

Retrofit Narrative

The entire ground level floor at Building A shall be replaced with new 2x12 joists spanning to LVL beams. The existing masonry piers can be re-used for beam support but will require improved connections. Once the upper level floor framing is exposed during demolition phase, further analysis can be performed. Complete stiffening or replacement is anticipated, including the load-bearing stud walls. The roof over the two-story portion of the building shall be replaced with new wood trusses or I-joists. The roof over the one-story portion will be replaced with new wood truss framing in light of a proposed roof deck. A 16” deep I-joist or floor truss system with a pedestal paver system and intermediate LVL beams over existing foundation piers is anticipated. Where areas of significant damage are uncovered in the exterior stud walls at Building A, full height 2x6 stud members shall be used to replace or stiffen the existing wall framing. Wall sill plates shall be exposed and visually confirmed and replaced as required.

At Building B, approximately 40% of the wood-framed roof and floor system shall be anticipated for complete replacement due to water damage. (2) 2x6 roof purlins spanning to the existing roof trusses will be needed at Building B, with partial repairs and stiffening performed on the existing trusses. New overbuild will be constructed over the wood-framed floor to raise the elevation 8” to match the adjacent concrete slab and sidewalk grade. To accommodate the new overbuild and address any deficiencies, the portion of wood floor to remain will require stiffening. The interior masonry piers without footings or proper grouting/assembly will need to be replaced or supplemented with new foundations. Mechanical connections of floor framing to foundations shall be verified upon further demolition and exposure.

With the inclusions and conditions described within this report, the proposed adaptive re-use will be capable of supporting the code-required loads for public and office occupancy in accordance with the IBC 2018. This assessment has been provided for initial information and pricing only. Stability Engineering will provide full design and construction documents as the project progresses. If you have any questions or concerns, or if I may be of any further assistance, please contact our office.

Sincerely,
Stability Engineering, LLC

Jacob Jeffcoat, EIT
Project Engineer

Chris Murphy, PE
Project Manager



WARRANTY AND LIABILITY:

This report is based upon a visual observation of conditions as they existed at the time of the site visit only. Stability Engineering’s investigation did not include a review of hidden or concealed conditions. Although an earnest effort has been made to discover and identify all visible defects, in the event of an oversight, Stability Engineering’s maximum liability shall be limited to the direct costs incurred by Client as a result of Consultant’s negligence. Stability Engineering reserves the right to supplement or revise its opinions based upon changed conditions, further investigation by Stability Engineering or others, or new findings.

Stability Engineering warrants that its services are performed, within the limits prescribed by the Client, with that level of care and skill ordinarily exercised by members of the same profession currently practicing in the same locality under similar conditions. No other warranties or representations are expressed or implied. This report and its conclusions are intended for the exclusive use of the Client and Stability Engineering shall have no liability arising out of their unauthorized use by others.

Structural Systems Narrative – Outline Summary:

A. Building A – Partial 2-story Building:

1. Foundations: Minimal repairs and/or new construction are anticipated
 - i) Verification of existing interior foundations shall be required once the floor system is shored
 - ii) New and/or supplemental foundation construction may be required to support the loads for the roof deck addition
2. Floor framing: Major stiffening or replacement required
 - i) New 2x12 joists at 16” on center for entire ground level
 - ii) New (2) 11¼” LVL beams onto existing foundation piers
 - iii) Partial rim beam replacement at areas of water damage
3. Roof framing systems: Replacement at high roof and new framing at roof deck
 - i) New pre-fabricated wood trusses or I-joists with intermediate LVL beams and column supports
 - ii) Account for additional framing depth at roof deck for support of pedestal paver system with drainage and waterproofing system
4. Façade & Exterior Walls: Minor masonry repairs and patching are anticipated, significant re-framing required
 - i) Repointing of existing brick veneer masonry joints typical throughout
 - ii) Re-coursing of veneer at front storefront and rear wall areas with damage
 - iii) Stiffening or replacement of existing 2x4 rough sawn studs with new 2x6 studs at areas of water damage
 - iv) Partial replacement of stud wall sill plate at damaged area
 - v) Cleaning of and application of corrosion protection to existing lintels

