL-587-PROTECTION-RELAY_015-006.ASPX%3FUTM_SOURCE%3DCHATGPT.COM) OR CREATE A CUSTOMER ACCOUNT FOR DISCOUNTED PRICES.

QTY

1



Allen-Bradley

150 V AC SURGE SUPPRESSOR,

4983-DS120-801

MFG # 4983-DS120-801

$273.37 / E
EACH

1

Product Description:

Surge Protective Device, 1 Pole DIN rail, 80kA,
120V

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4983-DS120-801

Manufacturer

Allen-Bradley

Specifications

Amperage Rating	: 80k
Brand Name	: Allen-Bradley
Class	: UL 1449
Mounting	: Din Rail Mount
Standard	: CE, CSA, CUL, UL
Type	: Surge Suppressor
Voltage Rating	: 150

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Product #: SE-107

Description
LITL GROUND CHECK RELAY

Price: $1,584.26

E QTY

ADD TO CART >

Additional Information:

Document/Specification

Account Login

Username

Password

SUBMIT

Inform e-Commerce - Developed by DDI System LLC (http://www.ddisys.com/)

Eaton

EATON 8346A28G60 Test Cabinet, For Use With VCP-W Medium Voltage Vacuum Circuit Breaker, 5/15 kV Voltage Rating, Metal

Optimize your testing capabilities with the EATON 8346A28G60 Test Cabinet, designed specifically for the VCP-W Medium Voltage Vacuum Circuit Breaker. With a robust metal construction and a voltage rating of 5/15 kV, this cabinet ensures reliable performance in any environment. Compact and efficient, it measures 7 in L x 12 in W x 12 in H, making it an essential addition to your testing equipment. Enhanced by AI

EATON Test Cabinet, For Use With: VCP-W Medium Voltage Vacuum Circuit Breaker, 5/15 kV Voltage Rating, Metal, 7 in L x 12 in W x 12 in H

MFG #: 8346A28G60
EECO #: CH8346A28G60

Brand: Eaton
UPC #: 786680177392

Attributes

UNSPSC	39121115
Material	Metal

Dimensions 7 in L x 12 in W x 12 in H

Specifications 5/15 kV Voltage Rating

Suitable For Use With VCP-W Medium Voltage Vacuum Circuit Breaker

Features

- Compatible with VCP-W Medium Voltage Vacuum Circuit Breaker
- Voltage Rating: 5/15 kV
- Dimensions: 7 in L x 12 in W x 12 in H
- Material: Metal construction

Enhanced by AI

$8,717.91 Web Price/Unit

1 EA

Add to Cart

Notice: This item is subject to geographic restrictions and can only be sold within the Carolinas.

Log In for Account-Specific Pricing & Availability

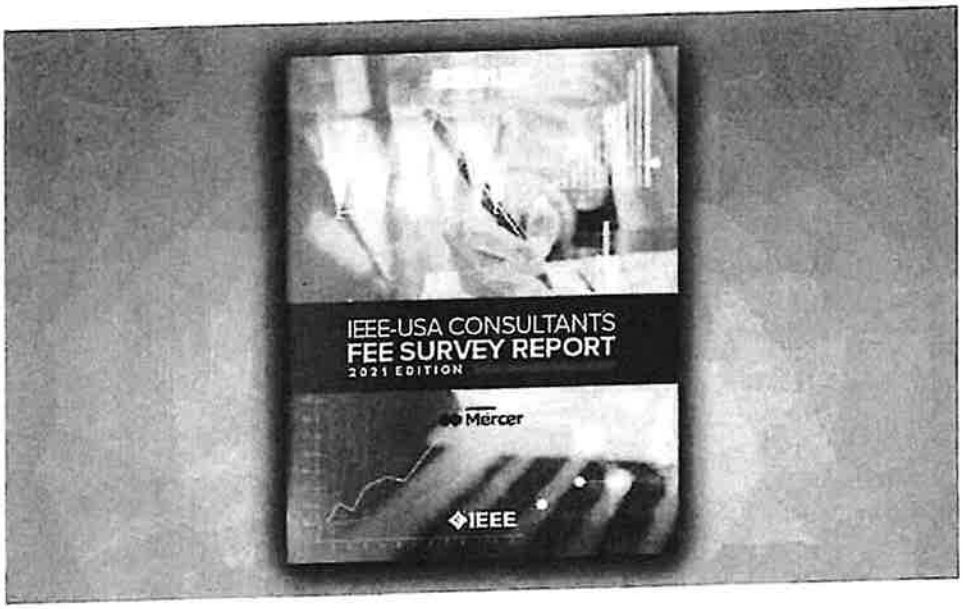
Access real-time product details tailored to your account, including your recently viewed items.

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2021 IEEE-USA Consultants Fee Survey Report – Median Billable Rates Up, Covid Affecting Short- and Long-Term Business

By Paul Lief Rosengren

19 October 2021 0 5,772 3 minutes read





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IEEE-USA Consultants Fee Survey Report – 2021 Edition

MORE INFO

IEEE-USA has released its 2021 Consultants Fee Survey, focusing on the compensation of consultants, as well as on the impact of COVID-19 on members who earn at least half of their income from engineering consulting. Starting in 1998, this survey has been conducted every other year — through 2008; and annually, starting in 2009.

Despite COVID-19, there was a rise in the amount that respondents to the survey were billing as consultants. The average consultant billing was $170 per hour, up $20 over the previous survey. This rate was consistent, regardless of years of experience — except for those with less than 15 years of experience, whose median hourly rate was $158 an hour. The share of respondents with hourly rates at, or above, $200 per hour increased to 36.4%, up from 32.1% in 2020.

Educational differences in billing rates were consistent with the 2020 survey. Having a Ph.D. translated into a $45 higher median billing rate ($215 an hour), with 17.5% of respondents holding a Ph.D., or its equivalent. There is virtually no difference in hourly rate between those with a

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CPI Inflation Calculator

$ 170.00

in year1 month October year1 year 2021

has the same buying power as

$204.68

in year2 month April year2 year 2026

Calculate

Calculations using October 2025 data cannot be calculated due to a lapse in appropriations.

» BLS could not collect October 2025 reference period survey data for CPI due to a lapse in appropriations. Calculations using October 2025 data will not be calculated.

About the CPI Inflation Calculator

The CPI inflation calculator uses the Consumer Price Index for All Urban Consumers (CPI-U) U.S. city average series for all items, not seasonally adjusted. This data represents changes in the prices of all goods and services purchased for consumption by urban households.

BuildFolio

ELECTRICAL CONTRACTOR GUIDE

Electrical Contractor Pricing Guide

Pricing electrical work profitably requires more than knowing your hourly rate. You need a systematic approach that accounts for labor, materials, permits, overhead, and profit. This guide covers everything from building a price book to presenting quotes that win jobs without leaving money on the table.

Updated March 2026 | 15 min read

Flat Rate vs Hourly | Building a Price Book | Sample Pricing | Labor & Markup | Permit Costs | Commercial vs Residential | Pricing Mistakes | Presenting Quotes | FAQ

Start Your Free Trial

Electrical Pricing Quick Facts

- **Avg hourly rate:** $50-$100/hour
- **Outlet install:** $150-$300
- **Panel upgrade:** $1,500-$3,000
- **Whole house rewire:** $8,000-$20,000
- **EV charger install:** $500-$2,000
- **Material markup:** 20-50%

By the BuildFolio Team Updated: March 1, 2026 Fact-checked

QUICK ANSWER

Electrical contractor pricing: hourly rates $50-$100, or flat-rate pricing by job type. Average markup 30-50% on materials. Key factors: job complexity, permits required, and local market rates.

Flat Rate vs. Hourly Pricing for Electricians

The pricing model you choose affects your profitability, customer satisfaction, and how you run your business. Both approaches have their place in electrical contracting.

Flat Rate Pricing Advantages

- Rewards efficiency and experience
- Customers know the price upfront
- Eliminates time-tracking pressure
- Higher average ticket values
- Easier to train new salespeople
- Protects profit on routine work

Hourly Pricing Advantages

- Better for unknown scope work
- Simpler to calculate and explain
- Fairer for troubleshooting calls
- Standard for T&M commercial work
- Lower perceived risk for small jobs
- Easier to adjust for complications

When to Use Each Model

Job Type	Recommended Pricing	Why
Outlet/switch installs	Flat Rate	Predictable scope, rewards your speed
Panel upgrades	Flat Rate	Standard job, known material costs

Job Type	Recommended Pricing	Why
Troubleshooting	Hourly (with diagnostic fee)	Unknown time requirement until diagnosis
Whole house rewire	Flat Rate (after inspection)	Large job justifies detailed estimate
Commercial T&M	Hourly + Materials	Industry standard, change orders expected
Service calls	Hybrid (trip charge + flat rate repair)	Covers your time, then predictable repair

> **The Hybrid Approach**
>
> Many successful electrical contractors use both models. Charge a flat diagnostic/trip fee ($75-$150) to cover your time getting to the job and diagnosing the issue. Then present flat rate options for the repair. This protects you on troubleshooting while giving customers price certainty on the fix.

Calculating Your Hourly Rate

Whether you use flat rate or hourly pricing, you need to know your true hourly cost. Here's how to calculate it:

1. **Direct labor cost:** Hourly wage + benefits + payroll taxes (typically 25-35% above wage)
2. **Vehicle costs:** Truck payment, insurance, fuel, maintenance divided by billable hours
3. **Overhead:** Office, insurance, licenses, tools, marketing divided by billable hours
4. **Profit margin:** Add 15-25% for business growth and owner compensation

Most electrical contractors find they need to charge **$85-$150 per hour** (fully burdened) to run a profitable business. If you're charging less, you're likely losing money on overhead.

File #: 26-090 **Finance Committee**

[06.11.26 Fin Powerpoint]

June 11, 2026

Regional Transit Authority

Finance Committee

The New Orleans Regional Transit Authority (RTA) hereby declares that, in accordance with La. R.S. 42:17.1 (A)(2)(a)-(c), a meeting will be held on Thursday, June 11, 2026, at 11:00 a.m. The meeting will begin at the scheduled time but may be delayed until a quorum is present and will be live streamed on the RTA website; masks are optional.

Written comments on any matter included on the agenda will be accepted in the following ways: 1) Submission of a Speaker Card on meeting day; 2) Electronically by email sent to: rtaboard@rtaforward.org prior to the meeting; or 3) By U.S. Mail send to 2817 Canal Street, Attention: Office of Board Affairs, New Orleans, LA 70119.

