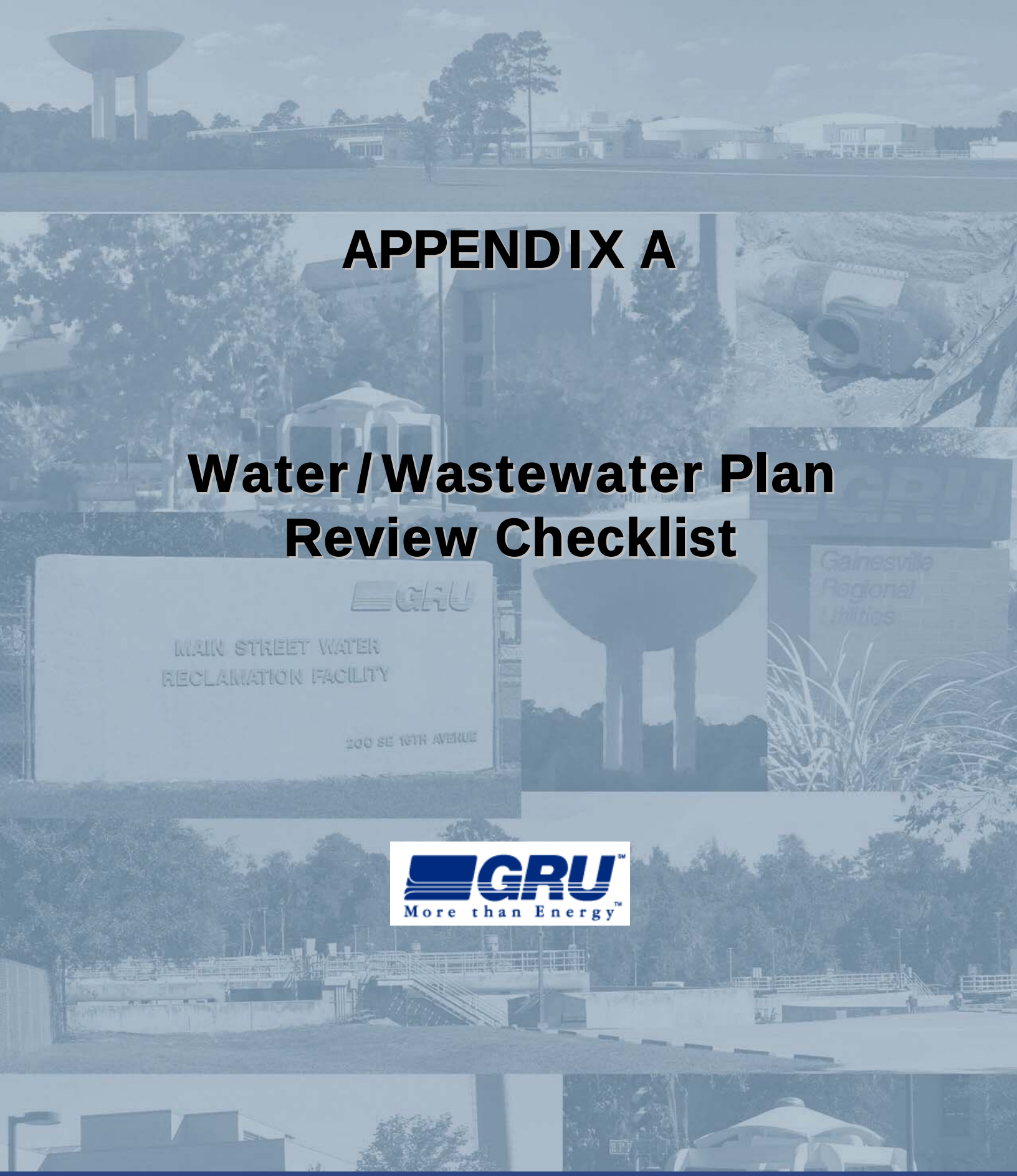
APPENDIX A

Water/Wastewater Plan Review Checklist



GRU™
More than Energy™

Water and Wastewater Engineering Department

Gainesville Regional Utilities W/WW Plan Review Checklist

Project:_____Date:_____

Engineer:_____

	Yes	No	N/A
1. A Cover Sheet that includes a Project Location Map with nearby and/or adjacent streets labeled.	___	___	___
2. Cover sheet signed and sealed by engineer-of-record.	___	___	___
• Certification by engineer that W/WW/RCW system design is in accordance with GRU Design Standards.	___	___	___
• PE license is valid and PE seal reads “Professional Engineer” (Confirm at: www.myfloridalicense.com/)	___	___	___
• Cover sheet reads “For Review Only”	___	___	___
3. A Drawing Index that clearly identifies the names and sheet numbers of all drawings under review, also on the Cover Sheet.	___	___	___
4. The following information must appear on all sheets:			
• The design engineer's name	___	___	___
• The project name in lower right corner	___	___	___
• The phase to be constructed	___	___	___
5. A legible Utility Master Site Plan shall be part of the project drawings, and shall clearly depicting the following:			
• Water and wastewater systems	___	___	___
• Electric transformers and pedestals in relation to the W/WW systems (minimum 10’ horizontal separation, transformers and water meters on opposite property corners)	___	___	___
6. All phases of construction shall be clearly shown.	___	___	___
7. All plan sheets shall be to scale with the scale clearly noted on each drawing.	___	___	___
8. All plan sheets shall have an arrow indicating the direction north (pointing up or to the right).	___	___	___
9. The Utility Master Site Plan shall be a maximum 1” = 40’ scale.	___	___	___
10. If the entire project area does not fit on one sheet at this scale, then it shall be printed on multiple sheets.	___	___	___
• A key map shall be provided on each sheet indicating the	___	___	___

location of the related sheet within the project.

11. When multiple pages are used, a map of the entire project area on a single drawing, with limited labeling, shall be included.	___	___	___
12. Mandatory Plan and Profile Sheets shall be drawn at 1" = 20' or 1" = 30' (preferred) horizontal scale, and 1" = 2' to 1" = 5' vertical scale.	___	___	___
13. Each Plan and Profile Sheet shall display the plan view above the profile view, and each shall depict the same length of utility installation. The plan shall be aligned vertically with the profile.	___	___	___
14. The Plan and Profile Sheet plan view shall show the following:			
• water mains	___	___	___
• valves	___	___	___
• fittings	___	___	___
• fire hydrants	___	___	___
• services	___	___	___
• meters	___	___	___
• blowoff assemblies	___	___	___
• wastewater mains	___	___	___
• manholes	___	___	___
• wyes	___	___	___
• laterals	___	___	___
• cleanouts	___	___	___
• reclaimed water mains	___	___	___
• force mains	___	___	___
• storm water lines	___	___	___
• electric lines	___	___	___
• gas lines	___	___	___
• paving	___	___	___
• curbs and gutters	___	___	___
• right-of-way lines	___	___	___
• property lines	___	___	___
• and all existing and proposed features	___	___	___
15. A wastewater structure schedule shall be included on all sheets on which the structure is shown (i.e., the Utility Master Site Plan, Plan and Profile sheets, etc.).	___	___	___
16. The Plan and Profile Sheet profile view shall show the existing and proposed finished grade over proposed and existing gravity wastewater mains.	___	___	___
17. All wastewater gravity lines and wastewater force mains shall be shown in profile view.	___	___	___
18. All stormwater lines in close proximity to depicted wastewater, water, and reclaimed water mains shall also be shown in profile view.	___	___	___
19. All crossings (stormwater, wastewater, reclaimed water, and water mains) and all additional relevant utility information shall be included.	___	___	___

20. Master paving and drainage plan reflecting all stormwater facilities, retention or detention ponds with elevations.
    - Clearly indicate design high water level and 100 year, critical event floodplain elevations. ___ ___ ___
    - Wetland delineation/setback lines, creeks, and ponds indicated. ___ ___ ___
    - Drainage structure locations, elevations, sizes and slopes. ___ ___ ___
21. Analysis of manhole submergence during flood events (to be performed by GRU). ___ ___ ___
22. Proposed Subdivision Plat (if applicable) ___ ___ ___
23. Boundary Survey, Legal Description and Parcel Number. ___ ___ ___
24. GRU Energy Delivery Electric System Design reflecting proposed W/WW utility design. ___ ___ ___
25. Note on cover page/plans as “Electric Design Provided by GRU Energy Delivery” ___ ___ ___
26. Landscape Plans shall show existing and proposed tree locations and species, and shall include all potable water, reclaimed water, and wastewater utilities, shown clearly (labeling optional). ___ ___ ___
27. Utility Space Allocation Cross-sections for each different roadway section, alley, and Public Utility Easement (PUE) shall be included, showing proposed and existing tree types and locations, and complying with the Utility Separation Table (**Appendix C, GRU Standards**). ___ ___ ___
28. Proposed trees depicted on the utility allocations shall include those within 20 feet of all right-of-way lines. ___ ___ ___
29. Water meters shall be shown at the right-of-way, where applicable. ___ ___ ___
30. Show temporary construction water source. ___ ___ ___
31. For multi-family and non-residential projects, buildings shall be master metered or served by grouped potable water meter gangs with no more than 12 meters per gang ___ ___ ___
32. For potable water meters 1.5” or greater, the Engineer-of-Record shall submit a detailed water demand estimate, signed and sealed by a Professional Engineer, reflecting Average Daily Flow and Peak Hourly Demand calculations, with supporting documentation for review and approval by GRU. ___ ___ ___
33. Fire hydrants no more than 500’ from farthest side of the building (as the truck drives) and 1000’ (as the truck drives) – minimum two required. ___ ___ ___
34. Show required blowoff assemblies and sample points. ___ ___ ___

35. Control valves shall be provided on each branch of potable water main tees (3 valves per tee may be required, at GRU's discretion). ___ ___ ___

36. Indicate tap location and size (Contractor coordinate with GRU 48 hours in advance, GRU to install, Contractor to connect). ___ ___ ___

37. Indicate all required backflow preventers and types (to be installed by contractor). If Backflow preventers are not shown, indicate source of irrigation water. ___ ___ ___

38. All materials shown on the plans shall be clearly labeled, including, but not limited to:
    - pipe, ___ ___ ___
    - valves, ___ ___ ___
    - fire hydrants, ___ ___ ___
    - fire sprinkler lines, ___ ___ ___
    - water meters, ___ ___ ___
    - backflow preventers, ___ ___ ___
    - fittings, ___ ___ ___
    - manholes, ___ ___ ___
    - services, ___ ___ ___
    - clean outs, etc., ___ ___ ___

    with associated elevations, sizes, types, material, slopes, and appurtenances. Materials shall be labeled on each sheet on which the materials are shown.

39. All wastewater design information shall be shown, including the following:
    - pipe sizes ___ ___ ___
    - pipe lengths ___ ___ ___
    - pipe materials ___ ___ ___
    - pipe slopes ___ ___ ___
    - manhole top elevations ___ ___ ___
    - manhole invert elevations ___ ___ ___
    - cleanout top elevations ___ ___ ___
    - cleanout invert elevations ___ ___ ___

40. Potable and Wastewater Demand calculations. The following information shall be provided:
    - AutoCAD Drawing file of Water and Wastewater Utilities with pipe sizes, fittings, and valves clearly labeled (this file will be used by GRU Strategic Planning to model the proposed water system). ___ ___ ___
    - Average and Peak Water Demand calculations based on one ERC, (Equivalent Residential Connection, where 1 ERC = 350 GPD) per single-family residential, 70 GPD per bedroom for multi-family residential, and F.A.C. 64-E for commercial development. (Note: GRU uses a peaking factor of 2.5 based on the Recommended Standards for Wastewater Facilities ("Ten State Standards"), 1997 Edition, Chapter 10, Figure 1, but will accept other peaking factors, with documentation. ___ ___ ___
    - Peak Fire Line Demand at 20 psig. ___ ___ ___
    - Signed and sealed ISO fire flow calculations (2008 Edition) for ___ ___ ___

all phases.

- Copy of Development Master Plan including Phasing Schedule, if applicable. ___ ___ ___
- Peak Wastewater generation rate (Provide Calcs based on Source). Note: If wastewater is industrial, and concentrations of certain chemicals exist, then applicant must secure an Industrial User Permit (contact Fred Williams at 393-1698). ___ ___ ___

41. Based on required flow (total of peak potable demand, peak fire line demand, and ISO fire flow calcs), GRU Water/Wastewater Engineering shall determine if adequate flow is available by one of the following methods:
    - Based on fire flow tests and analysis of the surrounding water system (attach copy of test results) ___ ___ ___
    - Based on Maximum Line Length Table (attach copy of GIS map with selected loop(s) highlighted, along with any other pertinent information, such as copy of line length table, notes, etc.) ___ ___ ___
    - If neither of the above methods is applicable, forward project to Strategic Planning for modeling ___ ___ ___

42. Any existing potable water, reclaimed water, and wastewater service stub-outs to subject parcels from adjacent development are to be included in the drawings. ___ ___ ___

43. Proposed off-site utility extensions to the point of W/WW service availability. ___ ___ ___

44. All proposed potable water, reclaimed water, and wastewater service stub-outs from subject parcels to adjacent potentially developable sites are to be included in the drawings. ___ ___ ___

    - Oversizing required? (to be determined by GRU) ___ ___ ___

45. When connecting wastewater to existing manhole, the following note shall be included: “Core-drill manhole for installation of wastewater pipe. Install pipe with Kor-n-Seal or equal boot. Grout annular space with non-shrink grout. Coordinate with GRU inspector 48 hours in advance.” ___ ___ ___

46. When connecting a wastewater force main to an existing manhole, Raven lining (or equal) is required in the manhole. In the case of a connection to a proposed manhole, the lining shall be HDPE. ___ ___ ___

47. Presentation of manhole information is recommended to be in a “Sanitary Sewer Structures Schedule” format, but in any case, must be shown on all sheets where manhole is drawn. ___ ___ ___

48. Locate, show, and label existing utilities that cross or are adjacent to the property or project construction area. ___ ___ ___

49. Elevations (manhole and cleanout tops and inverts) and pipe sizes of all existing wastewater facilities that cross and/or are adjacent to the property. ___ ___ ___

50. The design drawings shall indicate any required grease, oil, sand, or lint separators and/or other pre-treatment systems required as part of the wastewater system. (Contact Fred Williams at 393-1698 for grease trap permit) ___ ___ ___

51. All existing and proposed utility easements shall be shown with dimensions. ___ ___ ___

52. Existing and proposed site contour elevations shall be shown at minimum 2-foot intervals. ___ ___ ___

53. Building minimum finished floor elevations shall be shown. ___ ___ ___

54. Sewer backwater valves must be shown when finished floor elevation does not meet requirements. ___ ___ ___

55. Lot numbers and street names. If 'official' street names are not available for initial plan submittals, include temporary street designations. Revise subsequent submittals when official street name labels are available. ___ ___ ___

56. **ALL** of the following GRU standard utility notes must be shown on utility plans, in the order shown:

    a. *Provide a statement identifying any associated utility permits that are required by City, County, FDOT, FDEP, or other agency, or that none are required.* ___ ___ ___

    b. The utility plan and plat shows all Public Utility Easements (PUE's) in a metes and bounds format. Upon GRU's approval of plans for developments not being platted, Owner may choose to grant the metes and bounds easements as shown, or a blanket easement over the entire property, provided facilities are installed within the prescribed distances as shown on the utility plans and in accordance with the Utility Separation Requirements Table in Appendix C of the GRU W/WW/RCW Design Standards. ___ ___ ___

    c. All construction materials and methods for potable water, wastewater, and reclaimed water systems shall be in conformance with GRU's most recent Potable Water, Wastewater and Reclaimed Water System Design Standards, and Approved Materials Manual. ___ ___ ___

    d. Potable Water and Wastewater mains shall maintain a minimum 10 feet horizontal and 1.5 foot vertical separation. ___ ___ ___

    e. A minimum horizontal separation of 10 feet for potable water mains, wastewater force mains, and reclaimed water mains, and 15 feet for gravity wastewater mains shall be provided and maintained from trees, buildings, transformers, and all permanent structures. Live Oak trees require an additional ___ ___ ___

	5 feet of horizontal clearance. Service laterals require 5 feet less clearance for each of the utilities; note that water service laterals shall be installed within 3" sleeves. (See **Appendix C, GRU Standards** – Horizontal Separation Distances for Parallel and Perpendicular Clearance from Other Objects Table.)			
f.	Potable water services, requiring a separate water meter, shall be provided to each lot, building or parcel. Effective October 1, 2007, for commercial, multifamily, and institutional developments, the Developer shall be responsible for installing potable water services and Yoke Assembly Package up to and including the meter yoke, box (installed at final grade) and associated appurtenances, for meters 1" and smaller (see GRU W/WW/RCW Construction Detail W – 8.0), with a one-year warranty.	___	___	___
g.	2" valves located in paved areas, including sidewalks, shall be GRU approved cast iron, resilient seat gate valves with standard 2" operating nut, threaded with brass nipple between the valves and tapping saddle or tapped tee.	___	___	___
h.	Water mains 4" in diameter and greater, placed under roadways, shall be cement lined ductile iron pipe (CLDIP) extending 5 feet past the back of curb (3 feet within City of Gainesville limits). Tracer wire installed on PVC water mains shall continue across the CLDIP sections.	___	___	___
i.	1" and 2" water service crossings located under roadways shall be encased in 3" SCH 40 PVC extending 5' past the back of curb (3 feet inside City of Gainesville limits).	___	___	___
j.	Anchoring tees, couplings, and bends shall be used on all fire hydrant assemblies.	___	___	___
k.	All pressurized main fittings shall be mechanical joint with restrained joint glands; a sufficient length of the pipe connected to the fittings shall be mechanically restrained to provide reaction as specified on the Restrained Joint Standard in the Construction Details of the GRU Standards (W – 2.8 & 2.9, RCW – 2.8 & 2.9, and WW – 2.4 & 2.5). Calculations for required restraint length must be provided if the specified restraint length, due to soil type or depth of cover, differs from those provided on these details.	___	___	___
l.	All sanitary wastewater service laterals shall be min. 4" diameter PVC (SDR 35) at 1.00% min. slope unless otherwise labeled.	___	___	___
m.	Wastewater cleanout covers located within pavement and sidewalks adjacent to paved areas shall be rated for traffic load bearing. Wastewater cleanout covers in other	___	___	___

sidewalks/walkways shall be brass with a square recess.

n. Manholes which are not installed under pavement shall have a rim elevation at least 6" above finished grade, and a 10:1 slope to finished grade. ___ ___ ___

o. Unless otherwise noted on the plans, the finished floor elevations of buildings shall be a minimum of 6" above the lowest upstream manhole top. If this is infeasible, a wastewater service lateral backwater valve (BWV) is required on the customer side of the cleanout. ___ ___ ___

p. When a potable or reclaimed water main, or a wastewater force main is routed within 10 ft. of an electric transformer, a 20 ft. length of DIP shall be centered on the transformer with mechanical restraint at each end. No fittings or valves shall occur within 10 ft. of the nearest edge of the transformer. A minimum clearance of 3' shall be maintained between the main and the transformer. ___ ___ ___

57. Typical cross sections for all roadways shall be included. ___ ___ ___

58. Road crossing details for bore and jacks and open cuts shall be provided. The crossing details shall show all existing and proposed utilities including surveyed elevations and field locations. Entrance and receiving pit location and dimensions shall be included. ___ ___ ___

59. Building footprints, decorative masonry walls, fences, signs, berms, and landscaped buffer areas shall be shown and labeled on the plans. ___ ___ ___

60. Each side of a R/W shall include a minimum 5 feet wide PUE. Additional PUE's may be required to ensure adequate separation for utilities. ___ ___ ___

61. Indicate the source of irrigation water. ___ ___ ___

62. Provide appropriate/adequate backflow prevention (BFP) for public water supply in accordance with the GRU Standards, Section V. G. Backflow Prevention. If a DDC BFP is specified on a fire-line, the engineer must certify that the fire protection system will use plain water, only (no chemicals or antifreeze). ___ ___ ___

63. GRU Standard WW Lift Station design drawings for GRU O&M stations (Private O&M WW lift stations shall include signed and sealed design calculations, i.e. system head curve, pump curve/specs, etc.). ___ ___ ___

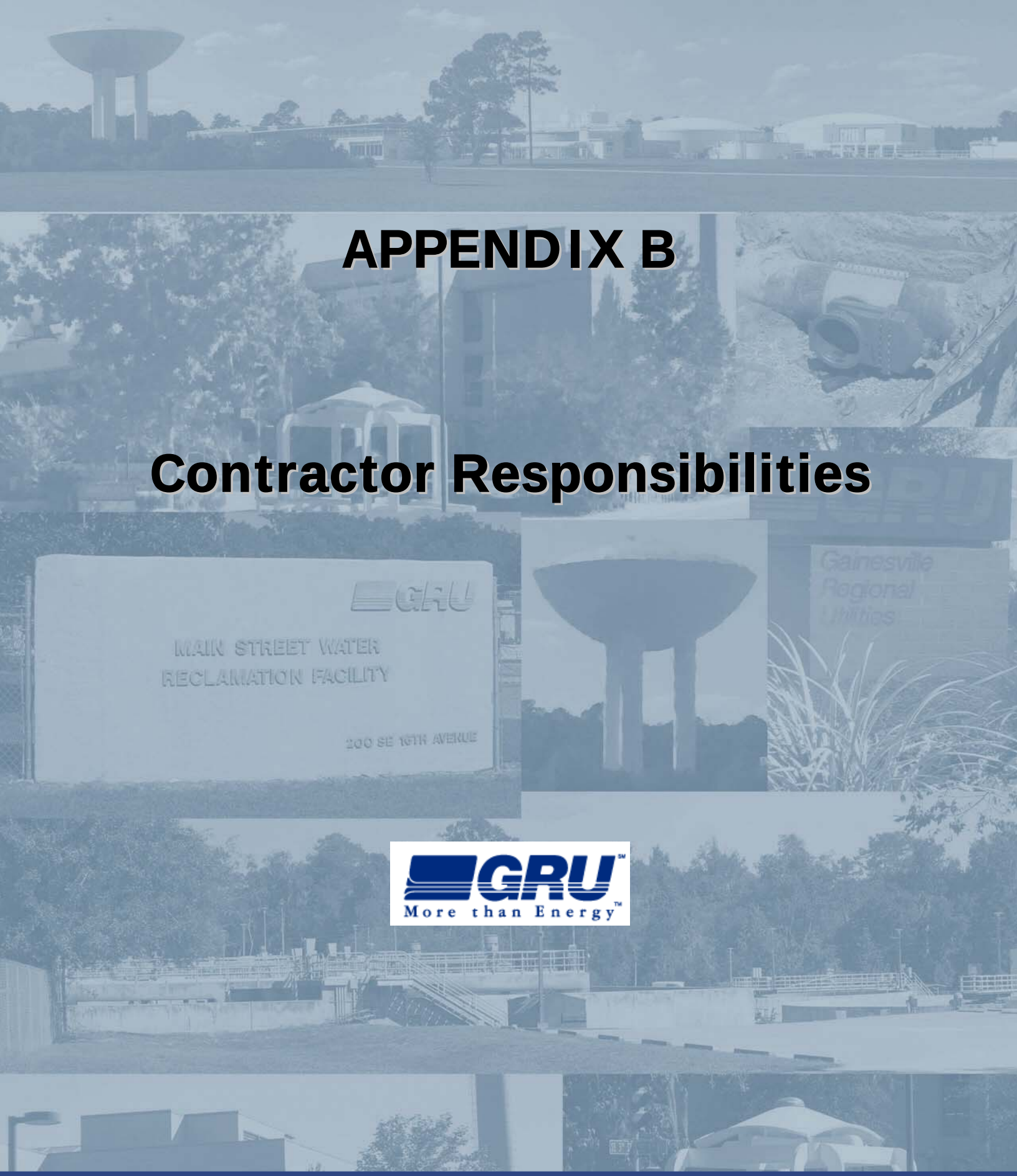
64. Lift Station Capacity and pump operating point shall be checked by GRU. ___ ___ ___

65. Force mains shall be shown on plan and profile with plug valves and air release valves. ___ ___ ___

66. Show air conditioning condensate water drain line, and clearly note that it shall not connect to GRU wastewater. ___ ___ ___

APPENDIX B

Contractor Responsibilities



GRU™
More than Energy™

Water and Wastewater Engineering Department – February 2008

Contractor Responsibilities

Call John Worley at 352-393-1633 at least 48 hours in advance to notify GRU when work will begin at the site. The Contractor shall schedule a preconstruction meeting on-site with GRU Inspector. Contractor shall coordinate with GRU W/WW System Inspector to perform work in progress inspections at various times during construction, including, but not limited to, the following items:

POTABLE WATER/RECLAIMED WATER:

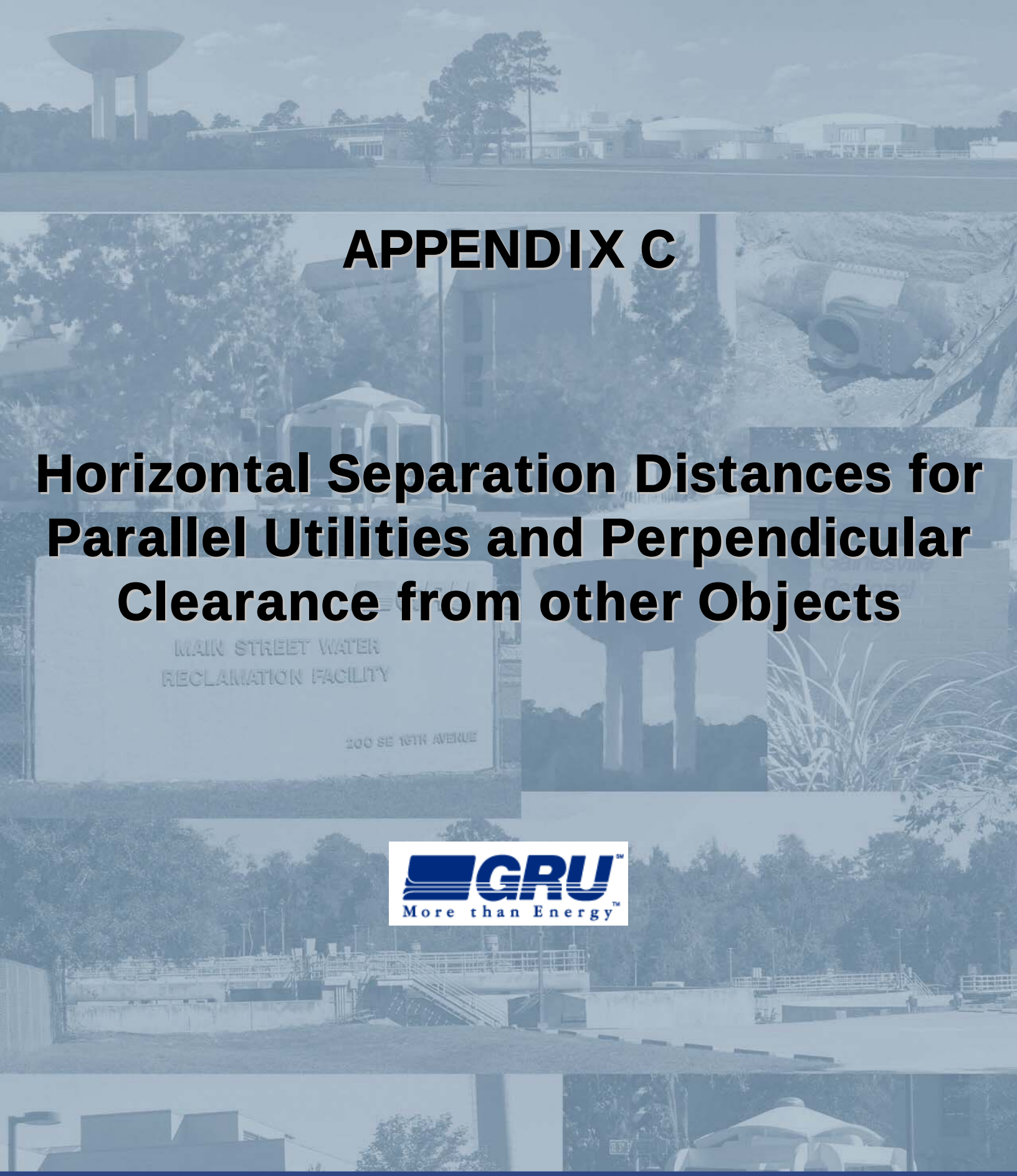
1. Inspection of connections to existing GRU infrastructure and backfill on main line.
2. Visual inspection of all mechanical joint restraints and thrust blocks before backfilling.
3. Contractor shall coordinate with GRU Inspector prior to sterilization and pressure testing (note: reclaimed water lines do not require sterilization).
4. Coordinate with Inspector and Murphree WTP staff to take two water samples for bacteriological testing on two consecutive days (note: does not apply to reclaimed water systems).
5. Coordinate with Inspector to arrange a date and time for "walkthrough" with Water Department (note: before walkthrough, all mains must be flushed, hydrant plumbing and valve boxes brought to grade, and services shall be vertical with caps off). A written report of discrepancies (if any) shall be prepared by the Water Department and given to the Inspector and Contractor.
6. Contractor shall notify Inspector when discrepancies are repaired so that Inspector may coordinate with Water Department for re-inspection.
7. When the system has passed inspection, Contractor shall furnish record drawings and certified costs. Inspector shall then close-out job, and a Completion Letter shall be sent by GRU to the Developer, Engineer of Record, and Contractor.