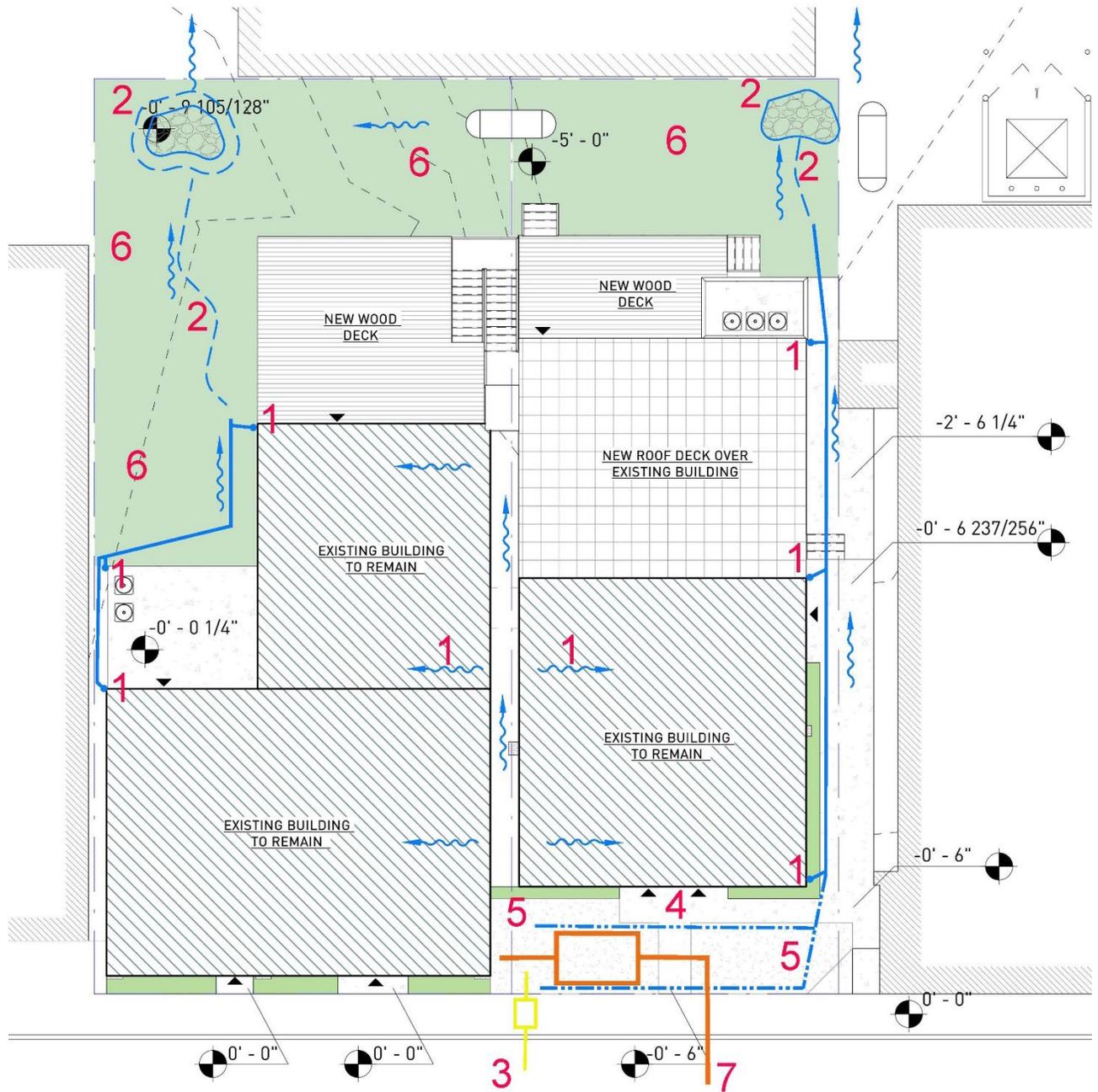
B. Building B – 1-story Building:

1. Foundations: Minimal repairs and/or new construction are anticipated
 - i) Verification of existing foundations shall be required at water-damaged rear area
2. Floor framing: Partial stiffening and/or replacement required
 - i) New 2x12 joists at 16” on center at collapsed floor area at rear ($\pm 25\%$ of footprint)
 - ii) Sister new 2x members to existing 2x10 joists to accommodate code-required loads
 - (1) Alternative to sistering new members: Provide new joists supports at third-points
3. Roof framing systems: Partial stiffening and/or replacement required
 - i) New (2) 2x6 purlins at collapsed roof areas at rear of building ($\pm 50\%$ of footprint)
 - ii) Sister new 2x member to existing 2x6 purlins
 - iii) Replace or supplement distorted web members at existing roof trusses
4. Façade & Exterior Walls: Minor masonry repairs and patching are anticipated
 - i) Repointing of existing brick veneer masonry joints typical throughout
 - ii) Provide steel plate straps at brick band infill above storefront and patch large cracks
 - iii) Cleaning of and application of corrosion protection to existing lintels
 - iv) Epoxy-injection at vertical cracks within existing concrete block walls

PARIS PLAZA RENOVATION / 79 MAIN STREET HIAWASSEE, GA
CIVIL SCHEMATIC DESIGN NARRATIVE

23 OCTOBER 2020

This narrative uses Key ID#s to reference the 50% SD Site Plan (C-1.1) prepared by Source Urbanism and dated 10.21.20



STORMWATER

The site is located within a 0.14 square mile drainage basin with a discharge point to Hiawassee’s Lake Chatuge. The site is approximately 1,000 ft northeast from the lake. There is a low spot in N Main Street just north of the site near the intersection of Wood St/Franks St and N Main Street where there are two existing storm drains. There are additional storm inlets located downhill at the intersection of Wood St and N Berrong St. There is also an existing storm drain located the intersection of N Berrong St with the private driveway of the metal warehouse building at 11 N Berrong St. These existing inlets downstream from the site will continue to receive runoff from the site as they do in the existing condition.