Agenda

1. **Call to Order**
2. **Roll Call**

Agenda

3. Consideration of Meeting Minutes

[Finance Committee Meeting – May 14, 2026] 26-084

Agenda

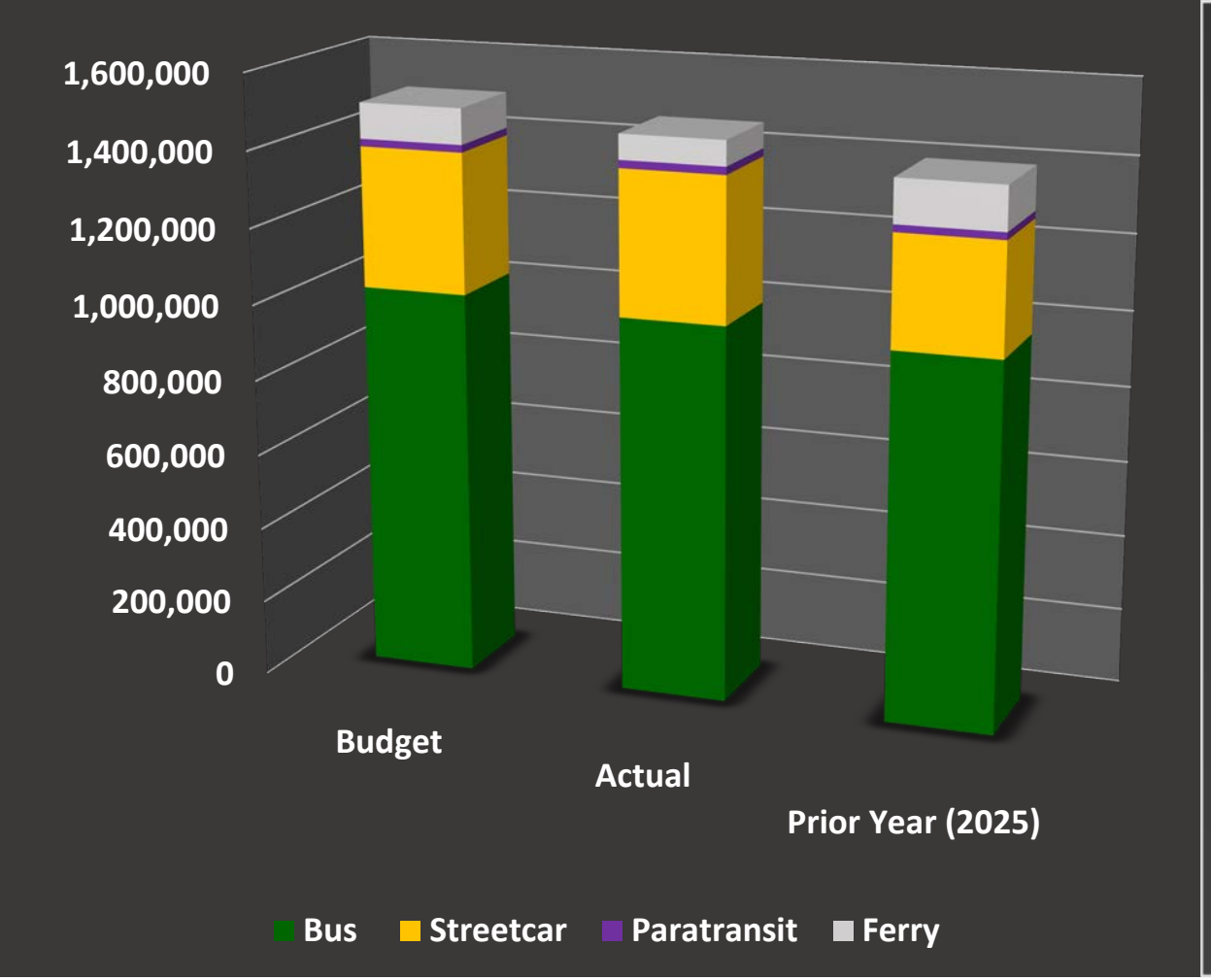
4. Committee Chairman’s Report

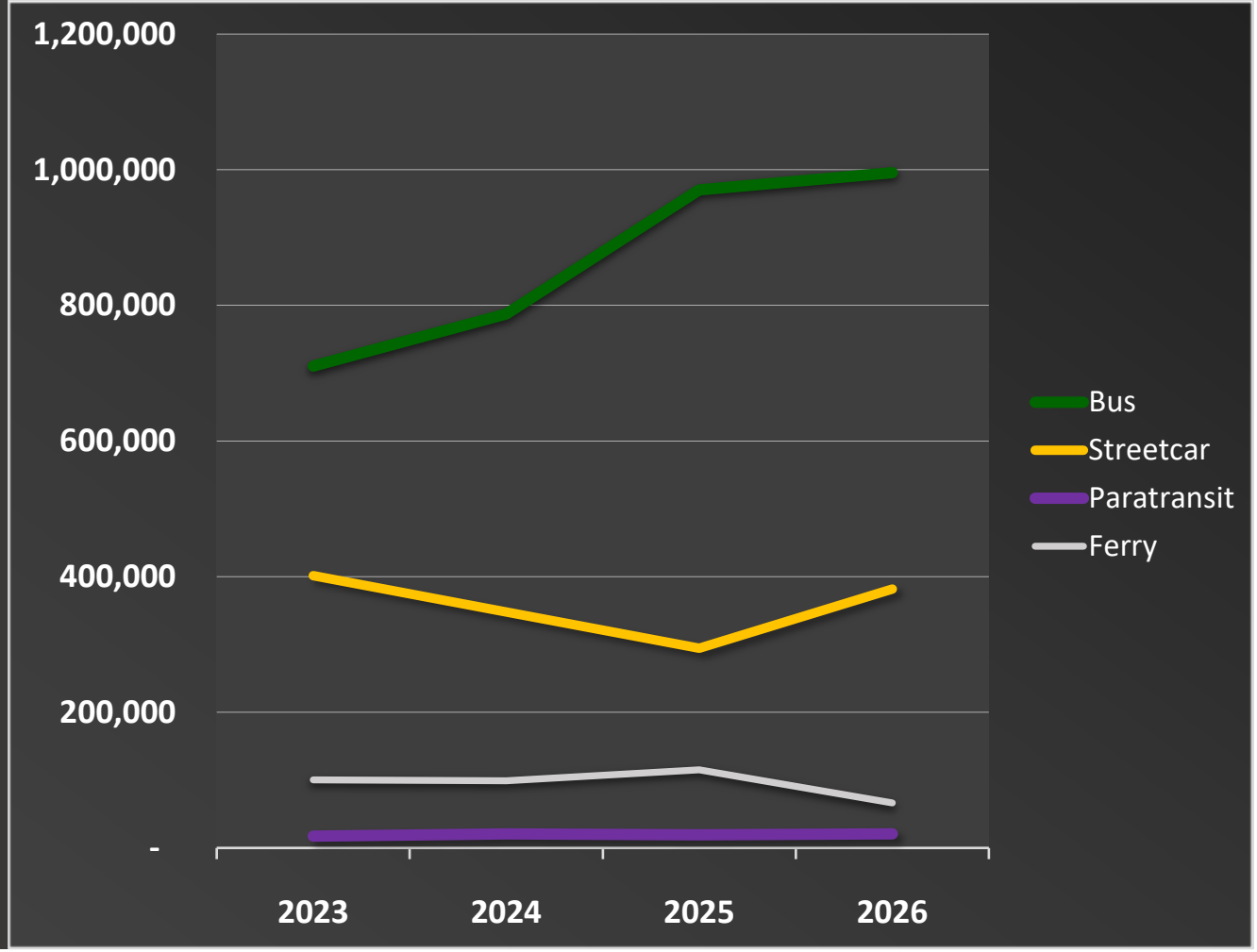
Agenda

5. Chief Executive Officer's Report

Agenda

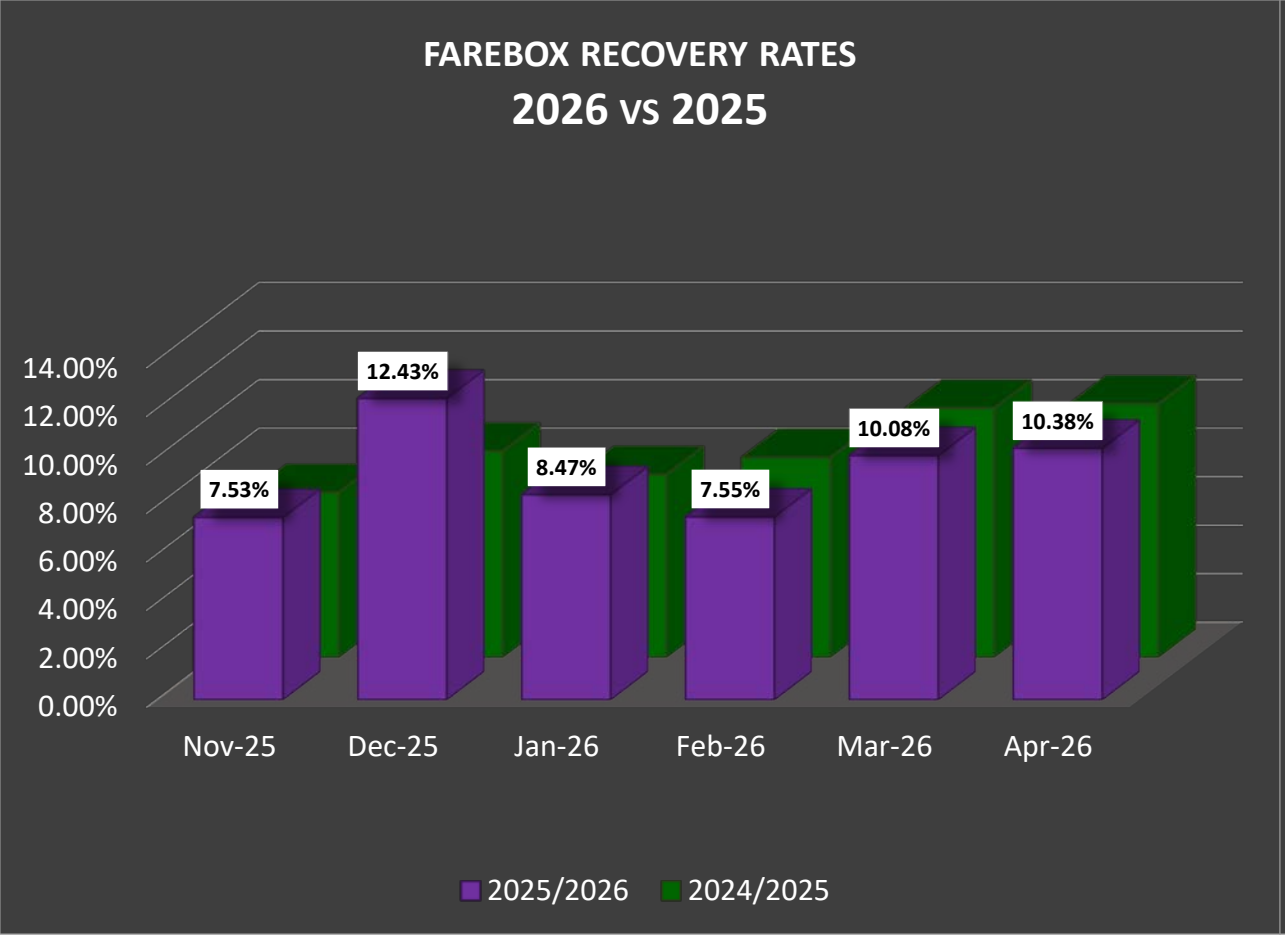