WASTEWATER:

1. Inspection of connections to existing GRU infrastructure and backfill (with Type A-3) on main line.
2. Inspection to confirm proper grade per GRU Standards and drawings on mainline, wyes, and laterals.
3. Inspection of completed wastewater system, including manhole inverts.
4. Coordinate with Inspector to arrange for TV inspection of wastewater system (note: prior to TV inspection, laterals must be flushed, the entire circumference of mains jet cleaned, and all debris removed). A written report of any discrepancies found shall be prepared by the Wastewater Department and provided to the Inspector.
5. Contractor shall notify Inspector when discrepancies are repaired so that Inspector may coordinate with Wastewater Department for re-inspection.
6. When the system has passed inspection, Contractor shall furnish record drawings and certified costs. Inspector shall then close-out job, and a Completion Letter shall be sent by GRU to the Developer, Engineer of Record, and Contractor.

APPENDIX C

Horizontal Separation Distances for Parallel Utilities and Perpendicular Clearance from other Objects



GRU™
More than Energy™

Water and Wastewater Engineering Department

GAINESVILLE REGIONAL UTILITIES - UTILITY SEPARATION REQUIREMENTS

HORIZONTAL Separation Distances for PARALLEL Utilities and Perpendicular Clearance From Other Objects

	Electric Over Head	Electric Under Ground	GRUCom Over Head	GRUCom Under Ground	Gas Pipe	Water Main	WW Force Main	WW Gravity Main	Reclaimed Water Main	Trees[10]	Lift Station (Property Line)	Structure	Transformer	Fire hydrant	Water Meter	Street light	Storm Sewers	Other Underground Utilities
Electric Overhead	NA	-	NA	-	-	3	3	10	3	7.5[9]	10	NESC[7]	NA	-	-	NESC[7]	3	3
Electric Underground	-	1	-	1	2	3	3	10	3	10[11]	10	10	NA	3	3	None	3	3
GRUCom Overhead	NA	-	NA	-	-	3	3	10	3	7.5[9]	10	NESC[7]	NA	-	-	NESC[7]	3	3
GRUCom Underground	-	1	-	1	2	3	3	10	3	7.5[9]	10	10	NA	3	3	None	3	3
Gas Pipe	-	2	-	2	2	3	3	10	3	7.5[9]	10	5	None	3	3	3	3	3
Water Main	3	3	3	3	3	2	10	10	4	7.5[9]	10	≥ 10	3[12]	None	None	3	4	3
WW Force Main	3	3	3	3	3	10	2	10	4	7.5[9]	10	≥ 10	3[12]	10	10	3	4	3
WW Gravity Main	10	10	10	10	10	10	10	Depth[3]	10	10[9]	15	≥ 15	15	10	10	10	10	10
Reclaimed Water Main	3	3	3	3	3	4	4	10	2	7.5[9]	10	≥ 10	3[12]	4	4	3	4	3
Trees[10]	7.5[9]	10[11]	7.5[9]	7.5[9]	7.5[9]	7.5[9]	7.5[9]	10[9]	7.5[9]	NA	10	NA	10	7.5[9]	7.5[9]	7.5[9]	-	7.5[9]
Lift Station (Property Line)	10	10	10	10	10	10	10	15	10	10	NA	10	10	10	10	10	10	10
Structure	NESC[7]	10	NESC[7]	10	5	≥ 10	≥ 10	≥ 15	≥ 10	NA	10	NA	10	10	5	NA	10	10
Transformer	NA	NA	NA	NA	None	3[12]	3[12]	15	10	10	10	10	NA	10	5	NA	10	NA
Fire hydrant	-	3	-	3	3	None	10	10	4	7.5[9]	10	10	10	NA	5	5	4	3
Water Meter	-	3	-	3	3	None	10	10	4	7.5[9]	10	5	5	5	1.5	5	4	3
Street light	NESC[7]	None	NESC[7]	None	3	3	3	10	3	7.5[9]	10	NA	NA	5	5	NA	3	-
Storm Sewers	3	3	3	3	3	4	4	10	4	-	10	10	10	3	3	3	NA	3
Other Underground Utilities	3	3	3	3	3	3	3	10	3	7.5[9]	10	10	NA	3	3	-	3	1

Notes:
1. All Values are Distances in Feet - Measured Center-to-Center of pipes for typical cases.
2. Large diameter pipes (>10") require additional clearance to achieve separation required by underlying rules based on outside-to-outside dimensions to be determined by GRU Engineering
3. Separation from gravity sewer is dependent on the depth of the main, which varies with application
4. NA = Not Applicable
5. Measurements from buildings (structures) and above ground objects (hydrants, transformers, poles, etc.) are from the furthest external protrusion. (roof, wall, porch, foundation, stairway, etc.)
6. Vertical Separation is required for utilities crossing one another (not addressed here)
7. NESC - National Electric Safety Code - The separation from structures is based upon various criteria and must meet the NESC
8. Separations shown between utilities not owned and operated by GRU are for reference only
9. See Tree Separation Details W-10.9, WW-9.2 and 9.7, and RCW 9.5 for detailed tree separation information.
10. See GRU Plant Matrix Guide.
11. Minimum 15' for large trees.
12. When a potable or reclaimed water main, or a wastewater force main is routed within 10 ft. of an electric transformer, a 20 ft. length of DIP shall be centered on the transformer with mechanical restraint at each end. No fittings or valves shall occur within 10 ft. of the nearest edge of the transformer. A minimum clearance of 3' shall be maintained between the main and the transformer.

Revised: 10/12/2015

GRU Plant Matrix Guide

Adapted from FDOT Landscape Guide

Botanical Name	Common Name	Native Plant	USDA Hardiness Zones	Applicable Under Overhead Utility >21' Above Grade	Applicable Within Underground Utility Easement
GROUNDCOVERS					
Carissa macrocarpa	Natal Plum	N	9 - 11	Yes	Yes
Catharanthus roseus	Madagascar Perwinkle	N	9 - 11	Yes	Yes
Gaillardia pulchella	Blanket Flower	Y	5 - 10	Yes	Yes
Gelsemium sempervirens	Carolina Jasmine	Y	7A - 9A	Yes	Yes
Helianthus debilis	Beach Sunflower	Y	8B - 11	Yes	Yes
Hemerocallis 'x'	Daylily	N	4A - 10A	Yes	Yes
Ilex vomitoria 'Stokes Dwarf'	Dwarf Stoke's Holly	Y	7A - 10A	Yes	Yes
Juniperus conferta	Shore Juniper	N	6A-10A	Yes	Yes
Lantana camara	Gold Mound Lantana	N	8 - 11	Yes	Yes
Lantana montevidensis	Trailing Lantana	N	8 - 11	Yes	Yes
Licania michauxii	Gopher Apple	Y	8B - 11	Yes	Yes
Liriope muscari	Lilyturf	N	6A - 10A	Yes	Yes
Ophiopogon japonicus	Mondo Grass	N	7A - 11	Yes	Yes
Trachelospermum asiaticum	Asian Jasmine	N	7B - 10A	Yes	Yes
Tradescantia pallida 'Purpurea'	Purple Queen	Y	8B - 11	Yes	Yes
Vaccinium myrsinites	Shiny Blueberry	Y	3 - 11	Yes	Yes
Wedelia trilobata	Wedelia	N	8B - 11	Yes	Yes
Yucca filamentosa	Adam's Needle/Beargrass	Y	5A-10B	Yes	Yes
Zamia pumila	Coontie	Y	8B-11	Yes	Yes

GRU Plant Matrix Guide

Adapted from FDOT Landscape Guide

Botanical Name	Common Name	Native Plant	USDA Hardiness Zones	Applicable Under Overhead Utility >21' Above Grade	Applicable Within Underground Utility Easement
SHRUBS					
Abelia 'x' grandiflora	Glossy Abelia	N	5A - 9A	Yes	Yes
Acalypha wilkesiana	Copperleaf	N	9A - 11	Yes	Yes
Caesalpinia pulcherrima	Dwarf Poinciana	N	8 - 11	Yes	Yes
Callicarpa americana L.	American Beautyberry	N	6 - 10	Yes	Yes
Cephalanthus occidentalis	Common Buttonbush	Y	4A - 10A	Yes	Yes
Cleyera japonica	Japanese Cleyera	N	6B - 8	Yes	Yes
Cortaderia selloana	Pampus Grass	N	8 - 10	Yes	Yes
Forestiera segregata	Florida Privet	Y	8B - 11	Yes	Yes
Hamelia patens	Firebush	Y	9A - 11	Yes	Yes
Ilex cornuta 'Burfordii'	Burford Holly	N	8 - 9	Yes	Yes
Ilex cornuta 'Dwarf Burford'	Dwarf Burford Holly	N	8 - 9	Yes	Yes
Ilex crenata	Japanese Holly	N	6A - 9A	Yes	Yes
Ilex vomitoria	Yaupon Holly	N	8 - 10	Yes	Yes
Jasminum mesnyi	Primrose Jasmine	N	8 - 10	Yes	Yes
Juniperus 'x' spp.	"x" Juniper	N	3 - 9	Yes	Yes
Leucophyllum frutescens	Texas Sage	N	8A - 10A	Yes	Yes
Ligustrum japonicum	Japanese Privet	N	7B - 10B	Yes	Yes
Lycium carolinianum	Berry Christmas	Y	7B - 11	Yes	Yes
Lyonia ferruginea	Rusty Lyonia/Crookedwood	Y	8 - 10	Yes	Yes
Malvaviscus arboreus	Turk's Cap	N	9 - 11	Yes	Yes
Myrica cerifera	Wax Myrtle	Y	7B-11	Yes	Yes
Nandina domestica	Heavenly Bamboo	N	6 - 9	Yes	Yes
Nerium oleander	Oleander	N	8 - 10	Yes	Yes
Osmanthus americanus	Wild Olive	Y	5B-9A	Yes	Yes
Prunus angustifolia	Chickasaw Plum	Y	6A-9A	Yes	Yes
Pyracantha coccinea	Firethorn/Rosaceae	N	5 - 9	Yes	Yes
Rapanea punctata	Myrsine	Y	8B-11	Yes	Yes
Rhaphiolepis indica	Indian Hawthorn	N	8A-11	Yes	Yes
Rhus copallina	Shining Sumac	Y	5A-10A	Yes	Yes
Sabal minor	Dwarf Palmetto	Y	7B-11	Yes	Yes
Scaevola aemula	Fairy Fanflower	N	9A-11	Yes	Yes
Serenoa repens	Saw Palmetto	Y	8A-11	Yes	Yes
Severinia buxifolia	Boxthorn	Y	8B-10	Yes	Yes
Spartina bakeri	Sand Cordgrass	Y	8B-11	Yes	Yes
Viburnum obovatum 'Walter's'	Walter's Viburnum	Y	7A-10A	Yes	Yes
Yucca aloifolia	Spanish Bayonet	Y	8 - 11	Yes	Yes
Yucca gloriosa	Mound Lily	Y	7 - 11	Yes	Yes
Zamia maritima	Cardboard Palm	N	9 - 11	Yes	Yes

GRU Plant Matrix Guide

Adapted from FDOT Landscape Guide

Botanical Name	Common Name	Native Plant	USDA Hardiness Zones	Applicable Under Overhead Utility >21' Above Grade	Applicable Within Underground Utility Easement
TREES					
Acer barbatum	Florida Maple	Y	7A-9B	Yes	No
Acer rubrum	Red Maple	Y	4A-9A	No	No
Betula nigra	River Birch	Y	4A-9A	No	Yes
Carpinus caroliniana	American Hornbeam	Y	3A-9A	No	No
Carya aquatica	Water Hickory	Y	6B-9A	No	No
Carya glabra	Pignut Hickory	Y	5A-9A	No	No
Carya illinoinensis	Pecan	Y	5B-9A	No	No
Celtis laevigata	Sugarberry	Y	5A-10A	No	No
Cercis canadensis	Redbud	Y	5A-9A	No	Yes
Chionanthus virginicus	Fringe Tree	Y	3A-9A	Yes	Yes
Cornus florida	Dogwood	Y	5A-9A	Yes	Yes
Fraxinus pennsylvanica	Green Ash	Y	3A-9A	No	No
Gordonia lasianthus	Loblolly Bay	Y	6A-9B	No	No
Halesia diptera	Snowdrop Tree	Y	5A-8B	Yes	Yes
Ilex cassine	Dahoon Holly	Y	7A-11	No	Yes
Ilex opaca	American Holly	Y	5B-9A	No	No
Ilex vomitoria	Yaupon Holly	Y	7A-10A	Yes	Yes
Ilex vomitoria 'pendula'	Weeping Holly	Y	7A-10A	Yes	Yes
Ilex 'x' attenuata 'Savannah'	Savannah Holly	Y	6A-9B	No	No
Juglans nigra	Black Walnut	Y	5A-9A	No	No
Juniperus virginiana silicicola	Southern Red Cedar	Y	8A-10A	No	No
Lagerstroemia indica spp.	Crape Myrtle	Y	7A-9A	Yes	Yes
Ligustrum japonicum	Chinese Privet Tree	N	8A-11	Yes	Yes
Liquidambar styraciflua	Sweetgum	Y	5B-10A	No	No
Liriodendron tulipifera	Tulip Poplar	Y	5A-9A	No	No
Magnolia grandiflora	Southern Magnolia	Y	7A-10A	No	No
Magnolia virginiana	Sweetbay	Y	5A-10A	No	No
Myrica cerifera	Wax Myrtle	Y	7B-11	Yes	Yes
Noronhia emarginata	Madagassgar Olive	N	8B-11	Yes	Yes
Nyssa sylvatica	Black Tupelo	Y	4B-9A	No	No
Ochrosia elliptica	Kopsia - Elliptic Yellowwood	N	8B-11	Yes	Yes
Ostrya virginiana	American Hop Hornbeam	Y	3A-9A	No	No
Parkinsonia aculeata	Jerusalem Thorn	N	8 - 11	Yes	Yes
Persea borbonia	Florida Red Bay	Y	7B-11	No	No
Photinia 'x' fraseri	Red Tip Photinia	N	7 - 9	Yes	Yes
Pinus clausa	Sand Pine	Y	7A-10A	No	No
Pinus elliottii	Slash Pine	Y	7A-11	No	No
Pinus palustrus	Longleaf Pine	Y	7A-10A	No	No
Pinus taeda	Loblolly Pine	Y	6B-9A	No	No

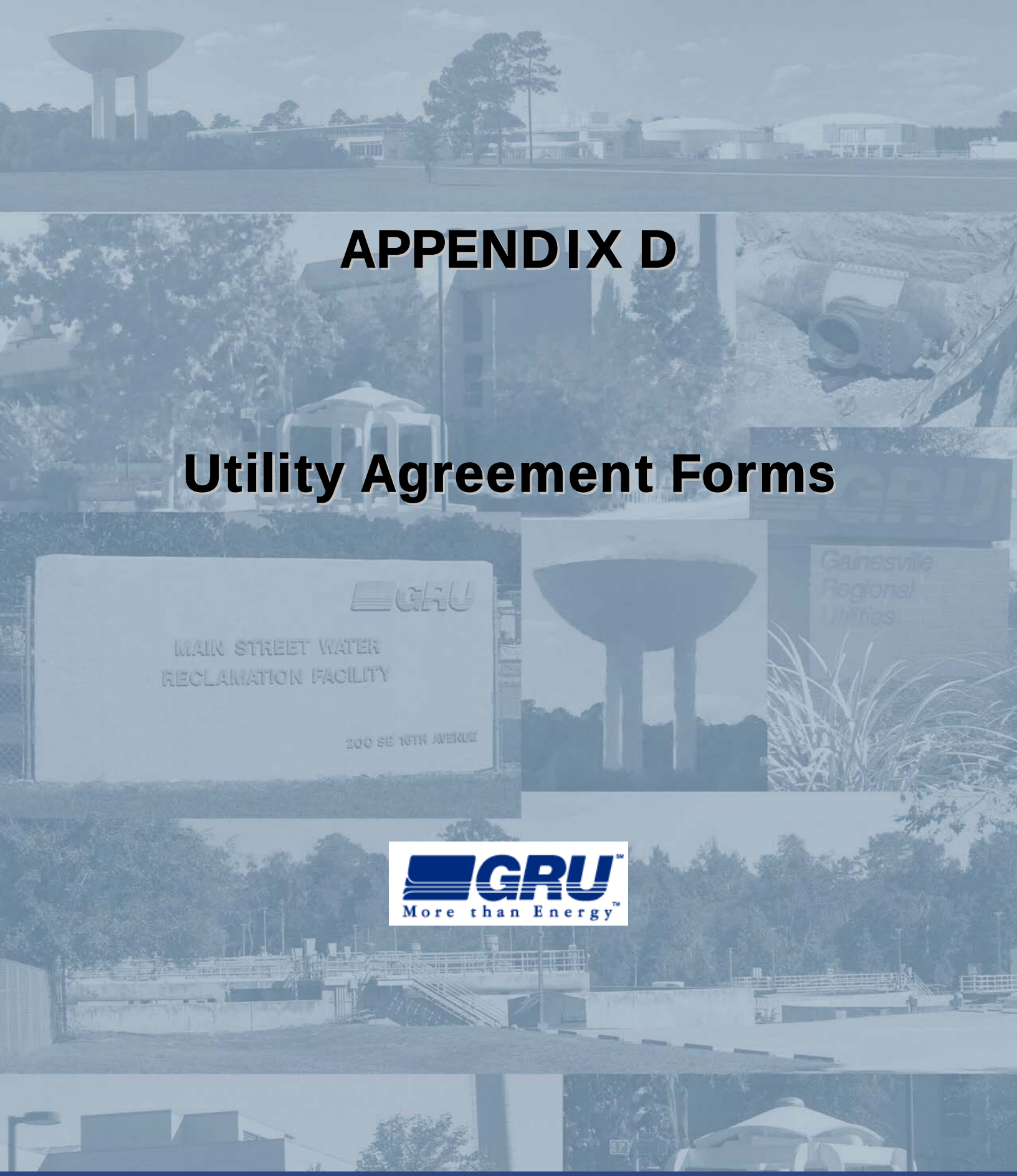
Botanical Name	Common Name	Native Plant	USDA Hardiness Zones	Applicable Under Overhead Utility >21' Above Grade	Applicable Within Underground Utility Easement
TREES (cont'd.)					
Plumeria 'x' spp.	Frangipani	N	9 - 11	No	No
Podocarpus gracilior	Weeping Yew	N	8 - 10	Yes	Yes
Populus deltoides	Eastern Cottonwood	Y	2A-9A	No	No
Prunus angustifolia	Chickasaw Plum	Y	6A-9A	Yes	Yes
Prunus caroliniana	Cherry Laurel	Y	7 - 9	Yes	Yes
Prunus umbellata	Flatwoods Plum	Y	8A-9A	Yes	Yes
Quercus chapmanii	Chapman Oak	Y	8B-11	No	No
Quercus hemisphaerica	Laurel Oak	Y	6B-10A	No	No
Quercus laevis	Turkey Oak	Y	7B-9A	No	No
Quercus myrtifolia	Myrtle Oak	Y	9A-11	No	No
Quercus nigra	Water Oak	Y	7 - 10	No	No
Quercus shumardii	Shumard Oak	Y	5B-9A	No	No
Quercus virginiana	Live Oak	Y	7B-10B	No	No
Taxodium ascendens	Pond Cypress	Y	5B-9A	No	No
Taxodium distichum	Bald Cypress	Y	5A-10A	No	No
Terminalia catappa	Tropical Almond	N	8B-11	No	No
Ulmus alata	Winged Elm	Y	6A-9A	No	No
Ulmus americana 'floridana'	American Elm	Y	8A-9A	No	No
Ulmus parvifolia 'x' spp.	Chinese Elm	N	5 - 9	No	No
Viburnum rufidulum	Southern Black Haw	Y	5B-9A	Yes	Yes
Ximenia americana	Tallowwood Plum	Y	8B-11	Yes	Yes

Botanical Name	Common Name	Native Plant	USDA Hardiness Zones	Applicable Under Overhead Utility >25' Above Grade	Applicable Within Underground Utility Easement
PALMS					
Beaucarnea recurvata	Ponytail Palm	N	9 - 12	No	Yes
Butia capitata	Pindo Palm	Y	8B-11	No	Yes
Chamaerops humilis	European fan Palm	N	8A-11	Yes	Yes
Livistona chinensis	Chinese Fan Palm	N	9 - 11	No	Yes
Livistona decipens	Ribbon Palm	N	9 - 11	No	Yes
Phoenix canariensis	Canary Island Date Palm	N	9 - 11	No	No
Phoenix dactylifera x spp.	Edible Date Palm	N	9 - 11	No	No
Phoenix reclinata	Senegal Date Palm	N	9 - 11	No	No
Phoenix sylvestris	Wild Date Palm	N	9 - 11	No	No
Pseudophoenix sargentii	Florida Cherry Palm	Y	8 - 11	No	Yes
Sabal palmetto	Cabbage Palm	Y	8B-11	No	Yes
Syagrus romanzoffiana	Queen Palm	N	9 - 11	No	Yes
Syagrus schizophylla	Arikury Palm	N	9 - 11	No	Yes
Thrinax radiata	Florida Thatch Palm	Y	8B-11	No	Yes
Trachycarpus fortunei	Windmill Palm	N	7B -10	No	Yes
Washingtonia robusta	Washington Palm	N	9 - 11	No	Yes

Botanical Name	Common Name	Native Plant	USDA Hardiness Zones	Applicable Under Overhead Utility >25' Above Grade	Applicable Within Underground Utility Easement
VINES					
Allamanda cathartica	Common Allamanda	N	9 - 11	No	Yes
Antigonon leptopus	Coral Vine	N	8 - 10	No	Yes
Bougainvillea 'x' spp.	Bougainvillea	N	9 - 11	No	Yes
Campsis radicans	Trumpet Creeper	Y	6 -10	No	Yes
Ficus pumila	Creeping Fig	N	8 - 11	No	Yes
Gelsemium sempervirens	Carolina Jasmine	Y	7A-9A	No	Yes
Lonicera japonica	Honeysuckle	N	4 - 10	No	Yes
Pentalinon luteum	Yellow Mandevilla	Y	8 - 11	No	Yes
Pseudogynoxys chenopodioides	Mexican Flame	N	8 - 11	No	Yes
Pyrostegia venusta	Flame Vine	N	9 - 11	No	Yes
Thunbergia grandiflora	Sky Flower	N	8 - 11	No	Yes
Trachelospermum asiaticum	Asian Jasmine	N	7B-10A	No	Yes
Trachelospermum asiaticum variegata	Variegated Asian Jasmine	N	7B-10A	No	Yes
Trachelospermum jasminoides	Confederate Jasmine	N	8 - 10	No	Yes
Trachelospermum jasminoides var.	Variegated Confed. Jasmine	N	8 - 10	No	Yes
Wisteria sinensis	Chinese Wisteria	N	3 - 9	No	Yes

APPENDIX D

Utility Agreement Forms



GRU™
More than Energy™

Water and Wastewater Engineering Department

CITY OF GAINESVILLE
GAINESVILLE REGIONAL UTILITIES

UTILITY AGREEMENT
THIS AGREEMENT TO BE COMPLETED PRIOR TO APPROVAL OF PLANS BY GRU

Applicant: Owner/Developer

Name: _____ Contact Person: _____
Mailing Address: _____
_____ Zip: _____
Phone: _____ Fax: _____ E-Mail: _____

Engineer

Name: _____
Mailing Address: _____
_____ Zip: _____
Phone: _____ Fax: _____ E-Mail: _____

Property Description

Section _____ Township _____ Range _____ Grant _____
Tax Parcel No. _____ Acreage _____

Development Name: _____

Street Address or Detailed Location: _____

Project Meeting Date: _____ **Approximate Construction Start Date:** _____

Type of Development and Number of Units Below: (check only one)
O Single Family _____total units O Multifamily _____total units, _____ total bedrooms O Commercial O Industrial

Size and Number of Water Meter(s) Below:

Amt	Building Type	Number of BR/Total Area (sq ft)	Avg. Daily Flow (gpd)	Peak Flow (gpm)	Meter Size (in)

Water Meter Numbers for Meters to be Removed (for Connection Charge Credit)

If Removing Meters that Serve Multi-Family units, Provide total number of Bedrooms _____

CITY OF GAINESVILLE
GAINESVILLE REGIONAL UTILITIES

Type of Electrical Service Requested Below: (check only one)
O 120/240V Single Phase O 120/208V Three Phase O 277/480V Three Phase
O 7200/12470V Three Phase Customer Owned or GRU Owned (Circle One)

UTILITY SERVICES: (check all that apply)

O **Water**	O **Wastewater**	O **Reclaimed Water**
O Oversizing Agmt. **(Att. 1)**	O Oversizing Agmt. **(Att. 1)**	O Oversizing Agmt. **(Att. 1)**
O Private Owner. Agmt. **(Att. 2)**	O Private Owner. Agmt. **(Att. 2)**	O Private Owner. Agmt. **(Att. 2)**
O Other _____	O Lift Sta./Force Main Agmt. **(Att. 3)**	O Other_____
	O Other _____	
O **Electric**	O **Gas**	O **GRUCom**
O Electric Conduit Installation Agmt. **(Att. 4)**	O**Contractor Installed Casing and/or** Trench Agmt. **(Att. 5)**	O Communications Conduit Installation Agmt. **(Att. 6)**
O Other _____	O Other _____	O Other _____

The terms and conditions of any additional agreements for utility services marked above as applicable and attached hereto, i.e., Attachments 1 thru 6, are hereby incorporated into this Utility Agreement as if fully set out and Applicant agrees to be bound thereunder.

Joint Trench: O Yes O No (See Energy Delivery Guide for Joint Trench Procedures)
O GRU Water O GRU Electric O GRU Gas O GRUCom
O Cox Communications O Bell South

The Applicant named is the Owner of certain utilities serving the above named Project(s) and desires to forever dedicate, in fee simple, these facilities to the City of Gainesville, Florida, a municipal corporation organized and existing under the laws of the State of Florida and thereafter receive utility service. If the Owner desires to retain ownership of all or any part of these utility facilities, this must be indicated on Page 1 of this Utility Agreement Form and the completed Private Ownership Agreement must be attached to this Utility Agreement Form.

The City of Gainesville/Gainesville Regional Utilities, (GRU) owns and operates public utilities defined in this agreement as water distribution, reclaimed water distribution, wastewater collections systems, electric and gas transmission and distribution systems, and communication services. GRU desires to obtain ownership and the City, its successors and assignees, agree to perpetually operate and maintain these dedicated facilities in accordance with its published ordinances and policies as part of its utility system.