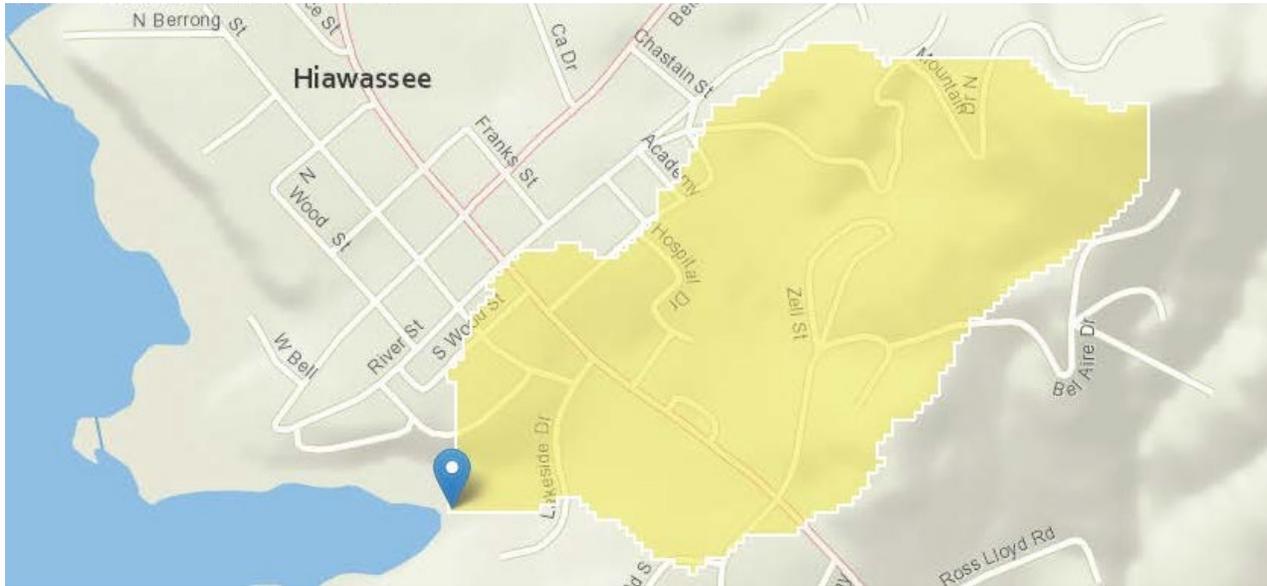


Figure 1: Stormwater Drainage Basin



Figure 2: Inlets at N. Main Street



Figure 3: Inlets at N Berrong St



Figure 4: Inlets at N. Berrong St

The proposed renovation will include a sloped roof toward the outer walls and away from the center uncovered alleyway (see Key ID#1). New building downspouts will be placed at the corners of the building and will connect to an 8" PVC roof leader line. The roof leader line will be buried with approximately 2' cover and will flow to the southwest. The 8" PVC will discharge to the surface into a 3' wide shallow swale lined with hand-placed river stone for stabilization (see Key ID #2). The swale will discharge into shallow (approximately 18" deep) infiltration area that will be planted with native landscape material. The shallow infiltration area will overflow to the property line which will allow the runoff to leave the site in the same location as the existing condition while providing on-site water quality treatment and infiltration that does not exist in the pre-developed condition.

PUBLIC UTILITIES

Domestic water and sanitary/sewer service will be provided by local municipal utility providers. There is an existing 12" water line in N Main Street. There is an existing fire hydrant located on the opposite side of N Main Street just east of the site. A new water service and meter would be located in the zone between the building and N Main St (see Key ID#3). Blue Ridge Mountain EMC provides telephone and high-speed fiber optic service along N Main Street. Blue Ridge Mountain EMC provides also electric service to the City and County. The renovation anticipated that the BRMEMC electric service will be fed from the rear/south end of the building.

GREASE AND SANITARY SEWER

The renovation will require a new grease trap for the restaurant space in the south building. The grease trap will be located inside the aggregate area since locating the trap at the rear of the site is not feasible due to inability to service the trap and since there is no sanitary line at the rear of the site. Existing sanitary sewer service is located in N Main St proximate to the location of the proposed grease traps. The non-grease sanitary waste will connect to the line existing the trap so that only one new connection will be located in the roadway.

