

Duluth



Greg Whitlock, Mayor
Jamin Harkness, Post 1
Marline Thomas, Post 2

Lamar Doss, Post 3
Manfred Graeder, Post 4
Shenée Holloway, Post 5

**AGENDA
MAYOR AND COUNCIL
CITY OF DULUTH, GA
3167 Main Street
Duluth, GA 30096**

OCTOBER 14, 2024

CITY HALL COUNCIL CHAMBERS

6:00 pm

***The leaders and staff of the City of Duluth are dedicated to ensuring that Duluth is:
an Attractive Destination, a Quality Community, a World Class Government,
and promotes a Sustainable Economic Environment.***

5:30 P.M. – AGENDA REVIEW

Main St. Conference Room

6:00 P.M. - CALL TO ORDER

Mayor Whitlock or Mayor Pro tem Thomas

INVOCATION OR MOMENT OF SILENCE

PLEDGE OF ALLEGIANCE

I. APPROVAL OF MEETING AGENDA

II. APPROVAL OF MINUTES

III. ANNOUNCEMENTS

1. UPCOMING EVENTS – www.duluthga.net/events

Duluth Live every Thursday, Friday, Saturday (6-9pm) and Sunday (2-5pm) through October. Enjoy live music and various street performers in Parsons Alley and on the Activity Lawn.

PLEASE NOTE: This and other City meetings may be audio and/or videotaped for broadcast, transcription and/or archival purposes. As set forth in the Americans with Disabilities act (ADA) of 1990, the City of Duluth government does not discriminate on the basis of disability in the admission or access to or treatment of employment in its programs or activities and complies with the requirements contained in section 35.107 of the Department of Justice regulations. All agenda packets may be converted to WCAG 2.0 compatibility format by emailing agenda@duluthga.net. In addition, any requests for reasonable accommodations required by individuals to fully participate in any open meeting, program, or activity of the City of Duluth government should be made seven days prior to the event. Direct inquiries to the ADA Coordinator in the City Clerk office, located at 3167 Main Street, Duluth, GA. 30096, or by telephone at 770.476.3434.

Duluth Farmers & Artisan Market every 2nd and 4th Sunday, April through October. 2-5pm, Town Green. Shop local vendors, with live music, themed photo-ops and free kid's activities in Parsons Alley.

Haunted Tours October 19 & 26. 5:00-9:30pm in downtown Duluth.

Get ready for a spine-tingling adventure on October 19th and 26th! For just \$5 per person, join us for an eerie exploration of Downtown Duluth like never before. For more information and to book your visit go to <https://www.eventeny.com/events/haunted-tours-2024-14557/>.

Howl on the Green October 25. 6-10pm in downtown Duluth. Step into the magical world of a Mystical Masquerade! Join us for a free Halloween celebration packed with enchanting fun on Duluth Town Green! Experience the charm of our mystical theme where fairies, woodland creatures, and mythical beings roam freely. Bring your family, friends, and pets for an unforgettable night of enchantment. "Trunk-or-Treat" is happening from 6-7pm (or while supplies last) in the City Hall Parking lot. No need to wander - look for signage to start your adventure at the Hill Street entrance. Show off your most mystical costume at our legendary costume contest! Sign up from 6:00-7:00pm for a chance to win fantastic prizes on the Main Stage from 7:30-8:30pm. As the sun sets, prepare to be amazed by our mystical finale show. Watch mesmerizing performances by aerialists, fire dancers, and more on the Main Stage at 9pm.

IV. MATTERS FROM CITIZENS

Maximum of five (5) minutes per person. Sign-up sheet available.

V. CONSENT AGENDA

1. ORDINANCES TO AMEND DULUTH CODE-BOARDS/COMMISSIONS

As discussed at the July 22 work session, Mayor and Council authorized staff to work with the City Attorney in preparing amendments to standardize the content and language in each of the board/commission ordinances relating to appointment of officers, meetings, quorum, compensation, ethics, term limits, service/removal clause, attendance, open meetings, oaths, and background checks. The proposed amendments do not include the Planning Commission, URA, TADAC, ZBA and Ethics. The Planning Commission and ZBA are governed under the Unified Development Code (UDC), the URA and DDA are governed by State Law, the TADAC is founded on an intergovernmental agreement with Gwinnett County, and currently no changes are being proposed to the Ethics ordinance. Approval of this item approves ordinances O2024-38, 47, 48, 49 and 50 to amend the Alcohol Board, Public Art Commission, Employee Benefits/Audit Review Committee, Parks & Recreation Board, and Veterans Marker Committee as presented.

2. AUTHORIZATION FOR CONTRACT – RED CLAY THEATRE

Approval of this item authorizes the City Manager to execute a contract with Solid Rock Church Furniture and Design for replacement of carpet and installation of seats at the Red Clay Theatre.

3. APPROVAL OF IGA – DDA – GARDEN CLUB/LANDSCAPING

The Garden Club of Duluth has proposed improving and maintaining certain planting beds and planting containers in and around downtown and the Town Green. The mechanism for implementation is a proposed intergovernmental agreement (IGA) between the Duluth Downtown Development Authority (DDA) and the City. DDA will provide funding and guidance. The IGA allows the Garden Club to perform projects on city-owned property. Approval of this item approves the IGA as presented. Final approval of all projects will fall under the City Manager.

4. ORDINANCE TO AMEND BUDGET -\$9,400 – VEHICLES

The Police Department sold a police vehicle, drone, and seven (7) bicycles at auction. After commission and fees, the city received \$9,400. Staff is requesting the \$9,400 be added to Police Vehicles - Consolidated Vehicle Maintenance - Vehicles line item, including associated transfers. Approval of this item authorizes ordinance BA-FY25-10 to amend the FY25 budget as presented.

5. ORDINANCE TO AMEND BUDGET -\$29,000 – FOX ST EASEMENT

For connectivity reasons, staff acquired a permanent sidewalk easement from a Fox Street property owner, Mr. Chavez to install a sidewalk. The cost of the easement was \$29,000 and was paid out of existing budgeted project funds.

These funds need to be replaced to cover a shortfall on existing projects. Therefore, staff is requesting \$29,000 in unallocated 2023 SPLOST Transportation funds be added to Transportation/Infrastructure Improvements - Paved Streets - Repairs & Maintenance of Streets/Sidewalks line item, including associated transfers. Approval of this item authorizes BA-FY25-12 to amend the FY25 budget.

6. ORDINANCE TO AMEND BUDGET -\$9,982 – TEMPORARY EASEMENT

To complete the necessary easements for the construction of the sanitary sewer line in the Hill community, the city acquired an additional temporary easement from Mount Carmel Baptist Church for \$15,000. Additional project funding is needed to complete the acquisition. Project funding of \$5,018.56 was available to offset some of the cost; staff is requesting a budget amendment of \$9,982 to make up the balance. Staff is requesting \$9,982 in 2021 American Rescue Plan Act funds be added to American Rescue Plan Act 2021 - New Sewer Services - Land line item. Approval of this item authorizes ordinance BA-FY25-11 to amend the FY25 budget.

7. APPOINTMENT OF PLANNING COMMISSION CHAIR – ALANA MOSS

Current Planning Commission Chair Ray Williams will be stepping down and leaving the Planning Commission as of October 31, 2024. Vice Chair Alana Moss has agreed to assume the chairperson role starting November 1. As the Unified Development Code currently requires that the mayor approve each Planning Commission Chair, approval of this item authorizes the appointment as presented.

VI. PUBLIC HEARINGS

1. ORDINANCE OF SUP– CASE SU2024-004- YOGA/PILATES STUDIO

Mayor and Council to consider an ordinance for a special use permit for case number SU2024-004.

Owner Realco GA 001, LLC and applicant Brian Howell have requested a special use permit (SUP) to allow for Yoga and Pilates uses in space in excess of 3500 square feet in the central business district.

Per the Unified Development Code, each of those uses would be allowed by right if occupying less than 3500 square feet.

The Planning Commission recommended approval with conditions on October 7, 2024. Staff also recommends approval with conditions. Ordinance and staff report are attached for consideration.

2. ORDINANCE - TEXT AMENDMENT – CASE TA2024-010 -SIGNS

Mayor and Council to consider an ordinance for text amendments to the Unified Development Code that will clarify language as it pertains to signs under case number TA2024-010.

Planning Commission recommended approval on October 7, 2024. Staff also recommends approval. Ordinance and staff report are attached for consideration.

3. ORDINANCE - TEXT AMENDMENT – CASE TA2024-011 - PARKING

Mayor and Council to consider and ordinance for text amendments to the Unified Development Code that will clarify language as it pertains to parking for case number TA2024-011.

Planning Commission recommended approval on October 7, 2024. Staff also recommends approval. Ordinance and staff report are attached for consideration.

4. ORDINANCE – TEXT AMENDMENT - CASE TA2024-012- RR LAND USE

Mayor and Council to consider an ordinance for text amendments to the Unified Development Code that will clarify language as it pertains to land use for railroads for case number TA2024-012.

Planning Commission recommended approval on October 7, 2024. Staff also recommends approval. Ordinance and staff report are attached for consideration.

5. ORDINANCE – TEXT AMENDMENT CASE TA2024-013 ZONING

Mayor and Council to consider an ordinance for text amendments to the Unified Development Code that will clarify language as it pertains to zoning interpretations for case number TA2024-013.

Planning Commission recommended approval on October 7, 2024. Staff also recommends approval. Ordinance and staff report are attached for consideration.

6. ORDINANCE – TEXT AMEND CASE TA2024-014 HOME OCCUPATIONS

Mayor and Council to consider an ordinance for text amendments to the Unified Development Code that will clarify language as it pertains to home occupation for residential accessory uses for case number TA2024-014.

Planning Commission recommended approval on October 7, 2024. Staff also recommends approval.

7. ORDINANCE – TEXT AMENDMENT CASE TA2024-015 - EASEMENTS

Mayor and Council to consider an ordinance for text amendments to the Unified Development Code that will clarify language as it pertains to plantings in a drainage easement for case number TA2024-015.

Planning Commission recommended approval on October 7, 2024. Staff also recommends approval. Ordinance and staff report are attached for consideration.

8. ORDINANCE OF REZONING – CASE Z2024-003 – RR PROPERTY

Mayor and Council to consider an ordinance to rezone all railroad right-of-way and property within the city limits owned by Norfolk Southern under case Z2024-003.

The City is the applicant, requesting all railroad owned right of way and property be rezoned from current zoning, which varies throughout the City, to a consistent zoning of M-1 Light Industrial District.

Planning Commission recommended approval on October 7, 2024. Staff also recommends approval. Ordinance and staff report are attached for consideration.

VII. NEW BUSINESS

1. AWARD OF BID/AMEND FY25 BUDGET – PUBLIC SAFETY HVAC

The Mayor and Council to consider awarding a contract for the Public Safety HVAC and AHU Replacement.

The HVAC Systems at the Public Safety Building are original to the building and circa 2005. Accordingly, staff published a Request for Proposal (RFP) for replacement of the systems. Staff received two responses, and following an evaluation by an outside consultant it was determined there was only one responsive proposer. Accordingly, staff is recommending that the contract be awarded to John F. Pennebaker Co in the amount of \$ 996,655. Given the complexity of the system staff is also recommending that a budget amendment in the amount of \$996,655 with 20% contingency for a total amount of \$ 1,195,986 be approved.

Additionally, staff is requesting approval of a budget amendment BA-FY25-13 to add \$1,195,986 in unallocated 2023 SPLOST Public Safety funds to Police Capital Projects - Police - Buildings line item, including associated transfers.

2. AUTHORIZATION FOR IGA – DOVER DRIVE SPEED HUMPS

At discussed at the August 26 work session, Gwinnett County has been asked by several citizens to install speed humps on Dover Drive. Dover Drive is along the edge of the Duluth city limit, and the speed humps would affect city residents in the Bromley Rowe neighborhood. Once an intergovernmental agreement (IGA) is signed, the County will circulate a petition among the financially affected properties. Four Duluth incorporated properties would be required to pay \$12/year to Gwinnett County for the speed hump installation and maintenance if the County's petition for speed humps gets enough support. Those four will have an opportunity to review and sign the petition as well.

Approval of the IGA allows Gwinnett County to move forward with their process which may or may not result in speed humps on Dover Drive. Denial of the IGA prohibits the County from determining level of interest in speed humps and keeps them from being able to install them in this location. Staff is requesting Council approve the IGA to allow the County to move forward with their process to assist the citizens of that area with traffic calming, if the citizens so desire.

VIII. MATTERS FROM DEPT HEADS/CITY ATTORNEY

1. ORDINANCE TO AMEND BUDGET - STORMWATER ASST

At the September 23 work session, Council agreed to move forward with the hiring of a stormwater assistant to allow for more staffing capacity in the stormwater department. This position will be fully funded by stormwater utility revenues.

Staff is requesting approval of a budget amendment BA-FY25-14 to add \$89,929 in salary, taxes and benefits to the following line item in the Stormwater Utility - Stormwater Collection & Disposal budget: \$49,816 Salary & Wages line item, \$479 Overtime line item, \$3,850 FICA Tax line item, \$30,754 Group Insurance line item, and \$5,030 Retirement Contribution/Pension line item.

IX. MATTERS FROM MAYOR & COUNCIL

X. MATTERS FROM CITY MANAGER

XI. EXECUTIVE SESSION (if necessary)

It may be necessary to hold an executive session on Real Estate, Pending/Potential Litigation, or Personnel, which is properly excluded from the Georgia Open and Public Meeting Law (O.C.G.A. 50-14).

XII. ADJOURNMENT

The next scheduled meeting of the Mayor and Council is a work session for October 28, 2024 at 5:30 p.m.



**DRAFT MINUTES OF THE
MAYOR AND COUNCIL
CITY OF DULUTH, GA
SEPTEMBER 9, 2024**

PRESENT: Mayor Whitlock, Council members Harkness, Thomas, Doss, Graeder, and Holloway, City Manager, Asst. City Managers, Department Directors, City Attorney

A work session was held prior to the regular scheduled meeting to allow the elected officials to discuss this evening's agenda items. No other items were discussed, and no action was taken.

Mayor Whitlock called the meeting to order at 5:45 p.m. and called for a motion to adjourn into an Executive Session.

I. EXECUTIVE SESSION

It was necessary to hold an executive session on Real Estate, Pending/Potential Litigation, or Personnel, which is properly excluded from the Georgia Open and Public Meeting Law (O.C.G.A. 50-14).

A motion was made by Councilmember Harkness, seconded by Councilmember Thomas, to adjourn to executive session at 5:45 p.m.

**Voting for: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.**

After the discussion, a motion was made by Councilmember Graeder, seconded by Councilmember Thomas, to return to regular session at 5:55 p.m.

**Voting for: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.**

MOMENT OF SILENCE

Mayor Whitlock called for a Moment of Silence and asked that everyone remember the families of the victims and all those affected by the tragic school shooting at Apalachee High School.

PLEDGE OF ALLEGIANCE

II. APPROVAL OF MEETING AGENDA

A motion was made by Councilmember Harkness, seconded by Councilmember Doss, to approve the September 9, 2024 Council Agenda as presented.

**Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.**

III. APPROVAL OF MINUTES

A motion was made by Councilmember Graeder, seconded by Councilmember Holloway, to approve the August 12 and 26, 2024 meeting minutes “as presented.

**Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.**

IV. ANNOUNCEMENTS

1. UPCOMING EVENTS – www.duluthga.net/events

Duluth Live every Thursday, Friday, Saturday (6-9pm) and Sunday (2-5pm) through October. Enjoy live music and various street performers in Parsons Alley and the Activity Lawn.

Duluth Farmers & Artisan Market every second and fourth Sunday April through October. 2-5pm, Town Green. Shop local vendors at the Duluth Farmers Market in Downtown Duluth! Live music, themed photo-ops and free kid’s activities in Parsons Alley.

Fall Festival Concert featuring *Guardians of the Jukebox*, Saturday, September 14, Town Green and Amphitheater. 6:30pm Opening act and 8pm for Guardians. Join us for a night of fun and good music. Bring your lawn chairs and picnic or enjoy food from our food vendors and Duluth restaurants.

S'mores N Shores, September 21-22, 6pm. Rogers Bridge Park. This family-friendly event is the perfect introduction to camping; you get to enjoy the new park and sleep under the stars while having easy access to amenities. Bring your camping gear (tent, sleeping bags, pillows, etc.) and we provide everything else! Free activities will include glow-in-the-dark crafts, s'mores, campfires, live music, games, and more!

Duluth Fall Festival

September 28-29. Downtown Duluth - Saturday, 9am-7pm; Sunday, 9am-5pm. Enjoy shopping, food, music and other entertainment. For more information visit www.duluthfallfestival.org.

V. CEREMONIAL MATTER

1. PROCLAMATION – “GEORGIA READS” DAY {A}

Mayor Whitlock proclaimed September 30th as “Georgia Reads Day” in the City of Duluth. The Georgia Municipal Association and its nonprofit, Georgia City Solutions, along with Malcolm Mitchell of the Share the Magic Foundation, have partnered with the Georgia Council on Literacy to promote a new “Georgia Reads” initiative.

The purpose of Georgia Reads is to raise awareness of the need to improve reading skills in all age groups, encourage activities to increase literacy rates and recognize community partnerships that are actively contributing to a more literate Georgia. The initiative will be officially launched on September 30.

Councilmember Harkness read the Proclamation.

VI. MATTERS FROM CITIZENS

Dr. Arlene Beckles of 5680 Chatham Circle, Norcross, GA came forward to introduce herself as the new State Representative-Elect for District 96.

Cole Saulsberry of 4559 Sean Court, Intern wanting to learn more about the operation of the city and the field of urban planning.

VII. CONSENT AGENDA

1. ORDINANCE TO AMEND BUDGET - \$21,501 – VEHICLES {B}

Approval if this item authorizes ordinance BA-FY25-05 to amend the FY25 budget. Recently, the Police Department sold three (3) vehicles, chairs and a drone at auction, after commission and fees the City received \$21,501. Staff is requesting \$21,501 be added to Police Vehicles - Consolidated Vehicle Maintenance - Vehicle line item, including associated transfers.

2. ORDINANCE TO AMEND BUDGET - \$1,000,000 –STORMWATER {C}

At the August 26th council work session, staff updated council on the condition of various City maintained detention ponds. The City is responsible for the maintenance of 17 detention ponds, with conditions ranging from in compliance

and only needing annual maintenance, to others requiring minor to significant repairs. Staff requested a transfer of \$1,000,000 from the General Fund to the Stormwater Utility Fund to address both repairs to the overall stormwater system in the amount of \$850,000 and \$150,000 for repairs to the Public Works and Public Safety detention pond. Staff will continue to research the cost and funding for the repairs to other detention ponds and provide an update to council. Approval of this item authorizes ordinance BA-FY25-06 to amend the FY25 budget as presented.

3. AUTHORIZATION FOR CONTRACTS–RED CLAY THEATRE {D,E}

Red Clay Theatre operator Eddie Owen received several quotes for installation of new carpet and seats at the Red Clay Theatre. The attached contract with M & M Interior Solutions will include replacement of carpet and installation of Sauder seats within the theatre. Approval of this item authorizes the Mayor or City Manager to execute the contract.

In addition, staff is requesting funding of \$110,814 in unallocated 2023 SPLOST Cultural Facilities to replace the carpet and seating, painting and hiring SOGO Studio to redesign the lobby. Approval of this item approves BA-FY25-07 to added \$10,000 in unallocated 2023 SPLOST Cultural Facilities funds to (CA-10) Red Clay Theatre - Special Recreational Facilities - Professional Services line item and \$100,814 in unallocated 2023 SPLOST Cultural Facilities funds to Red Clay Theatre - Special Recreational Facilities - Site Improvements line item, including associated transfers.

4. APPROVAL OF HAZARD MITIGATION PLAN {F}

As discussed at the August 26, 2024 work session, Gwinnett County has requested the city update our section in the County's Hazard Mitigation Plan and adopt it by resolution. Approval of this item approves R2024-11 as presented.

A motion was made by Councilmember Doss, seconded by Councilmember Thomas, to approve the Consent Agenda as presented.

**Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.**

VIII. PUBLIC HEARING

1. ORDINANCE TO AMEND DULUTH CODE – CHAPTER 7 {G}

Mayor Whitlock opened the public hearing to consider an ordinance to amend the Duluth Code regarding licensing and business regulations.

Asst. City Manager/City Clerk Teresa Lynn summarized the proposed changes.

Article 1., Section 7-25-11 -Collection of Tax by Operator, deleting language 7-25-11 and replacing it with language to meet new State Laws addressing the types of occupations and professions subject to regulatory fees and occupation taxes.

Article 1., Section 7-25-9 Occupation tax registration certificate not transferrable. The amendment sets requirements for ownership changes for business operators and alcohol licensees.

Article VI., Section 7-156. Insurers License Fees - adding definitions for clarification.

Article X., Section 7-359(a) Solicitors – increase permit fees from \$15.00 to \$25.00 to cover supplies, materials, and processing fees.

Article XIX – Section 7-804. Collection of tax by operator. Deleting incorrect section numbering and replacing it with correct numbering.

Mayor to call for discussion from Council. There being none, Mayor Whitlock called for questions/comments from the public.

There being no further comments or questions, Mayor Whitlock closed the public hearing and called for a motion.

A motion was made by Councilmember Thomas, seconded by Councilmember Graeder, to approve ordinance O2024-33 to amend the Duluth Code as presented.

Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.

IX. OLD BUSINESS

1. ORDINANCE TO AMEND THE UNIFIED DEVELOPMENT CODE – LIGHTING

{H}

The Mayor and Council considered an ordinance to revise section 303 of the Unified Development Code. As the Unified Development Code (UDC) is currently written, a lot which is comprised of one single-family dwelling is exempt from the Outdoor Lighting Standards as set forth in Section 303.

Staff recommended that lots comprised of one single-family dwelling be regulated through Section 303. Outdoor Lighting Standards. This includes those single-family dwellings within the HRD (Historic Residential District).

Planning Commission recommended approval of these the original text amendments on August 5, 2024. A public hearing was held at the August 12th

Council meeting, and council postponed this item and directed staff to amend some of the language, so as not to impede on holiday lights.

Being no further discussion, Mayor Whitlock called for a motion.

A motion was made by Councilmember Harkness, seconded by Councilmember Doss, to approve ordinance O2024-36 to amend the UDC as presented.

Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.

X. NEW BUSINESS

1. AUTHORIZATION FOR AGREEMENT – VISION OUTDOOR MEDIA {I}

The Mayor and Council considered a settlement agreement which mutually releases and settles legal disputes between the City of Duluth and Vision Outdoor Media, LLC relating to the right to build, operate, or modify up to three (3) signs allowed pursuant to this agreement.

Being no further discussion, Mayor Whitlock called for a motion.

A motion was made by Councilmember Thomas, seconded by Councilmember Holloway, to approve the settlement and release agreement with Vision Outdoor Media, LLC and authorize the mayor to execute the document as presented.

Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.

2. RESOLUTION – MORATORIUM ON ACCEPTANCE OF SIGN APPLICATIONS {J}

The Mayor and Council considered approval of a resolution to set a 60 day moratorium on acceptance of applications for large signs (signs exceeding 32 square feet in size), in order to allow the City to expeditiously undertake a review of the City's Unified Development Code (Sign Regulations), Zoning Map, and other sections of the Unified Development Code that may be necessary to ensure consistency with any proposed changes.

Being no further discussion, Mayor Whitlock called for a motion.

A motion was made by Councilmember Graeder, seconded by Councilmember Thomas, to approve resolution R2024-12 as presented.

Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.

XI. MATTERS FROM DEPT HEADS/CITY ATTORNEY

1. ORDINANCE TO AMEND FY25 BUDGET - \$269,960 – POLICE EQUIPMENT {K}

Assistant City Manager Ken Sakmar came forward and presented. As part of the upgrades to the real time crime center (RTCC), the Police Department would like to upgrade their drone capabilities. They are proposing the purchase of two new drones and docking stations that will be housed at the public safety facility and dispatched by the RTCC personnel. The new drones are specifically designed for police operations and will eliminate the practice of an officer on each shift carrying a drone in his vehicle. The start-up cost of the new system is \$84,000 in year one, with ongoing support in subsequent years, which will be offset by the elimination of the support agreement for the Virtual Reality Shooting Simulator.

Additionally, the Police Department is requesting funding to complete the replacement of officer in car laptops. This requires the purchase of 32 laptops at a cost of \$160,571 and laptop car mounts at a cost of \$25,390, for a total cost of \$185,961.

The Police Department is requesting approval of a budget amendment in the amount of \$269,961 for these purchases. The purchases will be funded by Public Safety 2017 SPLOST and 2023 SPLOST. Staff is requesting approval of a budget amendment (BA-FY25-09) to add \$185,961 in unallocated 2017 SPLOST Public Safety funds to (PD-20) SPLOST Vehicles - Police - Consolidated Vehicle Maintenance - Vehicles line item, including associated transfers and to add \$14,040 in unallocated 2017 SPLOST Public Safety funds and \$69,960 in unallocated 2023 SPLOST Public Safety funds to Police Capital Projects - Police - Police Equipment line item, including associated transfers.

Councilmember Thomas asked if the cost of additional drone training and certification are included in the request, and also if the laptops are on a cycle for replacement.

Robert Montgomery said the drone training is included in the price, and tablets are bought all at the same time for the ease of updating the same version at each time.

Councilmember Graeder asked that a demonstration be scheduled for the Council once in place. He had questions about how the support expenses would be offset by the support payment for the Virtual Reality simulator.

Chief Carruth responded they have upgraded the IVR to something smaller and more updated, which is not as costly to support.

Mayor Whitlock asked about insurance on the drones, as they are treated as aircraft.

Mr. Sakmar responded that there is a separate insurance policy for drone coverage.

A motion was made by Councilmember Thomas, seconded by Councilmember Harkness, to approve ordinance BA-FY25-09 as presented.

Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.

2. ORDINANCE TO AMEND FY25 BUDGET - \$37,045 – PARK FACILITIES

{L}

Asst. City Manager Ken Sakmar presented. The Parks and Recreation Department is seeking funds to investigate the conversion of the storage building adjacent to Taylor Park to an expanded restroom building. In addition, they are also seeking funds to replace the current access control system at the Scott Hudgens Park Restroom/Concession Building. The original system has failed and must be replaced.

Staff is requesting funding of \$37,045 in unallocated 2017 SPLOST Recreation Facilities funds to develop a feasibility study and concept plan and to replace the access control system at Scott Hudgens Park restroom/concession building. Approval of this item approves BA-FY25-08 to add \$25,000 in unallocated 2017 SPLOST Recreational Facilities funds to Taylor Park Improvements - Park Areas - Professional Services line item and \$12,045 in unallocated 2017 SPLOST Recreational Facilities funds to (PK-27) S. Hudgens Park Restroom/Concession - Park Areas - Buildings line item, including associated transfers.

Being no further discussion, Mayor Whitlock called for a motion.

A motion was made by Councilmember Doss, seconded by Councilmember Graeder, to approve ordinance BA-FY25-08 as presented.

Voted For: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.

XII. MATTERS FROM MAYOR & COUNCIL

- Councilmember Holloway noted that the Mission Church recently painted.
- Mayor Whitlock announced the new restaurant “Spice House of Duluth” recently opened.
- Mayor Whitlock reported:
 - He received a letter from the Georgia Department of Transportation announcing they had submitted the Rogers Bridge Project to competition and the project was chosen to compete on a national level and will receive an award.

- The Student Lead Class met at Bunten Park, and their next meeting is scheduled to be held at the Duluth Police Department. They have a project to present at the November work session.
- The new Mayor and City Manager's Administrative Assistant will start on Monday, September 16th.
- He met with the new DHS principal who committed to ensure that reinforcement at school has influence on the behavior of the kids in the downtown.
- Councilmember Thomas attended the Rainbow Village Gala and spoke about the different programs being offered by Rainbow Village which is beneficial to those seeking help.
- Councilmember Graeder announced the two new electric charging stations now in the city. One located in the parking deck, and one installed by the railroad tracks.

XIII. ADJOURNMENT

A motion was made by Councilmember Thomas, seconded by Councilmember Holloway, to adjourn at 6:40 pm.

Voting for: Council members Harkness, Thomas, Doss, Graeder, and Holloway
Motion carried.

The next scheduled meeting of the Mayor and Council is a work session for September 23, 2024, at 5:30 p.m.

KM 9/10/24



**WORK SESSION NOTES
MAYOR AND COUNCIL
CITY OF DULUTH, GA
SEPTEMBER 23, 2024**

PRESENT: Mayor Whitlock, Council members Harkness, Doss, Graeder, and Holloway, City Manager, Asst. City Managers, Department Directors, City Attorney

ABSENT: Councilmember Thomas

Mayor Whitlock called the meeting to order at 5:30pm

I. PUBLIC COMMENTS

No comments.

II. DISCUSSION ITEMS/PRESENTATIONS/UPDATES

1. PARKS & RECREATION UPDATE

{A}

Parks & Recreation Director Kathy Marelle introduced Recreation Program Coordinator Will Marvel to present the annual program report for 2024. He highlighted the seasonal sports, summer programs, educational and holiday/annual offerings, geared for all segments of the community. This is accomplished both by city instructors and by third parties utilizing park amenities

Ms. Marelle further discussed how they determine what is essential to our community, to gauge what activities are most successful, and what trends they anticipate for the future. She discussed park facilities, other activity schedules, and discussed challenges and park usage.

2. RED CLAY THEATRE CARPET & SEAT UPDATE

City Manager James Riker explained the request. At the last Council meeting, M&M Interior Solutions was awarded the contract to install carpet and seats at the Red Clay Theatre. M&M has since informed the city that they are not able to fulfill the contract.

Accordingly, Eddie Owen reached out to Solid Rock Furniture to see if they would still be interested in providing the carpet and seats. Solid Rock was the only other bidder that submitted a combined proposal for carpet and seats. Solid Rock responded with an updated price, and as a result, staff recommends that a contract be placed on the next agenda awarding installation of carpet and seats to them. The contract amount is within the budget amendment previously approved by council.

Mr. Riker noted that several options for the design improvements will be presented and brought back to council for final approval.

Staff was authorized to place this item on the next council meeting consent agenda for approval.

3. HALL CIRCLE TRANSPORTATION UPDATE

{B}

Community Development/Engineering Director Margie Pozin came forward to present. She explained that Staff has been moving forward with a plan to transition the streets within the Hall Circle Community to one-way operation, except for Fox Street, which will remain two-way traffic.

As developers approach staff with opportunities to redevelop the Hall Circle area, staff is alerting them to the change in roadway operations. For the project to be successful and comprehensive, the change must be made prior to the first redevelopment completion.

Ms. Pozin showed maps of each area, noting that each developer is required to build their section of curb/gutter, sidewalk, and provide on-street parking, which may require them to add a small section of asphalt width to the street. All of this will then be dedicated to the city/public for use and maintenance within the public right-of-way. Once a critical mass of infrastructure is in, the city will need to go back and install street lighting, as appropriate.

Council confirmed the project is moving forward with this design

4. HUDGENS PROPERTY – SMALL AREA PLAN

{C}

At the June 2024 strategic retreat, council prioritized the development of an updated “small area plan” for the Hudgens property, bounded by Pleasant Hill Road, Peachtree Industrial Blvd, Howell Springs Drive, and McClure Bridge Road.

Since that time, staff and the mayor have met with representatives from the Hudgens Foundation to discuss potential future development and to exchange ideas on how that property should be handled at the appropriate time.

Community Development/Engineering Deputy Director Aron Hall came forward to present. He outlined the plan history and philosophy and showed examples of communities and districts in GA and TN that could be modeled after. He also addressed the infrastructure designs and components, as well as height and massing and density of buildings and residences.

The current version of the subject property in the 2040 ForwardDuluth Comp Plan shows this area broken up into 7 distinct sections: commercial, mixed use, large SF lots, small SF lots, unprogrammed park space, medical, and hotel service. The newer plan envisions 4 districts: medical, mixed-use commercial, mixed-use residential/park district, and residential. He detailed each one and highlighted the primary uses for each.

Council discussed the needs as well as the proposed housing balance. All liked the concept as presented.

Staff was directed to refine the plan and meet with Hudgens group again, moving forward with updating the Comprehensive Plan and reporting back to council.

5. STRATEGIC WORK SESSION UPDATE

{D}

City Manager James Riker presented a summary update on action items for the strategic work session initiatives determined during the June 2024 meeting. Items for discussion were:

- 1) Medical Character Area
- 2) Strategic Housing
- 3) Buford Highway (beautification, safety)
- 4) Shopping Centers
- 5) Walkability
- 6) Public Art
- 7) Downtown (daytime population)
- 8) Jobs/Employment

Other comments were addressed regarding infill housing, code enforcement, annexation, transit, gateway signage, and the Hudgens property.

6. PLANNING COMMISSION VACANCY - CHAIR

Ray Williams has served as the Chair of the Planning Commission for several years. He recently told staff he is retiring and moving away; October will be his last month serving on Planning Commission.

Staff reported that current Vice Chair Alana Moss has agreed to step in as the new Planning Commission Chair, whose service in that role will begin officially at their November 4th meeting.

Staff was authorized to place this item on the next Council agenda for approval.

7. POSITION REQUEST – STORMWATER ASSISTANT

With an increase in workload, visibility, and expectation for project completion, staff is challenged to keep up with the administrative needs of the program. Current staff includes one full-time program/project manager, one full-time administrator, one part-time grant writer, and one part-time GIS specialist. Engineering staff is on-call to the stormwater group for technical assistance as needed.

The stormwater group requested consideration for expanding staff by one full-time position, for a stormwater assistant. This person will assist the project manager and the program administrator with invoices, correspondence, regulatory reporting, audits, meetings, public education, billing/collections, various stormwater related research, easement and right of entry acquisition, citizen calls and inquiries, and general administrative actions. If time permits, this person will handle administrative inspections such as Highly Visible Pollutant Source (HVPS) and/or Industrial inspections.

Staff was authorized to place a budget amendment on a future council agenda for authorization.

8. INTERGOVERNMENTAL AGREEMENT W/DDA – GARDEN CLUB

Economic Development Director Chris McGahee came forward to present. The Garden Club of Duluth would like to assist in improving and maintaining certain planting beds and planting containers in and around downtown and the Town Green. The mechanism for implementation is a proposed intergovernmental agreement (IGA) between the Downtown Development Authority (DDA) of Duluth and the City of Duluth. DDA will provide funding and guidance. The IGA allows the Garden Club to perform projects on city-owned property through the DDA. Final approval of all projects will fall under the City Manager. This initiative will be DDA funded.

Staff was authorized to place this item on the next council agenda for approval.

III. MATTERS FROM MAYOR & COUNCIL

- Fall Festival: Parade rain or shine, where to meet
- LEADS class project
- Mayor meeting with large employers
- Comedy at Red Clay report
- Sugar Hill retaining walls - attaching decorative metal. lighting

- Timeline on Abbotts Bridge widening project for DOT
- Ambassador opening due to current employee applying to police academy

IV. ADJOURNMENT

Meeting adjourned at 7:40 pm.

The 5th Monday work session for September 30 has been cancelled. The next scheduled meeting of the Mayor and Council is October 14, 2024, at 6:00 p.m.

ORDINANCE 02024-38
TO AMEND ARTICLE 1 - DIVISION 2 OF THE DULUTH CODE
ALCOHOLIC BEVERAGE REVIEW BOARD

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Municipal Code is hereby amended by deleting in its entirety Chapter 3, Article 1 - Division 2. Alcoholic Beverage Review Board, and replacing said section with the following:

DIVISION 2. - ALCOHOLIC BEVERAGE REVIEW BOARD

Sec. 3-115. Establishment and Membership.

- (a) There is hereby established the Alcoholic Beverage Review Board, composed of five (5) members and two (2) alternates who are nominated by mayor and council.
- (b) Members and alternates of the board shall be residents of the city for at least one (1) year prior to their nomination; however, two (2) members or alternates of the board may be owners or operators of a business located within the city limits of Duluth, for at least one (1) year prior to nomination, provided the business is current in the payment of its city occupational tax and all other payments due to the city.
- (c) In accordance with Sec. 2-49, service on the board shall be limited to three (3) consecutive four (4) year terms and in no event shall a member server for over fourteen (14) consecutive years. Four-year terms shall be staggered when possible.
- (d) Members of the board shall be subject to and comply with the code of ethics found in Chapter 2, article X of this Code.
- (e) Members of the board shall receive compensation in the amount of \$25.00 per meeting.
- (f) Members of the board serve at the pleasure of mayor and council and may be removed and replaced by mayor and council with or without cause at any time.
- (g) Following official appointment of nominees, new members and re-appointed members shall take an oath of office administered by the city municipal court judge or city clerk.
- (h) Following the nomination of each member of the board, each nominee, prior to their final appointment by mayor and council, shall consent to a background investigation to determine their eligibility to serve.

- (i) No board member may be nominated or serve if convicted of any of the following: driving under the influence; any felony or misdemeanor of any state, or of the United States; or of any municipal ordinance, except traffic violations not related to driving under the influence, within a period of ten (10) years immediately prior to nomination or service. The term "conviction" as used in this subsection shall include an adjudication of guilt or a plea of guilty or a plea of nolo contendere or the forfeiture of a bond by a person charged with a crime. Where the violation is for a misdemeanor, forfeiture of a bond, violation of a municipal ordinance, or where there is a plea of nolo contendere, the city clerk may, after investigation, waive such conviction as a disqualification.
- (j) Alternates nominated to serve on the board shall meet all requirements set forth in this article for regular members of the board. Alternates shall be designated as alternate one (1) and alternate two (2) and shall replace regular members of the board, according to numerical sequence, as necessary due to their absence or disqualification as a result of a conflict of interest.

Sec. 3-116. Officers.

- (a) The board shall elect from its membership, by recorded motion, a chair, vice-chair, and secretary to serve a term of one (1) year and shall determine the responsibilities of those officers.
- (b) The chairperson shall preside over all meetings, appoint committees, and perform all duties generally pertaining to the office of the chairperson and as assigned by the board. The vice-chairperson shall perform these duties in the absence of the chairperson and other duties as assigned by the board.
- (c) The secretary, city clerk, or designated staff liaison shall keep all records of the board including minutes of formal proceedings, documenting the vote of each member upon each question, and official actions of the board. These shall be public records and provided to the city clerk office of records management within two (2) business days of the adjournment of a meeting.

Sec. 3-117 Meetings.

- (a) All meetings of the board shall be conducted in accordance with the Georgia Open Meetings Act and any amendments thereto.
- (b) The board shall not meet prior to posting proper notice of all meetings and agendas of those meetings per public notice requirements.
- (c) Meetings shall be held at a location within the corporate city limits of Duluth that is open to the public and accessible to persons with disabilities.
- (d) A majority of the board, three (3) members, shall at all times constitute a quorum.
- (e) Upon absence from three (3) consecutive meetings by any member of the board or committee, members may vote to recommend the removal of that member to mayor and council.

Sec. 3-118 Board responsibilities.

- (a) The board shall be responsible for renewing ordinance(s) related to the sale and consumption of alcohol and making recommendations to mayor and council.
- (b) The board shall have the duty of hearing appeals from decisions of the city clerk denying the issuance or renewal of any license or permit provided for by this article, and to hear appeals from the decision of the city clerk suspending or revoking any such license or permit provided for by this article.

This Ordinance shall become effective _____.

IT IS SO ORDAINED this _____ day of _____ 2024.

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Holloway, Post 5

Those council members voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr./City Clerk

ORDINANCE 02024-47
TO AMEND CHAPTER 2 – ARTICLE XII OF THE DULUTH CODE
PUBLIC ART COMMISSION

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Municipal Code is hereby amended by deleting in its entirety Chapter 2 – Article XII – Public Art Commission, and replacing said section with the following:

ARTICLE XII. – DULUTH PUBLIC ART COMMISSION

Sec. 2-268. Establishment and Membership.

- (a) There is hereby established the Duluth Public Art Commission, composed of six (6) regular members and one (1) member of the mayor and council. At least five (5) of the six (6) regular members shall reside within the city limits of Duluth.
- (b) In accordance with Sec. 2-49, service on commission shall be limited to three (3) consecutive four (4) year terms and in no event shall a member serve for over fourteen (14) consecutive years. Four-year terms shall be staggered when possible.
- (c) Members of the commission shall be subject to and comply with the code of ethics found in Chapter 2, article X of this Code.
- (d) Members of the commission shall serve without compensation or reimbursement for personal expenses, unless specifically approved by the city council.
- (e) Members of the commission serve at the pleasure of mayor and council and may be removed and replaced by mayor and council with or without cause at any time.
- (f) Following official appointment of nominees, new members and re-appointed members shall take an oath of office administered by the city municipal court judge or city clerk.
- (g) The city manager shall designate appropriate staff member(s) as liaisons to provide administrative support, offer input, guidance, procedural support and program management when needed. Those staff members shall serve in a non-voting capacity.

Sec. 2-269. Officers.

- (a) The commission shall elect from its membership, by recorded motion, a chair, and vice-chair and shall determine the responsibilities of those officers.
- (b) The chairperson shall preside over all meetings, appoint committees, and perform all duties generally pertaining to the office of the chairperson and as assigned by the commission. The vice-chairperson shall perform these duties in the absence of the chairperson and other duties as assigned by the commission.
- (c) The city clerk or designated staff liaison shall keep all records of the commission including minutes of formal proceedings, documenting the vote of each member upon each question, and official actions of the commission. These shall be public records and provided to the city clerk office of records management within two (2) business days of the adjournment of a meeting.

Sec. 2-270. Meetings.

- (a) All meetings of the commission shall be conducted in accordance with the Georgia Open Meetings Act and any amendments thereto.
- (b) The commission shall not meet prior to posting proper notice of all meetings and agendas of those meetings per public notice requirements.
- (c) Meetings shall be held at a location within the corporate city limits of Duluth that is open to the public and accessible to persons with disabilities.
- (d) A majority of the commission, four (4) members, shall at all times constitute a quorum.
- (e) Upon absence from three (3) consecutive meetings by any member of the board or committee, members may vote to recommend the removal of that member to mayor and council.

Sec. 2-271. Commission responsibilities.

- (a) To advise on ways in which city government might best serve the public with regards to matters involving the arts.
- (b) To encourage and aid the appreciation and awareness of, and participation in, the arts among all citizens of Duluth.
- (c) To encourage cooperation and coordination among individuals, organizations and institutions concerned with the arts in Duluth.
- (d) To promote and expand the cultural resources thereby facilitating employment for artists and development of self-sustaining art programs.

- (e) To formulate in cooperation with other City agencies a long-range plan for the development of a thriving cultural climate in Duluth.
- (f) *Master plan.* DPAC shall prepare, maintain and update a public art master plan which identifies locations for public art in the city and identifies specific performing arts venues or locations for development thereof.
- (g) *Authorization of expenditures.* The chair of the DPAC or designee and the city manager or city clerk shall be jointly required to authorize expenditures of the Performing Art and Acquisition Fund (PAAF) pursuant to decisions of the DPAC. These expenditures shall be for art acquisition, performances, art education, fund raising and other purposes consistent with the promotion of public and performing art in Duluth.
- (h) *Creation of committees.* As needed DPAC shall have the authority to create a study committee or task force to assist in matters consistent with duties associated with the commission. No committee or task force shall have voting power or authority to obligate funds from the PAAF. The mayor or council representative to DPAC or their designee shall chair any committee or task force.

Sec. 2-272. Performing Arts and Acquisition Fund.

- (a) *Accounting.* The performing art and acquisition fund ("PAAF") shall be a separate, special revenue fund as part of the city's overall fund structure into which public art donations and funding are deposited, transferred and used for the acquisition, commissioning, performance, exhibition and conservation of public art as recommended by DPAC and approved by the city manager or designee. The funds shall be included as part of the city's main operating account for banking purposes.
- (b) *Developer/builder contributions.* The planning and development department shall institute a process whereby prior to the issuance of any development permit, certificate of completion, or certificate of occupancy, the applicant must meet with DPAC representatives. Donations shall not be required, nor shall there be any bias for or against any applicant based on their decision to participate in the art program. The purpose of the meeting shall be for education and awareness of the impact of art on the community and the economy. As part of the development and/or construction process, all applicants with projects in excess of one hundred thousand dollars (\$100,000.00) in value shall be referred to DPAC for the purpose of educating the applicant on opportunities for contribution to the arts as articulated in the city public arts master plan. Developers and builders shall be encouraged by designated members of the DPAC to voluntarily contribute an art project or amount of money equal to the value of one (1) percent of new, non-city initiated, construction or renovation projects, excluding projects that have their own master art plan.

(c) PAAF funds may be authorized for the following purposes:

1. Artist fees and artist travel related to the training, education and performance of art open to the general public;
2. Artist fees and artist travel and expenses that are related to the city's commission or purchase of public art;
3. Purchase of equipment to be used in performing arts;
4. Leasing of equipment and space for education, practice and performance;
5. Studies and planning documents to further the arts;
6. Promotions and marketing of activities associated with educational activities and performances;
7. Fabrication, storage, and installation of a commissioned work of art;
8. Acquisition of existing works of art;
9. Decorative, ornamental or functional elements that are designed by an artist selected specifically for the project and through the processes established in the guidelines, but not by a member of the pre-existing design team working on the related capital project (if applicable);
10. Fees associated with the lease of works of art for temporary display;
11. Required permits and insurance during the fabrication and installation of the public art per contract;
12. Project consultants and contracted services;
13. Curatorial services;
14. Public art planning services;
15. Documentation and interpretive plaques;
16. Publicity for public art projects;
17. Education and outreach, including symposia and special events;
18. Conservation, cleaning and routine maintenance of works in the City of Duluth Public Art Collection; and
19. Expenses associated with art donations/sponsorships.

(d) PAAF may not be used for:

1. Mass produced work, with the exception of limited editions controlled by the artist.
2. Professional graphics, unless designed or executed by an artist or used in the development of collateral material for the city's public art program.
3. Routine maintenance, which is covered under the maintenance fund.
4. City staff costs.

(e) *PAAF annual report.* Each year, the city manager or designee will assist the commission in preparing the public art annual report, which presents a detailed accounting of monies spent or earmarked for future expenditures in the PAAF. The annual report should include the public art projects, related community and educational programs, and art conservation projects that were completed in the previous year, that are ongoing, or that will be initiated during the coming fiscal year. This presentation to city council should fall within the regular annual budget cycle of the city.

This Ordinance shall become effective _____.

IT IS SO ORDAINED this _____ day of _____ 2024.

Those councilmembers voting in favor:

Mayor Greg Whitlock

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Holloway, Post 5

Those council members voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr./City Clerk

ORDINANCE 02024-48
TO AMEND CHAPTER 2 – ARTICLE VI OF THE DULUTH CODE
EMPLOYEE BENEFITS AND AUDIT REVIEW COMMITTEE

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Municipal Code is hereby amended by deleting in its entirety Chapter 2 – Article VI. Employee Benefits and Audit Review Committee, and replacing said section with the following:

ARTICLE VI. – EMPLOYEE BENEFITS AND AUDIT REVIEW COMMITTEE

Sec. 2-96. Establishment and Membership.

- (a) There is hereby established the Employee Benefits and Audit Review Committee composed of the following members:

Two (2) members of mayor and council.

Five (5) citizens and one (1) alternate. These members shall be residents of the city for at least (1) year prior to their nomination; however, one (1) member or alternate of the committee may be an owner or operator of a business located within the city limits of Duluth, for at least one (1) year prior to their nomination, provided the business is current in the payment of its city occupational tax and all other payments due to the city.

Two (2) members of staff, the city's finance director and human resources manager, who shall serve in a non-voting capacity.

- (b) Committee members with backgrounds in employee benefits and/or finance are desirable.
- (c) In accordance with Sec. 2-49, service on the committee shall be limited to three (3) consecutive four (4) year terms and in no event shall a member serve for over fourteen (14) consecutive years. Four-year terms shall be staggered when possible.
- (d) Members of the committee shall be subject to and comply with the code of ethics found in Chapter 2, article X of this Code.
- (e) Members of the committee shall serve without compensation or reimbursement for personal expenses, unless specifically approved by mayor and council.
- (f) Members of the committee serve at the pleasure of mayor and council and may be removed and replaced by mayor and council with or without cause at any time.
- (g) Following official appointment of nominees, new members and re-appointed members shall take an oath of office administered by the city municipal court judge or city clerk.

Sec. 2-97. Officers.

- (a) The committee shall elect from its membership, by recorded motion, a chair and vice-chair and shall determine the responsibilities of those officers.
- (b) The chairperson shall preside over all meetings, appoint committees, and perform all duties generally pertaining to the office of the chairperson and as assigned by the committee. The vice-chairperson shall perform these duties in the absence of the chairperson and other duties as assigned by the committee.
- (c) The city clerk or designated staff liaison shall keep all records of the committee including minutes of formal proceedings, documenting the vote of each member upon each question, and official actions of the committee. These shall be public records and provided to the city clerk office of records management within two (2) business days of the adjournment of a meeting.

Sec. 2-98. Meetings.

- (a) All meetings of the committee shall be conducted in accordance with the Georgia Open Meetings Act and any amendments thereto.
- (b) The committee shall not meet prior to posting proper notice of all meetings and agendas of those meetings per public notice requirements.
- (c) Meetings shall be held at a location within the corporate city limits of Duluth that is open to the public and accessible to persons with disabilities.
- (d) A majority of the committee, four (4) members, shall at all times constitute a quorum.
- (e) Upon absence from three (3) consecutive meetings by any member of the board or committee, members may vote to recommend the removal of that member to mayor and council.
- (f) Members shall meet at least annually to analyze and evaluate employee benefits, compensation, and other related matters.

Sec. 2-99. Committee Responsibilities.

- (a) Members are responsible for making recommendations before the mayor and council as well as reporting the results of the annual audit report.
- (b) The committee shall perform such other duties as may be assigned, or upon request of the governing body.

This Ordinance shall become effective _____.

IT IS SO ORDAINED this _____ day of _____ 2024.

Those councilmembers voting in favor:

Mayor Greg Whitlock

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Holloway, Post 5

Those council members voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr./City Clerk

ORDINANCE 02024-49
TO AMEND CHAPTER 2 – ARTICLE V OF THE DULUTH CODE
PARKS AND RECREATION ADVISORY BOARD

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Municipal Code is hereby amended by deleting in its entirety Chapter 2 Article V. – Parks and Recreation Advisory Board, and replacing said section with the following:

ARTICLE V. - PARKS AND RECREATION ADVISORY BOARD

Sec. 2-87. Establishment and Membership.

- (a) There is hereby established the Parks and Recreation Advisory Board, composed of nine (9) members and one (1) alternate member appointed by mayor and council.
- (b) Nine (9) of the ten (10) members shall reside within the city limits of Duluth for at least one (1) year or shall own and operate a business within the city limits of Duluth for one (1) year prior to nomination, provided the business is current in the payment of its city occupational tax and all other payments due to the city.
- (c) In accordance with Sec. 2-49, service on the board shall be limited to three (3) consecutive four (4) year terms and in no event shall a member serve for over fourteen (14) consecutive years. Four-year terms shall be staggered when possible.
- (d) Members of the board shall be subject to and comply with the code of ethics found in Chapter 2, article X of this Code.
- (e) Members of the board shall serve without compensation or reimbursement for personal expenses, unless specifically approved by mayor and council.
- (f) Members of board serve at the pleasure of mayor and council and may be removed and replaced by mayor and council with or without cause at any time.
- (g) Following official appointment of nominees, new members and re-appointed members shall take an oath of office administered by a city municipal court judge or the city clerk.

Sec. 2-88. Officers.

- (a) The board shall elect from its membership, by recorded motion, a chair, vice-chair, and secretary and shall determine the responsibilities of those officers.
- (b) The chairperson shall preside over all meetings, appoint committees, and perform all duties generally pertaining to the office of the chairperson and as assigned by the board. The vice-chairperson shall perform these duties in the absence of the chairperson and other duties as assigned by the board.
- (c) The secretary, city clerk, or designated staff liaison shall keep all records of the board including minutes of formal proceedings, documenting the vote of each member upon each question, and official actions of the board. These shall be public records and provided to the city clerk office of records management within two (2) business days of the adjournment of a meeting.

Sec. 2-89. Meetings.

- (a) All meetings of the board shall be conducted in accordance with the Georgia Open Meetings Act and any amendments thereto.
- (b) The board shall not meet prior to posting proper notice of all meetings and agendas of those meetings per public notice requirements.
- (c) Meetings shall be held at a location within the corporate city limits of Duluth that is open to the public and accessible to persons with disabilities.
- (d) A majority of the board, five (5) members, shall at all times constitute a quorum.
- (e) The board shall meet regularly the second Wednesday of each month or as scheduled by a majority vote of the board.
- (f) Upon absence from three (3) consecutive meetings by any member of the board or committee, members may vote to recommend the removal of that member to mayor and council.

Sec. 2-90. Board Responsibilities.

- (a) To advise, make recommendations to, and assist the director of parks and recreation and the city officials on recreational and parks matters.
- (b) To seek the development of a broad variety of programs, facilities, and services to meet the total needs and demands utilizing the total resources of the city.
- (c) To prepare and recommend for approval, regulations and policies for proper conduct of public recreation facilities.

- (d) To achieve citizens input in the planning and development of the recreation system and identify local needs.
- (e) To provide a close liaison and coordinate with other agencies, including all municipalities within the county, to ensure total cooperative community effort to provide the most effective and economical services possible.
- (f) To evaluate the organizations, programs, facilities, services, and relationship periodically to assure that its goals and objectives are being achieved.
- (g) To provide encouragement, support and work in partnership with the director of parks and recreation to provide a team approach to addressing concerns.
- (h) To advise, guide and inform the youth athletic associations of the operating procedures and policies of the city parks and recreation department.
- (i) To make provisions for a high standard in the development, preservation, care, and maintenance of the park areas and facilities for the maximum enjoyment and use by the public.
- (j) To guide and advise the director of parks and recreation on the development of park master plans of all city parks for the elected official's approval.

This Ordinance shall become effective _____.

IT IS SO ORDAINED this _____ day of _____ 2024.

Those councilmembers voting in favor:

Mayor Greg Whitlock

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Holloway, Post 5

Those council members voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr./City Clerk

**ORDINANCE 02024-50
TO AMEND CHAPTER 2 – ARTICLE XIV OF THE DULUTH CODE
VETERANS MARKER COMMITTEE**

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Municipal Code is hereby amended by deleting in its entirety Chapter 2 – Article XIV. Veterans Marker Committee, and replacing said section with the following:

ARTICLE XIV. - VETERANS MARKER COMMITTEE

Sec. 2-289. Establishment and Membership.

- (a) There is hereby established the Veterans Marker Committee composed of five (5) members as follows:

One (1) member of mayor and council.

Two (2) citizens of Duluth, Georgia at least one of whom is an active or retired veteran of the Army, Navy, Air Force, Marines or U.S. Coast Guard.

The chairperson of the Planning Commission and the director of the Duluth Public Works department.