6. Chief Financial Officer’s Report

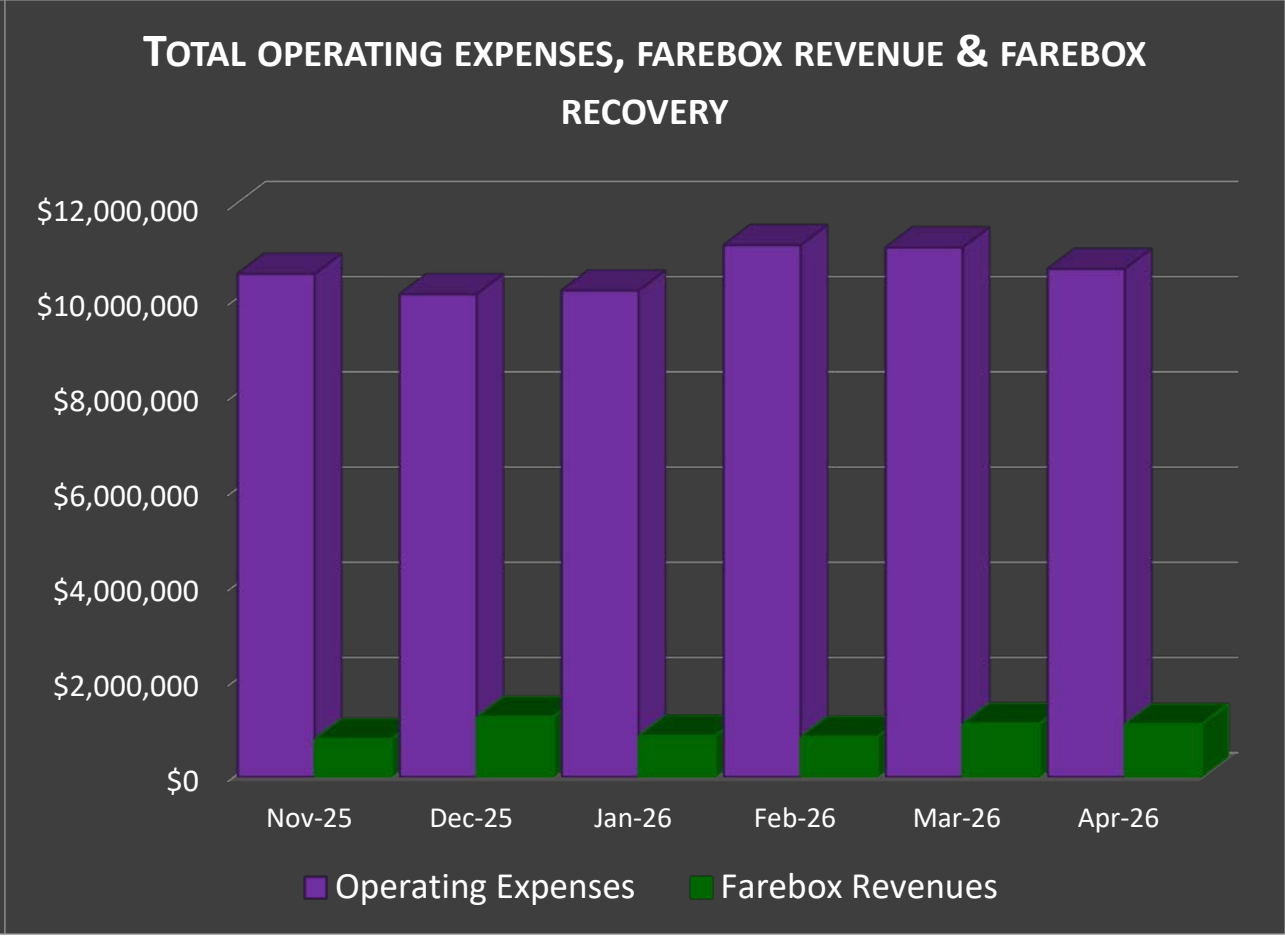




Ridership

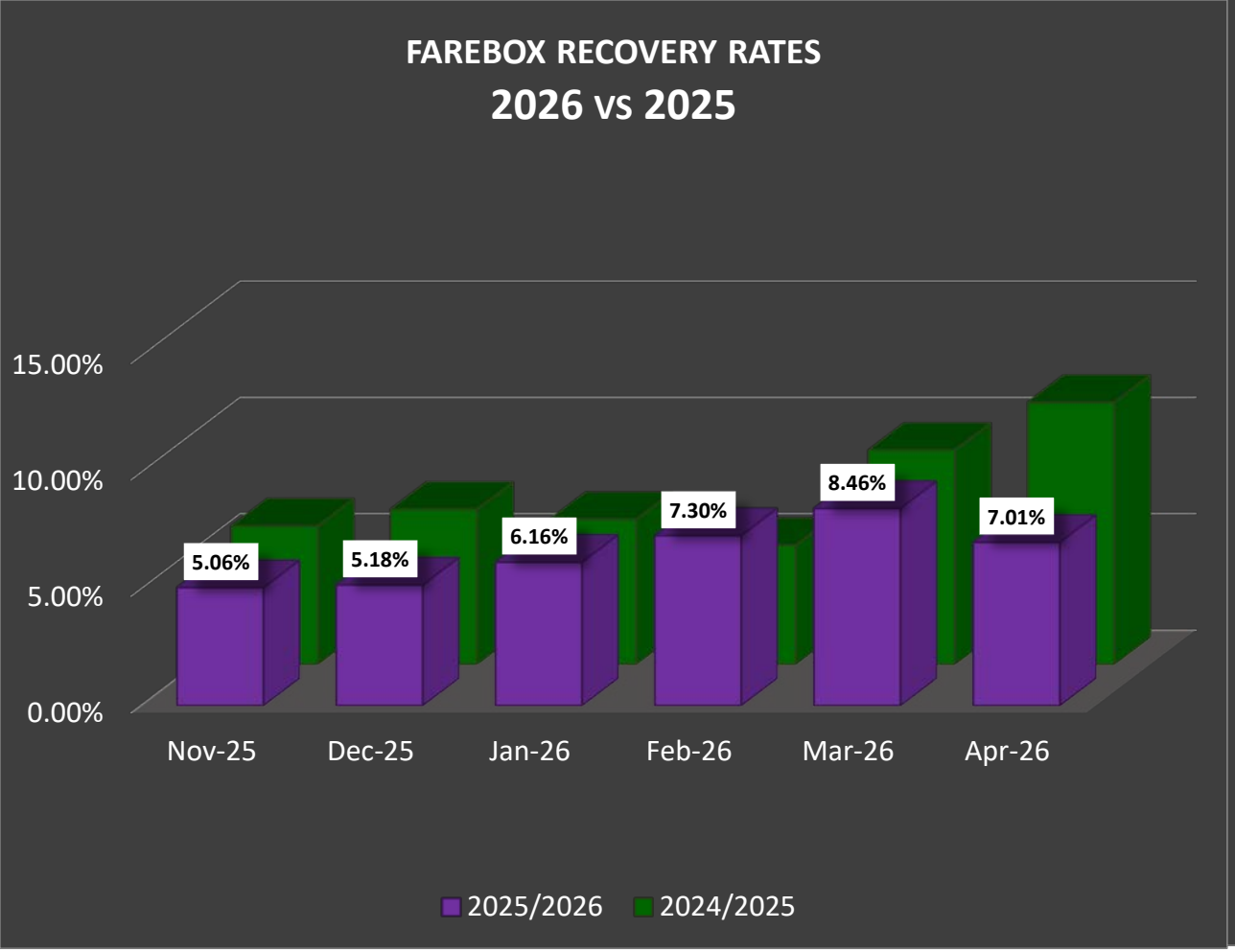
Ridership in April decreased 3% when compared to March actuals. In April, total system ridership (bus, streetcar, paratransit, and ferry) was 1.46M, compared to 1.51M for the previous month of March.