SITE ACCESS

The existing floor elevations are not accessible from the public sidewalk due to an approximately 6" elevation change across the recessed area between the public sidewalk and building. In order to remedy this, the floor of the south concrete slab building will be raised 6" to be even with the north building. There will be two new paved concrete sidewalk connections to the existing public sidewalk (see Key ID#4). More specifically, a new sidewalk will connect from the entry of the north building to the sidewalk with no change in elevation. A new connection with side flare ramp will be installed at the north edge of the site to allow additional access. The space between the concrete sidewalk connections will be chipped aggregate such as blue slate or granite. This will allow the area to better drain and will help define the spaces from the concrete entrance walkways. The aggregate space will be used for seating or amenity space. The aggregate space will have small perforated underdrains to assist in drainage. The perforated underdrain will connect to the roof leader line on the north edge of the north building (see Key ID#5).

LANDSCAPING

The areas around the rear of the site will be adjacent to the outdoor patio. The space is likely too restricted for mid-story and over-story trees. The project proposes a simple palette of grasses and under-story trees appropriate for zone 6a/6b planting (see Key ID#6). The images below illustrate a sample palette of native prairie grasses, Persian Ironwood, and Fringetree.



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MEP DESIGN

INTRODUCTION

This report is intended to summarize the scope of work for Mechanical, Electrical, and Plumbing required for two buildings in Hiawassee, GA retail district on Main Street:

Building A is a two-storey space that will be renovated to be finished office and white box retail (2 retail tenants planned).

Building B is a one-storey space that will be renovated to be a white box shell space for a restaurant.

Refer to Architectural drawings for existing and proposed floor plans. In both cases, it is expected that all existing restrooms, ceilings, and utilities will be demolished; as well as walls other than those deemed necessary to remain by the structural engineer. The shell of the building will remain and be upgraded as necessary with insulation and vapor barrier to meet current codes for conditioned spaces, including new windows throughout.

New work will be designed to meet IMC 2018, IPC 2018, IFGC 2018, IFC 2018, NEC 2017, and IECC 2015 requirements, along with the applicable 2020 Georgia State Amendments.

DEMOLITION/MODIFICATION OF EXISTING MEP

Existing MEP systems have exceeded their useful lifecycle and will be removed in demolition where exposed. Where existing infrastructure is below slab or in concealed space not exposed during the course of demolition, it may be allowed to disconnect from the system and abandon materials in place. Existing service entries for utilities will be replaced or re-worked to accommodate the new demand loads and service locations for the layout designed.

MECHANICAL**Building A - 2-storey Retail White Box & Finished Office**

HVAC

DX split systems will be used for HVAC serving the finished office and white-box retail spaces. Basis of design is to provide three (3) total DX systems, estimated at 2 tons each. The condensing units will be selected to be “slim” style inverter driven units to take up minimum space on the site where they will be ground-mounted on concrete pads or polypropylene pads designed for such use, Diversitech “Black Pad” or equal. Systems can be either electric heat-pump type systems OR air conditioning with LP gas furnace and cooling coil. It is expected that the electric heat pump style unit is most appropriate for this application which reduces tenant coordination needs for billing of utility services, removes the need for the flue routing in relation to the rooftop deck occupancy.

All units will be provided with low ambient controls, 7-day programmable thermostat, OA intake, and condensate drain overflow safety switch. Refrigerant lines will be routed from the indoor furnace/fan coil unit to the outdoor condensing units.

- An estimated 2-ton split system will serve the front retail area of the 1st floor, with the fan coil unit located in a mechanical closet with ductwork to serve both retail tenants. Dampers will be provided on the diffusers so that tenants have control over the airflow in their space, Thermostat for the unit can be located in the utility corridor for accessibility by both tenants, with remote temperature sensor in the mixed air return stream for operation based on the average for each space.
- An estimated 2-ton split system will serve the conference room spaces and utility corridor, restrooms at the rear of the 1st floor. The unit will be located in the rear utility room adjacent to the stair and exterior wall for OA intake.
- A 2-ton split system will serve the 2nd floor office spaces, ducted to the various office/conference spaces located there. Due to limited overhead space, the units will be vertical Fan Coil Units in utility/mechanical closets, or where horizontal configuration is suitable, a flat “pancake” style fan coil unit will be used, with distribution to be coordinated through the new roof joist system, or below floor.

VENTILATION & HEAT

Individual toilet exhaust fans will be located in the ceiling, and routed with a 4-6” duct through side-wall to exterior, with a wall cap.

Auxiliary electric heat will be considered for the stairwell, storage, and utility areas where freezing may be of concern, 1.8 kW maximum.

Rooftop deck with bar/dining area will be exterior space, portable propane radiant heaters are recommended for comfort purposes, outside of base building scope.

Building B - 1-storey restaurant

HVAC

Rooftop Units with LP gas heating and economizers will be planned for this single-storey space.

- An estimated 5-ton RTU will serve the kitchen area.
- An estimated 5-ton RTU will serve the dining area.