- (b) In accordance with Sec. 2-49, such members shall be appointed by the mayor and council and shall be limited to three (3) consecutive four (4) year terms, and in no event shall serve over fourteen (14) consecutive years. Four-year terms shall be staggered when possible.
- (c) Members of the committee shall be subject to and comply with the code of ethics found in Chapter 2, article X of this Code.
- (d) Members of committee shall serve without compensation or reimbursement for personal expenses, unless specifically approved by the city council.
- (e) Members of committee serve at the pleasure of mayor and council and may be removed and replaced by mayor and council with or without cause at any time.
- (f) Following official appointment of nominees, new members and re-appointed members shall take an oath of office administered by the city municipal court judge or city clerk.

Sec. 2-290. Officers.

- (a) The committee shall elect from its membership, by recorded motion, a chair and vice-chair and shall determine the responsibilities of those officers.
- (b) The chairperson shall preside over all meetings, appoint committees, and perform all duties generally pertaining to the office of the chairperson and as assigned by the committee. The vice-chairperson shall perform these duties in the absence of the chairperson and other duties as assigned by the committee.
- (c) The city clerk, or designated staff liaison, shall keep all records of the committee including minutes of formal proceedings, documenting the vote of each member upon each question, and official actions of the committee. These shall be public records and provided to the office of the city clerk office of records management within two (2) business days of the adjournment of a meeting.

Sec. 2-291. Meetings.

- (a) All meetings of the committee shall be conducted in accordance with the Georgia Open Meetings Act and any amendments thereto.
- (b) The committee shall not meet prior to posting proper notice of all meetings and agendas of those meetings per public notice requirements.
- (c) Meetings shall be held at a location within the corporate city limits of Duluth that is open to the public and accessible to persons with disabilities.
- (d) The committee shall meet twice annually.
- (e) A majority of the committee, three (3) members, shall at all times constitute a quorum.
- (f) Upon absence from three (3) consecutive meetings by any member of the board or committee, members may vote to recommend the removal of that member to mayor and council.
- (g) At the discretion of the Veterans Marker Committee applicants may be provided with an opportunity to present testimony at a meeting in support of their application.

Sec. 2-292. - Committee responsibilities.

- (a) The committee is tasked with considering applications for exceptions and exemptions from the City of Duluth's O/I PW-06 governing Veteran's Marker Program. In the event no applications for exemptions are pending, the committee need not convene.
- (b) The veterans marker committee shall grant exceptions or exemptions from O/I PW-06 only where such a decision is consistent with the purpose of the veteran's marker program; the accurate commemoration of U.S. veterans with close ties to the City of Duluth, Georgia.

- (c) Decisions of the veteran marker committee shall be issued in writing and provided to the applicant by U.S. mail within thirty (30) days of the meeting where the exception or exemption is considered.
- (d) All decisions of the veterans marker committee shall be final, and no appeals are authorized.

This Ordinance shall become effective _____.

IT IS SO ORDAINED this _____ day of _____ 2024.

Those councilmembers voting in favor:

Mayor Greg Whitlock

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Holloway, Post 5

Those council members voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr./City Clerk

CONTRACT FOR RED CLAY THEATRE CARPET AND SEATS

THIS AGREEMENT is made this ____ day of _____, 2024 by and between Solid Rock Church Furniture and Design a Georgia corporation located at 1100 Antrim Glen Drive, Hoschton, Georgia 30548 (hereinafter called the "Contractor") and City of Duluth. 3167 Main Street. Duluth Georgia 30096 (hereinafter called the "City"), do mutually agree as follows;

1. Scope and Cost:

Whereas **Contractor** agrees to furnish all labor, supervision, materials, equipment, tools, supplies, disposal, and services necessary to timely and fully perform and complete in a neat, first-class and workmanlike manner and in compliance with the Contract Documents, including the Contractor's Proposal/Bid Quotation, drawings, specifications attached hereto as Exhibit "A" and incorporated herein and t and incorporated herein. Specifically, the Contractor shall provide, deliver and install new theatre seats and flooring as described and shown in the Contract Documents, including removal and disposal of exiting flooring and seating. Costs to provide the above scope of work shall be inclusive of taxes, labor, supervision, disposal, materials, equipment, tools, transportation, and any associated written reports.

2. City Manager

The Project has been initiated by the City and the City Representative for this project is City Manager James Riker, hereinafter referred to as the "City Manager." The City Manager shall act as the City's representative, assume all duties and responsibilities and have the rights and authority assigned to the City in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

3. Contract documents:

3.1- The term "Contract Documents" above includes all portions of the specifications published and or advertised by the City for purposes of soliciting bids for this project. Including; Instructions to Bidders, Request for Qualifications Documents, Addenda, Plans, Drawings, Specifications, General and Special Conditions, Guarantees, Contracts, Unit Pricing, Schedules, and all documents sent in by Contractor in response thereof of such request for qualifications including but not limited to Exhibit A attached hereto.

3.2- Contractor agrees to perform the contract work to the satisfaction of the City. Contractor agrees to provide

and pay for all labor, regardless of craft or jurisdiction, materials, tools, supplies and equipment, except as otherwise provided herein, to perform the work in strict conformity with the contract documents. The parties acknowledge that the installation of the playable art is included in the scope of this contract despite statements in the Contract Documents that the installation will be a separate budgeted item.

4. Project duration.

The duration of the project shall be for a period of not more than six (6) months from the Contractor's receipt of the written notice to proceed and a properly executed agreement by both parties. Both documents of which are part of the official documentation of the said project. Any extension of this time period must be agreed upon by both parties and executed by a written change order.

5. Contract sum and payments:

5.1- The total contracted amount is **NINETY-NINE THOUSAND ONE HUNDRED TWENTY FIVE DOLLARS (\$99,125.00)** which includes **delivery, installation and removal of flooring and seating** in accordance with the contract documents in a neat, first-class and workmanlike manner.

5.2- Payments shall be made in three installments with fifty percent (50%) of the contract price paid by the City upon execution of the contract documents, thirty percent (30%) on day of delivery of seats and the remainder of the contract price paid after all work has been satisfactorily completed after contractor has submitted a final pay request to the City unless contractor is in default.

5.3- Prior to the final payment Contractor will provide an affidavit showing that its labor, materials and other bills have been paid except for retainage amounts remaining to be owed to subcontractors. If it appears that any labor, material or other bills incurred in the performance of the contract work are not being paid, the City may take such steps as it (in its sole discretion) deems necessary to insure that the payments will be utilized to pay such bills.

5.4- Final Payment including shall be made to contractor not later than thirty (30) days after receipt of the Contractor's final written requisition for payment and acceptance of the final completed project.

6. Execution of Work

6.1- The contractor agrees to proceed with execution of contract obligations diligently upon execution of the contract.

6.2- Contractor shall promptly provide the City with any scheduling information requested. City may revise any

schedule, if necessary, as the work progresses.

6.3- Contractor shall cooperate with City and other subcontractors/contractors whose work may interfere with or affect the Contractor's Work.

6.4- Contractor shall give adequate notices pertaining to its work to the proper authorities and shall secure all necessary licenses and permits to carry on its work; a copy to be provided to City by Contractor prior to the start of contract Work.

6.5- Contractor understands that time is of the essence for completion of the project and, because damages will be difficult to ascertain, the parties agree that liquidated damages in the amount of five hundred (\$500.00) per day shall be paid by Contractor for each calendar day that Contractor is in default of completing the work within the agreed-upon time frame.

7. Compliance with Immigration Laws & Regulations

7.1 The Contractor shall be responsible for complying with the GA Security and Immigration Compliance Act of 2006 (O.C.G.A. §13-10-90 & §13-10-91) and the Rules of the GA Department of Labor implementing the GA Security and Immigration Compliance Act of 2006 (Rules 300-10-1-.01 through 300-10-1-.09), commonly known as E-Verify. In accordance with these provisions, the Contractor shall complete attached Exhibit C.

7.2 The Contractor affirms and agrees that it is currently registered and participates in the federal work authorization program to verify information of all new employees pursuant to O.C.G.A. §13-10-91(b).

7.3 The Contractor affirms and agrees that any and all subcontractors that it will use on the above-described project are registered and participate in the federal work authorization program to verify information of all new employees. It is the Contractor's responsibility to submit additional E-Verify affidavits on every subcontractor for this project.

7.4 The failure to abide by the provisions and agreements set forth in this Subsection 7 shall constitute a breach and default of this contract.

8. Insurance

8.1 The Contractor shall provide insurance as follows from the issuance of the Notice to Proceed and continuing through the final payment under this contract:

- a. Workers Compensation Insurance in amounts as required by Georgia law.
- b. Employers Liability Insurance with minimum limits of the greater of \$500,000 per accident/disease or as required by the law of the state of Georgia.
- c. Commercial General Liability Insurance - ISO Form CG 00 01 (10/93) or equivalent Occurrence Policy which will provide primary coverage in the event of any Occurrence Claim, or Suit, with:

aa. Limits of not less than:

- 1) \$2,000, 000 General Aggregate;
- 2) \$2,000, 000 Products - Comp/OPS Aggregate;
- 3) \$1,000, 000 Personal and Advertising Injury;
- 4) \$1,000, 000 Each Occurrence;
- 5) \$50,000 Fire Damage (any one fire); and
- 6) \$5,000 Medical Expense (any one person).

bb. Endorsements attached thereto including the following or their equivalent:

- 1) ISO Form CG 25 03 (10/93), Amendment of Limits of Insurance (Designated Project or Premises), describing the Agreement and specifying limits as shown above.
- 2) ISO Form CG 20 10 (10/93), Additional Insured-- Owners, Lessees, Or Contractors (Form B), naming Owner as additional insureds.

d. Automobile Liability Insurance, with:

1. A minimum limit of \$1,000,000 Combined Single Limit per accident; and
2. Coverage applying to "Any Auto."

8.2 The Contractor shall provide proof of insurance required as set forth above upon execution of this contract and such proof shall be a necessary pre-condition to this agreement.

9. Inspection and Approvals

9.1- Contractor shall notify City and or its representatives when portions of its work are ready for inspection. City shall make reasonable efforts after receiving notice from Contractor, to inspect said scope of work completed. Limitations and or Sizes of such portions of work shall be agreed upon by City and Contractor prior to starting each phase thereof.

9.2- Contractor agrees to 'make right' at no additional cost to City any such portion that is determined by City's representatives to be incomplete within the bounds of the contract. Contractor shall promptly perform any and all punch list work submitted to it by City.

10. Termination

10.1- The City may terminate the contract for failure by the Contractor to comply with the terms and conditions of its contract or failure by the Contractor to correct problems brought to its attention by the City, each of which failures shall constitute a default. In the event of such termination, that Contractor will be paid only those sums due and owing under the contract for performance satisfactorily rendered, subject to offset for damages and

other amounts which are, or which may become, due and owing to the City.

10.2- The City, for its convenience and without cause, may terminate this contract whenever the City determines that such termination is in its best interest after giving ten (10) days written notice of such termination to the Contractor. In the event of a termination for convenience, the City shall pay all amounts due and owing to the Contractor for performance satisfactorily rendered. However, in no event shall the total of all amounts paid to the Contractor exceed the contract price. The Contractor shall not be reimbursed for any profits which may have been anticipated, but which have not been earned up to the date of termination.

11. Disputes/Resolutions

11.1- Any claims or disputes that may arise, including adjustments to compensation or to time of completion, shall be initiated by written notice within five (5) days after either party becomes aware of the claim or issue in dispute. The parties shall have ten (10) days following such written notice to cure or resolve any dispute. Notwithstanding the foregoing, the failure to provide written notice shall not serve as a bar to an action in law or equity for either party.

11.2- The City and Contractor shall make all reasonable efforts to resolve any and all matters of dispute without the involvement of any third party. However, if such efforts are not successful after a thirty (30) day period, then both parties agree to resolve their claims by filing a Complaint in the Superior Court of Gwinnett County, Georgia. The terms of this Agreement shall be integrated and enforced under the Laws of Georgia.

12. Indemnity

12.1- Contractor assumes full liability for any and all damages, death, or injury of any kind to all person(s), whether employees or otherwise, and property arising out of or in any way connected with its work and shall to the fullest extent permitted by law defend, indemnify and hold harmless City, and their respective officers, agents, and employees, (herein referred to as Indemnities), from and against any and all claims, losses, suits, damages, legal costs and expenses and otherwise, arising out of or in any way connected with Contractor's work. If any claim or demand is made against City for any matter enumerated herein, any payment due, or thereafter to become due, to Contractor shall be held by City to cover such losses and expenses.

13. Compliance with Laws and Safety Regulations

13.1- All work, labor, safety rules, services and materials to be furnished by Contractor must strictly comply with all applicable federal, state and local laws, rules, regulations, statutes, ordinances and directives (hereinafter

"Laws") now in force or hereafter in effect. All work, labor, services or materials necessary to comply with said laws will be furnished by Contractor as part of this Contract without any additional compensation.

13.2 Equal Opportunity Agreement: Contractor further agrees to support and abide by the City's Equal Opportunity Pledge and shall a) Not discriminate against any employee or job applicant because of their race, creed, color, sex, marital status or national origin; b) Post a copy of this pledge in a conspicuous place, available to all employees and job applicants; c) Place or cause to be placed a statement in all solicitations or advertisements for job applicants, including subcontractors, that the contractor is an "Equal Opportunity Employer". Contractor indemnifies, and will defend and hold City harmless from and against any and all claims, loss or expense caused directly or indirectly by its failure to fully comply herewith.

14. Interpretation

14.1 This Contract shall be interpreted under the laws of the State of Georgia.

IN WITNESS WHEREOF, the City and Contractor have executed this contract consisting of (7) pages and the Attachments/Exhibits/Statements/Affidavits (If any) on the day and year first above written, by their proper officers or agents, duly authorized in the premises.

16. Amendments

16.1 Any amendments to this contract shall be made in writing and shall not be binding until such amendment is agreed upon and executed by both parties.

16.2 No change orders shall be binding unless reduced to writing and agreed upon by both parties in writing.

[Signatures on following page]

CONTRACTOR:
Solid Rock Church Furniture and Design

By: _____

Printed Name and Title

Federal I.D. Number: _____

Notary Public

In the presence of: _____
Subscribed and sworn to before me
this ____ day of _____, 2024.
My Commission expires: _____
in the County of _____

CITY
(SEAL) **CITY OF DULUTH**

By: _____
James Riker, City Manager
Printed Name and Title

Notary Public

In the presence of: _____
Subscribed and sworn to me
This ____ day of _____, 2024.
My Commission expires: _____
in the County of _____

EXHIBIT A

CONTRACT DOCUMENTS

Bid Quotation from Solid Rock Church Furniture and Design

Quantity 260	Option #1: Description: Theater Seat Chairs: Convention Compact With Arms • (260) Convention Compact 35" over all height w/standard aisle standards w black edge banding with oval footplate; back is standard convention flat style • Seats will be anatomical with gravity lift seat bottom mechanism: 100% seat return - seat dimensions – see drawings • Plastic armrest • Std. Fabric : Many Choices: Absecon Mills: Sherpa/Shire: TBD • Aisle Standard End: Standard w/fabric insert or laminate • Price includes seat number and aisle letter plates for easy identification • Seating layout: Upon onsite Field measurement – drawings will be provided		Amount Total: Grand Total Installed: \$64,407.00 Price includes installation by SRCF and freight
------------------------	---	---	--

- Plastic injection molded Black seat back and black plastic injection seat pan with serpentine springs and cold molded foam
- Price includes cupholder on each seat
- All Metal is to be BLACK
- Allow 90-120 days for delivery from the time fabric is chosen (STD) and contract is executed with required deposit
- **Optional** : Drink cup holder is included in price



Option #2: Removal of old seating and haul off. Our process includes rental of dumpsters and gridding off anchor bolts flush to floor. \$6718.00

\$6718.00

Option #3: New Carpet, Installation, and Demo existing carpet

\$28,000.00

Description – Carpet, Demo, and installation by Solid Rock Church Furniture & Right Touch Interiors

We propose to provide labor to demo existing carpet and provide new carpet and installation. The following areas will be a part of our overall scope of work: **Entire Lobby area including hallway, outside aisle/hallway around the auditorium, steps leading into auditorium, only aisles inside of auditorium, and 11 steps to basement**

We will demo all existing carpet in areas outlined and (Red Clay will provide dumpster for old carpet and debris) and we will provide all new commercial grade standard carpet.

We guarantee all work. All furniture to be moved by Red Clay as agreed upon. Price includes travel to site, demo of existing carpet and preparation of floor surfaces.. We will work with your schedule. Allow 5-7 days for completion.

Grand Total:

\$99,125.00

EXHIBIT C

Georgia Security and Immigration Compliance Act.

Contractor shall comply with the provisions of the Georgia Security and Immigration Compliance Act of 2006 (O.C.G.A. §§ 13-10-90 & 13-10-91) and the Rules of the Georgia Department of Labor implementing the Georgia Security and Immigration Compliance Act of 2006 (Rules 300-10-1-.01 through 300-10-1-.09). Contractor's obligations under this section shall include, but not be limited to the following:

1. **Contractor must initial** one of the sections below:

_____ Contractor has 500 or more employees and has complied with the provisions of the Georgia Security and Immigration Compliance Act of 2006 (O.C.G.A. §§ 13-10-90 & 13-10-91) and the Rules of the Georgia Department of Labor implementing the Georgia Security and Immigration Compliance Act of 2006 (Rules 300-10-1-.01 through 300-10-1-.09).

_____ Contractor has 100 to 499 employees and Contractor warrants that no later than July 1, 2008, Contractor will comply with the provisions of the Georgia Security and Immigration Compliance Act of 2006 (O.C.G.A. §§ 13-10-90 & 13-10-91) and the Rules of the Georgia Department of Labor implementing the Georgia Security and Immigration Compliance Act of 2006 (Rules 300-10-1-.01 through 300-10-1-.09).

_____ Contractor has 99 or fewer employees and Contractor warrants that no later than July 1, 2009, Contractor will comply with the provisions of the Georgia Security and Immigration Compliance Act of 2006 (O.C.G.A. §§ 13-10-90 & 13-10-91) and the Rules of the Georgia Department of Labor implementing the Georgia Security and Immigration Compliance Act of 2006 (Rules 300-10-1-.01 through 300-10-1-.09)

2. Contractor agrees to execute and comply with the Contractor Affidavit and Agreement attached as Exhibit C1.

3. Contractor agrees that in the event any subcontractor is retained to perform any services under this contract the Contractor will insure that the subcontractor will comply with the requirements of the Georgia Security and Immigration Compliance Act of 2006 (O.C.G.A. §§ 13-10-90 & 13-10-91) and the Rules of the Georgia Department of Labor implementing the Georgia Security and Immigration Compliance Act of 2006 (Rules 300-10-1-.01 through 300-10-1-.09). Contractor further agrees to require all subcontractors performing work under this Contract to execute the Subcontractor Affidavit attached as Exhibit C2. Contractor further agrees to maintain records of the Subcontractor Affidavit(s) and to make such Subcontractor Affidavit(s) available for inspection by the City of Duluth at any time.

Exhibit C (1)

CONTRACTOR AFFIDAVIT AND AGREEMENT

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is contracting with the City of Duluth has registered with and is participating in a federal work authorization program [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to this contract with the City of Duluth, contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. 13-10-91 on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the City of Duluth at the time the subcontractor(s) is retained to perform such service.

Employment Eligibility Verification
User Identification Number

By:

Date

Title:

Date

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE
____ DAY OF _____, 2024.

Notary Public
My Commission Expires:

Exhibit C(2)

SUBCONTRACTOR AFFIDAVIT AND AGREEMENT

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. 13-10-91, stating affirmatively that the individual, firm, or corporation which is engaged in the physical performance of services under a contract with Contractor on behalf of the City of Duluth has registered with and is participating in a federal work authorization program [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603], in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

Employment Eligibility Verification
User Identification Number

By: Authorized Officer or Agent
(Subcontractor Name)

Date

Title of Authorized Officer or Agent of Subcontractor

Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE
____ DAY OF _____, 2024.

Notary Public
My Commission Expires:

INTERGOVERNMENTAL AGREEMENT BETWEEN THE CITY OF
DULUTH, GEORGIA AND THE DOWNTOWN DEVELOPMENT
AUTHORITY OF DULUTH, GEORGIA FOR DOWNTOWN
LANDSCAPING SERVICES

This Agreement is hereby entered into between the City of Duluth (hereinafter referred to as "CITY") and the Downtown Development Authority of Duluth, Georgia (hereinafter referred to as "DDA"). This agreement is intended to and shall be construed as an intergovernmental agreement under the provisions of the Constitution of the State of Georgia.

WHEREAS, both parties believe that the downtown landscaping is an asset of the public space requiring additional tending and care commensurate with its value and importance to the greater downtown experience and would benefit from the consistent efforts provided by the local community; and

WHEREAS, the DDA has an interest in improving the appearance of existing landscaping beds which consist of the installation of plants, landscaping, and other aesthetic improvements (herein referred to as "Landscaping") in the downtown Duluth area, bounded on the north by Hill Street, on the east by the city's right-of-way line for Highway 120, on the west by Hardy Street and on the south by the Norfolk Southern railroad tracks; and

WHEREAS, the DDA has an interest in working with local volunteer community groups to carry out such Landscaping projects; an

WHEREAS, the CITY and DDA wish to formalize the relationship between the Parties by setting forth a series of mutual expectations with regard to the installation of small scale landscaping improvements and stewardship of the downtown landscaping;

NOW THEREFORE, in consideration of the mutual covenants, promises and commitments herein, the parties agree as follows:

WITNESSETH

1. The CITY authorizes the DDA to enter into agreements with a list of approved by the City Manager of third-party organizations, contractors, and non-profit community groups for the installation and care of small-scale landscaping improvements on public properties in downtown Duluth. Specifically, the CITY authorizes the DDA to install landscaping improvements in any existing landscaping beds in the publicly owned area bounded on the north by Hill Street, on the east by the city's right-of-way line for Highway 120, on the west by Hardy Street and on the south by the Norfolk Southern railroad tracks after approval from the City Manager;
2. The small-scale landscaping improvements authorized under this agreement shall not include the construction or placement of statues, art, pillars, monuments or any decorative pieces.

3. The CITY will continue to maintain existing landscaping service contracts for the downtown area and will include within such contracts maintenance of the approved small-scale landscaping improvements made by the DDA.
4. DDA will be responsible for the cost of installation of the landscaping improvements installed pursuant to this agreement and may from time to time invite volunteers to perform routine maintenance to supplement the existing landscaping service contracts provided by the CITY.
5. Should the CITY in its sole discretion determine that the Landscaping installed by the DDA would cause hardship to the CITY, then the DDA will remove the Landscaping that was installed by or for the DDA and restore landscaping bed to the standard for all downtown landscaping beds.

GOVERNING LAW

This IGA shall in all respects be governed by, and construed in accordance with, the laws of the State of Georgia.

SIGNATURES

IN WITNESS WHEREOF, the City of Duluth, Georgia and the authorized representative of the Downtown Development Authority of Duluth, Georgia have executed this Understanding on this day of _____, 2024, the effective date of this Agreement.

REPRESENTATIVE OF THE CITY OF DULUTH, GEORGIA

By

(Signature)

By

(Printed Name)

REPRESENTATIVE OF THE DOWNTOWN DEVELOPMENT AUTHORITY OF DULUTH, GEORGIA

By

(Signature)

By

(Printed Name)

**ORDINANCE
TO AMEND THE CITY OF DULUTH
2025 FISCAL YEAR BUDGET**

AN ORDINANCE TO AMEND THE 2025 ANNUAL BUDGET FOR THE CITY OF DULUTH, GEORGIA, IN COMPLIANCE WITH THE LAWS OF THE STATE OF GEORGIA.

THE CITY COUNCIL OF THE CITY OF DULUTH HEREBY ORDAINS, the City of Duluth, Georgia, has previously adopted a budget for the 2025 fiscal year as follows:

Total Revenues:	<u>97,913,746</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>56,174,327</u>
Total Expenditures:	<u>97,913,746</u>

For a balanced budget in compliance with the laws of the State of Georgia.

WHEREAS the City of Duluth Police Department sold a police vehicle, drone and bicycles at auction and after commission and fees received \$9,400; and

WHEREAS in order to continue to maintain a vehicle fleet that is low maintenance and dependable, the Police Department is requesting the \$9,400 be added to the Police Department Vehicle Fund; and

WHEREAS it is requested \$9,400 in General Funds be added to the Police Vehicle – Consolidated Vehicle Maintenance – Vehicles line item, including associated transfers; and

NOW THEREFORE, the City of Duluth 2025 Fiscal Year Budget is amended as follows:

Total Revenues & Prior Yr Reserves	<u>97,923,146</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>56,183,727</u>
Total Expenditures:	<u>97,923,146</u>

IT IS SO ORDAINED this _____ day of _____, 2024.

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa S. Lynn, City Clerk

**ORDINANCE
TO AMEND THE CITY OF DULUTH
2025 FISCAL YEAR BUDGET**

AN ORDINANCE TO AMEND THE 2025 ANNUAL BUDGET FOR THE CITY OF DULUTH, GEORGIA, IN COMPLIANCE WITH THE LAWS OF THE STATE OF GEORGIA.

THE CITY COUNCIL OF THE CITY OF DULUTH HEREBY ORDAINS, the City of Duluth, Georgia, has previously adopted a budget for the 2025 fiscal year as follows:

Total Revenues:	<u>97,933,128</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>56,193,709</u>
Total Expenditures:	<u>97,933,128</u>

For a balanced budget in compliance with the laws of the State of Georgia.

WHEREAS the City of Duluth for connectivity reasons, acquired a permanent sidewalk easement on Fox Street from a property owner, Mr. Chavez to subsequently install a sidewalk; and

WHEREAS the cost of the easement of \$29,000 was paid with existing budgeted project funds which need to be replaced to avoid a shortfall in other existing projects; and

WHEREAS it is requested \$29,000 in unallocated 2023 SPLOST Transportation funds be added to the Transportation/Infrastructure Improvements – Paved Streets – Repairs & Maintenance of Streets/Sidewalks line item, including associated transfers; and

NOW THEREFORE, the City of Duluth 2025 Fiscal Year Budget is amended as follows:

Total Revenues & Prior Yr Reserves	<u>97,962,128</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>56,222,709</u>
Total Expenditures:	<u>97,962,128</u>

IT IS SO ORDAINED this _____ day of _____, **2024.**

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa S. Lynn, City Clerk

**ORDINANCE
TO AMEND THE CITY OF DULUTH
2025 FISCAL YEAR BUDGET**

AN ORDINANCE TO AMEND THE 2025 ANNUAL BUDGET FOR THE CITY OF DULUTH, GEORGIA, IN COMPLIANCE WITH THE LAWS OF THE STATE OF GEORGIA.

THE CITY COUNCIL OF THE CITY OF DULUTH HEREBY ORDAINS, the City of Duluth, Georgia, has previously adopted a budget for the 2025 fiscal year as follows:

Total Revenues:	<u>97,923,146</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>56,183,727</u>
Total Expenditures:	<u>97,923,146</u>

For a balanced budget in compliance with the laws of the State of Georgia.

WHEREAS the City of Duluth is constructing a sanitary sewer line in the Hill community and needs to acquire an additional temporary easement from Mount Carmel Church for \$15,000; and

WHEREAS the project has remaining funds of \$5,018.56 to use to offset part of the cost for this acquisition and therefore will only need an additional \$9,982 to acquire the necessary temporary easement; and

WHEREAS it is requested \$9,982 in American Rescue Plan Act funds be added to the American Rescue Plan Act 2021 – New Sewer Services – Land line item; and

NOW THEREFORE, the City of Duluth 2025 Fiscal Year Budget is amended as follows:

Total Revenues & Prior Yr Reserves	<u>97,933,128</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>56,193,709</u>
Total Expenditures:	<u>97,933,128</u>

IT IS SO ORDAINED this _____ day of _____, **2024**.

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa S. Lynn, City Clerk

**ORDINANCE OF REZONING
02024-39
CITY OF DULUTH**

AN ORDINANCE GRANTING SPECIAL USE APPROVAL TO OPERATE A YOGA AND PILATES STUDIO IN THE CBD (CENTRAL BUSINESS DISTRICT) ZONING DISTRICT LOCATED ON A ± .77 ACRE PROPERTY IN LAND LOT 293 OF THE 6TH DISTRICT, GWINNETT COUNTY CONSISTING OF TAX PARCEL R6293 038 ADDRESSED AS 3150-3160 MAIN STREET, DULUTH, GEORGIA 30096. THE PROPERTY, GENERALLY KNOWN AS “3150-3160 MAIN STREET”, IS LEGALLY DESCRIBED ON THE ATTACHED EXHIBIT “B”. THE ORDINANCE PROVIDES FOR FINDINGS, ESTABLISHES CONDITIONS OF APPROVAL AS SHOWN ON ATTACHED EXHIBIT “C”, PROVIDES FOR SEVERABILITY, REPEALS CONFLICTING ORDINANCES, ESTABLISHES AN EFFECTIVE DATE, AND IS FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, the applicant, Brian Howell has filed a complete application (SU2024-004) with the City of Duluth seeking Special Use approval to operate a Yoga and Pilate Studio in the CBD (Central Business District) zoning district; and

WHEREAS, per Article 11 of the Duluth Unified Development Code, a Special Use must be approved by the Governing Body; and

WHEREAS, the City of Duluth Planning Commission held a public hearing at the meeting of October 7, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post, regarding the application. At the October 7, 2024 meeting, the Planning Commission recommended recommendation with conditions as is set forth in the minutes of said meeting; and

WHEREAS, the City Council held a public hearing at the meeting of October 14, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post, regarding said application, as shall be set forth in the minutes of said meeting.

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Unified Development Code is hereby amended as follows:

SECTION 1. FINDINGS.

Pursuant to Article 11 of the Duluth Unified Development Code, the City Council finds that it is appropriate to grant special use approval to the property, for the following reasons:

- A. The special use is suitable given the use and development of adjacent and nearby properties.
- B. The proposed special use is not anticipated to adversely affect the existing use or usability of adjoining or nearby properties.
- C. The proposed special use is not anticipated to cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.

D. The Future Land-Use and Development section and supporting Character Area Map of FORWARDuluth (also known as the Comprehensive Plan, 2045) identifies the Character Area of this property as the Downtown Core. Special Use approval to operate a Yoga and Pilates Studio in the CBD (Central Business District) zoning district is consistent with the spirit and intent of the Comprehensive Plan.

SECTION 2. LEGAL DESCRIPTION.

The property that is subject to this ordinance consists of ±0.77 acres and is legally described on Exhibit “A”, attached hereto. Said Exhibit is incorporated by reference as if fully set forth herein.

SECTION 3. SEVERABILITY.

Should any section or provision of this Ordinance or any Ordinance pertaining to the companion applications as identified above be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 4. EFFECTIVE DATE.

The effective date of this Ordinance shall be upon approval by the City Council of the City of Duluth, Georgia.

SECTION 5. REPEALER.

All conflicting ordinances and conditions are hereby repealed and replaced with the conditions of approval set forth in this Ordinance 02024-39.

ATTACHMENTS:

Exhibit “A”: Maps

Exhibit “B”: Legal Description

Exhibit “C”: Conditions of Approval

Exhibit “D”: Applicant’s Responses to the Standards Governing Special Use Consideration

Exhibit “E”: Public Notice

{Signatures on the following page}

IT IS SO ORDAINED this _____ day of _____ 2024.

Those councilmembers voting in favor:

Mayor Greg Whitlock

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr/City Clerk

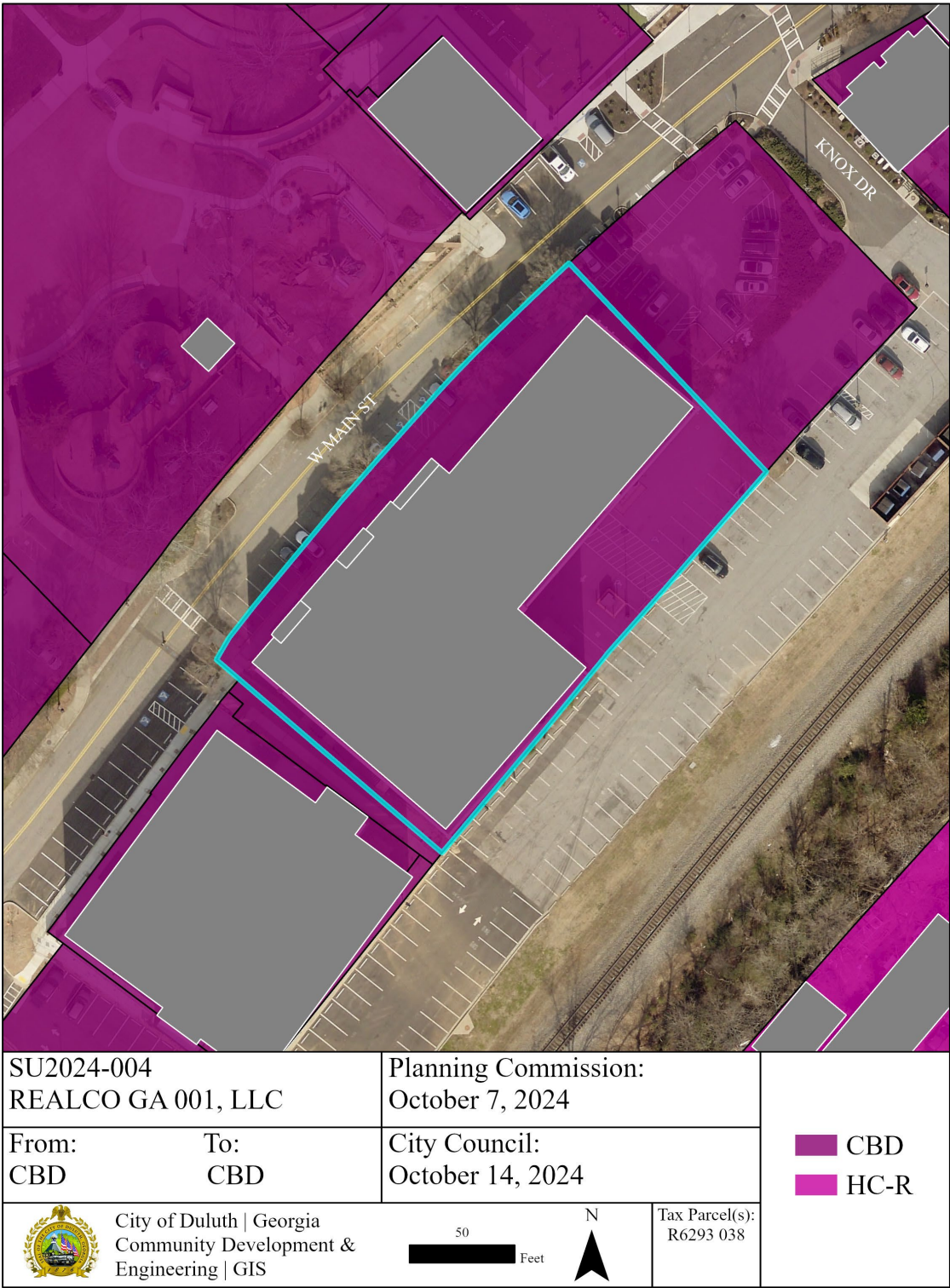
Exhibit "A"
Maps

Location Map



SU2024-004 REALCO GA 001, LLC		Planning Commission: October 7, 2024		Streets Address Outline Parcel
From: CBD	To: CBD	City Council: October 14, 2024		
 City of Duluth Georgia Community Development & Engineering GIS		50 Feet N 	Tax Parcel(s): R6293 038	

Zoning Map



Character Area Map

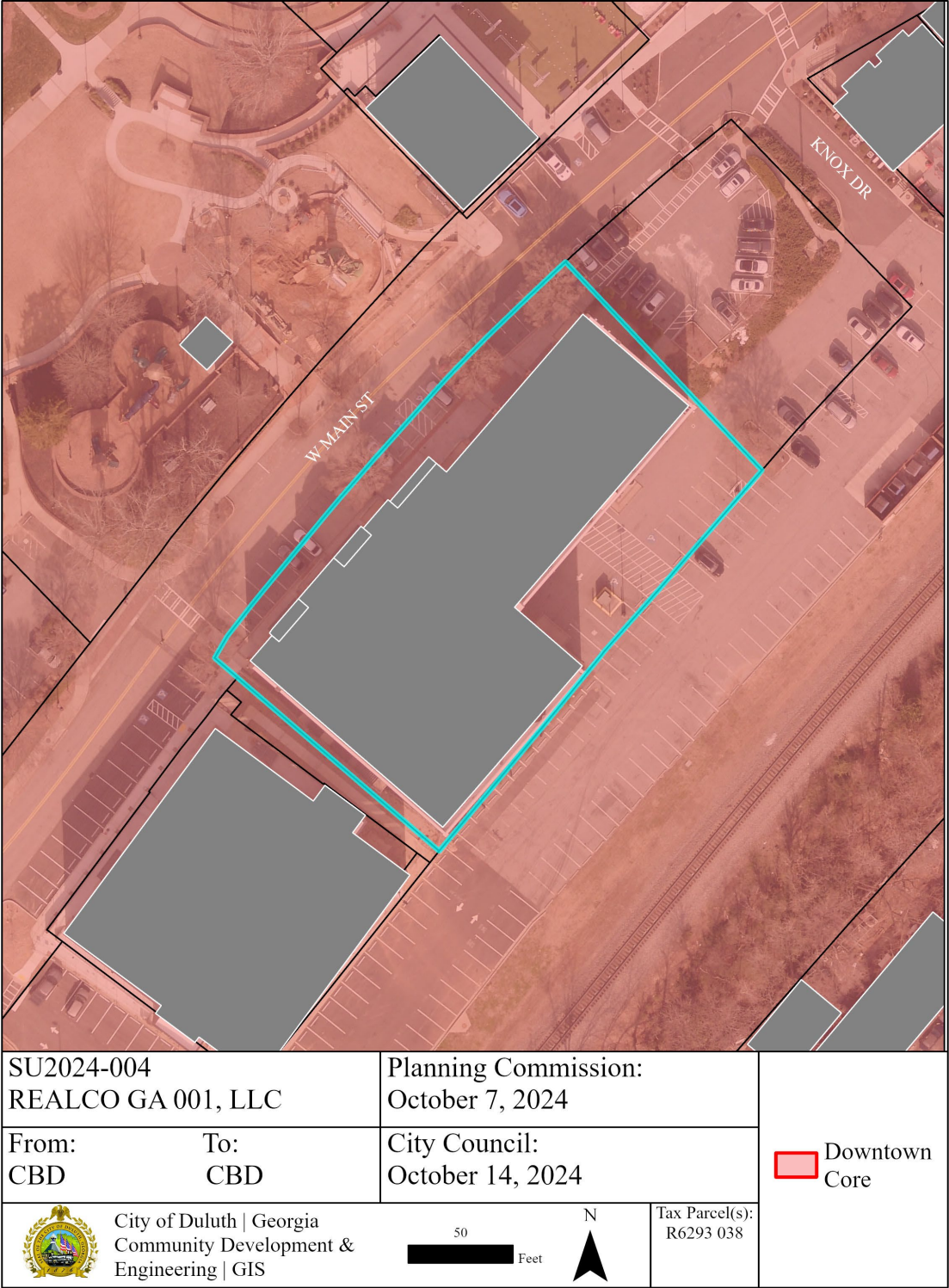


Exhibit "B"

Legal Description

LEGAL DESCRIPTION TRACT ONE

ALL THAT TRACT OR PARCEL OF LAND lying and being in Land Lot 293 of the 6th District of City of Duluth, Gwinnett County, Georgia, and being more particularly described as follows:

COMMENCING at an iron pin found at the intersection of the southeasterly margin of the right-of-way of Main Street (a/k/a Old Peachtree Road) (right-of-way varies) and the southwesterly margin of the right-of-way of Knott Street (a/k/a Knox Street) (30-foot right-of-way); thence running along the southeasterly margin of the right-of-way of Main Street, and running southeasterly along the southeasterly margin of the right-of-way of Main Street, South 52 degrees 32 minutes 33 seconds West, a distance of 86.80 feet to an iron pin found on the southeasterly margin of the right-of-way of Main Street; thence South 51 degrees 41 minutes 23 seconds West, a distance of 23.93 feet to an iron pin, said iron pin being THE TRUE POINT OF BEGINNING; thence leaving the southwesterly margin of the right-of-way of Main Street, and thence running South 46 degrees 36 minutes 53 seconds East, a distance of 127.54 feet to an iron pin found on the northwesterly right of way of Norfolk-Southern Railway and thence running southwesterly along the northwesterly margin of the right-of-way of Norfolk-Southern Railroad, along the arc of a curve to the left (said arc having a radius of 3716.59 feet, and being subtended by a chord bearing South 42 degrees 48 minutes 19 seconds West, a distance of 124.12 feet), an arc distance of 124.13 feet to an iron pin found; thence continuing along the northwesterly margin of the right-of-way of Norfolk-Southern Railroad, South 40 degrees 52 minutes 49 seconds West, a distance of 119.59 feet to an iron pin found; thence leaving the northwesterly margin of the right-of-way of Norfolk-Southern Railroad, and running North 47 degrees 05 minutes 43 seconds West, a distance of 141.45 feet to an iron pin found on the southeasterly margin of the right-of-way of Main Street; thence running northeasterly along the southeasterly margin of the right-of-way of Main Street, along the arc of a curve to the right (said arc having a radius of 1075.00 feet, and being subtended by a chord bearing North 44 degrees 30 minutes 39 seconds East, a distance of 224.99 feet), an arc distance of 225.41 feet to an iron pin set; thence continuing along the southeasterly margin of the right-of-way of Main Street, North 51 degrees 41 minutes 23 seconds East, a distance of 20.04 feet to an iron pin found which is the POINT OF BEGINNING, said property being shown as Tract One (0.7743 acres) on that certain ALTA/NSPS Survey for Realco Georgia 001, LLC dated, October 14, 2019, prepared by Gresham Planning & Development, Inc., and bearing the seal of William P. Gresham, GPLS No. 2880.

Together with:

RECIPROCAL EASEMENT AGREEMENT BY AND BETWEEN DULUTH DOWNTOWN I, LLC, A GEORGIA LIMITED LIABILITY COMPANY AND ETJ DOWNTOWN, LLC, A GEORGIA LIMITED LIABILITY COMPANY, DATED DECEMBER 18, 2007, FILED FOR RECORD DECEMBER 19, 2007, AND RECORDED IN DEED BOOK 48510, PAGE 792, AFORESAID RECORDS; AS AMENDED BY VIRTUE OF THAT CERTAIN FIRST AMENDMENT TO RECIPROCAL EASEMENT AGREEMENT, DATED DECEMBER 31, 2008, FILED DECEMBER 31, 2008, AND RECORDED IN DEED BOOK 49220, PAGE 142, AFORESAID RECORDS.

Exhibit “C”**Conditions of Approval****General**

1. The Special Use (SU2024-004) is hereby approved for Brian Howell, and their successors, for the operation of a Yoga/Pilates Studio. Notwithstanding, all Special Use applications shall be for firm proposals only. The Special Use shall not be used for securing early zoning for conceptual proposals that may not be undertaken for some time. Therefore, an occupational tax certificate shall be obtained within three (3) months from the date of Special Use approval. The Special Use shall be revoked if no occupational tax certificate is obtained.

Once established:

- A. If the use changes, the Special Use is hereby terminated.
 - B. If the use is discontinued or abandoned for a period of ninety (90) days, regardless of the intent of the owner or occupier to resume the use, the Special Use is hereby terminated.
 - C. If the use is extended in any way, either on the same or adjoining property, the Special Use is terminated.
2. The approval of the special use allows Brian Howell and their successors to operate a Yoga/Pilates Studio. The approval does not, however, permit the deviation from the UDC as it relates to signage or lighting. Signage must follow Article 6, and includes but is not limited to Section 604. Any proposed lighting must be submitted for a lighting plan review to the Department of Community Development and Engineering.
3. The property shall be maintained in a state of good repair at all times, free from any violations of the Property Maintenance Code; Unified Development Code; License and Business Regulations; Nuisance Codes, and any other codes adopted by the City of Duluth. Failure to maintain the property at or above the minimum standards adopted in the City of Duluth codes and ordinance shall be cause for revocation of the Special Use.
4. The privilege of a Special Use is subject to all conditions that have been attached to it. The City Council may revoke any Special Use approval after it has been proven that the conditions have been violated. Revocation of the Special Use shall cause the use to become an illegal nonconformity, the continuation of which is strictly prohibited.

Exhibit “D”

Applicant’s Response to the Standards Governing Special Use Consideration

A. How the proposed special use will allow a use that is suitable in view of the use and development of adjacent and nearby property.

We are requesting a Special Use to have Indigo LLC, a pilates and yoga parent company operate two of their business units out of Suite 103, 104, and 105 (collectively the “Premises”) at 3150-3160 Main Street. While originally built as three suites, the Premises is now divided into two suites with a cased opening between the two. Indigo LLC will operate PowerUp Pilates in Suite 103/104 (2,737 square feet) and Lift Yoga in Suite 105 (1,990 square feet). While technically one suite, both individual operations are under the zoning’s 3,500 square foot threshold for requirement of special use permit so will maintain a suitable view of use for patrons of Downtown Duluth. With the increase of office tenants in Downtown Duluth, through the addition of CoHatch and Thrive, walkable fitness options are in increasing demand. The addition of a pilates studio and yoga studio will also help fill a void in fitness options on the Town Green. Furthermore, the addition of retail to 3150-3160 Main St adds vibrancy to the Main Street Corridor and further activates the downtown as visitors travel southwest along the Town Green.

B. How the proposed special use will adversely affect the existing use or usability of adjacent or nearby property.

The special use should have no adverse effects on the existing use or usability of any adjacent or nearby properties.

C. Whether the property to be affected by a proposed special use has a reasonable economic use as currently zoned.

The property’s current CBD zoning provides a reasonable economic use; this Special Use approval will not alter the current and future intent of the property to accommodate office and retail tenants looking to occupy in Downtown Duluth.

D. Whether the proposed special use will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.

As stated in Question A above, each individual use will be below the City of Duluth's 3,500 square foot threshold, with pilates operating within 2,737 square feet and yoga operating within 1,990 square feet. This proposed use will not create an excessive or burdensome use of streets, transportation facilities, utilities or schools.

E. Whether the proposed special use is in conformity with the policy and interest of the Comprehensive Plan; Land Use Plan; transportation plans and other plans adopted for guiding development within the City of Duluth.

The approval of a Special Use for PowerUp Pilates and Lift Yoga aligns with the aspirations "to continue to recruit high quality retail tenants" as stated in the Comprehensive Plan. In addition, the addition of a yoga and pilates studio adds a walkable fitness option for the many new and future residents, office tenants, and hotel visitors within the Downtown Core, further reducing the concentration of auto-centric businesses Downtown.

F. Whether there is other existing or changing conditions affecting the use and give grounds for either approval or disapproval of the special use.

The addition of CoHatch and Thrive will bring many new office tenants to Downtown. In addition, there are a number of multifamily redevelopments that are bringing new residents that are within walking distance of Downtown. Currently there are no pilates or yoga studios within the Downtown Core area and the approval of this Special Use will help serve the existing and continued demand for such services.

Exhibit "E"

Public Notice

CITY OF DULUTH NOTICE OF PUBLIC HEARING

GDP7111
9pn16
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission to consider a special use request from Brian Howell, on approximately 0.7743 acres of property in Land Lot 293, 6th District, Gwinnett County, located at 3150-3160 Main Street Duluth, GA, consisting of tax parcels 6293-038, case number SU2024-004. The special use request is to operate a Yoga & Pilates studio in the CBD zoning district. The public is invited to attend this hearing before the Planning Commission on the proposed special use. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 - 6:00
p.m.
WHERE:
City Hall Council
Chambers
3167 Main Street
Duluth, GA 30096

PERSONS INTERESTED IN THIS MATTER are invited to review the proposed special use, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:

City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
OR
Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770) 476-1790.

In compliance with the Americans with Disabilities Act of 1990, the City of Duluth is committed to providing reasonable accommodations for a person with a disability. Please contact Teresa Lynn at (770) 476-3434 if special program accommodation is necessary and/or if program information is needed in an alternative format. Special requests must be made in a reasonable amount of time in order that accommodation can be arranged.

9:22,2024



CITY OF DULUTH
Mayor and Council
Staff Report
October 14, 2024

CASE NUMBER:	SU2024-004
LOCATION:	3150-3160 Main Street
PARCEL(S):	R6293 038
CURRENT ZONING:	CBD (Central Business District)
PROPOSED ZONING:	CBD (Central Business District) with Special Use
ACREAGE:	+/- 0.77 acres
REQUEST:	Approval of Special Use to allow a Yoga and Pilates Studio that collectively exceeds 3,500 square feet in the CBD (Central Business District) zoning district.
OWNER/APPLICANT:	<i>Owner:</i> Realco GA 001, LLC 194 Summers Street Charleston, WV 25301 <i>Applicant:</i> Brian Howell 3565 Piedmont Rd NE, Suite 250 Atlanta, GA 30305

STAFF RECOMMENDATION SU2024-004:	APPROVAL WITH CONDITIONS
PLANNING COMMISSION RECOMMENDATION:	APPROVAL WITH CONDCTIONS

I. PURPOSE AND DESCRIPTION OF THE REQUEST

The purpose of this Special Use request (SU2024-004) is to allow a retail trade business that exceeds 3,500 square feet in the CBD (Central Business District) zoning district.

Maps detailing the location, zoning district and character area of the subject property are attached hereto as Exhibit "A". The legal description of the subject property is attached hereto as Exhibit "B". Recommended conditions of approval are detailed in Exhibit "C".

II. EXISTING CONDITIONS

The subject property totals +/- 0.77 acres. The applicant is proposing to combine Suites 103, 104 and 105 which collectively totals 4,727 sq ft.

III. REVIEW OF THE REQUEST

1. Literal Interpretation of the Unified Development Code (UDC)

- A. Table 2-C of the UDC allows "yoga, pilates and similar studios" in CBD zoning district by-right unless the commercial use occupies more than 3,500 square feet in which case Special Use approval from the Duluth City Council is required.
- B. Section 1101.02 of the UDC states if a proposed use is not allowed by right under the existing zoning on a property, a request for an amendment to the Official Zoning Map (often called a "rezoning") must be approved prior to development, construction, or occupancy.
- C. Section 1105 of the UDC establishes the Special Use Considerations.

The Special Use is designed to apply under any one of the following circumstances:

- 1. A Special Use listed under the zoning district is desired for development and a more intensive zoning district containing that use, as a use by right would not be appropriate for the property; or
- 2. A Special Use listed under the zoning district is desired for development and no zoning district contains that use as a use by right; or
- 3. A unique use not addressed in any zoning district is desired for development and is not likely to be duplicated within the City of Duluth; or
- 4. The density of development may be affected by the height of a building; or
- 5. The neighboring properties may be affected by the height of any structure; or
- 6. The Special Use would be consistent with the needs of the neighborhood or the community as a whole, be compatible with the neighborhood and would not be in conflict with the overall objective of the Comprehensive Plan.

In order to accommodate these particular uses, Special Use approval allows the City Council to approve such a use on a particular parcel without changing the general zoning district.

Such approval shall be subject to the requirements set forth below and any additional conditions deemed necessary to ensure the compatibility of the Special Use with the surrounding properties. All Special Use applications shall be for firm development proposals only. The Special Use shall not be used for securing early zoning for conceptual proposals that may not be undertaken for some time. A Special Use application shall be considered only if the application is made by the owner of the property or by his/her authorized agent. The minimum requirements for a Special Use approval are:

1. Any uses allowed under Special Use approval shall also conform to the requirements of this Development Code for all uses as found in the zoning district.
2. The application and review process for a Special Use shall be the same as for the zoning district under which the Special Use is found. In addition to the information and/or site plans which are required to be submitted for the proposed development, additional information deemed necessary by the Director in order to evaluate a proposed use and its relationship to the surrounding area shall be submitted. In the review process, particular emphasis shall be given to the evaluation of the characteristics of the proposed use in relationship to its immediate neighborhood and the compatibility of the proposed use with its neighborhood.
3. In the approval process for a Special Use approval application, the City Council shall consider the policies and objectives of the Comprehensive Plan, particularly in relationship to the proposed site and surrounding area and shall consider the potential adverse impacts on the surrounding area, especially in regards but not limited to traffic, storm drainage, land values and compatibility of land use activities.
4. If an application is approved and a Special Use approval is granted, all conditions that may have been attached to the approval are binding to the property. All subsequent development and use of the property shall be in accordance with the approved plan and conditions.
5. Changes to a Special Use or development of a site for the Special Use, shall be treated as an amendment to the Special Use Permit and shall be subject to the same application and review process as a new application.
6. An application for Special Use approval in a residential district and which use is proposed to operate in a dwelling or as an accessory use to a dwelling is subject to the following additional requirements:
 - a. The Special Use shall operate within the dwelling on the property or, if approved by the City Council, in an accessory structure.
 - b. The exterior character of the dwelling shall be preserved in its residential state and there shall be no outside evidence of the operation of a Special Use to the neighborhood, except for any accessory structure approved by the City Council.
7. The owner of the property approved for a Special Use may voluntarily request termination of the Special Use by notifying the Director in writing. The Director

shall notify the City Council through the Planning Commission of the voluntary termination. The approval of a Special Use for a specific use which may be operated by a lessee under a private agreement with a lessor in any non-residential district shall not obligate the City Council to be responsible for or be required to resolve any disputes which may arise out of the voluntary termination of the Special Use by the property owner.

8. The Community Development and Engineering Department shall have the right to periodically examine the operation of the specific use to determine compliance with the requirements and any conditions. If the Director determines that the requirements and conditions are being violated, a written notice shall be issued to the owner of the property outlining the nature of the violation and giving the owner of the property a maximum of ten days to come into compliance. If after ten days the violations continue to exist, the Director shall forward a report to the City Council through the Planning Commission who may recommend that action be taken to remove the Special Use from the property.
9. Upon approval by the City Council, a Special Use shall be identified on the official zoning maps.
10. Upon approval by the City Council of a Special Use, the owner of the property shall be issued a notice from the Director that states the specific use permitted, the requirements of this Section and any conditions attached to the approval.
11. The Community Development and Engineering Department shall not issue a Certificate of Occupancy for the specific use unless all requirements and conditions of the Special Use approval have been fulfilled by the owner of the property.

2. Standards Governing the Exercise of Zoning Power

Section 1104.02 of the UDC establishes the standards governing the exercise of zoning power. The following standards are relevant in balancing the interest and promoting the public health, safety, morality, and general welfare against the right to the unrestricted use of property:

- A. How the proposed Special Use will permit a use that is suitable in view of the use and development of adjacent and nearby property.
- B. How the proposed Special Use will adversely affect the existing use or usability of adjacent or nearby property.
- C. Whether the property to be affected by a proposed Special Use has a reasonable economic use as currently zoned.
- D. Whether the proposed Special Use will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.
- E. Whether the proposed Special Use is in conformity with the policy and interest of the Comprehensive Plan; Land Use Plan; transportation plans and other plans

adopted for guiding development within the City of Duluth.