In consideration of the foregoing and the mutual promises set out in this Agreement the Parties agree to the following:

A) APPLICANT'S OBLIGATIONS:

1. INSTALLATION: The Applicant hereby represents and warrants that all utilities subject to this agreement shall be installed as specified by utility plans approved by GRU and in accordance with the prevailing edition of the following policies and standards which are by this reference incorporated into this agreement as if fully set out:

    - City of Gainesville Code of Ordinances
    - Gainesville Regional Utilities':
        - Water and Wastewater Standards & Approved Materials Manual
        - Electric Distribution Approved Materials Manual
        - Electric Distribution Construction Standards Manual
        - Gas Standards and Approved Materials Manual
        - Energy Delivery Service Guide
        - Telecommunications Conduit Installation Standards
        - Vegetation Management Design Standards

    If there is a conflict in any of these standards, the utility that is the subject of this application has precedence. If more than one utility is the subject, GRU shall determine the order of precedence and so inform the Applicant in writing.

    To the extent that any utility systems installed are not in compliance with these policies or standards the developer is responsible to correct any deficiencies to bring these systems to an acceptable condition as determined by GRU. GRU reserves the right to deny service to the Applicant upon notification that the subject service is in non-conformance with applicable standards or utility plans approved by GRU.

    NOTWITHSTANDING any other provision of this agreement, it is understood that in the event the ordinances or policies of GRU regarding developer installed utility facilities to be accepted by GRU, are amended after the execution of this agreement, then in such event the amended ordinance(s) or policy(s) shall apply to those utility facilities constructed after the effective date of such amendments.

2. MATERIALS AND EQUIPMENT ADDED TO THE SYSTEM: The Applicant agrees that GRU retains the sole right to specify the size, type, and design of all utility systems and any other incidental components that may be required or added to the utility system.

3. PAYMENT REQUIREMENTS: All monies paid to GRU, relating to service to a particular location shall be paid by the Applicant in accordance with the rates and charges which are in effect at the time payment is made prior to rendering service.

4. RIGHTS OF WAY AND EASEMENTS: In accordance with the Gainesville Code of Ordinances, the Applicant shall grant or shall cause to be granted to GRU, without cost, all on-site and off-site rights-of-way, easements, deeded lands and privileges, for the proposed phase and all future phases of the subject project, which of GRU in the exercise of its sole discretion may deem necessary for the rendering and maintaining of any existing or proposed utility facilities and services, and/or for connecting and expanding utility service to adjacent property or new development and as indicated on approved construction drawings, (including but not limited to easements and rights-of-way granted to the City of Gainesville via easement documents and fee simple deeds or dedicated by recorded plat. Whereas a GRU lift station is required, GRU requires a minimum 50 foot by 50 foot site deeded to GRU conveyed by a warranty deed. Applicant shall supply to GRU any surveys and metes and bounds legal descriptions and sketches prepared by a registered land surveyor as needed for GRU's preparation of any instruments of conveyance or other legal documents as required for the subject project.

5. OBSTRUCTIONS WITHIN EASEMENTS: The Applicant agrees that no structures including, but not limited to, buildings, obstacles, signs, walls, vegetation or fences, where GRU in the exercise of its sole discretion, deems such structures unreasonably interferes with the operation and maintenance of its facilities, shall be located, constructed or created within any easement areas. Applicant hereby assumes all risk of loss for any structures placed within any easement area. Any permanent structures placed within an easement creates an encroachment, therefore, GRU will require removal at Applicant's expense and that the Applicant indemnify and hold harmless GRU from all claims and suits for damage to property and injuries to persons, including death, arising out of or relating to the existence or removal of the encroachment, or GRU's operation and maintenance of its utility facilities within the easement area and as related to the existence of the encroachment.

   Moveable fences may be permitted within easement areas, provided they are placed so as to allow ready access to utility facilities and provide a working space of not less than six feet (6') from fire hydrants and manhole centers, ten feet (10') from the opening side of any pad mounted equipment, and three feet (3') from water meters, valve box centers, and the other three sides of any pad mounted equipment.

6. INGRESS AND EGRESS: The Applicant shall provide ingress and egress to Gainesville Regional Utilities at no charge for the purpose of accessing the utility systems as identified in the approved construction drawings.

7. CONVEYANCE OF FACILITIES: The Applicant shall convey to GRU, legal title to all developer installed utility systems as constructed in accordance with the approved construction drawings free of any claims, liens, encroachments or encumbrances. Upon execution of this agreement by both parties, and upon acceptance of the subject facilities by GRU, the Applicant shall be released from, and GRU will accept, all

responsibility for the operation and maintenance of those facilities, other than the obligations of this Paragraph 7 and as expressly stipulated or described in the Applicant's Guarantee of the Work (See Line 9 Below).

8. CERTIFIED COST: Upon completion of construction and prior to acceptance by GRU of the completed utility facilities, GRU may require the Applicant to furnish to GRU a certified cost summary describing property units conveyed to GRU on forms to be provided. GRU retains the sole right to specify and the applicant agrees to construct any oversizing or extensions that in the opinion of GRU are necessary to provide utility service to adjacent or future sites. The Applicant certifies that all requested oversizing of facilities shall be completed in accordance with the terms and conditions of the applicable Oversizing Agreement, if any, and shall be specifically identified in the Certified Cost summary.

9. APPLICANT'S GUARANTEE OF THE WORK: The Applicant shall guarantee all materials and workmanship for a period of one year after the date of the completion letter. If any work should require repair or replacement due to faulty workmanship or failure of materials within a period of one (1) year of the date of the completion letter the Applicant shall make all repairs required to bring the system(s) to an acceptable condition as determined by GRU. The cost of all repairs during this maintenance period shall be the responsibility of the Applicant.

10. CONSTRUCTION PLAN APPROVAL: The Applicant shall obtain a Construction Permit from GRU prior to the start of construction. Substantial and progressive construction must begin in accordance with the approved plans within six (6) months from the date of the completion letter or the permit for construction shall expire. If the Construction Permit expires, the Applicant shall be required to resubmit an application to GRU or receive a written extension to the approval date from GRU. The expired plans shall be subject to review and modifications which may be necessary to bring the plans into compliance with the standards, specifications and policies in affect at the time the re-application is made. Any additional connection charges resulting from new charges imposed or amendments to changes occurring post-plan expiration must be paid by the Applicant prior to rendering service.

11. INDEMNIFY/HOLD HARMLESS: The Developer shall be solely responsible for, indemnify, and hold GRU, its officers and employees harmless from any loss, cost, injury or damages to, any persons or property caused as a result of the installation of utility facilities subject to this agreement.

12. ADDITIONAL FORMS: This Utility Agreement must include all the Agreements and Forms as indicated on Page 1. The Applicant must comply with the obligations as specified in the attached agreements.

B) GAINESVILLE REGIONAL UTILITIES OBLIGATIONS:

1. GRU agrees that upon acceptable completion and testing of the utility systems in the approved phases of the subject project, and subject to Applicant's guarantee of the work, to accept responsibility for the perpetual operation and maintenance of these facilities, in accordance with all Federal, State and local requirements, and in accordance with prudent utility practices.

2. GRU shall provide utility service, to the extent utility system capacity is available, to all individual properties within approved phases of the subject project, in accordance with current Utility Service Policies and City of Gainesville Code of Ordinances upon receipt of the following:

3.

- ♦ acceptance and release by the Florida Department of Environmental Protection (FDEP) and/or other permitting agencies, where applicable; and,
- ♦ payment of all appropriate fees by the Applicant and payment of any applicable connection charges by the customer; and,
- ♦ acceptable instruments of conveyance granted to GRU, without cost, for all on-site and off-site rights-of-way, easements, and privileges, necessary for GRU to install, operate and maintain the requested utility facilities for service to the subject project.

C) GENERAL:

1. This Agreement constitutes the entire agreement between the parties with respect to the subject matter herein.
2. This Agreement shall be construed in accordance with the laws of the State of Florida.
3. Should any litigation arise out of this Agreement, the same shall be prosecuted in the Circuit Court of the 8th Judicial Court, Alachua County, Florida or the state court having jurisdiction and so located.
4. No modifications of this Agreement shall be effective unless in writing signed by both parties.

CITY OF GAINESVILLE
GAINESVILLE REGIONAL UTILITIES

DATED this _____ day of _____, 200__.

APPLICANT OR AUTHORIZED REPRESENTATIVE (Letter of Authorization to GRU required if not signed by Applicant)	**CITY OF GAINESVILLE GAINESVILLE REGIONAL UTILITIES:**
By:_____	**By:**_____
(Please Print)	**(Please Print)**
Signature:_____	**Signature:** _____
Title: _____	**Title:** _____

PLEASE NOTE: The water/wastewater infrastructure (Developer) fees will be invoiced once the Utility Construction Permit is issued. These fees can include extension of water or sewer mains, meters, connection charges, Inspection fees, etc.

The entity responsible for the payment of the invoice must be a Gainesville Regional Utilities (GRU) customer or have an approved application with GRU Customer Service. Please visit **www.gru.com/MyBusiness/CustomerService/StartYourService.aspx** for the current application and process instruction.

ADDENDUM TO UTILITY AGREEMENT
Section A, Number 11. INDEMNIFY/HOLD HARMLESS

Developer understands that the referenced indemnity includes: 1) any construction of utility facilities by the developer on private property, or in a County or State Road Right-of-Way as specified by utility plans approved by Gainesville Regional Utilities (GRU), and 2) any loss, cost, or damages payable under the conditions of any permit(s) issued for such installation by County or State agencies.

APPLICANT OR AUTHORIZED REPRESENTATIVE

By:_____
(Please Print)

Signature:_____

Title:_____

Date:_____

WATER AND/OR WASTEWATER OVERSIZING AGREEMENT

THIS AGREEMENT TO BE COMPLETED PRIOR TO APPROVAL OF PLANS BY GRU

Applicant Name: _____ Date: _____
Development Name: _____
(The Project)

Description of Oversizing Requirements: (Please Be Specific)

☐ Water ☐ Wastewater ☐ Reclaimed Water

_____

_____

_____

_____

_____

_____

_____

_____

_____

Oversizing Reimbursement Amount: _____

The Applicant named above, is the developer of certain water distribution, wastewater pumping and/or wastewater collection facilities serving the above named project.

The City of Gainesville/Gainesville Regional Utilities, (GRU) has established policies within its Code of Ordinances including, but not limited to the provisions of Chapter 27 thereof to ensure the development of water distribution and wastewater collection systems which serve the public in a coordinated and efficient manner. The Ordinances prescribe the mechanisms to provide for necessary oversizing of developer constructed facilities.

The City through its utility system, Gainesville Regional Utilities (GRU), has requested the oversizing of certain of those water and/or wastewater facilities.

In consideration of the foregoing and the mutual promises set out below the parties agree to the following:

A) APPLICANT'S OBLIGATIONS:

1. Oversizing Cost Estimate: The Applicant shall provide GRU a written itemized cost estimate covering the minimum facilities required to serve the subject project and a written itemized cost estimate covering the actual facilities to be constructed. These estimates shall identify the incremental construction, engineering and interest costs (subject to restrictions) associated with the requested oversizing. The estimates shall be signed and sealed by a Professional Engineer registered in the State of Florida attesting to the fact that the cost estimates are based upon the best available and most recent cost information for similar work. Interest cost estimates shall be based upon the incremental oversizing cost estimates referenced above, the Applicant's current borrowing rate, and the expected time to complete the project. This estimate must be submitted to and approved by GRU prior to approval of plans by GRU or its designated engineer.

2. Installation: The Applicant agrees to construct all oversized facilities in accordance with the plans approved by GRU or its designated engineer.

3. Invoicing: The Applicant shall invoice GRU for the approved oversizing amount following completion of that portion of the water and/or wastewater facilities to be oversized within six months of the completion letter. The invoice shall not exceed the oversizing reimbursement amount agreed upon and shall be based upon the Contractor's actual final prices and quantities. The invoice shall be signed and sealed by a Professional Engineer registered in the State of Florida certifying to the validity of the contract prices and quantities, and actual interest costs shall be certified by the lender. The final invoice amount will be subject to GRU concurrence.

4. Reimbursement: The Applicant understands that reimbursement for change orders or additions shall only be made for items which have received prior written approval from GRU. The Applicant agrees that there will be no compensation, monetary or otherwise, for the connection of additional properties to facilities installed by the Applicant and conveyed to GRU.

B) GAINESVILLE REGIONAL UTILITIES OBLIGATIONS:

1. Utilization: GRU in its sole discretion may, without restriction, utilize the water distribution and/or wastewater pumping and collection facilities in whatever manner necessary, in accordance with the GRU's policies, to provide and/or improve utility service to the subject project or the surrounding areas.

2. Estimate: GRU shall review the oversizing estimate and establish an eligible amount for reimbursement. The reimbursement amount is subject to the approval of GRU. The amount of the oversizing reimbursement may be adjusted by GRU in accordance with the procedures contained in the City of Gainesville Code of Ordinances.

3. Reimbursement: Following completion and acceptance by GRU of the water distribution and/or wastewater pumping and collection facilities constructed on the above named project(s) and upon receipt from the Applicant of an original written invoice to GRU, the engineer's certified cost estimate and the Contractor's final signed contract unit prices and quantities, and provided that all conditions of this Agreement have been satisfactorily met, GRU shall within 30 days of receipt of the request issue an approval for payment to GRU accounting.

DATED this _____ day of _____, 20____.

APPLICANT OR AUTHORIZED REPRESENTATIVE	**CITY OF GAINESVILLE**
Letter of Authorization to GRU required if not signed by Applicant	**GAINESVILLE REGIONAL UTILITIES**
By: _____ (Please Print)	By: _____ (Please Print)
Signature: _____	Signature: _____
Title: _____	Title: _____

GRU Water & Wastewater System Oversizing Estimate Summary Sheet

Project Name: _____

Description: In order to provide potable water, reclaimed water, and wastewater facilities to adjacent offsite properties, the proposed utility systems must be oversized oversized beyond the minimum facilities required to serve just the proposed development. A summary of estimated costs for providing minimum facilities and for additional oversizing is presented below.

No.	Utility System	Minimum Facilities to Serve Development				Additional Facilities for Oversizing				Net Increase to Oversize
		Qty	Unit	Unit Cost	Total Cost	Qty	Unit	Unit Cost	Total Cost	
1	Water System		ls	$ -	$ -		ls	$ -	$ -	$ -
2	Reclaimed Water		ls	$ -	$ -		ls	$ -	$ -	$ -
3	Wastewater System		ls	$ -	$ -		ls	$ -	$ -	$ -
4	Lift Station		ls	$ -	$ -		ls	$ -	$ -	$ -
5	Engineering, Surveying				$ -		ls	$ -	$ -	$ -
					$ -				$ -	$ -
					$ -				$ -	$ -
					$ -				$ -	$ -
					$ -				$ -	$ -
Total Estimate for Minimum Facilities:					**$ -**	***Total Est for Oversized Facilities:***			**$ -**	**$ -**

(Sign & Seal)

Engineer of Record: _____ P.E.No: _____ Date: _____

Engineering Firm: _____ Certificate of Authorization No: _____

GRU Water System Oversizing Estimate

Project Name: _____

Description: In order to provide potable water, reclaimed water, and wastewater facilities to adjacent offsite properties, the proposed utility systems must be oversized beyond the minimum facilities required to serve just the proposed development. A cost estimate for providing minimum facilities and for providing oversizing is presented below.

No.	Description of Itemized Cost	Minimum Facilities to Serve Development					Additional Facilities for Oversizing					Net Increase to Oversize
		Item	Qty	Unit	Unit Cost	Extended Cost	Item	Qty	Unit	Unit Cost	Extended Cost	
1						$ -					$ -	$ -
						$ -					$ -	$ -
2						$ -					$ -	$ -
						$ -					$ -	$ -
3						$ -					$ -	$ -
						$ -					$ -	$ -
4						$ -					$ -	$ -
						$ -					$ -	$ -
5						$ -					$ -	$ -
						$ -					$ -	$ -
6						$ -					$ -	$ -
						$ -					$ -	$ -
7						$ -					$ -	$ -
						$ -					$ -	$ -
8						$ -					$ -	$ -
						$ -					$ -	$ -
9						$ -					$ -	$ -
						$ -					$ -	$ -
10						$ -					$ -	$ -
						$ -					$ -	$ -
11						$ -					$ -	$ -
						$ -					$ -	$ -
12						$ -					$ -	$ -
						$ -					$ -	$ -
					Total Estimate for Minimum Facilities:	**$ -**				***Total Estimate for Oversized Facilities:***	**$ -**	**$ -**

GRU Reclaimed Water System Oversizing Estimate

Project Name: _____

Description: In order to provide potable water, reclaimed water, and wastewater facilities to adjacent offsite properties, the proposed utility systems must be oversized beyond the minimum facilities required to serve just the proposed development. A cost estimate for providing minimum facilities and for providing oversizing is presented below.

No.	Description of Itemized Cost	Minimum Facilities to Serve Development					Additional Facilities for Oversizing					Net Increase to Oversize
		Item	Qty	Unit	Unit Cost	Extended Cost	Item	Qty	Unit	Unit Cost	Extended Cost	
1						$ -					$ -	$ -
						$ -					$ -	$ -
2						$ -					$ -	$ -
						$ -					$ -	$ -
3						$ -					$ -	$ -
						$ -					$ -	$ -
4						$ -					$ -	$ -
						$ -					$ -	$ -
5						$ -					$ -	$ -
						$ -					$ -	$ -
6						$ -					$ -	$ -
						$ -					$ -	$ -
7						$ -					$ -	$ -
						$ -					$ -	$ -
8						$ -					$ -	$ -
						$ -					$ -	$ -
9						$ -					$ -	$ -
						$ -					$ -	$ -
10						$ -					$ -	$ -
						$ -					$ -	$ -
11						$ -					$ -	$ -
						$ -					$ -	$ -
12						$ -					$ -	$ -
						$ -					$ -	$ -
					Total Estimate for Minimum Facilities:	**$ -**				***Total Estimate for Oversized Facilities:***	**$ -**	**$ -**

GRU Wastewater System Oversizing Estimate

Project Name: _____

Description: In order to provide potable water, reclaimed water, and wastewater facilities to adjacent offsite properties, the proposed utility systems must be oversized beyond the minimum facilities required to serve just the proposed development. A cost estimate for providing minimum facilities and for providing oversizing is presented below.

No.	Description of Itemized Cost	Minimum Facilities to Serve Development					Additional Facilities for Oversizing					Net Increase to Oversize
		Item	Qty	Unit	Unit Cost	Extended Cost	Item	Qty	Unit	Unit Cost	Extended Cost	
1						$ -					$ -	$ -
						$ -					$ -	$ -
2						$ -					$ -	$ -
						$ -					$ -	$ -
3						$ -					$ -	$ -
						$ -					$ -	$ -
4						$ -					$ -	$ -
						$ -					$ -	$ -
5						$ -					$ -	$ -
						$ -					$ -	$ -
6						$ -					$ -	$ -
						$ -					$ -	$ -
7						$ -					$ -	$ -
						$ -					$ -	$ -
8						$ -					$ -	$ -
						$ -					$ -	$ -
9						$ -					$ -	$ -
						$ -					$ -	$ -
10						$ -					$ -	$ -
						$ -					$ -	$ -
11						$ -					$ -	$ -
						$ -					$ -	$ -
12						$ -					$ -	$ -
						$ -					$ -	$ -
					Total Estimate for Minimum Facilities:	**$ -**				***Total Estimate for Oversized Facilities:***	**$ -**	**$ -**

GRU Lift Station Oversizing Estimate

Project Name: _____

Description: In order to provide potable water, reclaimed water, and wastewater facilities to adjacent offsite properties, the proposed utility systems must be oversized beyond the minimum facilities required to serve just the proposed development. A cost estimate for providing minimum facilities and for providing oversizing is presented below.

No.	Description of Itemized Cost	Minimum Facilities to Serve Development					Additional Facilities for Oversizing					Net Increase to Oversize
		Item	Qty	Unit	Unit Cost	Extended Cost	Item	Qty	Unit	Unit Cost	Extended Cost	
1						$ -					$ -	$ -
						$ -					$ -	$ -
2						$ -					$ -	$ -
						$ -					$ -	$ -
3						$ -					$ -	$ -
						$ -					$ -	$ -
4						$ -					$ -	$ -
						$ -					$ -	$ -
5						$ -					$ -	$ -
						$ -					$ -	$ -
6						$ -					$ -	$ -
						$ -					$ -	$ -
7						$ -					$ -	$ -
						$ -					$ -	$ -
8						$ -					$ -	$ -
						$ -					$ -	$ -
9						$ -					$ -	$ -
						$ -					$ -	$ -
10						$ -					$ -	$ -
						$ -					$ -	$ -
11						$ -					$ -	$ -
						$ -					$ -	$ -
12						$ -					$ -	$ -
						$ -					$ -	$ -
					Total Estimate for Minimum Facilities:	**$ -**				***Total Estimate for Oversized Facilities:***	**$ -**	**$ -**

GRU Force Main Rebate Calculations

Project Name: _____

Lift Station Design Data

Number of Residential Units:		units				
Lift Station Capacity (Peak Flow):		gpm	or		gpd	
Lift Station Peaking Factor:	2.50					
Lift Station Average Daily Flow:	0	gpd	/	2.50	=	gpd

Equivalent Residential Connection (ERC)

Average Daily Flow per Connection:		gpd				
Equivalent Residential Connection:		gpd	/	0	=	ERC

Force Main Cost Estimate

Total Force Main Construction Costs:	
GRU Paid Force Main Oversizing:	
Developer's Net Costs:	

Force Main Cost Estimate by Segment

Force Main Segment	Length	Percent	Pro-Rata Cost
Total Length of Force Main:			
Onsite Force Main:			
Offsite Force Main:			

Rebate & Cost Share

Connect to FM via Lift Station per ERC:		/		=
Connect to Onsite FM per ERC (50% of Total):		/		=
Connect to Offsite FM per ERC (50% of Offsite):		/		=
Developer's Cost Share:	units	x		=
Maximum Possible Developer Rebate:		-		=

GRU Lift Station Rebate Calculations

Project Name: _____

Lift Station Design Data

Number of Residential Units:		units				
Lift Station Capacity (Peak Flow):		gpm	or		gpd	
Lift Station Peaking Factor:	2.50					
Lift Station Average Daily Flow:		gpd	/	2.50	=	gpd

Equivalent Residential Connection (ERC)

Average Daily Flow per Connection:		gpd				
Equivalent Residential Connection:		gpd	/		=	ERC's

Lift Station Cost Estimate

Total Lift Station Construction Costs:	
GRU Paid Lift Station Oversizing:	
Developer's Net Costs:	

Rebate & Cost Share

Rebate Charge per ERC:		/		=	
Developer's Cost Share:	units	x		=	
Maximum Possible Developer Rebate:		-		=	

Cost Estimate for Lift Station / Force Main Reimbursement Agreement
Project Name

Description:

In order to provide wastewater services to offsite properties to the east, west, and south, the proposed lift station and force main must be oversized beyond the minimum facilities required to serve just the proposed Weatherly development. A cost estimate for providing minimum wastewater services and for providing additional facilities for oversizing is presented below.

No.	Description of Itemized Cost	Minimum Facilities to Serve Development				Additional Facilities for Oversizing				Net Increase to Provide Oversize
		Item	Quantity	Unit Price	Total Unit Cost	Item	Quantity	Unit Price	Total Unit Cost	
1	Force Main									
		Force Main Estimate Sub-Total:				*Force Main Net Increase Estimate Sub-Total:*				
2	Lift Station									
		Lift Station Estimate Sub-Total:				*Lift Station Net Increase Estimate Sub-Total:*				
		Total Estimate to Provide Minimum Facilities:				*Total Net Increase Estimate for Oversizing:*				
		Combined Total for Providing Minimum and Oversizing Facilities:								

(Sign & Seal)

Engineer of Record: _____ P.E.No: _____ Date _____

Engineering Firm: _____ Certificate of Authorization No: _____

GRU Water & Wastewater System Oversizing Interest Cost Summary Sheet

GRU will reimburse Applicant six months of interest cost associated with the incremental cost of the requested oversizing based on the calculation below. GRU will not reimburse Applicant for origination fees, closing costs, interest amounts in excess of those stated herein, or any other fees associated with borrowings for oversizing. Oversizing interest reimbursement will be calculated as 6 equal monthly draws of the total oversizing amount multiplied by the Prime Rate* for the borrowing period. When oversizing construction costs are finalized, Applicant will submit the interest reimbursement request based on these finalized construction costs.

Line 1	Incremental Cost of Oversizing	
Line 2	Interest Rate	

	Amount		(Line 2) / 12		Periods		Interest
(Line 1) / 6	$0.00	X		X	6	=	
(Line 1) / 6	$0.00	X		X	5	=	
(Line 1) / 6	$0.00	X		X	4	=	
(Line 1) / 6	$0.00	X		X	3	=	
(Line 1) / 6	$0.00	X		X	2	=	
(Line 1) / 6	$0.00	X		X	1	=	
					Total Interest Refund		

Signature of Company Representative | Title | Date

* As published in the Wall Street Journal on the first business day of the month in which reimbursement is requested

GAINESVILLE REGIONAL UTILITIES
Water & Wastewater Engineering

CERTIFIED COSTS – LIFT STATION

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

Project name:
Location:

GRU Job Numbers (oversizing):*

QTY	UNITS	CPR	DESCRIPTION	TOTAL COST
	EA	30-333-300-0149	5 HP Flygt Pumps & Accessories	$
	EA	30-333-300-0153	10 HP Flygt Pumps & Accessories	$
	EA	30-333-300-____	___ HP Flygt Pumps & Accessories	$
	EA	30-333-300-0129	Quality Controls Duplex Control Panel & Accessories	$
	EA	30-333-300-0130	Quality Controls Triplex Control Panel & Accessories	$
	EA	30-377-830-0034	Manhole - 4’ or 6’	$
	EA	30-336-300-0175	Valve vault – 4’x6’ or 6’x6’	$
	EA	30-336-300-0173	Wetwell - duplex	$
	EA	30-336-300-0174	Wetwell - triplex	$
	EA	30-378-830-210	4" Plug valve (Force mains)	$
		Manufactured By:		Depth to Nut (inches):
		Number of Turns to Close:	Direction to Close (CW or CCW):	
	EA	30-378-830-0220	6” Plug valve (Force mains)	$
		Manufactured By:		Depth to Nut (inches):
		Number of Turns to Close:	Direction to Close (CW or CCW):	
	EA	30-378-830-0230	8" Plug valve (Force mains)	$
		Manufactured By:		Depth to Nut (inches):
		Number of Turns to Close:	Direction to Close (CW or CCW):	
	EA	30-378-830-____	___" Plug valve (Force mains)	$
		Manufactured By:		Depth to Nut (inches):
		Number of Turns to Close:	Direction to Close (CW or CCW):	
	EA	30-378-830-0334	4" Gate valve (Force mains)	$
		Manufactured By:		Depth to Nut (inches):
		Number of Turns to Close:	Direction to Close (CW or CCW):	
	EA	30-378-830-0336	6" Gate valve (Force mains)	$
		Manufactured By:		Depth to Nut (inches):
		Number of Turns to Close:	Direction to Close (CW or CCW):	

GAINESVILLE REGIONAL UTILITIES
Water & Wastewater Engineering

CERTIFIED COSTS – LIFT STATION

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

QTY	UNITS	CPR	DESCRIPTION	TOTAL COST
	EA	30-378-830-____	___" Gate valve (Force mains)	$
		Manufactured By:		Depth to Nut (inches):
		Number of Turns to Close:	Direction to Close (CW or CCW):	
	EA	30-377-820-____	___" Round Port Plug valve (Gravity mains)	$
		Manufactured By:		Depth to Nut (inches):
		Number of Turns to Close:	Direction to Close (CW or CCW):	
	EA	30-329-300-new	Fencing	$
	EA	30-329-300-new	Landscaping	$
	EA	30-329-300-new	Asphalt Access Road	$
	EA	30-334-300-new	Misc. Equipment (Generator, etc.): _____	$

I certify that these are true and correct costs.