Each of these RTUs will be provided with 7-day programmable thermostat, hail guards for coil protection, and hot-gas reheat feature to provide up to 30% outdoor air (600 CFM) to maintain a positive building pressure when the kitchen systems are in operation.

DX split systems are not recommended for conditioning kitchen and dining spaces due to the high humidity demands of the outdoor air needed for such use. Because the neighboring roof deck will be occupied space, the RTUs and other roof-mounted equipment will be located in a manner that screens the equipment from view at both the street and the roof deck of Building A.

Lined RTU supply and return ducts will be stubbed-in to below roof structure, and ductwork distribution will be as follows:

- Dining area distribution will be complete with main, branches, and diffusers in base building scope, for the dining capacity suitable for the space provided as listed in ASHRAE and IMC standards.
- Kitchen area distribution will be by future restaurant tenant, to suit hood and equipment layout.

VENTILATION & KITCHEN SYSTEMS

Planning for future kitchen ventilation systems will consist of a conceptual selection of exhaust hood, rooftop exhaust fan, an LP gas-fired make-up air unit, and a dishwasher exhaust fan to accommodate the appropriate weights and roof openings for future installation by the restaurant tenant.

Individual toilet exhaust fans will be located in the ceiling, and routed with a 4-6" duct through side-wall to exterior, with a wall cap. Auxiliary electric heaters will be considered for utility or storage spaces if needed.

PLUMBING

PLUMBING FIXTURES

The following fixture types and features will be planned for use in both buildings:

- Water Closets:** ADA-compliant floor mount, flush tank type with water conservation ratings of 1.28 GPF.
- Lavatories:** ADA-compliant, wall-mount with carrier, or counter under-mount or drop-in type as selected by Architect, two-handle lever faucet (battery-operated sensor type faucets available as options).
- Break Sinks:** Break area sinks will be single- or double-compartment style stainless steel sinks, undermount or drop-in per architect, with single-lever faucets (pull-out sprayer and similar options available). Includes garbage disposal if preferred for 2-compartment sinks.
- Janitor's or Service sink:** Floor Mount terrazzo with stainless steel guard; faucet with pail hook, support bracket, vacuum breaker.
- Drinking Fountain:** Hi-lo ADA compliant electric water cooler, surface wall-mount (bottle filler and filter options available).



Building A - 2-storey Retail White Box & Finished Office

DRAIN, WASTE & VENT SYSTEMS

New sanitary waste system will be connected to the existing 4" sewer main where appropriate. Vent system will be provided with new Vent-thru-roof (VTR) at the 2nd-storey roof level. The system will serve two (2) ADA compliant restrooms on the 1st floor, two (2) restrooms on the 2nd floor, drinking fountain and 2 break areas. Floor drains will be provided in restrooms if

desired by owner, and a floor drain will be provided at each HVAC or utility closet, as well as for any ice makers or plumbing fixtures selected for the exterior bar on the roof deck.

Where exposed to freezing conditions, P-Traps will be heat-traced and insulated.

New Storm drainage system will be provided for approximately 3 roof drains for flat roof area(s), connected to City Storm system as appropriate. Where a gable or hip roof is used, storm will be via gutters and downspouts to remain outside the building. Where the area is occupied roof deck space, specialty drains may be used with the roof deck system.

DOMESTIC WATER AND WATER HEATING

The existing (3/4") domestic water service entry will be reworked to suit the location of the new utility room. This will be provided with appropriate BFP and PRV or RPZ as appropriate.

A low-boy style tank water heater (WH) will be provided in 1st floor utility area to serve the 2 public restrooms and break area sinks on 1st and 2nd floors. The WH is estimated at 10 gallons, 9 kW. HW recirculation will not be required due to the limited distance to the fixtures. Tankless water heaters may be considered if quantity of fixtures is reduced during design.

Distribution of domestic water system will be copper or CPVC piping. The system will serve all fixtures listed in the Waste & Vent System description. Mini-fridges will be provided at break areas, ice maker boxes will be considered where appropriate for accessory connections. Non-freeze hose bibbs will be provided at exterior in 2-3 locations.

Hot Water will be insulated to meet IECC/ASHRAE 90.1 standards. If copper piping is used, Cold Water piping will be insulated where located in concealed spaces to prevent condensation. Where exposed to freezing conditions, all domestic water lines (CW, HW) will be heat-traced and insulated, such as at the roof deck bar area.

GAS SYSTEM

The existing Liquid Propane (LP) gas system is an above-ground tank which serves multiple buildings; new underground service piping and distribution will be provided for building heating systems as required; however, it is expected that an all-electric service is acceptable since there is no commercial cooking needs.