- F. Whether there are other existing or changing conditions affecting the use and give grounds for either approval or disapproval of the Special Use.

The Applicant has provided written responses to the above Special Use standards as part of the application. That document is attached hereto as Exhibit “D”.

3. **Literal Interpretation of FORWARDuluth, Plan 2045 (Comprehensive Plan)**

The subject property is located in the Downtown Core. FORWARDuluth envisions this Character Area to serve as the cultural and entertainment heart of the City and region, celebrating the hometown, historic character while utilizing big city aesthetics and amenities. The Future Land Use Map (FLUM) envisions the uses to be commercial/retail/office.

IV. **PLANNING STAFF REVIEW**

Section 317 of the UDC states that special use approval is required for commercial services businesses that exceed 3,500 square feet in the CBD zoning district. Staff understands that historically, this piece of code was to deter commercial services that did not have high levels of customer traffic or the potential for high levels of customer traffic, such as a bank, to occupy such a large amount of “dead” space.

Although the pilates/yoga use would take up 4,727 square feet, it is split between three suites of the building and two different businesses (PowerUp Pilates and Lift Yoga). There were two options for the businesses to occupy the spaces in this particular building: 1. In order to avoid the special use they would have had to enclose the cased opening between the suites and put in a fire rated wall that would separate the two distinct businesses. This would have made it a use by-right in downtown since each business would be occupying a space less than 3,500 square feet but would have been necessary for fire approval. It would have been a high cost burden for each business. Or, 2. They ask for a special use so that each business can occupy the same space with only a cased opening separating them.

These particular uses will assist in activating downtown during most hours. Businesses in downtown may benefit from the added morning and afternoon foot traffic. Both Thrive and CoHatch employees may benefit from having pilate and yoga facilities within walking distance.

V. **RECOMMENDATION**

Staff recommends **Approval with Conditions** of case SU2024-004. Planning Commission recommends **Approval with Conditions**. The Conditions of Approval are attached hereto as Exhibit “C”.

ATTACHMENTS:

Exhibit "A": Maps

Exhibit "B": Legal Description

Exhibit "C": Conditions of Approval

Exhibit "D": Applicant's Responses to the Standards Governing Special Use Consideration

Exhibit "E": Public Hearing Advertisement/Public Notice

Exhibit "A"
Maps
Location Map



Zoning Map



SU2024-004 REALCO GA 001, LLC		Planning Commission: October 7, 2024	CBD HC-R
From: CBD	To: CBD	City Council: October 14, 2024	
 City of Duluth Georgia Community Development & Engineering GIS		50 Feet N 	Tax Parcel(s): R6293 038

Character Map

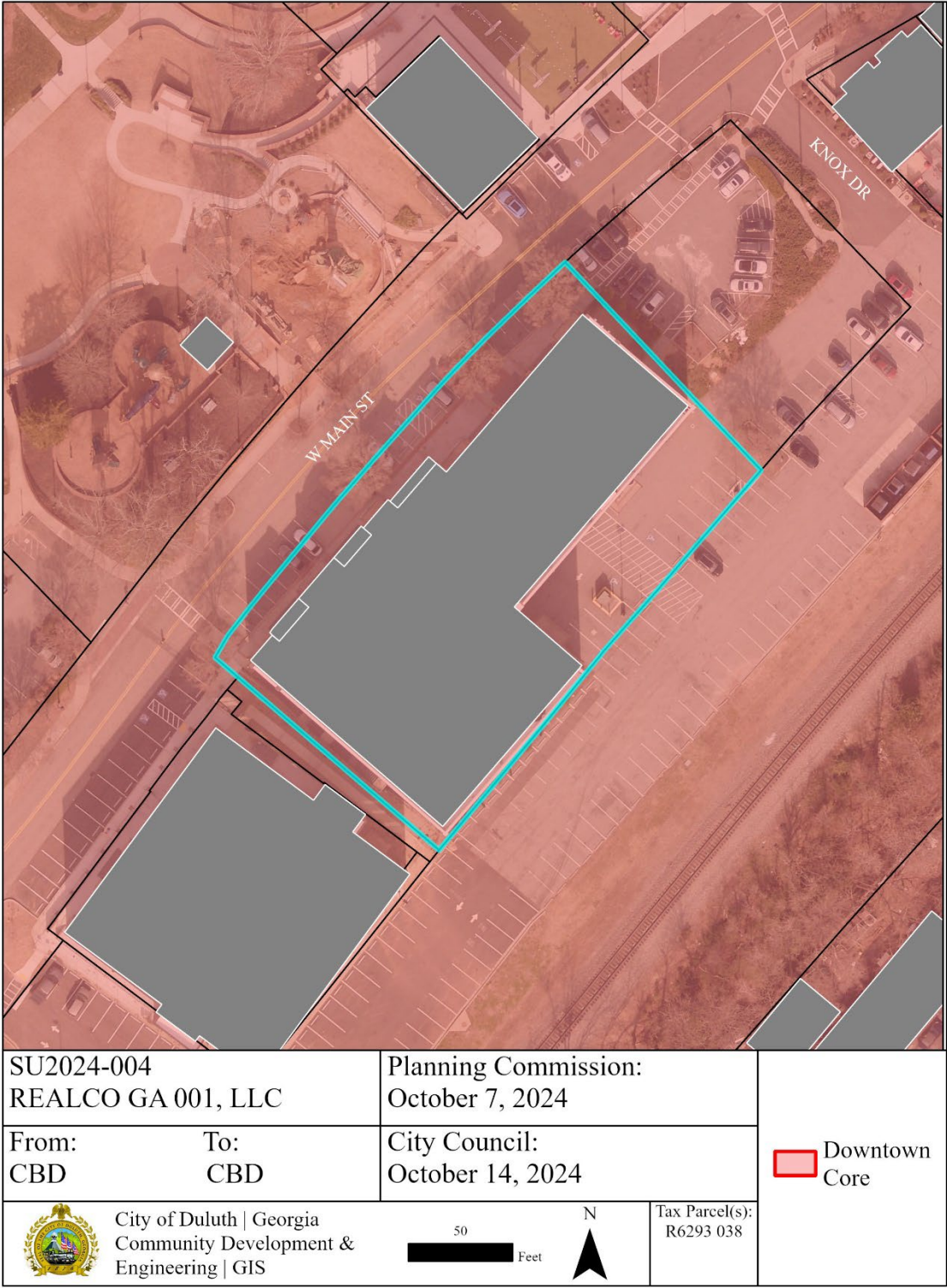


Exhibit "B"

Legal Description

LEGAL DESCRIPTION TRACT ONE

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Exhibit "C"
Conditions of Approval

General

1. The Special Use (SU2024-004) is hereby approved for Brian Howell, and their successors, for the operation of a Yoga/Pilates Studio. Notwithstanding, all Special Use applications shall be for firm proposals only. The Special Use shall not be used for securing early zoning for conceptual proposals that may not be undertaken for some time. Therefore, an occupational tax certificate shall be obtained within three (3) months from the date of Special Use approval. The Special Use shall be revoked if no occupational tax certificate is obtained.

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 3. The property shall be maintained in a state of good repair at all times, free from any violations of the Property Maintenance Code; Unified Development Code; License and Business Regulations; Nuisance Codes, and any other codes adopted by the City of Duluth. Failure to maintain the property at or above the minimum standards adopted in the City of Duluth codes and ordinance shall be cause for revocation of the Special Use.
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Exhibit “D”
Applicant’s Response to the Standards Governing Special Use Consideration

A. How the proposed special use will allow a use that is suitable in view of the use and development of adjacent and nearby property.

We are requesting a Special Use to have Indigo LLC, a pilates and yoga parent company operate two of their business units out of Suite 103, 104, and 105 (collectively the “Premises”) at 3150-3160 Main Street. While originally built as three suites, the Premises is now divided into two suites with a cased opening between the two. Indigo LLC will operate PowerUp Pilates in Suite 103/104 (2,737 square feet) and Lift Yoga in Suite 105 (1,990 square feet). While technically one suite, both individual operations are under the zoning’s 3,500 square foot threshold for requirement of special use permit so will maintain a suitable view of use for patrons of Downtown Duluth. With the increase of office tenants in Downtown Duluth, through the addition of CoHatch and Thrive, walkable fitness options are in increasing demand. The addition of a pilates studio and yoga studio will also help fill a void in fitness options on the Town Green. Furthermore, the addition of retail to 3150-3160 Main St adds vibrancy to the Main Street Corridor and further activates the downtown as visitors travel southwest along the Town Green.

B. How the proposed special use will adversely affect the existing use or usability of adjacent or nearby property.

The special use should have no adverse effects on the existing use or usability of any adjacent or nearby properties.

C. Whether the property to be affected by a proposed special use has a reasonable economic use as currently zoned.

The property’s current CBD zoning provides a reasonable economic use; this Special Use approval will not alter the current and future intent of the property to accommodate office and retail tenants looking to occupy in Downtown Duluth.

D. Whether the proposed special use will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.

As stated in Question A above, each individual use will be below the City of Duluth’s 3,500 square foot threshold, with pilates operating within 2,737 square feet and yoga operating within 1,990 square feet. This proposed use will not create an excessive or burdensome use of streets, transportation facilities, utilities or schools.

E. Whether the proposed special use is in conformity with the policy and interest of the Comprehensive Plan; Land Use Plan; transportation plans and other plans adopted for guiding development within the City of Duluth.

The approval of a Special Use for PowerUp Pilates and Lift Yoga aligns with the aspirations “to continue to recruit high quality retail tenants” as stated in the Comprehensive Plan. In addition, the addition of a yoga and pilates studio adds a walkable fitness option for the many new and future residents, office tenants, and hotel visitors within the Downtown Core, further reducing the concentration of auto-centric businesses Downtown.

F. Whether there is other existing or changing conditions affecting the use and give grounds for either approval or disapproval of the special use.

The addition of CoHatch and Thrive will bring many new office tenants to Downtown. In addition, there are a number of multifamily redevelopments that are bringing new residents that are within walking distance of Downtown. Currently there are no pilates or yoga studios within the Downtown Core area and the approval of this Special Use will help serve the existing and continued demand for such services.

Exhibit "F"

Public Notice

Public Notice Printed in Gwinnett Daily Post 09/22/2024

**GDP7111
gpn16
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING**

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission to consider a special use request from Brian Howell, on approximately 0.7743 acres of property in Land Lot 293, 6th District, Gwinnett County, located at 3150- 3160 Main Street Duluth, GA, consisting of tax parcels 6293-038, case number SU2024-004. The special use request is to operate a Yoga & Pilates studio in the CBD zoning district. The public is invited to attend this hearing before the Planning Commission on the proposed special use. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 - 6:00 p.m.

WHERE:
**City Hall Council
Chambers
3167 Main Street
Duluth, GA 30096**

PERSONS INTERESTED IN THIS MATTER are invited to review the proposed special use, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:

City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
OR
Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770)476-1790.

In compliance with the Americans with Disabilities Act of 1990, the City of Duluth is committed to providing reasonable accommodations for a person with a disability. Please contact Teresa Lynn at (770) 476-3434 if special program accommodation is necessary and/or if program information is needed in an alternative format. Special requests must be made in a reasonable amount of time in order that accommodation can be arranged.

9:22,2024



ORDINANCE 02024-41
CITY OF DULUTH
UNIFIED DEVELOPMENT CODE
AMENDING ARTICLE 6 “SIGNS” AND ARTICLE 14. “INTERPRETATION AND DEFINITIONS”

WHEREAS, the Mayor and City Council of the City of Duluth, Georgia recognizes the importance of promoting the community’s health, safety and welfare by providing clear, correct and consistent zoning regulations and compliance with the goals, objectives and policies identified within the adopted Community Agenda; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, specifically authorizes the City Council to amend the text of the City of Duluth Unified Development Code by the City Council; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, grants authority to the Director of Community Development and Engineering to initiate amendments to the text of the City of Duluth Unified Development Code; and

WHEREAS, the Mayor and City Council recognize the importance of ensuring that the regulations promote the quality of life in the City; and

WHEREAS, on October 7, 2024, the City of Duluth Planning Commission held a public hearing duly noticed and voted to recommend approval of the text amendment (TA2024-010) as set forth in the minutes of said meeting; and

WHEREAS, the Duluth City Council held a public meeting on October 14, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post regarding the text amendments as set forth in the minutes of said meeting.

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Unified Development Code is hereby amended by amending: Article 6 and Article 14 as attached hereto in Exhibit “A”.

ATTACHMENTS:

Exhibit “A”: Proposed Text Amendments to the Unified Development Code
 Exhibit “B”: Public Hearing Advertisement/Public Notice

{Signatures on the Following Page}

IT IS SO ORDAINED this 14th day of October, 2024.

Those councilmembers voting in favor:

Mayor Greg Whitlock

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr/City Clerk

Exhibit “A”

II. Description of the Request

Section 602. Definitions

~~**Commercial Speech.** The expression of an idea, opinion or message that directs or attracts attention to a business operated for profit; or to a product, commodity or service for sale, trade, barter, swap or lease; or to any other commercial interest or activity.~~

~~**Personal (noncommercial) Speech.** The expression of an idea, opinion or message that does not direct or attract attention to a business operated for profit; or to a product, commodity or service for sale, trade, barter, swap or lease; or to any other commercial interest or activity.~~

~~**Sign, Billboard.** Any monument sign erected on undeveloped property.~~ A freestanding pole sign that is 200 square feet in area or larger.

Section 603. Applicability

603.02 Signs that are Exempt from Permitting Requirements

- ~~a. Signs erected by or at the direction of the City or any government entity in the right of way or on any government owned parcel are exempt from provisions of this Article.~~
- ~~b. Historic markers authorized by the City are exempt.~~
- a. Property address numbers as required by the City are exempt. ~~considered “official governmental signs” and are exempt.~~
- b. Incidental signs (as defined in this Development Code) that are located in conjunction with a multi-family or nonresidential use are exempt, provided such signs are not illuminated and that the aggregate of all such signs on a property may not exceed 9 square feet (unless a larger aggregate area is required by law or government regulation).
- c. Displays or decorations related to a holiday or seasonal event (as defined in this Development Code) that are placed on a property by the owner or with the owner’s permission ~~as personal (noncommercial) speech (also as defined in this Development Code)~~ are exempt.
- d. Signs containing a non-commercial message with a maximum total sign face area not to exceed sixteen (16) square feet per lot and a maximum height of four (4) feet per sign provided they are placed by the property owner or with the property owner’s permission.
- e. Signs located on property ~~which is listed~~ advertising the property being for sale or lease with a total maximum area of sixteen (16) square feet per lot and a maximum height of four (4) feet per sign.

603.03. Signs that are Prohibited

- ~~a. All signs, other than legal non-conforming signs, which are not in compliance with this Article are prohibited and illegal and shall not be erected or maintained.~~

604.07. Language and Legibility

- a. Every principal freestanding sign shall contain the street number and the official street name in English letters and Arabic numbers of a size equivalent to the predominant size of the letters and numbers on the sign.
- ~~b. To aid in proper and timely response in an emergency, the name of the business or the type of business on the premises must also be indicated in English.~~
- b. Nothing in this section shall prohibit the same and/or additional information on the sign from being written in a language other than English, provided that an English translation of the sign is included with the application for a sign permit in accordance with Section 610.03(d).

~~605.04. Adjustments~~

~~The maximum size of certain principal signs may be increased, or the sign restrictions otherwise modified, under any one of the following circumstances:~~

- ~~a. Property Adjacent to a Major Roadway:~~
 - ~~1. The following thoroughfares are established as “major roadways” in the City’s Comprehensive Plan: Peachtree Industrial Boulevard, US 23/SR 13 (Buford Highway), SR 120 (Duluth Highway/Abbotts Bridge Road), and Pleasant Hill Road.~~
 - ~~2. For nonresidential uses fronting on any of these major roadways, the following adjustments are allowed for each principal freestanding sign on the property:~~

~~Table 6-C: Major Roadway Adjustment~~

Posted Speed Limit		Nonresidential Properties Not Zoned O-N	
		One or Two Tenants	Three or More Tenants
35 mph (No increase)	Max. area of sign face	50 sq. ft.	1 sq. ft. per linear foot of frontage, up to a maximum of 150 sq. ft.
	Max. height of sign	8 ft.	15 ft.
1-Street Frontage			
45 mph	Max. area of sign face	64 sq. ft.	1.3 sq. ft. per linear foot of frontage, up to a maximum of 200 sq. ft.
	Max. height of sign	11 ft.	17 ft.
55 mph	Max. area of sign face	80 sq. ft.	1.6 sq. ft. per linear foot of frontage, up to a maximum of 240 sq. ft.
	Max. height of sign	12 ft.	19 ft.
2-Street Frontages			
45 mph	Max. area of sign face	80 sq. ft.	1.3 sq. ft. per linear foot of frontage, up to a maximum of 200 sq. ft.
	Max. height of sign	12 ft.	17 ft.
55 mph	Max. area of sign face	100 sq. ft.	1.6 sq. ft. per linear foot of frontage, up to a maximum of 240 sq. ft.
	Max. height of sign	13 ft.	19 ft.

~~Source: Multipliers are drawn from Context-Sensitive Signage Design, Marya Morris, Mark L. Hinshaw, Douglas Mace, Alan Weinstein, American Planning Association Planning Advisory Service, Chicago IL, June 2001.~~

608.03. Billboards

In addition to the general regulations and restrictions applying to all sign classifications, billboard signs (as defined in this Development Code) shall comply with the following:

- a. All applications for billboards shall be accompanied by written permission of the owner of the property on which the proposed sign is to be placed, a site plan showing the proposed location of the sign, and a scale drawing of the sign.
- b. Billboards will be permitted only on undeveloped property that is zoned ~~M-1 or~~ M-2 and shall be removed when a Land Disturbance (i.e., Clearing, Grubbing, Grading or Development) Permit is issued for development on the property on which a billboard is located.
- c. Location and Spacing.
 1. No billboard shall be placed within 500 feet of a residence, church, school, park or cemetery.
 2. No billboard shall be located within 1,000 feet of another billboard as measured along the right-of-way of the street or streets on which such billboard is located, and provided further that no billboard may be located closer than 500 feet to another billboard in any direction.
 3. Billboards shall be erected only in the buildable area of the lot. ~~No trees or other vegetation shall be cut or removed in locating or erecting a billboard.~~
- d. Size and Height Regulations. ~~No billboard sign shall exceed 600 square feet or have more than one sign face or exceed 45 feet in overall height as measured from undisturbed grade to the top of the highest attached component.~~
- e. Conformance to State Law. Any billboard located or to be located within 660 feet of the nearest edge of the right-of-way of a U.S. or State-numbered highway (which includes SR 13/US 23—Buford Highway, and SR 120—Duluth Highway/Abbotts Bridge Road), or located or to be located beyond 660 feet of such highway but visible and intended to be read from such highway, must comply with the following:
 1. Such sign shall comply with all applicable requirements of the Georgia Outdoor Advertising Act, O.C.G.A. 32-6-70 et seq.
 2. Such sign shall comply with all requirements of this Article and, specifically, this Section 608.03.
 3. In the case of a conflict between the Georgia Outdoor Advertising Act and the City's regulations, the billboard must comply with the most restrictive requirements with respect to each and every item of regulation.

Section 1403. Glossary of Definitions

~~**Commercial Speech.** The expression of an idea, opinion, or message that directs or attracts attention to a business operated for profit; or to a product, commodity, or service for sale, trade, barter, swap, or lease; or to any other commercial interest or activity.~~

Personal (Noncommercial) Speech. ~~The expression of an idea, opinion, or message that does not direct or attract attention to a business operated for profit; or to a product, commodity, or service for sale, trade, barter, swap, or lease; or to any other commercial interest or activity.~~

Sign, Billboard. ~~Any monument sign erected on undeveloped property.~~ A freestanding pole sign that is 200 square feet in area or larger.

Exhibit "B"

Public Notice Posted in the Gwinnett Daily Post 9/22/2024

GDP7110 gpn16 CITY OF DULUTH NOTICE OF PUBLIC HEARING NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows: WHEN: October 7th, 2024 - 6:00 p.m. WHERE: City Hall Council Chambers 3167 Main Street PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address: City of Duluth ATTN: Planning Department 3167 Main Street Duluth, GA 30096 OR Email: Planning@duluth-ga.net For more information, contact Planning & Development, at (770)476-1790. ***** In compliance with the Americans with Disabilities Act of 1990, the City of Duluth is committed to providing reasonable accommodations for a person with a disability. Please contact Teresa Lynn at (770) 476-3434 if special program accommodation is necessary and/or if program information is needed in an alternative format. Special requests must be made in a reasonable amount of time in order that accommodation can be arranged. 9:22,2024 GDP7111
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CITY OF DULUTH
Mayor and Council
Staff Report
October 14, 2024

CASE NUMBER:	TA2024-010
REQUEST:	Text Amendment to address content within <i>Article 6. Signs</i> within the Unified Development Code AND Definitions pertaining to Signs in <i>Article 14. Interpretation and Definitions.</i>
APPLICANT:	City of Duluth

Staff Recommendation: Planning Commission Recommendation:	Approval Approval
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I. Background:

Staff is clarifying some discrepancies within Article 6. Signs of the Unified Development Code and definitions pertaining to signs in Article 14.

II. Description of the Request:

1. *Attached is a redlined copy of the proposed Unified Development Code Amendments.*

III. Exhibits

Exhibit "A": Public Notice

II. Description of the Request

Section 602. Definitions

Commercial Speech. ~~The expression of an idea, opinion or message that directs or attracts attention to a business operated for profit; or to a product, commodity or service for sale, trade, barter, swap or lease; or to any other commercial interest or activity.~~

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Section 603. Applicability

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- ~~b. Historic markers authorized by the City are exempt.~~
- a. Property address numbers as required by the City are exempt. ~~considered “official governmental signs” and are exempt.~~
- b. Incidental signs (as defined in this Development Code) that are located in conjunction with a multi-family or nonresidential use are exempt, provided such signs are not illuminated and that the aggregate of all such signs on a property may not exceed 9 square feet (unless a larger aggregate area is required by law or government regulation).
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- a. Every principal freestanding sign shall contain the street number and the official street name in English letters and Arabic numbers of a size equivalent to the predominant size of the letters and numbers on the sign.
- ~~b. To aid in proper and timely response in an emergency, the name of the business or the type of business on the premises must also be indicated in English.~~
- b. Nothing in this section shall prohibit the same and/or additional information on the sign from being written in a language other than English, provided that an English translation of the sign is included with the application for a sign permit in accordance with Section 610.03(d).

605.04. Adjustments

~~The maximum size of certain principal signs may be increased, or the sign restrictions otherwise modified, under any one of the following circumstances.~~

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- c. Location and Spacing.
 1. No billboard shall be placed within 500 feet of a residence, church, school, park or cemetery.
 2. No billboard shall be located within 1,000 feet of another billboard as measured along the right-of-way of the street or streets on which such billboard is located, and provided further that no billboard may be located closer than 500 feet to another billboard in any direction.
 3. Billboards shall be erected only in the buildable area of the lot. ~~No trees or other vegetation shall be cut or removed in locating or erecting a billboard.~~
- d. Size and Height Regulations. ~~No billboard sign shall exceed 600 square feet or have more than one sign face or exceed 45 feet in overall height as measured from undisturbed grade to the top of the highest attached component.~~
- e. Conformance to State Law. Any billboard located or to be located within 660 feet of the nearest edge of the right-of-way of a U.S. or State-numbered highway (which includes SR 13/US 23—Buford Highway, and SR 120—Duluth Highway/Abbotts Bridge Road), or located or to be located beyond 660 feet of such highway but visible and intended to be read from such highway, must comply with the following:
 1. Such sign shall comply with all applicable requirements of the Georgia Outdoor Advertising Act, O.C.G.A. 32-6-70 et seq.

2. Such sign shall comply with all requirements of this Article and, specifically, this Section 608.03.
3. In the case of a conflict between the Georgia Outdoor Advertising Act and the City's regulations, the billboard must comply with the most restrictive requirements with respect to each and every item of regulation.

Section 1403. Glossary of Definitions

Commercial Speech. ~~The expression of an idea, opinion, or message that directs or attracts attention to a business operated for profit; or to a product, commodity, or service for sale, trade, barter, swap, or lease; or to any other commercial interest or activity.~~

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Sign, Billboard. ~~Any monument sign erected on undeveloped property.~~ A freestanding pole sign that is 200 square feet in area or larger.

Exhibit "A"

Public Notice Posted in the Gwinnett Daily Post 09/22/2024

GDP7110 snn16 CITY OF DULUTH NOTICE OF PUBLIC HEARING NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows: WHEN: October 7th, 2024 - 6:00 p.m. WHERE: City Hall Council Chambers 3167 Main Street PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address: City of Duluth ATTN: Planning Department 3167 Main Street Duluth, GA 30096 OR Email: Planning@duluth-ga.net For more information, contact Planning & Development, at (770)476-1790. ***** ***** ***** In compliance with the Americans with Disabilities Act of 1990, the City of Duluth is committed to providing reasonable accommodations for a person with a disability. Please contact Teresa Lynn at (770) 476-3434 if special program accommodation is necessary and/or if program information is needed in an alternative format. Special requests must be made in a reasonable amount of time in order that accommodation can be arranged. 9:22,2024 GDP7110
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ORDINANCE 02024-42
CITY OF DULUTH
UNIFIED DEVELOPMENT CODE
AMENDING ARTICLE 4 “PARKING AND LOADING REQUIREMENTS”

WHEREAS, the Mayor and City Council of the City of Duluth, Georgia recognizes the importance of promoting the community’s health, safety and welfare by providing clear, correct and consistent zoning regulations and compliance with the goals, objectives and policies identified within the adopted Community Agenda; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, specifically authorizes the City Council to amend the text of the City of Duluth Unified Development Code by the City Council; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, grants authority to the Director of Community Development and Engineering to initiate amendments to the text of the City of Duluth Unified Development Code; and

WHEREAS, the Mayor and City Council recognize the importance of ensuring that the regulations promote the quality of life in the City; and

WHEREAS, on October 7, 2024, the City of Duluth Planning Commission held a public hearing duly noticed and voted to recommend approval of the text amendment (TA2024-011) as set forth in the minutes of said meeting; and

WHEREAS, the Duluth City Council held a public meeting on October 14, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post regarding the text amendments as set forth in the minutes of said meeting.

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Unified Development Code is hereby amended by amending: Article 4 as attached hereto in Exhibit “A”.

ATTACHMENTS:

Exhibit “A”: Proposed Text Amendments to the Unified Development Code
 Exhibit “B”: Public Hearing Advertisement/Public Notice

{Signatures on the Following Page}

IT IS SO ORDAINED this 14th day of October, 2024.

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr/City Clerk

Exhibit "A"

II. Description of the Request

Section 405.01 Prohibited Off-Street Parking.

In any residential district the following requirements shall apply:

A. Prohibited Vehicle Parking

- (1) Parking any vehicle or trailer on the grass or unimproved surface is prohibited.
- (2) Parking of the following vehicles is not allowed in residential districts: any vehicle for hire including but not limited to, limousines, taxis, box trucks, flatbed trucks, dump trucks, tow trucks, transport wreckers, tandem axle trucks, cab-on-chassis trucks, tractor trailers, bucket trucks, buses, earthmoving machinery, and semi-trailers.
- (3) (3) Parking or storing the following trailers is not allowed in residential districts: open utility trailers, towable cement mixers, tree chippers, flatbed trailers, dump trailers, livestock trailers, low boy trailers, gooseneck trailers, auto hauler trailers, and drop deck trailers, any trailer over 12 feet in length.
- (4) (4) Parking of any vehicle (other than recreational and watercraft) over 23 feet in length, or 7 feet in height, or 7 feet in width is prohibited in residential districts.

Exhibit "B"

Public Notice Posted in the Gwinnett Daily Post 9/22/2024

**GDP7110
gpn16
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING**

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows:

WHEN:
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PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:

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3167 Main Street
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Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770)476-1790.

In compliance with the Americans with Disabilities Act of 1990, the City of Duluth is committed to providing reasonable accommodations for a person with a disability. Please contact Teresa Lynn at (770) 476-3434 if special program accommodation is necessary and/or if program information is needed in an alternative format. Special requests must be made in a reasonable amount of time in order that accommodation can be arranged.

9:22,2024

CITY OF DULUTH
Mayor and Council
Staff Report
October 14, 2024

CASE NUMBER:	TA2024-011
REQUEST:	Text Amendment to prohibit parking on grass or any other unimproved surface <i>in 405.01 A. Prohibited Vehicle Parking</i> of the Unified Development Code (UDC).
APPLICANT:	City of Duluth

Staff Recommendation: Planning Commission Recommendation:	Approval Approval
---	----------------------

I. Background:

Staff previously presented several changes to *Section 405. Prohibited Off-Street Parking* to the Planning Commission and City Council that were approved in June of 2024. A key part of the off-street parking ordinance was inadvertently overlooked with that change: the prohibition of parking on grass and other unimproved surfaces. Staff is recommending that the parking of any vehicle or trailer on grass or unimproved surface be prohibited.

II. Description of the Request:

1. *Attached is a redlined copy of the proposed Unified Development Code Amendments.*

III. Exhibits

Exhibit "A": Public Notice

II. Description of the Request

Section 405.01 Prohibited Off-Street Parking.

In any residential district the following requirements shall apply:

A. Prohibited Vehicle Parking

- (1) Parking any vehicle or trailer on the grass or unimproved surface is prohibited.
- (2) Parking of the following vehicles is not allowed in residential districts: any vehicle for hire including but not limited to, limousines, taxis, box trucks, flatbed trucks, dump trucks, tow trucks, transport wreckers, tandem axle trucks, cab-on-chassis trucks, tractor trailers, bucket trucks, buses, earthmoving machinery, and semi-trailers.
- (3) (3) Parking or storing the following trailers is not allowed in residential districts: open utility trailers, towable cement mixers, tree chippers, flatbed trailers, dump trailers, livestock trailers, low boy trailers, gooseneck trailers, auto hauler trailers, and drop deck trailers, any trailer over 12 feet in length.
- (4) (4) Parking of any vehicle (other than recreational and watercraft) over 23 feet in length, or 7 feet in height, or 7 feet in width is prohibited in residential districts.

Exhibit "A"

Public Notice Posted in the Gwinnett Daily Post 09/22/2024

GDP7110
gpn16
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 -
6:00 p.m.

WHERE:
City Hall Council
Chambers
3167 Main Street

PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:

City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
OR
Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770) 476-1790.

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9:22,2024

**ORDINANCE 02024-43
CITY OF DULUTH
UNIFIED DEVELOPMENT CODE
AMENDING ARTICLE 2 “USE OF LAND AND STRUCTURES”**

WHEREAS, the Mayor and City Council of the City of Duluth, Georgia recognizes the importance of promoting the community’s health, safety and welfare by providing clear, correct and consistent zoning regulations and compliance with the goals, objectives and policies identified within the adopted Community Agenda; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, specifically authorizes the City Council to amend the text of the City of Duluth Unified Development Code by the City Council; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, grants authority to the Director of Community Development and Engineering to initiate amendments to the text of the City of Duluth Unified Development Code; and

WHEREAS, the Mayor and City Council recognize the importance of ensuring that the regulations promote the quality of life in the City; and

WHEREAS, on October 7, 2024, the City of Duluth Planning Commission held a public hearing duly noticed and voted to recommend approval of the text amendment (TA2024-012) as set forth in the minutes of said meeting; and

WHEREAS, the Duluth City Council held a public meeting on October 14, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post regarding the text amendments as set forth in the minutes of said meeting.

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Unified Development Code is hereby amended by amending: Article 2 as attached hereto in Exhibit “A”.

ATTACHMENTS:

Exhibit “A”: Proposed Text Amendments to the Unified Development Code
Exhibit “B”: Public Hearing Advertisement/Public Notice

{Signatures on the Following Page}

IT IS SO ORDAINED this 14th day of October, 2024.

Those councilmembers voting in favor:

Mayor Greg Whitlock

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr/City Clerk

Exhibit “A”

II. Description of the Request

PRINCIPAL USES	R-TH	RA-200	R-100	R-75	RM	MH	HRD	CBD	C-1	C-2	HC-Retail	HC-Auto	O-I	O-N	M-1	M-2	RD	See Also Article 3	For Parking, See Table 4-B:
Rail Transportation:																			
Rail Transportation Company Office												S							b.1.
Rail Yards, Rail and Train Service and Repair												S							c.5.

Replace with:

PRINCIPAL USES	R-TH	RA-200	R-100	R-75	RM	MH	HRD	CBD	C-1	C-2	HC-Retail	HC-Auto	O-I	O-N	M-1	M-2	RD	See Also Article 3	For Parking, See Table 4-B:
Rail Transportation:																			
Rail Transportation Company Office												S							b.1.
Rail Yards, Rail and Train Service and Repair												S			A				c.5.

Exhibit "B"

Public Notice Posted in the Gwinnett Daily Post 9/22/2024

GDP7110
gpn16
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 -
6:00 p.m.
WHERE:
City Hall Council
Chambers
3167 Main Street

PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:

City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
OR
Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770)476-1790.

In compliance with the Americans with Disabilities Act of 1990, the City of Duluth is committed to providing reasonable accommodations for a person with a disability. Please contact Teresa Lynn at (770) 476-3434 if special program accommodation is necessary and/or if program information is needed in an alternative format. Special requests must be made in a reasonable amount of time in order that accommodation can be arranged.

9:22,2024

CITY OF DULUTH
Mayor and Council
Staff Report
October 14, 2024

CASE NUMBER:	TA2024-012
REQUEST:	Text Amendment to allow Rail Yards, Rail and Train Service and repair in M-1 (Light Industrial District) in <i>Table 2-C: Principal Uses Allowed by Zoning District</i> of the Unified Development Code (UDC).
APPLICANT:	City of Duluth

Staff Recommendation: Planning Commission Recommendation:	Approval Approval
---	--------------------------

I. Background:

With the request to rezone all Rail Road property and Rail Road right-of-way to M-1, staff is recommending that Rail Yards, Rail and Train Service and repair be allowed by right in M-1 (Light Industrial District).

II. Description of the Request:

1. *Attached is a redlined copy of the proposed Unified Development Code Amendments.*

III. Exhibits

Exhibit "A": Public Notice

II. Description of the Request

NAICS 2022	PRINCIPAL USES	R-TH	RA-200	R-100	R-75	RM	MH	HRD	CBD	C-1	C-2	HC- Retail	HC- Auto	O-I	O-N	M-1	M-2	RD	See Also Article 3
482	Rail Transportation:																		
4821	Rail Transportation Company Office												S						
4882	Rail Yards, Rail and Train Service and Repair												S						

Replace with:

NAICS 2022	PRINCIPAL USES	R-TH	RA-200	R-100	R-75	RM	MH	HRD	CBD	C-1	C-2	HC- Retail	HC- Auto	O-I	O-N	M-1	M-2	RD	See Also Article 3
482	Rail Transportation:																		
4821	Rail Transportation Company Office												S						
4882	Rail Yards, Rail and Train Service and Repair												S			A			

Exhibit "A"

Public Notice Posted in the Gwinnett Daily Post 09/22/2024

GDP7110 gpn16 CITY OF DULUTH NOTICE OF PUBLIC HEARING NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows: WHEN: October 7th, 2024 - 6:00 p.m. WHERE: City Hall Council Chambers 3167 Main Street PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address: City of Duluth ATTN: Planning Department 3167 Main Street Duluth, GA 30096 OR Email: Planning@duluth-ga.net For more information, contact Planning & Development, at (770)476-1790. ***** In compliance with the Americans with Disabilities Act of 1990, the City of Duluth is committed to providing reasonable accommodations for a person with a disability. Please contact Teresa Lynn at (770) 476-3434 if special program accommodation is necessary and/or if program information is needed in an alternative format. Special requests must be made in a reasonable amount of time in order that accommodation can be arranged. 9:22,2024

ORDINANCE 02024-44
CITY OF DULUTH
UNIFIED DEVELOPMENT CODE
AMENDING ARTICLE 2 “USE OF LAND AND STRUCTURES”

WHEREAS, the Mayor and City Council of the City of Duluth, Georgia recognizes the importance of promoting the community’s health, safety and welfare by providing clear, correct and consistent zoning regulations and compliance with the goals, objectives and policies identified within the adopted Community Agenda; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, specifically authorizes the City Council to amend the text of the City of Duluth Unified Development Code by the City Council; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, grants authority to the Director of Community Development and Engineering to initiate amendments to the text of the City of Duluth Unified Development Code; and

WHEREAS, the Mayor and City Council recognize the importance of ensuring that the regulations promote the quality of life in the City; and

WHEREAS, on October 7, 2024, the City of Duluth Planning Commission held a public hearing duly noticed and voted to recommend approval of the text amendment (TA2024-013) as set forth in the minutes of said meeting; and

WHEREAS, the Duluth City Council held a public meeting on October 14, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post regarding the text amendments as set forth in the minutes of said meeting.

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Unified Development Code is hereby amended by amending: Article 2 as attached hereto in Exhibit “A”.

ATTACHMENTS:

Exhibit “A”: Proposed Text Amendments to the Unified Development Code
Exhibit “B”: Public Hearing Advertisement/Public Notice

{Signatures on the Following Page}

IT IS SO ORDAINED this 14th day of October, 2024.

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr/City Clerk

Exhibit “A”

II. Description of the Request

~~202.03 Interpretation of Zoning District Boundaries.~~

~~Where uncertainty exists with respect to the location and boundaries shown on the Official Zoning Map, the following rules shall apply:—~~

~~(a) —Where a zoning district boundary line is shown as approximately following a corporate limits line, a militia district line, a land lot line, a lot line or the center line of a street, a county road, a state highway or a railroad right-of-way or such lines extended, then such lines shall be construed to be the zoning district boundary lines.~~

~~(b) —Where a zoning district boundary line is shown as being set back from a street, a county road, a state highway, an interstate highway or a railroad right-of-way and approximately parallel thereto, then such zoning district boundary line shall be construed as being at the scaled distance from the center line of the street, county road, state highway, interstate highway or railroad right-of-way and as being parallel thereto.~~

~~(c) —Where a zoning district boundary line divides a lot, the location of the line shall be the scaled distance from the lot lines. In this situation, the requirements of the zoning district in which the greater portion of the lot lies shall apply to the balance of the lot except that such extension shall not include any part of a lot that lies more than 50 feet beyond the zoning district boundary line.~~

~~(d) —In the case of a through lot fronting on two approximately parallel streets that is divided by a zoning district boundary line paralleling the streets, the restrictions of the zoning district in which each frontage of the through lot lies shall apply to that portion of the through lot.~~

Replace with:

202.03 Interpretation of Zoning District Boundaries

The planning Director, or designee, shall interpret any ambiguity in accordance with the following principals:

Where uncertainty exists with respect to the location and boundaries shown on the Official Zoning Map, the following rules shall apply:

A. Boundaries that Follow Lot Lines

1. A boundary shown on the Official Zoning Map as following a lot line or parcel boundary shall be construed as following the lot line or parcel boundary as it actually existed at the time the zoning boundary was established as determined on the basis of the legal descriptions associated with approved zoning applications, or, lacking such legal descriptions, on the basis of the location of the boundary as depicted on the Official Zoning Map along with any dimensions shown.
2. If, after the establishment of the zoning boundary, a property line adjustment is made based upon a court ruling, the zoning boundary shall be construed to move with the lot line or parcel boundary.

B. Boundaries that Do Not Follow Lot Lines

1. Where the ordinance establishing a zoning boundary identifies the boundary as following a particular natural feature such as a ridgeline, contour line, a river, stream, lake or other water course or reflects a clear intent that the boundary follow the feature, the boundary shall be construed as following the feature as it actually exists and extends to the centerline of that feature. If after the establishment of the boundary, such a natural feature should move as a result of natural processes (slippage, subsidence, erosion, flooding, sedimentation, etc.), the boundary shall be construed as moving with the natural feature and shall extend to that features centerline.
2. Where a zoning boundary shown on the Official Zoning Map is approximately following a street, county road, state highway, an interstate highway or a railroad and/or railroad right-of-way, it shall be construed as following and extending to the centerline of the street, county road, state highway, interstate highway or railroad and/or railroad right-of-way. If after the establishment of the boundary, the centerline of the street, county road, state highway, interstate highway or railroad and/or railroad right-of-way should be moved as a result of its widening or a minor realignment (such as at an intersection), the boundary shall be construed as moving with and extending to the centerline of said feature.
3. A boundary shown on the Official Zoning Map as approximately parallel to, or as an apparent extension of, a feature described above shall be construed as being actually parallel to, or an extension of, that feature.
4. If a zoning boundary splits an existing lot or parcel, the metes and bounds description, if one was submitted at the time the zoning boundary was established, shall be used to establish the boundary.
5. If the specific location of the boundary cannot be determined from application of the above rules to the Official Zoning Map, it shall be determined by scaling the mapped boundary's distance from other features on the map.

C. Any property that is interpreted to be unzoned shall be construed as being zoned RA-200 (Residential-Agricultural District).

Exhibit "B"

Public Notice Posted in the Gwinnett Daily Post 9/22/2024

GDP7100
sep14
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission to consider a rezoning of all railroad property within the City Limits. The public is invited to attend this hearing before the Planning Commission on the rezoning. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 -
6:00 p.m.
WHERE:
City Hall Council
Chambers
3167 Main Street
Duluth, GA 30096

PERSONS INTERESTED IN THIS MATTER are invited to review the rezoning, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:
City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
OR
Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770) 476-1750.

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9/22/2024

CITY OF DULUTH
Mayor and Council
Staff Report
October 14, 2024

CASE NUMBER:	TA2024-013
REQUEST:	Text Amendment to <i>Section 202.03 Interpretation of Zoning District Boundaries</i> in the UDC (Unified Development Code).
APPLICANT:	City of Duluth

Staff Recommendation: Planning Commission Recommendation:	Approval Approval
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I. Background:

Staff is correcting ambiguity within Section 202.03 Interpretation of Zoning District Boundaries within the UDC (Unified Development Code).

II. Description of the Request:

1. *Attached is a redlined copy of the proposed Unified Development Code Amendments.*

III. Exhibits

Exhibit "A": Public Notice

II. Description of the Request

~~202.03 Interpretation of Zoning District Boundaries.~~

~~Where uncertainty exists with respect to the location and boundaries shown on the Official Zoning Map, the following rules shall apply:—~~

~~(a) —Where a zoning district boundary line is shown as approximately following a corporate limits line, a militia district line, a land lot line, a lot line or the center line if a street, a county road, a state highway or a railroad right-of-way or such lines extended, then such lines shall be construed to be the zoning district boundary lines.~~

~~(b) —Where a zoning district boundary line is shown as being set back from a street, a county road, a state highway, an interstate highway or a railroad right-of-way and approximately parallel thereto, then such zoning district boundary line shall be construed as being at the scaled distance from the center line of the street, county road, state highway, interstate highway or railroad right-of-way and as being parallel thereto.~~

~~(c) —Where a zoning district boundary line divides a lot, the location of the line shall be the scaled distance from the lot lines. In this situation, the requirements of the zoning district in which the greater portion of the lot lies shall apply to the balance of the lot except that such extension shall not include any part of a lot that lies more than 50 feet beyond the zoning district boundary line.~~

~~(d) —In the case of a through lot fronting on two approximately parallel streets that is divided by a zoning district boundary line paralleling the streets, the restrictions of the zoning district in which each frontage of the through lot lies shall apply to that portion of the through lot.~~

Replace with:

202.03 Interpretation of Zoning District Boundaries

The planning Director, or designee, shall interpret any ambiguity in accordance with the following principals:

Where uncertainty exists with respect to the location and boundaries shown on the Official Zoning Map, the following rules shall apply:

A. Boundaries that Follow Lot Lines

1. A boundary shown on the Official Zoning Map as following a lot line or parcel boundary shall be construed as following the lot line or parcel boundary as it actually existed at the time the zoning boundary was established as determined on the basis of the legal descriptions associated with approved zoning applications, or, lacking such legal

descriptions, on the basis of the location of the boundary as depicted on the Official Zoning Map along with any dimensions shown.

2. If, after the establishment of the zoning boundary, a property line adjustment is made based upon a court ruling, the zoning boundary shall be construed to move with the lot line or parcel boundary.

B. Boundaries that Do Not Follow Lot Lines

1. Where the ordinance establishing a zoning boundary identifies the boundary as following a particular natural feature such as a ridgeline, contour line, a river, stream, lake or other water course or reflects a clear intent that the boundary follow the feature, the boundary shall be construed as following the feature as it actually exists and extends to the centerline of that feature. If after the establishment of the boundary, such a natural feature should move as a result of natural processes (slippage, subsidence, erosion, flooding, sedimentation, etc.), the boundary shall be construed as moving with the natural feature and shall extend to that features centerline.
2. Where a zoning boundary shown on the Official Zoning Map is approximately following a street, county road, state highway, an interstate highway or a railroad and/or railroad right-of-way, it shall be construed as following and extending to the centerline of the street, county road, state highway, interstate highway or railroad and/or railroad right-of-way. If after the establishment of the boundary, the centerline of the street, county road, state highway, interstate highway or railroad and/or railroad right-of-way should be moved as a result of its widening or a minor realignment (such as at an intersection), the boundary shall be construed as moving with and extending to the centerline of said feature.
3. A boundary shown on the Official Zoning Map as approximately parallel to, or as an apparent extension of, a feature described above shall be construed as being actually parallel to, or an extension of, that feature.
4. If a zoning boundary splits an existing lot or parcel, the metes and bounds description, if one was submitted at the time the zoning boundary was established, shall be used to establish the boundary.
5. If the specific location of the boundary cannot be determined from application of the above rules to the Official Zoning Map, it shall be determined by scaling the mapped boundary's distance from other features on the map.

- C. Any property that is interpreted to be unzoned shall be construed as being zoned RA-200 (Residential-Agricultural District).**

Exhibit "A"

Public Notice Posted in the Gwinnett Daily Post 09/22/2024

GDP7166
99616
**CITY OF DULUTH
NOTICE OF PUBLIC
HEARING**

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission to consider a rezoning of all railroad property within the City Limits. The public is invited to attend this hearing before the Planning Commission on the rezoning. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 -
6:00 p.m.
WHERE:
City Hall Council
Chambers
3167 Main Street
Duluth, GA 30096

PERSONS INTERESTED IN THIS MATTER are invited to review the rezoning, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address: City of Duluth, ATTN: Planning Department, 3167 Main Street, Duluth, GA 30096. OR Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770)476-1790.

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9:22,2024

**ORDINANCE 02024-45
CITY OF DULUTH
UNIFIED DEVELOPMENT CODE
AMENDING ARTICLE 2 “USE OF LAND AND STRUCTURES”**

WHEREAS, the Mayor and City Council of the City of Duluth, Georgia recognizes the importance of promoting the community’s health, safety and welfare by providing clear, correct and consistent zoning regulations and compliance with the goals, objectives and policies identified within the adopted Community Agenda; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, specifically authorizes the City Council to amend the text of the City of Duluth Unified Development Code by the City Council; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, grants authority to the Director of Community Development and Engineering to initiate amendments to the text of the City of Duluth Unified Development Code; and

WHEREAS, the Mayor and City Council recognize the importance of ensuring that the regulations promote the quality of life in the City; and

WHEREAS, on October 7, 2024, the City of Duluth Planning Commission held a public hearing duly noticed and voted to recommend approval of the text amendment (TA2024-014) as set forth in the minutes of said meeting; and

WHEREAS, the Duluth City Council held a public meeting on October 14, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post regarding the text amendments as set forth in the minutes of said meeting.

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Unified Development Code is hereby amended by amending: Article 2 as attached hereto in Exhibit “A”.

ATTACHMENTS:

Exhibit “A”: Proposed Text Amendments to the Unified Development Code
Exhibit “B”: Public Hearing Advertisement/Public Notice

{Signatures on the Following Page}

IT IS SO ORDAINED this 14th day of October, 2024.

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr/City Clerk

Exhibit “A”

II. Description of the Request

Section 203. Definitions.

Home Occupation, Small-Scale Manufacturing. The making of products on residentially scaled machinery (i.e 3-D printer, household power and hand tools, oven, range, sewing machine, etc.).

Table 2-D: Accessory and Temporary Uses Allowed by Zoning District

USES	R-TH	RA-200	R-100	R-75	RM	MH	HRD	C-1	C-2	HC-Retail	HC-Auto	O-I	O-N	CBD	M-1	M-2	RD	See Also Article 3:
ACCESSORY USES																		
Home Occupation:																		
Home Office	A	A	A	A	A	A	A							A				Sec. 346
Small-Scale Manufacturing	S	A	A	A	S	S	A							S				
Beauty Parlor or Barber Shop	S	S	S	S	S	S	S							S				Sec. 346
Family Day Care	S	S	S	S	S	S	S							S				Sec. 319

Exhibit "B"

Public Notice Posted in the Gwinnett Daily Post 9/22/2024

**GDP7110
gpn16
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING**

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 -
6:00 p.m.
WHERE:
City Hall Council
Chambers
3167 Main Street

Duluth, GA 30096

PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:

City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
OR
Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770) 476-1790.

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9:22,2024

CITY OF DULUTH
Mayor and Council
Staff Report
October 14, 2024

CASE NUMBER:	TA2024-014
REQUEST:	Text Amendment to add small-scale manufacturing as an allowed use by-right as a residential accessory use home occupation in the following zoning districts: RA-200, R-100, R-75 AND by Special Use Permit in the following zoning districts: CBD, HRD, MH, R-TH and RM to <i>Table 2-D: Accessory and Temporary Uses Allowed by Zoning District</i> of the Unified Development Code (UDC). Text Amendment will also add Home Office as an allowed use in CBD. Text Amendment will also add Beauty Parlor or Barbor Shop as a Home Occupation and Family Day Care as a Home Occupation both as a Special Use in CBD and R-TH.
APPLICANT:	City of Duluth

Staff Recommendation: Planning Commission Recommendation:	Approval Approval
---	--------------------------

I. Background:

Staff responds to several inquiries a month about small-scale manufacturing as a home occupation. Currently, a home occupation as a use by-right is a home office (e.g. computer, printer, etc.). Staff recommends expanding the definition of home occupation to include small-scale manufacturing. Staff defines small-scale manufacturing as the making of products on residentially scaled machinery (i.e 3-D printer, household power and hand tools, oven, range, sewing machine, etc.). Small-scale manufacturing as a home occupation would include, but not be limited to: candle making, metal working, wood working, soap making, food and beverage production, perfume making, textile production, apparel and footwear manufacturing, furniture manufacturing, toy manufacturing, essential oil extraction.

Staff is also recommending that Home Office as a Home Occupation be allowed by-right in the CBD District. Also, Beauty Parlor or Barber Shop as a Home Occupation and Family Day Care as a Home Occupation be allowed by Special Use in the R-TH District.

II. Description of the Request:

1. *Attached is a redlined copy of the proposed Unified Development Code Amendments.*

III. Exhibits

Exhibit "A": Public Notice

II. Description of the Request

Section 203. Definitions.

Home Occupation, Small-Scale Manufacturing. The making of products on residentially scaled machinery (i.e 3-D printer, household power and hand tools, oven, range, sewing machine, etc.).

Table 2-D: Accessory and Temporary Uses Allowed by Zoning District

NAICS 2012	USES	R-TH	RA-200	R-100	R-75	RM	MH	HRD	C-1	C-2	HC-Retail	HC-Auto	O-I	O-N	CBD	M-1	M-2	RD	See Also Article 3:
	ACCESSORY USES																		
	Home Occupation:																		
	Home Office	A	A	A	A	A	A	A							A				Sec. 346
	Small-Scale Manufacturing	S	A	A	A	S	S	A							S				
	Beauty Parlor or Barber Shop	S	S	S	S	S	S	S							S				Sec. 346
	Family Day Care	S	S	S	S	S	S	S							S				Sec. 319

Exhibit "A"

Public Notice Posted in the Gwinnett Daily Post 9/22/2024

GDP7110 9pm16 CITY OF DULUTH NOTICE OF PUBLIC HEARING NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows: WHEN: October 7th, 2024 - 6:00 p.m. WHERE: City Hall Council Chambers 3167 Main Street Duluth, GA 30096 PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address: City of Duluth ATTN: Planning Department 3167 Main Street Duluth, GA 30096 OR Email: Planning@duluth-ga.net For more information, contact Planning & Development, at (770) 476-1790. ***** In compliance with the Americans with Disabilities Act of 1990, the City of Duluth is committed to providing reasonable accommodations for a person with a disability. Please contact Teresa Lynn at (770) 476-3434 if special program accommodation is necessary and/or if program information is needed in an alternative format. Special requests must be made in a reasonable amount of time in order that accommodation can be arranged. 9:22,2024
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**ORDINANCE 02024-46
CITY OF DULUTH
UNIFIED DEVELOPMENT CODE
AMENDING ARTICLE 9 “PROJECT DESIGN AND CONSTRUCTION STANDARDS”**

WHEREAS, the Mayor and City Council of the City of Duluth, Georgia recognizes the importance of promoting the community’s health, safety and welfare by providing clear, correct and consistent zoning regulations and compliance with the goals, objectives and policies identified within the adopted Community Agenda; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, specifically authorizes the City Council to amend the text of the City of Duluth Unified Development Code by the City Council; and

WHEREAS, the Unified Development Code of the City of Duluth, Georgia, grants authority to the Director of Community Development and Engineering to initiate amendments to the text of the City of Duluth Unified Development Code; and

WHEREAS, the Mayor and City Council recognize the importance of ensuring that the regulations promote the quality of life in the City; and

WHEREAS, on October 7, 2024, the City of Duluth Planning Commission held a public hearing duly noticed and voted to recommend approval of the text amendment (TA2024-015) as set forth in the minutes of said meeting; and

WHEREAS, the Duluth City Council held a public meeting on October 14, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post regarding the text amendments as set forth in the minutes of said meeting.

NOW THEREFORE, the City Council of the City of Duluth hereby ordains that the City of Duluth Unified Development Code is hereby amended by amending: Article 9 as attached hereto in Exhibit “A”.

ATTACHMENTS:

Exhibit “A”: Proposed Text Amendments to the Unified Development Code
Exhibit “B”: Public Hearing Advertisement/Public Notice

{Signatures on the Following Page}

IT IS SO ORDAINED this 14th day of October, 2024.

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr/City Clerk

Exhibit "A"

II. Description of the Request

915.04. Easements.

(f) Drainage easements off the street right-of-way shall be clearly defined on the Final Plat. The property owner will be required to keep the easement free of obstruction in such a way as to assure the maximum designed flow at all times. The property owner shall not alter any drainage improvements without the prior written approval from the City. No structure shall be constructed or erected in an easement without the prior written approval from the City. Driveways may cross perpendicular to the easement. Property owners may plant landscaping (turf grass, ornamental grass, shrubbery under two feet in height at maximum growth) in an easement that is piped; however, the City is not responsible for replacing the landscape material located in the easement when it is removed to maintain the drainage system. No trees shall be planted in a drainage easement.