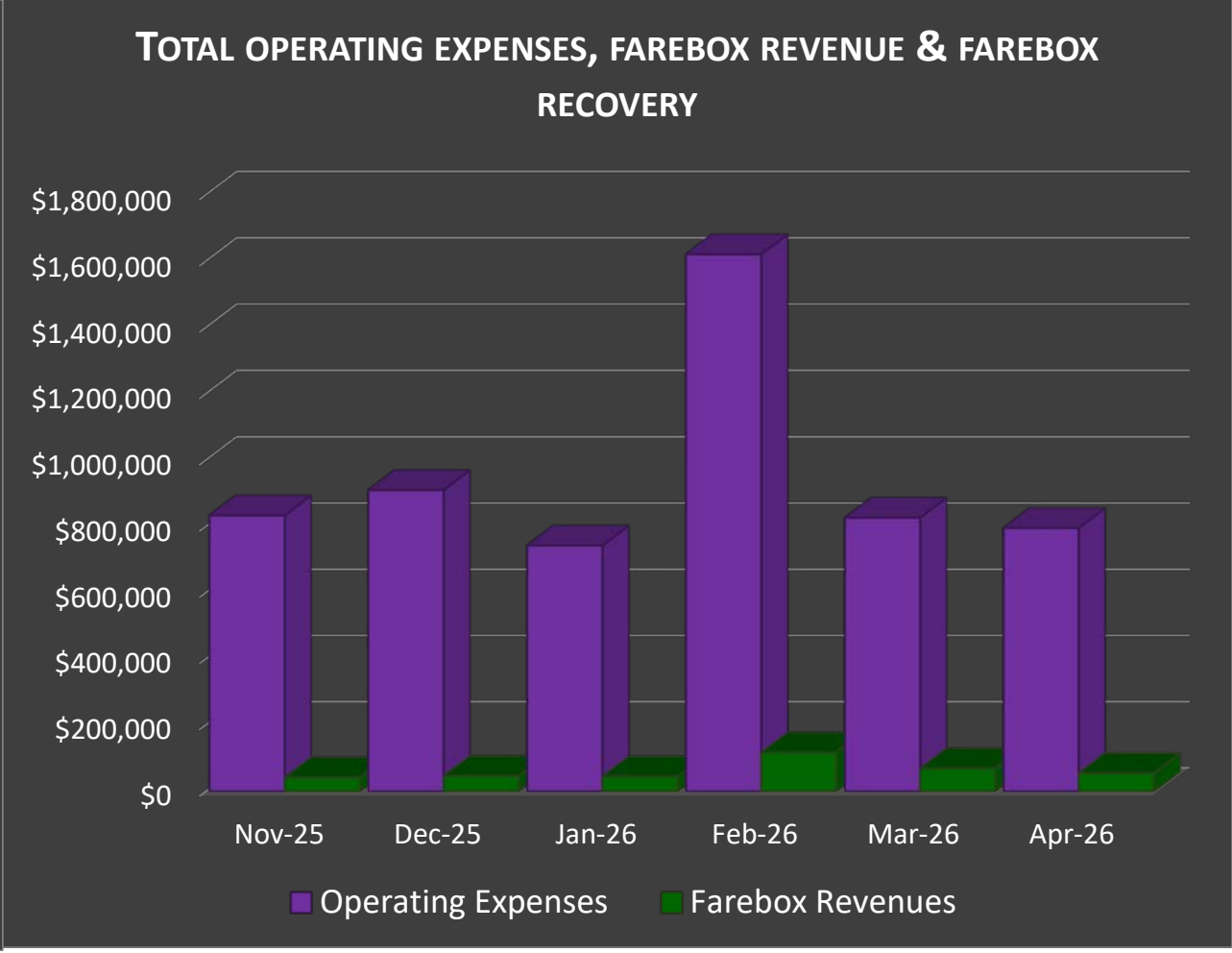




Farebox Recovery Rates
2026 vs. 2025

Fare revenue continues to offset a modest percentage of operating expenses as ridership continues to rebound. April's farebox recovery rate increased slightly from 10.1% to 10.4%, an increase of about 0.3%.





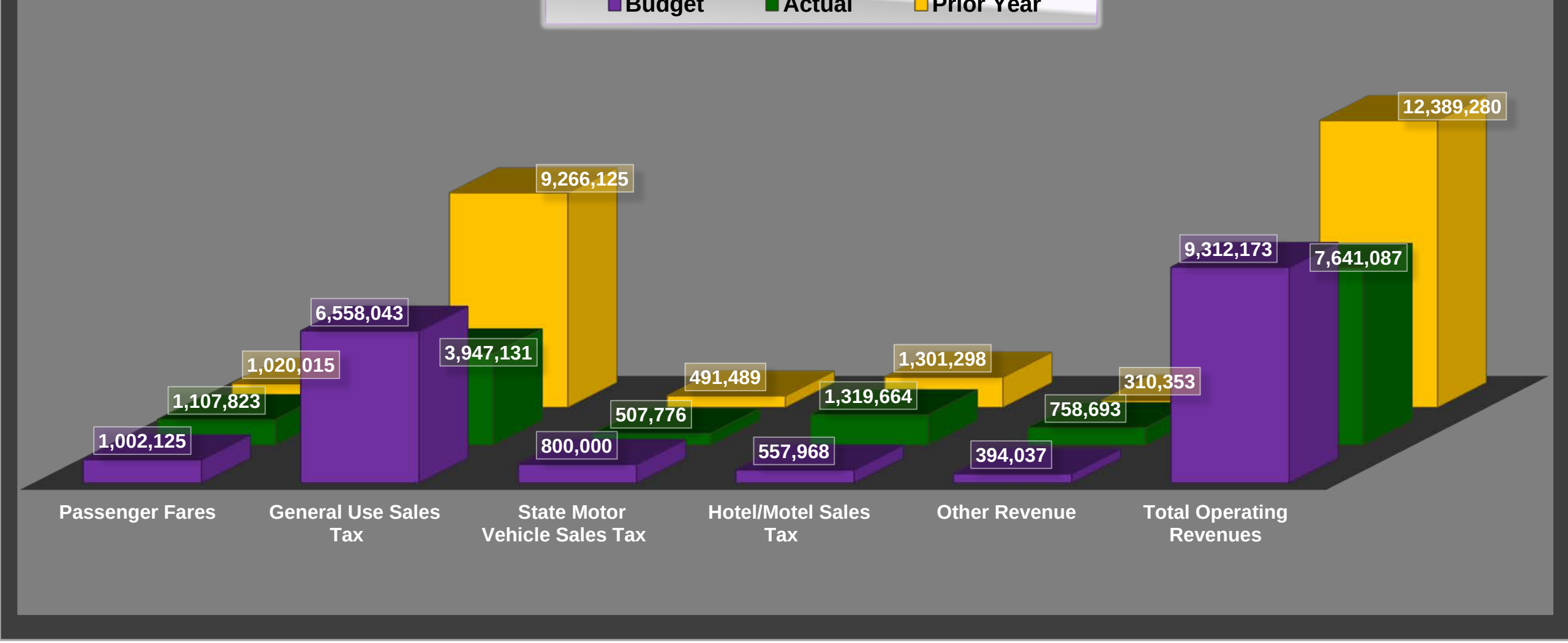
FERRY- Farebox Recovery Rates

2026 vs. 2025

The decrease in farebox recovery from 8.5% in March to 7% in April was driven by a decrease passenger revenues due to the Chalmette Ferry outage by LADOTD for bridge repair work. Expenses were also under budget due to the outage of the ferry.

April 2026 Summary of Sources

SUMMARY OF SOURCES						
	Budget	Actuals	$ Change	% Change	YTD Budget	YTD Actuals
Sales Tax	7,916,011	5,774,571	(2,141,440)	-27.05%	31,664,044	35,401,678
Government Assistance	2,097,040	2,116,784	19,744	0.94%	8,388,160	8,243,210
Sales Tax and Government Assistance	**10,013,051**	**7,891,355**	**(2,121,696)**	**-21.19%**	**40,052,204**	**43,644,888**
Passenger Fares	1,002,125	1,107,823	105,698	10.55%	4,008,500	3,937,336
Other Operating Revenues	394,037	758,693	364,656	92.54%	1,576,148	5,571,276
Subtotal Transit Operations	1,396,162	1,866,516	470,354	33.69%	5,584,648	9,508,612
Total Operating Revenues	**11,409,213**	**9,757,871**	**(1,651,342)**	**-14.47%**	**45,636,852**	**53,153,500**
Federal Capital Funding	5,518,170	2,265,762	(3,252,408)	-58.94%	22,072,680	8,264,686
Investment Income	102,864	73,502	(29,362)	100.00%	411,456	298,667
Subtotal Capital and Bond Resources	**5,621,034**	**2,339,264**	**(3,281,770)**	**-58.38%**	**22,484,136**	**8,563,353**
Total Revenue	**17,030,247**	**12,097,135**	**(4,933,112)**	**-28.97%**	**68,120,988**	**61,716,853**
Operating Income	1,153,773	1,285,596	131,823	-100.00%	4,615,092	(7,638,681)
Total Sources	18,184,020	13,382,731	(4,801,289)	-26.40%	72,736,080	54,078,172

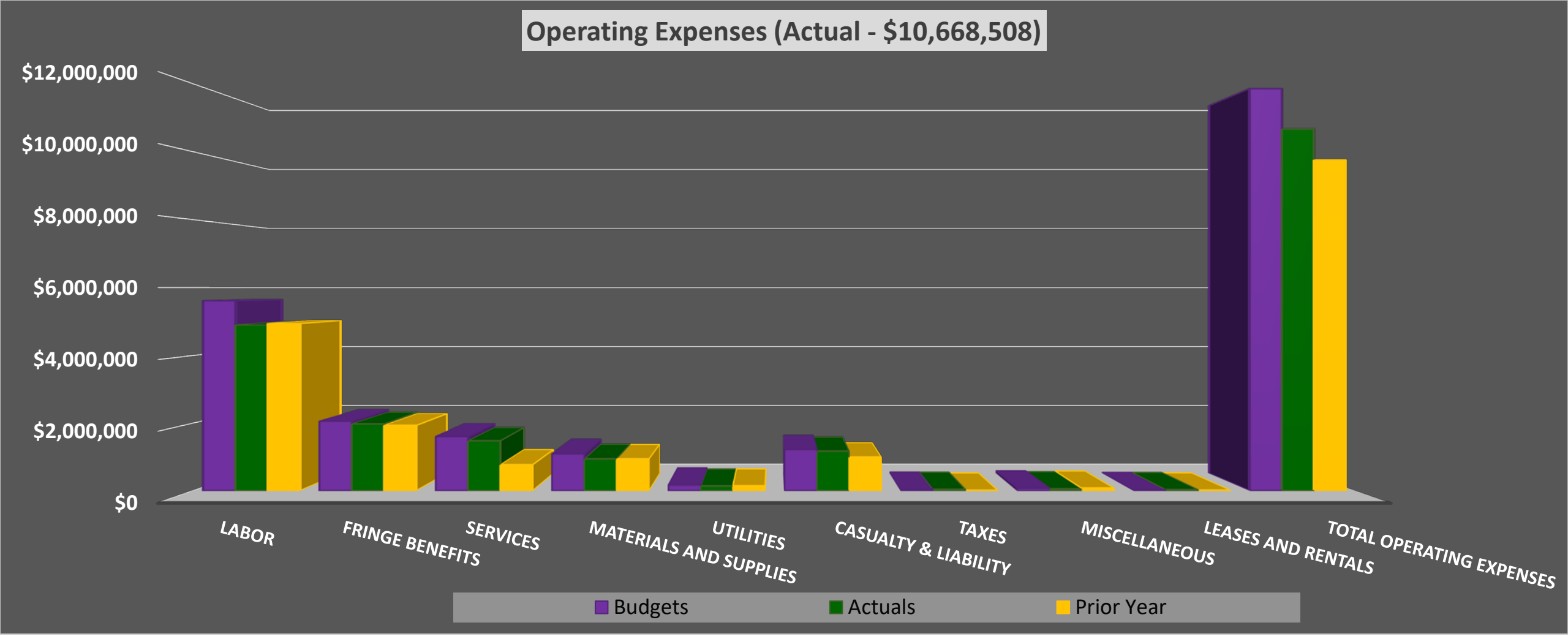


Operating Revenues (Budget, Actual & Prior Year)

RTA's two largest revenue sources are General Use Sales Tax ($3.9M) and Hotel/Motel Sales Tax ($1.3M). The two combined make up 68.9% or $5.3M of total revenue. Overall, total operating revenues for the month of April are $7.6M.