Name_____

Florida Underground Utility and Excavation License No._____

Expiration Date_____

Company Name_____

Address_____

City_____ State_____ Zip_____

Telephone_____ Fax_____ Email_____

GAINESVILLE REGIONAL UTILITIES
Water & Wastewater Engineering

CERTIFIED COSTS – WATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

Project name:
Location:

GRU Job Numbers (oversizing):*

QUANTITY/UNITS	PROP UNIT CODE	ASSET DESCRIPTION	TOTAL INSTALLED COST
FT	20-377-820-0008	6" MAIN (DIP)	$
	Manufactured By:		PSI CLASS:
FT	20-377-820-0008	6" MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI CLASS:
FT	20-377-820-0009	8" MAIN (DIP)	$
	Manufactured By:		PSI CLASS:
FT	20-377-820-0009	8" MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI CLASS:
FT	20-377-820-0011	12" MAIN (DIP)	$
	Manufactured By:		PSI CLASS:
FT	20-377-820-0011	12" MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI CLASS:
FT	20-377-820-___	___" MAIN (DIP)	$
	Manufactured By:		PSI CLASS:
FT	20-377-820-___	___" MAIN BY BORE & JACK (DIP)	$
	Manufactured By:	PSI CLASS:	
FT	20-377-820-0020	2" MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	20-377-820-0020	2" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:
FT	20-377-820-0022	4" MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	20-377-820-0022	4" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:

CERTIFIED COSTS – WATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

FT	20-377-820-0023	6" MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	20-377-820-0023	6" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:	PSI RATING:	
FT	20-377-820-0024	8" MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	20-377-820-0024	8" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:
FT	20-377-820-____	___"MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	20-377-820-____	___"MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:
FT	20-377-____	___" MAIN (HDPE)	$
	Manufactured By:		PSI RATING:
FT	20-377-____	___" MAIN BY DIRECTIONAL BORE(HDPE)	$
	Manufactured By:		PSI RATING:
EA	20-377-820-0032	2" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	20-377-820-0034	4" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	20-377-820-0035	6" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	20-377-820-0036	8" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	20-377-820-0038	12" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	20-377-820-____	___" VALVE & BOX (TYPE_____)	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	

GAINESVILLE REGIONAL UTILITIES
Water & Wastewater Engineering

CERTIFIED COSTS – WATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

EA	20-379-820-0060	1" PE (Tubing) SERVICE w/TAP		$
	Manufactured By:			
	Distance along Main (inches) included on Record Drawings (please initial):		AsBuilt Recorded Length (inches) included on Record Drawings (please initial):	
EA	20-379-820-0061	1" PVC(Sch40) SERVICE w/TAP		$
	Manufactured By:			
	Distance along Main (inches) included on Record Drawings (please initial):		AsBuilt Recorded Length (inches) included on Record Drawings (please initial):	
EA	20-379-820-0032	2" PVC(Sch40) SERVICE w/TAP		$
	Manufactured By:			
	Distance along Main (inches) included on Record Drawings (please initial):		AsBuilt Recorded Length (inches) included on Record Drawings (please initial):	
EA	20-382-820-0129	FIRE HYDRANT ASSEMBLY		$
	Manufactured By:			Tag #:
	Nozzle Diameter 1 (inches):	Nozzle Diameter 2 (inches):		Nozzle Diameter 3 (inches):
EA	20-382-820-0118	FIRE HYDRANT VALVE		$
	Manufactured By			Depth to Nut (inches):
CY	REMOVE UNSUITABLE SOILS			$
CY	IMPORT SOILS			$

I certify that these are true and correct costs.

Name_____

Florida Underground Utility and Excavation License No._____

Expiration Date_____

Company Name_____

Address_____

City_____ State_____ Zip_____

Telephone_____ Fax_____ Email_____

GAINESVILLE REGIONAL UTILITIES
Water & Wastewater Engineering

CERTIFIED COSTS – RECLAIMED WATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

Project name:
Location:

GRU Job Numbers (oversizing):*

QUANTITY/UNITS	PROP UNIT CODE	ASSET DESCRIPTION	TOTAL INSTALLED COST
FT	30-387-820-0007	4" MAIN (DIP)	$
	Manufactured By:		PSI CLASS:
FT	30-387-820-0007	4" MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI CLASS:
FT	30-387-820-0008	6" MAIN (DIP)	$
	Manufactured By:		PSI CLASS:
FT	30-387-820-0008	6" MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI CLASS:
FT	30-387-820-0009	8" MAIN (DIP)	$
	Manufactured By:		PSI CLASS:
FT	30-387-820-0009	8" MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI CLASS:
FT	30-387-820-____	___" MAIN (DIP)	$
	Manufactured By:		PSI CLASS:
FT	30-387-820-____	___" MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI CLASS:
FT	30-387-830-0430	2" MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	30-387-830-0430	2" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:
FT	30-387-830-0431	4" MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	30-387-830-0431	4" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:
FT	30-387-830-0420	6" MAIN (PVC)	$
	Manufactured By:		PSI RATING:

GAINESVILLE REGIONAL UTILITIES
Water & Wastewater Engineering

CERTIFIED COSTS – RECLAIMED WATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

QUANTITY/UNITS	PROP UNIT CODE	ASSET DESCRIPTION	TOTAL INSTALLED COST
FT	30-387-830-0420	6" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:
FT	30-387-830-0438	8" MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	30-387-830-0438	8" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:
FT	30-387-830-____	___" MAIN (PVC)	$
	Manufactured By:		PSI RATING:
FT	30-387-830-____	___" MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI RATING:
EA	30-387-820-0032	2" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	30-387-820-0034	4" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	30-387-820-0035	6" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	30-387-820-0036	8" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	30-387-820-____	___" GATE VALVE & BOX	$
	Manufactured By:	Depth to Nut (inches)included on Record Drawings (please initial):	
EA	30-387-820-0060	1" PE (Tubing) SERVICE w/TAP	$
	Manufactured By:		
	Distance along Main (inches) included on Record Drawings (please initial):	AsBuilt Recorded Length (inches) included on Record Drawings (please initial):	
EA	30-387-820-0460	1" PVC(Sch40) SERVICE w/TAP	$
	Manufactured By:		
EA	Distance along Main (inches) included on Record Drawings (please initial):	AsBuilt Recorded Length (inches) included on Record Drawings (please initial):	
	30-387-820-0061	2" PVC(Sch40) SERVICE w/TAP	$
	Manufactured By:		

CERTIFIED COSTS – RECLAIMED WATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

QUANTITY/UNITS	PROP UNIT CODE	ASSET DESCRIPTION	TOTAL INSTALLED COST
	Distance along Main (inches) included on Record Drawings (please initial):	AsBuilt Recorded Length (inches) included on Record Drawings (please initial):	
CY	REMOVE UNSUITABLE SOILS		$
CY	IMPORT SOILS		$

I certify that these are true and correct costs.

Name_____

Florida Underground Utility and Excavation License No._____

Expiration Date_____

Company Name_____

Address_____

City_____ State_____ Zip_____

Telephone_____ Fax_____ Email_____

CERTIFIED COSTS – WASTEWATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

Project name:
Location:

GRU Job Numbers (oversizing):*

QUANTITY/ UNITS	CPR	DESCRIPTION	TOTAL INSTALLED COST
FT	30-377-830-0030	8" GRAVITY MAIN, 3' – 14' DEPTH (DR-35 PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0030	8" GRAVITY MAIN, 15' – 20' DEPTH (DR-26 PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0030	8" GRAVITY MAIN, 21' – 25' DEPTH (DR-18 PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0030	8" GRAVITY MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0030	8" GRAVITY MAIN BY HDD (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0032	12" GRAVITY MAIN, 3' – 14' DEPTH (DR-35 PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0032	12" GRAVITY MAIN, 15' – 20' DEPTH (DR-26 PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0032	12" GRAVITY MAIN, 21' – 25' DEPTH (DR-18 PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0032	12" GRAVITY MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0032	12" GRAVITY MAIN BY HDD (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-___	___" GRAVITY MAIN, 3' – 14' DEPTH (DR-35 PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-___	___" GRAVITY MAIN, 15' – 20' DEPTH (DR-26 PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-___	___" GRAVITY MAIN, 21' – 25' DEPTH (DR-18 PVC)	$
	Manufactured By:		PSI Rating:

CERTIFIED COSTS – WASTEWATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

FT	30-377-___	___" GRAVITY MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-___	___" GRAVITY MAIN BY HDD (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0058	8" GRAVITY MAIN, 3' – 14' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0058	8" GRAVITY MAIN, 15' – 20' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0058	8" GRAVITY MAIN, 21' – 25' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0058	8" GRAVITY MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0062	12" GRAVITY MAIN, 3' – 14' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0062	12" GRAVITY MAIN, 15' – 20' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0062	12" GRAVITY MAIN, 21' – 25' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-830-0062	12" GRAVITY MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-____	___" GRAVITY MAIN, 3' – 14' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-____	___" GRAVITY MAIN, 15' – 20' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-____	___" GRAVITY MAIN, 21' – 25' DEPTH (DIP)	$
	Manufactured By:		PSI Rating:
FT	30-377-____	___" GRAVITY MAIN BY BORE & JACK (DIP)	$
	Manufactured By:		PSI Rating:

CERTIFIED COSTS – WASTEWATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

FT	30-377-____	___" GRAVITY MAIN, 3' – 14' DEPTH (HDPE)	$
	Manufactured By:		PSI Rating:
FT	30-377-____	___" GRAVITY MAIN, 15' – 20' DEPTH (HDPE)	$
	Manufactured By:		PSI Rating:
FT	30-377-____	___" GRAVITY MAIN, 21' – 25' DEPTH (HDPE)	$
	Manufactured By:		PSI Rating:
FT	30-377-____	___" GRAVITY MAIN BY BORE & JACK (HDPE)	$
	Manufactured By:		PSI Rating:
FT	30-377-____	___" GRAVITY MAIN BY HDD (HDPE)	$
	Manufactured By:		PSI Rating:
EA	30-377-830-0034	MANHOLE, 3' – 14' (4' Diameter)	$
	Manufactured By:		Elevations Included on Record Drawings (Please initial):
EA	30-377-830-0034	MANHOLE, 15' – 20' (6' Diameter)	$
	Manufactured By:		Elevations Included on Record Drawings (Please initial):
EA	30-377-830-0034	MANHOLE, 21' – 25' DEPTH (6' Diameter)	$
	Manufactured By:		Elevations Included on Record Drawings (Please initial):
FT	30-378-830-0104	4" FORCE MAIN (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378-830-0104	4" FORCE MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378-830-0104	4" FORCE MAIN BY HDD (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378-830-0106	6" FORCE MAIN (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378-830-0106	6" FORCE MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378-830-0106	6" FORCE MAIN BY HDD (PVC)	$
	Manufactured By:		PSI Rating:

GAINESVILLE REGIONAL UTILITIES
Water & Wastewater Engineering

CERTIFIED COSTS – WASTEWATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

FT	30-378-830-0108	8" FORCE MAIN (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378-830-0108	8" FORCE MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378-830-0108	8" FORCE MAIN BY HDD (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378	___" FORCE MAIN (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378	___" FORCE MAIN BY BORE & JACK (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378	___" FORCE MAIN BY HDD (PVC)	$
	Manufactured By:		PSI Rating:
FT	30-378-____	___" FORCE MAIN (HDPE)	$
	Manufactured By:		PSI Rating:
FT	30-378-____	___" FORCE MAIN BY BORE & JACK (HDPE)	$
	Manufactured By:		PSI Rating:
FT	30-378-____	___" FORCE MAIN BY HDD (HDPE)	$
	Manufactured By:		PSI Rating:
LS	XX-XXX-XXX-XXXX	RAVEN LINING FOR EXISTING MANHOLE CONNECTED TO NEW FORCE MAIN	$
EA	30-378-830-0210	4" PLUG VALVE	$
	Manufactured By:	Depth to Nut (inches) included on Record Drawings (please initial):	
	Number of Turns to Close:	Direction to Close (CW or CCW):	
EA	30-378-830-0220	6" PLUG VALVE	$
	Manufactured By:		Depth to Nut (inches):
EA	30-378-830-0230	8" PLUG VALVE	$
	Manufactured By:		Depth to Nut (inches):
EA	30-378-___	___" PLUG VALVE	$
	Manufactured By:		Depth to Nut (inches):
EA	30-378-___	___" AIR RELEASE VALVE	$
	Manufactured By:		Depth to Nut (inches):
EA	30-378-830-0120	MANHOLE (for Air Release Valve)	

GAINESVILLE REGIONAL UTILITIES
Water & Wastewater Engineering

CERTIFIED COSTS – WASTEWATER

The Total Certified Cost of an item should include all design, survey, labor, materials and equipment required for the installation, i.e. the cost to the client. Failure to accurately complete all relevant fields and provide record drawings will delay water meter sets.

	Manufactured By:			
EA	30-379-830-0414	4" SERVICE LATERAL		$
	Manufactured By:			
	Distance along Main (in feet) included on Record Drawing (please initial):		AsBuilt Recorded Length included on Record Drawing (please initial)::	
EA	30-379-830-0416	6" SERVICE LATERAL		$
	Manufactured By:			
	Distance along Main (in feet) included on Record Drawing (please initial):		AsBuilt Recorded Length included on Record Drawing (please initial)::	
CY	XX-XXX-XXX-XXXX	REMOVE UNSUITABLE SOILS		$
CY	XX-XXX-XXX-XXXX	IMPORT SOILS		$

I certify that these are true and correct costs.

Name_____

Florida Underground Utility and Excavation License No._____

Expiration Date_____

Company Name_____

Address_____

City_____ State_____ Zip_____

Telephone_____ Fax_____ Email_____

CERTIFIED COSTS – DEVELOPER SUPPLEMENTAL FORM

This form shall be completed by the Developer or their authorized agent, and will be used to supplement the Certified Costs received directly from the Contractor. Please include all design, survey, applicable fees and all other charges required for the installation, i.e. the total cost to the client/developer. Failure to provide this information along with the Certified Costs will delay water meter sets.

PROJECT NAME:_____

Description of Charges	Cost
Total Cost of Water System Paid to Contractor	
Total Cost of Wastewater System Paid to Contractor	
Total Cost of Reclaimed Water System Paid to Contractor	
Total Cost of Lift Station System Paid to Contractor	
Engineering	
Surveying	
Easements	
Legal Fees	
Additional Item	
Additional Item	
Additional Item	
Additional Item	
Additional Item	
Total Paid for Water/Wastewater Systems	

INFORMATION PROVIDED ABOVE ACCURATELY IDENTIFIES THE COSTS ASSOCIATED WITH THE INSTALLATION OF THE WATER/WASTEWATER SYSTEMS PAID BY THE DEVELOPER IN THEIR ENTIRETY.

COMPLETED BY:_____

SIGNATURE:_____

COMPANY:_____

PHONE NUMBER:_____

WATER AND/OR WASTEWATER
PRIVATE OR PARTIAL OWNERSHIP AGREEMENT

THIS AGREEMENT TO BE COMPLETED PRIOR TO APPROVAL OF PLANS BY GRU

Applicant Name: _____ **DATE: _____**
Development Name: _____
(The Project)

Description of Facilities to be Maintained by GRU:
(State none or give specific description of partially maintained facility)

☐ Water ☐ Wastewater ☐ Reclaimed Water

_____

_____

_____

_____

_____

_____

Description of Facilities to be Maintained by Applicant:
(State entire or give specific description of partially maintained facility)

☐ Water ☐ Wastewater ☐ Reclaimed Water

_____

_____

_____

_____

_____

_____

The Applicant being the owner of certain water distribution, wastewater pumping and/or wastewater collection facilities serving the above named project, desires to perpetually maintain and operate all or a portion of said facilities and to connect the same to the existing central water distribution and/or wastewater collection facility owned and operated by GRU.

The City of Gainesville/Gainesville Regional Utilities, (GRU) owns and operates public utilities defined in this agreement as water distribution, reclaimed water distribution, wastewater collection systems, electric and gas transmission and distribution systems, and communication services.

In consideration of these facts and the mutual promises set out in this Agreement, the parties agree to the following:

A) **APPLICANT'S OBLIGATIONS:**

1. Operation and Maintenance: The Applicant hereby accepts the sole responsibility for the perpetual operation and maintenance of the facilities described above as to be maintained by Applicant, in accordance with all State, Federal and Local requirements.

   The Applicant shall be responsible for water and wastewater system inspection fees.

   To ensure continuous adequate utility service, and to ensure a clean, orderly and presentable appearance, the Applicant shall perform maintenance and repairs with due diligence and in accordance with generally acceptable utility practice to the water and/or wastewater systems maintained by the Applicant subject to this agreement.

   The Applicant shall submit proof of registration with Sunshine One Call of Florida, Inc. and the name and license number of the underground utility maintenance entity to GRU herewith.

   a) Sunshine One Call Member Code _____

   b) Maintenance Entity _____
      License # _____

   The Applicant shall be solely responsible for maintaining utility service to the properties maintained by the Applicant subject to this agreement, and for the reestablishment of service, at its own cost, in a timely and prudent manner. In instances of utility disruptions beyond the control of the Applicant, the Applicant shall provide temporary wastewater service during periods of power outage in consideration of reasonable practicality for the conditions present and to provide continuous water service during periods of long term disruptions as far as practical.

   The applicant understands that water and/or wastewater service may by interrupted by GRU at any time during periods of maintenance or failure of GRU's central systems. Upon notification by GRU of a service interruption, (contact person's name _____ and phone number _____) the Owner shall be responsible to place all wastewater pumping equipment in the off position and shall be required to provide on-site storage disposal of wastewater during service interruption periods. The applicant shall also provide temporary water service if required by whatever means necessary.

   In the event the Applicant decides to sell this property, GRU shall be notified and the responsibilities of this agreement shall be transferred to the new owner and remain in full effect.

2. Future Modifications: The Applicant shall, at Applicant's expense, make all future modifications to its facilities which may be required to provide acceptable and continuous utility service to the subject project in accordance with all prevailing City of Gainesville Ordinances. The Applicant shall upgrade the water and/or wastewater systems as necessary to maintain service to the subject project. The applicant understands that these required upgrades may result from changes in GRU's water distribution and/or wastewater collection and force main systems. These changes may include but are not limited to changes in line pressure.

3. Indemnity/Hold Harmless: The Applicant shall be solely responsible for, indemnify and hold GRU, its officers and employees harmless from any damages to persons, property or facilities, arising from operation and maintenance of those water and/or wastewater systems maintained by the Applicant subject to this Agreement.

4. Resale: The Applicant acknowledges that the resale of GRU potable water for profit is prohibited. Charges for water service shall at a maximum recover the cost of potable water and any costs Associated with the operation, maintenance and administration of the on-site distribution system.

5. Permits: The Applicant shall make application for and secure all required construction and operating permits from the Florida Department of Environmental Protection (FDEP) and all other applicable Federal, State and Local agencies. The Applicant shall also submit to GRU written release and authorization from FDEP and other permitting agencies to place the water and/or wastewater systems into operation prior to the rendering of service by GRU.

B) GAINESVILLE REGIONAL UTILITES OBLIGATIONS:

Following payment of all appropriate fees by the Applicant and payment of any applicable connection charges by the customer and receipt of all permits in Paragraph 5 above, GRU agrees to provide utility service, to the extent water and/or wastewater treatment plant and system capacity is available, to all individual properties within the subject project, and to provide meters and metering appurtenances, and services as required to provide water and/or wastewater service in accordance with the prevailing Water and Wastewater service Policies and the City of Gainesville Ordinance.

Dated this _____ day of _____, 200___.

APPLICANT OR AUTHORIZED REPRESENTATIVE
(Letter of Authorization to GRU required if not signed by Applicant)

By: _____
(Please Print)

Signature: _____

Title: _____

CITY OF GAINESVILLE
GAINESVILLE REGIONAL UTILITIES

By:_____
(Please Print)

Signature: _____

Title: _____

LIFT STATION/FORCE MAIN REIMBURSEMENT AGREEMENT

THIS AGREEMENT TO BE COMPLETED PRIOR TO APPROVAL OF PLANS BY GRU

Applicant Name: _____ Date: _____
Development Name: _____
(The Project)

The City of Gainesville/Gainesville Regional Utilities, (GRU) has established policies within its Code of Ordinances to ensure the development of wastewater collection systems that service the public in a coordinated and efficient manner. The Ordinances provide the mechanisms to allow for the reimbursement to the developer for certain constructed facilities when these facilities are utilized to provide utility service to properties outside of the original development.

The Applicant named above, is the developer of certain wastewater pumping and/or wastewater collection facilities serving the above named project.

The City through its utility systems, Gainesville Regional Utilities (GRU), has determined that the wastewater facilities installed by the Applicant will provide utility service to properties outside the above named project, provided that capacity is available at the time this service is required.

In consideration of the foregoing and the mutual promises set out below the parties agree to the following:

Applicants Obligations:

1. The Applicant shall provide GRU a written itemized cost estimate covering the minimum facilities required to serve the subject project and a written itemized cost estimate covering the actual facilities to be constructed. These estimates shall identify the incremental construction, engineering and finance costs associated with the facilities subject to reimbursement. The estimates shall be signed and sealed by a Professional Engineer registered in the State of Florida attesting to the fact that the cost estimates are based upon best available and most recent cost information for similar work.

2. The Applicant shall provide GRU an itemized reimbursement schedule based upon the Contractor's actual final unit prices and quantities, following completion and acceptance of the water/wastewater facilities. The schedule shall be signed and sealed by a professional engineer registered in the State of Florida attesting to the validity of the contract prices and quantities. The final reimbursement amount will be subject to GRU concurrence.

3. The Applicant understands that reimbursement for change orders or additions shall only be made for items that have received prior written approval from GRU.

4. The Applicant agrees that there will be no additional compensation, monetary or otherwise, other than that provided for in this agreement for the connection of additional properties to facilities installed by the Applicant and conveyed to GRU.

5. The Applicant agrees to notify GRU of any changes in the status of the Corporation or legal entity authorized to receive the approved reimbursement. Failure to notify GRU may result in forfeiture of all or part of any reimbursement.

6. The Applicant agrees that he may receive no more than the maximum rebate total amount. The maximum amount is the amount above the Applicant's share of the facility cost. The Applicant's share of the cost is based upon the capacity utilized for the Applicant's entire development including any undeveloped portions or phases.

7. The Applicant agrees to hold GRU harmless in the event of any disputes.

8. The Applicant agrees to provide equal access to the subject utility system to any properties that may be served by the subject utility system.

Gainesville Regional Utilities Obligations:

1. GRU shall review the facility construction costs and establish an eligible amount for reimbursement.

2. GRU shall determine the facility capacity based upon practices, policies and system conditions in effect at the time the determination is made.

3. GRU shall determine the reimbursement amount using the facility capacity and approved costs. The reimbursement amount shall be collected on an equivalent residential connection, ERC, basis. The reimbursement amount (See Page 4: APPROVED REIMBURSEMENT AMOUNTS) is incorporated herein as part of this agreement.

4. The reimbursement amount is based upon the Applicant's actual cost and the estimated system capacity of facilities paid for by the Applicant including oversizing costs for improvements requested and paid for by GRU.

5. The reimbursement amount is subject to the approval of GRU. The amount of the oversizing reimbursement may be adjusted by the City in accordance with the procedures contained in the City of Gainesville Code of Ordinances.

6. The reimbursement amount and unit rate shall be fixed in this agreement and shall not be adjusted for inflation, changes in capacity or any other related reason.

7. The developer shall be entitled to the reimbursement for a period of ten years following completion and acceptance of the wastewater facilities or until such time as the Applicant receives the accumulated maximum rebate amount.

8. GRU in its sole discretion may, without restriction, utilize the water distribution and/or wastewater pumping and collection facilities in whatever manner necessary, in accordance with the City of Gainesville's policies, to provide and/or improve utility service to the subject project and/or surrounding areas.

9. Following completion and acceptance by GRU of the water distribution and/or wastewater pumping and collection facilities constructed on the above named project(s) and upon receipt from the Applicant of the engineer's certified cost estimate and the contractor's final signed contract unit prices and quantities, and provided that all conditions of this agreement have been satisfactorily met, Gainesville Regional Utilities shall; 1) charge a lift station rebate fee to any properties discharging flow to the applicants lift station provided that the discharging party is able to connect to the applicants collection system without the aid of any pumping systems; and 2) charge a force main rebate fee to any properties connecting directly to the applicants force main.

10. The rebate fee(s) will be charged at the agreed upon rate for the number of equivalent residential connections which are actually connecting to the applicant's system. Connections to the pump station shall pay the pump station rebate charge and 100% of the off-site and on-site force main rebate charge. Connections to the force main at a point located on the proposed development property shall pay 50% of the total force main rebate charge. Connections to the force main at a point which is located outside of the proposed development property shall pay 50% of the off-site force main rebate charge as listed below.

11. GRU shall reimburse the total amount of the rebate fees collected to the Applicant within 60 days of receipt of the rebate fees.

12. The reimbursement shall be paid to the Applicant at the address in the Utility Agreement.

13. This reimbursement agreement shall not apply to any pump stations that are abandoned and taken out of service as part of GRU's system improvements. GRU shall have the right to make such modifications to the utility facilities covered by this agreement at its sole discretion for reasons that are considered to be in the best interest of GRU.

14. Any rebate fees collected by GRU or its agent under this agreement shall become the sole property of the City of Gainesville in the event that GRU is unable to make the reimbursement payment to the Applicant.

15. GRU shall have full authority to resolve any disputes concerning the amount or application of the rebate charge and/or reimbursement provided for in this agreement.

16. GRU reserves the right to adjust and/or modify the rebate amount if, due to circumstances and/or system conditions, it is determined that an alternative method of providing service exist which may provide a different cost of service and if connection to the subject utility system is determined to be in the best interest of the City.

See Page 4: APPROVED REIMBURSEMENT AMOUNTS

APPROVED REIMBURSEMENT AMOUNT

PROJECT: _____

SYSTEM: _____

PUMP STATION

DESCRIPTION: PUMP STATION REBATE

AMOUNT: $_____ PER EQUIVALENT RESIDENTIAL CONNECTION

MAXIMUM: $ _____ TOTAL PUMP STATION REBATE

FORCE MAIN

DESCRIPTION: FORCE MAIN REBATE – CONNECT TO PUMP STATION

AMOUNT $ _____ PER EQUIVALENT RESIDENTIAL CONNECTION

DESCRIPTION: ON-SITE FORCE MAIN REBATE

AMOUNT: $_____ PER EQUIVALENT RESIDENTIAL CONNECTION

DESCRIPTION: OFF-SITE FORCE MAIN REBATE

AMOUNT: $_____ PER EQUIVALENT RESIDENTIAL CONNECTION

MAXIMUM: $_____ TOTAL FORCE MAIN REBATE

REBATE PERIOD _____ through _____

This agreement constitutes the full and complete arrangements between GRU and the Developer. No other agreements except those specifically stated herein are required of either party.

Should any dispute arise out of any interpretations of language in this agreement, GRU shall be the final arbitrator for resolution.

DATED this _____ day of _____, 200___.

APPLICANT OR AUTHORIZED REPRESENTATIVE	**CITY OF GAINESVILLE**
Letter of Authorization to GRU required If not signed by Applicant	**GAINESVILLE REGIONAL UTILITES**
By: _____ (Please Print)	By: _____ (Please Print)
Signature: _____	Signature: _____
Title: _____	Title: _____

RECLAIMED WATER REIMBURSEMENT AGREEMENT

THIS AGREEMENT TO BE COMPLETED PRIOR TO APPROVAL OF PLANS BY GRU

Applicant Name: _____ **DATE:** _____
Development Name: _____
(The Project)

Description of Reclaimed Water Facilities: (Please Be Specific)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

RESIDENTIAL	
Lot Size (Ac)	# of Lots
<0.2	
0.20 - 0.33	
0.33 – 0.60	
0.6 - 0.8	
>0.8	

COMMERCIAL	
Description	Area (sq.ft.)

WATER FEATURES	
Description	Area (sq.ft.)