Exhibit "B"

Public Notice Posted in the Gwinnett Daily Post 9/22/2024

**GDP7110
gpn16
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING**

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission regarding updates to the UDC (Unified Development Code) with the following Articles: Article 2. Use of Land and Structures, Article 3. Restrictions on Particular Uses, Article 4. Parking and Loading Requirements, Article 6. Sign Regulations, Article 14. Interpretation and Definitions and any other part of the UDC that may be pertinent to the hearing. The public is invited to attend this hearing before the Planning Commission on the UDC updates. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 -
6:00 p.m.
WHERE:
City Hall Council
Chambers
3167 Main Street

Duluth, GA 30096

PERSONS INTERESTED IN THIS MATTER are invited to review the UDC update, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:

City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
OR
Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770) 476-1790.

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9:22,2024

CITY OF DULUTH
Mayor and Council
Staff Report
October 14, 2024

CASE NUMBER:	TA2024-015
REQUEST:	Text Amendment to <i>Article 9. Project Design and Construction Standards Section 915.04 Easements.</i>
APPLICANT:	City of Duluth

Staff Recommendation: Planning Commission Recommendation:	Approval Approval
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I. Background:

This past summer, the Stormwater Department employed two interns to survey drainage easements throughout the City and found an over abundance of trees within the easements. These drainage easements convey stormwater runoff through underground pipes or over shallow swales and eventually make it to larger streams or rivers. In order for these drainage easements to properly function, they must be clear of large objects or debris. Furthermore, trees planted above pipes conveying water will eventually destroy the pipe as their roots grow and seek water.

Staff is recommending that trees not be planted within a drainage easement and that only turf grass, ornamental grasses and/or shrubs and/or shrubbery not to exceed 2 feet at maturity be allowed to be planted within the drainage easement.

II. Description of the Request:

1. *Attached is a redlined copy of the proposed Unified Development Code Amendments.*

III. Exhibits

Exhibit "A": Public Notice

II. Description of the Request

915.04. Easements.

(f) Drainage easements off the street right-of-way shall be clearly defined on the Final Plat. The property owner will be required to keep the easement free of obstruction in such a way as to assure the maximum designed flow at all times. The property owner shall not alter any drainage improvements without the prior written approval from the City. No structure shall be constructed or erected in an easement without the prior written approval from the City. Driveways may cross perpendicular to the easement. Property owners may plant landscaping (turf grass, ornamental grass, shrubbery under two feet in height at maximum growth) in an easement that is piped; however, the City is not responsible for replacing the landscape material located in the easement when it is removed to maintain the drainage system. No trees shall be planted in a drainage easement.

Exhibit "A"

Public Notice Posted in the Gwinnett Daily Post 9/22/2024

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ORDINANCE NO. 02024-40

AN ORDINANCE FOR THE REZONING OF ± 6 LINEAR MILES OF RAILROAD PROPERTY IS SHOWN ON THE MAP ON THE ATTACHED EXHIBIT “A”. THE ORDINANCE PROVIDES FOR FINDINGS, PROVIDES FOR SEVERABILITY, REPEALS CONFLICTING ORDINANCES, ESTABLISHES AN EFFECTIVE DATE, AND IS FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, the applicant, the City of Duluth is seeking a rezoning of the +/- 6 linear miles of Railroad property from various zoning categories to M-1 (Light Industrial District).

WHEREAS, per Article 11 of the Duluth Unified Development Code, a rezoning must be approved by the Governing Body; and

WHEREAS, the City of Duluth Planning Commission held a public hearing at the meeting of October 7, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post, regarding the application. At that meeting, the Planning Commission recommended approval of the rezoning as is set forth in the minutes of said meeting; and

WHEREAS, the City Council held a public hearing at the meeting of October 14, 2024, duly noticed as prescribed by law and published in the Gwinnett Daily Post, regarding said application, as shall be set forth in the minutes of said meeting.

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF DULUTH HEREBY ORDAINS AS FOLLOWS:

SECTION 1. FINDINGS.

Pursuant to Article 11 of the Duluth Unified Development Code, the City Council finds that it is appropriate to rezone the property from various zoning districts to M-1 (Light Industrial District).

SECTION 2. MAP.

The property that is subject to this ordinance consists of ± 11.2 acres and is legally described on Exhibit “A”, attached hereto. Said Exhibit is incorporated by reference as if fully set forth herein.

SECTION 3. SEVERABILITY.

Should any section or provision of this Ordinance or any Ordinance pertaining to the companion applications as identified above be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 4. EFFECTIVE DATE.

The effective date of this Ordinance shall be upon approval by the City Council of the City of Duluth, Georgia.

SECTION 5. REPEALER.

All conflicting ordinances and conditions are hereby repealed and replaced with the conditions of approval set forth in this Ordinance, No. 02024-40.

ATTACHMENTS:

Exhibit "A": Map

Exhibit "B": Public Hearing Advertisement/Public Notice

{Signatures on the Following Page}

IT IS SO ORDAINED this 14th day of October, 2024.

Those councilmembers voting in favor:

Mayor Greg Whitlock

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

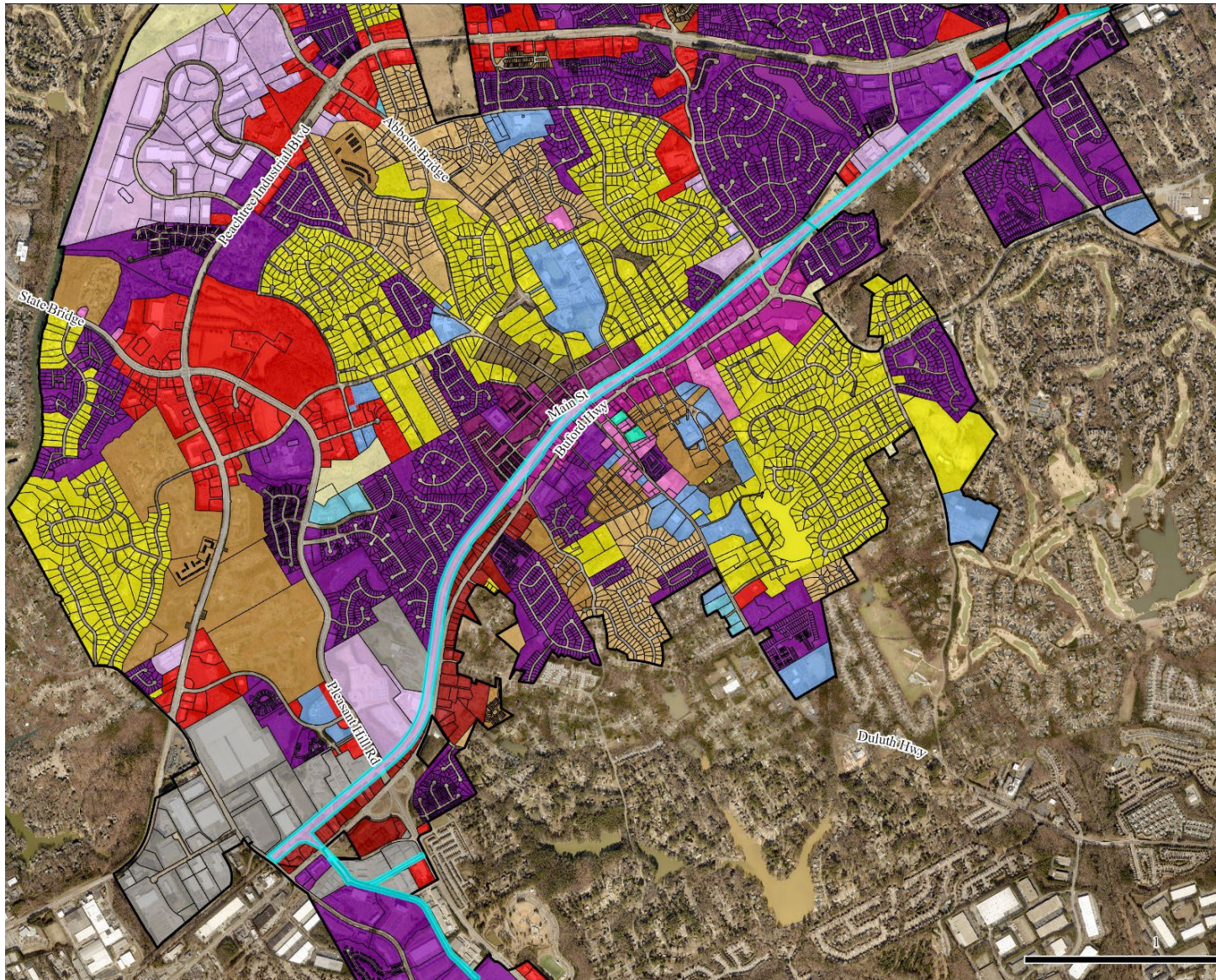
Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa Lynn, Asst. City Mgr/City Clerk

Exhibit "A"
MAP



City of Duluth | Georgia
Community Development &
Engineering | GIS

Z2024-003
Norfolk Southern Corporation

From: To:
Various Zones M-1

Planning Commission:
October 7, 2024

City Council:
October 14, 2024

RA-200	CBD	
HC-A	M-1	
O-I	M-2	
O-N	RD	

Exhibit "B"

Public Notice

GDP7168
99914
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission to consider a rezoning of all railroad property within the City Limits. The public is invited to attend this hearing before the Planning Commission on the rezoning. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 -
6:00 p.m.
WHERE:
City Hall Council
Chambers
3167 Main Street
Duluth, GA 30096

PERSONS INTERESTED IN THIS MATTER are invited to review the rezoning, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:
City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
OR
Email: Planning@duluth-ga.net

For more information, contact Planning & Development, at (770)476-1790.

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9:22,2024

CITY OF DULUTH
Mayor and Council
Staff Report
October 14, 2024

CASE NUMBER:	Z2024-003
LOCATION:	Various Locations throughout the City
PARCEL(S):	Various Railroad Parcels throughout the City
CURRENT ZONING:	Various Zoning Categories
PROPOSED ZONING:	M-1 (Light Industrial District)
ACREAGE:	+/- 6 Linear Miles
REQUEST:	Approval of a Rezoning from various zoning categories to M-1 (Light Industrial District).
OWNER/APPLICANT:	Owner: Norfolk Southern Corporation 650 W. Peachtree Street NE Atlanta, GA 30308 Applicant: City of Duluth 3167 Main Street Duluth, GA 30096

STAFF RECOMMENDATION Z2024-003:	Approval
PLANNING COMMISSION RECOMMENDATION:	Approval

I. PURPOSE AND DESCRIPTION OF THE REQUEST

The purpose of the rezoning request (Z2024-003) is to rezone all railroad right-of-way and property from what it is currently zoned (which varies throughout the city) to a uniformed zoning of M-1 (light Industrial District).

Maps detailing the new zoning of the railroad property and right-of-way is attached hereto as Exhibit "A".

II. EXISTING CONDITIONS

The subject property totals roughly 6 miles in length and is developed by Norfolk Southern as an active rail line. The subject property bisects the City boundary line at Suwanee Creek on the northeaster entryway and runs through the City at its terminus running under North Berkely Lake Road to the southwest.

III. ZONING HISTORY

The current zoning of the railroad right-of-way has been interpreted to begin at the center line of the track and run generally parallel to the zoning boundary adjacent to it. However, the railroad is not considered by all to be just right-of-way, but real property and therefore must be properly zoned. Staff is recommending that all railroad property and right-of-way be zoned M-1 (light industrial district) and be shown on the official zoning map of the City as such.

There are a few spur tracks that exist within the City limits that do not belong to Norfolk Southern. These spur tracks that do not belong to Norfolk Southern are already zoned appropriately on the parcels on which they exist.

IV. REVIEW OF THE REQUEST

1. Literal Interpretation of the Unified Development Code (UDC)

- A. Section 1101.02 of the UDC states if a proposed use is not allowed by right under the existing zoning on a property, a request for an amendment to the Official Zoning Map (often called a "rezoning") must be approved prior to development, construction, or occupancy.

2. Standards Governing the Exercise of Zoning Power

Section 1104.02 of the UDC establishes the standards governing the exercise of zoning power. The following standards are relevant in balancing the interest and promoting

the public health, safety, morality, and general welfare against the right to the unrestricted use of property:

- A. Whether the zoning proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.
- B. Whether the zoning proposal will adversely affect the existing use or usability of adjacent or nearby property.
- C. Whether the zoning proposal will result in a use that will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.
- D. Whether the zoning proposal is consistent with the Land Use Policy Plan, Comprehensive Plan, transportation plans, or other plans adopted for guiding development within the City of Duluth.
- E. Whether there are other existing or changing conditions affecting the use and development of property that give supporting grounds for either approval or disapproval of the zoning or special use proposal.

3. Literal Interpretation of FORWARDuluth, Plan 2040 (Comprehensive Plan)

The railroad property runs through the Established Neighborhood Character Area, Buford Highway North Corridor Character Area, Core Neighborhood District, Buford Highway South Corridor Character Area, North Berkeley Industrial District and along the north section of North Berkeley International Village Character Area. Like the zoning and the character areas, the FLUM (Future Land Use Map) shows the railroad property encompassing multiple categories including Commercial/Retail/Office, Industrial, Institutional, Mixed Use and Residential. However, the railroad is already developed and has a very low likelihood of being developed into anything other than railroad.

V. PLANNING STAFF REVIEW

This rezone request is to create a uniformed zoning designation over the entire +/- 6 mile stretch of railroad property. No other substantive changes are being requested for the railroad property.

VI. RECOMMENDATION

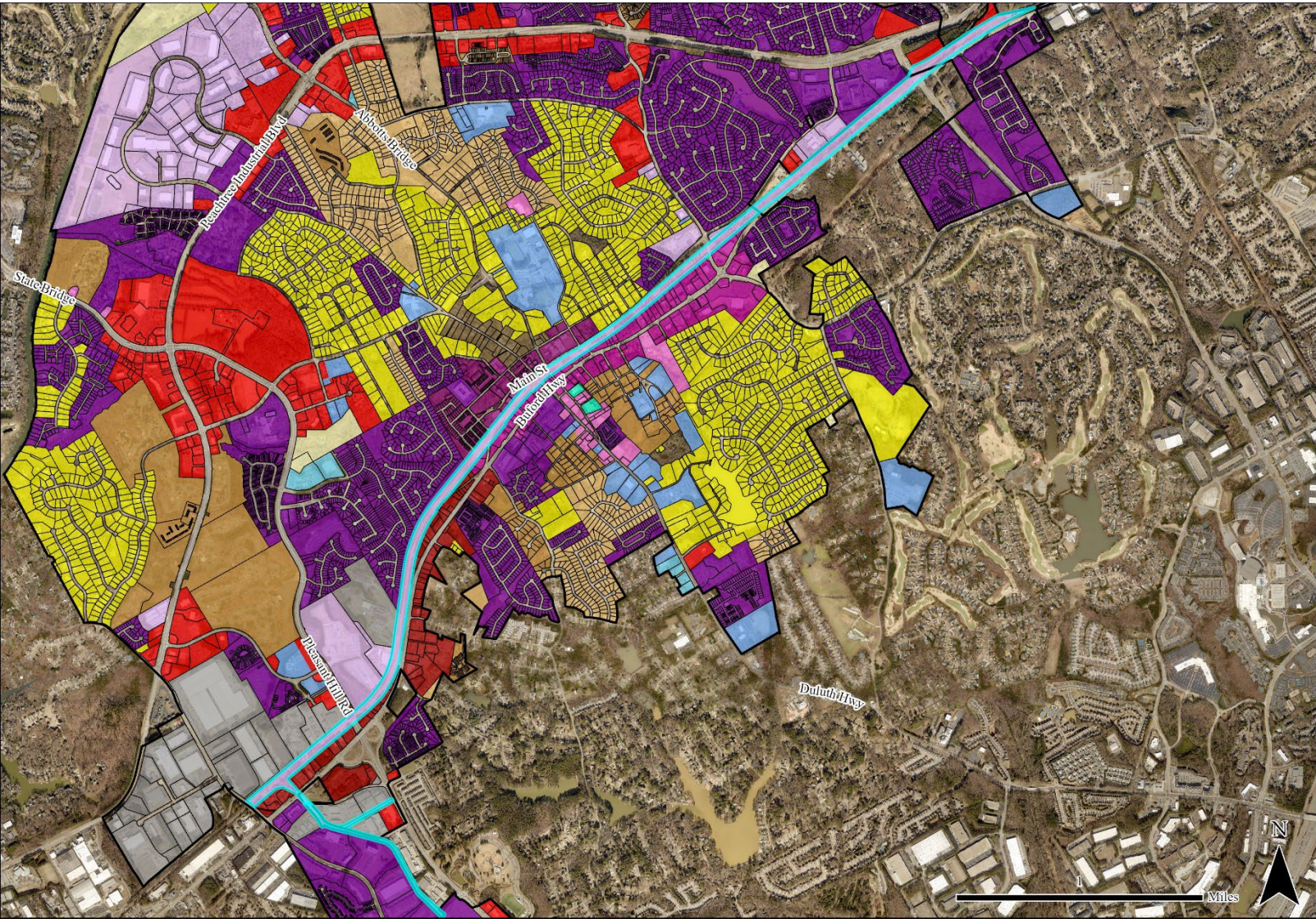
Planning staff recommends **Approval** of case Z2024-003.

ATTACHMENTS:

Exhibit "A": Maps

Exhibit "B": Public Hearing Advertisement/Public Notice

Exhibit “A”
Map



City of Duluth | Georgia
Community Development &
Engineering | GIS

Z2024-003 Norfolk Southern Corporation		Planning Commission: October 7, 2024
From: Various Zones	To: M-1	City Council: October 14, 2024

RA-200	CBD	PUD	HRD
HC-A	M-1	R-100	C-1
O-I	M-2	R-75	C-2
O-N	RD	RM	HC-R

Exhibit "B"

Public Notice

Public Notice Printed in Gwinnett Daily Post 9/22/2024

**GDP7100
99614
CITY OF DULUTH
NOTICE OF PUBLIC
HEARING**

NOTICE IS HEREBY GIVEN that a public hearing will be held before Planning Commission to consider a rezoning of all railroad property within the City Limits. The public is invited to attend this hearing before the Planning Commission on the rezoning. The meeting date, place and time regarding this matter are as follows:

WHEN:
October 7th, 2024 -
6:00 p.m.

WHERE:
City Hall Council
Chambers
3167 Main Street
Duluth, GA 30096

PERSONS INTERESTED IN THIS MATTER are invited to review the rezoning, which is on file with the Department of Planning & Development of the City of Duluth and to attend the public hearing at the date, time and place provided in this notice, to express their opinion on this matter. Written comments may also be received in lieu of testimony during the public hearing. Written comments may be sent to the following address:
City of Duluth
ATTN: Planning Department
3167 Main Street
Duluth, GA 30096
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Email: Planning@duluth-ga.net

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9:22,2024



Memorandum

To: James Riker, City Manager, City of Duluth

From: Kevin Hendrix, Design Project Manager, Pond & Company

Duluth Public Safety Building Chiller and AHU Replacements—Review of Proposals

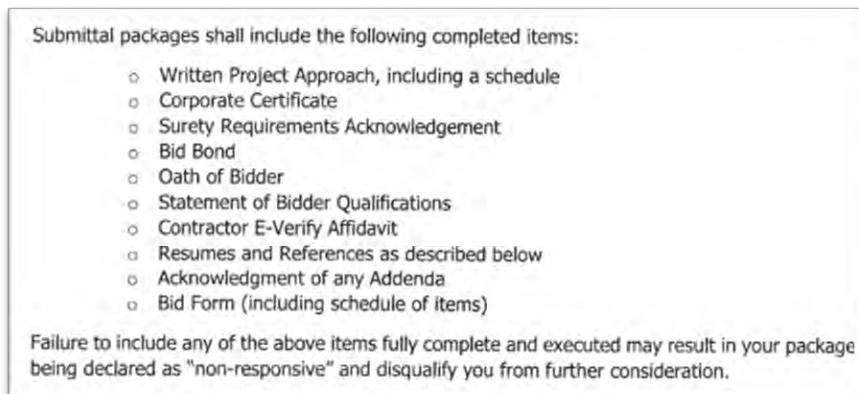
James,

I have reviewed the two proposals that were received for the above referenced project. While both contractors appear to be qualified and capable, one submission is missing the requested resumes and the required bid bond.

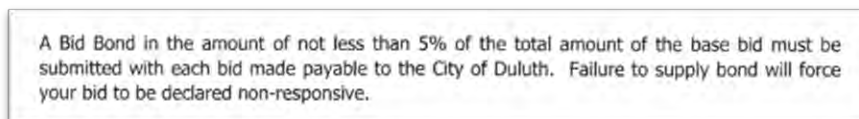
See below for a summary of each proposal:

Max Air Mechanical

- Proposal received: 09/26/2024 at 10:14am
- Total price: \$924,522
- Projected completion date: April 13, 2025
- Note that their submission did not include the requested resumes (they included a statement that resumes will be provided upon award). Our request for proposal states the following:



- Also note that the required bid bond form was not completed in their submission. In addition to the statement shown above, our RFP specifically states the following:



- Their approach appears to be generally adequate but does not clearly and specifically answer the provided questions.

John F Pennebaker Co

- Proposal received: 09/26/2024 at 10:48 am
- Total price: \$996,655
- Projected completion date: June 27, 2025
- This submission appears to be complete and includes all requested items.
- Their approach is well written and includes specific responses to the provided questions, along with a preliminary site logistics plan.

Please let me know if you need any further information or input from Pond during the selection process.

STATE OF GEORGIA

CITY OF DULUTH

**CONTRACT FOR CHILLER AND AHU REPLACEMENT
CITY OF DULUTH, GEORGIA
DULUTH PUBLIC SAFETY BUILDING**

THIS AGREEMENT is made this 14 day of October, 2024 between John F. Pennebaker Company Inc, located at 1840 South Lee Court, Georgia, 30518 (hereinafter called the "Contractor") and the City of Duluth; 3167 Main Street, Duluth, GA 30096 (hereinafter called the "City"). Both parties do mutually agree as follows:

1. **Scope and Cost:** The Contractor agrees to furnish labor, supervision, materials, equipment, tools, supplies, disposal, and services necessary to timely and fully perform and complete in a neat, first-class and workmanlike manner and in strict compliance with the Contract Documents, drawings, specifications provided as applicable to the contractor, all of the specific work and services for the replacement of the Chiller and Air Handling units at the Duluth Public Safety Building as described in the Request for Proposal attached hereto as Exhibit "A" and incorporated herein by reference and the Contractor's Proposal attached hereto as Exhibit "B" and incorporated herein by reference. Contractor expressly agrees to provide the above scope of work inclusive of taxes, labor, supervision, disposal, materials, equipment, tools, transportation, and any associated written reports or drawings.

The Contractor shall commence the Work with adequate force and equipment within ten (10) days from receipt of the Notice to Proceed. The Contractor hereby assumes the entire responsibility and liability for any and all injury to or death of any and all persons, including the Contractor's agents, servants, and employees, and in addition thereto, for any and all damages to property caused by or resulting from or arising out of any act or omission in connection with this Contract or the prosecution of Work hereunder, whether caused by the Contractor or the Contractor's agents, servants, or employees, or by any of the Contractor's subcontractors or suppliers. This Contract, executed in triplicate, constitutes the full agreement between the parties, and the Contractor shall not sublet, assign, transfer, pledge, convey, sell or otherwise dispose of the whole or any part of this Contract or his right, title, or interest therein to any person, firm or corporation without the previous consent of the City in writing.

2. **City Representative:** The Project has been initiated by the City and the Representative for this project is Captain Robert Montgomery, hereinafter referred to as the "City Representative". The City Representative shall act as the City's representative, assume all duties and responsibilities and have the rights and authority assigned to the City in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

3. Contract Documents

3.1 The term "Contract Documents" above includes all portions of the specifications published and/or advertised by the City for purposes of soliciting bids for this project. Including: Instructions to Bidders, Bid Documents, Addenda, Plans, Drawings, Specifications, General and Special Conditions, Guarantees, Contracts, Unit Pricing, Schedules, and all documents sent in by Contractor in response thereof such bids including but not limited to, the Contractor's Bid and the Request for Proposals (Exhibits A and B), are attached hereto. The scope of work therefore, may not extend beyond these descriptions as set forth above without proper adjustments and/or opportunity made available so as to properly compensate the contractor for any such scope of work.

3.2 Contractor agrees to perform the contract work to the satisfaction of the City. Contractor agrees to provide and pay for all labor, regardless of craft or jurisdiction, materials, tools, supplies and equipment, except as otherwise provided herein, to perform the work in strict conformity with the contract documents.

4. **Project Duration:** The duration of the project shall be for a period of not more than Nine (9) months from the Contractor's receipt of the written notice to proceed and a properly executed agreement by both parties. Both documents of which are part of the official documentation of the said project. Any extension of this time period must be approved by the City and agreed upon by a written change order.

5. Contract sum and payments

5.1 The total contracted amount is **\$996,655 (NINE HUNDRED AND NINETY SIX THOUSAND SIX HUNDRED AND FIFTY FIVE DOLLARS and 00/100 Dollars.)**

5.2 Payments shall be made for as follows:

- Payment 1: Approved drawing submittals 10% payment
- Payment 2. Release for equipment fabrication 25% payment
- Payment 3. Completion and installation of work and equipment 65% payment

A ten percent (10%) retainage shall be withheld from final payment until all work is complete.

5.3 Prior to the final payment, Contractor will provide an affidavit showing that its labor, materials and other bills have been paid, along with full release and/or unconditional lien waivers, in a form satisfactory to Contractor and City. If it appears that any labor, material or other bills incurred in the performance of the contract work are not being paid, the City may take such steps as it (in its sole discretion) deems necessary to ensure that the payments will be utilized to pay such bills.

5.4 Final Payment including any and all retainage shall be made to Contractor not later than thirty (30) days after receipt of the Contractor's final written requisition for payment and acceptance of the final completed project.

5.5 The parties agree that the timing of the performance is essential to this agreement and that damages for failure to abide by this conditions with regard to the timing of performance will be difficult to ascertain. Therefore the parties agree that liquated damages provisions are appropriate and that such damages are not a penalty in this case. In the event that the Contractor fails to perform within the time period specified in this contract Contractor shall pay the City the sum of FIVE HUNDRED DOLLARS (\$500) per day for each calendar day beyond the contract performance termination date as set forth in Section 4 above.

6. Execution of Work

6.1 The contractor agrees, within ten (10) calendar days after written notification to proceed by City, to commence the contract work, at such points as the City may designate, and to continue diligently in its performance in accordance with the Project Schedule. Time is of the essence of this contract. If contractor is given reasonable time to perform and fails to do so, any work performed by the City on behalf of the Contractor will be charged back as necessary to cover costs for such work.

6.2 Contractor shall promptly provide the City with any scheduling information requested. City may revise any schedule, if necessary, as the work progresses.

6.3 Contractor shall cooperate with City and other subcontractors/contractors whose work may interfere with or affect the Contractor's work.

6.4 Contractor shall give adequate notices pertaining to its work to the proper authorities and shall secure all necessary licenses and permits to carry on its work; a copy to be provided to City by Contractor prior to the start of contract work.

7. Warranty

Contractor will provide a special warranty to repair or replace components of water chillers that fail in materials or workmanship as noted in attached project specifications for a five-year period from substantial completion.

Contractor will provide a warranty to repair or replace components of the air handling units that fail in materials or workmanship as noted in attached project specifications for a one-year period from substantial completion.

All other items materials, equipment or workmanship shall be warranted as required or identified in attached project specifications.

8. Insurance/Liens

8.1 Successful proposer shall provide insurance as follows from the issuance of Notice to Proceed / commencement of work through final payment:

Workers Compensation Insurance in the amounts required by Georgia law.

Employers Liability Insurance with minimum limits of the greater of \$500,000 per accident/disease or as required by the law of the state of Georgia.

Commercial General Liability Insurance - ISO Form CG 00 01 (10/93) or equivalent Occurrence Policy which will provide primary coverage in the event of any Occurrence Claim, or Suit, with:

aa. Limits of not less than:

\$2,000, 000 General Aggregate;

\$2,000, 000 Products - Comp/OPS Aggregate:

\$1,000, 000 Personal and Advertising Injury:

\$1,000, 000 Each Occurrence;

\$50,000 Fire Damage (any one fire); and

\$5,000 Medical Expense (any one person).

bb. Endorsements attached thereto including the following or their equivalent:

ISO Form CG 25 03 (10/93), Amendment of Limits of Insurance (Designated Project or Premises), describing the Agreement and specifying limits as shown above.

ISO Form CG 20 10 (10/93), Additional Insured-- Owners, Lessees, Or Contractors (Form B), naming Owner and Architect as additional insureds.

Automobile Liability Insurance, with:

A minimum limit of \$1,000,000 Combined Single Limit per accident; and

Coverage applying to "Any Auto."

2. If any subcontractors are to be used, successful proposer will be required to submit a lien waiver prior to final payment.

9. Compliance with Immigration Laws & Regulations

9.1 The Contractor shall be responsible for complying with the GA Security and Immigration Compliance Act of 2006 (O.C.G.A. §13-10-90 & §13-10-91) and the Rules of the GA Department of Labor implementing the GA Security and Immigration Compliance Act of 2006 (Rules 300-10-

1-.01 through 300-10-1-.09). In accordance with these provisions, the Contractor shall complete attached Exhibits C

9.2 The Contractor affirms and agrees that it is currently registered and participates in the federal work authorization program to verify information of all new employees pursuant to O.C.G.A. §13-10-91(b).

9.3 The Contractor affirms and agrees that any and all subcontractors that it will use on the above-described project are registered and participate in the federal work authorization program to verify information of all new employees.

9.4 Pursuant to O.C.G.A. §50-36-1, Proposer shall provide information regarding citizenship status and shall complete and file with the City the Citizenship Status Affidavit, which is attached hereto as Exhibit C.

9.5 The failure to abide by the provisions and agreements set forth in this Subsection 7 shall constitute a breach and default of this contract.

9. Inspection and Approvals

9.1 Contractor shall notify City and or its representatives when portions of its work are ready for inspection. City shall make reasonable efforts after receiving notice from Contractor, to inspect said scope of work completed. Limitations and/or sizes of such portions of work shall be agreed upon by City and Contractor prior to starting each phase thereof.

9.2 Contractor agrees to “make right” at no additional cost to City any such portion that is determined by City’s representatives to be incomplete within the bounds of the contract. Contractor shall promptly perform any and all punch list work submitted to it by City.

10. Termination

10.1 The City may terminate the contract for failure by the Contractor to comply with the terms and conditions of its contract or failure by the Contractor to correct problems brought to its attention by the City, each of which failures shall constitute a default. In the event of such termination, that Contractor will be paid only those sums due and owing under the contract for performance satisfactorily rendered, subject to offset for damages and other amounts which are, or which may become, due and owing to the City.

10.2 The City, for its convenience and without cause, may terminate this contract whenever the City determines that such termination is in its best interest after giving ten (10) days written notice of such termination to the Contractor. In the event of a termination for convenience, the City shall pay all amounts due and owing to the Contractor for performance satisfactorily rendered. However, in no event shall the total amounts paid to the Contractor exceed the contract price.

The Contractor shall not be reimbursed for any profits which may have been anticipated, but which have not been earned up to the date of termination.

11. Disputes/Resolutions

11.1 Any claims or disputes that may arise, including adjustments to compensation or to time of completion, shall be initiated by written notice within five (5) days after either party becomes aware of the claim or issue in dispute. The parties shall have ten (10) days following such written notice to cure or resolve any dispute. Notwithstanding the foregoing, the failure to provide written notice shall not serve as a bar to an action in law or equity for either party.

11.2 The City and Contractor shall make all reasonable efforts to resolve any and all matters of dispute without the involvement of any third party. However, if such efforts are not successful after a thirty (30) day period, then both parties agree to resolve their claims by filing a Complaint in the Superior Court of Gwinnett County, Georgia. The terms of this Agreement shall be integrated and enforced under the Laws of Georgia.

12. Indemnity

12.1 Contractor assumes full liability for any and all damages, death, or injury of any kind to all person(s), whether employees or otherwise, and property arising out of or in any way connected with its work, and shall to the fullest extent permitted by law defend, indemnify and hold harmless City, and their respective officers, agents, and employees, (herein referred to as Indemnities), from and against any and all claims, losses, suits, damages, legal costs and expenses and otherwise, arising out of or in any way connected with Contractor's work. If any claim or demand is made against City for any matter enumerated herein, any payment due, or thereafter to become due, to Contractor shall be held by City to cover such losses and expenses.

13. Compliance with Laws and Safety Regulations

13.1 All work, labor, safety rules, services and materials to be furnished by Contractor must strictly comply with all applicable federal, state and local laws, rules, regulations, statutes, ordinances and directives (hereinafter "Laws") now in force or hereafter in effect. All work, labor, services or materials necessary to comply with said laws will be furnished by Contractor as part of this Contract without any additional compensation.

13.2 Equal Opportunity Agreement:

- a. The Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, or handicapping condition. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, national origin, or handicapping condition. 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. The contractor agrees to post in conspicuous places,

available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provision of this nondiscrimination clause.

- b. The Contractor will, in all solicitations or advertisements for employees placed or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, national origin, or handicapping condition.
- c. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order 11246, as amended (3 CFR 169 (1979), and shall post copies of notices in conspicuous places available to employees and applicants for employment.
- d. The Contractor will comply with all provisions of Executive Order 11246, as amended, and the rules, regulations, and relevant orders of the Secretary of Labor.
- e. The Contractor will furnish all information and reports required by Executive Order 11246, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
- f. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246, as amended, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246, as amended, or by rules, regulations, or orders of the Secretary of Labor, or as otherwise provided by law.
- g. The Contractor will include the provisions of paragraphs (1) through (6) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246, as amended, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

13.3 Contractor agrees to comply with the Drug Free Work Place Act.

14. Interpretation

14.1 This Contract shall be interpreted under the laws of the State of Georgia.

15. Amendments

15.1 Any amendments to this contract shall be made in advance in writing and shall not be binding until such amendment is agreed upon and executed by both parties.

This _____ day of _____, 201

My Commission expires: _____

In the County of _____

My Commission expires: _____

In the County of _____

EXHIBIT A

EXHIBIT B

EXHIBIT C



Contractor E-Verify Affidavit
O.C.G.A. § 13-10-91 (b)(1)

Physical performance of services: Contracts with the City involving both physical labor and any services over \$2499.99 in value.

Contractors must be registered with and use the E-Verify program. If you have not registered, you can find the information at www.uscis.gov (click on [E-verify Homepage](#), see start here direction.)

It is the responsibility of the Contractor to submit additional E-Verify Affidavits on every Sub-Contractor for this project.

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the City of Duluth has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Project Name: _____ Date of Project: _____

Legal Name of Contractor: _____

Address: _____ City: _____ State: _____ Zip Code: _____

Federal Work Authorization User Identification Number (E-Verify Number): _____ (4-8 digit numeric #)

Date of Authorization: _____

If a contractor has no employees and does not hire or intend to hire they may satisfy the law by submission of State DL or State ID) Drivers License Number: _____

I hereby declare under penalty of perjury that the foregoing is true and correct

Signature of Authorized Officer/Agent _____ Date _____ Printed Name and Title of Authorized Officer/Agent _____

MUST BE COMPLETED BY NOTARY

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE _____ DAY OF _____, 20____

Executed in _____ (City), _____ (State)

NOTARY PUBLIC Signature _____

My Commission Expires _____

EXHIBIT D

DRUG-FREE WORKPLACE CERTIFICATION

THE UNDERSIGNED CERTIFIES THAT THE PROVISIONS OF CODE SECTIONS 50-24-1 THROUGH 50-24-6 OF THE OFFICIAL CODE OF GEORGIA ANNOTATED, RELATED TO THE “DRUG-FREE WORKPLACE”, HAVE BEEN COMPLIED WITH IN FULL. THE UNDERSIGNED FURTHER CERTIFIES THAT:

1. A DRUG-FREE WORKPLACE will be provided for the employees during the performance of the contract; and
2. Each sub-contractor under the direction of the Contractor shall secure the following written certification:

_____ (Contractor) certifies to the City of Duluth that a DRUG-FREE WORKPLACE will be provided for the employees during the performance of this contract known as _____ (Project) pursuant to paragraph seven (7) of subsection B of Code Section 50-24-3. Also the undersigned further certifies that he/she will not engage in the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of the contract.

CONTRACTOR

DATE

NOTARY

DATE

Request For Proposal

RFP No. PS 24-01

Public Safety Building Chiller and AHU Replacements



City of Duluth Public Safety Building

3276 Buford Highway
Duluth GA 30096

REQUEST FOR PROPOSAL

Sealed proposal packages will be received by the City of Duluth (Owner) until **11:00 a.m. legally prevailing time on September 26, 2024** for:

Replacement of HVAC Systems at the Public Safety Building
3276 Buford Highway Duluth, GA 30096

Proposal packages will be formally opened and the total bid from the bid form will be read aloud at 11:01a.m. legally prevailing time on **September 26, 2024**, in the second-floor executive conference room of Duluth City Hall, located at 3167 Main Street, Duluth, GA 30096.

THIS WILL BE A PACKAGE OPENING AND BID READING ONLY. No determination as to the most qualified or highest-ranking proposal will be made until a thorough evaluation has been completed by the City of Duluth's evaluation team, and the evaluation team's recommendation is approved by City Council.

For purposes of this Request for Proposal (RFP), the terms "Proposer", "Bidder", and "Contractor" will be used interchangeably, and are intended to refer to the entity submitting the proposal package.

Contractor shall provide one (1) original and two (2) copies of the complete submittal package, along with one (1) complete digital version on a flash drive. All four (4) items must be submitted in a sealed package, addressed to City of Duluth (OWNER). Each sealed package containing the four (4) items must be plainly marked on the outside as follows:

TO: City of Duluth
3167 Main Street
Duluth, GA 30096
Attention: Teresa Lynn, City Clerk

RE: Replacement of HVAC Systems at the Public Safety Building

Submittal packages shall include the following completed items:

- o Written Project Approach, including a schedule
- o Corporate Certificate
- o Surety Requirements Acknowledgement
- o Bid Bond
- o Oath of Bidder
- o Statement of Bidder Qualifications
- o Contractor E-Verify Affidavit
- o Resumes and References as described below
- o Acknowledgment of any Addenda
- o Bid Form (including schedule of items)

Failure to include any of the above items fully complete and executed may result in your package being declared as "non-responsive" and disqualify you from further consideration.

If submittal is forwarded by mail or delivery service, the sealed package containing the one (1) original, two (2) copies, and one (1) digital version listed above must be enclosed in another internal package to the attention of OWNER at the address previously given. If, for example, your FedEx box is opened and the submittal is not in a sealed package within the FedEx box, it may be declared non-responsive and disqualified from consideration. Submittal packages must be sealed to maintain their integrity prior to the formal opening.

Submittal packages received without the aforementioned criteria enclosed may be returned to Contractor. Submittal packages received after said time and date will be marked late and not opened. No extension of the proposal period will be made.

The Instructions to Proposers, Bid Information, Evaluation Criteria, Forms, Project Manual, Specifications, Drawings, Bid Bond, Performance and Labor & Material Payment Bond requirements and other Documents related to the bidding and construction of the Work of this Project may be obtained via the following:

Project plans and specifications for the “Replacement of HVAC Systems at the Public Safety Building” will be available electronically at no charge via the City’s website and via the Georgia State Procurement Registry.

PACKAGES MUST BE SUBMITTED IN RESPONSE TO THE PROJECT IN ITS ENTIRETY. NO PARTIAL SUBMITTALS WILL BE ACCEPTED.

The City of Duluth and the Georgia Procurement Registry are the only official sources for this invitation or any addenda that may be issued for same. The City of Duluth will not be held responsible for errors or omissions in submittal packages.

The written bid within the Contractor’s submittal package will include the furnishing of all labor, materials, equipment, and all items necessary pursuant to Drawings, Specifications and Conditions, etc., for the Replacement of HVAC Systems at the Public Safety Building (hereinafter referred to as the Project).

Proposed Project Location: Duluth Public Safety Building
3276 Buford Highway
Duluth, Georgia 30096

Scope of Work: Replacement of the existing chiller, three air-handling units, the chilled water pump, and other work as indicated in the contract documents. The scope of work includes removal of the existing equipment and temporary comfort heating/cooling as the building will need to remain open and fully functional during construction.

Temporary comfort heating/cooling should be provided via temporary HVAC equipment, provided and installed by the contractor, which will keep the facility at a consistent temperature between 65 and 75 degrees Fahrenheit and at a maximum relative humidity of 55%.

Contractor Experience Requirements:

1. The Contractor maintains a permanent place of business.
2. The Contractor has operated under the current corporate name for at least the last five (5) years.
3. The Contractor currently has sufficient bonding capacity to provide performance and payment bonds, both in the amount of 100 percent of the contract amount.
4. The Contractor has not defaulted on a project or failed to complete a project within the last ten years.
5. The Contractor has not filed for bankruptcy nor been judged bankrupt at any time over the last ten years.
6. The Contractor has a history of completing projects consistently on time and within the bid amount.
7. The Contractor does not have a history of being involved in litigation or filing claims against Owners, Construction Contract Administration Firms, or Design Firms.
8. The Contractor has available at least two project management personnel with at least five years' experience on projects with the technical characteristics required of a project of similar scope. One of these project management personnel must be the Project Superintendent and must be on the jobsite at all times during construction. Documentation of this experience must be provided with the proposal package, including resumes of the two project management personnel and a list of at least 3 similar projects completed by the contractor with project name, description, and reference contact information.
9. The onsite project management personnel shall be fluent in the English language.
10. The Contractor, nor any of its affiliated companies, is not currently involved in a dispute, formal claim, or litigation with the OWNER, or with any authority or organization with which the City of Duluth (OWNER) has a vested interest.
11. The Contractor has a written Quality Control/Quality Assurance Program.
12. The Contractor has a written Safety Program.

Project Schedule:

Contractor understands that time is of the essence for completion of the project and, because damages will be difficult to ascertain, the parties shall include a provision in the Contract agreeing that liquidated damages in the amount of five hundred dollars (\$500.00) per calendar day shall be paid by Contractor for each day that Contractor is in default of completing the work within the agreed-upon time frame. Completion of the work includes successfully passing any required punch-list inspection by the designer and/or owner.

The successful bidder shall commence work with an adequate force and equipment on a date to be specified in a written order of the Owner (**Anticipated Notice to Proceed – November 14, 2024**) and shall complete the work within the nine-month time period allotted. Payment will be made to the contractor each calendar month based on the estimated work complete and in place as prescribed by the standard specifications. Retainage as prescribed by the standard specifications will be withheld. Final payment of amount withheld will not be made until the work has been satisfactorily completed and accepted by Owner.

Bid Information:

A pre-submittal meeting will be held at The Public Safety Building on **Wednesday, September 11, 2024 at 10:00 a.m.** This meeting is not mandatory, but interested bidders are strongly encouraged to attend. A City representative will be present on site throughout the duration of the meeting. **This will be the proposer's only opportunity to visit the project site prior to submitting a proposal.**

All addenda will be issued on the State procurement Registry and on the City's website at www.duluthga.net

Bidders that would like to inspect the site to ascertain the nature and location of work should make every attempt to attend the pre-submittal meeting. The City will assume no responsibility for representations or understandings concerning conditions made by its officers or employees unless included in this request for proposal.

A Bid Bond in the amount of not less than 5% of the total amount of the base bid must be submitted with each bid made payable to the City of Duluth. Failure to supply bond will force your bid to be declared non-responsive.

The successful proposer shall provide a 100% payment and a 100% performance bond at the signing of the contract. Failure to supply bonds will result in default of contract.

Failure to sign your bid in the proper space provided on Part II (Bid Form) may force your bid to be declared as "non-responsive" and it may not be considered for award.

No bid may be withdrawn for a period of ninety (90) days after time has been called on the date of opening.

Contract, if awarded, will be based on the bid prices for each line item as is in the best interest of the City of Duluth.

The City of Duluth reserves the right, with or without notice or cause, to accept any bid regardless of the amount thereof; to reject any bid, any number of bids or all bids; to negotiate with any bidder for a reduction or alteration in its bid; to waive or insist upon formal requirements; to reject all bids and to call for additional bids upon the same or different Invitation to Bid and/or Plans and Specifications; to be sole judge, in its discretion, of all questions as to whether or not a bid complies with the Invitation to Bid, the Plans or the Specifications, and as to the qualifications of a bidder to perform the Contract.

Questions must be submitted in writing to Kevin Hendrix at Pond & Company via Kevin.Hendrix@pondco.com. The deadline for questions shall be **September 13 at 5:00 PM**. No questions received after this deadline will be addressed. All questions will be answered via addendum posted on the City's website on or before **September 20, 2024**. Note that no phone calls regarding this project will be accepted.

The successful bidder will be issued one (1) complete set of documents for construction execution. Any additional sets required will be at the bidder's expense. A land disturbance and building permit will be required for the work (permits are approved and are ready for pickup by the successful contractor). The contractor will be responsible for coordinating all required inspections, close out items, etc. associated with the permits.

Please Note: The City of Duluth strives to maintain a website that is both accessible to all visitors and compliant with the Web Content Accessibility Guidelines (WCAG 2.0). All Request for Proposal packages may be requested in WCAG 2.0 compatibility format by emailing pio@duluthga.net.

END OF SECTION

INSTRUCTIONS TO BIDDERS/PROPOSERS/CONTRACTORS

SECTION 1

1.1 QUALIFICATIONS

Firm must have a current Contractor's Public Liability Insurance policy and must be insurable in the following amounts: Bodily injury, including death limits of \$1,000,000 for each accident. Property damage limits of \$2,000,000 for each accident and \$10,000,000 for the aggregate of operations. (The OWNER reserves the right to require additional limits and/or coverage for actual contract.)

1.2. ERRORS IN PROPOSAL PACAKGES

Contractors or their authorized representatives are expected to fully inform themselves as to the conditions, requirements, and specifications before submitting proposal packages. Failure to do so will be at the contractor's own risk. In case of error in extension of prices in the bid, the contract price will govern.

1.3. CONTRACT INFORMATION

The contract will be based on unit prices for each line item as shown in the bid. The price bid for each item will include materials, labor, tools, equipment and all other miscellaneous and/or necessary items to complete each item. The bidder agrees that the cost of any work performed, materials furnished, services provided, or expenses incurred, which are not specifically delineated in the bid list or Contract Documents, but which are incidental to the scope, intent, and completion of the Contract, shall be deemed to have been included in the prices bid for the various items scheduled.

1.4 STATEMENT OF AGREEMENT

With the submission of a proposal package, the Contractor agrees that he/she has carefully examined the Request for Proposal and the proposal documents, and the Contractor agrees that it is the Contractor's responsibility to request clarification on any issues in any section of the Request for Proposal with which the Contractor disagrees or needs clarified. The Contractor also understands that failure to mention these items in the proposal package will be interpreted to mean that the Contractor is in full agreement with the terms, conditions, specifications and requirements therein. With submission of a proposal package, the Contractor hereby certifies: (a) that this proposal package is genuine and is not made in the interest or on behalf of any undisclosed person, firm, or corporation; (b) that Contractor has not directly or indirectly included or solicited any other Contractor to put in a false or insincere proposal package; (c) that Contractor has not solicited or induced any person, firm, or corporation to refrain from submitting a proposal package.

END OF SECTION

GENERAL CONDITIONS

SECTION 2

2.1 MULTIPLE PROPOSAL PACKAGES:

No contractor shall be allowed to submit more than one proposal package.

2.2 BID FOR ALL OR PART:

Contractors must submit a bid sheet for the Base Bid items and must name a price on each item. Incomplete bid sheets will not be accepted and may cause the proposal package to be considered incomplete, disqualifying it from further consideration.

2.3 PRICES TO BE FIRM:

Contractor warrants that bid prices, terms and conditions quoted on his bid sheet will be firm for acceptance for a period of ninety (90) days from proposal package opening date.

2.4 COMPLETENESS:

All information required by the Request for Proposals (RFP) must be completed and submitted to constitute a proper bid proposal.

2.5 QUALITY:

All materials, or supplies used for the construction necessary to comply with this RFP shall be of the best quality and of the highest standard of workmanship. Workmanship employed in any construction, repair, or installation required by this RFP shall be of the highest quality and meet recognized standards within the respective trades, crafts, and of the skills employed.

2.6 GUARANTEE:

Unless otherwise specified by the City, the Contractor shall unconditionally guarantee the materials and workmanship on all material and/or services. If, within the guarantee period any defects occur which are due to faulty material and/or services, the contractor at his expense, shall repair or adjust the condition, or replace the material and/or services to the complete satisfaction of the City. These repairs, replacement or adjustments shall be made only at such time as will be designated by the City as being least detrimental to the operation of the City business.

2.7 LIABILITY PROVISIONS:

Where contractors are required to enter or go onto City property to take measurements or gather other information in order to prepare the bid form as requested by the City, the contractor shall be liable for any injury, damage or loss occasioned by negligence of the contractor, his agent, or any person the contractor has designated to prepare the bid form and shall indemnify and hold harmless the City from any liability arising therefrom. The contract documents specify the liability provisions required of the successful contractor in order to be awarded a contract with the City.

2.8 CANCELLATION OF CONTRACT:

The contract may be cancelled or suspended by the City in whole or in part by written notice of default to the contractor upon non-performance or violation of contract terms.

2.9 PATENT INDEMNITY:

Except as otherwise provided, the successful contractor agrees to indemnify the City and its officers, agents and employees against liability, including costs and expenses for infringement upon any letters patent of the United States arising out of the performance of this contract or out of the use of disposal for the account of the City of supplies furnished or construction work performed hereunder.

2.10 CERTIFICATION OF INDEPENDENT PRICE DETERMINATION:

By submission of this proposal package, the contractor certifies, and in the case of a joint bid each party thereto certifies, as to its own organization, that in connection with this procurement:

(1) The prices on this bid form have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.

(2) Unless otherwise required by law, the prices which have been quoted on this bid form have not been knowingly disclosed by the contractor prior to opening, directly or indirectly to any other contractor or to any competitor; and

(3) No attempt has been made or will be made by the contractor to induce any other person or firm to submit or not to submit a proposal package for the purpose or restricting competition.

2.11 SIGNED BID CONSIDERED OFFER:

The signed bid shall be considered an offer on the part of the contractor, which offer shall be deemed accepted upon approval by the City, Purchasing Agent or his designee. In case of default on the part of the contractor after such acceptance, the City may take action as it deems appropriate, including legal action for damages for lack of required performance.

2.12 NOTICE TO PROCEED:

The successful contractor or proposer shall not commence work under this Request for Proposal until a written contract is awarded and a Notice to Proceed is issued by the City or their designee. If the successful bidder does commence any work or deliver items prior to receiving official notification, he does so at his own risk.

2.13 TERMS OF CONTRACT: (check where applicable)

_____ A. Annual Contract

_____ B. One-time Purchase

____X____ C. Other One Time Contract

2.14 RESPONSIBILITY FOR CLAIMS AND RELIABILITY:

The Contractor shall agree to hold harmless, indemnify and defend the City and its agents. The Contractor will require any and all Subcontractors to conform to the provisions of this clause prior to commencing any work and agrees to ensure that this clause is in conformity with the insurance provisions of the contract.

2.15 BASIS OF CONTRACT AWARD:

If the contract is awarded, it will be awarded to the contractor whose proposal package was ranked highest by the evaluation team and approved by the City Council. Evaluation criteria are listed in section 3.2 of this Request for Proposal.

The City reserves the right to reject any or all proposal packages and to waive any technicalities.

Contracts will be administered by the City Representative. Invoices will be submitted to the City Representative as directed.

2.16 SUBLETTING, ASSIGNMENT OR TRANSFER

The City considers the work of the CONTRACTOR personal. The CONTRACTOR agrees not to assign, sublet, or transfer any or all of its interest in this agreement without prior written approval of the City.

The City reserves the right to review all subcontracts prepared in connection with the agreement, and the CONTRACTOR agrees that it shall submit to the City any proposed subcontract documents together with the subcontractor cost estimates for review and written concurrence of the City in advance of their execution. All subcontracts of \$10,000 or more shall include the provisions set forth in this agreement.

2.17 PRE-CONSTRUCTION CONFERENCE:

The contractor shall attend a pre-construction conference prior to commencing any work.

END OF SECTION

PROPOSAL EVALUATION

SECTION 3

Proposal packages will be evaluated in two phases.

3.1 COMPLETENESS VERIFICATION

Contractor shall include all items in his/her package as required by this request for proposal:

- o Bid Form
- o Written Project Approach
- o Anticipated schedule for project, including major milestone dates
- o Corporate Certificate
- o Surety Requirements Acknowledgement
- o Bid Bond
- o Oath of Bidder
- o Statement of Bidder Qualifications
- o Contractor E-Verify Affidavit
- o Resumes and References
- o Acknowledgment of any Addenda

Phase one of the evaluations will include verification that all items from the above list are included in the proposal package. If anything from the above list is missing from the proposal package, the packages may be deemed non-responsive, and disqualified from further consideration. Complete packages will move forward into the scoring phase.

3.2 RANKING/SCORING

Once each package has been reviewed for completeness, the evaluation team will score each complete package based on the following criteria. Packages will be ranked in order of score, with the highest scoring proposal package being recommended to Council for contract award.

- o **Bid (Total Cost) – up to 65 points**
- o **Written Project Approach & Schedule – up to 25 points**
- o **Resumes and References – up to 10 points**

END OF SECTION

WRITTEN PROJECT APPROACH

Contractor shall include a written approach (max 2 pages) indicating the following to the evaluation team:

1. How does your team plan to mobilize and conduct construction activities while keeping the remainder of the building fully open, functional, and accessible to the public at all times?
2. How will you provide temporary comfort heating/cooling to ensure occupant comfort during construction?
3. How will you anticipate phasing construction?
4. What assistance will you require from the City to complete the project?

CORPORATE CERTIFICATE

I, _____, certify that I am the Secretary of the Corporation named as Contractor in the foregoing Bid; that, _____ who signed said Bid in behalf of the Contractor, was then (Title) _____ of said Corporation; that said Bid was duly signed for and in behalf of said Corporation by authority of its Board of Directors, and is within the scope of its corporate powers, that said Corporations organized under the laws of the State of Georgia.

This _____ day of _____, 2024.

Signature

(SEAL)

SURETY REQUIREMENTS ACKNOWLEDGEMENT

A Bid Bond for five percent (5%) of the amount of the base bid is required to be submitted with each bid.

A Performance and Payment Bond for one hundred percent (100%) of the base bid plus any requested add-alternates will be required of the successful bidder.

The Bidder certifies that he/she has examined all documents contained in this bid package, and is familiar with all aspects of the bid proposal and understands fully all that is required of the successful bidder. The Bidder further certifies that his/her bid shall not be withdrawn for ninety (90) days from the date on which the bid is publicly opened and read.