April 2026 Summary of Uses

Summary of Uses						
	Budget	Actuals	$ Change	% Change	YTD Budget	YTD Actuals
Transit Operations	11,858,089	10,668,508	1,189,581	10.03%	47,432,356	43,174,131
TMSEL Legacy Costs	112,255	59,526	52,729	46.97%	449,020	346,530
Maritime Costs	454,355	255,032	199,323	43.87%	1,817,420	1,757,213
Capital Expenditures	5,518,170	2,265,762	3,252,408	58.94%	22,072,680	8,264,686
FEMA Project Worksheet Expenditures	0	0	0	0.00%	0	0
Debt Service	241,151	133,903	107,248	44.47%	964,604	535,612
Total Expenditures	**18,184,020**	**13,382,731**	**4,801,289**	**26.40%**	**72,736,080**	**54,078,172**
Operating Income	0	0	0	0.00%	0	0
Total Uses	18,184,020	13,382,731	4,801,289	26.40%	72,736,080	54,078,172



Operating Expenses

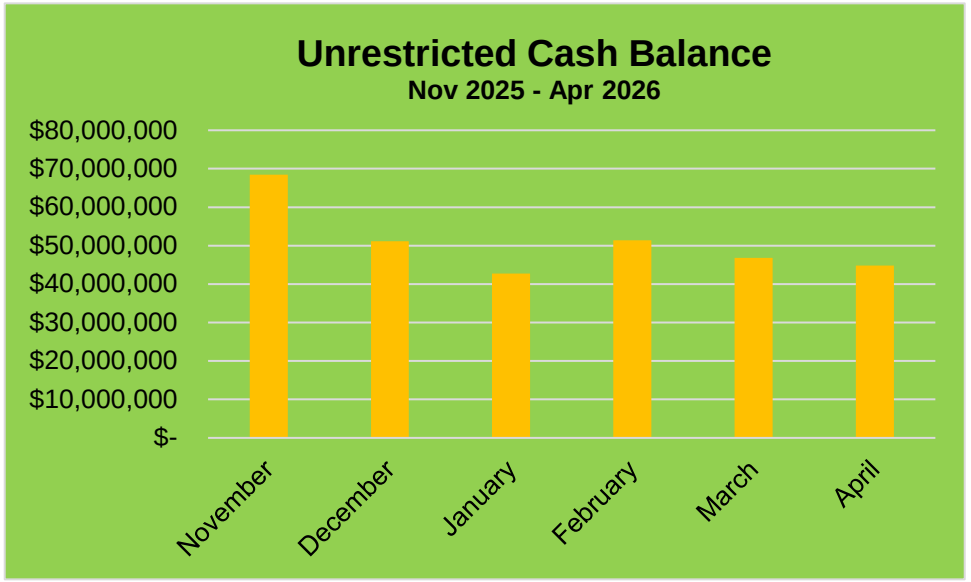
Operating Expenses for the month of April are roughly $10.7M. Labor and Fringe Benefits, the largest expenditure at $6.9M, comprised 64.4% of this month's actual expenses. In total, Operating Expenses for the month of April show a decrease of 4.1% from $11.1M in March.

April 30, 2026 Statement of Net Position and Dashboard

Statement of Net Position as of April 30, 2026	
Assets	
Unrestricted cash and equivalents	$ 44,838,294
Other current assets	74,912,573
Restricted cash and equivalents	10,016,243
Other non-current assets	291,338,513
Total assets	**$ 421,105,623**
Liabilities and Net Position	
Liabilities	
Accounts payable and accrued expenses	$ 9,360,401
Due to NOTMC	43,857,347
Other current liabilities	8,853,723
Bonds payable	57,320,000
Other non-current liabilities	25,828,462
Total liabilities	145,219,933
Net Position	
Unrestricted	265,869,447
Restricted	10,016,243
Total net position	275,885,690
Total liabilities and net position	**$ 421,105,623**

Summary of Unrestricted Cash	
Beginning cash	$46,850,954
Cash inflows	19,954,511
Cash outflows	(21,967,171)
Ending cash	$44,838,294
Avg mthly operating exp	$11,755,143
Months operating cash	3.81

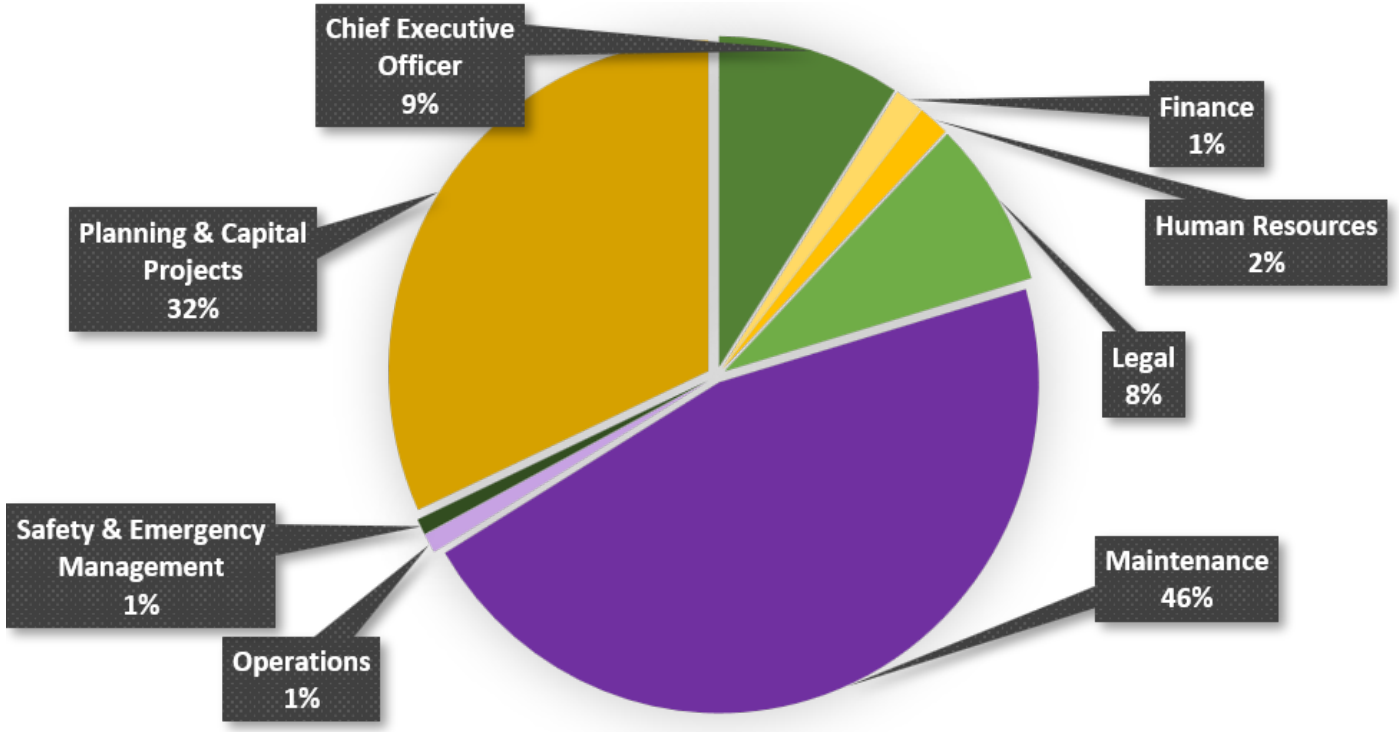
Working Capital and Current Ratio	
Total current assets	$119,750,867
Total current liabilities	62,071,471
Working capital	$ 58,853,112
Current ratio	1.93



Procurement

Purchase Orders Less than $100K (May 1, 2026 – May 31, 2026)

Summary by Division



Procurement

Purchase Orders Less than $100K
(May 1, 2026 – May 31, 2026)

