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Florida and Georgia
Registrations

March 15, 2017

City of Gainesville CRA
802 NW 5th Ave, #200
Gainesville, FL 32601

Attn: Andrew Meeker

Re: Design Narrative for Undergrounding of Overhead Utilities Along
South Main Street from Depot Avenue to South 16th Avenue

Dear Andrew:

The following is a design narrative and cost estimate for undergrounding the electrical utilities on South Main Street from Depot Avenue to South 16th Avenue. It is anticipated that the project may be constructed in two phases; therefore, the cost estimate is provided for three options:

Option A – The entire project from Depot Avenue to South 16th Avenue

Option B – From Depot Avenue south to SW 11th Place

Option C – From SW 11th Place south to South 16th Avenue

During our feasibility study in 2014 we met with AT&T, GRUCom fiber, and Cox Cable. We have recently contacted all three utilities to verify that previous budget and design parameters were still valid. GRUCom has confirmed that their previous budget figure of \$100,000 can still be used. Cox Cable has not confirmed that their 2014 budget figure of \$20,000 is valid; however, in the interest of time we are assuming that it is.

AT&T lines are currently underground with a major duct bank on the east side of South Main Street. The east side of South Main Street is currently congested with other underground utilities as well as hosting a Trans- Atlantic Fiber Optic System. For this reason, it is not feasible to utilize the east side of South Main Street from SE 10th Avenue to South 16th Avenue for the underground electric installation. The electrical underground installation north of SE 10th Avenue is considerably smaller in scope and size and will most probably be suitable for installation on the east side of South Main Street.

The existing overhead electrical utilities are distributed along the corridor using both wooden and concrete utility poles. These poles are in close proximity to the roadway and located in the sidewalk.

The proposed undergrounding of the existing utilities would require installation of conduits for each electrical utility within the public right-of-way, underground conduits from the right-of-way to each existing service point on private property, and easements for pad mounted above ground equipment, below-grade distribution boxes, or to riser poles set back from the South Main Street right-of-way. A minimum of nineteen total easements will be required. Five or six easements will be required for the underground primary to riser poles, and thirteen or fourteen easements will be required for pad mounted above ground equipment.

Easements would need to be procured by the CRA from private property owners along the project for the mixed use of the serving utilities. The utility companies will utilize the conduits within the right-of-way for their primary and trunk line conductors. Conduits from the right of way to each existing service point will not be utility owned or maintained. The CRA would pay for the required construction on private property. This cost has been accounted for in the cost estimate below.

AT&T stated in 2014 that their existing underground facilities were sufficient and would not be impacted by this project. We are assuming that this is still the case. The AT&T point of contact is Rick Marino at (352) 284-8110.

GRUCom requires two 4" conduits along the roadway within the right-of-way, with one 2" conduit from the right-of-way to any commercial service point. At various locations, a crossing consisting of two 4" conduits between each side of the street is required. A cost of \$100,000 for GRUCom's labor and equipment was provided in 2014 and we have confirmed that this is still valid. The GRUCom point of contact is Mike Chappell at (352) 393-6923.

Cox cable requires two 4" conduits along the roadway within the right-of-way. From this conduit location to the customer service point, a single 2" conduit is required to be installed under the CRA contract for Cox re-installation of service. A cost for Cox Cable's labor and equipment of \$20,000 was provided in 2014 and we are assuming minimal changes at this time. The Cox Cable point of contact is Adam Gause at (352) 337-2142.

GRU Electric will require four 4" conduits installed within the right-of-way along the east side of the roadway from SE 10th Avenue to approximately 950 feet north of SE 10th Avenue and four 4" conduits and four 6" conduits installed within the right-of-way along the west side of the roadway from SE 10th Avenue south to South 16th Avenue. Several primary crossings consisting of two to four 4" conduits will be required. GRU will install their primary cables in these conduits.

Secondary conduits and conductors (customer services) will not be installed in the right-of-way. Conduit and wiring from the proposed transformer to each customer (service lateral) will be installed by the CRA contractor and will become property of the landowner. In order not to have customer conduit and wiring in the right of way it will be necessary to have four easements for GRU pad mounted transformers and one easement for GRU switchgear from Depot Avenue south to SE 11th Place (Option B). Also, there will be a requirement for one primary easement for underground primary crossing private property to riser a pole for Option B. South of 11th Place (Option C) thirteen easements will be required. Six or seven easements will be required for GRU pad mounted transformers and two easements will be required for GRU switchgear.

Also, there will be a requirement for four or five primary easements for underground primary crossing private property to riser poles.