The Contractor agrees, if awarded this bid, he/she will:

- Furnish, upon receipt of an authorized City of Duluth Contract Agreement, all items indicated thereon as specified in this request for proposal for the bid amount, or;
- Enter a contract with the City to do and/or furnish everything necessary to provide the service and/or accomplish the work as stated and/or specified in this request for proposal for the bid amount, and;
- Furnish a revised performance bond with a new cost amount based upon any add-alternates selected if required by the City, and;
- Forfeit the amount of the Bid Bond as liquidated damages if he/she fails to enter a contract with the City as stated above, within fifteen (15) days of the date on which he/she is awarded the contract.

COMPANY

DATE

SIGNATURE

TITLE

BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE _____ (hereinafter called the Principal) and _____ (hereinafter called the Surety), a Corporation chartered and existing under the laws of the State of _____ with its principal offices in the City of _____ and authorized to do business in the State of Georgia, are held and firmly bound unto the City of DULUTH in the full and just sum of _____ Dollars (\$ _____) good and lawful money of the United States of America, to be paid upon demand of the City of Duluth, to which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, and assigns jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted, to the City of Duluth, a bid for furnishing materials, labor and equipment for:

Replacement of HVAC Systems at the Public Safety Building

WHEREAS, the Principal desires to file this Bond in accordance with law in lieu of a certified Bidder's check otherwise required to accompany this Proposal.

NOW, THEREFORE, the conditions of this obligation are such that if the bid be accepted, the Principal shall within ten (10) days after receipt of notification of the acceptance, execute a Contract in accordance with the bid and upon the terms, conditions, and prices set forth in the form and manner required by the City of DULUTH, and execute a sufficient and satisfactory Performance Bond in the amount of 100% of the total contract price and Payment Bond in the amount of 100% of the total contract price payable to the City of DULUTH, in form and with security satisfactory to said City of DULUTH, and otherwise, to be and remain in full force and virtue in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the City of DULUTH, Georgia, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this _____ day of _____, 2024.

SURETY

PRINCIPAL

BY: _____

BY: _____

(SEAL)

(SEAL)

OATH OF BIDDER

Personally appeared before the undersigned officer duly authorized by law to administer oaths and _____ who, after being first duly sworn, depose and say that they are all the officers, agents, persons, or employees who have acted for or represented _____ (Company Name) in bidding or procuring a Contract with the City of Duluth on the following projects:

Replacement of HVAC Systems at the Public Safety Building

and that said _____ has not by (himself, themselves) or through any persons, officers, agents, or employees prevented or attempted to prevent by any means whatsoever competition in such bidding; or by any means whatsoever prevented or endeavored to prevent anyone from making a bid therefore, or induces or attempted to induce another to withdraw a bid for said work.

BY: _____
Signature of Bidder

Name – Printed

Title

Sworn to and subscribed before me this _____ day of _____, 2024.

Notary Public

(SEAL)

STATEMENT OF BIDDER'S QUALIFICATIONS
(To be subscribed and sworn to before a notary public)

Page 1 of 2

Firm Name: _____
LEGAL NAME OF BUSINESS (As registered with Secretary of State)

Address: _____
LEGAL BUSINESS ADDRESS (P.O. BOX IS INSUFFICIENT)

CITY STATE ZIP

MAILING ADDRESS IF DIFFERENT FROM ABOVE

Telephone Number: _____ Facsimile Number: _____

Contact Person Name and Email Address: _____

Georgia Resident: YES _____ NO _____

When Organized: _____ Where Incorporated: _____

Federal I.D. No.: _____ or Social Security No.: _____

Number of years engaged in the contracting business under the present firm name:

General Contractor's License Number: _____

Credit Available for This Contract: _____

Contracts Now in Hand, Gross Amount: _____

Plan of Organization: ☐ Proprietorship ☐ Corporation ☐ Partnership ☐ LLC

The bidder has refused to sign a contract at the original bid. YES or NO (Please circle one)

The bidder has been declared in default on a contract. YES or NO (Please circle one)

The bidder has been involved in litigation or filing claims against Owners, Construction Contract Administration Firms, or Design Firms in the last 3 years. YES or NO (Please circle one)

If answer is Yes to any statement above, please explain:

The bidder has written corporate safety and quality assurance/quality control processes in place, and the City may examine these documents if requested. YES or NO (Please circle one)

(STATEMENT OF BIDDER'S QUALIFICATIONS - CONTINUED)

Page 2 of 2

I certify that the above information is complete, true, and correct.

COMPANY

DATE

SIGNATURE

TITLE

Sworn to and subscribed before me this _____ day of _____, 2024.

Notary Public

(SEAL)

CONTRACTOR E-VERIFY AFFIDAVIT

By executing this affidavit, the undersigned contractor verifies its compliance with *The Illegal Reform Enhancements for 2013*, stating affirmatively that the individual, firm, or corporation which is contracting with the City of Duluth has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein].

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the City of Duluth, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the City of Duluth at the time the subcontractor(s) is retained to perform such service.

E-Verify * User Identification Number

Date Registered

Legal Company Name

Street Address

City/State/Zip Code

BY: Authorized Officer or Agent
(Contractor Signature)

Date

Title of Authorized Officer or Agent of Contractor

Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE

____ DAY OF _____, 2024

My Commission Expires: _____

Notary Public

* As of the effective date of O.C.G.A. § 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

RESUMES AND REFERENCES

Contractor shall include at least two project management personnel with at least five years' experience on projects with the technical characteristics required of a project of similar scope. One of these project management personnel must be the Project Superintendent and must be on the jobsite at all times during construction. Documentation of this experience must be provided **in this section**, including resumes of the two project management personnel and a list of at least 3 similar projects completed by the contractor with project name, description, and reference contact information.

ACKNOWLEDGEMENT OF ADDENDA

Contractor shall acknowledge all addenda by date each was posted as follows. It is the bidder/contractor's responsibility to check the City's website or the Georgia Procurement Registry for such updates, and to ensure he/she reviews and understands their content. Failure to do so may disqualify contractor's proposal package from further consideration.

ADDENDUM 1 DATED _____

ADDENDUM 2 (if applicable) DATED _____

ADDENDUM 3 (if applicable) DATED _____

Other Addenda, as needed, please list.

I certify that the above information is complete, true, and correct.

COMPANY

DATE

SIGNATURE

TITLE

BID FORM*Page 1 of 2*

In compliance with your Request for Proposal, the undersigned, hereinafter termed the Bidder, proposes to enter into a Contract with the City of Duluth to provide the necessary machinery, tools, apparatus, and other means of construction, and all materials and labor specified in the Contract, necessary to complete the work in the manner therein specified within the time specified, as therein set forth, for:

Replacement of HVAC Systems at the Public Safety Building

The Bidder has carefully examined and fully understands the Contract and other Contractual Documents hereto attached and has made a personal examination of the proposed Work and has satisfied himself as to the actual conditions and requirements of the Work, and hereby proposes and agrees that if his Bid is accepted, he will contract with the City of Duluth in full conformance with the Contract Documents.

It is the intent of this Bid to include all items of construction and all Work indicated on the Drawings and called for in the Specifications.

In accordance with the foregoing, the undersigned proposes to furnish and construct the items listed in the below Schedule of Items for the following bid amounts:

Cost Summary	
Total cost for complete project as shown in project documents.	
Phase	Total Cost
Chiller Replacement installed complete (including removal of current chiller, replacement of chilled water pump, and temporary comfort heating/cooling)	\$
Air Handling Unit 1 installed complete (including removal of current unit and temporary comfort heating/cooling)	\$
Air Handling Unit 2 installed complete (including removal of current unit and temporary comfort heating/cooling)	\$
Air Handling Unit 3 installed complete (including removal of current unit and temporary comfort heating/cooling)	\$
Total Project Cost (Base Bid)	\$

The bidder agrees that the cost of any work performed, materials furnished, services provided, or expenses incurred, which are not specifically delineated in the Contract Documents, but which

Page 2 of 2

are incidental to the scope, intent, and completion of the Contract, shall be deemed to have been included in the prices bid for the various items scheduled.

The bidder further proposes and agrees hereby to promptly commence the Work with adequate force and equipment within ten (10) calendar days from receipt of Notice to Proceed, and to complete the Work within the agreed upon schedule. The City of Duluth will charge the contractor five hundred dollars (\$500.00) per calendar day as liquidated damages for every day beyond this deadline that work is not fully complete.

The undersigned represents that the unit prices listed above are complete as specified, acknowledges that the estimated quantities are not guaranteed, and agrees that payment will be for actual in-place quantities installed per the plans.

Prices must be entered for all blanks in the schedule.

Providing items in excess of the amount shown on the plans will not be paid unless requested by and approved by the City in advance.

COMPANY

SIGNATURE

DATE

PRINT NAME

TITLE



CITY OF DULUTH
CHILLER AND AHU
REPLACEMENTS
AT PUBLIC SAFETY BUILDING
PROJECT SPECIFICATIONS

November 3, 2023

ISSUED FOR CONSTRUCTION

POND PROJECT#: 1230559



3500 Parkway Lane, Suite 500
Peachtree Corners, GA 30092
678-336-7740 – www.pondco.com

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

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END OF TABLE OF CONTENTS

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Contractor's use of site and premises.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and Drawing conventions.

1.2 PROJECT INFORMATION

A. Project Identification: Public Safety Building Chiller Replacement

1. Project Location: 3276 Buford Hwy Duluth GA 30096

B. Owner: City of Duluth, 3167 Main Street, Duluth, Georgia 30096

1. Owner's Representative:

Tony Carr (678-425-4245 tcarr@duluthpd.com)

Robert Montgomery (678-457-7949, rmontgomery@duluthpd.com)

C. Engineer: Pond & Company, 3500 Parkway Lane, Suite 500, Peachtree Corners, Georgia 30092

1. Engineer's Representative: Kevin Hendrix, PE (678- 336-7740, Hendrixk@pondco.com)

D. Web-Based Project Software: Project software will be used for purposes of managing communication and documents during the construction stage.

1. See Section 013100 "Project Management and Coordination." for requirements for using web-based Project software.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. Replacement of the existing chiller, three air-handling units, and the chilled water pump and other Work indicated in the Contract Documents.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.4 PHASED CONSTRUCTION

- A. The Work shall be conducted in four (4) phases, with each phase substantially complete as indicated. The intent of this phasing is to minimize disruptions to the building and occupants, as the facility must remain fully operational at all times. Below is one possible approach—alternate approaches could be acceptable based on discussion with and written approval by the engineer and owner.

1. Phase 1: Chiller and Chilled Water Pump Replacement
 - a. The contractor is responsible for providing temporary comfort heating/cooling to the following locations while the chiller is not in fully working operation: Dispatch, server room, real time crime center, crime lab, evidence room, uniform patrol entrance hallway (Capt., LT., Sgt.), criminal investigations offices, administrative offices (chief of police), records offices, court's offices, judges chambers, court room, and security screening area.
2. Phase 2: AHU 1 Replacement
 - a. The contractor is responsible for providing temporary comfort heating/cooling to the following locations while AHU-1 is not in fully working operation: Dispatch, server room, real time crime center, crime lab, evidence room, and uniform patrol entrance hallway (Capt., LT., Sgt.).
3. Phase 3: AHU 2 Replacement
 - a. The contractor is responsible for providing temporary comfort heating/cooling to the following locations while AHU-2 is not in fully working operation: Criminal investigations offices, administrative offices (chief of police), records offices, and courts offices.
4. Phase 4: AHU 3 Replacement
 - a. The contractor is responsible for providing temporary comfort heating/cooling to the following locations while AHU-3 is not in fully working operation: Judge's chambers, court room, and security screening area.

- B. Before commencing Work of each phase, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates for all phases of the Work.

1. Notify the owner and engineer immediately if any impacts to the schedule are anticipated.

1.5 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Restricted Use of Site: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

- B. Limits on Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways, and Entrances: Keep driveways, parking lots, 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 unless written approval is provided by the owner.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.
- D. 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. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
- B. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

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 normal business working hours of 8 a.m. to 5 p.m., Monday through Friday and 10 a.m. to 5 p.m. on Saturday. No noise generating operations will be allowed on Sundays or Holidays. Exceptions will be permitted for emergencies only and must be approved by the City of Duluth in advance.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than five days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- D. 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 no less than three days in advance of proposed disruptive operations.
 2. Obtain Owner's written permission before proceeding with disruptive operations.
- E. Smoking and Controlled Substance Restrictions: Use of tobacco products , alcoholic beverages, and other controlled substances on Owner's property is not permitted.
- F. Employee Identification: [Provide] [Owner will provide] identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
- G. Employee Screening: Comply with Owner's requirements for [drug] [and] [background] screening of Contractor personnel working on Project site.
1. Maintain list of approved screened personnel with Owner's representative.

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 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

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.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule and the schedule of items provided in the bid documents.
 - 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.
- 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. Arrange schedule of values consistent with format of AIA Document G703
 - 2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Provide line items that align with the schedule of items provided in the bid documents, including a detailed breakdown by phase (phases 1, 2, 3 and 4).
 - 3. 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.
 - 4. Overhead Costs: Include total cost and proportionate share of general overhead and profit for each line item.
 - 5. 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.

1.3 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 Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- D. 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.
- E. Transmittal: Submit a scanned copy of the signed and notarized Application for Payment to engineer and owner via email. Include waivers of lien and similar attachments if required by the Agreement between Owner and Contractor.
 - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- F. 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. Schedule of unit prices.
 - 5. Submittal schedule (preliminary if not final).
 - 6. List of Contractor's staff assignments.
 - 7. List of Contractor's principal consultants.
 - 8. Copies of building permits.
 - 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 10. Initial progress report.
 - 11. Report of preconstruction conference.
 - 12. Certificates of insurance and insurance policies.
 - 13. Performance and payment bonds.
 - 14. Data needed to acquire Owner's insurance.
- G. 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.
 - 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- H. 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. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706.
 5. AIA Document G706A.

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. Coordination drawings.
 - 3. RFIs.
 - 4. Digital project management procedures.
 - 5. Project meetings.
- B. Related Requirements:
 - 1. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 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.

1.3 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 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. 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.

1.4 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 so as 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. Owner name.
 2. Owner's Project number.
 3. Name of Engineer
 4. Date.
 5. Name of Contractor.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Engineer.
- D. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow five (5) business 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 Architect'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 Architect's time for response will date from time of receipt by Engineer of additional information.
 3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within five days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly to Engineer. Use software log that is part of web-based Project management software. Software log with not less than 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.
- 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.

1.5 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Architect's Digital Data Files: Digital data files of Engineer's CAD drawings will be provided by Engineer for Contractor's use during construction.
1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project record Drawings.
 2. Engineer makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 3. Contractor shall execute a data licensing agreement in the form of Agreement form as provided by the Engineer in order to receive the files.

- B. Web-Based Project Management Software Package: Provide, administer, and use a web-based Project management software package for purposes of hosting and managing Project communication and documentation until Final Completion.

1. Web-based Project management software includes, at a minimum, the following features:
 - a. Compilation of Project data, including Contractor, subcontractors, Architect, architect's consultants, Owner, and other entities involved in Project. Include names of individuals and contact information.
 - b. Access control for each entity for each workflow process, to determine entity's digital rights to create, modify, view, and print documents.
 - c. Document workflow planning, allowing customization of workflow between project entities.
 - d. Creation, logging, tracking, and notification for Project communications required in other Specification Sections, including, but not limited to, RFIs, submittals, Minor Changes in the Work, Construction Change Directives, and Change Orders.
 - e. Track status of each Project communication in real time, and log time and date when responses are provided.
 - f. Procedures for handling PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
 - g. Processing and tracking of payment applications.
 - h. Processing and tracking of contract modifications.
 - i. Creating and distributing meeting minutes.
 - j. Document management for Drawings, Specifications, and coordination drawings, including revision control.
 - k. Management of construction progress photographs.
 2. Provide access to the web-based Project management software by the Engineer, Architect, Owner.
 3. At completion of Project, provide digital archive in format that is readable by common desktop software applications in format acceptable to Architect. Provide data in locked format to prevent further changes.
- C. 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.

1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 15 days after notice to proceed unless agreed upon in writing by all parties.
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: Expect to discuss items of significance that could affect progress. An agenda for the preconstruction meeting should be developed prior to the meeting in cooperation with the owner/engineer. The following should be included at a minimum:
 - 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. Preparation of Record Documents.
 - o. Use of the premises.
 - p. Work restrictions.
 - q. Working hours.
 - r. Owner's occupancy requirements.
 - s. Responsibility for temporary facilities and controls.
 - t. Procedures for disruptions and shutdowns.
 - u. Construction waste management and recycling.
 - v. Parking availability.
 - w. Office, work, and storage areas.
 - x. Equipment deliveries and priorities.
 - y. First aid.
 - z. Security.
 - aa. Progress cleaning.
 3. Minutes: The contractor will be responsible for recording 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. Possible conflicts.
 - i. Compatibility requirements.
 - j. Time schedules.
 - k. Weather limitations.
 - l. Manufacturer's written instructions.
 - m. Warranty requirements.
 - n. Compatibility of materials.
 - o. Acceptability of substrates.
 - p. Temporary facilities and controls.
 - q. Space and access limitations.
 - r. Regulations of authorities having jurisdiction.
 - s. Testing and inspecting requirements.
 - t. Installation procedures.
 - u. Coordination with other work.
 - v. Required performance results.
 - w. Protection of adjacent work.
 - x. 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. Progress Meetings: Conduct progress meetings at biweekly 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) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site use.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of Proposal Requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) 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 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

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.

1.4 SUBMITTAL FORMATS

A. Submittal Information: Include the following information in each submittal:

1. Project name.
2. Date.
3. Name of Engineer.
4. Name of Contractor.
5. Name of firm or entity that prepared submittal.
6. Names of subcontractor, manufacturer, and supplier.
7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
8. Category and type of submittal.
9. Submittal purpose and description.

10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 11. Drawing number and detail references, as appropriate.
 12. Indication of full or partial submittal.
 13. Location(s) where product is to be installed, as appropriate.
 14. Other necessary identification.
 15. Remarks.
 16. Signature of transmitter.
- B. Options: Identify options requiring selection by Architect.
- 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. Submittals for Utilizing Web-Based Project Management 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. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project management software website. Enter required data in web-based software site to fully identify submittal.
- 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.
- 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 10 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. Resubmittal Review: Allow 10 days for review of each resubmittal.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

- 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 concurrent 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 kind, 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. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based Project software website. Enter required data in web-based software site to fully identify submittal.
 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.
 5. 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 two sets of Samples. Engineer will retain one 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:
- 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 architects 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 Welding Procedure Specification and Procedure Qualification Record 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. The designer will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ENGINEER REVIEW

- A. Action Submittals: Engineer will review each submittal, indicate corrections or revisions required, and return it.
 - 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 Architect 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. 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.
 - 2. Requirements for Contractor to provide quality-assurance and quality-control services required by Engineer, Owner, Commissioning Authority, 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; for example, 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 Architect.
- 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 Architect 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. 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.
- B. 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 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. Statement on condition of substrates and their acceptability for installation of product.
 - 2. Statement that products at Project site comply with requirements.
 - 3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 5. 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. Statement that equipment complies with requirements.

2. Results of operational and other tests and a statement of whether observed performance complies with requirements.
3. Other required items indicated in individual Specification Sections.

1.7 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. 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.
- F. 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.
- G. 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.

1.8 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, and the Contract Sum will be adjusted by Change Order.
- 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. 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.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. 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, Commissioning Authority and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 1. Notify Engineer, Commissioning Authority, 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 preinstallation 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. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 6. 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.

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 Architect.
 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, Commissioning Authority'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 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

- A. Installation, removal, and use charges for temporary facilities to be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to Engineer, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and requirements for replacing water-damaged Work.
2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
3. Indicate methods to be used to avoid trapping water in finished work.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

- C. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- C. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

3.4 SUPPORT FACILITIES INSTALLATION

- A. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- B. Parking: **Use designated areas of Owner's existing** parking areas for construction personnel.
- C. Storage and Staging: **Use designated areas of Project site** for storage and staging needs.
- D. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
- F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- G. Existing Elevator Use: Use of Owner's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
 - 1. Do not load elevators beyond their rated weight capacity.
 - 2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become

damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

- H. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
 - 1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, in accordance with **requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent**.
 - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
 - 2. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Tree and Plant Protection: Protect tree root systems from damage, flooding, and erosion.
- F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- G. Temporary Egress: Provide temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction. Provide signage directing occupants to temporary egress.

- H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- I. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by **Owner and tenants** from fumes and noise.
 - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
 - 2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 - 3. Provide walk-off mats at each entrance through temporary partition.
- J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition in accordance with requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

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. Construction layout.
 - 2. Field engineering.
 - 3. Installation.
 - 4. Cutting and patching.
 - 5. Coordination of Owner's portion of the Work.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
 - 9. Correction of the Work.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for submitting Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, replacing defective work, and final cleaning.
 - 2. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.3 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Engineer of locations and details of cutting and await directions from Engineer before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- 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. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Engineer for the visual and functional performance of in-place materials. Use materials that are not considered hazardous.
- C. 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 work, 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.
- 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.
 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. 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.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. 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 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation existing conditions. If discrepancies are discovered, notify Engineer promptly.
- B. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- C. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

3.4 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 Architect.
 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 Architect. Fit exposed connections together to form hairline joints.

3.5 CUTTING AND PATCHING

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of Work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching in accordance with requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.
 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 5. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as practicable, as judged by Engineer. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 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.
- 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. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."
- H. 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.
- I. 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.
- J. 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.

3.7 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components with requirements in **Section 019113 "General Commissioning Requirements."**
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.8 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.

3.9 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 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Disposing of nonhazardous demolition and construction waste.

1.2 DEFINITIONS

- A. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building, structure, and site improvement materials resulting from demolition operations.
- C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Comply with requirements in Section 024119 "Selective Demolition."

PART 2 - EXECUTION

2.1 PLAN IMPLEMENTATION

- A. General: Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

1. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.
 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

2.2 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged or recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. General: Except for items or materials to be salvaged or recycled, remove waste materials and legally dispose of at designated spoil areas on Owner's property.
- C. Burning: Do not burn waste materials.

END OF SECTION 017419

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 017823 "Operation and Maintenance Data" for additional operation and maintenance manual requirements.
 - 2. Section 017839 "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 3. Section 017900 "Demonstration and Training" for requirements to train Owner's maintenance personnel to adjust, operate, and maintain products, equipment, and systems.

1.2 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.

1.3 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. 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.

2. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 3. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Label with manufacturer's name and model number.
 4. Submit testing, adjusting, and balancing records.
 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. Complete startup and testing of systems and equipment.
 3. Perform preventive maintenance on equipment used prior to Substantial Completion.
 4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 5. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 6. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 7. Complete final cleaning requirements.
 8. 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.

1.4 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.

- 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.

1.5 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. Organize list of spaces in sequential order, listed by room or space number.
 - 2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
 - 3. 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.
 - 4. Submit list of incomplete items in the following format:
 - a. MS Excel Electronic File: Engineer will return annotated file.

1.6 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect 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. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. 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 and Owner.
- D. Warranties in Paper Form:
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

- 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. 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. 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.
 - c. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - d. Clean flooring, removing debris, dirt, and staining; clean in accordance with manufacturer's instructions.
 - e. Vacuum and mop concrete.
 - f. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean in accordance with manufacturer's instructions if visible soil or stains remain.
 - 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 ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - m. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
 - n. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste-disposal requirements Section 017419 "Construction Waste Management and Disposal."

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.

1.2 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 [**and Commissioning Authority**] 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 on digital media acceptable to Architect. Enable reviewer comments on draft submittals.
- C. 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 5 days of receipt of Engineer's [**and Commissioning Authority's**] comments and prior to commencing demonstration and training.
- D. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 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.

1.4 REQUIREMENTS FOR, 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 shall 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 Architect.
 8. Name and contact information for Commissioning Authority.
 9. Names and contact information for major consultants to the Architect 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.
- 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 according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 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.
- 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.

1.6 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.
- 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. 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.
- D. 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.
- E. 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.
- F. 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.

- 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.
- H. 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.

1.7 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. 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.
- D. 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.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. 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.
- B. Related Requirements:
 - 1. 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 in electronic PDF format.
- 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.

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
 - k. Changes made following Architect'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: Annotated PDF electronic file.
 - 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 - 3. Refer instances of uncertainty to Engineer for resolution.
 - 4. Engineer will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.
- C. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- 1. Format: Annotated PDF electronic file.
 - 2. 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.

1.4 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
- B. Format: Submit record specifications as annotated PDF electronic file.

1.5 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 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.

1.6 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 and Owner's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Instruction in operation and maintenance of systems, subsystems, and equipment.
 - 2. Demonstration and training video recordings.

1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.3 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit electronic copies within seven days of end of each training module.
 - 1. At completion of training, submit complete training manual(s) for Owner's use prepared in same paper and PDF file format required for operation and maintenance manuals specified in Section 017823 "Operation and Maintenance Data."

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination."

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.6 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Systems and equipment operation manuals.
 - c. Systems and equipment maintenance manuals.
 - d. Product maintenance manuals.
 - e. Project Record Documents.
 - f. Identification systems.
 - g. Warranties and bonds.
 - h. Maintenance service agreements and similar continuing commitments.
 - 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.

- d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
- a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
- a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
- a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
- a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning.
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
8. Repairs: Include the following:
- a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

1.7 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

1.8 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- B. Scheduling: Provide instruction at mutually agreed-on times.
 - 1. Schedule training with Owner with at least ten days' advance notice.
- C. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- D. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.9 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. 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 HD mode.
 - 1. Submit video recordings on CD-ROM or thumb drive or by uploading to web-based Project software site.
- B. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
- C. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
- D. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017900

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.

1.2 MATERIALS OWNERSHIP

- ##### A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- ##### B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 PREINSTALLATION MEETINGS

- ##### A. Predemolition Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

- ##### A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and , for noise control. Indicate proposed locations and construction of barriers.
- ##### B. Schedule of selective demolition activities with starting and ending dates for each activity.
- ##### C. Predemolition photographs or video.
- ##### D. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician.

1.5 QUALITY ASSURANCE

- ##### A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.6 FIELD CONDITIONS

- A. Owner will 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: It is not expected that hazardous materials will be encountered in the Work.
 - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.
- G. Arrange selective demolition schedule so as not to interfere with Owner's operations.

1.7 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

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. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
- C. Inventory and record the condition of items to be removed and salvaged.

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 2. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. 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.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 4. Maintain fire watch during and for at least 4 hours after flame-cutting operations.
 - 5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 6. Dispose of demolished items and materials promptly. Comply with requirements in Section 017419 "Construction Waste Management and Disposal."
- 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.
- C. 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.
- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 CLEANING

- A. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 017419 "Construction Waste Management and Disposal."
 - 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.

4. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. 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 230500 - COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Motors.

1.2 DEFINITIONS

- A. Existing Piping To Remain: Existing piping that is not to be removed and that is not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 ACTION SUBMITTALS

A. Product Data:

1. For each type of product, excluding motors which are included in Part 1 of HVAC equipment Sections.
 - a. Include construction details, material descriptions, and dimensions of individual components, and finishes.
 - b. Include operating characteristics and furnished accessories.

1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Field quality-control reports.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1/D1.1M.
- B. Pipe and Pressure-Vessel Welding Qualifications: Qualify procedures and operators in accordance with 2021 ASME Boiler and Pressure Vessel Code, Section IX.

1.6 COORDINATION

- A. Coordinate features of motors, installed units, and accessory devices to be compatible with the following:

1. Motor controllers.
2. Torque, speed, and horsepower requirements of the load.
3. Ratings and characteristics of supply circuit and required control sequence.
4. Ambient and environmental conditions of installation location.

PART 2 - PRODUCTS

2.1 MOTORS

A. Motor Requirements, General:

1. Content includes motors for use on alternating-current power systems of up to 600 V and installed at equipment manufacturer's factory or shipped separately by equipment manufacturer for field installation.
2. Comply with requirements in this Section except when stricter requirements are specified in equipment schedules or Sections.
3. Comply with NEMA MG 1 unless otherwise indicated.

B. Motor Characteristics:

1. Duty: Continuous duty at ambient temperature of 40 deg C and at altitude of **3300 ft.** (1000 m) above sea level.
2. Capacity and Torque Characteristics: Sufficient to start, accelerate, and operate connected loads at designated speeds, at installed altitude and environment, with indicated operating sequence, and without exceeding nameplate ratings or considering service factor.

C. Polyphase Motors:

1. Description: NEMA MG 1, Design B, medium induction motor.
2. Efficiency: Premium Efficient, as defined in NEMA MG 1.
3. Service Factor: 1.15.
4. Multispeed Motors: Variable torque.
 - a. For motors with 2:1 speed ratio, consequent pole, single winding.
 - b. For motors with other than 2:1 speed ratio, separate winding for each speed.
5. Multispeed Motors, Two Winding: Separate winding for each speed.
6. Rotor: Random-wound, squirrel cage.
7. Bearings: Regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading.
8. Temperature Rise: Match insulation rating.
9. Insulation: Class F.
10. Code Letter Designation:
 - a. Motors 15 Hp and Larger: NEMA starting Code F or Code G.
 - b. Motors Smaller Than 15 Hp: Manufacturer's standard starting characteristic.
11. Enclosure Material: Cast iron for motor frame sizes 324T and larger; rolled steel for motor frame sizes smaller than 324T.

D. Additional Requirements for Polyphase Motors:

1. Motors Used with Reduced-Voltage and Multispeed Controllers: Match wiring connection requirements for controller with required motor leads. Provide terminals in motor terminal box, suited to control method.
2. Motors Used with Variable-Frequency Controllers: Ratings, characteristics, and features coordinated with and approved by controller manufacturer.
 - a. Windings: Copper magnet wire with moisture-resistant insulation varnish, designed and tested to resist transient spikes, high frequencies, and short time-rise pulses produced by pulse-width-modulated inverters.
 - b. Premium-Efficient Motors: Class B temperature rise; Class F insulation.
 - c. Inverter-Duty Motors: Class F temperature rise; Class H insulation.
 - d. Thermal Protection: Comply with NEMA MG 1 requirements for thermally protected motors.

PART 3 - EXECUTION

END OF SECTION 230500

SECTION 230553 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Equipment labels.
2. Warning signs and labels.

1.2 ACTION SUBMITTALS

- A. Equipment-Label Schedule: Include a listing of all equipment to be labeled with the proposed content for each label.

PART 2 - PRODUCTS

2.1 EQUIPMENT LABELS

A. Metal Labels for Equipment:

1. Material and Thickness: Brass, 0.032-inch (0.8-mm) stainless steel, 0.025-inch (0.64-mm) aluminum, 0.032-inch (0.8-mm) anodized aluminum, 0.032-inch (0.8-mm) minimum thickness, with predrilled or stamped holes for attachment hardware.
2. Letter and Background Color: As indicated for specific application under Part 3.
3. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch (64 by 19 mm).
4. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances of up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
5. Fasteners: Stainless steel rivets or self-tapping screws.
6. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

B. Plastic Labels for Equipment:

1. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch (1.6 mm) 1/8 inch (3.2 mm) thick, with predrilled holes for attachment hardware.
2. Letter and Background Color: As indicated for specific application under Part 3.
3. Maximum Temperature: Able to withstand temperatures of up to 160 deg F (71 deg C).
4. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch (64 by 19 mm).
5. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances of up to 72 inches (1830 mm).

- mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
- 6. Fasteners: Stainless steel rivets or self-tapping screws.
- 7. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.

- C. Label Content: Include equipment's Drawing designation or unique equipment number, Drawing numbers where equipment is indicated (plans, details, and schedules), and the Specification Section number and title where equipment is specified.

2.2 WARNING SIGNS AND LABELS

- A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch (1.6 mm) 1/8 inch (3.2 mm) thick, with predrilled holes for attachment hardware.
- B. Letter and Background Color: As indicated for specific application under Part 3.
- C. Maximum Temperature: Able to withstand temperatures of up to 160 deg F (71 deg C).
- D. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch (64 by 19 mm).
- E. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances of up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths the size of principal lettering.
- F. Fasteners: Stainless steel rivets or self-taping screws.
- G. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- H. Arc-Flash Warning Signs: Provide arc-flash warning signs in locations and with content in accordance with requirements of OSHA and NFPA70E and other applicable codes and standards.
- I. Label Content: Include caution and warning information plus emergency notification instructions.

2.3 WARNING TAGS

- A. Description: Preprinted accident-prevention tags of plasticized card stock.
 - 1. Size: 3 by 5-1/4 inches (75 by 133 mm) minimum Approximately 4 by 7 inches (100 by 178 mm).
 - 2. Fasteners: Brass grommet and wire Reinforced grommet and wire or string.
 - 3. Nomenclature: Large-size primary caption, such as "DANGER," "CAUTION," or "DO NOT OPERATE."
 - 4. Letter and Background Color: As indicated for specific application under Part 3.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean piping and equipment surfaces of incompatible primers, paints, and encapsulants, as well as dirt, oil, grease, release agents, and other substances that could impair bond of identification devices.

3.2 INSTALLATION, GENERAL REQUIREMENTS

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Locate identifying devices so that they are readily visible from the point of normal approach.

3.3 INSTALLATION OF EQUIPMENT LABELS, WARNING SIGNS, AND LABELS

- A. Permanently fasten labels on each item of mechanical equipment.
- B. Sign and Label Colors:
 - 1. White letters on an ANSI Z535.1 safety-blue background.
- C. Locate equipment labels where accessible and visible.
- D. Arc-Flash Warning Signs: Provide arc-flash warning signs on electrical disconnects and other equipment where arc-flash hazard exists, as indicated on Drawings, and in accordance with requirements of OSHA and NFPA 70E, and other applicable codes and standards.

3.4 INSTALLATION OF WARNING TAGS

- A. Warning Tag Color: Black letters on an ANSI Z535.1 safety-yellow background.
- B. Attach warning tags, with proper message, to equipment and other items where scheduled.

END OF SECTION 230553

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Testing, Adjusting, and Balancing of Air Systems:
 - a. Variable-air-volume systems.
- 2. Testing, Adjusting, and Balancing of Hydronic Piping Systems:
 - a. Constant-flow hydronic systems.
- 3. Testing, adjusting, and balancing of equipment.
- 4. Vibration tests.
- 5. HVAC-control system verification.

1.3 DEFINITIONS

- A. AABC: Associated Air Balance Council.
- B. NEBB: National Environmental Balancing Bureau.
- C. TAB: Testing, adjusting, and balancing.
- D. TABB: Testing, Adjusting, and Balancing Bureau.
- E. TAB Specialist: An independent entity meeting qualifications to perform TAB work.
- F. TDH: Total dynamic head.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: Within 30 days of Contractor's Notice to Proceed, submit documentation that the TAB specialist and this Project's TAB team members meet the qualifications specified in "Quality Assurance" Article.
- B. Contract Documents Examination Report: Within 30 days of Contractor's Notice to Proceed, submit the Contract Documents review report, as specified in Part 3.

- C. Strategies and Procedures Plan: Within 30 days of Contractor's Notice to Proceed, submit TAB strategies and step-by-step procedures, as specified in "Preparation" Article.
- D. System Readiness Checklists: Within 30 days of Contractor's Notice to Proceed, submit system readiness checklists, as specified in "Preparation" Article.
- E. Examination Report: Submit a summary report of the examination review required in "Examination" Article.
- F. Certified TAB reports.
- G. Sample report forms.
- H. Instrument calibration reports, to include the following:
 - 1. Instrument type and make.
 - 2. Serial number.
 - 3. Application.
 - 4. Dates of use.
 - 5. Dates of calibration.
 - 6. Record of measurements of existing equipment that will be replaced.

1.5 QUALITY ASSURANCE

- A. TAB Specialists Qualifications, Certified by AABC:
 - 1. TAB Field Supervisor: Employee of the TAB specialist and certified by AABC.
 - 2. TAB Technician: Employee of the TAB specialist and certified by AABC.
- B. TAB Specialists Qualifications, Certified by NEBB or TABB:
 - 1. TAB Field Supervisor: Employee of the TAB specialist and certified by NEBB or TABB.
 - 2. TAB Technician: Employee of the TAB specialist and certified by NEBB or TABB.
- C. Instrumentation Type, Quantity, Accuracy, and Calibration: Comply with requirements in ASHRAE 111, Section 4, "Instrumentation."
- D. ASHRAE/IES 90.1 Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6.7.2.3 - "System Balancing."
- E. Code and AHJ Compliance: TAB is required to comply with governing codes and requirements of authorities having jurisdiction.

1.6 FIELD CONDITIONS

- A. Full Owner Occupancy: Owner will occupy the site and existing building during entire TAB period. Cooperate with Owner during TAB operations to minimize conflicts with Owner's operations.

PART 2 - EXECUTION

2.1 EXAMINATION

- A. Examine the Contract Documents to become familiar with Project requirements and to discover conditions in systems designs that may preclude proper TAB of systems and equipment.
- B. Examine installed systems for balancing devices, such as test ports, gauge cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers. Verify that locations of these balancing devices are applicable for intended purpose and are accessible.
- C. Examine the approved submittals for HVAC systems and equipment.
- D. Examine design data, including HVAC system descriptions, statements of design assumptions for environmental conditions and systems output, and statements of philosophies and assumptions about HVAC system and equipment controls.
- E. Examine equipment performance data, including fan and pump curves.
 - 1. Relate performance data to Project conditions and requirements, including system effects that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system.
 - 2. Calculate system-effect factors to reduce performance ratings of HVAC equipment when installed under conditions different from the conditions used to rate equipment performance. To calculate system effects for air systems, use tables and charts found in AMCA 201, "Fans and Systems," or in SMACNA's "HVAC Systems - Duct Design." Compare results with the design data and installed conditions.
- F. Examine system and equipment installations and verify that field quality-control testing, cleaning, and adjusting specified in individual Sections have been performed.
- G. Examine test reports specified in individual system and equipment Sections.
- H. Examine HVAC equipment and verify that bearings are greased, belts are aligned and tight, filters are clean, and equipment with functioning controls is ready for operation.
- I. Examine control valves for proper installation for their intended function of isolating, throttling, diverting, or mixing fluid flows.
- J. Examine heat-transfer coils for correct piping connections and for clean and straight fins.
- K. Examine system pumps to ensure absence of entrained air in the suction piping.
- L. Examine operating safety interlocks and controls on HVAC equipment.
- M. Examine control dampers for proper installation for their intended function of isolating, throttling, diverting, or mixing air flows.

- N. Report deficiencies discovered before and during performance of TAB procedures. Observe and record system reactions to changes in conditions. Record default set points if different from indicated values.

2.2 PREPARATION

- A. Prepare a TAB plan that includes the following:
 - 1. Equipment and systems to be tested.
 - 2. Strategies and step-by-step procedures for balancing the systems.
 - 3. Instrumentation to be used.
 - 4. Sample forms with specific identification for all equipment.
- B. Perform system-readiness checks of HVAC systems and equipment to verify system readiness for TAB work. Include, at a minimum, the following:
 - 1. Airside:
 - a. Clean filters are installed.
 - b. Fans are operating, free of vibration, and rotating in correct direction.
 - c. Variable-frequency controllers' startup is complete and safeties are verified.
 - d. Automatic temperature-control systems are operational.
 - e. Suitable access to balancing devices and equipment is provided.
 - 2. Hydronics:
 - a. Verify leakage and pressure tests on water distribution systems have been satisfactorily completed.
 - b. Water treatment is complete.
 - c. Systems are flushed, filled, and air purged.
 - d. Strainers are pulled and cleaned.
 - e. Control valves are functioning in accordance with the sequence of operation.
 - f. Shutoff and balance valves have been verified to be 100 percent open.
 - g. Pumps are started and proper rotation is verified.
 - h. Pump gauge connections are installed directly at pump inlet and outlet flanges or in discharge and suction pipe prior to valves or strainers.
 - i. Variable-frequency controllers' startup is complete and safeties are verified.
 - j. Suitable access to balancing devices and equipment is provided.

2.3 GENERAL PROCEDURES FOR TESTING AND BALANCING

- A. Perform testing and balancing procedures on each system in accordance with the procedures contained in AABC's "National Standards for Total System Balance" ASHRAE 111 NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems" and in this Section.
- B. Cut insulation, ducts, pipes, and equipment casings for installation of test probes to the minimum extent necessary for TAB procedures.

1. After testing and balancing, patch probe holes in ducts with same material and thickness as used to construct ducts.
 2. Where holes for probes are required in piping or hydronic equipment, install pressure and temperature test plugs to seal systems.
- C. Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.
- D. Take and report testing and balancing measurements in inch-pound (IP) and metric (SI) units.

2.4 TESTING, ADJUSTING, AND BALANCING OF HVAC EQUIPMENT

- A. Test, adjust, and balance HVAC equipment indicated on Drawings, including, but not limited to, the following:
1. Motors.
 2. Pumps.
 3. Air-handling units.

2.5 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

- A. Check airflow patterns from the outdoor-air louvers and dampers and the return- and exhaust-air dampers through the supply-fan discharge and mixing dampers.
- B. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.
- C. Verify that motor starters are equipped with properly sized thermal protection.
- D. Check condensate drains for proper connections and functioning.
- E. Check for proper sealing of air-handling-unit components.

2.6 PROCEDURES FOR VARIABLE-AIR-VOLUME SYSTEMS

- A. Adjust the variable-air-volume systems as follows:
1. Verify that the system static pressure sensor is located two-thirds of the distance down the duct from the fan discharge.
 2. Verify that the system is under static pressure control.
 3. Select the terminal unit that is most critical to the supply-fan airflow. Measure inlet static pressure, and adjust system static pressure control set point so the entering static pressure for the critical terminal unit is not less than the sum of the terminal-unit manufacturer's recommended minimum inlet static pressure plus the static pressure needed to overcome terminal-unit discharge system losses.
 4. Measure fan static pressures as follows:
 - a. Measure static pressure directly at the fan outlet or through the flexible connection.

- b. Measure static pressure directly at the fan inlet or through the flexible connection.
 - c. Measure static pressure across each component that makes up the air-handling system.
 - d. Report any artificial loading of filters at the time static pressures are measured.
- 5. Set final return and outside airflow to the fan while operating at maximum return airflow and minimum outdoor airflow.
 - a. Balance the return-air ducts and inlets.
 - b. Verify that terminal units are meeting design airflow under system maximum flow.
- 6. Verify final system conditions as follows:
 - a. Re-measure and confirm that minimum outdoor, return, and relief airflows are within design. Readjust to match design if necessary.
 - b. Re-measure and confirm that total airflow is within design.
 - c. Re-measure final fan operating data, speed, volts, amps, and static profile.
 - d. Mark final settings.
 - e. Test system in economizer mode. Verify proper operation and adjust if necessary. Measure and record all operating data.
 - f. Verify tracking between supply and return fans.

2.7 GENERAL PROCEDURES FOR HYDRONIC SYSTEMS

- A. Prepare test reports for pumps, coils, and other equipment. Obtain approved submittals and manufacturer-recommended testing procedures. Crosscheck the summation of required coil and equipment flow rates with pump design flow rate.
- B. Prepare schematic diagrams of systems' Record drawings piping layouts.
- C. In addition to requirements in "Preparation" Article, prepare hydronic systems for testing and balancing as follows:
 - 1. Locate start-stop and disconnect switches, electrical interlocks, and motor controllers.
 - 2. Verify that motor controllers are equipped with properly sized thermal protection.
 - 3. Check that air has been purged from the system.
- D. Measure and record upstream and downstream pressure of each piece of equipment.
- E. Check settings and operation of automatic temperature-control valves, self-contained control valves, and pressure-reducing valves. Record final settings.
 - 1. Check settings and operation of each safety valve. Record settings.

2.8 PROCEDURES FOR CONSTANT-FLOW HYDRONIC SYSTEMS

- A. Adjust pumps to deliver total design flow.
 - 1. Measure total water flow.
 - a. Position valves for full flow through coils.

- b. Measure flow by main flow meter, if installed.
 - c. If main flow meter is not installed, determine flow by pump TDH or known equipment pressure drop.
 2. Measure pump TDH as follows:
 - a. Measure discharge pressure directly at the pump outlet flange or in discharge pipe prior to any valves.
 - b. Measure inlet pressure directly at the pump inlet flange or in suction pipe prior to any valves or strainers.
 - c. Convert pressure to head and correct for differences in gauge heights.
 - d. Verify pump impeller size by measuring the TDH with the discharge valve closed. Note the point on manufacturer's pump curve at zero flow, and verify that the pump has the intended impeller size.
 - e. With valves open, read pump TDH. Adjust pump discharge valve until design water flow is achieved. If excessive throttling is required to achieve desired flow, recommend pump impellers be trimmed to reduce excess throttling.
 3. Monitor motor performance during procedures, and do not operate motor in an overloaded condition.
- B. Adjust flow-measuring devices installed in mains and branches to design water flows.
 1. Measure flow in main and branch pipes.
 2. Adjust main and branch balance valves for design flow.
 3. Re-measure each main and branch after all have been adjusted.
- C. Adjust flow-measuring devices installed at terminals for each space to design water flows.
 1. Measure flow at terminals.
 2. Adjust each terminal to design flow.
 3. Re-measure each terminal after it is adjusted.
 4. Position control valves to bypass the coil, and adjust the bypass valve to maintain design flow.
 5. Perform temperature tests after flows have been balanced.
- D. For systems with pressure-independent valves at terminals:
 1. Measure differential pressure and verify that it is within manufacturer's specified range.
 2. Perform temperature tests after flows have been verified.
- E. For systems without pressure-independent valves or flow-measuring devices at terminals:
 1. Measure and balance coils by either coil pressure drop or temperature method.
 2. If balanced by coil pressure drop, perform temperature tests after flows have been verified.
- F. Verify final system conditions as follows:
 1. Re-measure and confirm that total water flow is within design.
 2. Re-measure final pumps' operating data, TDH, volts, amps, and static profile.

3. Mark final settings.

G. Verify that memory stops have been set.

2.9 PROCEDURES FOR MOTORS

A. Motors 1/2 HP and Larger: Test at final balanced conditions and record the following data:

1. Manufacturer's name, model number, and serial number.
2. Motor horsepower rating.
3. Motor rpm.
4. Phase and hertz.
5. Nameplate and measured voltage, each phase.
6. Nameplate and measured amperage, each phase.
7. Starter size and thermal-protection-element rating.
8. Service factor and frame size.

B. Motors Driven by Variable-Frequency Controllers: Test manual bypass of controller to prove proper operation.

2.10 PROCEDURES FOR WATER CHILLERS

A. Air-Cooled Chillers: Balance water flow through each evaporator to within specified tolerances of indicated flow, with all pumps operating. With only one chiller operating in a multiple-chiller installation, do not exceed the flow for the maximum tube velocity recommended by the chiller manufacturer. Measure and record the following data with each chiller operating at design conditions:

1. Evaporator-water entering and leaving temperatures, pressure drop, and water flow.
2. Evaporator and condenser refrigerant temperatures and pressures, using instruments furnished by chiller manufacturer.
3. Power factor if factory-installed instrumentation is furnished for measuring kilowatts.
4. Kilowatt input if factory-installed instrumentation is furnished for measuring kilowatts.
5. Capacity: Calculate in [tons] [kilowatts] <Insert units> of cooling.
6. Efficiency: Calculate operating efficiency for comparison to submitted equipment.
7. Verify condenser-fan rotation and record fan and motor data, including number of fans and entering- and leaving-air temperatures.

B. Water-Cooled Chillers: Balance water flow through each evaporator and condenser to within specified tolerances of indicated flow, with all pumps operating. With only one chiller operating in a multiple-chiller installation, do not exceed the flow for the maximum tube velocity recommended by the chiller manufacturer. Measure and record the following data with each chiller operating at design conditions:

1. Evaporator-water entering and leaving temperatures, pressure drop, and water flow.
2. Condenser-water entering and leaving temperatures, pressure drop, and water flow.
3. Evaporator and condenser refrigerant temperatures and pressures, using instruments furnished by chiller manufacturer.
4. Power factor if factory-installed instrumentation is furnished for measuring kilowatts.

5. Kilowatt input if factory-installed instrumentation is furnished for measuring kilowatts.
6. Capacity: Calculate in [tons] [kilowatts] <Insert units> of cooling.
7. Efficiency: Calculate operating efficiency for comparison to submitted equipment.

2.11 PROCEDURES FOR HEAT-TRANSFER COILS

A. Measure, adjust, and record the following data for each hydronic coil:

1. Entering- and leaving-water temperature.
2. Water flow rate.
3. Water pressure drop.
4. Dry-bulb temperature of entering and leaving air.
5. Wet-bulb temperature of entering and leaving air for cooling coils.
6. Airflow.
7. Air pressure drop.

2.12 HVAC CONTROLS VERIFICATION

A. In conjunction with system balancing, perform the following:

1. Verify HVAC control system is operating the same as existing.
2. Verify that controllers are calibrated and function as intended.
3. Verify that controlled devices are properly installed and connected to correct controller.

B. Reporting: Include a summary of verifications performed, remaining deficiencies, and variations from indicated conditions.

2.13 PROCEDURES FOR TESTING, ADJUSTING, AND BALANCING EXISTING SYSTEMS

A. Perform a preconstruction inspection of existing equipment that is to remain and be reused. Provide a record of all measurements.

1. Measure and record the operating speed, airflow, and static pressure of each fan and equipment with fan(s).
2. Measure and record flows, temperatures, and pressures of each piece of equipment in each hydronic system. Compare the values to design or nameplate information, where information is available.
3. Measure motor voltage and amperage. Compare the values to motor nameplate information.
4. Check the refrigerant charge.
5. Check the condition of filters.
6. Check the condition of coils.
7. Check the operation of the drain pan and condensate-drain trap.
8. Check bearings and other lubricated parts for proper lubrication.
9. Report on the operating condition of the equipment and the results of the measurements taken. Report deficiencies.

- B. Perform testing and balancing of existing systems to the extent that existing systems are affected by the renovation work.
 - 1. Compare the indicated airflow of the renovated work to the measured fan airflows, and determine the new fan speed and the face velocity of filters and coils.
 - 2. Verify that the indicated airflows of the renovated work result in filter and coil face velocities and fan speeds that are within the acceptable limits defined by equipment manufacturer.
 - 3. If calculations increase or decrease the airflow rates and water flow rates by more than 5 percent, make equipment adjustments to achieve the calculated rates. If increase or decrease is 5 percent or less, equipment adjustments are not required.

2.14 TOLERANCES

- A. Set HVAC system's airflow rates and water flow rates within the following tolerances:
 - 1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus or minus 10 percent. If design value is less than 100 cfm (47 L/s), within 10 cfm (4.7 L/s).
 - 2. Chilled-Water Flow Rate: Plus 10 percent or minus 5 percent. If design value is less than 10 gpm (0.63 L/s), within 10 percent.
- B. Maintaining pressure relationships as designed shall have priority over the tolerances specified above.

2.15 FINAL REPORT

- A. General: Prepare a certified written report; tabulate and divide the report into separate sections for tested systems and balanced systems.
 - 1. Include a certification sheet at the front of the report's binder, signed and sealed by the certified testing and balancing engineer.
 - 2. Include a list of instruments used for procedures, along with proof of calibration.
 - 3. Certify validity and accuracy of field data.
- B. Final Report Contents: In addition to certified field-report data, include the following:
 - 1. Pump curves.
 - 2. Fan curves.
 - 3. Manufacturers' test data.
 - 4. Field test reports prepared by system and equipment installers.
 - 5. Other information relative to equipment performance; do not include Shop Drawings and Product Data.
- C. General Report Data: In addition to form titles and entries, include the following data:
 - 1. Title page.
 - 2. Name and address of the TAB specialist.
 - 3. Project name.
 - 4. Project location.

5. Architect's name and address.
 6. Engineer's name and address.
 7. Contractor's name and address.
 8. Report date.
 9. Signature of TAB supervisor who certifies the report.
 10. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
 11. Summary of contents, including the following:
 - a. Indicated versus final performance.
 - b. Notable characteristics of systems.
 - c. Description of system operation sequence if it varies from the Contract Documents.
 12. Nomenclature sheets for each item of equipment.
 13. Notes to explain why certain final data in the body of reports vary from indicated values.
 14. Test conditions for fans performance forms, including the following:
 - a. Settings for outdoor-, return-, and exhaust-air dampers.
 - b. Conditions of filters.
 - c. Cooling coil, wet- and dry-bulb conditions.
 - d. Face and bypass damper settings at coils.
 - e. Fan drive settings, including settings and percentage of maximum pitch diameter.
 - f. Variable-frequency controller settings for variable-air-volume systems.
 - g. Settings for pressure controller(s).
 - h. Other system operating conditions that affect performance.
 15. Test conditions for pump performance forms, including the following:
 - a. Variable-frequency controller settings for variable-flow hydronic systems.
 - b. Settings for pressure controller(s).
 - c. Other system operating conditions that affect performance.
- D. System Diagrams: Include schematic layouts of air and hydronic distribution systems. Present each system with single-line diagram and include the following:
1. Quantities of outdoor, supply, return, and exhaust airflows.
 2. Water flow rates.
 3. Duct, outlet, and inlet sizes.
 4. Pipe and valve sizes and locations.
 5. Balancing stations.
 6. Position of balancing devices.
- E. Air-Handling-Unit Test Reports: For air-handling units, include the following:
1. Unit Data:
 - a. Unit identification.
 - b. Location.
 - c. Make and type.
 - d. Model number and unit size.

- e. Manufacturer's serial number.
 - f. Unit arrangement and class.
 - g. Discharge arrangement.
 - h. Sheave make, size in inches (mm), and bore.
 - i. Center-to-center dimensions of sheave and amount of adjustments in inches (mm).
 - j. Number, make, and size of belts.
 - k. Number, type, and size of filters.
2. Motor Data:
- a. Motor make, and frame type and size.
 - b. Horsepower and speed.
 - c. Volts, phase, and hertz.
 - d. Full-load amperage and service factor.
 - e. Sheave make, size in inches (mm), and bore.
 - f. Center-to-center dimensions of sheave and amount of adjustments in inches (mm).
3. Test Data (Indicated and Actual Values):
- a. Total airflow rate in cfm (L/s).
 - b. Total system static pressure in inches wg (Pa).
 - c. Fan speed.
 - d. Inlet and discharge static pressure in inches wg (Pa).
 - e. For each filter bank, filter static-pressure differential in inches wg (Pa).
 - f. Preheat-coil static-pressure differential in inches wg (Pa).
 - g. Cooling-coil static-pressure differential in inches wg (Pa).
 - h. Heating-coil static-pressure differential in inches wg (Pa).
 - i. List for each internal component with pressure-drop, static-pressure differential in inches wg (Pa).
 - j. Outdoor airflow in cfm (L/s).
 - k. Return airflow in cfm (L/s).
 - l. Outdoor-air damper position.
 - m. Return-air damper position.
 - n. .