FIRE PROTECTION SYSTEM

This building will require Automatic Fire Sprinkler system; complying with NFPA 13. If allowed, a modified residential style system will be considered complying with NFPA 13R for cost saving purposes. Fire riser with Backflow Preventer to be located in Utility room on 1st floor and Fire Department Connection (FDC) at location approved by Fire Marshal.

A dumbwaiter will be provided for hauling equipment to 2nd level; if this dumbwaiter is enclosed, then fire protection for the shaft shall be coordinated as needed. Side-wall sprinklers will be used to maintain the sprinkler piping within the heated building envelope and avoid exposure to

freezing conditions; no dry-pipe system expected. Fire protection system monitoring will be tied into fire alarm system.

Building B - 1-storey restaurant

DRAIN, WASTE & VENT SYSTEMS

New Sanitary Waste system to serve the restaurant restrooms (2) and other domestic plumbing fixtures provided with the base building renovation such as the mop sink. will be connected to the existing 4" sanitary sewer at the building. Vent system will be provided with new Vent-thru-roof (VTR) as needed, with capped end for future tenant connection.

A new exterior 1,000 gallon grease trap will be located in the plaza area in front of Building A. The effluent of the grease trap will be connected to the 4" sanitary waste system. The grease waste inlet will be piped to a 4" floor clean-out in the restaurant space for future tenant connection, and the remainder of the grease waste system will be by future restaurant tenant.

New Storm drainage system will be provided for approximately 3 roof drains for flat roof area(s), connected to City Storm system as appropriate. Where a gable or hip roof is used, storm will be via gutters and downspouts to remain outside the building.

DOMESTIC WATER AND WATER HEATING

New 1-1/4" domestic water service will be provided with indoor back-flow preventer (BFP) and Pressure Reducing Valve (PRV), or equivalent RPZ which combines both the BFP and PRV features. Drain from the BFP or RPZ will be provided to a floor drain in the utility space. The domestic water system will be provided with a 1" valved and capped branch for future tenant connection, and a branch line to serve the base building plumbing fixtures consisting of restrooms and mop sink.

It is expected that the restaurant area will require a gas-fired tank-type water heater in the rear utility closet adjacent to the kitchen, which will be the responsibility of the future restaurant tenant based on their required water heating load. If needed, the white-box/shell scope of work can include either of these options for temporary water heating:

- a low-boy water heater (10 gallon) installed above the mop sink to serve restrooms and janitorial needs, or
- 2 under-lavatory tankless "instant" electric water heaters to serve restrooms only.

Distribution of domestic water system will be copper or CPVC piping. The system will serve all fixtures listed above, and be provided with a valved and capped connection (1" minimum) for future restaurant tenant fit-up. Hot Water piping will be insulated to meet IECC/ASHRAE 90.1 standards. If copper piping is used, Cold Water piping will be insulated where located in concealed spaces to prevent condensation. Non-freeze hose bibbs/wall hydrants will be provided at approximately 3 locations.

GAS SYSTEM

The existing Liquid Propane (LP) gas system is an above-ground tank which serves multiple buildings; new underground service piping and distribution will be provided for building systems, sized for the commercial kitchen service estimated at 600 MBH and HVAC equipment estimated at 200 MBH. A valved, capped connection will be provided for future connection to kitchen distribution by restaurant tenant. Gas connections to equipment shall include gas-rated ball valves, regulators as needed.

FIRE PROTECTION SYSTEM

Since the restaurant will be less than 5,000 sq.ft. total, it does not require a FP sprinkler system. However, costs will be considered during design for an automatic FP sprinkler system in compliance with NFPA 13 for enhanced life safety considerations. The Kitchen exhaust hood by future tenant shall be provided with an ANSUL fire protection system for the cooking line equipment.

ELECTRICAL

Note: The EMC contact for this project is Mr. Walls 706-994-2756 (BMEMC).

Building A - 2-storey Retail White Box & Finished Office

POWER

Electric Service

1. The local utility company is to serve as the primary power source for the project. Power is to be delivered to the site from overhead service with new weatherhead at exterior.
2. Power to be delivered by the utility as 240/120 Volt, 1 phase, 3 wire, 60 Hertz. Single-phase power was selected for lower monthly utility costs, as no industrial 3-phase equipment is expected for this building.

A new 400A service disconnect located on the rear exterior of the building. The disconnect will service a 400A 42 circuit MLO panel which will contain all branch circuits for lighting, convenience receptacles, HVAC equipment and equipment provided by Owner. Two sets of conductors will feed the panel from the disconnect.

Panel board will be rated NEMA 1 with provisions for feed thru for future panel expansion.

Contractor shall provide a "Short Circuit and Relay Coordination" study prepared by panel board manufacturer. Equipment AIC ratings shall be determined by this study.

HVAC systems will be powered at part of base-building scope; power to owner-furnished equipment in retail will be by future tenants.