At this time, it has not been determined if the Chevron Station on the corner of South 16th Avenue and South Main Street will be fed from a pad mounted transformer or from the existing pole mounted transformer. The CRA contractor will be required to provide pads and grounding for all pad mounted equipment.

For the primary easements above, there are five or six locations where existing pole mounted transformers with overhead services to customers are fed overhead from South Main Street, but located off of the South Main Street corridor. In these cases, underground primary will be run from the South Main Street right of way to these poles in order to eliminate visual clutter along the corridor. A primary riser will be installed on each pole and the existing overhead utilities will remain in service. The CRA will determine what distance from South Main Street is acceptable for this project.

The following is a description of the proposed easements indicated on the preliminary easement location plans:

- N-1 Single phase pad mounted transformer to provide power to the Original Cade Museum Building.
- N-2 Three Phase pad mounted transformer to provide power to Partsco. (1012).
- N-3 Single phase pad mounted transformer and three phase pad mounted transformer to provide power to several business (1024, 1032, 1040, and possibly more). Secondary easements may be needed from the transformer easement to each business affected.
- N-4 Two pad mounted switches for the two primary circuits being undergrounded.
- N-5 Primary easement to feed pole mounted transformers for the Truss Company (1102) and overhead primary along SW 11th Place.
- N-6 Single phase pad mounted transformer and three phase pad mounted transformer to provide power to several business. Secondary easements may be needed from the transformer easement to each business affected.
- S-1 Three phase pad mounted transformer to provide power to Continental Imports and others.
- S-2 Primary easement to feed pole mounted transformers and overhead primary feeding Rogers Welding and others.
- S-3 Two pad mounted switches for the two primary circuits being undergrounded.
- S-4 Three Phase pad mounted transformer to provide power to Towing Company (1308) and Dentist Office.
- S-5 Primary easement to feed pole mounted transformers and overhead primary feeding 1310 and others.

- S-6 Primary easement to feed pole mounted transformers and overhead primary feeding 1315 and others along SE 13th Road.
- S-7 Single phase pad mounted transformer to provide power to Blue Oven.
- S-8 Single phase pad mounted transformer and three phase pad mounted transformer to provide power to 1409 and 1529.
- S-9 Primary easement to feed the pole mounted transformer for the Newberry Animal Hospital and the communications tower.
- S-10 Single phase pad mounted transformer or primary easement to provide power to the Chevron Station (1510).
- S-11 Three phase pad mounted transformer to provide power to Jeffcoat Signs and Import Sales and Service.
- S-12 Pad mounted Switchgear easement on the southeast corner of SE 16th Ave and South Main Street.
- S-13 Three phase pad mounted transformer to provide power to the CITGO Station and Fastenal on SW 16th Avenue.

Note: The above easements are numbered north to south. Easements starting with N are north of SE 11th Place (Option B). Easements starting with S are south of SE 11th Place (Option C).

GRU has presented an estimate of their costs to include installation of the primary conductors within the right-of-way, installation and connection of pad mounted transformers and switchgear, and removal of the existing overhead distribution system. This cost is \$360,000 for the north section (Option B), \$1,224,000 for the south section (Option C). The GRU point of contact is René Zamot at (352) 393-1562.

The utility conduits detailed above may all be installed within close proximity to each other, allowing for shared trenching. However, GRU electric requires a minimum of 10 feet between their conduits and waste water, trees, and structures as well as two to three feet separation from other underground utilities. This will require coordination during the design phase to ensure clearances between all required utilities are met. Due to the competition for space with existing underground utilities and with proposed trees, we are proposing a concrete encased duct bank in order to reduce the required clearances between other utilities and with new trees along the corridor. This cost has been accounted for in the cost estimate below. The costs for trenching and backfill for all of the required conduits and duct bank has not been included in the overall cost estimate in anticipation of a joint utility trench to be designed by CHW.

The cost estimate does not include new decorative street lighting.

The following are cost estimates for this project. Included is a \$10k contingency for the North end (Option B) for voltage change-over consequences, \$25k for the South end (Option C) for voltage change-over consequences, and engineering fees for Nix Engineering. Street Lighting, trenching and backfill are not included.

Cox and GRUCom have not divided their costs between Option B and Option C; therefore, we allocated 40% of their costs for Option B and 60% of Option C based on the linear footage of the project and the proportion of the total for each option.

North End (Option B)	\$878,000.00
South End West Side (Option C)	\$2,234,000.00
Total (Option A)	\$3,112,000.00

Sincerely,

Ronald J. Nix, P.E.