F. Apparatus-Coil Test Reports:

1. Coil Data:
- a. System identification.
 - b. Location.
 - c. Coil type.
 - d. Number of rows.
 - e. Fin spacing in fins per inch (mm) o.c.
 - f. Make and model number.
 - g. Face area in sq. ft. (sq. m).
 - h. Tube size in NPS (DN).
 - i. Tube and fin materials.
 - j. Circuiting arrangement.
2. Test Data (Indicated and Actual Values):

- a. Airflow rate in **cfm** (L/s).
- b. Average face velocity in **fpm** (m/s).
- c. Air pressure drop in **inches wg** (Pa).
- d. Outdoor-air, wet- and dry-bulb temperatures in **deg F** (deg C).
- e. Return-air, wet- and dry-bulb temperatures in **deg F** (deg C).
- f. Entering-air, wet- and dry-bulb temperatures in **deg F** (deg C).
- g. Leaving-air, wet- and dry-bulb temperatures in **deg F** (deg C).
- h. Water flow rate in **gpm** (L/s).
- i. Water pressure differential in **feet of head or psig** (kPa).
- j. Entering-water temperature in **deg F** (deg C).
- k. Leaving-water temperature in **deg F** (deg C).
- l. Refrigerant suction pressure in **psig** (kPa).
- m. Refrigerant suction temperature in **deg F** (deg C).

G. Fan Test Reports: For supply, return, and exhaust fans, include the following:

1. Fan Data:
 - a. System identification.
 - b. Location.
 - c. Make and type.
 - d. Model number and size.
 - e. Manufacturer's serial number.
 - f. Arrangement and class.
 - g. Sheave make, size in **inches** (mm), and bore.
 - h. Center-to-center dimensions of sheave and amount of adjustments in **inches** (mm).
2. Motor Data:
 - a. Motor make, and frame type and size.
 - b. Horsepower and speed.
 - c. Volts, phase, and hertz.
 - d. Full-load amperage and service factor.
 - e. Sheave make, size in **inches** (mm), and bore.
 - f. Center-to-center dimensions of sheave and amount of adjustments in **inches** (mm).
 - g. Number, make, and size of belts.
3. Test Data (Indicated and Actual Values):
 - a. Total airflow rate in **cfm** (L/s).
 - b. Total system static pressure in **inches wg** (Pa).
 - c. Fan speed.
 - d. Discharge static pressure in **inches wg** (Pa).
 - e. Suction static pressure in **inches wg** (Pa).

H. Pump Test Reports: Calculate impeller size by plotting the shutoff head on pump curves, and include the following:

1. Unit Data:
 - a. Unit identification.

- b. Location.
- c. Service.
- d. Make and size.
- e. Model number and serial number.
- f. Water flow rate in **gpm (L/s)**.
- g. Water pressure differential in **feet of head or psig (kPa)**.
- h. Required net positive suction head in **feet of head or psig (kPa)**.
- i. Pump speed.
- j. Impeller diameter in **inches (mm)**.
- k. Motor make and frame size.
- l. Motor horsepower and rpm.
- m. Voltage at each connection.
- n. Amperage for each phase.
- o. Full-load amperage and service factor.
- p. Seal type.

2. Test Data (Indicated and Actual Values):

- a. Static head in **feet of head or psig (kPa)**.
- b. Pump shutoff pressure in **feet of head or psig (kPa)**.
- c. Actual impeller size in **inches (mm)**.
- d. Full-open flow rate in **gpm (L/s)**.
- e. Full-open pressure in **feet of head or psig (kPa)**.
- f. Final discharge pressure in **feet of head or psig (kPa)**.
- g. Final suction pressure in **feet of head or psig (kPa)**.
- h. Final total pressure in **feet of head or psig (kPa)**.
- i. Final water flow rate in **gpm (L/s)**.
- j. Voltage at each connection.
- k. Amperage for each phase.

I. Instrument Calibration Reports:

1. Report Data:

- a. Instrument type and make.
- b. Serial number.
- c. Application.
- d. Dates of use.
- e. Dates of calibration.

J.

END OF SECTION 230593

SECTION 232123 - HYDRONIC PUMPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Separately coupled, horizontally mounted, in-line centrifugal pumps.

1.3 DEFINITIONS

- A. ECM: Electronically commutated motor.
- B. EPDM: Ethylene propylene diene monomer.
- C. EPR: Ethylene propylene rubber.
- D. FKM: Fluoroelastomer polymer.
- E. HI: Hydraulic Institute.
- F. NBR: Nitrile rubber or Buna-N.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of pump.
 - 1. Include certified performance curves and rated capacities, operating characteristics, furnished specialties, final impeller dimensions, and accessories for each type of product indicated.
 - 2. Indicate pump's operating point on curves.
- B. Shop Drawings: For each pump.
 - 1. Show pump layout and connections.
 - 2. Include setting drawings with templates for installing foundation and anchor bolts and other anchorages.
 - 3. Include diagrams for power, signal, and control wiring.
- C. Delegated-Design Submittal: For each pump.

1. Design calculations and vibration isolation base details signed and sealed by a qualified professional engineer.
 - a. Design Calculations: Calculate requirements for selecting vibration isolators and for designing vibration isolation bases.
 - b. Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Plans, or BIM model, drawn to scale, showing the items described in this Section, and coordinated with all building trades.
- B. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For pumps to include in emergency, operation, and maintenance manuals.

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. Mechanical Seals: One mechanical seal(s) for each pump.

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.

2.2 SEPARATELY COUPLED, HORIZONTALLY MOUNTED, IN-LINE CENTRIFUGAL PUMPS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Armstrong Fluid Technology.
 2. Taco Comfort Solutions.
 3. Bell & Gossett
- B. Source Limitations: Obtain pumps from single source from single manufacturer.

- C. Description: Factory-assembled and -tested, centrifugal, overhung-impeller, separately coupled, in-line pump as defined in HI 1.1-1.2 and HI 1.3; designed for installation with pump and motor shafts mounted horizontally.
- D. Pump Construction: Manufacturer Standard.
- E. Shaft Coupling: Interlocking frame with interconnecting springs capable of absorbing vibration.
- F. Motor: Comply with NEMA designation, temperature rating, service factor, and efficiency requirements for motors specified in Section 230500 "Common Work Results for HVAC".
 - 1. Enclosure Type: Totally enclosed, fan cooled.
 - 2. NEMA Premium Efficient motors as defined in NEMA MG 1.
 - 3. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
 - 4. Controllers, Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in electrical Sections.
 - 5. Variable-speed motor.
 - 6. Provide integral pump motor variable-speed controller.
 - 7. .

2.3 INTEGRAL PUMP MOTOR VARIABLE-SPEED CONTROLLERS

- A. Where specified or scheduled, provide pumps with an integral pump motor speed controller.
 - 1. Motor: Operates as constant- or variable-speed pump with speed regulated by an integrated variable-speed drive.
 - 2. Integrated Pump Controller: Supports direct communication with the building management system (BMS) with built-in support for the following protocols: BACnet MS/TP.
 - 3. Commissioning and pump set up access to pump controls via the following:
 - a. A web interface (data exchange).
 - b. A user interface located on the face of speed controller to adjust modes and mode values.
 - c. An electronic display that reads real-time mode set values, flow, head, speed, and power and that locks out unauthorized adjustment of pump.
 - 4. Provide electronics with "Auto" as factory default but slope of the proportional curve will automatically match the required system curve, constant pressure control ($\Delta p/c$), variable differential pressure control ($\Delta p/v$), constant curve duty (uncontrolled pump), and rpm regulation. RPM (speed) regulation can be accomplished by the following:
 - a. Manual (via user interface or HTML).
 - b. Remote via 0 to 10 V dc.
 - c. Data protocol communications with the BMS.

5. Pump Electronics: Standard with multiple digital inputs and one external digital output to be available for additional mechanical room control and pump status monitoring.
6. Controller: Mounted on or adjacent to the motor. Provide enclosure rated to UL Type 12.
7. Electronically Protected Pumps: Rated for continuous duty and with built-in startup circuit. Provide overcurrent, line surge and current limit protection, thermal monitoring, heat sink status and over temperature protection.
8. Pump capable of being monitored continuously via integrated Internet link.
9. Integrated pump controller system to have the following features:
 - a. Controller software shall be capable of sensorless control in variable-volume systems without need for pump-mounted (internal/external) or remotely mounted differential pressure sensor.
 - b. Integrated Pump Controller Sensorless Control: Operates under Quadratic Pressure Control (QPC) to ensure that head reduction with reducing flow conforms to quadratic control curve.
 - c. Controller:
 - 1) Minimum head of 40 percent of design duty head.
 - 2) User-adjustable control mode settings and minimum/maximum head set points using built-in programming interface.
 - d. Controller Integrated Control Software:
 - 1) Capable of controlling pump performance for non-overloading power at every point of operation.
 - 2) Capable of maintaining flow rate data.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine equipment foundations and anchor-bolt locations for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for piping systems to verify actual locations of piping connections before pump installation.
- C. Examine foundations and inertia bases for suitable conditions where pumps will be installed.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PUMP INSTALLATION

- A. Comply with HI 1.4.
- B. Install pumps to provide access for periodic maintenance including removing motors, impellers, couplings, and accessories.

- C. Independently support pumps and piping so weight of piping is not supported by pumps and weight of pumps is not supported by piping.
- D. Equipment Mounting:

3.3 Install base-mounted pumps on existing concrete equipment bases. ALIGNMENT

- A. Engage a factory-authorized service representative to perform alignment service.
- B. Perform alignment service. When required by manufacturer to maintain warranty coverage, engage a factory-authorized service representative to perform it.
- C. Comply with requirements in HI standards for alignment of pump and motor shaft. Add shims to the motor feet and bolt motor to base frame. Do not use grout between motor feet and base frame.
- D. Comply with pump and coupling manufacturers' written instructions.
- E. After alignment is correct, tighten foundation bolts evenly but not too firmly. Completely fill baseplate with nonshrink, nonmetallic grout while metal blocks and shims or wedges are in place. After grout has cured, fully tighten foundation bolts.

3.4 PIPING CONNECTIONS

- A. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Where installing piping adjacent to pump, allow space for service and maintenance.
- C. Connect piping to pumps.

3.5 ELECTRICAL CONNECTIONS

- A. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with NFPA 70 and NECA 1.
- C. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.
 - 1. Nameplate shall be laminated acrylic or melamine plastic signs with a black background and engraved white letters at least **1/2 inch (13 mm)** high.

3.6 CONTROL CONNECTIONS

- A. Install control and electrical power wiring to field-mounted control devices.

- B. Connect control wiring in accordance with Section 260523 "Control-Voltage Electrical Power Cables."

3.7 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
 - 1. Complete installation and startup checks in accordance with manufacturer's written instructions.
 - 2. Check piping connections for tightness.
 - 3. Clean strainers on suction piping. Use startup strainer for initial startup.
 - 4. Perform the following startup checks for each pump before starting:
 - a. Verify bearing lubrication.
 - b. Verify that pump is free to rotate by hand and that pump for handling hot liquid is free to rotate with pump hot and cold. If pump is bound or drags, do not operate until cause of trouble is determined and corrected.
 - c. Verify that pump is rotating in correct direction.
 - 5. Prime pump by opening suction valves and closing drains, and prepare pump for operation.
 - 6. Start motor.
 - 7. Open discharge valve slowly.

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Perform tests and inspections with the assistance of a factory-authorized service representative.
- C. Hydronic pumps will be considered defective if they do not pass tests and inspections.
- D. Prepare test and inspection reports.

3.9 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain hydronic pumps.

END OF SECTION 232123

SECTION 236423.13 - AIR-COOLED, SCROLL WATER CHILLERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes packaged, air-cooled, electric-motor-driven, scroll water chillers.

1.3 DEFINITIONS

- A. BAS: Building automation system.
- B. COP: Coefficient of performance. The ratio of the rate of heat removal to the rate of energy input using consistent units for any given set of rating conditions.
- C. DDC: Direct digital control.
- D. EER: Energy-efficiency ratio. The ratio of the cooling capacity given in Btu/h to the total power input given in watts at any given set of rating conditions.
- E. GFI: Ground fault interrupt.
- F. IPLV: Integrated part-load value. A single-number part-load efficiency figure of merit for a single chiller calculated per the method defined by AHRI 550/590 and referenced to AHRI standard rating conditions.
- G. I/O: Input/output.
- H. kW/Ton: The ratio of total power input of the chiller in kilowatts to the net refrigerating capacity in tons at any given set of rating conditions.
- I. NPLV: Nonstandard part-load value. A single number part-load efficiency figure of merit for a single chiller calculated per the method defined by AHRI 550/590 and intended for operating conditions other than the AHRI standard rating conditions.
- J. SCCR: Short-circuit current rating.
- K. TEAO: Totally enclosed air over.
- L. TENV: Totally enclosed nonventilating.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
1. Include refrigerant, rated capacities, operating characteristics, and furnished specialties and accessories.
 2. Performance at AHRI standard conditions and at conditions indicated.
 3. Performance at AHRI standard unloading conditions.
 4. Minimum evaporator flow rate.
 5. Refrigerant capacity of water chiller.
 6. Oil capacity of water chiller.
 7. Fluid capacity of evaporator.
 8. Characteristics of safety relief valves.
 9. Force and moment capacity of each piping connection.
- B. Shop Drawings: Complete set of manufacturer's prints of water chiller assemblies, control panels, sections and elevations, and unit isolation. Include the following:
1. Assembled unit dimensions.
 2. Weight and load distribution.
 3. Required clearances for maintenance and operation.
 4. Size and location of piping and wiring connections.
 5. Diagrams for power, signal, and control wiring.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings:
1. Plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 - a. Structural supports.
 - b. Piping roughing-in requirements.
 - c. Wiring roughing-in requirements, including spaces reserved for electrical equipment.
 - d. Access requirements, including working clearances for mechanical controls and electrical equipment, and tube pull and service clearances.
 2. Coordination drawings showing plan, section and elevation views, drawn to **0.25 inches (6.35 millimeters)**.
 3. Each view to show screened background with the following:
 - a. Column grids, beams, columns, and concrete housekeeping pads.
 - b. Layout with walls, floors, and roofs, including each room name and number.
 - c. Equipment and products of other trades that are located in vicinity of chillers and part of final installation, such as plumbing systems.
- B. Certificates: For certification required in "Quality Assurance" Article.
- C. Installation instructions.

- D. Source quality-control reports.
- E. Startup service reports.
- F. Sample Warranty: For special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For each water chiller to include in emergency, operation, and maintenance manuals.
- B. Spare Parts List: Recommended spare parts list with quantity for each.
- C. Touchup Paint Description: Detailed description of paint used in application of finish coat to allow for procurement of a matching paint.
- D. Instructional Videos: Including those that are prerecorded and those that are recorded during training.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Tool kit to include the following:
 - 1. A tool kit specially designed by chiller manufacturer for use in servicing chiller(s) furnished.
 - 2. Special tools required to service chiller components not readily available to Owner service personnel in performing routine maintenance.
 - 3. Lockable case with hinged cover, marked with large and permanent text to indicate the special purpose of tool kit, such as "Chiller Tool Kit." Text size shall be at least **1 inch (25 mm)** high.
 - 4. A list of each tool furnished. Permanently attach the list to underside of case cover. Text size shall be at least **1/2 inch (13 mm)** high.
- B. Touchup Paint: **32 oz. (1 L)** container of paint used for finish coat. Label outside of container with detailed description of paint to allow for procurement of a matching paint in the future.

1.8 QUALITY ASSURANCE

- A. AHRI Certification: Certify chiller according to AHRI 590 certification program.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Ship water chillers from the factory fully charged with refrigerant and filled with oil.
- B. Package water chiller for export shipping.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of water chillers that fail in materials or workmanship within specified warranty period.
 - 1. Extended warranties include, but are not limited to, the following:
 - a. Complete chiller including refrigerant and oil charge.
 - 1) Loss of refrigerant charge for any reason due to manufacturer's product defect and product installation.
 - b. Parts and labor.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Site Altitude: Chiller shall be suitable for altitude at which installed without affecting performance indicated. Make adjustments to affected chiller components to account for site altitude.
- B. AHRI Rating: Rate water chiller performance according to requirements in AHRI 550/590.
- C. ASHRAE Compliance: ASHRAE 15 for safety code for mechanical refrigeration.
- D. ASHRAE/IES 90.1 Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."
- E. ASME Compliance: Fabricate and stamp water chiller heat exchangers to comply with ASME Boiler and Pressure Vessel Code.
- F. Comply with NFPA 70.
- G. Comply with requirements of UL 1995, "Heating and Cooling Equipment," and include label by a qualified testing agency showing compliance.
- H. Outdoor Installations:
 - 1. Chiller shall be suitable for outdoor installation indicated. Provide adequate weather protection to ensure reliable service life over a 23-year period with minimal degradation due to exposure to outdoor ambient conditions.

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Carrier Global Corporation.
2. Daikin Applied.
3. Trane.
4. YORK; brand of Johnson Controls International plc, Building Solutions North America.

2.3 MANUFACTURED UNITS

- A. Description: Factory-assembled and run-tested water chiller complete with compressor(s), compressor motors and motor controllers, evaporator, condenser with fans, electrical power, controls, and indicated accessories.

2.4 CABINET

- A. Base: Galvanized-steel base extending the perimeter of water chiller. Secure frame, compressors, and evaporator to base to provide a single-piece unit.
- B. Frame: Rigid galvanized-steel frame secured to base and designed to support cabinet, condenser, control panel, and other chiller components not directly supported from base.
- C. Casing: Galvanized steel.

2.5 COMPRESSOR-DRIVE ASSEMBLIES

- A. Compressors:
 1. Description: Positive-displacement direct drive with hermetically sealed casing.
 2. Each compressor provided with suction and discharge service valves, crankcase oil heater, and suction strainer.
 - a. For multiple compressor assemblies, it is acceptable to isolate each compressor assembly in lieu of each compressor.
 3. Operating Speed: Nominal 3600 rpm for 60-Hz applications.
 4. Capacity Control: On-off compressor cycling.
 - a. Digital compressor unloading is an acceptable alternative to achieve capacity control.
 5. Oil Lubrication System: Automatic pump with strainer, sight glass, filling connection, filter with magnetic plug or removable magnet in sump, and initial oil charge.
 - a. Manufacturer's other standard methods of providing positive lubrication are acceptable in lieu of an automatic pump.
 6. Vibration Isolation: Mount individual compressors on vibration isolators.
 - a. For multiple compressor assemblies, it is acceptable to isolate each compressor assembly in lieu of each compressor.

B. Compressor Motors:

1. Hermetically sealed and cooled by refrigerant suction gas.
2. High-torque, two-pole induction type with inherent thermal-overload protection on each phase.

C. Compressor Motor Controllers:

1. Across the Line: NEMA ICS 2, Class A, full voltage, nonreversing.

2.6 REFRIGERATION

A. Refrigerant: R-410A. Classified as Safety Group A1 according to ASHRAE 34.

B. Refrigerant Compatibility: Parts exposed to refrigerants shall be fully compatible with refrigerants, and pressure components shall be rated for refrigerant pressures.

C. Refrigerant Circuit: Each circuit shall include an electronic or a thermal-expansion valve, refrigerant charging connections, a hot-gas muffler, compressor suction and discharge shutoff valves, a liquid-line shutoff valve, a replaceable-core filter-dryer, a sight glass with moisture indicator, a liquid-line solenoid valve, and an insulated suction line.

D. Refrigerant Isolation: Factory install positive shutoff isolation valves in the compressor discharge line and the refrigerant liquid-line to allow the isolation and storage of the refrigerant charge in the chiller condenser.

1. For multiple compressor assemblies, it is acceptable to isolate each compressor assembly in each circuit in lieu of each compressor.

E. Pressure Relief Device:

1. Comply with requirements in ASHRAE 15, ASHRAE 147, and applicable portions of ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.
2. Select and configure pressure relief devices to protect against corrosion and inadvertent release of refrigerant.
3. ASME-rated, spring-loaded, pressure relief valve; single- or multiple-reseating type. Pressure relief valve(s) shall be provided for each heat exchanger.

2.7 EVAPORATOR

A. Shell and Tube:

1. Description: Direct-expansion, shell-and-tube design with fluid flowing through the shell and refrigerant flowing through the tubes within the shell.
2. Code Compliance: Tested and stamped according to ASME Boiler and Pressure Vessel Code.
3. Shell Material: Carbon steel.
4. Shell Heads: Removable carbon-steel heads with multipass baffles designed to ensure positive oil return and located at each end of the tube bundle.

5. Shell Nozzles: Fluid nozzles located along the side of the shell and terminated with mechanical-coupling end connections for connection to field piping.
6. Tube Construction: Individually replaceable copper tubes with enhanced fin design, expanded into tube sheets.

B. Brazed Plate:

1. Direct-expansion, single-pass, brazed-plate design.
2. Type 316 stainless-steel construction.
3. Code Compliance: Tested according to ASME Boiler and Pressure Vessel Code.
4. Fluid Nozzles: Terminate with mechanical-coupling end connections for connection to field piping.
5. Inlet Strainer: Factory-furnished, 20-mesh strainer for field installation in supply piping to evaporator. Manufacturer has option to factory install strainer.

C. Flow Switch: Factory-furnished and -installed, thermal-type flow switch wired to chiller operating controls.

D. Heater: Factory-installed and -wired electric heater with integral controls designed to protect the evaporator to **minus 20 deg F (minus 29 deg C)**.

E. Remote-Mounting Kit: Designed for remote field mounting where indicated. Provide kit for field installation.

2.8 AIR-COOLED CONDENSER

A. Coil(s) with integral subcooling on each circuit.

B. Copper Tube with Plate Fin Coils:

1. Construct coils of copper tubes mechanically bonded to copper fins.
2. Coating: None.

C. Louver: Located over condenser fins.

D. Fans: Direct-drive propeller type with statically and dynamically balanced fan blades, arranged for vertical air discharge.

E. Fan Motors: TENV or TEAO enclosure, with sealed and permanently lubricated bearings, and having built-in overcurrent- and thermal-overload protection.

1. Overcurrent- and thermal-overload protection not integral to motor is acceptable if provided with chiller electrical power package.

F. Fan Guards: Removable steel safety guards with corrosion-resistant coating.

2.9 INSULATION

- A. Closed-cell, flexible, elastomeric thermal insulation complying with ASTM C534/C534M, Type I for tubular materials and Type II for sheet materials.
 - 1. Thickness: 3/4 inch (19 mm).
- B. Adhesive: As recommended by insulation manufacturer.
- C. Factory-applied insulation over all cold surfaces of chiller capable of forming condensation. Components shall include, but not be limited to, evaporator, evaporator water boxes including nozzles, refrigerant suction pipe from evaporator to compressor, cold surfaces of compressor, refrigerant-cooled motor, and auxiliary piping.
 - 1. Apply adhesive to 100 percent of insulation contact surface.
 - 2. Before insulating steel surfaces, prepare surfaces for paint, and prime and paint as indicated for other painted components. Do not insulate unpainted steel surfaces.
 - 3. Seal seams and joints to provide a vapor barrier.
 - 4. After adhesive has fully cured, paint exposed surfaces of insulation to match other painted parts.
 - 5. Manufacturer has option to factory or field insulate chiller components to reduce potential for damage during installation.
 - 6. Field-Applied Insulation:
 - a. Components that are not factory insulated shall be field insulated to comply with requirements indicated.
 - b. Manufacturer shall be responsible for chiller insulation whether factory or field installed to ensure that manufacturer is the single point of responsibility for chillers.
 - c. Manufacturer's factory-authorized service representative shall instruct and supervise installation of field-applied insulation.
 - d. After field-applied insulation is complete, paint insulation to match factory-applied finish.

2.10 ELECTRICAL

- A. Factory installed and wired, and functionally tested at factory before shipment.
- B. Factory-installed and -wired switches, motor controllers, transformers, and other electrical devices necessary shall provide a single-point field power connection to water chiller.
- C. House in a unit-mounted, NEMA 250, Type 3R enclosure with hinged access door with lock and key or padlock and key.
- D. Wiring shall be numbered and color-coded to match wiring diagram.
- E. Factory wiring shall be located outside of an enclosure in a metal raceway. Terminal connections shall be made with not more than a 24-inch (610-mm) length of liquidtight conduit.

- F. Each motor shall have branch power circuit and controls with one of the following disconnecting means having SCCR to match main disconnecting means:
 - 1. NEMA KS 1, heavy-duty, fusible switch with rejection-type fuse clips rated for fuses. Select and size fuses to provide Type 2 protection according to IEC 60947-4-1.
 - 2. NEMA KS 1, heavy-duty, nonfusible switch.
 - 3. UL 489, motor-circuit protector (circuit breaker) with field-adjustable, short-circuit trip coordinated with motor locked-rotor amperes.
- G. Each motor shall have overcurrent protection.
- H. Overload relay sized according to UL 1995, or an integral component of water chiller control microprocessor.
- I. Phase-Failure and Undervoltage: Solid-state sensing with adjustable settings.
- J. Controls Transformer: Unit-mounted transformer with primary and secondary fuses and sized with enough capacity to operate electrical load plus spare capacity.
- K. Control Relays: Auxiliary and adjustable time-delay relays, or an integral to water chiller microprocessor.
- L. Service Receptacle:
 - 1. Unit-mounted, 120-V GFI duplex receptacle.
 - 2. Power receptacle from chiller internal electrical power wiring.
- M. Indicate the following for water chiller electrical power supply:
 - 1. Current, phase to phase, for all three phases.
 - 2. Voltage, phase to phase and phase to neutral for all three phases.
 - 3. Three-phase real power (kilowatts).
 - 4. Three-phase reactive power (kilovolt amperes reactive).
 - 5. Power factor.
 - 6. Running log of total power versus time (kilowatt hours).
 - 7. Fault log, with time and date of each.

2.11 CONTROLS

- A. Factory installed and wired, and functionally tested at factory before shipment.
- B. Standalone, microprocessor based, with all memory stored in nonvolatile memory so that reprogramming is not required on loss of electrical power.
- C. Enclosure: Share enclosure with electrical power devices or provide a separate enclosure of matching construction.
- D. Operator Interface: Keypad or pressure-sensitive touch screen. Multiple-character, digital display. Display the following:

1. Date and time.
2. Operating or alarm status.
3. Operating hours.
4. Outside-air temperature if required for chilled-water reset.
5. Temperature and pressure of operating set points.
6. Chilled-water entering and leaving temperatures.
7. Refrigerant pressures in evaporator and condenser.
8. Saturation temperature in evaporator and condenser.
9. No cooling load condition.
10. Elapsed time meter (compressor run status).
11. Pump status.
12. Antirecycling timer status.
13. Percent of maximum motor amperage.
14. Current-limit set point.
15. Number of compressor starts.
16. Alarm history with retention of operational data before unit shutdown.

E. Control Functions:

1. Manual or automatic startup and shutdown time schedule.
2. Capacity control based on evaporator leaving-fluid temperature.
3. Capacity control compensated by rate of change of evaporator entering-fluid temperature.
4. Chilled-water entering and leaving temperatures, control set points, and motor load limit. Chilled-water leaving temperature shall be reset based on outside-air temperature.
5. Current limit and demand limit.
6. External water chiller emergency stop.
7. Antirecycling timer.

F. Manual-Reset Safety Controls: The following conditions shall shut down water chiller and require manual reset:

1. Low evaporator pressure or high condenser pressure.
2. Low chilled-water temperature.
3. Refrigerant high pressure.
4. High or low oil pressure.
5. High oil temperature.
6. Loss of chilled-water flow.
7. Control device failure.

G. BAS System Interface: Factory-install hardware and software to enable system to monitor, control, and display chiller status and alarms.

1. Communication Interface: ASHRAE 135 (BACnet) communication interface shall enable control system operator to remotely control and monitor the water chiller from an operator workstation. Control features and monitoring points displayed locally at water chiller control panel shall be available through DDC system for HVAC.

H. Factory-installed wiring outside of enclosures shall be in NFPA 70-complaint raceway. Make terminal connections with liquidtight or flexible metallic conduit.

2.12 ACCESSORIES

- A. Factory-furnished neoprene or spring isolators for field installation.
 - 1. Spring Deflection: 1 inch (25 mm) 2 inches (50 mm).

2.13 MATERIALS

- A. Steel:
 - 1. ASTM A36/A36M for carbon structural steel.
 - 2. ASTM A568/A568M for steel sheet.
- B. Stainless Steel:
 - 1. Manufacturer's standard grade for casing.
 - 2. Manufacturer's standard type, ASTM A240/A240M for bare steel exposed to airstream or moisture.
- C. Galvanized Steel: ASTM A653/A653M.
- D. Aluminum: ASTM B209.

2.14 SOURCE QUALITY CONTROL

- A. Perform functional test of water chillers before shipping.
- B. Factory performance test water chillers, before shipping, according to AHRI 550/590.
 - 1. Test the following conditions:
 - a. Design conditions indicated.
 - b. AHRI 550/590 part-load points.
- C. Factory test and inspect evaporator according to ASME Boiler and Pressure Vessel Code: Section VIII, Division 1. Stamp with ASME label.
- D. For water chillers located outdoors, rate sound power level according to AHRI 370 procedure.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Before water chiller installation, examine roughing-in for equipment support, anchor-bolt sizes and locations, piping, controls, and electrical connections to verify actual locations, sizes, and other conditions affecting water chiller performance, maintenance, and operations.

1. Water chiller locations indicated on Drawings are approximate. Determine exact locations before roughing-in for piping, controls, and electrical connections.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 WATER CHILLER INSTALLATION

- A. Coordinate sizes and locations of bases with actual equipment provided. Cast anchor-bolt inserts into concrete bases.
- B. Equipment Mounting:
 1. Install water chillers on existing cast-in-place concrete equipment bases.
- C. Maintain manufacturer's recommended clearances for service and maintenance.
- D. Maintain clearances required by governing code.
- E. Chiller manufacturer's factory-trained service personnel shall charge water chiller with refrigerant if not factory charged and fill with oil if not factory installed.
- F. Install separate devices furnished by manufacturer and not factory installed.
 1. Chillers shipped in multiple major assemblies shall be field assembled by chiller manufacturer's factory-trained service personnel.

3.3 PIPING CONNECTIONS

- A. Connect each drain connection with a drain valve, full size of drain connection.
- B. Connect each chiller vent connection with an automatic or a manual vent, full size of vent connection.

3.4 ELECTRICAL POWER CONNECTIONS

- A. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Provide nameplate for each electrical connection indicating electrical equipment designation and circuit number feeding connection. Nameplate shall be laminated phenolic layers of black with engraved white letters at least **1/2 inch (13 mm)** high. Locate nameplate where easily visible.

3.5 CONTROLS CONNECTIONS

- A. Install control and electrical power wiring to field-mounted control devices.

- B. Connect control wiring between chillers and other equipment to interlock operation as required to provide a complete and functioning system.
- C. Connect control wiring between chiller control interface and existing DDC system for remote monitoring and control of chillers.
- D. Provide nameplate on face of chiller control panel indicating control equipment designation serving chiller and the I/O point designation for each control connection. Nameplate shall be laminated phenolic layers of black with engraved white letters at least **1/2 inch (13 mm)** high.

3.6 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
- B. Inspect field-assembled components, equipment installation, and piping and electrical connections for proper assemblies, installations, and connections.
- C. Complete installation and startup checks according to manufacturer's written instructions and perform the following:
 - 1. Verify that refrigerant charge is sufficient and water chiller has been leak tested.
 - 2. Verify that pumps are installed and functional.
 - 3. Verify that thermometers and gages are installed.
 - 4. Operate water chiller for run-in period.
 - 5. Check bearing lubrication and oil levels.
 - 6. Verify that refrigerant pressure relief device for chillers installed indoors is vented outside.
 - 7. Verify proper motor rotation.
 - 8. Verify static deflection of vibration isolators, including deflection during water chiller startup and shutdown.
 - 9. Verify and record performance of water chiller protection devices.
 - 10. Test and adjust controls and safeties. Replace damaged or malfunctioning controls and equipment.
- D. Visually inspect chiller for damage before starting. Repair or replace damaged components, including insulation. Do not start chiller until damage that is detrimental to operation has been corrected.
- E. Prepare a written startup report that records results of tests and inspections.

3.7 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain water chillers. Video record the training sessions and provide electronic copy to Owner.
 - 1. Instructor shall be factory trained and certified.
 - 2. Provide not less than two hours of training.

3. Train personnel in operation and maintenance and to obtain maximum efficiency in plant operation.
4. Provide instructional videos showing general operation and maintenance that are coordinated with operation and maintenance manuals.
5. Obtain Owner sign-off that training is complete.
6. Owner training shall be held at Project site.

END OF SECTION 236423.13

SECTION 237313.16 - INDOOR, SEMI-CUSTOM AIR-HANDLING UNITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes insulated, double-wall-casing, indoor, semi-custom air-handling units that are factory assembled using multiple section components, including the following:
 - 1. Casings.
 - 2. Fans, drives, and motors.
 - 3. Coils.
 - 4. Air filtration.
 - 5. Dampers.
 - 6. UV-C lamp systems.

1.3 ACTION SUBMITTALS

- A. Product Data: For each air-handling unit.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
 - 3. Include unit dimensions and weight.
 - 4. Include cabinet material, metal thickness, finishes, insulation, and accessories.
 - 5. Fans:
 - a. Include certified fan-performance curves with system operating conditions indicated.
 - b. Include certified fan-sound power ratings.
 - c. Include fan construction and accessories.
 - d. Include motor ratings, electrical characteristics, and motor accessories.
 - 6. Include certified coil-performance ratings with system operating conditions indicated.
 - 7. Include filters with performance characteristics.
 - 8. Include dampers, including housings, linkages, and operators.
- B. Shop Drawings: For each type and configuration of indoor, semi-custom air handling unit.
 - 1. Include plans, elevations, sections, and mounting 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 indoor, semi-custom air-handling units, as well as procedures and diagrams.
4. Include diagrams for power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Floor plans and other details, or BIM model, drawn to scale, showing the items described in this Section, and coordinated with all building trades.
- B. Source quality-control reports.
- C. Startup service reports.
- D. Field quality-control reports.
- E. Sample Warranty: For manufacturer's warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For air-handling units to include in emergency, 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. Filters: One set(s) for each air-handling unit.
 2. Gaskets: One set(s) for each access door.
 3. Fan Belts: One set(s) for each air-handling unit fan.

1.7 WARRANTY

- A. Warranty: Manufacturer agrees to repair or replace components of indoor, semi-custom air-handling units that fail in materials or workmanship within specified warranty period.
 1. Warranty Period: 1 year(s) 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. NFPA Compliance: Comply with NFPA 90A for design, fabrication, and installation of air-handling units and components.
- C. ASHRAE 62.1 Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."
- D. ASHRAE/IES 90.1 Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."
- E. Structural Performance: Casing panels shall be self-supporting and capable of withstanding positive/negative **8-inch wg (2000 Pa)** of internal static pressure, without exceeding a midpoint deflection of **0.0042 inch/inch (0.0042 mm/mm)** of panel span.
- F. Casing Leakage Performance: ASHRAE 111, Class 6 leakage or better at plus or minus **8 inch wg (2000 Pa)**.

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Carrier Global Corporation.
 - 2. Daikin Applied.
 - 3. Trane.
 - 4. YORK; brand of Johnson Controls International plc, Building Solutions North America.

2.3 UNIT CASINGS

- A. Frame: Modular and providing overall structural integrity without reliance on casing panels for structural support.
- B. Base Rail:
 - 1. Material: Galvanized steel.
 - 2. Height: **6 inches (150 mm)**.
- C. Casing Joints: Hermetically sealed at each corner and around entire perimeter.
- D. Double-Wall Construction:
 - 1. Outside Casing Wall:

- a. Material, Galvanized Steel: Minimum **14 gauge (2.0 mm)** thick.
 - b. Factory Finish: Provide manufacturer's standard finish.
2. Inside Casing Wall:
 - a. Material, Galvanized Steel: Solid, minimum **14 gauge (1.6 mm)** thick.
- E. Floor Plate:
 1. Material, Galvanized Steel: minimum **14 gauge (2.0 mm)** thick.
- F. Casing Insulation:
 1. Materials: Injected polyurethane foam insulation.
 2. Insulation Thickness: **2 inches (50 mm)**.
 3. Thermal Break: Provide continuity of insulation with no through-casing metal in casing walls, floors, or roofs of air-handling unit.
- G. Airstream Surfaces: Surfaces in contact with airstream shall comply with requirements in ASHRAE 62.1.
- H. Panels, Doors, and Windows:
 1. Panels:
 - a. Fabrication: Formed and reinforced, double-wall and insulated panels of same materials and thicknesses as casing.
 - b. Fasteners: Two or more camlock type for panel lift-out operation. Arrangement shall allow panels to be opened against airflow
 - c. Gasket: Neoprene, applied around entire perimeters of panel frames.
 - d. Size: Large enough to allow unobstructed access for inspection and maintenance of air-handling unit's internal components.
 2. Doors:
 - a. Fabrication: Formed and reinforced, double-wall and insulated panels of same materials and thicknesses as casing.
 - b. Hinges: A minimum of two ball-bearing hinges or stainless-steel piano hinge and two wedge-lever latches, operable from inside and outside. Arrange doors to be opened against airflow. Provide safety latch retainers on doors so that doors do not open uncontrollably.
 - c. Gasket: Neoprene, applied around entire perimeters of panel frames.
 - d. Size: Large enough to allow for unobstructed access for inspection and maintenance of air-handling unit's internal components. Retain "Windows" Subparagraph below to add windows in access panels and doors.
 3. Locations and Applications: Manufacturer standard.
- I. Condensate Drain Pans:
 1. Construction:

- a. Single-wall, galvanized-steel or noncorrosive polymer sheet.
2. Drain Connection:
 - a. Located at lowest point of pan and sized to prevent overflow. Terminate with threaded nipple on one end of pan.
 - b. Minimum Connection Size: **NPS 1 (DN 25)**.
3. Slope: Minimum **0.125-in./ft. (10-mm/mm)** slope, to comply with ASHRAE 62.1, in at least two planes to collect condensate from cooling coils (including coil piping connections, coil headers, and return bends) and from humidifiers and to direct water toward drain connection.
4. Length: Extend drain pan downstream from leaving face for distance to comply with ASHRAE 62.1.
5. Width: Entire width of water producing device.
6. Depth: A minimum of **2 inches (50 mm)** deep.
7. **[Formed sections] [Integral part of floor plating]**.
8. Pan-Top Surface Coating for Galvanized-Steel Drain Pans: Asphaltic waterproofing compound.
9. Units with stacked coils shall have an intermediate drain pan to collect condensate from top coil.

2.4 FAN, DRIVE, AND MOTOR SECTION

- A. Fan and Drive Assemblies: Statically and dynamically balanced and designed for continuous operation at maximum-rated fan speed and motor horsepower.
- B. Fans: Centrifugal, galvanized steel; mounted on solid-steel shaft.
 1. Shafts: With field-adjustable alignment.
 - a. Turned, ground, and polished hot-rolled steel with keyway.
 2. Housings: Formed- and reinforced-steel panels to form curved scroll housings with shaped cutoff and spun-metal inlet bell.
 - a. Bracing: Steel angle or channel supports for mounting and supporting fan scroll, wheel, motor, and accessories.
 3. Housings, Plenum Fans: Steel frame and panel; fabricated without fan scroll and volute housing. Provide inlet screens for Type SWSI fans.
 4. Airfoil, Centrifugal Fan Wheels (Plenum Fan Wheels): Smooth-curved inlet flange, backplate, and hollow die-formed airfoil-shaped blades continuously welded at tip flange and backplate; steel hub riveted to backplate and fastened to shaft with setscrews.
 5. Mounting: For internal vibration isolation. Factory-mount fans with manufacturer's standard vibration isolation mounting devices having a minimum static deflection of **1 inch (25 mm)**.
 6. Shaft Lubrication Lines: Extended to a location outside the casing.

7. Flexible Connector: Factory fabricated with a fabric strip minimum 3-1/2 inches (89 mm) wide, attached to two strips of minimum 2-3/4-inch- (70-mm-)wide by 0.028-inch- (0.7-mm-) thick, galvanized-steel sheet.
 - a. Flexible Connector Fabric: Glass fabric, double coated with neoprene. Fabrics, coatings, and adhesives shall comply with UL 181, Class 1.
 - 1) Fabric Minimum Weight: 26 oz./sq. yd. (880 g/sq. m).
 - 2) Fabric Minimum Tensile Strength: 480 lbf/inch (84 N/mm) in the warp and 360 lbf/inch (63 N/mm) in the filling.
 - 3) Fabric Minimum Service Temperature Range: Minus 40 to plus 200 deg F (Minus 40 to plus 93 deg C).
- C. Drive, Direct: Factory-mounted, direct drive.
- D. Drive, Belt: Factory-mounted, V-belt drive, with adjustable alignment and belt tensioning, and with 1.5 service factor based on fan motor.
 1. Pulleys: Cast iron or cast steel with split, tapered bushing, dynamically balanced at the factory.
 2. Belts: Oil resistant, non-sparking and nonstatic; in matched sets for multiple-belt drives.
 3. Belt Guards: Comply with requirements specified by OSHA and fabricate according to SMACNA's "HVAC Duct Construction Standards"; 0.146-inch- (2.7-mm-) thick, 3/4-inch (20-mm) diamond-mesh wire screen, welded to steel angle frame; prime coated
- E. Motors:
 1. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Section 230500 "Common Work Results for HVAC".
 2. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
 3. Enclosure Type: Open, dripproof.
 4. Enclosure Materials: Manufacturer standard.
 5. Motor Bearings: Manufacturer standard.
 6. Efficiency: Premium Efficient motors as defined in NEMA MG 1.
 7. Controllers, Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in electrical Sections.
 8. Mount unit-mounted disconnect switches on exterior of unit.
- F. Variable-Frequency Motor Controller: Serving each fan individually in fan array.
 1. Manufactured Units: Pulse-width modulated; variable torque for inverter-duty motors.
 2. Output Rating: Three phase; 10 to 60 Hz, with voltage proportional to frequency throughout voltage range; maximum voltage equals input voltage.
 3. Unit Operating Requirements:
 - a. Internal Adjustability:
 - 1) Minimum Speed: 5 to 25 percent of maximum rpm.

- 2) Maximum Speed: 80 to 100 percent of maximum rpm.
 - 3) Current Limit: 30 to minimum of 150 percent of maximum rating.
 - b. Self-Protection and Reliability Features:
 - 1) Surge suppression.
 - 2) Loss of input signal protection.
 - 3) Under- and overvoltage trips.
 - 4) Variable-frequency motor controller and motor-overload/overtemperature protection.
 - 5) Critical frequency rejection.
 - 6) Loss-of-phase protection.
 - 7) Reverse-phase protection.
 - 8) Motor-temperature fault.
 - c. Bidirectional autospeed search.
 - d. Torque boost.
 - e. Motor temperature compensation at slow speeds.
 - 1) Panel-mounted operator station.
 - 2) Historical logging information and displays.
 - 3) Digital indicating devices.
 - f. Control Signal Interface: Electric.
 - g. Proportional Integral Directive (PID) control interface.
 - h. DDC system for HVAC Protocols for Network Communications: ASHRAE 135.
4. Line Conditioning:
 - a. Input line conditioning.
 - b. Output filtering.
 - c. EMI/RFI filtering.

2.5 COIL SECTION

A. General Requirements for Coil Section:

1. Comply with AHRI 410.
2. Fabricate coil section to allow removal and replacement of coil for maintenance and to allow in-place access for service and maintenance of coil(s).
3. For multizone units, provide air deflectors and air baffles to balance airflow across coils.
4. Coils shall not act as structural component of unit.

B. Cooling Coils: Manufacturer Standard.

2.6 AIR FILTRATION SECTION

A. Panel Filters:

1. Description: Pleated factory-fabricated, self-supported, disposable air filters with holding frames.
2. Filter Unit Class: UL 900.
3. Media: Interlaced glass, synthetic or cotton fibers coated with nonflammable adhesive.
4. Filter-Media Frame: Beverage board with perforated metal retainer, or metal grid, on outlet side.

B. Front-Access Filter Mounting Frames:

2.7 DAMPERS

- A. Outdoor- and Return-Air Dampers: Low-leakage, double-skin, airfoil-blade, galvanized-steel dampers with compressible jamb seals and extruded-vinyl blade edge seals in parallel-blade arrangement with zinc-plated steel operating rods rotating in stainless steel sleeve bearings mounted in a single galvanized-steel frame, and with operating rods connected with a common linkage. Leakage rate shall not exceed 4 cfm/sq. ft. (20 L/s per sq. m) at 1-inch wg (250 Pa) and 8 cfm/sq. ft. (40 L/s per sq. m) at 4-inch wg ((1.0 MPa), leakage Class 1), tested, rated, and labeled in accordance with AMCA 511.

B. Electronic Damper Operators:

1. Direct-coupled type designed for minimum 60,000 full-stroke cycles at rated torque.
2. Electronic damper position indicator shall have visual scale indicating percent of travel and 2- to 10-V dc, feedback signal.
3. Operator Motors:
 - a. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Section 230500 "Common Work Results for HVAC".
 - b. Size to operate with sufficient reserve power to provide smooth modulating action or two-position action.
 - c. Permanent Split-Capacitor or Shaded-Pole Type: Gear trains completely oil immersed and sealed. Equip spring-return motors with integral spiral-spring mechanism in housings designed for easy removal for service or adjustment of limit switches, auxiliary switches, or feedback potentiometer.
4. Nonspring-Return Motors for Dampers Larger Than 25 Sq. Ft. (2.3 sq. m): Size for running torque of 150 in. x lbf (16.9 N x m) and breakaway torque of 300 in. x lbf (33.9 N x m).
5. Spring-Return Motors for Dampers Larger Than 25 Sq. Ft. (2.3 sq. m): Size for running and breakaway torque of 150 in. x lbf (16.9 N x m).
6. Size dampers for running torque calculated as follows:
 - a. Parallel-Blade Damper with Edge Seals: 7 inch-lb/sq. ft. (86.8 kg-cm/sq. m) of damper.
 - b. Opposed-Blade Damper with Edge Seals: 5 inch-lb/sq. ft. (62 kg-cm/sq. m) of damper.
 - c. Parallel-Blade Damper without Edge Seals: 4 inch-lb/sq. ft. (49.6 kg-cm/sq. m) of damper.

- d. Opposed-Blade Damper without Edge Seals: 3 inch-lb/sq. ft. (37.2 kg-cm/sq. m) of damper.
 - e. Dampers with 2- to 3-Inch wg (500 to 750 Pa) of Pressure Drop or Face Velocities of 1000 to 2500 fpm (5 to 13 m/s): Increase running torque by 1.5.
 - f. Dampers with 3- to 4-Inch wg (750 to 1000 Pa) of Pressure Drop or Face Velocities of 2500 to 3000 fpm (13 to 15 m/s): Increase running torque by 2.0.
7. Coupling: V-bolt and V-shaped, toothed cradle.
 8. Overload Protection: Electronic overload or digital rotation-sensing circuitry.
 9. Fail-Safe Operation: Mechanical, spring-return mechanism with external, manual gear release on nonspring-return actuators.
 10. Power Requirements (Two-Position Spring Return): 24 V dc 120 V ac.
 11. Power Requirements (Modulating): Maximum 10 VA at 24 V ac or 8 W at 24 V dc.
 12. Proportional Signal: 2- to 10-V dc or 4 to 20 mA, and 2- to 10-V dc position feedback signal.
 13. Temperature Rating: Minus 22 to plus 122 deg F (Minus 30 to plus 50 deg C).
 14. Run Time: 12 seconds open, 5 seconds closed.
- C. Mixing Section: Multiple-blade, air-mixer assembly located immediately downstream of mixing section.
- D. Combination Filter and Mixing Section:
1. Cabinet support members shall hold 2-inch- (50-mm-) thick, pleated, flat, permanent or throwaway filters.
 2. Multiple-blade, air-mixer assembly shall mix air to prevent stratification, located immediately downstream of mixing box.

2.8 UV-C LAMP SYSTEMS

- A. Description:
1. UV-C lamp system consisting of power supply, power supply housing, wiring, UV lamp(s), lamp plug, lamp plug protector, encapsulated lamp, and lamp holder used for UV germicidal irradiation of cooling coil and condensate drain pan.
 2. Factory installed and preengineered.
- B. Standard: UL Category Code ABQK, HVAC accessories, air-duct mounted.
- C. Lamps: High output, hot cathode.
- D. Lamp-Holder Construction:
1. UV- and moisture-resistant materials and designed to connect the lamp to the plug.
 2. Adjustable positioning.
- E. Lamp-Clamp Construction:
1. UV- and moisture-resistant materials, water-tight connection.
 2. Adjustable positioning.

- F. Lamp Protection: Hermetically sealed to provide protection against lamp breakage and to ensure lamp contents from a broken lamp are contained.
- G. Lamp Output: UV-C energy, primarily at the 254-nm wavelength with a 360-degree energy distribution.
- H. Access Door Interlocks: Automatic disconnect on all access doors into UV-installed casing sections to shield servicing personnel from contact with light.
- I. Power Supply: UL-listed, single-point electrical connection with service disconnect.
- J. Power Consumption: Maximum of 15 W/sq. ft. (161 W/sq. m).

2.9 MATERIALS

- A. Steel:
 - 1. ASTM A36/A36M for carbon structural steel.
 - 2. ASTM A568/A568M for steel sheet.
- B. Stainless Steel:
 - 1. Manufacturer's standard grade for casing.
 - 2. Manufacturer's standard type, ASTM A240/A240M for bare steel exposed to airstream or moisture.
- C. Galvanized Steel: ASTM A653/A653M.
- D. Aluminum: ASTM B 09 (ASTM B209M).

2.10 SOURCE QUALITY CONTROL

- A. AHRI 430 Certification: Test, rate, and label air-handling units and their components in accordance with AHRI 430.
- B. AHRI 1060 Certification: Test, rate, and label air-handling units that include air-to-air energy recovery devices in accordance with AHRI 1060.
- C. AHRI 260 or AMCA 311 Sound Performance Rating Certification: Test, rate, and label in accordance with AHRI 260 or AMCA 311.
- D. Fan Aerodynamic Performance Rating: Factory test and rate fan performance for airflow, pressure, power, air density, rotation speed, and efficiency in accordance with AMCA 210.
- E. Fan Energy Index (FEI): Test in accordance with AMCA 210 and rate in accordance with AMCA 99, AMCA 207, and AMCA 208.
- F. Fan Operating Limits: Classify fans in accordance with AMCA 99, Section 14.
- G. Water Coils: Factory tested to 300 psig (2070 kPa) according to AHRI 410 and ASHRAE 33.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine casing insulation materials and filter media before air-handling unit installation. Reject insulation materials and filter media that are wet, moisture damaged, or mold damaged.
- C. Examine roughing-in for steam, hydronic, and condensate drainage piping systems and electrical services to verify actual locations of connections before installation.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Equipment Mounting:
 - 1. Install air-handling units on existing concrete equipment bases.
- B. Arrange installation of units to provide access space around air-handling units for service and maintenance.
- C. Do not operate fan system until filters (temporary or permanent) are in place. Replace temporary filters used during construction and testing, with new, clean filters.
- D. Install filter-gauge, static-pressure taps upstream and downstream of filters. Mount filter gauges on outside of filter housing or filter plenum in accessible position. Provide filter gauges on filter banks, installed with separate static-pressure taps upstream and downstream of filters.
- E. Connect duct to air-handling units with flexible connections. Comply with the following requirements.
 - 1. Fire-Performance Characteristics: Adhesives, sealants, fabric materials, and accessory materials shall have flame-spread index not exceeding 25 and smoke-developed index not exceeding 50 when tested in accordance with ASTM E84.
 - 2. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.
 - 3. Materials: Flame-retardant or noncombustible fabrics.
 - 4. Coatings and Adhesives: Comply with UL 181, Class 1.
 - 5. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.
 - a. Minimum Weight: 26 oz./sq. yd. (880 g/sq. m).
 - b. Tensile Strength: 480 lbf/inch (84 N/mm) in the warp and 360 lbf/inch (63 N/mm) in the filling.
 - c. Service Temperature: Minus 40 to plus 200 deg F (Minus 40 to plus 93 deg C).

3.3 PIPING CONNECTIONS

- A. Connect piping to air-handling units mounted on vibration isolators with flexible connectors.
- B. Connect condensate drain pans using **NPS 1-1/4 (DN 32)**, **ASTM B88, Type M (ASTM B88M, Type C)** copper tubing. Extend to nearest equipment or floor drain. Construct deep trap at connection to drain pan and install cleanouts at changes in direction.

3.4 ELECTRICAL CONNECTIONS

- A. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- B. Install electrical devices furnished by manufacturer, but not factory mounted, according to NFPA 70 and NECA 1.
- C. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.
 - 1. Nameplate shall be laminated acrylic or melamine plastic signs, as specified in Section 260553 "Identification for Electrical Systems."
 - 2. Nameplate shall be laminated acrylic or melamine plastic signs with a black background and engraved white letters at least **1/2 inch (13 mm)** high.

3.5 CONTROL CONNECTIONS

- A. Install control and electrical power wiring to field-mounted control devices.
- B. Connect control wiring according to Section 260523 "Control-Voltage Electrical Power Cables."

3.6 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
 - 1. Complete installation and startup checks according to manufacturer's written instructions.
 - 2. Verify that shipping, blocking, and bracing are removed.
 - 3. Verify that unit is secure on mountings and supporting devices and that connections to piping, ducts, and electrical systems are complete. Verify that proper thermal-overload protection is installed in motors, controllers, and switches.
 - 4. Verify proper motor rotation direction, free fan wheel rotation, and smooth bearing operations. Reconnect fan drive system, align belts, and install belt guards.
 - 5. Verify that bearings, pulleys, belts, and other moving parts are lubricated with factory-recommended lubricants.
 - 6. Verify that zone dampers fully open and close for each zone.
 - 7. Verify that face-and-bypass dampers provide full face flow.
 - 8. Verify that outdoor- and return-air mixing dampers open and close, and maintain minimum outdoor-air setting.

9. Comb coil fins for parallel orientation.
10. Verify that proper thermal-overload protection is installed for electric coils.
11. Install new, clean filters.
12. Verify that manual and automatic volume control and fire and smoke dampers in connected duct systems are in fully open position.

B. Starting procedures for air-handling units include the following:

1. Energize motor; verify proper operation of motor, drive system, and fan wheel. Adjust fan to indicated rpm. Replace fan and motor pulleys as required to achieve design conditions.
2. Measure and record motor electrical values for voltage and amperage.
3. Manually operate dampers from fully closed to fully open position and record fan performance.

3.7 ADJUSTING

- A. Adjust damper linkages for proper damper operation.
- B. Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC" for air-handling system testing, adjusting, and balancing.
- C. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

3.8 CLEANING

- A. After completing system installation and testing, adjusting, and balancing air-handling unit and air-distribution systems and after completing startup service, clean air-handling units internally to remove foreign material and construction dirt and dust. Clean fan wheels, cabinets, dampers, coils, and filter housings, and install new, clean filters.

3.9 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
 1. Fan Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
 2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

- D. Air-handling unit or components will be considered defective if unit or components do not pass tests and inspections.
- E. Prepare test and inspection reports.

3.10 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain air-handling units.

END OF SECTION 237313.16

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Copper building wire rated 600 V or less.
2. Connectors, splices, and terminations rated 600 V and less.