Reimbursement Amount:_____

The Applicant named above is the developer of reclaimed water facilities serving the above name project.

The City of Gainesville/Gainesville Regional Utilities, (GRU) has established policies (Refer to these directly) to ensure the development of reclaimed water systems to serve the public are constructed in a coordinated and efficient manner. These policies prescribe the mechanisms to provide for the installation of developer constructed reclaimed water facilities.

The City through its utility system, Gainesville Regional Utilities (GRU), has requested the installation of reclaimed water facilities.

In consideration of the foregoing and the mutual promises set out below the parties agree to the following:

A) APPLICANT'S OBLIGATIONS:

1. Installation Cost Estimate: The Applicant shall provide GRU a written itemized cost estimate covering the reclaimed water facilities required to serve the subject project. This estimate shall identify the construction, engineering and interest costs (subject to restrictions) associated with the requested installation. The estimates shall be signed and sealed by a Professional Engineer registered in the State of Florida attesting to the fact that the cost estimates are based upon the best available and most recent cost information for similar work. Interest cost estimates shall be based upon the construction costs referenced above, the Applicant's current borrowing rate, and the expected time to complete the project. This estimate must be submitted to and approved by GRU prior to approval of plans by GRU or its designated engineer.

2. Reclaimed Water Usage Estimate: The Applicant shall provide GRU a written itemized usage estimate covering the reclaimed water facilities required to serve the subject project. This usage estimate shall identify the total number of lots and their size using reclaimed water. This usage estimate shall also include the total area and type of usage for all other areas to be served by reclaimed water. This usage shall be signed and sealed by a Professional Engineer registered in the State of Florida. This usage must be submitted to and approved by GRU prior to approval of plans by GRU or its designated engineer.

3. Installation: The Applicant agrees to construct all reclaimed water facilities in accordance with the plans approved by GRU or its designated engineer.

4. Application Rates: The Applicant shall apply reclaimed water at a rate of 1.25 inches per week in perpetuity to all commercial areas referenced in this Agreement. The Applicant shall conform to all applicable local, county, state and federal permits and regulations.

5. Maintenance: The Applicant shall maintain all private reclaimed water systems (i.e. - irrigation systems, water features) in perpetuity. In the event that a sinkhole forms, the Applicant must stop reclaimed water flow and notify Gainesville Regional Utilities immediately. The Applicant must plug or isolate the sinkhole as soon as practical. Reclaimed water flow shall not be reintroduced without the approval of Gainesville Regional Utilities.

6. Invoicing: The Applicant shall invoice GRU for the reimbursement amount following completion of the reclaimed water facilities within six months of the completion letter. The invoice shall include an itemized usage schedule and itemized construction cost based upon the actual final installation. The invoice shall be signed and sealed by a Professional Engineer registered in the State of Florida certifying to the validity of the installed reclaimed water facility's usage quantities and actual interest costs shall be certified by the lender. The final invoice amount will be subject to GRU concurrence.

7. Reimbursement: The Applicant understands that reimbursement for change orders or additions shall only be made for items which have received prior written approval from GRU. The Applicant agrees that there will be no compensation, monetary or otherwise, for the connection of additional properties to facilities installed by the Applicant and conveyed to GRU.

B) GAINESVILLE REGIONAL UTILITIES OBLIGATIONS:

1. Utilization: GRU in its sole discretion may, without restriction, utilize the reclaimed water distribution facilities in any manner necessary, in accordance with the GRU's policies, to provide and/or improve utility service to the subject project or the surrounding areas.

2. Estimate: GRU shall review the construction cost estimate and reclaimed water usage estimate and establish an eligible amount for reimbursement. The reimbursement amount is subject to the approval of GRU. The amount of the reimbursement may be adjusted by GRU in accordance with the procedures contained in the City of Gainesville Code of Ordinances.

3. Reimbursement: Following completion and acceptance by GRU of the reclaimed water facilities constructed on the above named project(s) and upon receipt from the Applicant of an original written invoice to GRU, the engineer's certified usage quantities, and provided that all conditions of this Agreement have been satisfactorily met, GRU shall within 30 days of receipt of the request issue an approval for payment.

DATED this _____ day of _____, 20___.

APPLICANT OR AUTHORIZED REPRESENTATIVE
Letter of Authorization to GRU required if not signed by Applicant

By:_____
(Please Print)

Signature:_____

Title: _____

CITY OF GAINESVILLE
GAINESVILLE REGIONAL UTILITIES:

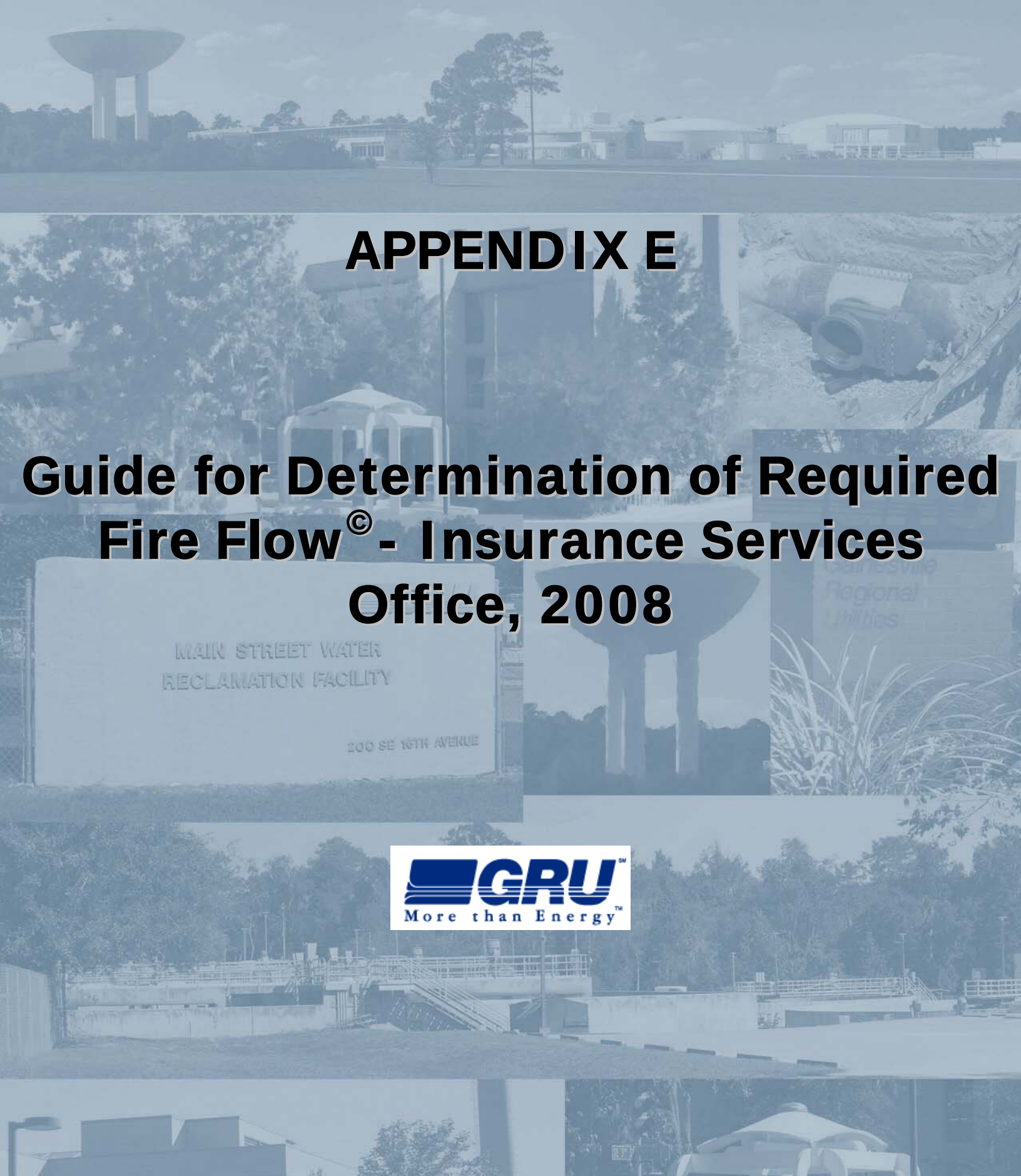
By:_____
(Please Print)

Signature: _____

Title: _____

APPENDIX E

Guide for Determination of Required Fire Flow© - Insurance Services Office, 2008



GRU™
More than Energy™

Water and Wastewater Engineering Department – March, 2010

GUIDE FOR DETERMINATION OF NEEDED FIRE FLOW

545 Washington Boulevard
Jersey City, New Jersey 07310-1686
(800) 888-4ISO (4476)
www.iso.com
www.isomitigation.com

EDITION 05-2008

FOREWORD

ISO has prepared this guide as an aid in estimating the amount of water that should be available for municipal fire protection. ISO calls this the needed fire flow. This publication is only a guide and requires knowledge and experience in fire protection engineering for its effective application.

INDEX

PREFACE

ISO is the premier source of information, products, and services related to property and liability risk. For a broad spectrum of types of insurance, ISO provides statistical, actuarial, underwriting, and claims information and analyses; consulting and technical services; policy language; information about specific locations; fraud-identification tools; and data processing. In the United States and around the world, ISO serves insurers, reinsurers, agents, brokers, self-insureds, risk managers, insurance regulators, fire departments, and other governmental agencies.

One of ISO's important services is to evaluate the fire suppression delivery systems of jurisdictions around the country. The result of those reviews is a classification number that ISO distributes to insurers. Insurance companies use the Public Protection Classification (PPC™) information to help establish fair premiums for fire insurance – generally offering lower premiums in communities with better fire protection.

ISO uses the Fire Suppression Rating Schedule (FSRS) to define the criteria used in the evaluation of a community's fire defenses. Within the FSRS, a section titled "Needed Fire Flow" outlines the methodology for determining the amount of water necessary for providing fire protection at selected locations throughout the community. ISO uses the needed fire flows to:

1. Determine the community's "basic fire flow." The basic fire flow is the fifth highest needed fire flow in the community. ISO uses the basic fire flow to determine the number of apparatus, the size of apparatus fire pumps, and special fire-fighting equipment needed in the community.
2. Determine the adequacy of the water supply and delivery system. ISO calculates the needed fire flow for selected properties and then determines the water flow capabilities at these sites. ISO then calculates a ratio considering the need (needed fire flow) and the availability (water flow capability). ISO uses that ratio in calculating the credit points identified in the FSRS.

ISO developed the needed fire flow through a review of actual large-loss fires. ISO recorded the average fire flow and other important factors, including construction type, occupancy type, area of the building, and exposures. Those factors are the foundation of the needed fire flow formula.

The following pages include a number of excerpts from another ISO document, the Specific Commercial Property Evaluation Schedule (SCOPES). ISO uses the SCOPES manual to weigh features of individual properties for the purpose of defining the building's vulnerability to fire loss. Insurers also use this information in their underwriting and ratemaking decisions.

CHAPTER 1

Needed Fire Flow Formula

To estimate the amount of water needed to fight a fire in an individual, nonsprinklered building, ISO uses the formula:

$$NFF = (C_i)(O_i)[(1.0+(X+P)_i]$$

where

NFF_i	=	the needed fire flow in gallons per minute (gpm)
C_i	=	a factor related to the type of construction
O_i	=	a factor related to the type of occupancy
X	=	a factor related to the exposure buildings
P	=	a factor related to the communication between buildings

To calculate the needed fire flow of a building, you will need to determine the predominant type (class) of construction, size (effective area) of the building, predominant type (class) of occupancy, exposure from the property, and the factor for communication to another building.

Here is a summary of the step-by-step process:

Step 1. Determine the predominant construction type and the associated factor (F).
Step 2. Determine the effective area (A_i).
Step 3. Substitute the values for "F" and "A" into the formula $C_i=18F(A_i)^{0.5}$ and calculate the construction factor (C_i).
Step 4. Round off the construction factor (C_i) to the nearest 250 gpm.
Step 5. Determine the predominant occupancy type and the associated factor (O_i).
Step 6. Determine if there is an exposure charge by identifying the construction type and length-height value of the exposure building as well as the distance (in feet) to the exposure building. Also make note of any openings and protection of those openings in the wall facing the subject building (the building the needed fire flow is being calculated on). The factor related to the exposure building is (X).
Step 7. Determine if there is a communication charge by identifying the combustibility of the passageway, whether the passageway is open or closed, the length, and a description of any protection provided in the passageway openings. The factor related to the communications between buildings is (P).
Step 8. Substitute the values for the factors in the formula $NFF_i = (C_i)(O_i)[1.0+(X+P)_i]$ to determine the needed fire flow.

Further details of the step-by-step process are provided in the following pages.

Note: ISO does not determine a needed fire flow for buildings rated and coded by ISO as protected by an automatic sprinkler system meeting applicable National Fire Protection Association standards. See Chapter 6, "Determining Recognition of Automatic Sprinkler Systems," for more information.

CHAPTER 2

Type of Construction (C_i) and Effective Area (A_i)

To determine the portion of the needed fire flow attributed to the construction and area of the selected building, ISO uses the formula:

$$C_i = 18F (A_i)^{0.5}$$

Where:

F = coefficient related to the class of construction
- F = 1.5 for Construction Class 1 (wood frame construction)
- = 1.0 for Construction Class 2 (joisted masonry construction)
- = 0.8 for Construction Class 3 (noncombustible construction and Construction Class 4 (masonry noncombustible construction)
- = 0.6 for Construction Class 5 (modified fire-resistive construction) and Construction Class 6 (fire-resistive construction)

A_i = effective area

Appendix A provides C_i for a range of construction classes (F) and effective areas (A_i).

1. Construction Materials and Assemblies

ISO uses the following definitions to determine the construction class for a building:

a. Combustible: Wood or other materials that will ignite and burn when subjected to fire, including materials with a listed flame-spread rating greater than 25. Also included are assemblies or combinations of combustible materials with other materials, such as the following:

(1) Metal walls or floors sheathed on either interior or exterior surfaces (with or without air space) with wood or other combustible materials (flame-spread rating over 25).

(2) Metal floors or roofs with combustible insulation or other combustible ceiling material attached to the underside of the floor or interior surface of the roof deck, or within 18" of the horizontal supports.

(3) Combustible wall materials with an exterior surface of brick, stone, or other masonry materials (commonly known as "masonry veneer").

(4) Noncombustible wall or roof construction on a skeleton wood frame (commonly known as "wood-iron clad").

(5) Combustible wall or roof construction on a noncombustible or slow burning frame.

(6) Composite assemblies of noncombustible materials with combustible materials, such as a combustible core between two noncombustible panels, or a noncombustible panel with a combustible insulation material (flame-spread rating over 25).

(7) Composite assemblies of noncombustible or slow burning materials combined with foamed plastic materials (with any flame-spread rating), unless the foamed plastic materials qualify as slow burning. (Refer to Item f, below.)

(8) Combustible assemblies which are listed as having not less than a one-hour rating.

b. **Fire-resistive:** Noncombustible materials or assemblies which have a fire-resistance rating of not less than one hour.

c. **Masonry:** Adobe, brick, cement, concrete, gypsum blocks, hollow concrete blocks, stone, tile, and similar materials with a minimum thickness of 4".

d. **Noncombustible:** Materials, no part of which will ignite and burn when subjected to fire, such as aluminum, asbestos board, glass, gypsum board, plaster, slate, steel, and similar materials. Also included are:

(1) Fire-resistive and protected-metal assemblies with a fire-resistance rating of less than one hour

(2) Materials or composite materials with a listed surface-flame-spread rating of 0 and of such composition that surfaces that would be exposed by cutting through the material in any way would not have a listed flame-spread rating greater than 0

(3) Masonry walls less than 4" thick, which are not a part of combustible walls (masonry veneer)

Note: Combustible nailing (furring) strips fastened directly to noncombustible supports shall not affect the classification of noncombustible walls, floors, or roofs.

e. **Protected metal:** Metal which is protected by materials so that the resulting assembly has a fire-resistance rating of not less than one hour.

f. **Slow burning:** Materials with a listed flame-spread rating greater than 0 but not greater than 25; except, foamed plastic materials shall be rated as slow burning if such materials or coverings meet one of the conditions in (1) or (2) below.

An acceptable thermal barrier includes those which have been tested as part of a field-fabricated or factory-manufactured composite assembly which has passed one of the acceptable wall or ceiling panel tests, when applied over foamed plastic material of a thickness and listed flame-spread rating not greater than that used in the composite assembly tested. Where any material is of a type which falls or drips to the floor of the furnace during the flame-spread test, the flame-spread rating of the material, when not protected by a thermal barrier, shall be based on the flame-spread rating of the material on the floor of the furnace, where this flame-spread is higher than the flame-spread of the material on the furnace ceiling. In all other cases, the normal flame-spread rating of the material on the furnace ceiling shall be used.

(1) An acceptable thermal barrier consisting of 1/2" or greater noncombustible material, such as plaster, cement, or gypsum board, when used over foamed plastic material having a listed flame-spread rating not greater than 25

(2) An acceptable thermal barrier which is listed with not less than a 15-minute finish rating when used over foamed plastic material having a listed flame-spread rating not greater than 25

Note 1: Combustible nailing (furring) strips fastened directly to slow burning supports shall not affect the classification of slow burning walls, floors, or roofs.

Note 2: Lumber and lumber products shall be eligible for consideration as slow burning only when all the ceilings and the walls are treated with a listed flame-retardant impregnation which meets all of the following requirements:

(1) Impregnation-treated materials shall be properly identified as having a flame-spread rating of 25 or less.

(2) Such identification shall indicate that there is no evidence of significant progressive combustion when subjected to at least 30 minutes test duration.

(3) Such identification shall indicate that the material has a permanent treatment not subject to deterioration from the effects of weathering, exposure to moisture or humidity, etc. (This requirement only applies where the treated material is exposed to the weather or moisture.) However, combustible nailing (furring) strips, doors, trim, and the top surfaces of combustible floors shall not be required to be treated.

g. **Unprotected metal:** Metal with no fire-resistive protection, or with a fire-resistance rating of less than one hour.

2. Classification of Basic Construction Types

ISO classifies construction types into six different categories:

Construction Class 6 (fire-resistive construction)
Construction Class 5 (modified fire-resistive construction)
Construction Class 4 (masonry noncombustible construction)
Construction Class 3 (noncombustible construction)
Construction Class 2 (joisted masonry construction)
Construction Class 1 (wood frame construction)

Note: In applying the rules below, ISO disregards below-grade basement walls and the construction of the lowest floor (usually concrete).

a. **Fire-resistive (Construction Class 6):** Buildings constructed of any combination of the following materials:

Exterior walls or exterior structural frame:

- Solid masonry, including reinforced concrete, not less than 4 inches in thickness
- Hollow masonry not less than 12 inches in thickness
- Hollow masonry less than 12 inches, but not less than 8 inches in thickness, with a listed fire-resistance rating of not less than two hours
- Assemblies with a fire-resistance rating of not less than two hours

Note: Panel or curtain sections of masonry may be of any thickness.

Floors and roof:

- Monolithic floors and roof of reinforced concrete with slabs not less than 4 inches in thickness
- Construction known as "joist systems" (or pan-type construction) with slabs supported by concrete joists spaced not more than 36 inches on centers with a slab thickness not less than 2 ¾ inches
- Floor and roof assemblies with a fire-resistance rating of not less than two hours

Structural metal supports:

- Horizontal and vertical load bearing protected metal supports (including prestressed concrete units) with a fire-resistance rating of not less than two hours

Note: Wherever in the SCOPES reference is made to "pre-stressed," this term shall also include "post-tensioned."

b. **Modified fire-resistive (Construction Class 5):** Buildings with exterior walls, floors, and roof constructed of masonry materials described in a., above, deficient in thickness, but not less than 4 inches; or fire-resistive materials described in a., above, with a fire-resistance rating of less than two hours, but not less than one hour.

c. **Masonry noncombustible (Construction Class 4):** Buildings with exterior walls of fire-resistive construction (not less than one hour), or of masonry, not less than 4 inches in thickness and with noncombustible or slow burning floors and roof (including noncombustible or slow burning roof decks on noncombustible or slow burning supports, regardless of the type of insulation on the roof surface).

d. **Noncombustible (Construction Class 3):** Buildings with exterior walls, floors, and roof of noncombustible or slow burning materials supported by noncombustible or slow burning supports (including noncombustible or slow burning roof decks on noncombustible or slow burning supports, regardless of the type of insulation on the roof surface).

e. **Joisted masonry (Construction Class 2):** Buildings with exterior walls of fire-resistive construction (not less than one hour), or of masonry, and with combustible floors and roof.

f. **Frame (Construction Class 1):** Buildings with exterior walls, floors, and roof of combustible construction, or buildings with exterior walls of noncombustible or slow burning construction, with combustible floors and roof.

Notes applicable to construction-type definitions above:

Note 1: Masonry or fire-resistive walls with panels composed of glass, noncombustible, slow burning, combustible, or open sections shall retain their classification as masonry or fire-resistive, provided that such panels are in or supported by a structural frame of masonry or protected metal (two hours fire resistance if in walls classed as Construction Class 6, one hour in classes 2, 4, or 5). Similarly, masonry or fire-resistive floors with wood or other combustible surfacing in buildings otherwise subject to Construction Classes 5 or 6 shall retain their classification as Classes 5 or 6.

Note 2: Noncombustible or slow burning roof deck with an exterior surface of combustible materials, such as combustible insulation, felt, asphalt, or tar, shall retain its classification as noncombustible or slow burning.

3. Crosswalk to Other Construction Types

The International Code Council (ICC) and the National Fire Protection Association (NFPA) have their own classification of construction types. These classifications are used in the codes and standards that they promulgate and are unique to their organization's publications. Below is a table that generally compares ISO's construction types to those of these other organizations.

Construction Types

ISO SCOPES Definition	ISO Construction Class	International Code (ICC)	NFPA 220	NFPA 5000	Standard Code 1997 (SBCCI)	National 1999 (BOCA)	Uniform Code 1997 (ICBO)
Wood frame	1	V, B	V	V	VI	5B	V
Ordinary (joisted masonry)	2	III, A	III	III	V	3	IIIV
Non-combustible (all metal)	3	II, B	II	II	IV	2C	11-N
Non-combustible (masonry)	4	II, A	II	III	IV	2B	II- 1 hr.
Modified – fire resistive	5	II, A	II	II	II	1B	II fire resistive
Fire resistive	6	I, A	I	I	I	1A	I
Heavy timber	2	IV	IV	IV	III	4	IV

4. Classification of Mixed Construction

In buildings constructed as defined in two or more classes above, ISO determines the appropriate construction class as follows:

Note: In applying these rules, ISO disregards basement walls and the lowest floor level.

a. **Fire-resistive:** Any building with 66 2/3 % or over of the total wall area and 66 2/3 % or over of the total floor and roof area constructed as defined in Construction Class 6.

b. **Modified fire-resistive:** Any building with 66 2/3 % or over of the total wall area and 66 2/3% or over of the total floor and roof area constructed as defined in Construction Class 5; or

Any building with 66 2/3% or over of the total wall area, and 66 2/3% or over of the total floor and roof area constructed as defined in Construction Classes 5 and 6, but with neither type in itself equaling 66 2/3% or over of the total area.

c. **Masonry noncombustible:** Any building with 66 2/3% or over of the total wall area and 66 2/3% or over of the total floor and roof area constructed as defined in Construction Class 4; or

Any building not qualifying under a. or b., above, with 66 2/3% or over of the total wall area and 66 2/3% or over of the total floor and roof area constructed as defined in two or more of Construction Classes 4, 5, and 6, but with no single type in itself equaling 66 2/3% or over of the total area.

d. **Noncombustible:** Any building with 66 2/3% or over of the total wall area and 66 2/3% or over of the total floor and roof area constructed as defined in Construction Class 3; or

Any building not qualifying under a. through c., above, with 66 2/3% or over of the total wall area and 66 2/3% or over of the total floor and roof area constructed as defined in two or more of Construction Classes 3, 4, 5, and 6, but with no single type in itself equaling 66 2/3% or over of the total area.

e. **Joisted masonry:** Any building not qualifying under a. through d., above, with 66 2/3% or over of the total wall area constructed as described in Construction Class 2; or

Any building not qualifying under a. through d., above, with 66 2/3% or over of the total wall area and 66 2/3% or over of the total floor and roof area constructed as defined in two or more of Construction Classes 2, 3, 4, 5, and 6, but with no single type in itself equaling 66 2/3% or over of the total area.

f. **Frame:** Any building not qualifying under a. through e., above, or any building with over 33 1/3 % of the total wall area of combustible construction, regardless of the type of construction of the balance of the building.

5. Determining Effective Area (A_i)

In the portion of the needed fire flow formula attributed to the construction and area of the subject building,

$$C_i = 18F\,(A_i)^{0.5}$$

The factor "A_i" is the "effective area" of the subject building.

a. Exempt areas:

Disregard the following in the determination of the effective area:

- In nonsprinklered buildings, or buildings which do not qualify for sprinkler credit (see Chapter 6, "Determining Recognition of Automatic Sprinkler Systems"), disregard floor areas (including basement and subbasement) where the entire floor is protected by an acceptable system of automatic sprinklers or other acceptable automatic fire protection systems, provided that there are no Combustibility Class C-5 occupancies on the floor (see "Occupancy Factor," i.e., "Rapid burning or flash burning").

- Basement and subbasement areas which are vacant, or are used for building maintenance, or which are occupied by occupancies having C-1 or C-2 contents combustibility (see "Occupancy Factor") regardless of the combustibility class applicable to the building. A basement is a story of a building which is 50% or more below grade, unless such story is accessible at grade level on one or more sides. A story which is less than 50% below grade shall also be considered a basement if such story is wholly enclosed by blank masonry foundation walls.

- In breweries, malt mills, and other similar occupancies, disregard perforated (slatted) operating decks which contain no storage.

- Roof structures, sheds, or similar attachments.

- Courts without roofs.

- Areas of mezzanines less than 25% times the square foot area of the floor immediately below.

b. Modification for division walls:

An acceptable division wall shall be constructed entirely of noncombustible materials with a fire-resistance rating of not less than one hour, or of masonry materials, and shall:

(1) Extend from one exterior wall to another (or form an enclosed area within the building).

(2) Extend from one masonry or fire-resistive floor to another masonry or fire-resistive floor, or from a masonry or fire-resistive floor to a roof of any construction.

(3) Have all openings through the wall protected by an automatic or self-closing labeled Class B (not less than one-hour) fire door.

Where division walls meet the above requirements, the maximum area on any floor used to determine the effective area shall be the largest undivided area plus 50% times the second largest undivided area on that floor.

c. Effective area calculation:

After modification for division walls as provided above, the effective area shall be the total square foot area of the largest floor in the building, plus the following percentage of the total area of the other floors:

(1) Buildings classified as Construction Classes 1 - 4: 50% of all other floors.

(2) Buildings classified as Construction Classes 5 or 6:

(a) If all vertical openings in the building are protected (see 4d., "Protection requirements," below), 25% times the remaining area not exceeding the two other largest floors.

(b) If one or more vertical openings in the building are unprotected (see 4d., "Protection requirements," below), 50% times the remaining area not exceeding 8 other floors with unprotected openings.

Note: The effective area determined under item 4c.(2)(b), above, shall not be less than the effective area that would be determined under item 4c.(2)(a), above, if all openings were protected.

d. Protection requirements:

The protection requirements for vertical openings are only applicable in buildings of Construction Class 5 or 6. The type of protection for vertical openings shall be based on the construction of the enclosure walls and the type of door or other device used for the protection of openings in the enclosure.

The following materials are acceptable for one-hour construction in enclosure walls: 4-inch brick, 4-inch reinforced concrete, 6-inch hollow block, 6-inch tile, or masonry or noncombustible materials listed with a fire-resistance rating of not less than one hour.

Protected openings:

Enclosures shall have walls of masonry or fire-resistive construction with a fire-resistance rating of not less than one hour.

Doors shall be automatic or self-closing and be labeled for Class B opening protection (not less than one-hour rating).

Elevator doors shall be of metal or metal-covered construction, so arranged that the doors must normally be closed for operation of the elevator.