Order	Supplier	Cost Center Code	Cost Center Description	Account	Creation Date	Description	Purchase Order Amount
RTAP_02450	SOUTHERN STRATEGY GROUP OF LOUISIANA	2100	Chief Executive Officer	01-2100-02-7070-176-00-00-00000-00000	5/29/26	Consultant	$45,000.00
			CEO				**$45,000.00**
RTAP_02389	NOTOCO INDUSTRIES	2843	Infrastructure	01-2843-99-8620-125-00-00-00000-00000	5/6/26	Materials & Supplies	$922.20
RTAP_02395	UNITED RENTALS	2843	Infrastructure	01-2843-99-9771-181-00-00-00000-00000	5/7/26	Equiptment Lease	$3,018.64
RTAP_02396	PRECISION ELEVATOR COMPANY	2843	Infrastructure	01-2843-99-7570-127-00-00-00000-00000	5/7/26	Elevator Inspection (Desire & Canal)	$14,805.00
RTAP_02402	CITY OF NEW ORLEANS (5)	2843	Infrastructure	01-2843-99-7570-127-00-00-00000-00000	5/12/26	Service	$875.00
RTAP_02407	NU-LITE ELECTRICAL WHOLESALERS	2843	Infrastructure	01-2843-99-8620-123-00-00-00000-00000	5/13/26	Streetcar Lights	$430.56
RTAP_02411	GRAINGER (2)	2843	Infrastructure	01-2843-99-8620-123-00-00-00000-00000	5/14/26	Materials & Supplies	$12,230.70
RTAP_02419	VAUGHN'S POWER EQUIPMENT INC	2843	Infrastructure	01-2843-99-8620-123-00-00-00000-00000	5/19/26	Equipment & Supplies	$419.88
RTAP_02424	GRAINGER (2)	2843	Infrastructure	01-2843-99-8620-127-00-00-00000-00000	5/19/26	Water Filters	$1,212.60
RTAP_02427	GRAINGER (2)	2843	Infrastructure	01-2843-99-8620-123-00-00-00000-00000	5/20/26	Materials & Supplies	$3,824.43
RTAP_02431	KEN BROWN & SONS INC	2843	Infrastructure	01-2843-99-8620-125-00-00-00000-00000	5/20/26	Shower heads	$909.46
RTAP_02434	ECONOMIC JANITORIAL SUPPLIES	2843	Infrastructure	01-2843-99-8620-123-00-00-00000-00000	5/22/26	Materials & Supplies	$1,020.75
RTAP_02438	GRAINGER (2)	2843	Infrastructure	01-2843-99-8620-125-00-00-00000-00000	5/27/26	Materials & Supplies	$3,598.88
RTAP_02440	BGSN MECHANICAL LLC	2843	Infrastructure	01-2843-99-7570-125-00-00-00000-00000	5/28/26	AC Unit Parts (ENO)	$4,821.60
RTAP_02444	ALLIED HAMCO	2843	Infrastructure	01-2843-99-8620-123-00-00-00000-00000	5/29/26	Materials & Supplies	$1,760.78
RTAP_02400	ISSUETRAK	2900	Information Technology	01-2900-02-7140-162-00-00-00000-00000	5/11/26	Service	$14,962.00
RTAP_02413	CARAHSOFT TECHNOLOGY CORP	2900	Information Technology	01-2900-02-7140-163-00-00-00000-00000	5/14/26	Annual SaaS Marketing Subscriptions, (04/29/26 - 04/28/27)	$15,375.36
RTAP_02422	WOLTERS KLUWER FINANCIAL SERVICES	2900	Information Technology	01-2900-02-7140-171-00-00-00000-00000	5/19/26	Audit Software (5/22/26 - 5/21/27)	$9,691.00
RTAP_02429	ENGHOUSE TRANSPORTATION LLC	2900	Information Technology	01-2900-02-7140-021-05-00-00000-00000	5/20/26	Service	$64,169.00
RTAP_02449	SMART 3RD PARTY	2900	Information Technology	01-2900-02-7070-170-00-00-00000-00000	5/29/26	Consultant	$1,185.00
			Planning & Capital Projects				**$155,232.84**
RTAP_02432	FLYLOCK SECURITY SOLUTIONS	3300	SSEM	01-3300-99-7680-161-00-00-00000-00000	5/21/26	Cipher Lock @ ENO	$3,825.00
			SSEM				**$3,825.00**
RTAP_02452	BEARCOM	4100	Operations	01-4100-02-7150-176-00-00-00000-00000	5/29/26	Motorola Dispatch Radio System	$4,100.00
RTAP_02453	LA WATERS	4100	Operations	01-4100-99-8640-181-00-00-00000-00000	5/29/26	Water	$514.72
			Operations				**$4,614.72**

Procurement

Purchase Orders Less than $100K
(May 1, 2026 – May 31, 2026)

Order	Supplier	Cost Center Code	Cost Center Description	Account	Creation Date	Description	Purchase Order Amount
RTAP_02393	INTERSTATE ALL BATTERY CENTER	2943	Fleet Technology	01-2943-99-8640-101-00-00-00000-00000	5/7/26	Radio Batteries	$502.50
RTAP_02428	SPX GENFARE	2943	Fleet Technology	01-2943-02-7520-111-13-00-00000-00000	5/20/26	Repairs to TMV at Canal	$7,370.00
RTAP_02430	MOTOROLA (3)	2943	Fleet Technology	01-2943-99-8640-101-00-00-00000-00000	5/20/26	Materials & Supplies	$6,720.66
RTAP_02436	SEON SYSTEMS SALES INC	2943	Fleet Technology	01-2943-99-8510-061-89-00-00000-00000	5/26/26	Dual facing front camera replacement	$3,781.62
RTAP_02421	AMERICAN TRACTION SOLUTIONS INC	0000	Unspecified	01-0000-00-1514-000-00-00-00000-00000	5/19/26	PCC GEN II CONTROL MODULE	$19,667.34
RTAP_02382	GRAINGER (2)	4300	Maintenance	01-4300-04-8640-061-03-00-00000-00000	5/1/26	Materials & Supplies	$1,018.76
RTAP_02383	IDEAL LIGHTING	4300	Maintenance	01-4300-99-8640-141-03-00-00000-00000	5/1/26	Materials & Supplies	$1,866.25
RTAP_02384	NEW FLYER OF AMERICA (2)	4300	Maintenance	01-4300-02-8510-062-01-00-00000-00000	5/1/26	Revenue Vehicle Parts	$11,140.02
RTAP_02385	SWIGER COIL SYSTEMS	4300	Maintenance	01-4300-04-9496-181-03-00-00000-00000	5/1/26	Miscellaneous	$3,050.00
RTAP_02387	NU-LITE ELECTRICAL WHOLESALERS	4300	Maintenance	01-4300-99-8640-141-03-00-00000-00000	5/1/26	Materials & Supplies	$1,715.31
RTAP_02388	STAR GLASS INC	4300	Maintenance	01-4300-06-7580-091-00-00-00000-00000	5/6/26	Glass Repairs on Support Vehicles	$1,198.05
RTAP_02391	TRI-STATE REFRIGERATION	4300	Maintenance	01-4300-02-7410-061-01-00-00000-00000	5/6/26	Bus AC Repairs	$3,644.66
RTAP_02392	LA WATERS	4300	Maintenance	01-4300-02-8650-061-01-00-00000-00000	5/6/26	Water	$3,745.76
RTAP_02398	LAMARQUE FORD	4300	Maintenance	01-4300-02-8510-061-01-00-00000-00000	5/8/26	Bus Revenue Vehicle Parts	$3,101.50
RTAP_02401	TRI-STATE REFRIGERATION	4300	Maintenance	01-4300-02-7410-061-01-00-00000-00000	5/11/26	Bus AC Repairs	$1,153.92
RTAP_02404	GRAINGER (2)	4300	Maintenance	01-4300-02-8640-051-01-00-00000-00000	5/12/26	Bus Supplies	$2,469.38
RTAP_02405	GRAINGER (2)	4300	Maintenance	01-4300-04-8640-061-03-00-00000-00000	5/13/26	Streetcar Supplies	$128.20
RTAP_02406	AMERICAN TRACTION SOLUTIONS INC	4300	Maintenance	01-4300-04-7610-061-03-00-00000-00000	5/13/26	Module Repairs for Streetcar (Recreate PO RTAP_01658)	$1,759.86
RTAP_02408	KENWORTH OF LOUISIANA LLC	4300	Maintenance	01-4300-02-7310-061-01-00-00000-00000	5/14/26	Bus Transmission Repairs	$12,343.97
RTAP_02409	TRI-STATE REFRIGERATION	4300	Maintenance	01-4300-02-7410-061-01-00-00000-00000	5/14/26	Bus AC Repairs	$10,908.07
RTAP_02410	KENWORTH OF LOUISIANA LLC	4300	Maintenance	01-4300-02-7360-061-01-00-00000-00000	5/14/26	Bus Engine Repairs	$6,399.63
RTAP_02412	NAPA	4300	Maintenance	01-4300-04-8640-061-03-00-00000-00000	5/14/26	Materials & Supplies	$4,091.25
RTAP_02416	JR CHEMICAL SALES	4300	Maintenance	01-4300-04-8640-181-03-00-00000-00000	5/14/26	Degreaser / Hand Cleaner	$410.24
RTAP_02420	TRI-STATE REFRIGERATION	4300	Maintenance	01-4300-02-7410-061-01-00-00000-00000	5/19/26	AC Repair - Unit 328	$1,623.59
RTAP_02423	LOUISIANA DEPARTMENT OF PUBLIC (5)	4300	Maintenance	01-4300-02-9211-031-01-00-00000-00000	5/19/26	Electric / Hybrid Usage Fees (OMV)	$3,470.00
RTAP_02433	ACADIAN CYPRESS & HARDWOOD	4300	Maintenance	01-4300-04-8640-061-03-00-00000-00000	5/21/26	Materials & Supplies	$3,375.00
RTAP_02437	DIXIE SUPPLY LLC	4300	Maintenance	01-4300-04-8640-061-03-00-00000-00000	5/27/26	AC-to-DC Conversion Circuits	$430.00
RTAP_02445	GRAINGER (2)	4300	Maintenance	01-4300-04-8640-061-03-00-00000-00000	5/29/26	Materials & Supplies	$383.93
RTAP_02446	BROOKVILLE EQUIPMENT CORPORATION	4300	Maintenance	01-4300-99-7080-041-03-00-00000-00000	5/29/26	Rail Training	$38,135.67
RTAP_02447	PEARL MEDIA	4300	Maintenance	01-4300-99-8640-166-03-00-00000-00000	5/29/26	Materials & Supplies	$39,134.72
RTAP_02451	NEW FLYER OF AMERICA	4300	Maintenance	01-4300-02-8510-062-01-00-00000-00000	5/29/26	Parts & Supplies	$6,673.35
RTAP_02390	LAMARQUE FORD	4500	Paratransit Services	01-4500-06-8510-061-05-00-00000-00000	5/6/26	Para Revenue Vehicle Parts	$416.08
RTAP_02414	LAMARQUE FORD	4500	Paratransit Services	01-4500-06-8510-061-05-00-00000-00000	5/14/26	Para Revenue Vehicle Parts	$12,741.30
RTAP_02425	LAMARQUE FORD	4500	Paratransit Services	01-4500-06-8510-061-05-00-00000-00000	5/20/26	Para Revenue Vehicle Parts	$3,043.47
RTAP_02426	SNAP-ON EQUIPMENT	4500	Paratransit Services	01-4500-06-7610-061-05-00-00000-00000	5/20/26	Repair Service for Para Vehicles	$3,920.28
RTAP_02442	MODEL1	4500	Paratransit Services	01-4500-06-8510-061-05-00-00000-00000	5/29/26	Para Revenue Vehicle Parts	$677.40
RTAP_02443	LAMARQUE FORD	4500	Paratransit Services	01-4500-06-8510-061-05-00-00000-00000	5/29/26	Para Revenue Vehicle Parts	$1,357.8
			Maintenance				**$223,569.61**

Procurement

Purchase Orders Less than $100K
(May 1, 2026 – May 31, 2026)

Order	Supplier	Cost Center Code	Cost Center Description	Account	Creation Date	Description	Purchase Order Amount
RTAP_02435	COMMUNITY COFFEE COMPANY LLC	5100	Chief Financial Officer	01-5100-02-8570-175-89-00-00000-00000	5/22/26	Agency Coffee	$7,000.00
			Finance				**$7,000.00**
RTAP_02397	PARRAN'S CATERING & BANQUET HALL	7400	Benefits & Employee Administration	01-7400-02-9496-181-89-00-00000-00000	5/8/26	Employee Quarterly Business Meeting Food	$505.00
RTAP_02415	HUB INTERNATIONAL	7400	Benefits & Employee Administration	01-7400-02-9496-181-89-00-00000-00000	5/14/26	Miscellaneous	$375.00
RTAP_02417	TONY'S SEAFOOD	7400	Benefits & Employee Administration	01-7400-02-9496-181-89-00-00000-00000	5/15/26	Employee Quarterly Business Meeting Food	$6,776.00
			Human Resources				**$7,656.00**
RTAP_02399	WRIGHT NATIONAL FLOOD INSURANCE CO	8300	Risk Management	01-8300-02-9138-169-00-00-00000-00000	5/8/26	Flood Insurance	$39,891.00
			Risk Management				**$39,891.00**
65							**$ 486,789.17**

Questions?