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 Company.
 2. Belden Inc.
 3. Cerro Wire LLC.
 4. Encore Wire Corporation.
 5. Okonite Company (The).
 6. Southwire Company.
 7. WESCO.
- C. Standards:
 1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.
- D. Conductors: Copper, complying with ASTM B3 for bare annealed copper and with ASTM B8 for stranded conductors.
- E. Conductor Insulation:
 1. Type THHN and Type THWN-2: Comply with UL 83.
 2. Type THW and Type THW-2: Comply with NEMA WC-70/ICEA S-95-658 and UL 83.
 3. Type XHHW-2: Comply with UL 44.

4. and sunlight- and oil-resistant outer PVC jacket.

2.2 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, provide products by one of the following:
 1. 3M Electrical Products.
 2. Hubbell Power Systems, Inc.
 3. Ideal Industries, Inc.
 4. ILSCO.
 5. NSi Industries LLC.
 6. O-Z/Gedney; a brand of Emerson Industrial Automation.
 7. Thomas & Betts Corporation; A Member of the ABB 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: Two hole with long barrels.
 3. Termination: Compression

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper; solid for No. 14 AWG and smaller; stranded for No. 12 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 14 AWG and smaller; stranded for No. 12 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN/THWN-2, single conductors in raceway.
- B. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type XHHW-2, single conductors in raceway.
- C. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway.

- D. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN/THWN-2, single conductors in raceway.
- E. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.

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 "Raceways and Boxes 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.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than that of unspliced conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches 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.

3.6 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.7 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

3.8 FIELD QUALITY CONTROL

- A. Perform tests and inspections listed below.
 - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
 - 2. Perform each of the following visual and electrical tests:
 - a. Inspect exposed sections of conductor and cable for physical damage and correct connection according to the single-line diagram.
 - b. Test bolted connections for high resistance using the following:
 - 1) Calibrated torque wrench.
 - c. Inspect compression-applied connectors for correct cable match and indentation.
 - d. Inspect for correct identification.
 - e. Inspect cable jacket and condition.
 - f. Insulation-resistance test on each conductor for ground and adjacent conductors. Apply a potential of 500-V dc for 300-V rated cable and 1000-V dc for 600-V rated cable for a one-minute duration.
 - g. Continuity test on each conductor and cable.
 - h. Uniform resistance of parallel conductors.
 - 3. Initial Infrared Scanning: After Substantial Completion, but before Final Acceptance, perform an infrared scan of each splice in conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner. Correct deficiencies determined during the scan.
 - a. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
 - b. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
- B. Cables will be considered defective if they do not pass tests and inspections.

- C. Prepare test and inspection reports to record the following:
1. Procedures used.
 2. Results that comply with requirements.
 3. Results that do not comply with requirements, and corrective action taken to achieve compliance with requirements.

END OF SECTION 260519

SECTION 26 05 23 - CONTROL-VOLTAGE ELECTRICAL POWER CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Category 5e balanced twisted pair cable.
 - 2. Low-voltage control cabling.
 - 3. Control-circuit conductors.
 - 4. Identification products.

1.3 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control and signaling power-limited circuits.
- C. Plenum: A space forming part of the air distribution system to which one or more air ducts are connected. An air duct is a passageway, other than a plenum, for transporting air to or from heating, ventilating, or air-conditioning equipment.
- D. RCDD: Registered Communications Distribution Designer.

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. Flame Travel and Smoke Density in Plenums: As determined by testing identical products according to NFPA 262, by a qualified testing agency. Identify products for installation in plenums with appropriate markings of applicable testing agency.
 - 1. Flame Travel Distance: 60 inches or less.
 - 2. Peak Optical Smoke Density: 0.5 or less.
 - 3. Average Optical Smoke Density: 0.15 or less.

- C. Flame Travel and Smoke Density for Riser Cables in Non-Plenum Building Spaces: As determined by testing identical products according to UL 1666.
- D. Flame Travel and Smoke Density for Cables in Non-Riser Applications and Non-Plenum Building Spaces: As determined by testing identical products according to UL 1685.
- E. RoHS compliant.

2.2 CATEGORY 5e BALANCED TWISTED PAIR CABLE

- A. Description: Four-pair, balanced-twisted pair cable, certified to meet transmission characteristics of Category 5e cable at frequencies up to 100 MHz.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Belden Inc.
 - 2. CommScope, Inc.
 - 3. General Cable; General Cable Corporation.
 - 4. West Penn Wire.
- C. Standard: Comply with ICEA S-90-661, NEMA WC 63.1, and TIA-568-C.2 for Category 5e cables.
- D. Conductors: 100-ohm, 24 AWG solid copper.
- E. Shielding/Screening: Unshielded twisted pairs (UTP).
- F. Cable Rating: Plenum
- G. Jacket: White thermoplastic.

2.3 BALANCED TWISTED PAIR CABLE HARDWARE

- A. Description: Hardware designed to connect, splice, and terminate balanced twisted pair copper communications cable.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. 3M
 - 2. Belden
 - 3. CommScope
 - 4. Hubbell
 - 5. Leviton
 - 6. Panduit
- C. Twisted Pair Cable Hardware:
 - 1. Comply with the performance requirements of Category 5e.

2. Comply with TIA-568-C.2, IDC type, with modules designed for punch-down caps or tools.
3. Cables shall be terminated with connecting hardware of same category or higher.

D. Plugs and Plug Assemblies:

1. Male; eight position; color-coded modular telecommunications connector designed for termination of a single four-pair 100-ohm unshielded or shielded balanced twisted pair cable.
2. Comply with IEC 60603-7-1, IEC 60603-7-2, IEC 60603-7-3, IEC 60603-7-4, and IEC 60603-7.5.
3. Marked to indicate transmission performance.

E. Jacks and Jack Assemblies:

1. Female; eight position; modular; fixed telecommunications connector designed for termination of a single four-pair 100-ohm unshielded or shielded balanced twisted pair cable.
2. Designed to snap-in to a patch panel or faceplate.
3. Standards:
 - a. Category 5e, unshielded balanced twisted pair cable shall comply with IEC 60603-7-2.
4. Marked to indicate transmission performance.

F. Faceplate:

1. Two port, vertical single-gang faceplates designed to mount to single-gang wall boxes.
2. Metal Faceplates: Stainless steel, complying with requirements in Section 262726 "Wiring Devices."

G. Legend:

1. Machine printed, in the field, using adhesive-tape label.
2. Snap-in, clear-label covers and machine-printed paper inserts.

2.4 LOW-VOLTAGE CONTROL CABLE

A. Plenum-Rated, Paired Cable: NFPA 70, Type CMP.

1. Multi-pair, twisted, tinned-copper conductors.
2. PVC insulation.
3. Unshielded.
4. PVC jacket.
5. Flame Resistance: Comply with NFPA 262.

2.5 CONTROL-CIRCUIT CONDUCTORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Encore Wire Corporation.
 - 2. General Cable; General Cable Corporation.
 - 3. Service Wire Co.
 - 4. Southwire Company.
- B. Class 1 Control Circuits: Stranded copper, Type THHN/THWN-2, complying with UL 83 in raceway.
- C. Class 2 Control Circuits: Stranded copper, Type THHN/THWN-2, complying with UL 83 in raceway

PART 3 - EXECUTION

3.1 INSTALLATION OF RACEWAYS AND BOXES

- A. Comply with requirements in Section 260533 "Raceways and Boxes for Electrical Systems" for raceway selection and installation requirements for boxes, conduits, and wireways as supplemented or modified in this Section.
 - 1. Outlet boxes for cables shall be no smaller than 4 inches square by 2-1/8 inches deep with extension ring sized to bring edge of ring to within 1/8 inch of the finished wall surface.

3.2 INSTALLATION OF CONDUCTORS AND CABLES

- A. Comply with NECA 1.
- B. General Requirements for Cabling:
 - 1. Comply with TIA-568-C Series of standards.
 - 2. Comply with BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems."
 - 3. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, and cross-connect and patch panels.
 - 4. Cables may not be spliced and shall be continuous from terminal to terminal. Do not splice cable between termination, tap, or junction points.
 - 5. Cables serving a common system may be grouped in a common raceway. Install network cabling and control wiring and cable in separate raceway from power wiring. Do not group conductors from different systems or different voltages.
 - 6. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
 - 7. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems." Install lacing bars and distribution spools.
 - 8. Do not install bruised, kinked, scored, deformed, or abraded cable. Remove and discard cable if damaged during installation and replace it with new cable.

9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Do not use heat lamps for heating.
10. Pulling Cable: Comply with BICSI ITSIMM, Ch. 5, "Copper Structured Cabling Systems." Monitor cable pull tensions.
11. Support: Do not allow cables to lie on removable ceiling tiles.
12. Secure: Fasten securely in place with hardware specifically designed and installed so as to not damage cables.
13. Provide strain relief.
14. Keep runs short. Allow extra length for connecting to terminals. Do not bend cables in a radius less than 10 times the cable OD. Use sleeves or grommets to protect cables from vibration at points where they pass around sharp corners and through penetrations.
15. Ground wire shall be copper, and grounding methods shall comply with IEEE C2. Demonstrate ground resistance.

C. Balanced Twisted Pair Cable Installation:

1. Comply with TIA-568-C.2.
2. Do not untwist balanced twisted pair cables more than 1/2 inch at the point of termination to maintain cable geometry.

D. Installation of Control-Circuit Conductors:

1. Install wiring in raceways.
2. Use insulated spade lugs for wire and cable connection to screw terminals.
3. Comply with requirements specified in Section 260533 "Raceways and Boxes for Electrical Systems."
4. .

E. Separation from EMI Sources:

1. Comply with BICSI TDMM and TIA-569-D recommendations for separating unshielded copper voice and data communications cable from potential EMI sources including electrical power lines and equipment.
2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
 - a. Electrical Equipment or Circuit Rating Less Than 2 kVA: A minimum of 5 inches .
 - b. Electrical Equipment or Circuit Rating between 2 and 5 kVA: A minimum of 12 inches .
 - c. Electrical Equipment or Circuit Rating More Than 5 kVA: A minimum of 24 inches.
3. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or 5 HP and Larger: A minimum of 48 inches .
4. Separation between Communications Cables and Fluorescent or LED Fixtures: A minimum of 5 inches.

3.3 REMOVAL OF CONDUCTORS AND CABLES

- A. Remove abandoned conductors and cables. Abandoned conductors and cables are those installed that are not terminated at equipment and are not identified with a tag for future use.

3.4 CONTROL-CIRCUIT CONDUCTORS

- A. Minimum Conductor Sizes:
 - 1. Class 1 remote-control and signal circuits; No 14 AWG.
 - 2. Class 2 low-energy, remote-control, and signal circuits; No. 14 AWG.

3.5 FIRESTOPPING

- A. Comply with BICSI TDMM, "Firestopping" Chapter.

3.6 GROUNDING

- A. For low-voltage control wiring and cabling, comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

3.7 IDENTIFICATION

- A. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

3.8 FIELD QUALITY CONTROL

- A. Perform tests and inspections
- B. Tests and Inspections:
 - 1. Visually inspect cable jacket materials for UL or third-party certification markings. Inspect cabling terminations to confirm color-coding for pin assignments and inspect cabling connections to confirm compliance with TIA-568-C.1.
 - 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.
 - 3. Test cabling for direct-current loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination, but not after cross-connection.
 - a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in its "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in its "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

- C. Document data for each measurement. Print data for submittals in a summary report that is formatted using Table 10.1 in BICSI TDMM as a guide, or transfer the data from the instrument to the computer, save as text files, print, and submit.
- D. End-to-end cabling will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.

END OF SECTION 260523

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Steel slotted support systems.
 - 2. Conduit and cable support devices.
 - 3. Support for conductors in vertical conduit.
 - 4. Structural steel for fabricated supports and restraints.
 - 5. Mounting, anchoring, and attachment components, including powder-actuated fasteners, mechanical expansion anchors, concrete inserts, clamps, through bolts, toggle bolts, and hanger rods.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - a. Slotted support systems, hardware, and accessories.
 - b. Clamps.
 - c. Hangers.
 - d. Eye nuts.
 - e. Fasteners.
 - f. Anchors.
 - g. Brackets.

- B. Shop Drawings: For fabrication and installation details for electrical hangers and support systems.

- 1. Hangers. Include product data for components.
 - 2. Slotted support systems.
 - 3. Equipment supports.
 - 4. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.

1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame Rating: Class 1.
 - 2. Self-extinguishing according to ASTM D635.

2.2 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Preformed steel channels and angles with minimum 13/32-inch diameter holes at a maximum of 8 inches o.c. in at least one surface.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. B-line, an Eaton business.
 - b. CADDY; a brand of nVent.
 - c. G-Strut.
 - d. Thomas & Betts Corporation; A Member of the ABB Group.
 - e. Unistrut; Part of Atkore International.
 - 2. Material for Channel, Fittings, and Accessories: Galvanized steel
 - 3. Channel Width: 1-5/8 inches
 - 4. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
- B. Conduit and Cable Support Devices: Steel or malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- C. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for nonarmored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be made of malleable iron.
- D. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:

1. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) B-line, an Eaton business.
 - 2) Empire Tool and Manufacturing Co., Inc.
 - 3) Hilti, Inc.
 - 4) ITW Ramset/Red Head; Illinois Tool Works, Inc.
2. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM F3125/F3125M, Grade A325 .
3. Toggle Bolts: All-steel springhead type.
4. Hanger Rods: 3/8" Threaded steel minimum.

2.3 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Comply with the following standards for application and installation requirements of hangers and supports, except where requirements on Drawings or in this Section are stricter:
 1. NECA 1.
 2. NECA 101
- B. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping materials and installation for penetrations through fire-rated walls, ceilings, and assemblies.
- C. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- D. Maximum Support Spacing and Minimum Hanger Rod Size for Raceways: Space supports for EMT, IMC, and RMC as scheduled in NECA 1, where its Table 1 lists maximum spacings that are less than those stated in NFPA 70. Minimum rod size shall be 3/8" inch in diameter.
- E. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
 1. Secure raceways and cables to these supports with single-bolt conduit clamps.

3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.
- B. Raceway Support Methods: Only methods described in NECA 1 and NECA 101 may be applied to supporting raceways.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To Wood: Fasten with lag screws or through bolts.
 - 2. To New Concrete: Bolt to concrete inserts.
 - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 4. To Existing Concrete: Expansion anchor fasteners.
 - 5. To Steel: Beam clamps (MSS SP-58, Type 19, 21, 23, 25, or 27), complying with MSS SP-69.
 - 6. To Light Steel: Sheet metal screws.

3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Comply with installation requirements for site-fabricated metal supports.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- C. Field Welding: Comply with AWS D1.1/D1.1M.

3.4 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A780.

END OF SECTION 260529

SECTION 26 05 33 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Metal conduits and fittings.
2. Nonmetallic conduits and fittings.
3. Metal wireways and auxiliary gutters.
4. Nonmetal wireways and auxiliary gutters.
5. Surface raceways.
6. Boxes, enclosures, and cabinets.
7. Handholes and boxes for exterior underground cabling.

1.3 DEFINITIONS

- A. GRC: Galvanized rigid steel conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
 1. Structural members in paths of conduit groups with common supports.
 2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.

PART 2 - PRODUCTS

2.1 METAL CONDUITS AND FITTINGS

A. Metal Conduit:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Allied Tube & Conduit; a part of Atkore International.
 - b. O-Z/Gedney; a brand of Emerson Industrial Automation.
 - c. Southwire Company.
 - d. Thomas & Betts Corporation; A Member of the ABB Group.
 - e. Wheatland Tube Company.
2. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. GRC: Comply with ANSI C80.1 and UL 6.
4. EMT: Comply with ANSI C80.3 and UL 797.
5. FMC: Comply with UL 1; aluminum.
6. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.

B. Metal Fittings:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Allied Tube & Conduit; a part of Atkore International.
 - b. O-Z/Gedney; a brand of Emerson Industrial Automation.
 - c. Southwire Company.
 - d. Thomas & Betts Corporation; A Member of the ABB Group.
 - e. Wheatland Tube Company.
2. Comply with NEMA FB 1 and UL 514B.
3. Listing and Labeling: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
4. Fittings, General: Listed and labeled for type of conduit, location, and use.
5. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 1203 and NFPA 70.
6. Fittings for EMT:
 - a. Material: Steel
 - b. Type: compression
7. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.

2.2 NONMETALLIC CONDUITS AND FITTINGS

A. Nonmetallic Conduit:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CANTEX INC.
 - b. Champion Fiberglass, Inc.
 - c. Condux International, Inc.
 - d. Kraloy.
 - e. RACO; Hubbell.
 - f. Thomas & Betts Corporation; A Member of the ABB Group.
2. Listing and Labeling: Nonmetallic conduit shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
3. Fiberglass:
 - a. Comply with NEMA TC 14.
4. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
5. LFNC: Comply with UL 1660.
6. Rigid HDPE: Comply with UL 651A.
7. Continuous HDPE: Comply with UL 651A.

B. Nonmetallic Fittings:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. CANTEX INC.
 - b. Champion Fiberglass, Inc.
 - c. Condux International, Inc.
 - d. Kraloy.
 - e. RACO; Hubbell.
 - f. Thomas & Betts Corporation; A Member of the ABB Group.
2. Fittings, General: Listed and labeled for type of conduit, location, and use.
3. Fittings for ENT and RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
 - a. Fittings for LFNC: Comply with UL 514B.
4. Solvents and Adhesives: As recommended by conduit manufacturer.

2.3 BOXES, ENCLOSURES, AND CABINETS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Crouse-Hinds, an Eaton business.
 2. Erickson Electrical Equipment Company.
 3. Hoffman; a brand of nVent.
 4. Hubbell Incorporated.
 5. Hubbell Incorporated; Wiring Device-Kellems.
 6. Kraloy.
 7. Milbank Manufacturing Co.
 8. RACO; Hubbell.
 9. Spring City Electrical Manufacturing Company.
 10. Thomas & Betts Corporation; A Member of the ABB Group.
 11. Wiremold / Legrand.
- B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, aluminum, Type FD, with gasketed cover.
- E. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb. Outlet boxes designed for attachment of luminaires weighing more than 50 lb shall be listed and marked for the maximum allowable weight.
- F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- G. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover.
- H. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
- I. Device Box Dimensions: 4 inches square by 2-1/8 inches deep
- J. Gangable boxes are prohibited.

2.4 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

- A. General Requirements for Handholes and Boxes:
1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
 2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Armorcast Products Company.
 - b. NewBasis.
 - c. Oldcastle Precast, Inc.
 - d. Quazite: Hubbell Power Systems, Inc.
 2. Standard: Comply with SCTE 77.
 3. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
 4. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
 5. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
 6. Cover Legend: Molded lettering, "ELECTRIC."
 7. Handholes – 12 Inches Wide by 24 Inches Long and Larger: Have inserts for cable racks and pulling-in irons installed before concrete is poured.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
1. Exposed Conduit: GRC
 2. Concealed Conduit, Aboveground: EMT
 3. Underground Conduit: RNC, Type EPC-40-PVC - Concrete encased as specified in the contract drawings.
 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC
 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R or Type 4X as indicated on contract drawings. Assume 3R if no designation is provided.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated:
1. Exposed, Not Subject to Physical Damage: EMT
 2. Exposed, Not Subject to Severe Physical Damage: EMT
 3. Exposed and Subject to Severe Physical Damage: GRC. Raceway locations include the following:
 - a. Loading dock.
 - b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
 - c. Mechanical room areas subject to forklift traffic
 4. Concealed in Ceilings and Interior Walls and Partitions: EMT

5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
 6. Damp or Wet Locations: EMT with steel compression fittings
 7. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
 2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
 3. EMT: Use compression, steel fittings. Comply with NEMA FB 2.10.
 4. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Do not install aluminum conduits, boxes, or fittings in contact with earth.

3.2 INSTALLATION

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- B. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- C. Do not fasten conduits onto the bottom side of a metal deck roof.
- D. Keep raceways at least 12 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- E. Complete raceway installation before starting conductor installation.
- F. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- G. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.
- H. Make bends in raceways 2" trade size and larger using large-radius factory sweeps. Use only equipment specifically designed for material and size involved.

- I. Conceal conduit within finished walls, ceilings, and floors in finished spaces. Install conduits parallel or perpendicular to building lines. Surface installation is acceptable in all electrical and mechanical rooms.
- J. Support conduit within 12 inches of enclosures to which attached.
- K. Raceways Embedded in Slabs:
 - 1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.
 - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
 - 3. Arrange raceways to keep a minimum of 2 inches of concrete cover in all directions.
- L. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- M. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- N. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- O. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- P. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- Q. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- R. Install pull strings in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 36 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- S. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all 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 raceway enters a building or structure.
 - 3. Conduit extending from interior to exterior of building.
 - 4. Where otherwise required by NFPA 70.
- T. Comply with manufacturer's written instructions for solvent welding RNC and fittings.

U. Expansion-Joint Fittings:

1. Install in each run of aboveground RNC that is located where environmental temperature change may exceed 30 deg F and that has straight-run length that exceeds 25 feet. Install in each run of aboveground RMC and EMT conduit that is located where environmental temperature change may exceed 100 deg F and that has straight-run length that exceeds 100 feet.
2. Install type and quantity of fittings that accommodate temperature change listed for each of the following locations:

V. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 36 inches of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage..

W. 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.

X. 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.

Y. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

Z. Locate boxes so that cover or plate will not span different building finishes.

AA. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.

BB. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Section 312000 "Earth Moving" for pipe less than 6 inches in nominal diameter.
2. Install backfill as specified in Section 312000 "Earth Moving."
3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Section 312000 "Earth Moving."

4. Install manufactured rigid steel sweep conduit elbows for stub-ups at poles and equipment and at building entrances through floor.
 - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete for a minimum of 12 inches on each side of the coupling.
5. Underground Warning Tape: Comply with requirements in Section 260553 "Identification for Electrical Systems."

3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.
- C. Elevation: In paved areas, set so cover surface will be flush with finished grade. Set covers of other enclosures 1 inch above finished grade.

3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.6 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.7 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
 1. Repair damage to galvanized finishes with zinc-rich paint as recommended by manufacturer.

END OF SECTION 260533

SECTION 26 05 44 - SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Sleeves for raceway and cable penetration of non-fire-rated construction walls and floors.
 - 2. Sleeve-seal systems.
 - 3. Sleeve-seal fittings.
 - 4. Grout.
 - 5. Silicone sealants.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 SLEEVES

- A. Wall Sleeves:
 - 1. Steel Pipe Sleeves: ASTM A53/A53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
- B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.
- C. PVC-Pipe Sleeves: ASTM D1785, Schedule 40.
- D. Sleeves for Rectangular Openings:
 - 1. Material: Galvanized sheet steel.
 - 2. Minimum Metal Thickness:

- a. For sleeve cross-section rectangle perimeter less than 50 inches and with no side larger than 16 inches, thickness shall be 0.052 inch.
- b. For sleeve cross-section rectangle perimeter 50 inches or more and one or more sides larger than 16 inches, thickness shall be 0.138 inch.

2.2 SLEEVE-SEAL SYSTEMS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Advance Products & Systems, Inc.
 - b. CALPICO, Inc.
 - c. Metraflex Company (The).
 - d. Pipeline Seal and Insulator, Inc.
 - e. Proco Products, Inc.
 2. Sealing Elements: Nitrile rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
 3. Pressure Plates: Stainless steel
 4. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements.

2.3 SLEEVE-SEAL FITTINGS

- A. Description: Manufactured plastic, sleeve-type, waterstop assembly made for embedding in concrete slab or wall. Unit shall have plastic or rubber waterstop collar with center opening to match piping OD.
 1. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. HOLDRITE.

2.4 GROUT

- A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
- B. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- C. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

2.5 SILICONE SEALANTS

- A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
- B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

PART 3 - EXECUTION

3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

- A. Comply with NECA 1.
- B. Comply with NEMA VE 2 for cable tray and cable penetrations.
- C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:
 - 1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
 - a. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Section 079200 "Joint Sealants."
 - b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.
 - 2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
 - 3. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed or unless seismic criteria require different clearance.
 - 4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
 - 5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches above finished floor level. Install sleeves during erection of floors.
- D. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:
 - 1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
 - 2. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.

- E. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- F. Aboveground, Exterior-Wall Penetrations: Seal penetrations using cast-iron pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- G. Underground, Exterior-Wall and Floor Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing sleeve-seal system.

3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

- A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.
- B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

3.3 SLEEVE-SEAL-FITTING INSTALLATION

- A. Install sleeve-seal fittings in new walls and slabs as they are constructed.
- B. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.
- C. Secure nailing flanges to concrete forms.
- D. Using grout, seal the space around outside of sleeve-seal fittings.

END OF SECTION 260544

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary 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. Tapes and stencils.
 - 4. Tags.
 - 5. Signs.
 - 6. Cable ties.
 - 7. Paint for identification.
 - 8. Fasteners for labels and signs.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for electrical identification products.

- B. Identification Schedule: For each piece of electrical equipment and electrical system components to be an index of nomenclature for electrical equipment and system components used in identification signs and labels. Use same designations indicated on Drawings.

- C. Delegated-Design Submittal: For arc-flash hazard study.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Comply with NFPA 70.
- B. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- C. Comply with NFPA 70E and Section 260573.19 "Arc-Flash Hazard Analysis" requirements for arc-flash warning labels.

- D. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

2.2 COLOR AND LEGEND REQUIREMENTS

- A. Raceways and Cables Carrying Circuits at 600 V or Less:
 - 1. Black letters on an white field
 - 2. Legend: Indicate voltage and system type.
- 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 4/0 AWG and smaller
 - 2. Colors for 208/120-V Circuits:
 - a. Phase A: Black.
 - b. Phase B: Red.
 - c. Phase C: Blue.
 - d. Neutral: White
 - 3. Colors for 480/277-V Circuits:
 - a. Phase A: Brown.
 - b. Phase B: Orange.
 - c. Phase C: Yellow.
 - d. Neutral: Gray
 - 4. Color for Equipment Grounds: Green
 - 5. Colors for Isolated Grounds: Green with yellow stripe.
- 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."
 - 3. Refer to Section 260574 "Overcurrent Protective Device Arc-Flash Study for arc flash label requirements
- 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, provide products by one of the following:
 - a. Brady Corporation.
 - b. Panduit Corp.
 - c. Seton Identification Products.
- B. Self-Adhesive Wraparound Labels: Preprinted, 3-mil-thick, vinyl flexible label with acrylic pressure-sensitive adhesive.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. Ideal Industries, Inc.
 - c. Panduit Corp.
 - d. Seton Identification Products.
 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: Machine-printed, permanent, waterproof, black ink recommended by printer manufacturer.
- C. 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, provide products by one of the following:Brady Corporation.Ideal Industries, Inc.Panduit Corp.Seton Identification Products.Minimum Nominal Size:
 - a. 3-1/2 by 5 inches for equipment minimum

2.4 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.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:Carlton Industries, LP.Ideal Industries, Inc.Panduit Corp.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.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. Brady Corporation.
 - b. Carlton Industries, LP.
 - c. emedco.
 - d. Marking Services, Inc.
- C. Floor Marking Tape: 3-inch-wide, 5-milpressure-sensitive vinyl tape, with yellow and black stripes and clear vinyl overlay.
 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. Seton Identification Products; a Brady Corporation company.
- D. Underground-Line Warning Tape:
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. Ideal Industries, Inc.
 - c. LEM Products Inc.
 - d. Marking Services, Inc.
 - e. Reef Industries, Inc.
 - f. Seton Identification Products.
 2. Tape:
 - a. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical 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. Inscriptions for Red-Colored Tapes: "ELECTRIC LINE, HIGH VOLTAGE" Insert drawing designation in "Tag" subparagraph below.
 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: 6inches
 - c. Thickness: 4 mils

2.5 SIGNS

- A. Laminated Acrylic or Melamine Plastic Signs:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Brady Corporation.
 - b. Carlton Industries, LP.
 - c. Emedco.
 - d. 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

2.6 CABLE TIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following: Ideal Industries, Inc., Panduit Corp. General-Purpose Cable Ties: Fungus inert, self-extinguishing, one piece, self-locking, and Type 6/6 nylon.
 1. Minimum Width: 1/4 inch
 2. Tensile Strength at 73 Deg F according to ASTM D638: 12,000 psi
 3. Temperature Range: Minus 40 to plus 185 deg F
 4. Color: Black, except where used for color-coding.
- C. 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. Minimum Width: 1/4 inch
 2. Tensile Strength at 73 Deg F according to ASTM D638: 12,000 psi
 3. Temperature Range: Minus 40 to plus 185 deg F
 4. Color: Black, except where used for color-coding.
- D. Plenum-Rated Cable Ties: Self-extinguishing, UV stabilized, one piece, and self-locking.
 1. Minimum Width: 1/4 inch
 2. Tensile Strength at 73 Deg F according to ASTM D638: 12,000 psi
 3. UL 94 Flame Rating: 94V-0.
 4. Temperature Range: Minus 40 to plus 185 deg F
 5. Color: Black, except where used for color-coding.

2.7 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 PREPARATION

- A. 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.

3.2 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. 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.
- H. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.
- I. 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 or load shedding.
- J. Elevated Components: Increase sizes of labels, signs, and letters to those appropriate for viewing from the floor.
- K. Vinyl Wraparound Labels:

1. Secure tight to surface of raceway or cable 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.

L. Self-Adhesive Labels:

1. On each item, 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.

M. Marker Tapes: Secure tight to surface at a location with high visibility and accessibility.

N. Self-Adhesive Vinyl Tape: Secure tight to surface at a location with high visibility and accessibility.

O. Floor Marking Tape: Apply stripes to finished surfaces following manufacturer's written instructions.

P. Underground Line Warning Tape:

1. During backfilling of trenches, install continuous underground-line warning tape directly above cable or raceway at 12 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 12 inches overall.
2. Install underground-line warning tape for direct-buried cables and cables in raceways.

Q. Nonmetallic Preprinted Tags:

1. Place in a location with high visibility and accessibility.
2. Secure using UV-stabilized cable ties.

R. Laminated Acrylic or Melamine Plastic 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 1-1/2-inch-high sign; where two lines of text are required, use labels 2 inches high.

S. Cable Ties: General purpose, for attaching tags, except as listed below:

1. Outdoors: UV-stabilized nylon.
2. In Spaces Handling Environmental Air: Plenum rated.

3.3 IDENTIFICATION SCHEDULE

- A. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, pull points, and locations of high visibility. Identify by system and circuit designation.

- B. Concealed Raceways, Duct Banks, More Than 600 V, within Buildings: Tape and stencil. Stencil legend "DANGER - CONCEALED HIGH-VOLTAGE WIRING" with 3-inch-high, black letters on 20-inch centers.
- C. 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-footmaximum intervals in straight runs, and at 25-footmaximum intervals in congested areas.
- D. Power-Circuit Conductor Identification, More Than 600 V: For conductors in vaults, pull and junction boxes, manholes, and handholes, use nonmetallic preprinted tags colored and marked to indicate phase, and a separate tag with the circuit designation.
- E. Locations of Underground Lines: Underground-line warning tape for power, lighting, communication, and control wiring and optical-fiber cable.
- F. Concealed Raceways and Duct Banks, More Than 600 V, within Buildings: Apply floor marking tape to the following finished surfaces:
 - 1. Floor surface directly above conduits running beneath and within 12 inches of a floor that is in contact with earth or is framed above unexcavated space.
 - 2. Wall surfaces directly external to raceways concealed within wall.
 - 3. Accessible surfaces of concrete envelope around raceways in vertical shafts, exposed in the building, or concealed above suspended ceilings.
- G. 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.
- H. Arc Flash Warning Labeling: Self-adhesive labels.
- I. Equipment Identification Labels:
 - 1. Indoor Equipment: Metal-backed Laminated acrylic or melamine plastic sign
 - 2. Outdoor Equipment: Laminated acrylic or melamine sign
 - 3. Equipment to Be Labeled:
 - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be in the form of engraved, laminated acrylic or melamine label.
 - b. Enclosures and electrical cabinets.
 - c. Access doors and panels for concealed electrical.
 - d. Switchgear.
 - e. Switchboards.
 - f. Transformers: Label that includes tag designation indicated on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
 - g. Emergency system boxes and enclosures.
 - h. Enclosed circuit breakers.

- i. Enclosed controllers.
- j. Variable-speed controllers.
- k. Push-button stations.
- l. Power-transfer equipment.
- m. Contactors.
- n. Power-generating units.
- o. Monitoring and control equipment.

END OF SECTION 260553

SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Fusible switches.
2. Nonfusible switches.
3. Receptacle switches.
4. Shunt trip switches.
5. Molded-case circuit breakers (MCCBs).
6. Molded-case switches.
7. Enclosures.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
1. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Provide in **PDF** electronic format.
- B. Shop Drawings: For enclosed switches and circuit breakers.
1. Include plans, elevations, sections, details, and attachments to other work.
 2. Include wiring diagrams for power, signal, and control wiring.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Seismic Qualification Certificates: For enclosed switches and circuit breakers, accessories, and components, from manufacturer.
- C. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Accredited by NETA.
 - 1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.

1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace components that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 5 year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Enclosed switches and circuit breakers shall withstand the effects of earthquake motions determined according to **ASCE/SEI 7**.
 - 1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified **and the unit will be fully operational after the seismic event.**"

2.2 GENERAL REQUIREMENTS

- A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single manufacturer.
- B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.
- D. Comply with NFPA 70.

2.3 FUSIBLE SWITCHES

- A. Type HD, Heavy Duty:
 - 1. **Single** throw.
 - 2. **Three** pole.
 - 3. **480-V** ac.
 - 4. **200 A and smaller.**

5. UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate **specified** fuses.
6. Lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

B. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
3. Isolated Ground Kit: Internally mounted; insulated, labeled for copper and aluminum neutral conductors.
4. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
5. Service-Rated Switches: Labeled for use as service equipment.

2.4 NONFUSIBLE SWITCHES

- A. Type GD, General Duty, Three Pole, Single Throw, 240-V ac, 600 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.
- B. Type HD, Heavy Duty, Three Pole, Single Throw, **480-V** ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- C. Type HD, Heavy Duty, Six Pole, Single Throw, **480-V** ac, 200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- D. Type HD, Heavy Duty, Three Pole, Double Throw, **480-V** ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- E. Accessories:
 1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
 2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
 3. Isolated Ground Kit: Internally mounted; insulated, labeled for copper and aluminum neutral conductors.
 4. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
 5. Service-Rated Switches: Labeled for use as service equipment.

2.5 RECEPTACLE SWITCHES

- A. Type HD, Heavy-Duty, Three Pole, Single-Throw Fusible Switch: **240-V** ac, **30A**; UL 98 and NEMA KS 1; horsepower rated, with clips or bolt pads to accommodate **indicated** fuses;

lockable handle with capability to accept three padlocks; interlocked with cover in closed position.

- B. Type HD, Heavy-Duty, Three Pole, Single-Throw Nonfusible Switch: **480-V ac, 30 A**; UL 98 and NEMA KS 1; horsepower rated, lockable handle with capability to accept three padlocks; interlocked with cover in closed position.
- C. Interlocking Linkage: Provided between the receptacle and switch mechanism to prevent inserting or removing plug while switch is in the on position, inserting any plug other than specified, and turning switch on if an incorrect plug is inserted or correct plug has not been fully inserted into the receptacle.
- D. Receptacle: Polarized, three-phase, four-wire receptacle (fourth wire connected to enclosure ground lug).
- E. Accessories:
 - 1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
 - 2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
 - 3. Isolated Ground Kit: Internally mounted; insulated, labeled for copper and aluminum neutral conductors.
 - 4. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
 - 5. Auxiliary Contact Kit: **One** NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open. Contact rating - **120-V ac or 208-V ac**.
 - 6. Hookstick Handle: Allows use of a hookstick to operate the handle.
 - 7. Lugs: **Compression** type, suitable for number, size, and conductor material.
 - 8. Service-Rated Switches: Labeled for use as service equipment.

2.6 SHUNT TRIP SWITCHES

- A. General Requirements: Comply with **ASME A17.1**, UL 50, and UL 98, with Class J fuse block and 200-kA interrupting and short-circuit current rating.
- B. Type HD, Heavy-Duty, Three Pole, Single-Throw Fusible Switch: **480-V ac, 30 A**; UL 98 and NEMA KS 1; integral shunt trip mechanism; horsepower rated, with clips or bolt pads to accommodate **indicated** fuses; lockable handle with capability to accept three padlocks; interlocked with cover in closed position.
- C. Type HD, Heavy-Duty, Three Pole, Single-Throw Nonfusible Switch: **480-V ac, 30 A**; UL 98 and NEMA KS 1; integral shunt trip mechanism; horsepower rated, lockable handle with capability to accept three padlocks; interlocked with cover in closed position.
- D. Control Circuit: 120-V ac; obtained from **integral control power transformer, with primary and secondary fuses**, with a control power **transformer** of enough capacity to operate shunt trip, pilot, indicating and control devices.
- E. Accessories:

1. Oiltight key switch for key-to-test function.
2. Oiltight **red** ON pilot light.
3. Isolated neutral lug; **200** percent rating.
4. Mechanically interlocked auxiliary contacts that change state when switch is opened and closed.
5. Three-pole, double-throw, fire-safety and alarm relay; **120-V ac** coil voltage.
6. Three-pole, double-throw, fire-alarm voltage monitoring relay complying with NFPA 72.
7. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
8. Isolated Ground Kit: Internally mounted; insulated, labeled for copper and aluminum neutral conductors.
9. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
10. Service-Rated Switches: Labeled for use as service equipment.

2.7 MOLDED-CASE CIRCUIT BREAKERS

- A. Circuit breakers shall be constructed using glass-reinforced insulating material. Current carrying components shall be completely isolated from the handle and the accessory mounting area.
- B. Circuit breakers shall have a toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. The circuit-breaker handle shall be over center, be trip free, and reside in a tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon shall be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with a push-to-trip button, located on the face of the circuit breaker to mechanically operate the circuit-breaker tripping mechanism for maintenance and testing purposes.
- C. The maximum ampere rating and UL, IEC, or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be clearly marked on face of circuit breaker. Circuit breakers shall be **100 percent rated. Fuse/circuit breaker** combinations for series connected interrupting ratings shall be listed by UL as recognized component combinations. Any series rated combination used shall be marked on the end-use equipment along with the statement "Caution - Series Rated System. _____ Amps Available. Identical Replacement Component Required."
- D. MCCBs shall be equipped with a device for locking in the isolated position.
- E. Lugs shall be suitable for **140 deg F (60 deg C) rated wire on 125-A circuit breakers and below.**
- F. Standards: Comply with UL 489 with interrupting capacity to comply with available fault currents.
- G. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal 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.
- H. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.

- I. Electronic Trip Circuit Breakers: Field-replaceable rating plug, rms sensing, with the following field-adjustable settings:
 - 1. Long- and short-time pickup levels.
 - 2. Long- and short-time time adjustments.
 - 3. Ground-fault pickup level, time delay, and I-squared t response.
- J. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.
- K. Features and Accessories:
 - 1. Standard frame sizes, trip ratings, and number of poles.
 - 2. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.
 - 3. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
 - 4. Auxiliary Contacts: **One SPDT switch** with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts, "b" contacts operate in reverse of circuit-breaker contacts.
 - 5. Alarm Switch: One **NC** contact that operates only when circuit breaker has tripped.

2.8 ENCLOSURES

- A. Enclosed Switches and Circuit Breakers: UL 489, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
- B. Enclosure Finish: The enclosure shall be **gray baked enamel paint, electrodeposited on cleaned, phosphatized galvanized steel (NEMA 250 Types 3R, 12)**
- C. Conduit Entry: NEMA 250 Types 4, 4X, and 12 enclosures shall contain no knockouts. NEMA 250 Types 7 and 9 enclosures shall be provided with threaded conduit openings in both endwalls.
- D. Operating Mechanism: The circuit-breaker operating handle shall be **directly operable through the front cover of the enclosure (NEMA 250 Type 1)** The cover interlock mechanism shall have an externally operated override. The override shall not permanently disable the interlock mechanism, which shall return to the locked position once the override is released. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.
- E. Enclosures designated as NEMA 250 Type 4, 4X stainless steel, 12, or 12K shall have a dual cover interlock mechanism to prevent unintentional opening of the enclosure cover when the circuit breaker is ON and to prevent turning the circuit breaker ON when the enclosure cover is open.
- F. NEMA 250 Type 7/9 enclosures shall be furnished with a breather and drain kit to allow their use in outdoor and wet location applications.

PART 3 - EXECUTION

3.1 ENCLOSURE ENVIRONMENTAL RATING APPLICATIONS

- A. Enclosed Switches and Circuit Breakers: Provide enclosures at installed locations with the following environmental ratings.
 - 1. Indoor, Dry and Clean Locations: NEMA 250, **Type 1**
 - 2. Outdoor Locations: NEMA 250, **Type 4X, 316 STAINLESS STEEL.**
 - 3. Other Wet or Damp, Indoor Locations: NEMA 250, **Type 4.**
 - 4. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 12.

3.2 INSTALLATION

- A. 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 **seven** days in advance of proposed interruption of electric service.
 - 2. Indicate method of providing temporary electric service.
 - 3. Do not proceed with interruption of electric service without **Owner's** written permission.
 - 4. Comply with NFPA 70E.
- B. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- C. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
- D. Comply with mounting and anchoring requirements specified in Section 260548.16 "Seismic Controls for Electrical Systems."
- E. Temporary Lifting Provisions: Remove temporary lifting of eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- F. Install fuses in fusible devices.
- G. Comply with NFPA 70 and NECA 1.
- H. Set field-adjustable circuit-breaker trip ranges **to values indicated on the Drawings.**

3.3 IDENTIFICATION

- A. Comply with requirements in Section 260553 "Identification for Electrical Systems."

1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
2. Label each enclosure with engraved metal or laminated-plastic nameplate.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- C. Perform tests and inspections.
- D. Tests and Inspections for Switches:
 1. Visual and Mechanical Inspection:
 - a. Inspect physical and mechanical condition.
 - b. Inspect anchorage, alignment, grounding, and clearances.
 - c. Verify that the unit is clean.
 - d. Verify blade alignment, blade penetration, travel stops, and mechanical operation.
 - e. Verify that fuse sizes and types match the Specifications and Drawings.
 - f. Verify that each fuse has adequate mechanical support and contact integrity.
 - g. Inspect bolted electrical connections for high resistance using one of the two following methods:
 - 1) Use a low-resistance ohmmeter.
 - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
 - a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
 - h. Verify that operation and sequencing of interlocking systems is as described in the Specifications and shown on the Drawings.
 - i. Verify correct phase barrier installation.
 - j. Verify lubrication of moving current-carrying parts and moving and sliding surfaces.
 2. Electrical Tests:
 - a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar

connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.

- b. Measure contact resistance across each switchblade fuseholder. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
- c. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with switch closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
- d. Measure fuse resistance. Investigate fuse-resistance values that deviate from each other by more than 15 percent.
- e. Perform ground fault test according to NETA ATS 7.14 "Ground Fault Protection Systems, Low-Voltage."

E. Tests and Inspections for Molded Case Circuit Breakers:

1. Visual and Mechanical Inspection:

- a. Verify that equipment nameplate data are as described in the Specifications and shown on the Drawings.
- b. Inspect physical and mechanical condition.
- c. Inspect anchorage, alignment, grounding, and clearances.
- d. Verify that the unit is clean.
- e. Operate the circuit breaker to ensure smooth operation.
- f. Inspect bolted electrical connections for high resistance using one of the two following methods:
 - 1) Use a low-resistance ohmmeter.
 - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
 - a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
- g. Inspect operating mechanism, contacts, and chutes in unsealed units.
- h. Perform adjustments for final protective device settings in accordance with the coordination study.

2. Electrical Tests:

- a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
 - b. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with circuit breaker closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
 - c. Perform a contact/pole resistance test. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
 - d. Perform insulation resistance tests on all control wiring with respect to ground. Applied potential shall be 500-V dc for 300-V rated cable and 1000-V dc for 600-V rated cable. Test duration shall be one minute. For units with solid state components, follow manufacturer's recommendation. Insulation resistance values shall be no less than two megohms.
 - e. Determine the following by primary current injection:
 - 1) Long-time pickup and delay. Pickup values shall be as specified. Trip characteristics shall not exceed manufacturer's published time-current characteristic tolerance band, including adjustment factors.
 - 2) Short-time pickup and delay. Short-time pickup values shall be as specified. Trip characteristics shall not exceed manufacturer's published time-current characteristic tolerance band, including adjustment factors.
 - 3) Ground-fault pickup and time delay. Ground-fault pickup values shall be as specified. Trip characteristics shall not exceed manufacturer's published time-current characteristic tolerance band, including adjustment factors.
 - 4) Instantaneous pickup. Instantaneous pickup values shall be as specified and within manufacturer's published tolerances.
 - f. Test functionality of the trip unit by means of primary current injection. Pickup values and trip characteristics shall be as specified and within manufacturer's published tolerances.
 - g. Perform minimum pickup voltage tests on shunt trip and close coils in accordance with manufacturer's published data. Minimum pickup voltage of the shunt trip and close coils shall be as indicated by manufacturer.
 - h. Verify correct operation of auxiliary features such as trip and pickup indicators; zone interlocking; electrical close and trip operation; trip-free, anti-pump function; and trip unit battery condition. Reset all trip logs and indicators. Investigate units that do not function as designed.
 - i. Verify operation of charging mechanism. Investigate units that do not function as designed.
3. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
 4. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.

- F. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.
- G. Prepare test and inspection reports.
 - 1. Test procedures used.
 - 2. Include identification of each enclosed switch and circuit breaker tested and describe test results.
 - 3. List deficiencies detected, remedial action taken, and observations after remedial action.

END OF SECTION 262816

SECTION 26 29 23 - VARIABLE-FREQUENCY MOTOR CONTROLLERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes separately enclosed, preassembled, combination VFCs, rated 600 V and less, for speed control of three-phase, squirrel-cage induction motors.

1.3 DEFINITIONS

- A. CPT: Control power transformer.
- B. DDC: Direct digital control.
- C. EMI: Electromagnetic interference.
- D. LED: Light-emitting diode.
- E. NC: Normally closed.
- F. NO: Normally open.
- G. OCPD: Overcurrent protective device.
- H. PID: Control action, proportional plus integral plus derivative.
- I. RFI: Radio-frequency interference.
- J. VFC: Variable-frequency motor controller.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type and rating of VFC indicated.
 - 1. Include dimensions and finishes for VFCs.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings: For each VFC indicated.

1. Include 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. Include diagrams for power, signal, and control wiring.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Floor plans, drawn to scale, showing dimensioned layout on which the following items are shown and coordinated with each other, using input from installers of the items involved:
 1. Required working clearances and required area above and around VFCs.
 2. Show VFC layout and relationships between electrical components and adjacent structural and mechanical elements.
 3. Show support locations, type of support, and weight on each support.
 4. Indicate field measurements.
- B. Product Certificates: For each VFC from manufacturer.
- C. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For VFCs to include in emergency, operation, and maintenance manuals.
 1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
 - a. Manufacturer's written instructions for testing and adjusting thermal-magnetic circuit breaker and motor-circuit protector trip settings.
 - b. Manufacturer's written instructions for testing, adjusting, and reprogramming microprocessor control modules.
 - c. Manufacturer's written instructions for setting field-adjustable timers, controls, and status and alarm points.

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. Power Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
 2. Control Power Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than two of each size and type.
 3. Indicating Lights: Two of each type and color installed.

4. Auxiliary Contacts: Furnish one spare(s) for each size and type of magnetic controller installed.

1.8 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Accredited by NETA.
 1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. If stored in space that is not permanently enclosed and air conditioned, remove loose packing and flammable materials from inside controllers and install temporary electric heating, with at least 250 W per controller.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace VFCs 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 MANUFACTURERS

- 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. ABB, Electrification Business.
 2. ABB, Motion Business.
 3. Cerus Industrial, Inc.
 4. Danfoss, Inc.
 5. Eaton.
 6. Nidec Motor Corporation; Nidec Corporation.
 7. Rockwell Automation, Inc.
 8. Schneider Electric USA, Inc.
 9. Siemens Industry, Inc., Building Technologies Division.
 10. Yaskawa Electric America, Inc.

2.2 SYSTEM DESCRIPTION

- A. General Requirements for VFCs:

1. VFCs and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
 2. Comply with NEMA ICS 7, NEMA ICS 61800-2, and UL 508A.
- B. Application: Constant torque.
- C. VFC Description: Variable-frequency motor controller, consisting of power converter that employs pulse-width-modulated inverter, factory built and tested in an enclosure, with integral disconnecting means and overcurrent and overload protection; listed and labeled by an NRTL as a complete unit; arranged to provide self-protection, protection, and variable-speed control of one or more three-phase induction motors by adjusting output voltage and frequency.
1. Units suitable for operation of NEMA MG 1, Design A and Design B motors, as defined by NEMA MG 1, Section IV, Part 30, "Application Considerations for Constant Speed Motors Used on a Sinusoidal Bus with Harmonic Content and General-Purpose Motors Used with Adjustable-Voltage or Adjustable-Frequency Controls or Both."
 2. Units suitable for operation of inverter-duty motors as defined by NEMA MG 1, Section IV, Part 31, "Definite-Purpose Inverter-Fed Polyphase Motors."
 3. Listed and labeled for integrated short-circuit current (withstand) rating by an NRTL acceptable to authorities having jurisdiction.
- D. Design and Rating: Match load type, such as fans, blowers, and pumps; and type of connection used between motor and load such as direct or through a power-transmission connection.
- E. Output Rating: Three phase; 10 to 66 Hz, with torque constant as speed changes; maximum voltage equals input voltage.
- F. Unit Operating Requirements:
1. Input AC Voltage Tolerance: Plus 10 and minus 15 percent of VFC input voltage rating.
 2. Input AC Voltage Unbalance: Not exceeding 5 percent.
 3. Input Frequency Tolerance: Plus or minus 3 percent of VFC frequency rating.
 4. Minimum Efficiency: 96 percent at 60 Hz, full load.
 5. Minimum Displacement Primary-Side Power Factor: 96 percent under any load or speed condition.
 6. Minimum Short-Circuit Current (Withstand) Rating: 22 kA.
 7. Ambient Temperature Rating: Not less than 32 deg F and not exceeding 104 deg F.
 8. Humidity Rating: Less than 95 percent (noncondensing).
 9. Altitude Rating: Not exceeding 3300 feet.
 10. Vibration Withstand: Comply with NEMA ICS 61800-2.
 11. Overload Capability: 1.5 times the base load current for 60 seconds; minimum of 1.8 times the base load current for three seconds.
 12. Starting Torque: Minimum 100 percent of rated torque from 3 to 60 Hz.
 13. Speed Regulation: Plus or minus 5 percent.
 14. Output Carrier Frequency: Selectable; 0.5 to 15 kHz.
 15. Stop Modes: Programmable; includes fast, free-wheel, and dc injection braking.
- G. Inverter Logic: Microprocessor based, 16 bit, isolated from all power circuits.
- H. Isolated Control Interface: Allows VFCs to follow remote-control signal over a minimum 40:1 speed range.

1. Signal: Electrical.
- I. Internal Adjustability Capabilities:
 1. Minimum Speed: 5 to 25 percent of maximum rpm.
 2. Maximum Speed: 80 to 100 percent of maximum rpm.
 3. Acceleration: 0.1 to 999.9 seconds.
 4. Deceleration: 0.1 to 999.9 seconds.
 5. Current Limit: 30 to minimum of 150 percent of maximum rating.
 - J. Self-Protection and Reliability Features:
 1. Surge Suppression: Field-mounted surge suppressors complying with Section 264313 "Surge Protection for Low-Voltage Electrical Power Circuits," UL 1449 SPD, Type 2.
 2. Loss of Input Signal Protection: Selectable response strategy, including speed default to a percent of the most recent speed, a preset speed, or stop; with alarm.
 3. Under- and overvoltage trips.
 4. Inverter overcurrent trips.
 5. VFC and Motor-Overload/Overtemperature Protection: Microprocessor-based thermal protection system for monitoring VFCs and motor thermal characteristics, and for providing VFC overtemperature and motor-overload alarm and trip; settings selectable via the keypad.
 6. Critical frequency rejection, with three selectable, adjustable deadbands.
 7. Instantaneous line-to-line and line-to-ground overcurrent trips.
 8. Loss-of-phase protection.
 9. Reverse-phase protection.
 10. Short-circuit protection.
 11. Motor-overtemperature fault.
 - K. Automatic Reset/Restart: Attempt three restarts after drive fault or on return of power after an interruption and before shutting down for manual reset or fault correction; adjustable delay time between restart attempts.
 - L. Power-Interruption Protection: To prevent motor from re-energizing after a power interruption until motor has stopped, unless "Bidirectional Autospeed Search" feature is available and engaged.
 - M. Bidirectional Autospeed Search: Capable of starting VFC into rotating loads spinning in either direction and returning motor to set speed in proper direction, without causing damage to drive, motor, or load.
 - N. Torque Boost: Automatically varies starting and continuous torque to at least 1.5 times the minimum torque to ensure high-starting torque and increased torque at slow speeds.
 - O. Motor Temperature Compensation at Slow Speeds: Adjustable current fall-back based on output frequency for temperature protection of self-cooled, fan-ventilated motors at slow speeds.
 - P. Integral Input Disconnecting Means and OCPD: UL 489, instantaneous-trip circuit breaker or UL 489, molded-case switch, with power fuse block and current-limiting fuses with pad-lockable, door-mounted handle mechanism.
 1. Disconnect Rating: Not less than 115 percent of VFC input current rating.

2. Auxiliary Contacts: NO or NC, arranged to activate before switch blades open.
3. Auxiliary contacts "a" and "b" arranged to activate with circuit-breaker handle.

2.3 CONTROLS AND INDICATION

- A. Status Lights: Door-mounted LED indicators displaying the following conditions:
1. Power on.
 2. Run.
 3. Overvoltage.
 4. Line fault.
 5. Overcurrent.
 6. External fault.
- B. Panel-Mounted Operator Station: Manufacturer's standard front-accessible, sealed keypad and plain-English-language digital display; allows complete programming, program copying, operating, monitoring, and diagnostic capability.
1. Keypad: In addition to required programming and control keys, include keys for HAND, OFF, and AUTO modes.
 2. Security Access: Provide electronic security access to controls through identification and password with at least three levels of access: View only; view and operate; and view, operate, and service.
 - a. Control Authority: Supports at least four conditions: Off, local manual control at VFC, local automatic control at VFC, and automatic control through a remote source.
- C. Historical Logging Information and Displays:
1. Real-time clock with current time and date.
 2. Running log of total power versus time.
 3. Total run time.
 4. Fault log, maintaining last four faults with time and date stamp for each.
 5. .
- D. Indicating Devices: Digital display mounted flush in VFC door and connected to display VFC parameters including, but not limited to:
1. Output frequency (Hz).
 2. Motor speed (rpm).
 3. Motor status (running, stop, fault).
 4. Motor current (amperes).
 5. Motor torque (percent).
 6. Fault or alarming status (code).
 7. PID feedback signal (percent).
 8. DC-link voltage (V dc).
 9. Set point frequency (Hz).
 10. Motor output voltage (V ac).