Unprotected openings:

Unprotected floor openings. Also includes doors or enclosures not meeting the minimum requirements for protected openings, above.

5. Maximum and Minimum Value of C_i:

The value of C_i shall not exceed

8,000 gpm for Construction Class 1 and 2
6,000 gpm for Construction Class 3, 4, 5, and 6
6,000 gpm for a 1-story building of any class of construction

The value of C_i shall not be less than 500 gpm.

ISO rounds the calculated value of C_i to the nearest 250 gpm.

CHAPTER 3

Occupancy Factor (O_i)

The factors below reflect the influence of the occupancy in the subject building on the needed fire flow:

Occupancy Combustibility Class	Occupancy Factor (O_i)
C-1 (Noncombustible)	0.75
C-2 (Limited-combustible)	0.85
C-3 (Combustible)	1.00
C-4 (Free-burning)	1.15
C-5 (Rapid burning)	1.25

1. Determining Occupancy Type

Occupancy combustibility classifications reflect the effect of the combustibility of contents on the building structure. ISO uses the following definitions to determine the combustibility classification of an occupancy:

a. **Noncombustible (C-1)** - Merchandise or materials, including furniture, stock, or equipment, which in permissible quantities does not in themselves constitute an active fuel for the spread of fire.

No occupancy shall be eligible for this classification which contains a sufficient concentration of combustible material to cause structural damage OR which contains a sufficient continuity of combustible materials so that a fire could spread beyond the vicinity of origin.

The maximum amount of combustible materials in any 10,000 square-foot section of an occupancy otherwise containing noncombustible materials shall not exceed 1000 board feet of lumber, or over 2 barrels (110 gallons) of combustible liquids or greases or equivalent amounts of other combustible materials. Further, the maximum total area containing combustible material in an occupancy otherwise containing noncombustible materials shall not exceed 5% of the total square foot area of that occupancy.

Note: In determining the applicability of C-1, combustible interior walls or partitions (including combustible finish), mezzanines, racks, shelves, bins, and similar combustible construction shall be considered combustible material.

Examples of occupancies which may (subject to survey) be eligible for C-1 classification include those storing asbestos, clay, glass, marble, stone, or metal products and some metalworking occupancies.

b. **Limited-combustible (C-2)** - Merchandise or materials, including furniture, stock, or equipment, of low combustibility, with limited concentrations of combustible materials.

Examples of occupancies classified as C-2 include banks, barber shops, beauty shops, clubs, habitational occupancies, hospitals, and offices.

Occupancies classified as C-2 in the occupancy classification list may be eligible for C-1 classification provided that such occupancy meets all of the requirements for C-1 classification.

Note: For manufacturing occupancies where over 20% of the total square foot area of the occupancy contains storage of combustible material or materials crated or wrapped in combustible containers, the combustibility class applicable to the occupancy shall not be less than C-3.

c. **Combustible (C-3)** - Merchandise or materials, including furniture, stock, or equipment, of moderate combustibility.

Examples of occupancies classified as C-3 include food markets, most wholesale and retail occupancies, etc.

Occupancies classified as C-3 in the occupancy classification list may be eligible for C-2 classification, provided that the total square foot area containing combustible material does not exceed 10% of the total square foot area of the occupancy.

Note: For the purpose of the above rule, combustible interior walls or partitions (including combustible finish), racks, shelves, bins, and similar combustible construction shall be considered combustible material.

d. **Free-burning (C-4)** - Merchandise or materials, including furniture, stock, or equipment, which burn freely, constituting an active fuel.

Examples of occupancies classified as C-4 include cotton bales, furniture stock, and wood products.

e. **Rapid burning or flash burning (C-5)** - Merchandise or materials, including furniture, stock, or equipment, which either

(1) burn with a great intensity

(2) spontaneously ignite and are difficult to extinguish

(3) give off flammable or explosive vapors at ordinary temperatures

(4) as a result of an industrial processing, produce large quantities of dust or other finely divided debris subject to flash fire or explosion

Examples of occupancies classified as C-5 include ammunition, excelsior, explosives, mattress manufacturing, matches, and upholsterers.

2. Determining Occupancy Combustibility Classification in Multiple Occupancy Buildings

In sole occupancy buildings or in multiple-occupancy buildings with occupancies subject to a single-occupancy classification, the occupancy classification applicable to the occupant(s) shall also apply to the building.

In multiple-occupancy buildings with occupancies having different occupancy classifications, the occupancy classification applicable to the building shall be determined according to the total floor area (including basements and subbasements) occupied by each occupancy, as follows:

Note: Basement and subbasement areas which are either vacant or used for building services or building maintenance shall be considered C-2 combustibility. Where such areas are used for other purposes, the combustibility class for those areas shall be determined according to the combustibility class of their occupancies.

- C-1 combustibility shall apply ONLY where 95% or more of the total floor area of the building is occupied by C-1 occupants, and there are no C-5 occupancies.

- C-2 combustibility shall apply to buildings which
  a. do not qualify as C-1 above, but where 90% or more of the total floor area of the building is occupied by C-1 and C-2 occupancies; OR
  b. are classified as CSP Construction Class 5 or 6, AND where 80% or more of the total floor area of the building is occupied by C-1 and C-2 occupancies, AND NOT MORE THAN 5% of the total floor area is occupied by C-5 occupancies.

- C-4 combustibility shall apply to any building containing C-4 occupants, where the combined total area occupied by C-4 and C-5 (if any) occupants is 25% OR MORE OF THE TOTAL FLOOR AREA of the building, provided the C-5 occupancies occupy, in total, less than 15% of the total floor area.

- C-5 combustibility shall apply to any building where 15% OR MORE OF THE TOTAL FLOOR AREA is occupied by C-5 occupancies.

- C-3 combustibility shall apply to any building not provided for above.

Occupancy Type Examples

Noncombustible (C-1) - Merchandise or materials, including furniture, stock, or equipment, which in permissible quantities do not in themselves constitute an active fuel for the spread of fire.

C-1 occupancy type examples:

- Asbestos storage
- Clay storage
- Marble storage
- Metal products storage
- Stone storage

Limited-combustible (C-2) - Merchandise or materials, including furniture, stock, or equipment, of low combustibility, with limited concentrations of combustible materials.

C-2 occupancy type examples:

- Airport, bus, railroad terminal
- Apartment
- Artist's studio
- Auto repair shop
- Auto showroom
- Aviary
- Barber shop
- Church
- Cold storage warehouse
- Day care center
- Educational institution
- Gasoline service station
- Greenhouse
- Health club
- Jail
- Library
- Medical laboratory
- Motel
- Museum
- Nursing home
- Office
- Pet grooming shop
- Photographer's studio
- Radio station
- Recreation center
- Rooming house
- Undertaking establishment

Combustible (C-3) - Merchandise or materials, including furniture, stock, or equipment, of moderate combustibility.

C-3 occupancy type examples:

- Auto parts store
- Auto repair training school
- Bakery
- Boat sales (where storage≥15%)
- Book store
- Bowling establishment
- Casino
- Commercial laundry
- Contractor equipment storage
- Department store (where storage≥15%)
- Dry cleaner (no flammable fluids)
- Gift shop (where storage≥15%)
- Hardware store (where storage ≥15%)
- Leather processing
- Municipal storage building
- Nursery sales outlet store
- Pavilion or dance hall
- Pet shop
- Photographic supplies
- Printer
- Restaurant
- Sandwich shop
- Shoe repair
- Sporting goods (where storage ≥15%)
- Supermarket
- Theater
- Vacant building
- Wearing apparel factory (except furs)

Free-burning (C-4) - Merchandise or materials, including furniture, stock, or equipment, which burn freely, constituting an active fuel.

C-4 occupancy type examples:

Aircraft hangers	Packaging and crating
Cabinet making	Paper products manufacturing
Combustible metals (e.g., magnesium)	Petroleum bulk distribution center
Dry cleaner (using flammable fluids)	Stables
Feed store (with > 1/3 ton of hay)	Tire manufacturing
Fur apparel manufacturing	Tire recapping or retreading
Furniture manufacturing	Wax products (candles, etc.)
Kennels	Woodworking shop
Lumber	

Rapid burning or flash burning (C-5) - Merchandise or materials, including furniture, stock, or equipment, which either

(1) burn with a great intensity

(2) spontaneously ignite and are difficult to extinguish

(3) give off flammable or explosive vapors at ordinary temperatures

(4) as a result of an industrial processing, produce large quantities of dust or other finely divided debris subject to flash fire or explosion

C-5 occupancy type examples:

Ammunition	Matches
Feed mill (with > 7 tons of hay & straw)	Mattress factory
Fireworks	Nitrocellulose-based plastics
Flammable compressed gases	Painting with flammables or combustibles
Flammable liquids	Rag storage
Flour mill	Upholstering shop
Highly flammable solids	Waste paper storage

CHAPTER 4

Exposure and Communication Factor ($X_i + P_i$)

The factors developed in this item reflect the influence of adjoining and connected buildings on the needed fire flow. An exposure building has a wall 100 feet or less from a wall of the subject building. A communicating building has a passageway to the subject building. ISO develops a value for the exposure to another building for the side with the highest charge. Likewise, ISO develops a value for a communication to another building for the side with the highest charge. The formula is:

($X_i + P_i$), with a maximum value of 0.60

1. Exposures (Table 330.A)

The factor for X depends upon the construction and length-height value (length of wall in feet, times height in stories) of the exposure building and the distance between facing walls of the subject building and the exposure building. Table 330.A of the FSRS gives the factors. When there is no exposure on a side, $X_i = 0$.

a. Construction of facing wall of exposure – ISO considers the wall construction of the exposure. The exposure factor used considers only the side of the subject building with the highest factor.
b. Length-height value of the facing wall of the exposure – ISO determines the length-height value of the facing wall of the exposure by multiplying the length of the facing wall of the exposure in feet by the height of the exposure in stories. ISO considers buildings five stories or more in height as five stories. Each 15 feet or fraction thereof equals one story.
c. Exposure distance – The distance in feet from the subject building to the exposure building, measured to the nearest foot, between the nearest points of the buildings. Where either the subject building or the exposure is at a diagonal to the other building, ISO increases the exposure distance by 10 feet.
d. Construction of facing wall of subject building – The wall construction of the subject building.

2. Exposure exceptions

The following conditions rule out exposure charges from adjacent buildings:

- Buildings rated sprinklered (See Chapter 6, "Determining Recognition of Automatic Sprinkler Systems.")
- Buildings rated as habitational, including their appurtenant outbuildings
- Buildings of Construction Class 5 or 6
- Buildings of Construction Class 3 or 4 with C-1 or C-2 contents combustibility class applicable to the building

TABLE 330.A FACTOR FOR EXPOSURE (X_i)						
Construction of Facing Wall of Subject Building	**Distance in Feet to the Exposure Building**	**Length-Height of Facing Wall of Exposure Building**	**Construction of Facing Wall of Exposure Building Classes**			
			1,3	**2, 4, 5, & 6**		
				Unprotected Openings	**Semiprotected Openings (wired glass or outside open sprinklers)**	**Blank Wall**
Frame, Metal or Masonry with Openings	0 – 10	1-100	0.22	0.21	0.16	0
		101-200	0.23	0.22	0.17	0
		201-300	0.24	0.23	0.18	0
		301-400	0.25	0.24	0.19	0
		Over 400	0.25	0.25	0.20	0
	11 - 30	1-100	0.17	0.15	0.11	0
		101-200	0.18	0.16	0.12	0
		201-300	0.19	0.18	0.14	0
		301-400	0.20	0.19	0.15	0
		Over 400	0.20	0.19	0.15	0
	31 - 60	1-100	0.12	0.10	0.07	0
		101-200	0.13	0.11	0.08	0
		201-300	0.14	0.13	0.10	0
		301-400	0.15	0.14	0.11	0
		Over 400	0.15	0.15	0.12	0
	61 - 100	1-100	0.08	0.06	0.04	0
		101-200	0.08	0.07	0.05	0
		201-300	0.09	0.08	0.06	0
		301-400	0.10	0.09	0.07	0
		Over 400	0.10	0.10	0.08	0
Blank Masonry Wall	Facing wall of the exposure building is higher than the subject building. Use the above table EXCEPT use only the length-height of the facing wall of the exposure building ABOVE the height of the facing wall of the subject building. Buildings five stories or over in height, consider as five stories.					
	When the height of the facing wall of the exposure building is the same or lower than the height of the facing wall of the subject building, $X_i = 0$.					

3. Communications (Table 330.B)

The factor for P depends upon the protection for communicating party-wall openings and the length and construction of communications between fire divisions. Table 330.B of the FSRS gives the factors. When more than one communication type exists in any one side wall, apply only the largest factor P for that side. When there is no communication on a side, $P_i = 0$.

a. Communications with combustible construction - An open passageway must be open on top or at least one side.
b. Fire-resistive, noncombustible, or slow burning communications – ISO considers the type of construction found within the passageway.
c. Description of protection of passageway openings – The protection for the openings to the passageway by Class A or B, single or double fire door.

4. Communications Exceptions

The following conditions rule out charges for communication with other separately rated buildings:

- Buildings rated sprinklered (See Chapter 6, "Determining Recognition of Automatic Sprinkler Systems.")
- Buildings rated as habitational, including their appurtenant outbuildings
- Buildings of Construction Class 5 or 6
- Buildings of Construction Class 3 or 4 with C-1 or C-2 contents combustibility class applicable to the building

TABLE 330.B FACTOR FOR COMMUNICATIONS (P_i)

	Fire-resistive, Noncombustible, or Slow burning Communications				Communications with Combustible Construction					
	Open	Enclosed			Open			Enclosed		
Description of Protection of Passageway Openings	Any Length	10 Ft. or Less	11 Ft. to 20 Ft.	21 Ft. to 50 Ft. +	10 Ft. or Less	11 Ft. to 20 Ft.	21 Ft. to 50 Ft. +	10 Ft. or Less	11 Ft. to 20 Ft.	21 Ft. to 50 Ft. +
Unprotected	0	++	0.30	0.20	0.30	0.20	0.10	++	++	0.30
Single Class A Fire Door at One End of Passageway	0	0.20	0.10	0	0.20	0.15	0	0.30	0.20	0.10
Single Class B Fire Door at One End of Passageway	0	0.30	0.20	0.10	0.25	0.20	0.10	0.35	0.25	0.15
Single Class A Fire Door at Each End or Double Class A Fire Doors at One End of Passageway	0	0	0	0	0	0	0	0	0	0
Single Class B Fire Door at Each End or Double Class B Fire Doors at One End of Passageway	0	0.10	0.05	0	0	0	0	0.15	0.10	0

\+ For over 50 feet, $P_i = 0$.

++ For unprotected passageways of this length, consider the 2 buildings as a single fire division

Note: When a party wall has communicating openings protected by a single automatic or self-closing Class B fire door, it qualifies as a division wall for reduction of area. Where communications are protected by a recognized water curtain, the value of P_i is 0.

CHAPTER 5

Separate Classifications of Buildings

ISO classifies the following as separate buildings:

a. Buildings separated by two independent walls, with no common or continuous combustible roof, that meet all of the requirements under either (1), (2), or (3) below.

(1) Where there is no communication between the two buildings

(2) Where the independent walls have communicating passageways constructed and protected as follows:

(a) A passageway open on the top or at least one side

(b) An enclosed passageway of glass, noncombustible, slow burning, or fire-resistive construction more than 10 feet in length (or, if combustible, more than 20 feet in length)

(c) An enclosed passageway of glass, noncombustible, slow burning or fire-resistive construction 10 feet or less in length (or, if combustible, 20 feet or less in length), provided that any such passageway is protected on at least one end by an automatic or self-closing labeled Class A fire door installed in a masonry wall section in accordance with standards

Where one or both of the communicating buildings qualify for sprinkler credit under ISO's Specific Commercial Property Evaluation Schedule (see Chapter 6, "Determining Recognition for Automatic Sprinkler Systems"), the above rules (including the Class A door requirement) apply. However, where acceptable sprinklers are installed over the communication in a masonry wall in the sprinklered building, such sprinklers are acceptable in lieu of the Class A door.

NOTE: A passageway is a structure providing communication between two otherwise separate buildings. Passageways must not contain contents. Enclosed passageways must not be more than 15 feet in width (least dimension). Passageways open on the top or at least one side shall not be more than 25 feet in width (least dimension). Any communicating structure that contains contents, or is more than 15 feet in width if enclosed, or is more than 25 feet in width if open, is a structure subject to all of the requirements regarding separate classification under this item.

(3) Where the independent walls have no communications, or where the two buildings have passageways constructed and protected as provided above, ISO classifies each building separately, with appropriate charges for exposure and communication (if any) under Chapter 4, "Exposure and Communication Factor."

b. Buildings separated by one continuous masonry party wall conforming to all of the following requirements:

(1) The party wall is constructed of brick or reinforced concrete not less than 6 inches in thickness; OR reinforced concrete building units (or filled blocks) with a fire-resistance rating of not less than two hours and not less than 6 inches in thickness; OR other masonry materials not less than 8 inches in thickness.

(2) The party wall rises to the underside of AND is in direct contact with a fire-resistive, masonry, or noncombustible roof; OR pierces a slow burning or combustible roof. In addition, no combustible material extends across any parapet that pierces a slow burning or combustible roof.

(3) The party wall extends to the interior surface of AND is in direct contact with a fire-resistive, masonry, or noncombustible wall OR pierces a slow burning or combustible wall. In addition, combustible cornices, canopies, or other combustible material do not extend across the party wall.

(4) All load bearing structural metal members in the party wall are protected metal (not less than one hour).

(5) At least a single automatic or self-closing labeled Class A fire door protects all access communications through the party wall. Where one or both of the communicating buildings qualify for sprinkler credit under ISO's Specific Commercial Property Evaluation Schedule (see Chapter 6, "Determining Recognition for Automatic Sprinkler Systems"), acceptable sprinklers installed over the communications are acceptable in lieu of the Class A door.

A single, labeled 1½ hour damper protects all communications caused by air conditioning and/or heating ducts piercing a party wall.

Note 1: Where unprotected metal, noncombustible, or combustible wall, floor, or roof supports are continuous through a masonry wall, such a wall is not be acceptable for separate classification.

Note 2: ISO ignores the usual openings provided for common utilities when their size is limited to that necessary to provide for normal clearances and vibration; such openings are the rule rather than the exception, and their effect is included in the overall analysis. ISO also ignores openings protected by one-hour listed firestop systems. ISO may also ignore abnormally large openings when mortar or other masonry material fills the excessive clearances.

ISO classifies all buildings not eligible for separate classification under a. or b. as a single building.

CHAPTER 6

Determining Recognition of Automatic Sprinkler Systems

ISO uses the Specific Commercial Property Evaluation Schedule (SCOPES) to evaluate sprinkler protection of a property. The criteria within the SCOPES manual permit determination of the percentage of credit for the sprinkler protection. For ISO to rate and code the property as a sprinklered property, it must score at least 10 points (out of the initial 100 points available) in ISO's automatic sprinkler grading.

A grading of 100 points represents the value of a two-source (water supply) wet-pipe or dry-pipe installation, standard in all respects, where no unusual conditions of construction or occupancy exist. In addition, the system must be installed and maintained as outlined in the National Fire Protection Association (NFPA) Standard 13 *Standard for the Installation of Sprinkler Systems*, NFPA 25 *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*, and other NFPA standards as appropriate.

ISO classifies a property as a sprinklered property if it meets the following minimum conditions:

- The sprinklered building has assured maintenance. Shut down, idle, or vacant structures have acceptable watchman or waterflow and control-valve supervision (remote or central station) or a caretaker. A caretaker is a responsible person who visits the premises not less than weekly.
- The usable unsprinklered area does not exceed:
    a) 25% of the total area in buildings with an Occupancy Combustibility Class of C-1
    b) 20% of the total area in buildings with an Occupancy Combustibility Class of C-2 or C-3
    c) 10,000 square feet or 15% of the total area in buildings with an Occupancy Combustibility Class of C-4
    d) 5,000 square feet or 10% of the total square foot area in buildings with an Occupancy Combustibility Class of C-5

    See Chapter 3, "Occupancy Factor" for definitions of the occupancy combustibility classes.

    Note: the area limitations above do not include unused, unsprinklered areas such as underfloor areas, attic areas, etc. However, ISO classifies usable vacant areas as used areas. ISO considers areas with obstructed sprinkler protection as unsprinklered.
- Installation has evidence of flushing and hydrostatic tests of both the underground and overhead piping in accordance with NFPA Standard 13.
- A full flow main drain test has been witnessed within the last 48 months.
- Dry-pipe installations have evidence of a satisfactory or partly satisfactory dry-pipe trip test conducted within the last 48 months.
- Fire-pump installations have evidence and results of a fire-pump test conducted within the last 48 months.

Where all 1- and 2-family dwellings in an entire subdivision or other definable area are protected with a residential sprinkler system meeting the requirements of NFPA 13D, *Standard for Sprinkler Systems in One- and Two- Family Dwellings and Mobile Homes*, a reduction in the needed fire flow may be appropriate. Where evidence is available to document the installation of these systems, the needed fire flow for such installations may be reduced to 500 gpm at 20 psi. No allowance will be made for

individual 1- and 2-family dwellings provided with residential sprinkler systems when interspersed with similar non-sprinklered 1- and 2-family dwellings.

Where residential occupancies up to and including four stories in height are protected with an automatic fire sprinkler system installed in accordance with NFPA 13R, *Standard for the Installation of Sprinkler Systems in residential Occupancies up to and including Four Stories in Height*, a reduction of the needed fire flow may be appropriate. Where evidence is available from local fire or building officials to document the installation, approval, testing and maintenance of these systems as defined in Chapter 6 of the Standard, the needed fire flow shall be the greater of the base of riser demand or 1,000 gpm at 20 psi, whichever, is greater, except when the calculated nonsprinklered needed fire flow is less than 1,000 gpm, the lesser demand should be used. Residential occupancies are as specified in NFPA 101 *Life Safety Code*® include (1) Apartment buildings, (2) Lodging and rooming houses, (3) Board and care facilities, and (4) Hotels, motels, and dormitories.

CHAPTER 7

Other Considerations for Determining Needed Fire Flow (NFF_i)

- When the subject building or exposure buildings have a wood-shingle roof covering and ISO determines that the roof can contribute to spreading fires, ISO adds 500 gpm to the needed fire flow.
- The maximum needed fire flow is 12,000 gpm. The minimum is 500 gpm.
- ISO rounds the final calculation of needed fire flow to the nearest 250 gpm if less than 2,500 gpm and to the nearest 500 gpm if greater than 2,500 gpm.
- For 1- and 2-family dwellings not exceeding 2 stories in height, ISO uses the following needed fire flows:

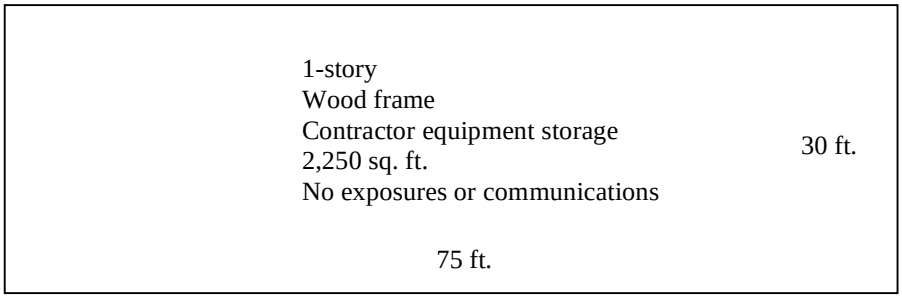
DISTANCE BETWEEN BUILDINGS	NEEDED FIRE FLOW
More than 100'	500 gpm
31-100'	750 gpm
11-30'	1,000 gpm
10' or less	1,500 gpm

- For other types of habitational buildings, the maximum needed fire flow is 3,500 gpm.

CHAPTER 8

Examples

Example 1.



CONSTRUCTION TYPE

Construction Class 1 (wood frame construction)
Construction type coefficient (F) = 1.5
Effective area (A_i) = 2,250

$C_i = 18F\ (A_i)^{0.5}$
$C_i = 18(1.5)\ (2,250)^{0.5}$
$C_i = 27\ (47.43)$
$C_i = 1,280.72$
C_i = 1,250 (rounded to the nearest 250 gpm)

OCCUPANCY TYPE

Contractor equipment storage
Occupancy combustibility class C-3 (Combustible)
Occupancy factor (O_i) = 1.00

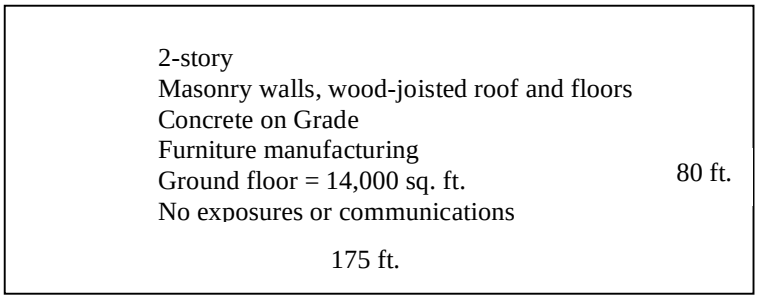
EXPOSURES AND COMMUNICATIONS

None
Exposure and communication factor $(X + P)_i = 0.00$

CALCULATION

$NFF_i = (C_i)(O_i)[1.0+(X+P)_i]$
$NFF_i = (1,250)(1.00)[1.0+(0.00)]$
$NFF_i = (1,250)(1.00)(1.00)$
NFF_i = 1,250 gpm

Example 2



CONSTRUCTION TYPE

Construction Class 2 (joisted masonry construction)
Construction type coefficient (F) = 1.0
Effective area (A_i) = 21,000 (ground floor + ½ of second floor area)

$C_i = 18F\ (A_i)^{0.5}$
$C_i = 18(1.0)\ (21{,}000)^{0.5}$
$C_i = 18\ (144.91)$
$C_i = 2{,}608.45$
C_i = 2,500 (rounded to the nearest 250 gpm)

OCCUPANCY TYPE

Furniture manufacturing
Occupancy combustibility class C-4 (free-burning)
Occupancy factor (O_i) = 1.15

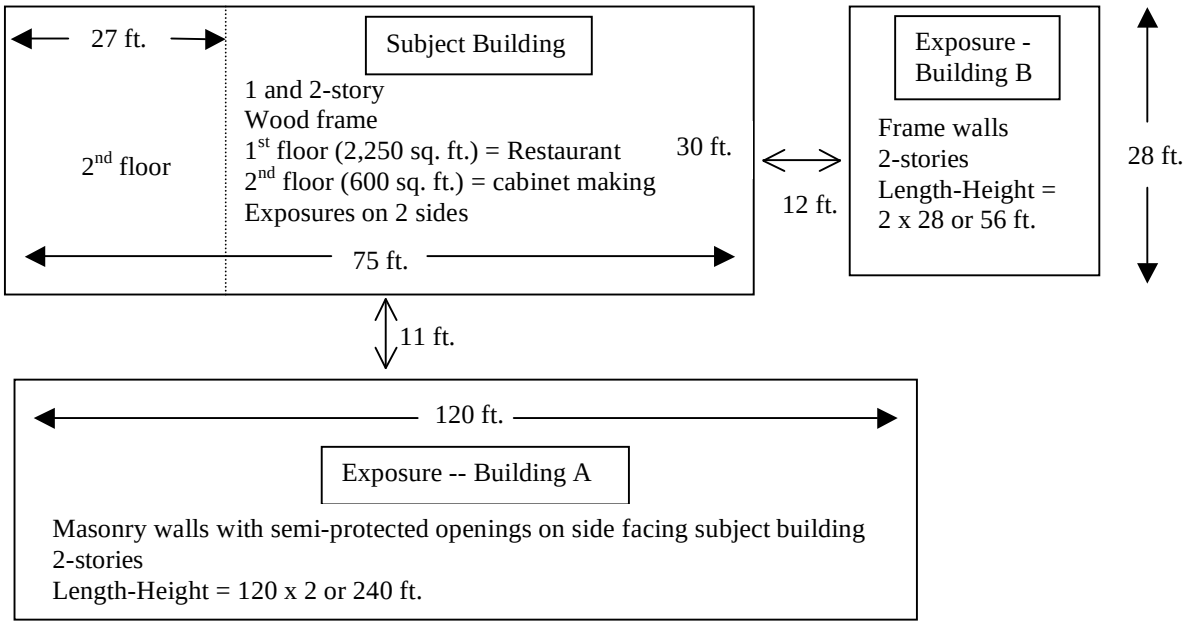
EXPOSURES AND COMMUNICATIONS

None
Exposure and communication factor $(X + P)_i = 0.00$

CALCULATION

$NFF_i = (C_i)(O_i)[1.0+(X+P)]$
$NFF_i = (2{,}500)(1.15)[1+(0.00)]$
$NFF_i = (2{,}500)(1.15)(1.00)$
$NFF_i = 2{,}875$
NFF_i = 3,000 gpm (because it is greater than 2,500 ISO rounds the NFF to the nearest 500 gpm)