A. Conductors

1. Conductor minimum size shall be #12 AWG except for emergency circuits minimum size shall be #10 AWG.
2. Conductors #1 AWG and smaller shall be Type THHN/THHW, rated for 90 degree C and 600 volt. Conductors #2 and larger shall be Type THHN/THHW-2 or XHHW-2, rated for 90 degree C and 600 volt.
3. Fixture wire shall be a minimum #16 AWG stranded 90 degree C thermoplastic nylon jacketed Type TFFN or 150 degree C silicon rubber Type SFF-2.
4. Connectors shall be solderless, spring type, insulated screw-on type for #10 and smaller. Connectors shall be hydraulic crimped with 90 degree C molded 600 V insulated cover for #8 and larger.
5. Design is based on copper conductors. Aluminum may be used as an alternate for copper conductors 1/0 AWG and larger. Raceway sizes shall be increased as necessary to maintain same raceway fill.

B. Raceways

1. Service entrance below grade raceway (if required): rigid nonmetallic conduit (PVC). Service entrance above grade raceway shall be Rigid Metallic conduit or Intermediate Metallic conduit. Service entrance raceway inside structure and greater than 20 feet in length shall be fire rated.
2. Feeder and branch circuit raceway below grade shall be rigid nonmetallic conduit and above grade, unless otherwise noted, shall be EMT. Wet or corrosive environments shall be rigid nonmetallic or PVC coated rigid metallic conduit.
3. Fire Alarm system raceway shall be metallic.
4. Minimum raceway size shall be 3/4" below grade or in concrete, and 1/2" elsewhere. Flexible conduit minimum size shall be 1/2" with exception for light fixture connections, which may be 3/8". Flexible conduit maximum lengths shall be 3 feet for 1/2" and larger or 6 feet for light fixture connections.
5. EMT raceway connections shall be compression type. Rigid Metallic raceway connections shall be threaded. Rigid Nonmetallic conduit connections shall be solvent welded. Connections in wet locations shall be rain tight.
6. Raceways below grade or in concrete shall be straight line from point to point to minimize bends as much as possible. Surface and suspended raceways shall be routed parallel or perpendicular to walls. Install pull wires in empty conduits.
7. Telecommunication conduits shall be a minimum of 3/4".

C. Outlet Boxes, Devices and Disconnects

1. Convenience outlets and other provisions for power will be provided throughout the project to comply with the NEC, Owners criteria and installed equipment.
2. Interior outlet boxes will be galvanized sheet steel. Wet and harsh environments outlet boxes shall be Type FS. Outlet boxes encased in concrete shall be concrete rated.
3. Outlet boxes shall be accessible. Provide access panels as necessary.
4. Maximum of 4 light fixtures per outlet box.
5. Outlet box covers shall be marked with circuit designation.
6. Devices shall be specification grade and Decorator style in public spaces. Receptacles shall be 20 Amp 125 volt and switches shall be 20 Amp 277 volt.
7. Wall dimmers semi flush, solid-state, slide control, with a minimum 600-Watt capacity.
8. GFI receptacles shall not provide circuit protection.
9. Receptacle in wet locations shall have weatherproof in use covers.
10. Disconnects shall be heavy duty 250V rated for 208V systems. Manual motor starter switches without overloads shall be used for three phase motors two horsepower or less.
11. Dumbwaiter for hauling items to 2nd floor is planned, power to motorized equipment shall be provided, and specialties such as door-switch for enclosed dumbwaiter, or similar safety devices, shall be per manufacturer and code requirements.

COMM/DATA AND LOW VOLTAGE

Coordination will be provided for Comm/data outlets throughout office and conference room spaces, including TV outlets and phone outlets as needed. Security considerations for exterior access as well as retail tenant suites and rentable conference spaces will be coordinated.

LIGHTING

All new lighting will be provided throughout the interior and exterior of the building. The lighting will be LED as required to comply with current energy standards. Where ceiling height is low, the lighting shall be recessed for installation flush with the ceiling. Lighting controls, occupancy sensors, and switching will be coordinated with the occupancy type and use of each space.

Lighting will be designed to meet lighting levels required by code for final occupancy; feature lighting and exterior lighting will be coordinated, but it is expected that light fixtures will be limited to no more than 5 fixture types with most decorative lighting by future tenants.

Exit lighting will be provided as suitable for the life safety plan. Exit lights and stumble lighting shall be provided with battery back-up power.

FIRE ALARM

An addressable fire alarm system will be provided with new Fire Alarm Control Panel (FACP), appropriate smoke detectors, and annunciators (horn/strobe) as required throughout.

Building B - 1-storey restaurant

POWER

Electric Service:

1. The local utility company is to serve as the primary power source for the project. Power is to be delivered to the site from overhead service with new weatherhead at exterior.
2. Power to be delivered by the utility as 208/120 Volt, 3 phase, 4 wire, 60 Hertz. Single-phase power is available at a lower cost from the local utility, but it will limit the future restaurant equipment to single-phase power only; this will be a design consideration.