E. Control Signal Interfaces:

1. Electric Input Signal Interface:

- a. A minimum of two programmable analog inputs: Operator-selectable "x"- to "y"-mA dc.
 - b. A minimum of six multifunction programmable digital inputs.
2. Remote Signal Inputs: Capability to accept any of the following speed-setting input signals from the DDC system for HVAC or other control systems:

- a. 0- to 10-V dc.
- b. 4- to 20-mA dc.
- c. Potentiometer using up/down digital inputs.
- d. Fixed frequencies using digital inputs.

3. Output Signal Interface: A minimum of one programmable analog output signal(s) (operator-selectable "x"- to "y"-mA dc), which can be configured for any of the following:

- a. Output frequency (Hz).
- b. Output current (load).
- c. DC-link voltage (V dc).
- d. Motor torque (percent).
- e. Motor speed (rpm).
- f. Set point frequency (Hz).

4. Remote Indication Interface: A minimum of two programmable dry-circuit relay outputs (120-V ac, 1 A) for remote indication of the following:

- a. Motor running.
- b. Set point speed reached.
- c. Fault and warning indication (overtemperature or overcurrent).
- d. PID high- or low-speed limits reached.

F. PID Control Interface: Provides closed-loop set point, differential feedback control in response to dual feedback signals. Allows for closed-loop control of fans and pumps for pressure, flow, or temperature regulation.

1. Number of Loops: Two.

G. Interface with DDC System for HVAC: Factory-installed hardware and software shall interface with DDC system for HVAC to monitor, control, display, and record data for use in processing reports. VFC settings shall be retained within VFC's nonvolatile memory.

1. Communication Interface: Comply with ASHRAE 135. Communication shall interface with DDC system for HVAC to remotely control and monitor lighting from a DDC system for HVAC operator workstation. Control features and monitoring points displayed locally at lighting panel shall be available through the DDC system for HVAC.

2.4 LINE CONDITIONING AND FILTERING

- A. Input Line Conditioning: Based on the manufacturer's harmonic analysis study and report, provide input filtering, as required, to limit total demand (harmonic current) distortion and total harmonic voltage demand at the defined point of common coupling to meet IEEE 519 recommendations.
- B. EMI/RFI Filtering: CE marked; certify compliance with IEC 61800-3 for Category C2.

2.5 OPTIONAL FEATURES

- 1. Configure to allow two motors to operate simultaneously and in a lead/lag mode, with one motor operated at variable speed via the power converter and the other at constant speed via the bypass controller; separate overload relay for each controlled motor.
- B. Damper control circuit with end-of-travel feedback capability.
- C. Sleep Function: Senses a minimal deviation of a feedback signal and stops the motor. On an increase in speed-command signal deviation, VFC resumes normal operation.
- D. Motor Preheat Function: Preheats motor when idle to prevent moisture accumulation in the motor.
 - 1. Forces VFC to operate motor, without any other run or speed command, at a field-adjustable, preset speed.
 - 2. Forces VFC to transfer to bypass mode and operate motor at full speed.
 - 3. Causes display of override mode on the VFC display.
 - 4. Reset VFC to normal operation on removal of override signal manually.
- E. Remote Indicating Circuit Terminals: Mode selection, controller status, and controller fault.
- F. Remote digital operator kit.
- G. Communication Port: RS-232 port, USB 2.0 port, or equivalent connection capable of connecting a printer.

2.6 ENCLOSURES

- A. VFC Enclosures: NEMA 250, to comply with environmental conditions at installed location.
 - 1. Dry and Clean Indoor Locations: Type 1.
 - 2. Outdoor Locations: Type 4X.
 - 3. Wash-Down Areas: Type 4X,.
 - 4. Other Wet or Damp Indoor Locations: Type 4X.
 - 5. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: Type 12.
- B. Plenum Rating: UL 1995; NRTL certification label on enclosure, clearly identifying VFC as "Plenum Rated."

2.7 ACCESSORIES

- A. General Requirements for Control-Circuit and Pilot Devices: NEMA ICS 5; factory installed in VFC enclosure cover unless otherwise indicated.
 - 1. Push Buttons: Covered.
 - 2. Pilot Lights: Push to test.
 - 3. Selector Switches: Rotary type.
 - 4. Stop and Lockout Push-Button Station: Momentary-break, push-button station with a factory-applied hasp arranged so padlock can be used to lock push button in depressed position with control circuit open.
- B. Reversible NC/NO bypass contactor auxiliary contact(s).
- C. Control Relays: Auxiliary and adjustable solid-state time-delay relays.
- D. Phase-Failure, Phase-Reversal, and Undervoltage and Overvoltage Relays: Solid-state sensing circuit with isolated output contacts for hard-wired connections. Provide adjustable undervoltage, overvoltage, and time-delay settings.
 - 1. Current Transformers: Continuous current rating, basic impulse insulating level (BIL) rating, burden, and accuracy class suitable for connected circuitry. Comply with IEEE C57.13.
- E. Supplemental Digital Meters:
 - 1. Elapsed-time meter.
 - 2. Kilowatt meter.
 - 3. Kilowatt-hour meter.
- F. Breather and drain assemblies, to maintain interior pressure and release condensation in NEMA 250, Type 4X enclosures installed outdoors or in unconditioned interior spaces subject to humidity and temperature swings.
- G. Sun shields installed on fronts, sides, and tops of enclosures installed outdoors and subject to direct and extended sun exposure.
- H. Spare control-wiring terminal blocks; wired.

2.8 SOURCE QUALITY CONTROL

- A. Testing: Test and inspect VFCs according to requirements in NEMA ICS 61800-2.
 - 1. Test each VFC while connected to a motor that is comparable to that for which the VFC is rated.
 - 2. Verification of Performance: Rate VFCs according to operation of functions and features specified.
- B. VFCs will be considered defective if they do not pass tests and inspections.

- C. Prepare test and inspection reports.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas, surfaces, and substrates to receive VFCs, with Installer present, for compliance with requirements for installation tolerances, and other conditions affecting performance of the Work.
- B. Examine VFC before installation. Reject VFCs that are wet, moisture damaged, or mold damaged.
- C. Examine roughing-in for conduit systems to verify actual locations of conduit connections before VFC installation.
- D. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Wall-Mounting Controllers: Install with tops at uniform height and with disconnect operating handles not higher than 79 inches above finished floor, unless otherwise indicated, and by bolting units to wall or mounting on lightweight structural-steel channels bolted to wall. For controllers not on walls, provide freestanding racks complying with Section 260529 "Hangers and Supports for Electrical Systems."
- B. Floor-Mounting Controllers: Install VFCs on 4-inch nominal thickness concrete base. Comply with requirements for concrete base specified in Section 033000 "Cast-in-Place Concrete."
 - 1. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
 - 2. For supported equipment, 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 supported equipment.
- C. Roof-Mounting Controllers: Install VFC on roofs with tops at uniform height and with disconnect operating handles not higher than 79 inches above finished roof surface unless otherwise indicated, and by bolting units to curbs or mounting on freestanding, lightweight, structural-steel channels bolted to curbs. Seal roof penetrations after raceways are installed.
 - 1. Curbs and roof penetrations are specified in Section 077200 "Roof Accessories."
 - 2. Structural-steel channels are specified in Section 260529 "Hangers and Supports for Electrical Systems."

- D. Install heaters in thermal-overload relays. Select heaters based on actual nameplate full-load amperes after motors are installed.
- E. Install, connect, and fuse thermal-protector monitoring relays furnished with motor-driven equipment.
- F. Comply with NECA 1.

3.3 CONTROL WIRING INSTALLATION

- A. Install wiring between VFCs and remote devices. Comply with requirements in Section 260523 "Control-Voltage Electrical Power Cables."
- B. Bundle, train, and support wiring in enclosures.
- C. Connect selector switches and other automatic-control devices where applicable.
 - 1. Connect selector switches to bypass only those manual- and automatic-control devices that have no safety functions when switches are in manual-control position.
 - 2. Connect selector switches with control circuit in both manual and automatic positions for safety-type control devices such as low- and high-pressure cutouts, high-temperature cutouts, and motor-overload protectors.

3.4 IDENTIFICATION

- A. Identify VFCs, components, and control wiring. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."
 - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
 - 2. Label each VFC with engraved nameplate.
 - 3. Label each enclosure-mounted control and pilot device.
- B. Operating Instructions: Frame printed operating instructions for VFCs, including control sequences and emergency procedures. Fabricate frame of finished metal, and cover instructions with clear acrylic plastic. Mount on front of VFC units.

3.5 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 test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections with the assistance of a factory-authorized service representative.
- D. Acceptance Testing Preparation:

1. Test insulation resistance for each VFC element, bus, component, connecting supply, feeder, and control circuit.
2. Test continuity of each circuit.

E. Tests and Inspections:

1. Inspect VFC, wiring, components, connections, and equipment installation. Test and adjust controllers, components, and equipment.
2. Test insulation resistance for each VFC element, component, connecting motor supply, feeder, and control circuits.
3. Test continuity of each circuit.
4. Verify that voltages at VFC locations are within 5 percent of motor nameplate rated voltages. If outside this range for any motor, notify Architect before starting the motor(s).
5. Test each motor for proper phase rotation.
6. Perform tests according to the Inspection and Test Procedures for Adjustable Speed Drives stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
7. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
8. Perform the following infrared (thermographic) 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 VFC. 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 VFC 11 months after date of Substantial Completion.
 - c. Instruments and Equipment: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
9. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.

F. VFCs will be considered defective if they do not pass tests and inspections.

G. Prepare test and inspection reports, including a certified report that identifies the VFC and describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations made after remedial action.

3.6 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.

3.7 ADJUSTING

- A. Program microprocessors for required operational sequences, status indications, alarms, event recording, and display features. Clear events memory after final acceptance testing and prior to Substantial Completion.
- B. Set the taps on reduced-voltage autotransformer controllers.
- C. Set field-adjustable circuit-breaker trip ranges as specified in Section 260573.16 "Coordination Studies."
- D. Set field-adjustable pressure switches.

3.8 PROTECTION

- A. Temporary Heating: Apply temporary heat to maintain temperature according to manufacturer's written instructions until controllers are ready to be energized and placed into service.
- B. Replace VFCs whose interiors have been exposed to water or other liquids prior to Substantial Completion.

3.9 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, reprogram, and maintain VFCs.

END OF SECTION 262923

Addendum 1

Request for Proposal
RFP No. PS 24-01/25-01

Public Safety Building Chiller and AHU Replacements

The following addendum to the Invitation to Bid includes the questions received during the open Q&A period. Responses and clarifications are included.

Please review and acknowledge this addendum with an authorized signature below, and include this signed page with your submitted bid. Failure to do so may result in your bid being declared non-responsive.

COMPANY

SIGNATURE

DATE

PRINT NAME

TITLE

Pre-Bid Question Log

Project: Public Safety Chiller and AHU Replacements

Date: 9/20/2024



	Question	Answer
1	What are the existing controls?	The facility has a Tridium Niagara system. It has both ion and bac net protocols and can also communicate with MOD BUS, etc.
2	Is there an as-built for existing controls?	No.
3	Are we able to work during normal business hours?	See paragraph 1.7.B of specification section 01 10 00.
4	Are there any restrictions on when we can or cannot work?	See paragraph 1.7.B of specification section 01 10 00. Note that any work on Saturdays must be approved in advance by the City.
5	When is the anticipated start and finish date?	Notice to proceed is anticipated on 11/14/2024 (pending contract approval by the City Council). A 9-month construction timeframe was anticipated based on lead times given by the vendors during the design process. However, the actual construction timeframe can be negotiated during the contracting process based upon actual lead times for the equipment. The city would like for the project to be complete as soon as possible.
6	Is it acceptable for the respondent to provide pricing for the refurbishment of the air handlers, including blower wheels, shafts, bearings, coil cleaning, pulley sheaves, belts (if applicable), and drain pan cleaning, in addition to the chiller and pump replacement?	No. The city is expecting all new equipment per the provided construction documents.
7	Is there an expectation that a rental chiller will be provided to maintain the chilled water loop's operation during the chiller replacement? If so, will a brief shutdown be required to install rental taps and isolation valves in the outdoor piping to ensure the chilled water distribution system remains functional during the replacement? Alternatively, is the expectation to schedule a brief shutdown period for the chiller replacement with minimal downtime and no rental chiller, such as during nights or weekends?	It is anticipated that a rental chiller will be required in order to minimize downtime. This facility operates and is occupied 24/7. Brief shutdowns in order to install the temporary equipment will need to be coordinated with the city in order to occur on a day with minimal disruption to the building's operations.



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CONFIRMATION RECEIPT

SUBMITTED BY: John F. Pennebaker Co. Inc.
(COMPANY NAME/INDIVIDUAL)

TYPE OF SUBMISSION

- ☒ Request for Bids
☐ Request for Proposals
☐ Request for Qualifications

PROJECT NAME: Public Safety HVAC

Number of packages submitted: 1

DELIVERED BY: Rob Pennebaker
(PRINT NAME OF REPRESENTATIVE DELIVERING PROPOSAL)

OFFICE USE ONLY

DATE RECEIVED: 9/26/24 TIME RECEIVED: 10:48am

ACCEPTED BY: John Gracia
(PRINT NAME OF EMPLOYEE RECEIVING PROPOSAL)

BID FORM

Page 1 of 2

In compliance with your Request for Proposal, the undersigned, hereinafter termed the Bidder, proposes to enter into a Contract with the City of Duluth to provide the necessary machinery, tools, apparatus, and other means of construction, and all materials and labor specified in the Contract, necessary to complete the work in the manner therein specified within the time specified, as therein set forth, for:

Replacement of HVAC Systems at the Public Safety Building

The Bidder has carefully examined and fully understands the Contract and other Contractual Documents hereto attached and has made a personal examination of the proposed Work and has satisfied himself as to the actual conditions and requirements of the Work, and hereby proposes and agrees that if his Bid is accepted, he will contract with the City of Duluth in full conformance with the Contract Documents.

It is the intent of this Bid to include all items of construction and all Work indicated on the Drawings and called for in the Specifications.

In accordance with the foregoing, the undersigned proposes to furnish and construct the items listed in the below Schedule of Items for the following bid amounts:

Cost Summary

Total cost for complete project as shown in project documents.

Phase	Total Cost
Chiller Replacement installed complete (including removal of current chiller, replacement of chilled water pump, and temporary comfort heating/cooling)	\$ 190,896.00
Air Handling Unit 1 installed complete (including removal of current unit and temporary comfort heating/cooling)	\$ 267,800.00
Air Handling Unit 2 installed complete (including removal of current unit and temporary comfort heating/cooling)	\$ 268,926.00
Air Handling Unit 3 installed complete (including removal of current unit and temporary comfort heating/cooling)	\$ 269,033.00
Total Project Cost (Base Bid)	\$ 996,655.00

The bidder agrees that the cost of any work performed, materials furnished, services provided, or expenses incurred, which are not specifically delineated in the Contract Documents, but which

Page 2 of 2

are incidental to the scope, intent, and completion of the Contract, shall be deemed to have been included in the prices bid for the various items scheduled.

The bidder further proposes and agrees hereby to promptly commence the Work with adequate force and equipment within ten (10) calendar days from receipt of Notice to Proceed, and to complete the Work within the agreed upon schedule. The City of Duluth will charge the contractor five hundred dollars (\$500.00) per calendar day as liquidated damages for every day beyond this deadline that work is not fully complete.

The undersigned represents that the unit prices listed above are complete as specified, acknowledges that the estimated quantities are not guaranteed, and agrees that payment will be for actual in-place quantities installed per the plans.

Prices must be entered for all blanks in the schedule.

Providing items in excess of the amount shown on the plans will not be paid unless requested by and approved by the City in advance.

John F. Pennebaker Company, Inc.
COMPANY


SIGNATURE

9/26/2024
DATE

John F. Pennebaker
PRINT NAME

President
TITLE



JOHN F. PENNEBAKER CO., INC.
MECHANICAL CONTRACTORS

City of Duluth

HVAC System Replacement for Public Safety Building

Written Project Approach

Contractor shall include a written approach (max 2 pages) indicating the following to the evaluation team:

1. How does your team plan to mobilize and conduct construction activities while keeping the remainder of the building fully open, functional, and accessible to the public at all times?

AHU-1 Mechanical Room & Yard

On the day of the chiller swap, JFP will remove all connections to the existing chiller and prepare it for removal. JFP plans to use a crane to remove the existing chiller and place the new chiller. During the time needed for JFP to prepare the existing chiller for removal, the crane will arrive and begin stabilizing. We propose to place the crane in 4 parking spaces closest to the yard inside the parking lot. An empty flatbed will be receiving the existing chiller and it will arrive shortly after the crane gets set up to receive the existing chiller. The existing chiller will be removed by the Crane and set on the empty flatbed. Once that truck leaves, the truck with the new chiller will come in and position where the chiller can be picked from the truck and allow civilians to enter/exit the parking lot. A picture of this plan is included. Once the chiller swap is complete, JFP will begin making the new connections.



During the time that the chiller swap is occurring, the JFP crew will be demolishing the AHU and its components inside the mechanical room. We propose to place a dumpster outside the yard, within the fence for these materials. The proposed location for the dumpster is in the picture as well. Working inside the yard and mechanical room, the JFP team will mobilize through the yard entrances.



AHU-2 & AHU-3 2nd Floor



During this phase, we propose to use the dumpster area as staging as well. We can demo the existing AHU and bring it out to the dumpster in sections. We will also bring the new AHU inside to install in sections. We would like to use the rounded entrance at the southeastern section of the building to move in and out of the building. AHU-2 is further into the building from this entrance; however, this will keep us out of the public entrances. It is also the closest entrance to a proper staging area.

2. How will you provide temporary comfort heating/cooling to ensure occupant comfort during construction?

We would use indoor A/C units placed in the mechanical rooms, connected to the existing duct trunks in the mechanical room via flex hose. This would be done per each phase. We would provide a temporary chiller for the chiller replacement phase.

3. How will you anticipate phasing construction?

We propose to do this in 4 phases. Phase 1 would consist of the largest part which is the Mechanical Yard. Once this area is completed, we will move on to Phase 2 which would be AHU-1, then Phase 3 which is AHU-2. Lastly, Phase 4 which is AHU-3. Unless a different path is requested from the facility. This will assist in the heating/cooling during construction so that not all AHU's are out of service at one time. There will be no anticipated time lapse in between phases apart from the time it might take to have the new units running. The goal is to have the unit up and running before moving to the next phase. If the client would prefer a different path, we are open to making those changes.

4. What assistance will you require from the City to complete the project?

- The City blocks off the required space in the parking lot on the afternoon/night before the chiller swap.
- Ability to travel inside the fenced area while working on AHU-2 & 3.
- Assistance in determining the proper isolation valves for the chiller.
- Assistance with shutting down existing equipment.

Initial Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		HVAC System Replacement for Public Safety	162 days?	Thu 11/14/24	Fri 6/27/25		
2		NTP	1 day?	Thu 11/14/24	Thu 11/14/24		
3		Submittals	21 days	Fri 11/15/24	Fri 12/13/24		
4		Chiller	21 days	Fri 11/15/24	Fri 12/13/24		
5		AHUs	21 days	Fri 11/15/24	Fri 12/13/24		
6		CHWP-1	21 days	Fri 11/15/24	Fri 12/13/24		
7		Controls	21 days	Fri 11/15/24	Fri 12/13/24		
8		Electrical	21 days	Fri 11/15/24	Fri 12/13/24		
9							
10		Chiller Replacement	8 days	Mon 6/2/25	Wed 6/11/25		
11		Chiller Demo	1 day	Mon 6/2/25	Mon 6/2/25		
12		Set Chiller	1 day	Mon 6/2/25	Mon 6/2/25	11	
13		Pipe Supports	1 day	Mon 6/2/25	Mon 6/2/25	11	
14		Piping Connections	2 days	Tue 6/3/25	Wed 6/4/25	12,13	
15		Insulation	2 days	Thu 6/5/25	Fri 6/6/25	14	
16		Electrical Connections	2 days	Tue 6/3/25	Wed 6/4/25	11	
17		Controls	4 days	Tue 6/3/25	Fri 6/6/25		
18		Chiller Startup	2 days	Mon 6/9/25	Tue 6/10/25	11	
19		Chiller Yard Cleanup	3 days	Mon 6/9/25	Wed 6/11/25		
20							
21		AHU-1	23 days	Mon 4/7/25	Wed 5/7/25		
22		Set Up Temp HVAC	5 days	Mon 4/7/25	Fri 4/11/25		
23		Demolition (All trades)	4 days	Mon 4/14/25	Thu 4/17/25	22	
24		Bring new AHU into space	1 day	Fri 4/18/25	Fri 4/18/25	23	
25		Rebuild AHU	3 days	Mon 4/21/25	Wed 4/23/25	24	
26		Duct Connections	2 days	Thu 4/24/25	Fri 4/25/25	25	
27		Pipe Connections	2 days	Thu 4/24/25	Fri 4/25/25		
28		Insulation	3 days	Mon 4/28/25	Wed 4/30/25		
29		Electrical Connections	2 days	Thu 4/24/25	Fri 4/25/25	25	
30		Controls	4 days	Thu 4/24/25	Tue 4/29/25	25	
31		Startup	1 day	Wed 4/30/25	Wed 4/30/25	30	
32		Cleanup	4 days	Wed 4/30/25	Mon 5/5/25		
33		Breakdown Temporary HVAC	3 days	Thu 5/1/25	Mon 5/5/25		
34							
35		AHU-2	19 days	Tue 5/6/25	Fri 5/30/25		
36		Set Up Temp HVAC	4 days	Tue 5/6/25	Fri 5/9/25		
37		Demolition (All trades)	4 days	Mon 5/12/25	Thu 5/15/25	36	
38		Bring new AHU into space	1 day	Fri 5/16/25	Fri 5/16/25	37	
39		Rebuild AHU	3 days	Mon 5/19/25	Wed 5/21/25	38	
40		Duct Connections	2 days	Tue 5/20/25	Wed 5/21/25	39	
41		Pipe Connections	2 days	Tue 5/20/25	Wed 5/21/25		
42		Insulation	3 days	Thu 5/22/25	Mon 5/26/25		
43		Electrical Connections	2 days	Tue 5/20/25	Wed 5/21/25	39	
44		Controls	4 days	Tue 5/20/25	Fri 5/23/25	39	
45		Startup	1 day	Mon 5/26/25	Mon 5/26/25	44	
46		Cleanup	5 days	Mon 5/26/25	Fri 5/30/25		
47		Breakdown Temporary HVAC	4 days	Tue 5/27/25	Fri 5/30/25		
48							
49		AHU-3	19 days	Tue 6/3/25	Fri 6/27/25		
50		Set Up Temp HVAC	4 days	Tue 6/3/25	Fri 6/6/25		
51		Demolition (All trades)	4 days	Mon 6/9/25	Thu 6/12/25	50	
52		Bring AHU into space	1 day	Fri 6/13/25	Fri 6/13/25	51	
53		Rebuild AHU	3 days	Mon 6/16/25	Wed 6/18/25	52	
54		Duct Connections	2 days	Tue 6/17/25	Wed 6/18/25	53	
55		Pipe Connections	3 days	Tue 6/17/25	Thu 6/19/25		
56		Insulation	3 days	Fri 6/20/25	Tue 6/24/25		
57		Electrical Connections	2 days	Tue 6/17/25	Wed 6/18/25	53	
58		Controls	4 days	Tue 6/17/25	Fri 6/20/25	53	
59		Startup	1 day	Mon 6/23/25	Mon 6/23/25	58	
60		Cleanup	5 days	Mon 6/23/25	Fri 6/27/25		
61		Breakdown Temporary HVAC	4 days	Tue 6/24/25	Fri 6/27/25		

CORPORATE CERTIFICATE

I, Robert A. Pennebaker, certify that I am the Secretary of the Corporation named as Contractor in the foregoing Bid; that, John F. Pennebaker who signed said Bid in behalf of the Contractor, was then (Title) President of said Corporation; that said Bid was duly signed for and in behalf of said Corporation by authority of its Board of Directors, and is within the scope of its corporate powers, that said Corporations organized under the laws of the State of Georgia.

This 26th day of September, 2024.



Signature



SURETY REQUIREMENTS ACKNOWLEDGEMENT

A Bid Bond for five percent (5%) of the amount of the base bid is required to be submitted with each bid.

A Performance and Payment Bond for one hundred percent (100%) of the base bid plus any requested add-alternates will be required of the successful bidder.

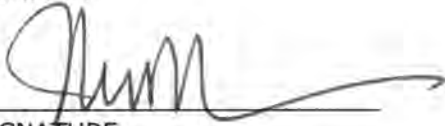
The Bidder certifies that he/she has examined all documents contained in this bid package, and is familiar with all aspects of the bid proposal and understands fully all that is required of the successful bidder. The Bidder further certifies that his/her bid shall not be withdrawn for ninety (90) days from the date on which the bid is publicly opened and read.

The Contractor agrees, if awarded this bid, he/she will:

- Furnish, upon receipt of an authorized City of Duluth Contract Agreement, all items indicated thereon as specified in this request for proposal for the bid amount, or;
- Enter a contract with the City to do and/or furnish everything necessary to provide the service and/or accomplish the work as stated and/or specified in this request for proposal for the bid amount, and;
- Furnish a revised performance bond with a new cost amount based upon any add-alternates selected if required by the City, and;
- Forfeit the amount of the Bid Bond as liquidated damages if he/she fails to enter a contract with the City as stated above, within fifteen (15) days of the date on which he/she is awarded the contract.

John F. Pennebaker Company, Inc.

COMPANY



SIGNATURE

September 26, 2024

DATE

President

TITLE

BID BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE John F. Pennebaker Company, Inc. (hereinafter called the Principal) and Liberty Mutual Insurance Company (hereinafter called the Surety), a Corporation chartered and existing under the laws of the State of Massachusetts with its principal offices in the City of Boston and authorized to do business in the State of Georgia, are held and firmly bound unto the City of DULUTH in the full and just sum of Five Percent Of The Total Amount Bid Dollars (\$ 5% of The Total Amount Bid) good and lawful money of the United States of America, to be paid upon demand of the City of Duluth, to which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, and assigns jointly and severally and firmly by these presents.

WHEREAS, the Principal is about to submit, or has submitted, to the City of Duluth, a bid for furnishing materials, labor and equipment for:

Replacement of HVAC Systems at the Public Safety Building

WHEREAS, the Principal desires to file this Bond in accordance with law in lieu of a certified Bidder's check otherwise required to accompany this Proposal.

NOW, THEREFORE, the conditions of this obligation are such that if the bid be accepted, the Principal shall within ten (10) days after receipt of notification of the acceptance, execute a Contract in accordance with the bid and upon the terms, conditions, and prices set forth in the form and manner required by the City of DULUTH, and execute a sufficient and satisfactory Performance Bond in the amount of 100% of the total contract price and Payment Bond in the amount of 100% of the total contract price payable to the City of DULUTH, in form and with security satisfactory to said City of DULUTH, and otherwise, to be and remain in full force and virtue in law; and the Surety shall, upon failure of the Principal to comply with any or all of the foregoing requirements within the time specified above, immediately pay to the City of DULUTH, Georgia, upon demand, the amount hereof in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Principal and Surety have caused these presents to be duly signed and sealed this 26th day of September, 2024.

Liberty Mutual Insurance Company

SURETY

BY:

Jaclyn Thomas, Attorney-in-Fact

(SEAL)

John F. Pennebaker Company, Inc.

PRINCIPAL

BY:

John F. Pennebaker, President

(SEAL)





This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: **8211861-985316**

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Andreah Moran; Edward Reilly; Jaclyn Thomas; Kevin T. Walsh, Jr.; Krystal L. Stravato; Marisol Mojica; Michael Marino; Ryan Gray; Thomas MacDonald

all of the city of Whippany state of NJ each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 16th day of May, 2024.



Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: David M. Carey
David M. Carey, Assistant Secretary

State of PENNSYLVANIA ss
County of MONTGOMERY

On this 16th day of May, 2024 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 26th day of September, 2024.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary

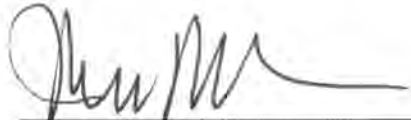
OATH OF BIDDER

Personally appeared before the undersigned officer duly authorized by law to administer oaths and John F. Pennebaker who, after being first duly sworn, depose and say that they are all the officers, agents, persons, or employees who have acted for or represented John F. Pennebaker Company, Inc. (Company Name) in bidding or procuring a Contract with the City of Duluth on the following projects:

Replacement of HVAC Systems at the Public Safety Building

and that said John F. Pennebaker has not by (himself, themselves) or through any persons, officers, agents, or employees prevented or attempted to prevent by any means whatsoever competition in such bidding; or by any means whatsoever prevented or endeavored to prevent anyone from making a bid therefore, or induces or attempted to induce another to withdraw a bid for said work.

BY:



Signature of Bidder

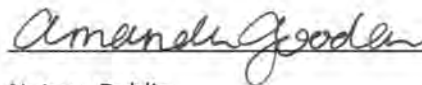
John F. Pennebaker

Name – Printed

President

Title

Sworn to and subscribed before me this 26th day of September, 2024.



Notary Public



STATEMENT OF BIDDER'S QUALIFICATIONS
(To be subscribed and sworn to before a notary public)

Page 1 of 2

Firm Name: John F. Pennebaker Company, Inc.
LEGAL NAME OF BUSINESS (As registered with Secretary of State)

Address: 1840 South Lee Court
LEGAL BUSINESS ADDRESS (P.O. BOX IS INSUFFICIENT)

<u>Buford</u>	<u>Georgia</u>	<u>30518</u>
CITY	STATE	ZIP

N/A
MAILING ADDRESS IF DIFFERENT FROM ABOVE

Telephone Number: 678-546-8858 Facsimile Number: 678-546-8828

Contact Person Name and Email Address: John F. Pennebaker, johnpennebaker@johnpennebaker.com

Georgia Resident: YES X NO

When Organized: 1975 Where Incorporated: Georgia

Federal I.D. No.: 58-1212306 or Social Security No.: N/A

Number of years engaged in the contracting business under the present firm name:
49

General Contractor's License Number: GCCO001364

Credit Available for This Contract: \$1,250,000.00

Contracts Now in Hand, Gross Amount: \$28,577,647.00

Plan of Organization: ☐ Proprietorship ☒ Corporation ☐ Partnership ☐ LLC

The bidder has refused to sign a contract at the original bid. YES or NO (Please circle one)

The bidder has been declared in default on a contract. YES or NO (Please circle one)

The bidder has been involved in litigation or filing claims against Owners, Construction Contract Administration Firms, or Design Firms in the last 3 years. YES or NO (Please circle one)

If answer is Yes to any statement above, please explain: N/A

The bidder has written corporate safety and quality assurance/quality control processes in place, and the City may examine these documents if requested. YES or NO (Please circle one)

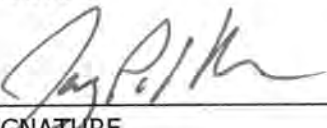
(STATEMENT OF BIDDER'S QUALIFICATIONS - CONTINUED)

Page 2 of 2

I certify that the above information is complete, true, and correct.

John F. Pennebaker Company, Inc.
COMPANY

September 26, 2024
DATE


SIGNATURE

Jay Pennebaker, Vice President
TITLE

Sworn to and subscribed before me this 26th day of September, 2024.


Notary Public



(SEAL)

CONTRACTOR E-VERIFY AFFIDAVIT

By executing this affidavit, the undersigned contractor verifies its compliance with *The Illegal Reform Enhancements for 2013*, stating affirmatively that the individual, firm, or corporation which is contracting with the City of Duluth has registered with and is participating in a federal work authorization program* [any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act, in accordance with the applicability provisions and deadlines established therein].

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services or the performance of labor pursuant to this contract with the City of Duluth, contractor will secure from such subcontractor(s) similar verification of compliance with the Illegal Immigration Reform and Enforcement Act on the Subcontractor Affidavit provided in Rule 300-10-01-.08 or a substantially similar form. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the City of Duluth at the time the subcontractor(s) is retained to perform such service.

49115 August 9, 2007
E-Verify * User Identification Number Date Registered

John F. Pennebaker Company, Inc.
Legal Company Name

1840 South Lee Court
Street Address

Buford, GA 30518
City/State/Zip Code

BY: [Signature]
(Contractor Signature)

September 26, 2024
Date

President
Title of Authorized Officer or Agent of Contractor

John F. Pennebaker
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME ON THIS THE
26th DAY OF September, 2024

Amanda Gooden
Notary Public

My Commission Expires: November 13, 2026



* As of the effective date of O.C.G.A. § 13-10-91, the applicable federal work authorization program is "E-Verify" operated by the U.S. Citizenship and Immigration Services Bureau of the U.S. Department of Homeland Security, in conjunction with the Social Security Administration (SSA).

RESUMES AND REFERENCES

Contractor shall include at least two project management personnel with at least five years' experience on projects with the technical characteristics required of a project of similar scope. One of these project management personnel must be the Project Superintendent and must be on the jobsite at all times during construction. Documentation of this experience must be provided **in this section**, including resumes of the two project management personnel and a list of at least 3 similar projects completed by the contractor with project name, description, and reference contact information.

Please see attached.



JOHN F. PENNEBAKER CO., INC.
MECHANICAL CONTRACTORS



robpennebaker@johnpennebaker.com

770-231-5776

Experience

John F. Pennebaker Co., Inc.

2008 – Present
Project Manager

AdvantaClean

2005 - 2008
Owner & Operator

Licenses

- State of Georgia General Contractor

Rob Pennebaker

Project Manager

Strong organizational and management background with proven abilities to organize, motivate and lead productive teams. Expertise includes project management, logistics and operations. Proven performer with all jobs completed on schedule and on/under budget.

Creates and executes project Construction plans and revises as appropriate to meet changing needs and requirements.

- Identifies resources needed and assigns individual responsibilities.
- Manages day-to-day operational aspects of a project and scope.
- Reviews deliverables prepared by team before passing to client.
- Effectively applies our methodology and enforces project standards.
- Prepares for engagement reviews and quality assurance procedures.

RECENT PROJECT EXPERIENCE

Gwinnett Co. Public Schools - Dacula Middle School HVAC Mods, 2024
Gwinnett Co. Public Schools - Duluth High School HVAC Mods, 2024
Gwinnett Co. Public Schools - Nesbit Elementary School HVAC Mods, 2024
Gwinnett Co. Public Schools - Sweetwater Middle School HVAC Mods, 2024
Gwinnett Co. Public Schools - Jackson Elementary School HVAC Mods, 2023
Gwinnett Co. Public Schools - Kanoheda Elementary School HVAC Mods, 2023
Newton Co. Schools - Multi Elementary HVAC Replacements, 2023
University of Georgia - Terrell Hall Chiller Replacement, 2023
University of Georgia - Milledge Hall Chiller Replacement, 2023
University of Georgia - Main Library Chiller Replacement, 2023
Georgia Building Authority - 244 Bldg. 5th Floor HVAC Replacements, 2023
University of Georgia - Riverbend North Boiler Replacement, 2022
University of Georgia - Griffin Campus Melton Bldg. CW Analysis, 2022
Newton Co. Schools - Multi Middle School HVAC Replacements, 2022
Newton Co. Schools - Eastside High School HVAC Replacement, 2022
Gwinnett Co. Public Schools - Brookwood High School HVAC Replacement, 2021
Gwinnett Co. - Police Training Facility HVAC Upgrade, 2021
Gwinnett Technical College - Rooftop Unit Replacements, 2021
University of Georgia - Griffin Campus Redding Bldg. HVAC Replacement, 2021
Gwinnett Co. Public Schools - Multi Elementary School HVAC Mods, 2020
Gwinnett Co. Public Schools - Pharr Elementary School HVAC Mods, 2020
University of Georgia - Journalism Hot Water Pump Upgrade, 2020
University of Georgia - Ground Admin Mechanical System, 2020
Gwinnett Co. Public Schools - Harris Elementary School - HVAC Replacement, 2019



JOHN F. PENNEBAKER CO., INC.
MECHANICAL CONTRACTORS



r.marsh@johnpennebaker.com

678-410-7071

Experience

John F. Pennebaker Co., Inc.

2003 – Present

*Project Superintendent &
Chiller Technician*

- Oversight of subcontractors
- Directs activities of workers
- Ensures work is on schedule
- Interprets plans and specifications
- Orders tools and materials

Brown Mechanical

2001 – 2003

Certification(s)

16 years of experience with an up-to-date pipefitter welding certification with Pipefitter/Millwright.

Randall Marsh

Project Superintendent

Randall Marsh has many years of experience in HVAC, millwright, and pipefitting. He has over 20 years of experience as a Project Superintendent in which he directed the activities of workers and sub-contractors to ensure projects follow specifications and plans. He has a proven ability to keep projects running on time and under budget with attention to safety standards. Randall has worked closely with all HVAC installation trades including but not limited to electrical, controls, sheet metal fabrication, and structural erecting. He is familiar with updated Ga. Code, O.S.H.A., and industry standard requirements

RECENT PROJECT EXPERIENCE

Gwinnett Co. - Fire Station No. 1 HVAC Replacement, 2024
University of Georgia - Main Library Chiller Replacement, 2024
University of Georgia - Milledge Hall Chiller Replacement, 2024
Gwinnett Co. - Kanoheda ES HVAC Modifications, 2023
Georgia Institute of Technology - Ben Zinn In-Line Heater and Piping, 2022
Georgia Institute of Technology - Zinn Natural Gas Compressor, 2022
Ft. Benning - Fueling Repairs, 2022
Camp Beauregard, LA - Fueling System Repairs, 2022
Andrews Air Force Base Fueling System Repairs, 2022
Georgia Institute of Technology- Woodruff DW Heater Replacement, 2022
Georgia Institute of Technology - Ben Zinn and CNES Infrastructure Updates, 2021
Georgia Institute of Technology - CRC Cooling Tower Replacement, 2021
Georgia Institute of Technology - CRC Chiller Replacement, 2020
Georgia Institute of Technology - CNES Adam Steinberg Research Lab, 2020
Georgia State University – Clarkston Campus HVAC Replacement, 2020
University of Georgia - Journalism Hot Water Pump Upgrade, 2020
University of Georgia - J.W. Fanning Furnish and Install Control Valves, 2020
University of Georgia - Transportation Facility HVAC Replacement, 2019



JOHN F. PENNEBAKER CO., INC.
MECHANICAL CONTRACTORS

8. Resumes and References

Project 1

a. Project Name:

Georgia Institute of Technology – CRC Chiller Replacement

Dates Performed:

04/2020 – 10/2020

b. Brief Description:

John F. Pennebaker Co. performed work as the General Contractor to replace the centrifugal chiller, primary pumps and associated piping in the campus recreational center. Provided and installed a multi-compressor centrifugal chiller sized at 730 tons. The five -compressor selection was sized to meet both the peak loading during summer events where the swim/div auditorium is fully occupied as well as the minimum loads in the off-season. The chiller equipment pad as well as the slab below was replaced with an isolated equipment pad for the new chiller. Refrigerant safety devices, alarming and signage were included.

c. Reference Contact:

Gerald Benjamin, (404)-825-3274, Gerald.benjamin@facilities.gatech.edu

Project 2

a. Project Name:

Gwinnett County – Police Training Facility HVAC Upgrade

Dates Performed:

02/2021 – 05/2021

b. Brief Description:

JFP replaced multiple HVAC systems, specifically, two chillers, in order to update and replace poorly functioning and aged out air condition systems equipment and components. JFP worked collaboratively with the design professional to provide preconstruction and construction services. Upgrades included the installation of two 201-ton Daikin air-cooled chillers, two boilers, one air handling unit, and all associated pumps, and variable frequency drives as well as modifications to the existing air handling systems for dehumidification control and commissioning of the HVAC system.

c. Reference Contact:

Travis Tallant, 770-822-1075, travis.tallant@gwinnettcountry.com



Project 3

a. Project Name:

Georgia State University – Rialto & Haas-Howell HVAC Upgrades

Dates Performed:

09/2021 – 04/2022

b. Brief Description:

The work included replacing all mechanical, specifically, two rooftop mounted chillers, electrical, plumbing, and controls systems for a complete turnkey project. JFP worked collaboratively with the design professional to provide preconstruction and construction services. The scope of work for this project included the installation of new structural steel platforms on the roof to support the roof top mounted chillers, demolition and installation of the new chilled water air handler and chillers, installation of the VRF system, all ductwork, water treatment and mechanical piping. John F. Pennebaker coordinated all electrical, controls, test and balance, and insulation work.

c. Reference Contact:

Todd Cook, 404 413-0732, tcook26@gsu.edu

Project 4

a. Project Name:

Kennesaw State University – Civil Engineering Lab HVAC Replacement

Dates Performed:

09/2021 – 06/2022

b. Brief Description:

The intent of the project was to update the existing HVAC system at the Civil Engineering Lab on the Marietta campus. The scope of work included removing and replacing air distribution, sheet metal, pumps, a boiler, ductwork, rooftop air handling units and coordinating with subcontractors in order to complete the controls work, roofing, insulation, and testing and balancing. The project was completed on time with a turnkey delivery.

c. Reference Contact:

Gary Paoletta, 470-578-3206, gary.paoletta@kennesaw.edu

ACKNOWLEDGEMENT OF ADDENDA

Contractor shall acknowledge all addenda by date each was posted as follows. It is the bidder/contractor's responsibility to check the City's website or the Georgia Procurement Registry for such updates, and to ensure he/she reviews and understands their content. Failure to do so may disqualify contractor's proposal package from further consideration.

ADDENDUM 1 DATED 9/20/2024

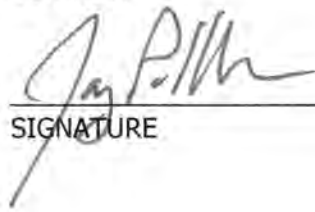
ADDENDUM 2 (if applicable) DATED _____

ADDENDUM 3 (if applicable) DATED _____

Other Addenda, as needed, please list.

I certify that the above information is complete, true, and correct.

John F. Pennebaker Co., Inc.
COMPANY


SIGNATURE

9/26/2024
DATE

Jay Pennebaker, Vice President
TITLE

Addendum 1

Request for Proposal
RFP No. PS 24-01/25-01

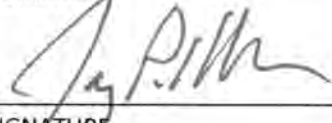
Public Safety Building Chiller and AHU Replacements

The following addendum to the Invitation to Bid includes the questions received during the open Q&A period. Responses and clarifications are included.

Please review and acknowledge this addendum with an authorized signature below, and include this signed page with your submitted bid. Failure to do so may result in your bid being declared non-responsive.

John F. Pennebaker Co., Inc.

COMPANY



SIGNATURE

Jay Pennebaker

PRINT NAME

9/26/2024

DATE

Vice President

TITLE

**ORDINANCE
TO AMEND THE CITY OF DULUTH
2025 FISCAL YEAR BUDGET**

AN ORDINANCE TO AMEND THE 2025 ANNUAL BUDGET FOR THE CITY OF DULUTH, GEORGIA, IN COMPLIANCE WITH THE LAWS OF THE STATE OF GEORGIA.

THE CITY COUNCIL OF THE CITY OF DULUTH HEREBY ORDAINS, the City of Duluth, Georgia, has previously adopted a budget for the 2025 fiscal year as follows:

Total Revenues:	<u>97,962,128</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>56,222,709</u>
Total Expenditures:	<u>97,962,128</u>

For a balanced budget in compliance with the laws of the State of Georgia.

WHEREAS the City of Duluth issued a Request for Proposal for the replacement of the HVAC system at the Public Safety building due to the age of the system; and

WHEREAS staff is recommending awarding a contract to the one responsive bidder, John F. Pennebaker Co. in the amount of \$996,655, but is requesting a 20% contingency for a total request of \$1,195,986; and

WHEREAS it is requested \$1,195,986 in unallocated 2023 SPLOST Public Safety funds be added to the Police Capital Projects – Police – Buildings line item, including associated transfers; and

NOW THEREFORE, the City of Duluth 2025 Fiscal Year Budget is amended as follows:

Total Revenues & Prior Yr Reserves	<u>99,158,114</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>57,418,695</u>
Total Expenditures:	<u>99,158,114</u>

IT IS SO ORDAINED this _____ day of _____, **2024.**

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa S. Lynn, City Clerk

CITY OF DULUTH

October 14, 2024

Gwinnett County DOT Request for Speed Humps

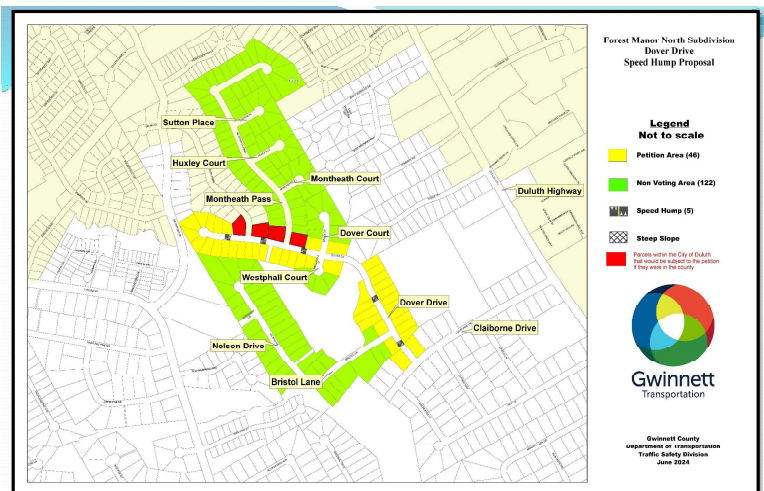
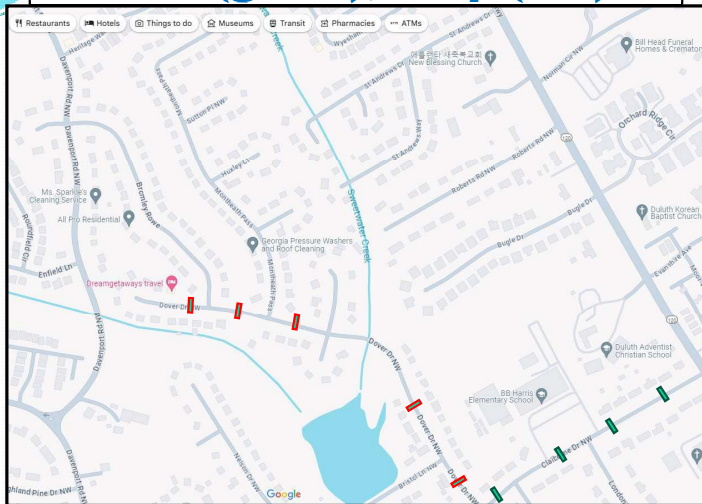


REQUEST

Gwinnett County received a request from a citizen to install speed humps on Dover Drive.



Exist (green), Prop (red)



Process: IGA – Petition – Construction - Assessments

Process

1. If Mayor & Council agree, City and County enter into IGA outlining the terms.
 1. County is responsible for construction, maintenance, repairs, and assessments.
 2. City agrees to allow four incorporated properties to be assessed annually and allows all highlighted incorporated properties to be impacted by the speed humps.
2. County circulates petition to “voting” properties. These are the “yellow and red” ones and will be the ones assessed. \$12/year on their County tax bill.

STEP 1: Council to vote on IGA (tonight).

Step 2: Gwinnett County to execute IGA, if approved by City.

Step 3: Gwinnett County to move forward into petition phase if IGA was executed.

Questions?

INTERGOVERNMENTAL AGREEMENT BETWEEN GWINNETT COUNTY AND THE CITY
OF DULUTH REGARDING THE GWINNETT COUNTY SPEED HUMP PROGRAM

This Agreement (hereinafter referred to as "Agreement") made by and between the City of Duluth, a municipal corporation chartered by the State of Georgia and headquartered at 3167 Main Street, Duluth, GA 30096 (hereinafter referred to as "CITY") and Gwinnett County, Georgia, a political subdivision of the State of Georgia headquartered at 75 Langley Drive, Lawrenceville, Georgia 30046, (hereinafter referred to as "COUNTY") each of whom has been duly authorized to enter into this Agreement. Both COUNTY and CITY are collectively referred to as "parties" or individually referred to as "party".

WITNESSETH

WHEREAS, the parties to this Agreement are governmental units located within Gwinnett County, Georgia and are authorized by law to enter into intergovernmental agreements; and

WHEREAS, the parties hereto are interested in serving the needs of the citizens of Gwinnett County by allowing and administering the installation of asphaltic speed humps to moderate speeds on residential streets; and

WHEREAS, the COUNTY has provided the CITY a copy of the Gwinnett County Speed Hump Program Manual (hereinafter referred to as "Program Manual");

NOW, THEREFORE, in consideration of the mutual promises and understandings herein made, the parties hereto do consent and agree as follows:

1. The COUNTY will evaluate the need for speed humps as part of a residential speed control district and will plan their placement on the respective streets which are located both within the limits of the CITY as well as within the unincorporated boundaries of the COUNTY.
2. No speed hump installation will proceed unless all requirements outlined in the Gwinnett County Speed Hump Program Manual are met.
3. The COUNTY will prepare work orders for the contractor for the installation of speed humps. The speed humps will be constructed to the specifications as outlined in the Program Manual. The COUNTY will monitor, inspect, and perform a final inspection of all speed hump installations, and will hold the contractor responsible for all specifications indicated in the speed hump installation contract.
4. Pursuant to the Program Manual, the COUNTY will collect an annual assessment for the costs associated with the maintenance and repair of speed humps from each lot, whether developed or not, that is located within a Special Assessment District created pursuant to Chapter 86 of the Code of Ordinances of Gwinnett County

entitled "Special Assessment Districts". The COUNTY will be responsible for all revenue collection and payables to contractors regarding speed hump installation. The CITY will not be responsible for any revenue collection or disbursement of payment in relation to the installation and maintenance of the speed humps, or the administration of the speed hump program.

5. The procedure and requirements for the removal of speed humps are outlined in the Program Manual. Once the requirements are met, the COUNTY will prepare work orders for the contractor to remove the speed humps. The COUNTY will be responsible for all revenue collection and payables to contractors regarding the removal of speed humps.
6. Upon the need to repave the CITY maintained streets that feature speed humps, the CITY will follow its normal procedures with road resurfacing and include the removal of speed humps. The CITY will cover the cost for the resurfacing of these streets and removal of speed humps. The COUNTY will cover the cost for the reinstallation of the speed humps and the speed humps will be reinstalled to specifications.
7. By signing this Agreement, the CITY accepts the speed hump layout(s) as designed by the COUNTY, as well as the accompanying signs and striping. The speed humps will be constructed to the specifications as outlined in the Program Manual.
8. To the extent permitted by law, the CITY shall indemnify and hold harmless the COUNTY, its agents, inspectors, servants and employees from and against any and all loss or damage, cost of any kind which they or either of them may suffer, pay, or be obligated to pay as a result of suits or claims resulting from actions by the CITY or any of its agents, servants, or employees. To the extent permitted by law, the COUNTY shall indemnify and hold harmless the CITY, its agents, inspectors, servants, and employees from and against any and all loss or damage, cost of any kind which they or any of them may suffer, pay, or be obligated to pay as a result of suits or claims resulting from actions by the COUNTY or any of its agents, servants, or employees.
9. Nothing contained within this Agreement shall be construed to in any way waive, restrict, or limit any privileges, protections, or immunities which may exist for the CITY or the COUNTY under the Constitution and laws of the State of Georgia.
10. This provision shall in no way relieve any contractor performing services of any liability or of its responsibility to perform the services set forth in this Agreement in a safe and responsible manner or to complete the work in a good, substantial, and workmanlike manner.
11. This Agreement constitutes the entire agreement between the parties hereto as to all matters contained herein. No other written or oral agreement or conversation shall affect or modify any of the terms and obligations herein contained. All subsequent changes to this Agreement must be in writing and signed by the parties

involved. This Agreement is for the benefit of the parties hereto only and is not intended to benefit any third parties or give rise to any duties or causes of action for any third parties.

12. This Agreement shall be effective as soon as it is executed by all the parties hereto. This Agreement shall remain in effect until cancellation is agreed to in writing by both parties.

All notices pursuant to this Agreement shall be served as follows: As to the COUNTY, Chairwoman, Gwinnett County Board of Commissioners, 75 Langley Drive, Lawrenceville, Georgia 30046. As to the CITY, Mayor, City of Duluth, 3167 Main Street, Duluth, GA 30096.

IN WITNESS WHEREOF, the parties hereto acting through their duly authorized agents have caused this Agreement to be signed and delivered on the date set forth below.

This _____ day of _____, 202__.

WINNETT COUNTY, GEORGIA

CITY OF DULUTH, GEORGIA

By: _____

By: _____

NICOLE L. HENDRICKSON

Title: CHAIRWOMAN

Title: MAYOR

ATTEST:

ATTEST:

By: _____

By: _____

Title: County Clerk/Deputy County Clerk (SEAL) Title: City Clerk (SEAL)

APPROVED AS TO FORM:

Senior Assistant County Attorney

**ORDINANCE
TO AMEND THE CITY OF DULUTH
2025 FISCAL YEAR BUDGET**

AN ORDINANCE TO AMEND THE 2025 ANNUAL BUDGET FOR THE CITY OF DULUTH, GEORGIA, IN COMPLIANCE WITH THE LAWS OF THE STATE OF GEORGIA.

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Total Revenues:	<u>99,158,114</u>
Operations Expenditures:	<u>41,739,419</u>
Capital Improvement Expenditures:	<u>57,418,695</u>
Total Expenditures:	<u>99,158,114</u>

For a balanced budget in compliance with the laws of the State of Georgia.

WHEREAS the City of Duluth Mayor and Council at a recent work session agreed to allow staff to move forward with the hiring of a Stormwater Administrative Assistant position; and

WHEREAS the position will allow staff more capacity in the Stormwater department and with expected salary and benefits will cost approximately \$89,929 and be fully funded by Stormwater Utility revenues; and

WHEREAS it is requested the following amount be added to the Stormwater Utility – Stormwater Collection & Disposal line items: Salary & Wages \$49,816, Overtime \$479, FICA Tax \$3,850, Group Insurance \$30,754 and Retirement Contribution/Pension \$5,030; and

NOW THEREFORE, the City of Duluth 2025 Fiscal Year Budget is amended as follows:

Total Revenues & Prior Yr Reserves	<u>99,248,043</u>
Operations Expenditures:	<u>41,829,348</u>
Capital Improvement Expenditures:	<u>57,418,695</u>
Total Expenditures:	<u>99,248,043</u>

IT IS SO ORDAINED this _____ day of _____, 2024.

Mayor Greg Whitlock

Those councilmembers voting in favor:

Charles Jamin Harkness, Post 1

Marline Thomas, Post 2

Kenneth Lamar Doss, Post 3

Manfred Graeder, Post 4

Shenée Johnson Holloway, Post 5

Those councilmembers voting in opposition:

ATTEST: _____
Teresa S. Lynn, City Clerk