Example 3



CONSTRUCTION TYPE

Construction Class 1 (wood-frame construction)
Construction type coefficient (F) = 1.5
Effective area (A_i) = 2,655 (ground floor + ½ of second floor area)

$C_i = 18F\ (A_i)^{0.5}$
$C_i = 18(1.5)\ (2{,}655)^{0.5}$
$C_i = 27(51.53)$
$C_i = 1{,}391.31$
C_i = 1,500 (rounded to the nearest 250 gpm)

OCCUPANCY TYPE

Cabinet making (occupies over 25% of the total floor of the building)
Occupancy combustibility class C-4 (free-burning)
Occupancy factor (O_i) = 1.15

EXPOSURES AND COMMUNICATIONS

Exposure charge for Building A = 0.14
Exposure charge for Building B = 0.17
The building with the highest charge is Building B.
Exposure factor (X_i) = 0.17
Communication (P_i) charge = none
Exposure and communication factor $(X + P)_i$ = 0.17

CALCULATION

$NFF_i = (C)(O)[1.0+(X+P)]$
$NFF_i = (1{,}500)(1.15)[1+(0.17)]$
$NFF_i = (1{,}500)(1.15)(1.17)$
$NFF_i = 2{,}018$
NFF_i = 2,000 gpm

APPENDIX A

Needed Fire Flow/Effective Area Table

TYPE OF CONSTRUCTION FACTOR AS DETERMINED BY RANGE IN EFFECTIVE AREA

Class	1		2		3,4		5,6	
Factor (F)	1.5		1.0		0.8		0.6	
	Effective Area (A_i)		Effective Area (A_i)		Effective Area (A_i)		Effective Area (A_i)	
(C_i)	At Least	Not Over	At Least	Not Over	At Least	Not Over	At Least	Not Over
500	0	535	0	1,205	0	1,883	0	3,348
750	536	1,050	1,206	2,363	1,884	3,692	3,349	6,564
1,000	1,051	1,736	2,364	3,906	3,693	6,103	6,565	10,850
1,250	1,737	2,593	3,907	5,835	6,104	9,117	10,851	16,209
1,500	2,594	3,622	5,836	8,150	9,118	12,734	16,210	22,639
1,750	3,623	4,822	8,151	10,852	12,735	16,954	22,640	30,140
2,000	4,823	6,194	10,853	13,937	16,955	21,776	30,141	38,714
2,250	6,195	7,737	13,938	17,409	21,777	27,202	38,715	48,359
2,500	7,738	9,452	17,410	21,267	27,203	33,230	48,360	59,076
2,750	9,453	11,338	21,268	25,511	33,231	39,861	59,077	70,864
3,000	11,339	13,395	25,512	30,140	39,862	47,095	70,865	83,724
3,250	13,396	15,624	30,141	35,156	47,096	54,931	83,725	97,656
3,500	15,625	18,025	35,157	40,557	54,932	63,374	97,657	112,659
3,750	18,026	20,597	40,558	46,344	63,375	72,413	112,660	128,734
4,000	20,598	23,341	46,345	52,517	72,414	82,058	128,735	145,881
4,250	23,342	26,256	52,518	59,076	82,059	92,306	145,882	164,100
4,500	26,257	29,342	59,077	66,020	92,307	103,156	164,101	183,390
4,750	29,343	32,600	66,021	73,350	103,157	114,610	183,391	203,751
5,000	32,601	36,029	73,351	81,066	114,611	126,666	203,752	225,185
5,250	36,030	39,630	81,067	89,168	126,667	139,325	225,186	247,690
5,500	39,631	43,402	89,169	97,656	139,326	152,587	247,691	271,267
5,750	43,403	47,346	97,657	106,529	152,588	166,452	271,268	295,915
6,000	47,347	51,461	106,530	115,788	166,453		295,916	
6,250	51,462	55,748	115,789	125,434				
6,500	55,749	60,206	125,435	135,464				
6,750	60,207	64,836	135,465	145,881				
7,000	64,837	69,637	145,882	156,684				
7,250	69,638	74,609	156,685	167,872				
7,500	74,610	79,753	167,873	179,446				
7,750	79,754	85,069	179,447	191,406				
8,000	85,070		191,407					

ISO Needed Fire Flow (NFF) Worksheet

(Page references are to the appropriate sections in the ISO Guide for Determination of Needed Fire Flow)

Petition Number: | **Date:**

Project: | **Engineer:**

Checked By:

Location:

Subject Building

Construction Class (p. 4): Wood Frame Construction **construction coefficient (F) (p. 2):** 1.5

Area of largest floor in the building (if modifications are made for division walls (p. 8), the division walls must be shown on the site plan.): sq.ft.

Total area of all other floors (if modifications are made for division walls (p. 8), the division walls must be shown on the site plan.): sq. ft.

Effective Area (A_i) (p. 9) : sq. ft. **(Show calculations below)**

Needed Fire Flow attributed to construction (C_i) (per formula (p. 2)): 0

(Round to the nearest 250 gpm. See p. 10 for maximum and minimum values of C_i)

Type of Occupancy: Combustible (C-3) **Occupancy Factor (O_i) (p. 11):** 1

Exposures (p. 16)

Front:
- **construction of facing wall of exposure building (p. 4):**
- **Distance (ft.) to the exposure building:** | **Length of exposure wall:**
- **Number of stories of exposure wall:** | **Length x number of stories:** 0
- **Opening Protection in exposure wall:**
- **Factor for exposure (X_i) from Table 330.A (p. 17):** 0

Back:
- **construction of facing wall of exposure building (p. 4):**
- **Distance (ft.) to the exposure building:** | **Length of exposure wall:**
- **Number of stories of exposure wall:** | **Length x number of stories:** 0
- **Opening Protection in exposure wall:**
- **Factor for exposure (X_i) from Table 330.A (p. 17):** 0

Left:
- **construction of facing wall of exposure building (p. 4):**
- **Distance (ft.) to the exposure building:** | **Length of exposure wall:**
- **Number of stories of exposure wall:** | **Length x number of stories:** 0
- **Opening Protection in exposure wall:**
- **Factor for exposure (X_i) from Table 330.A (p. 17):** 0

Right:
- **construction of facing wall of exposure building (p. 4):**
- **Distance (ft.) to the exposure building:** | **Length of exposure wall:**
- **Number of stories of exposure wall:** | **Length x number of stories:** 0
- **Opening Protection in exposure wall:**
- **Factor for exposure (X_i) from Table 330.A (p. 17):** 0

Communications (p. 18)

Passageway Opening Protection:

Construction class of communication (Table 330.B) :

Is communication open or enclosed?

Length of communication (in feet):

Factor for Communications (P_i) from Table 330.B on p.19): 0

Calculation of Needed Fire Flow (p. 1)

$NFF=(C_i)(O_i)[1.0+(X+P)_i]$ (substitute values as determined above. For exposures and communications use the single side with the highest charge.)

NFF= #NAME? x 1 x [1 + (0 + 0)

NFF= #NAME? gpm

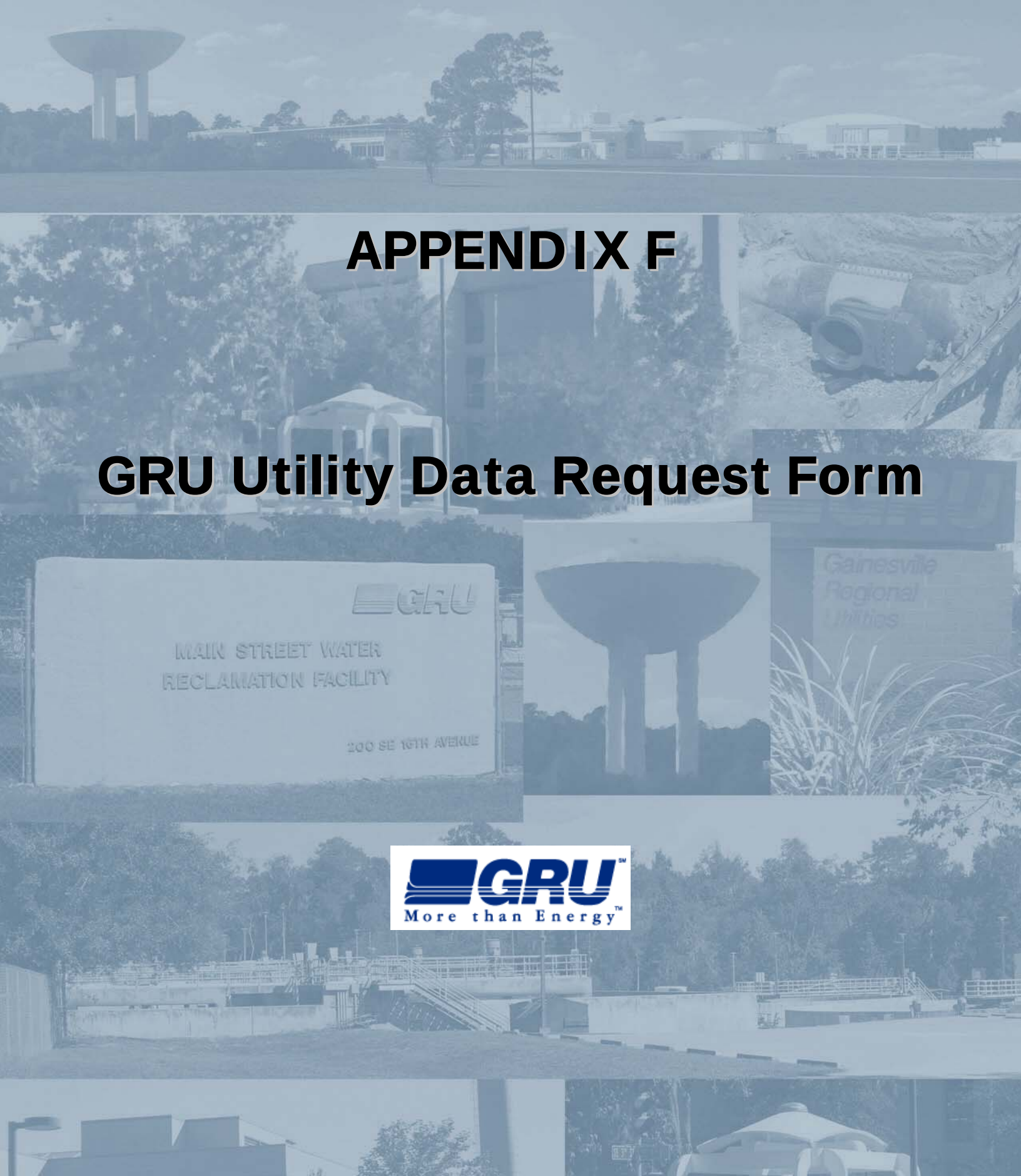
NFF= #NAME? gpm (rounded to nearest ### gpm per ISO requirements)

Note: ISO evaluates hydrant distribution by examining the number and type of hydrants within 1,000 feet of each representative building. They also look at the distance from each such hydrant to the subject building, measured as apparatus can lay hose.

Hydrants with at least one large pumper outlet may receive credit for up to 1,000 gpm. Hydrants with at least two hose outlets, but no pumper outlet, may receive credit for up to 750 gpm. And hydrants with only one hose outlet may receive credit for up to 500 gpm.

Hydrants within 300 feet of the subject building may receive credit for up to 1,000 gpm (but not more than the credit that would apply based on the number and type of outlets). Hydrants from 301 feet to 600 feet from the subject building may receive credit for up to 670 gpm (but not more than the credit that would apply based on the number and type of outlets). And hydrants from 601 feet to 1,000 feet from the subject building receive credit for 250 gpm. Under certain circumstances, when all fire department pumpers carry sufficient large-diameter hose, ISO may allow maximum credit for hydrants up to 1,000 feet from the subject building.

More than one fire hydrant may be required for proper distribution of water per ISO requirements.



APPENDIX F

GRU Utility Data Request Form

GRU™
More than Energy™

Water and Wastewater Engineering Department

GRU UTILITY DATA REQUEST FORM

Name: Date:

Company: E-Mail: Phone:

Project Manager:

Project Name:

Area of Interest Address:

Other Info: Tax Parcel Id: Map Grid: Subdivision:

(CHECK ALL THAT APPLY)

Utility data requested: ☐ Electric ☐ Gas ☐ Water ☐ Wastewater ☐ Reclaim ☐ Fiber

☐Fire-Flow ☐ General Service Areas Map (Shapefile) ☐ Other

Description (If **Other**)

Data requests will be addressed in the order they are received and will be fulfilled within 5 working days. (Fire Flows completed with data provided within 10 working days)

All requests shall be submitted using this form in a digital format **BY E-MAIL** sent to the following addresses:

Water/Wastewater/Reclaim: morleyjw@gru.com;
Electric: johnstonjm@gru.com
Gas: friendde@gru.com
GRUcom: hirschsc@gru.com

All fax or telephone requests will be referred to the completion of this form **THROUGH E-MAIL.**

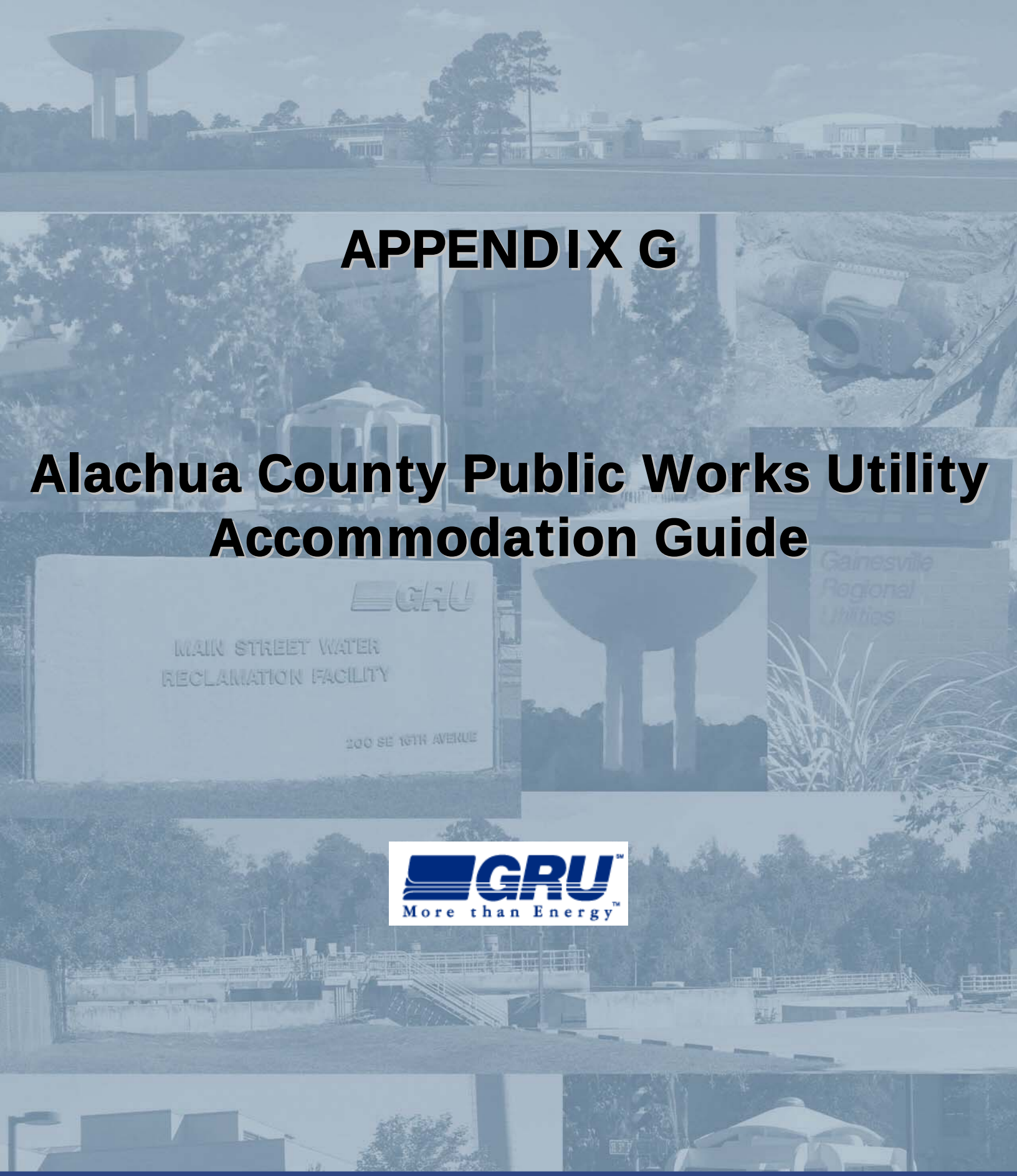
DISCLAIMER:

The data presented on this map has been prepared exclusively for the internal use of The City of Gainesville, Gainesville Regional Utilities, which assumes no liability for errors, or omissions in the information on the map. No person may rely upon its accuracy for any purpose, nor should any person use the information displayed hereon in strict compliance with applicable provisions of Chapter 556, Florida Statutes.

(This form is available in its original Word .doc format; email ingramrd@gru.com to request a copy)

APPENDIX G

Alachua County Public Works Utility Accommodation Guide



GRU™
More than Energy™

Water and Wastewater Engineering Department – February 2008

ALACHUA COUNTY PUBLIC WORKS
UTILITY ACCOMMODATION GUIDE

Alachua County Public Works intends to utilize the Florida Department of Transportation (FDOT) Utility Accommodation Manual for installation guidelines, to the greatest extent possible. This guide shall be utilized to provide exceptions to the referenced FDOT standards.

The following items are exceptions to the FDOT Utility Accommodation Manual:

PERMITTING

1.) Applications shall be submitted on the Utility Permit form, Appendix A.

2.) Permit applications shall be accompanied by the appropriate fee as established by resolution of the Board of County Commissioners.

3.) All reference to the Local Maintenance Engineer, the District Maintenance Engineer, or the District Permit Engineer shall be understood to mean the County Engineer.

4.) All permits submitted for approval shall be originals, in triplicate.

5.) Pictures of the proposed work are not required, unless specifically requested during the approval review process.

6.) Emergency repair, initiated to protect life and property, may be initiated immediately and the County Engineer, or his designee, shall be notified immediately. A permit application must be initiated the following business day.

NON-COMPLIANCE

1.) Permit non-compliance will be addressed in accordance with the Utility Installation Ordinance.

ACCOMMODATION STANDARDS

1.) Permits for installations on rights-of-way designated as “Scenic Roads”, by act of the Board of County Commissioners, shall conform to all stipulations of the respective Ordinance for utility installations.

2.) Clear recovery zone dimensions shall be governed by the FDOT Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Green Book) when dimensions reflected in the Accommodation Manual are less restrictive.

PAVEMENT CUTTING

1.) Cutting of the asphalt surface of an existing County maintained roadway will only be allowed in extenuating circumstances. Pavement cuts that are allowed shall have the asphalt surface replaced within 24 hours, with open cut restoration performed in accordance with FDOT Index No. 307, most current edition, using the flowable fill option. Thickness of limerock base may be replaced with Type “S” asphaltic concrete at the rate of 2.5" of asphalt for 6" of limerock base.

LOCATION CRITERIA

1.) All underground installations shall be placed parallel to the roadway, or right-of-way, as far back from the edge of the roadway as possible. Congestion due to existing facilities will not be grounds for approval of any installation detrimental to the roadway integrity.

2.) No underground utilities, installed parallel to the roadway, shall be installed in the shoulder area of a rural roadway or within 4' of the back of curb on a curb and gutter roadway.

UNDERGROUND CROSSINGS

1.) Underground crossings of existing roads may be installed by jacking, boring, or directional bore. Directional boring will be restricted from areas known to contain flint rock of enough concentration to deflect the true plane of the installation. Crossing of existing roadways with any pressurized line will require that the utility line be placed in a casing. On new construction, all service lines of any utility will be in a casing, however water mains may be installed without a casing when the main is constructed of ductile iron pipe (DIP).

2.) All crossings installed either by direct bury or by boring, will have the ends of the casing no closer than 8' from the edge of the pavement on rural roads with paved shoulders, 13' on rural roads without a paved shoulder, and no closer than 5' from the back of the curb on a curb and gutter roadway. Casing lengths may be required to be longer in order to facilitate known future widening or reconstruction. All jacked, bored, or directional bored crossings are subject to require pressure testing to a minimum of 20 psi for 24 hours, prior to the installation of the utility line, if there are any concerns about the integrity of the casing after installation.

3) Alachua County Construction Inspections shall be notified 24 hours prior to the start of a roadway crossing by directional bore or by jack and bore. The assigned inspector and the utility contractor making the crossing shall meet on site prior to the excavation of any bore pits. The area shall be evaluated to prevent damage to any underground drainage structures, under drain, sidewalk, or any other structural portion of the roadway.

ACCESS TO UTILITY FACILITIES

1.) Any utility facility which requires frequent access, such as communication huts, lift stations, junction boxes, or any other similar facility, shall have permanent driveway access constructed.

Such driveway access shall be permitted in accordance with the Alachua County Access Management Ordinance prior to construction.

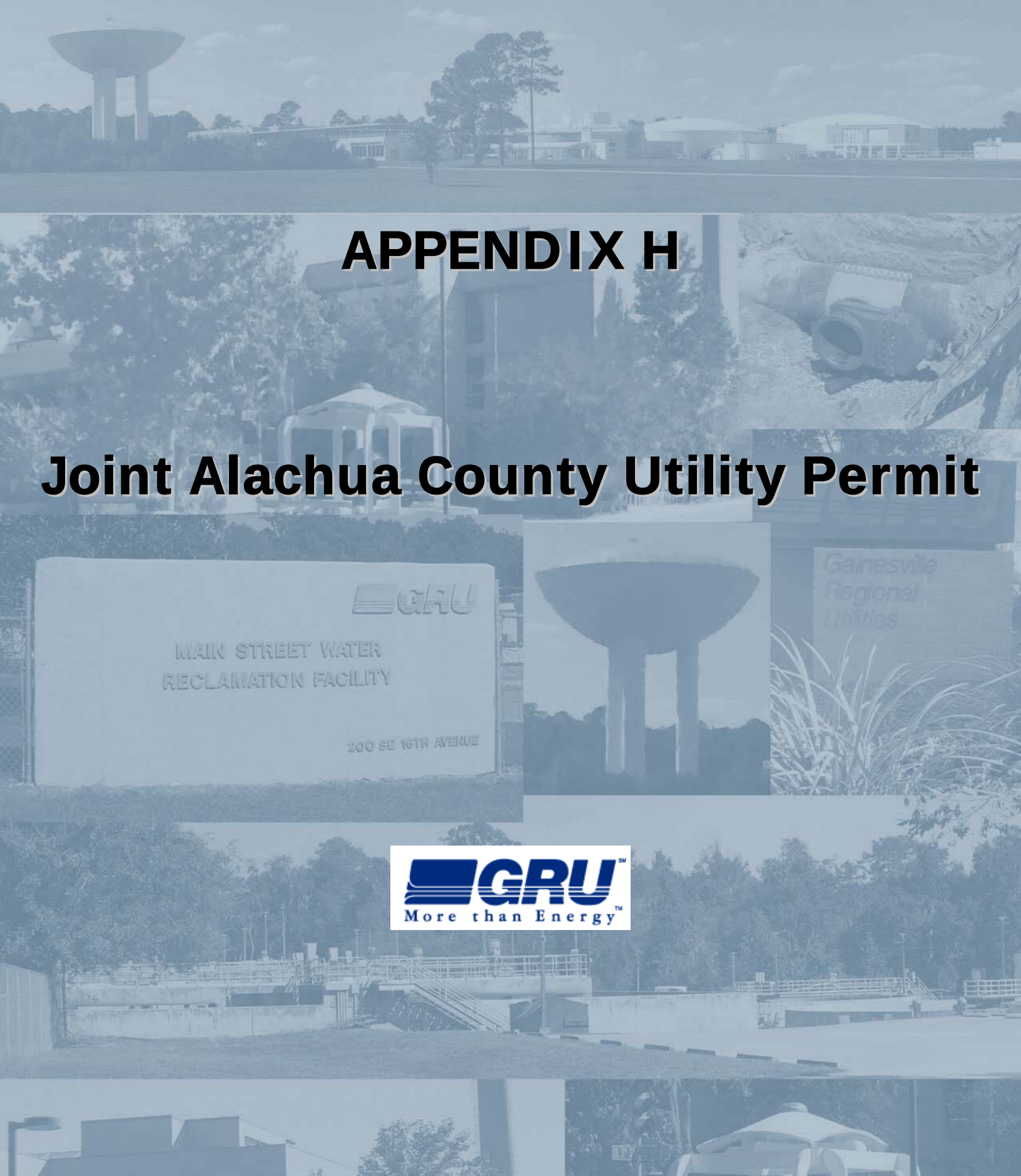
THIS DOCUMENT MAY BE REVISED AS NECESSARY IN ORDER TO PROMOTE TECHNOLOGY, ADDRESS SITE SPECIFIC CIRCUMSTANCES, OR TO IDENTIFY FURTHER DIFFERENCES WITH THE FDOT UTILITY ACCOMMODATION MANUAL AS THEY OCCUR OR ARE IDENTIFIED.

CURRENT DATE OF THIS REVISION NO. 2 IS AUGUST 1, 2002.

V:\Engineering\Public\JMK\UTILITY ACCOMODATION GUIDE.doc

APPENDIX H

Joint Alachua County Utility Permit



GRU™
More than Energy™

Water and Wastewater Engineering Department – February 2008

DEVELOPER INSTALLED EXTENSIONS
Permit Fee:
GRU File No.:

JOINT
ALACHUA COUNTY
UTILITY PERMIT

COMPLIANCE WITH STATE STATUTE 337.40 THRU 337.408 PERMIT NO. _____

Date: _____ Permit Approved Yes ( ) No ( )

Subject: County Road No.: _____
Between Road No.: _____ and Road No.: _____

CO-PERMITTEE: GAINESVILLE REGIONAL UTILITIES, c/o REAL ESTATE DEPT. Phone No. 334-3400 ext. 1221
Permittee's Address P.O. Box 147117, Sta. A-130, Gainesville, FL 32614-7117
Contact Person: _____

CO-PERMITTEE:_____ Phone No_____
Permittee's Address: _____
ContactPerson: _____

IF CONTRACTOR IS TO DO WORK:
Contractor's Name _____Phone No. _____
Contractor's Address _____
Contact Person _____

NOTE: Fill out fully if Contractor is not known, notify County as soon as that information is available.

Requesting permission from the Alachua County Public Works Department, hereinafter call The Department, to construct, operate and maintain:

_____
_____
_____
_____

1. Proposed work is within the corporate limits of a municipality Yes ( ) No ( )

   Name of municipality City of Gainesville

   A letter of concurrence from municipality is attached. Yes ( ) No ( )

2. Applicant declares that prior to filing this application he has ascertained the location of all existing utilities, both aerial and underground.

   A letter of notification was mailed on _____ to the following utilities:

   _____
   _____

3. State right-of-way is involved Yes ( ) No ( )

4. It is expressly stipulated that this permit is a license for permissive use only and that the placing of facilities upon public property pursuant to this permit shall not operate to create or vest any property right in said holder.