Agenda

7. DBE Report

Current DBE Projects

Project	Contract Amount	DBE Contract Commitment	Total Payments Made to DBE	Tentative Completion Date
Transit Ferry Services	$10,525,778	$1,052,577	$692,625	3/2027
Universal Accessibility Study	$258,221	$87,588	$94,224	5/2026
Drug and Alcohol Testing Services	$250,000	$250,000	$157,848	9/2026
Pest Control Services	$178,568	$178,568	$41,785	5/2029
Climate Adaptive Transit Shelter Design	$650,000	$117,000	$0	6/2027
Fare Collection System Upgrade Consultant	$500,000	$111,500	$13,020	7/2027
Streetcar System Modernization Master Plan	$1,200,000	$444,000	$95,948	12/2026
Standard Operating Procedure (SOP) Development	$300,000	$150,000	$0	7/2026
Algiers Ferry Terminal & Maintenance Building Renovation	$9,538,000	$3,554,812	$462,172	4/2027

Payments made to DBEs in the month of May totaled $124,714

Current SBE Projects

Project	Contract Amount	SBE Goal	Total Payments Made to SBE	% Goal Achieved May 2026	Tentative Completion Date
Advertising Campaigns & Media Buying Services	$800,000	100%	$683,376	85%	2/2028
Algiers Ferry Buildings Renovation – Design/CM	$1,100,000	100%	$665,256	60%	4/2027
Algiers Ferry Barges Replacement – Design/CM	$1,365,265	100%	$647,422	47%	12/2026
Website Services	$300,000	100%	$224,991	75%	5/2027
Transit Stops Inventory Improvement	$493,430	100%	$485,015	98%	6/2026
Rampart/Loyola Streetcar Electrical Feeder Repair	$72,000	100%	$37,348	52%	12/2026

Payments made to SBEs in the month of May totaled $128,648

Current SBE Projects

Project	Contract Amount	SBE Goal	Total Payments Made to SBE	% Goal Achieved May 2026	Tentative Completion Date
Transit Shelter Permitting for Broad and Canal Street	$39,831	100%	$30,850	77%	12/2026
Opportunity Pass Marketing & Outreach Services	$96,450	100%	$54,722	57%	12/2026
All Stations Accessibility Program – St Charles Streetcar	$1,300,000	100%	$0	0%	12/2026
St Charles Streetcar – Downtown Loop Track Replacement – Phase 4	$524,821	100%	$73,180	14%	9/2026
Tree Cutting and Vegetation Clearance	$33,000	100%	$0	0%	11/2026

Payments made to SBEs in the month of May totaled $128,648

Upcoming SBE Projects

	DBE/SBE Goal
RFP 2025-031 Transit Security Services (Oral Presentations being scheduled)	100% SBE
RFP 2026-003 Community Outreach & Engagement Services (Oral Presentations being scheduled)	100% SBE
RFP 2026-005 On-Call Technical Safety Support (Under Administrative Review)	100% SBE

DBE/SBE Business Development Training and Outreach Event

DBE Workshop:
Teaming and Joint Ventures

This workshop will provide small business owners with a practical overview of how teaming agreements and joint ventures (JVs) can help them compete more effectively for larger contracts, particularly in government and large public-sector projects.

Tuesday, May 26th, 5:30 PM to 7:00 PM
RTA Board Room, 2nd Floor
2817 Canal Street, New Orleans

Regional Transit Authority's Opportunity Conference

"How to do Business with RTA"

This Outreach meeting will discuss RTA's procurement process, how to become an RTA vendor, an update on RTA's DBE/SBE program, the Capital Projects forecast, and conclude with a Prime/Subcontractors Meet & Greet.

Thursday, May 28th, 10:00 AM to 12:00 NOON
RTA Board Room, 2nd Floor
2817 Canal Street, New Orleans

RTA

RTA's Opportunity Conference





Questions?

Agenda

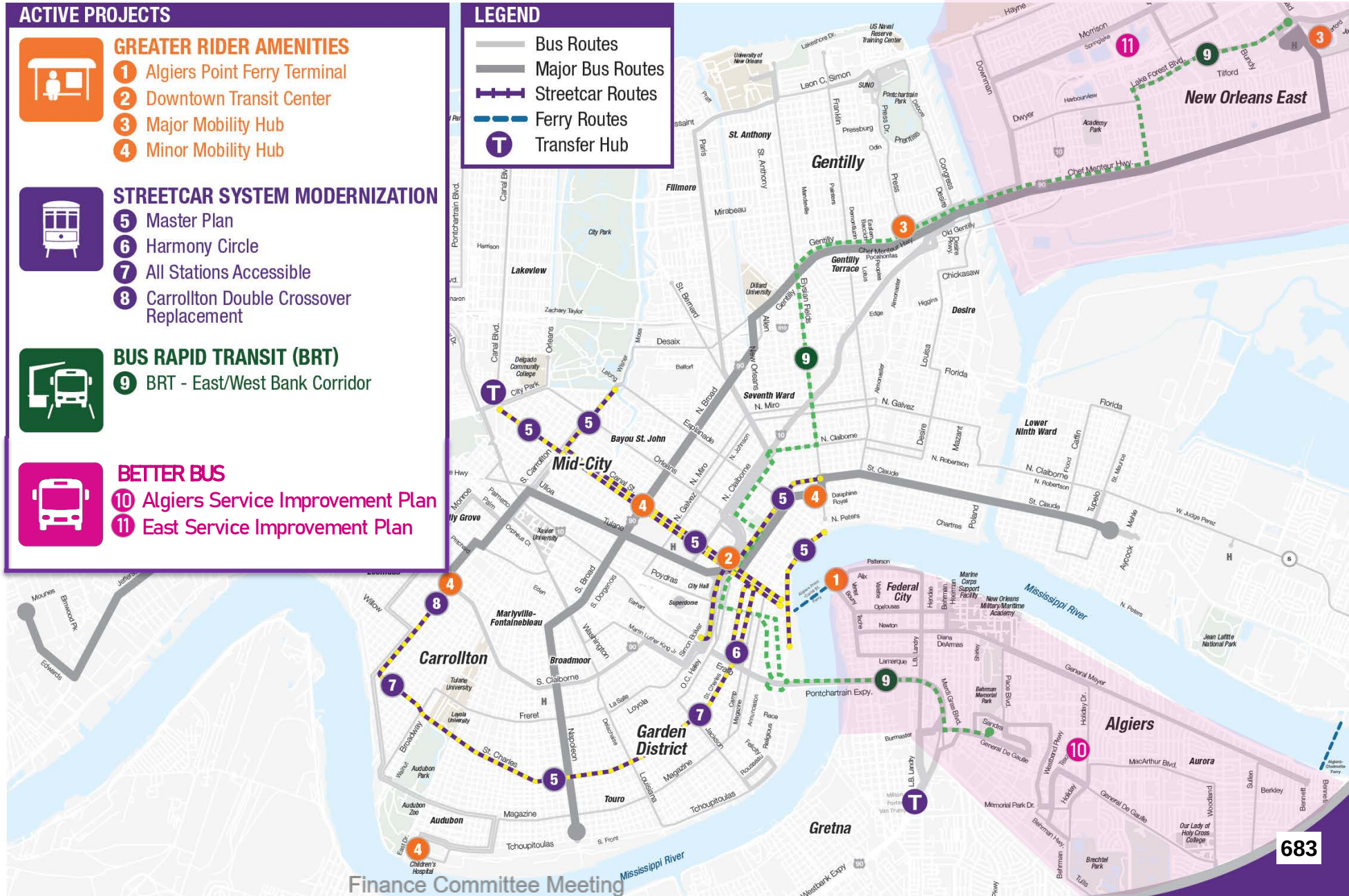
8. Chief Planning and Capital Project Officer's Report

Capital Investment Program (CIP): Major Initiatives

	**BETTER BUS**	Continuously invest and improve bus service, the workhorse of a transit system		**STREETCAR SYSTEM MODERNIZATION**	Reimagine streetcar fleet, stops, and trackway to be safer, faster, and more accessible
	**GREAT RIDER AMENDITIES**	Provide excellent places to wait and transfer, from basic stops to major hubs and terminals		**BUS RAPID TRANSIT (BRT)**	Transformative high-speed corridor project connecting the East to Downtown to Algiers
	**UNIVERSAL ACCESSIBILITY**	Ensure all aspects of RTA are inclusive and welcoming to all abilities and ages		**TRANSIT-ORRIENTED COMMUNITIES**	Connect transit to the development of housing that is affordable and promotes excellent quality of life

Capital Investment Program (CIP):

Major Initiatives



Open Projects: Construction

Algiers Ferry Buildings Renovation

Rehabilitate and modernize the 40-year-old Algiers Ferry Terminal for modern vessels and access, add Marine administrative offices, develop concessions/public space. Renovate Lower Algiers Maintenance Facility.





Project Budget:

Total: $11,407,000 (80% grant funded)

Contracting:

A&E: Batture
Contractor: CDW Services
Contracting Strategy: D/B/B

Status:

- Construction of new ramp/stair underway
- Plumbing rough-in

Board Action:

- CEA with nonprofit partner for concession space, programming (June – full board)
- CEA with City for complimentary ADA improvements (August)

Schedule:

Finance Committee Meeting

Planning	Design	Procure	Construction
’20-’22	Jan ’24 – Dec ‘26	Apr ‘25 – Dec ’25	

Open Projects: Procurement

Algiers Ferry Barges Modernization

Replace landing barges at Algiers Point and Lower Algiers with new, standardized design for interoperability between ferry landing locations.