A new 400A service disconnect located on the rear exterior of the building. The disconnect will service two 400A 42 circuit MLO panels (totalling 84 ckts) which will contain all branch circuits for lighting, convenience receptacles, HVAC equipment and future kitchen equipment provided by Tenant. Two sets of conductors will feed the panel from the disconnect.

Panel board will be rated NEMA 1 with provisions for feed thru for future panel expansion.

Contractor shall provide a "Short Circuit and Relay Coordination" study prepared by panel board manufacturer. Equipment AIC ratings shall be determined by this study. Distribution to convenience power, HVAC, and lighting will be provided, and the rest of the panel board will be left empty for future tenant connections.

HVAC systems will be powered at part of base-building scope; power to owner-furnished restaurant equipment will be by future tenant, including the kitchen hood.

A. Conductors

1. Conductor minimum size: #12 AWG except for emergency circuits minimum size shall be #10 AWG.
2. Conductors #1 AWG and smaller: Type THHN/THHW, rated for 90 degree C and 600 volt. Conductors #2 and larger shall be Type THHN/THHW-2 or XHHW-2, rated for 90 degree C and 600 volt.

3. Fixture wire shall be a minimum #16 AWG stranded 90 degree C thermoplastic nylon jacketed Type TFFN or 150 degree C silicon rubber Type SFF-2.
4. Connectors: solderless, spring type, insulated screw-on type for #10 and smaller. Connectors shall be hydraulic crimped with 90 degree C molded 600 V insulated cover for #8 and larger.
5. Design is based on copper conductors. Aluminum may be used as an alternate for copper conductors 1/0 AWG and larger. Raceway sizes shall be increased as necessary to maintain same raceway fill.

B. Raceways

1. Service entrance below grade raceway (if required): rigid nonmetallic conduit (PVC). Service entrance above grade raceway shall be Rigid Metallic conduit or Intermediate Metallic conduit. Service entrance raceway inside structure and greater than 20 feet in length shall be fire rated.
2. Feeder and branch circuit raceway below grade shall be rigid nonmetallic conduit and above grade, unless otherwise noted, shall be EMT. Wet or corrosive environments shall be rigid nonmetallic or PVC coated rigid metallic conduit.
3. Fire Alarm system raceway shall be metallic.
4. Minimum raceway size shall be 3/4" below grade or in concrete and 1/2" elsewhere. Flexible conduit minimum size shall be 1/2" with exception for light fixture connections, which may be 3/8". Flexible conduit maximum lengths shall be 3 feet for 1/2" and larger or 6 feet for light fixture connections.
5. EMT raceway connections shall be compression type. Rigid Metallic raceway connections shall be threaded. Rigid Nonmetallic conduit connections shall be solvent welded. Connections in wet locations shall be rain tight.
6. Raceways below grade or in concrete shall be straight line from point to point to minimize bends as much as possible. Surface and suspended raceways shall be routed parallel or perpendicular to walls. Install pull wires in empty conduits.
7. Telecommunication conduits shall be a minimum of 3/4".

C. Outlet Boxes, Devices and Disconnects

1. Convenience outlets and other power provisions will be provided in quantities and locations throughout the project to comply with the NEC and installed equipment.

2. Interior outlet boxes shall be galvanized sheet steel. Wet and harsh environments outlet boxes shall be Type FS. Outlet boxes encased in concrete shall be concrete rated.
3. Outlet boxes shall be accessible. Provide access panels as necessary.
4. Maximum of 4 light fixtures per outlet box.
5. Outlet box covers shall be marked with circuit designation.
6. Devices shall be specification grade and Decorator style in public spaces. Receptacles shall be 20 Amp 125 volt and switches shall be 20 Amp 277 volt.
7. Wall dimmers semi flush, solid-state, slide control, with a minimum 600-Watt capacity.
8. GFI receptacles shall not provide circuit protection.
9. Receptacle in wet locations shall have weather proof in use covers.
10. Disconnects shall be heavy duty 250V rated for 208V systems. Manual motor starter switches without overloads shall be used for three phase motors two horsepower or less.

LIGHTING

All new lighting will be provided throughout the interior and exterior of the building. The lighting will be LED as required to comply with current energy standards. Where ceiling height is low, the lighting shall be recessed for installation flush with the ceiling. Lighting controls, occupancy sensors, and switching will be coordinated with the occupancy type and use of each space.

Lighting will be provided for "stumble lighting" meeting minimum egress codes (1-5 Foot Candles), with the final lighting by future tenant.

Exit lighting will be provided as suitable for the life safety plan. Exit lights and stumble lighting shall be provided with battery back-up power.

FIRE ALARM

An addressable fire alarm system will be provided with new Fire Alarm Control Panel (FACP), appropriate smoke detectors, and annunciators (horn/strobe) as required throughout.

END OF REPORT