5. Whenever necessary for construction, repair, improvement, maintenance, safe and efficient operation, alteration or relocation of all, or any portion of said highway as determined by the Public Works Department, any or all of said poles, wires, pipes, cables or other facilities and appurtenances authorized hereunder, shall be immediately removed from said highway, or reset or relocated thereon as required by the Public Works Department, and at the expense of the permittee unless reimbursement is authorized.

6. All work shall meet Department standards and be performed under the supervision of the Public Works Department.

7. All materials and equipment shall be subject to inspection by the Public Works Department.

8. All Department property shall be restored to its original condition as far as practical, in keeping with Department specifications, and in a manner satisfactory to the Department.

9. All installations shall conform to the Department's Utility Accommodation Guide in effect the date permit is approved.

10. The attached sketch covering details of this installation shall be made a part of this permit.

11. The permittee shall commence actual construction in good faith within sixty (60) days from the date of said permit approval and shall be completed within **120** days. **This permit expires at the end of 60 days, if no work has begun.**

12. The construction and maintenance of such utility shall not interfere with the property and rights of a prior permittee.

13. Special Conditions **(1) Re-grade, seed, fertilize and mulch all disturbed areas; and (2) The City of Gainesville shall have no rights or obligations hereunder until such time as the facilities have been accepted in writing by the City of Gainesville.**

14. Special Instructions **"All traffic control will be in accordance with the most recent Roadway and Traffic Design Standards, Section No. 600 issued by the Department of Transportation (FDOT)" All utility installation will be in accordance with the most current issue of the FDOT Utility Accommodation Guide.**

15. It is understood and agreed that the rights and privileges herein set out are granted only to the extent of the County's right, title and interest in the land to be entered upon and used by the permittee. The Permittee agrees in consideration of the benefits derived by the granting of this permit and the County's coordination of the Permittee's facilities with other utilities and transportation facilities on this right-of-way, the Permittee will to the extent permitted by, and in accordance with F.S. 768.28, at all times, assume all risk of and indemnify, defend, and save harmless Alachua County, its Department of Public Works employees and agents, from and against any and all loss, damage, cost or expense arising from Permittee's negligent acts or omissions, or the negligent acts or omissions of Permittee's Officers or employees in the exercise or attempted exercises by said holder of the aforesaid rights and privileges. During construction, all safety regulations of the State and County shall be observed and the permittee must take such measures, including placing and display of safety devices, as may be necessary in order to safely conduct the public through the project area in accordance with the State and Federal traffic safety standards.

    The Permittee further agrees, in consideration of the aforesaid benefits, the permittee will hold harmless and indemnify, Alachua County, its Public Works Department employees and agents, against all loss and damage to the Permittee's facilities and property, including loss of use, and loss of income, in accordance with the provisions of F.S. 768.28, as amended.

    The Permittee shall be solely responsible for relocation of its facilities in the event of future roadway improvements.

16. The Office of the Public Works Department named in paragraph six shall be notified forty-eight (48) hours in advance before starting work.

17. In the case of non compliance with the Department's requirements this permit is void and the facility will have to be made to comply with such requirements or be removed from the R/W at no cost to the Department.

Submitted by: **Co-Permittee (As to Operations and Maintenance)**

BY: GAINESVILLE REGIONAL UTILITIES

_____ _____
Signature Attested
_____, Land Rights Coordinator

Co-Permittee (As to Construction)

BY: _____

_____
Signature
Title _____

Roadway construction is proposed or underway. Yes ( ) No ( )

Proposed installation is in accordance with Alachua County's Accommodation Guide Yes ( ) No ( )

Approved by _____ _____
County Engineer Date

ACPW USE ONLY

DATE WORK STARTED:_____COMPLETED:
ACPW ACCEPTANCE (Initial by Inspector)

DEPTH_____METHOD

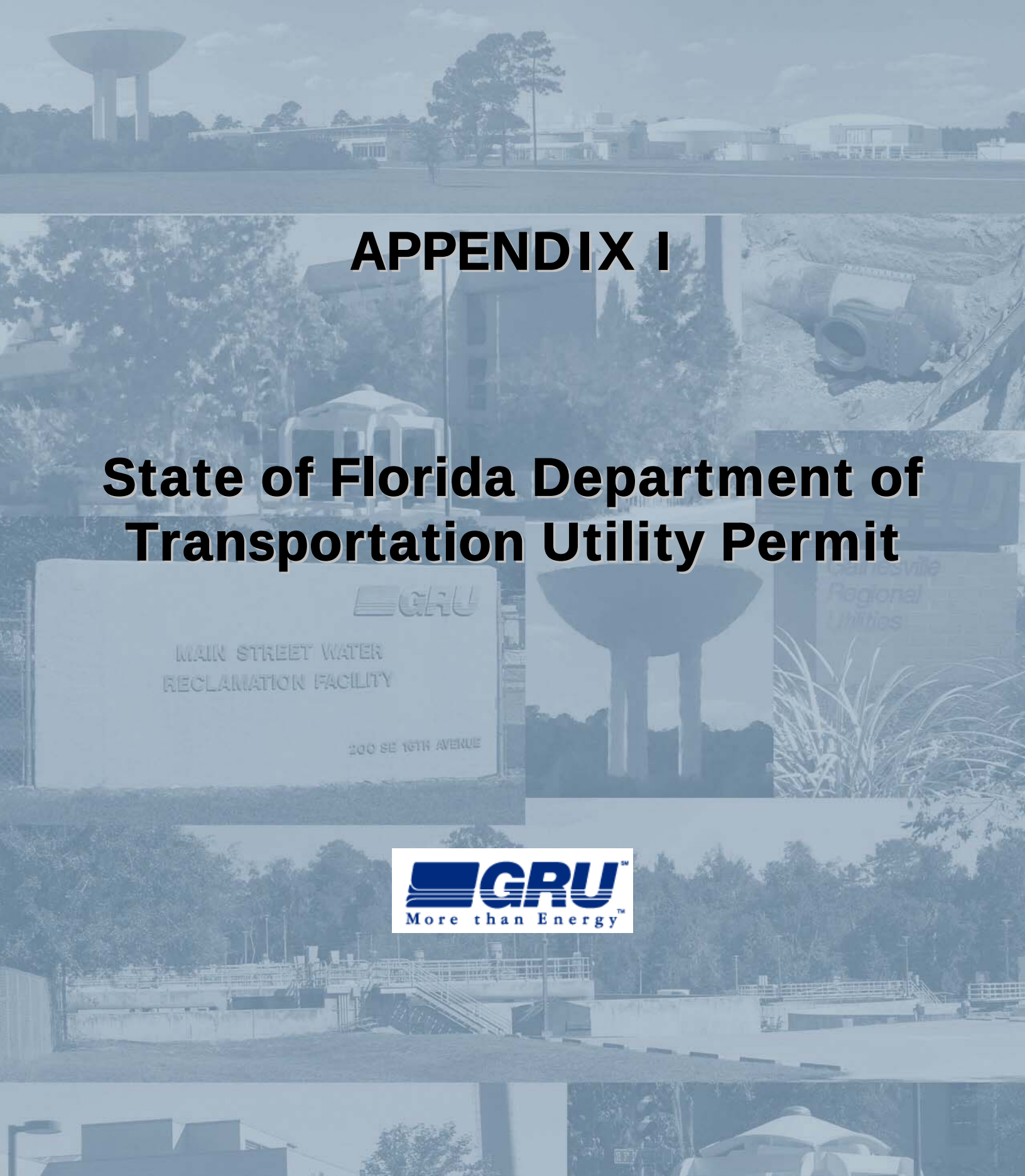
LOCATION_____RESTORATION
TRAFFIC CONTROL AND SIGNING:

INSPECTED BY:

REMARKS:

APPENDIX I

State of Florida Department of Transportation Utility Permit



GRU™
More than Energy™

Water and Wastewater Engineering Department –
December 2008

UTILITY PERMIT

PERMIT NO.:	SECTION NO.:	STATE ROAD	COUNTY
FDOT construction is proposed or underway.	☐ Yes	☐ No	Financial Project ID:
Is this work related to an approved Utility Work Schedule?	☐ Yes	☐ No	If yes, Document Number:
PERMITTEE:			
ADDRESS:		TELEPHONE NUMBER: ( ) -	
CITY/STATE/ZIP:			

The above PERMITTEE requests permission from the State of Florida Department of Transportation, hereinafter called the FDOT, to construct, operate and maintain the following:

FROM: #####	TO: #####

Submitted for the PERMITTEE by: Name and Company (Typed or Printed Legibly)	Contact Information Address/Telephone/E-Mail (if applicable)	Signature	Date

1. The Permittee declares that prior to filing this application, the location of all existing utilities that it owns or has an interest in, both aerial and underground, are accurately shown on the plans and a letter of notification was mailed on _____ to the following utilities known to be involved or potentially impacted in the area of the proposed installation:
   _____.
2. The local Maintenance or Resident Engineer, hereafter referred to as the FDOT Engineer, shall be notified a minimum of forty eight (48) hours in advance prior to starting work and again immediately upon completion of work. The FDOT's Engineer is _____, located at _____, Telephone Number _____. The Permittee's employee responsible for MOT is _____, Telephone Number _____. (This name may be provided at the time of the forty eight (48) hour advance notice prior to starting work).
3. All work, materials, and equipment shall be subject to inspection and approval by the FDOT Engineer.
4. All plans and installations shall conform to the requirements of the FDOT's UAM in effect as of the date this permit is approved by FDOT, and shall be made a part of this permit. This provision shall not limit the authority of the FDOT under Paragraph 8 of this Permit.
5. This Permittee shall commence actual construction in good faith within _____ days after issuance of permit, and shall be completed within _____ days after the permitted work has begun. If the beginning date is more than sixty (60) days from the date of permit approval, the Permittee must review the permit with the FDOT Engineer to make sure no changes have occurred to the Transportation Facility that would affect the permitted construction.
6. The construction and maintenance of such utility shall not interfere with the property and rights of a prior Permittee.
7. It is expressly stipulated that this permit is a license for permissive use only and that the placing of utilities upon public property pursuant to this permit shall not operate to create or vest any property right in said holder, except as provided in executed subordination and Railroad Utility Agreements.
8. Pursuant to Section 337.403, Florida Statues, any utility placed upon, under, over, or along any public road or publicly owned rail corridor that is found by FDOT to be unreasonably interfering in any way with the convenient, safe, or continuous use, or maintenance, improvement, extension, or expansion, of such public road or publicly owned rail corridor shall, upon thirty (30) days written notice to the utility or its agent by FDOT, be removed or relocated by such utility at its own expense except as provided in Section 337.403(1), Florida Statues, and except for reimbursement rights set forth in previously executed subordination and Railroad Utility Agreements, and shall apply to all successors and assigns for the permitted facility.
9. It is agreed that in the event the relocation of said utilities are scheduled to be done simultaneously with the FDOT's construction work, the Permittee will coordinate with the FDOT before proceeding and shall cooperate with the FDOT's contractor to arrange the sequence of work so as not to delay the work of the FDOT's contractor, defend any legal claims of the FDOT's contractor due to delays caused by the Permittee's failure to comply with the approved schedule, and shall comply with all provisions of the law and the FDOT's current UAM. The Permittee shall not be responsible for delay beyond its control.
10. In the case of non-compliance with the FDOT's requirements in effect as of the date this permit is approved, this permit is void and the facility will have to be brought into compliance or removed from the R/W at no cost to the FDOT, except for reimbursement rights set forth in previously executed subordination and Railroad Utility Agreements. This provision shall not limit the authority of the FDOT under Paragraph 8 of this Permit.
11. It is understood and agreed that the rights and privileges herein set out are granted only to the extent of the State's right, title and interest in the land to be entered upon and used by the Permittee, and the Permittee will, at all times, and to the extent permitted by law, assume all risk of and indemnify, defend, and save harmless the State of Florida and the FDOT from and against any and all loss, damage, cost or expense arising in any manner on account of the exercise or attempted exercises by said Permittee of the aforesaid rights and privileges.
12. During construction, all safety regulations of the FDOT shall be observed and the Permittee must take measures, including placing and the display of safety devices that may be necessary in order to safely conduct the public through the project area in accordance with the Federal MUTCD, as amended by the UAM.
13. Should the Permittee be desirous of keeping its utilities in place and out of service, the Permittee, by execution of this permit acknowledges its present and continuing ownership of its utilities located between _____ and _____ within the FDOT's R/W as set forth above. Whenever the Permittee removes its facilities, it shall be at the Permittee's sole cost and expense. The Permittee, at its sole expense, shall promptly remove said out of service utilities whenever the FDOT determines said removal is in the public interest.
14. In the event contaminated soil is encountered by the Permittee or anyone within the permitted construction limits, the Permittee shall immediately cease work and notify the FDOT. The FDOT shall notify the Permittee of any suspension or revocation of the permit to allow contamination assessment and remediation. Said suspension or revocation shall remain in effect until otherwise notified by FDOT.
15. For any excavation, construction, maintenance, or support activities performed by or on behalf of the FDOT, within its R/W, the Permittee may be required by the FDOT or its agents to perform the following activities with respect to a Permittee's facilities: physically expose or direct exposure of

UTILITY PERMIT

underground facilities, provide any necessary support to facilities and/or cover, de-energize or alter aerial facilities as deemed necessary for protection and safety.

16. Pursuant to Section 337.401(2), Florida Statutes, the permit shall require the permit holder to be responsible for damage resulting from the issuance of the permit. The FDOT may initiate injunctive proceedings as provided in s.120.69 to enforce provisions of this subsection or any rule or order issued or entered into pursuant thereto.
17. Pursuant to Section 337.402, Florida Statutes, when any public road or publicly owned rail corridor is damaged or impaired in any way because of the installation, inspection, or repair of a utility located on such road or publicly owned rail corridor, the owner of the utility shall, at his or her own expense, restore the road or publicly owned rail corridor to its original condition before such damage. If the owner fails to make such restoration, the authority is authorized to do so and charge the cost thereof against the owner under the provisions of s.337.404.
18. The Permittee shall comply with all provisions of Chapter 556, Florida Statutes, Underground Facilities Damage Prevention and Safety Act.
19. Special FDOT instructions: _____

_____
_____
_____
_____
_____
_____

It is understood and agreed that commencement by the Permittee is acknowledgment and acceptance of the binding nature of all the above listed permit conditions and special instructions.

20. By receipt of this permit, the Permittee acknowledges responsibility to comply with Section 119.07,, Florida Statutes..
21. By the below signature, the Permittee hereby represents that no change to the FDOT's standard Utility Permit form, as incorporated by reference into Rule 14-46.001, for this Utility Permit has been made which has not been previously called to the attention of the FDOT (and signified to by checking the appropriate box below) by a separate attached written document showing all changes and the written and dated approval of the FDOT Engineer. Are there attachments reflecting change/s to the standard form? ☐NO ☐ YES If Yes, _____ pages are attached.

PERMITTEE		**SIGNATURE**		**DATE:**	
	Name & Title of Authorized Permittee or Agent (Typed or Printed Legibly)				
APPROVED BY:				**ISSUE DATE:**	
	District Maintenance Engineer or Designee				

UTILITY PERMIT FINAL INSPECTION CERTIFICATION

DATE:	
DATE WORK STARTED:	
DATE WORK COMPLETED:	
INSPECTED BY:	
(Permittee or Agent)	
CHANGE APPROVED BY:	**DATE:**
District Maintenance Engineer or Designee	

I the undersigned Permittee do hereby CERTIFY that the utility construction approved by the above numbered permit was inspected and installed in accordance with the approved plans made a part of this permit and in accordance with the FDOT's current UAM. All plan changes have been approved by the FDOT's Engineer and are attached to this permit. I also certify that the work area has been left in as good or better condition than when the work was begun.

PERMITTEE:	**SIGNATURE:**	**DATE:**
Name & Title of Authorized Permittee or Agent (Typed or Printed Legibly)		

CC: District Permit Office
Permittee

Note: This form is also available at:
http://www.dot.state.fl.us/onestoppermitting/

Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD
SECRETARY

MEMORANDUM

To: ALL FDOT Driveway / Utility Permit Applicants
In Alachua, Clay, Duval and St. Johns Counties.

From: Permit Engineer / Coordinator

Subject: National Pollutant Discharge Elimination System (NPDES) Permits

---

The Department is requesting that a Copy of your Notice of Intent (NOI) application or letter to use the Generic Permit for Storm Water Discharge from Large and Small Construction Activities, pursuant to Florida Department of Environmental Protection Rule 62-621 Florida Administrative Code, be submitted as part of your application.

Please complete the applicable items below:

Project Name: _____

Project Address / Location: _____

_____ **I certify that the referenced project is over 1.0 Acre of disturbed area and a copy of the NOI is attached for your records.**

_____ **I certify that the referenced project is less than 1.0 Acre of disturbed area and an NOI is not required**

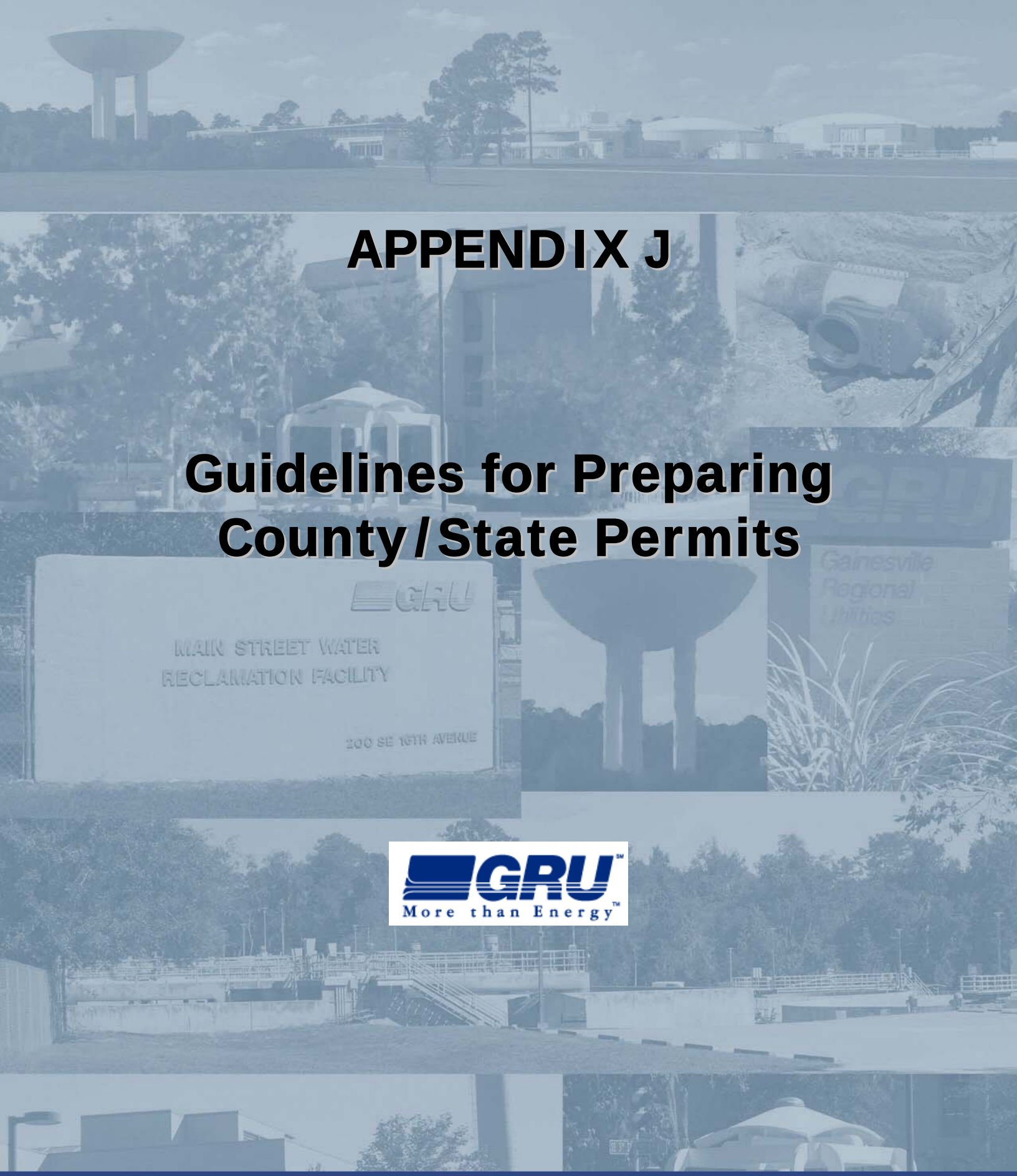
Signature: _____

Printed Name: _____Owner __ Agent __ Contractor __Developer

***** The Drainage Connection Permit will not be issued without this completed document *****

APPENDIX J

Guidelines for Preparing County/State Permits



GRU™
More than Energy™

Water and Wastewater Engineering Department

GUIDELINES FOR PREPARING COUNTY/STATE PERMITS

PLAN VIEW MUST SHOW THE FOLLOWING:

1. Key map with location of proposed facility and north arrow
2. Beginning and ending limits of project and offset to known landmark or nearest road in feet
3. Sidewalk and/or bike path and dimensions (include off-set distances from proposed installation)
4. Total right-of-way width
5. Pavement and width (include off-set distances from proposed installation)
6. Median and width
7. All known existing underground and overhead utilities in area of proposed construction
8. Location inside the right-of-way of proposed installations
9. Total length of overhead and underground installations
10. Casing and material size, type and method of installation for underground lines
11. Location must reference the distance to the closest County or State Road in feet
12. County or State Road number
13. Electric: Voltages on electric cables and sizes or classes of proposed poles
    Gas: Operating pressure on gas lines.

TYPICAL CROSS SECTION MUST SHOW THE FOLLOWING:

1. Sidewalk and/or bike path dimensions
2. Total right-of-way width
3. Pavement and width
4. Median and width
5. Curb and gutter
6. All known existing underground and overhead utilities in area of proposed construction, including FDOT storm sewers (Contact all utilities for locations, i.e. Bellsouth, AT & T, Cable TV, GRU Depts. - Electric, Gas, W/WW)
7. Minimum depth of underground installation
8. Minimum height of overhead installation
9. Pole distances from centerline of road and from curb and gutter
10. Location inside the right-of-way of proposed installation
11. Casing or material size, type, depth (36" minimum) and method of installation for underground lines (Must be an approved method of installation)

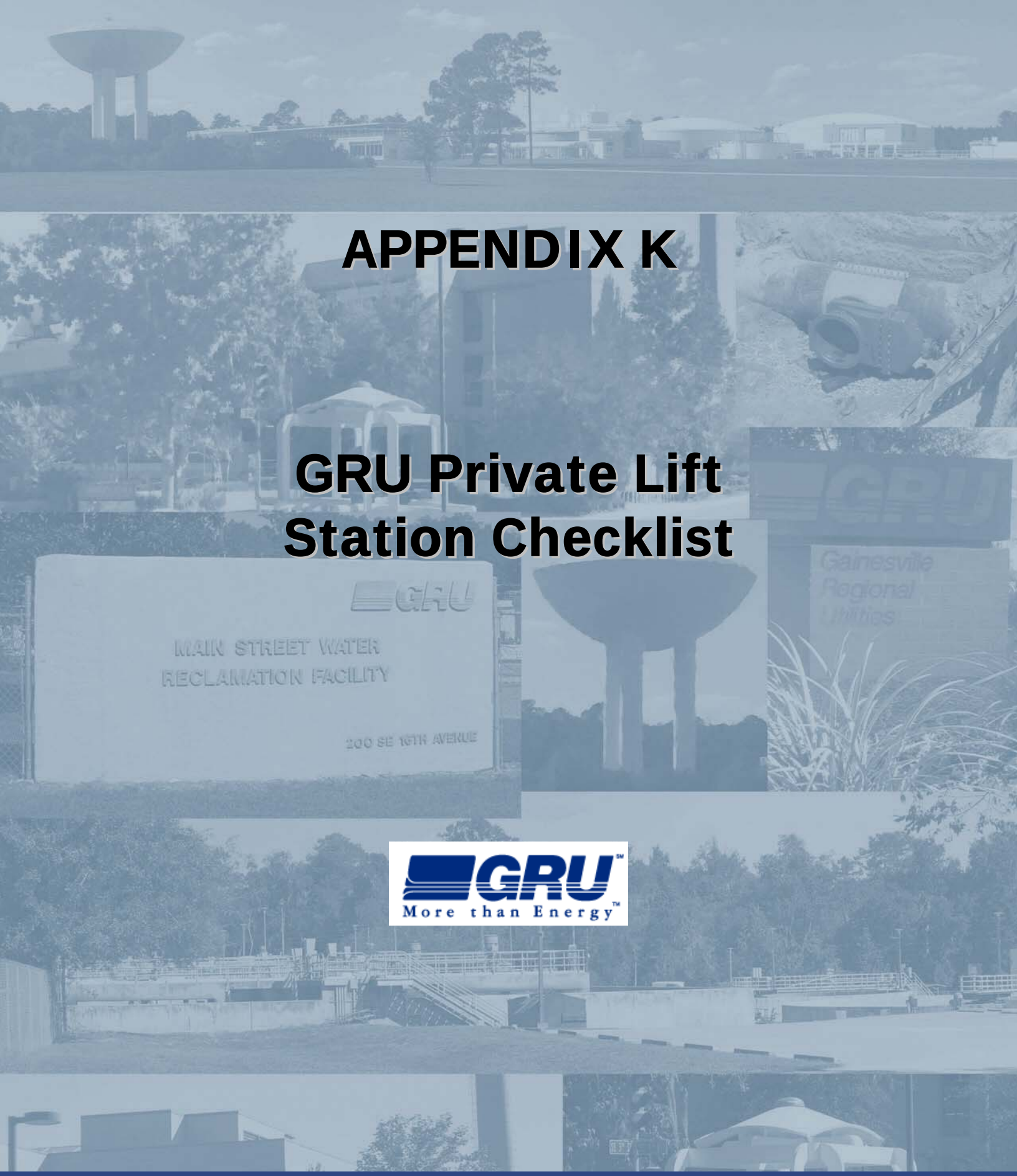
DRAWINGS AND ADDITIONAL DOCUMENTS REQUIRED:

COUNTY: 4 original drawings + PDF File (E-mail to boyds1@gru.com)
STATE: 6 original drawings + PDF File (E-mail to boyds1@gru.com)
Addendum to Utility Agreement, if applicable
Original signed NPDES (National Pollutant Discharge Elimination System) Form
MOT

CLOSEOUT (The following should be returned to the GRU Real Estate Division as soon as the work is complete and inspected.)
COUNTY: Return a copy of the Approval Memorandum with Completion Information
STATE: Return a copy of the Approved Utility Permit with Final Inspection Certification on Page 2 completed.

APPENDIX K

GRU Private Lift Station Checklist



GRU™
More than Energy™

Water and Wastewater Engineering Department

GAINESVILLE REGIONAL UTILITIES
WATER & WASTEWATER ENGINEERING

GRU W/WWE Private Lift Station Permit Checklist

PROJECT:
ENGINEER:
WWTP:
Drawing signed & sealed:
Date:

LIFT STATION	COMMENT
2 pumps	
Pump details/specs./curve	
System head curve	
Calculations signed/sealed	
Emergency pump-out	
High level alarm	
Sufficient wetwell volume	
Generator receptacle	
RPZ backflow device	
Enclosure (fence)	
Flotation Calculations	

FORCE MAINS	
Minimum diameter (4")	
Pipe material	
AWWA C-900 Piping = (SDR14 @ 200psi,	
SDR18 @150psi, SDR25 @ 100psi)	
If <4", Piping = NSF Sch 40 or 80	
Leakage test	
Thrustblock Details/Restraining Joints	
Minimum cover	
Horizontal separation from Water (6')	
Vertical separation (18")	
Air & vacuum relief valves	
Minimum Velocity (2 fps)	

DETAILED PLANS	
	(Ch. 20, 10-State Stds.)
INVERTED SIPHONS	
DREDGE & FILL PERMIT REQ.	Responsibility of Engineer of Record
Reviewer	
Okay to permit – Date	