Project Budget:

Total: $13,670,000

(80% grant funded)

Contracting:

A&E: Infinity Engineering (On-Call)
Contractor: TBD
Contracting Strategy: D/B/B

Status:

- Bids reviewed and ready to award

Board Action:

- **Award bid (June)**

Schedule:

Finance Committee Meeting

’21-’23	Nov ’24	Feb ‘26	July ’26	Feb ‘26
Planning	Design	Procure	Construction	

Open Projects: Design

Low-Emission Fleet Replacement

Advance the conversion of bus fleet to low emissions with 26 CNG vehicles; CNG infrastructure and ENO facility improvements to relocate entire bus fleet; investment in workforce transition.



Contracting:

PM:	CTE (Named partner)
Design:	Jacobs (Named partner)
Charging Equipment:	Heliox (Named partner)
Construction:	TBD
Vehicles:	TBD
Workforce Dev:	Delgado, IBEW (Named partners)

Project Budget:

Total: $80,862,949 (88% Federal grant funded)

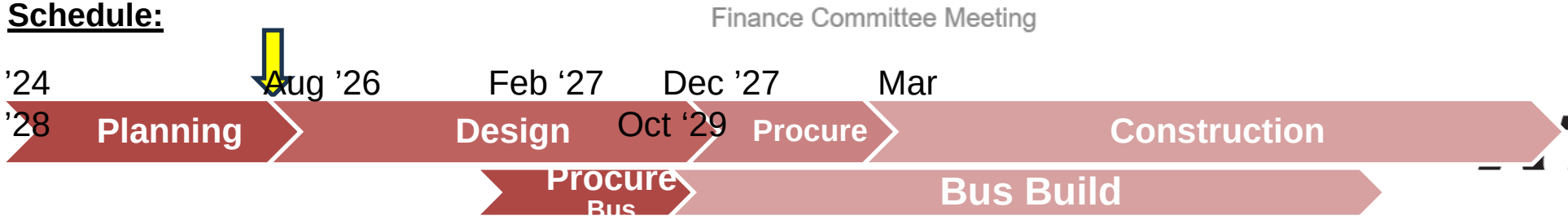
Status:

Completed re-scope of propulsion technology
Finalized Grant Agreement and Scope
Update Jacobs contract based on re-scope

Board Action:

- Amend design contract (August)
- **Order 26 buses (Aug/Sept)**

Schedule:



Open Projects: Design

BRT: East-West Bank Corridor

Design and construct the region's first rapid transit line to link New Orleans East, Downtown, and the West Bank



Contracting:

Prelim. Engineer: AECOM
Final Engineer: TBD
CMAR Contractor: TBD
Contracting Strategy: CMAR

Project Budget:

Total: $250-350 million

Board Action:

None currently

Status:

Developing outreach plan
Coordinating with DOTD and DPW on analysis and design

Schedule:

Finance Committee Meeting

'22-'24 | Jan '26 | July '27 | Oct '27 | Feb '29 | Feb'31

Planning | 30% Design & NEPA | Procure | Final Design | Construction and Testing

Open Projects: Planning

Streetcar System Modernization: Master Plan

Detailed condition assessment of power, electrical, track, guideway and vehicles.
Develop modernization scenarios for all systems that includes 100% full ADA-compliant fleet.
Support community engagement of process and selection of preferred scenario and final plan.



Contracting:

Consultant: HDR

Status:

Data collection / existing conditions complete
Public facing survey underway
Initial public meetings this summer
Visioning phase underway

Board Action:

Promote survey and public engagement!

Schedule:

NTP: November 2025
Modernization Scenarios: September 2026
Board-adopted Scenario: October 2026

Open Projects: Design

Streetcar System Modernization: All Stops Accessible, St Charles

Upgrade up to 40 streetcar stop pairs for ADA-compliance
Consolidate and rebalance some stops to achieve full compliance and improve reliability.

Contracting:
Engineer: Manning Architects (On-Call A&E)
Contractor: TBD
Contracting Strategy: D/B/B

Project Budget:
Total: $6,900,000 (80% FTA grant funded)

Status:
Secured NEPA clearance
Design NTP this month
Start engagement for stop spacing



Board Action:

None currently

Schedule:

Finance Committee Meeting

’25 June ’26 Feb ‘27 June ’27 March ‘28

Planning | Design | Procure | Construction

Open Projects: Design

Streetcar System Modernization:
St Charles Downtown Loop Phase 4 (Circle)

Replace special trackwork around Harmony Circle
Improve street design for greater safety and urban design

Contracting:

Engineer: Infinity Engineering (On-Call A&E)
Contractor: TBD
Contracting Strategy: D/B/B

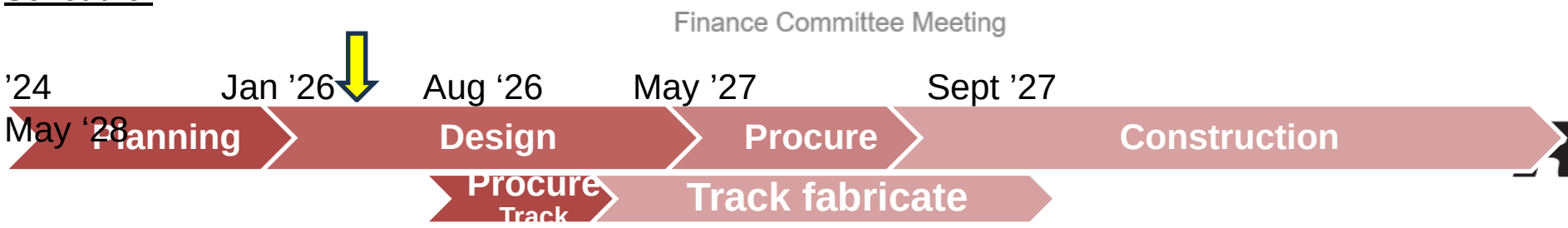
Project Budget:

Total: Approx. $25,000,000 (awaiting initial planning-stage cost estimates and scope)

Status:

Finalize design concept and
Develop and price track design package (Task Order 2: 15% → 30% design)

Schedule:





Board Action:

- Task Order 2 for Design (August)

Open Projects: Plans/Studies

Plan/Study	Scope	Status	Budget	Funding Source
Universal Accessibility Study	Roadmap for access to all RTA services regardless of ability, implementation plan and evaluation framework	Waiting for Final Report Updates (June completion)	$250,000	Local (Operating)
Transit Stop Inventory Update & Assessment	Update transit stops inventory and ADA compliance; develop improvement program;	• In closeout • Meeting w/City to develop capital plan	$493,430	Local (Operating)
Fare Modernization Initiative Consultant	Service related to: • fare modernization plan; • technology procurement; • Implementation support	Draft fare study (industry scan + existing conditions) under review	NTE $876,000	Capital (80% Fed)

Open Projects: In Procurement

Name	Number	Solicitation	Status	Budget
Carrollton Double Crossover Replacement	2019-FG-01	Installation of special trackwork at end of St Charles streetcar	Awarded in April NTP June	$3,000,000
Climate-adaptive Shelter Design	**2023-FA-04**	**Design of new standard shelter for bus and streetcar**	Task Order 1 (Bus) **NTP June**	Max NTE $650,000
Program Management Services (BRT + CIP)	n/a	PM/CM Support for Capital Program	Evaluating RFQ responses	On-call
Downtown Transit Center	2015-FA-01	100% Design	**Evaluation complete; Award for August**	$33 million (total project)
Major Transit Hubs	2024-FA-04	100% Design of 2 Major Hubs (NO East + Gentilly)	**Evaluation complete; Award for August**	$13.8 million (total project)
Replacement Enterprise Asset Management (EAM) Software	2023-IT-03	State contract / cooperative purchasing (Carahsoft)	**Evaluating vendors Award for August**	$1 million (install + year1)

Open Projects: In Development

Name	Number	Scope	Status	Budget
Transit Oriented Communities Study	TBD	Develop detailed land-use and development potential around future BRT stations	RFP in development	$950,000 (100% grant)
On-Call Real-Estate	n/a	Provide market analysis, pre-development and concession support services	RFP has been released Due 6/12	TBD

Grants / Funding Request

Grant Program	Funding Request	Status	Federal Amount Awarded	Scope Request
FY25 Bus & Bus Facilities	$27.2 million Fed $6.8 million RTA	AWARDED	$27.2 million	8 fixed-route buses Carrollton and Canal Facility improvements
FY26 Bus & Bus Facilities	~$10 million	Not released	TBD	All stops accessible, bus

Questions?

Agenda

9. Committee Action Items (Public Comment will be taken prior to Board vote on each item in accordance with La. R.S. 42:14 (D)

A. Authorizations:

- **Renewal of Excess Liability, Automobile Physical Damage, and Cyber Insurance [2026-2027]** — **26-082**

- **Cooperative Endeavor Agreement with Algiers Economic Development Foundation for Commercial Lease of Algiers Ferry Terminal** — **26-052**

CEA: Ferry Terminal Programming

Board Item 26-052
For June full Board







Partner: Algiers Economic Development Foundation (AEDF)

--DRAFT TERMS: CURRENTLY UNDER REVIEW BY AEDF--

Duration: 5 years with option to extend

AEDF Responsibilities:

- Manage programming for main floor:
  - Procure, lease and manage a concessionaire
  - Identify opportunities for cultural exhibits
  - Collect revenue
- Managing programming of activities in plaza space
- Manage use of 2nd floor conference room for public use (after hours)

RTA Responsibilities:

- Building maintenance
  Direct & through RTA ferry contractor
- Input into concessions procurement process and requirements

AEDF Payment/Revenue:

- 15% of concession gross rent
- 90% of plaza use fees

RTA Payment/Revenue:

- 85% of concession gross rent
- 10% of plaza use fees

Agenda

9. Committee Action Items (Public Comment will be taken prior to Board vote on each item in accordance with La. R.S. 42:14 (D) *cont'd*

B. Procurements:

- Algiers Barge Replacement-Contract Award (IFB 2026-007) 26-051
- Board and Conference Room Technology Upgrades 26-059
- Replacement of Handheld Radios 26-074

C. Amendments:

- Change Order for Transit Security Services – SEAL 26-075
- Emergency Change Order for Streetcar Substation Repairs 26-085

Agenda

10. New Business

Agenda

11. General Public Comment (Informational Items)

Agenda

12. Adjournment