

# Columbia County Board of County Commissioners

## ELLISVILLE UTILITIES

### Commercial Loop

# PHASE I

#### PROJECT CONTACTS

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(386) 719-9985

COLUMBIA COUNTY PUBLIC WORKS  
(386) 752-5955

FDOT UTILITIES  
(386) 961-7153

FOR:

Columbia County Board of County Comissioners

P.O. Box 1529

Lake City, FL 32055

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#### SHEET INDEX

C1 PHASE I (SOUTH)  
C2 PHASE I (NORTH)



STRUCTURAL/CIVIL ENGINEERS  
GTC Design Group

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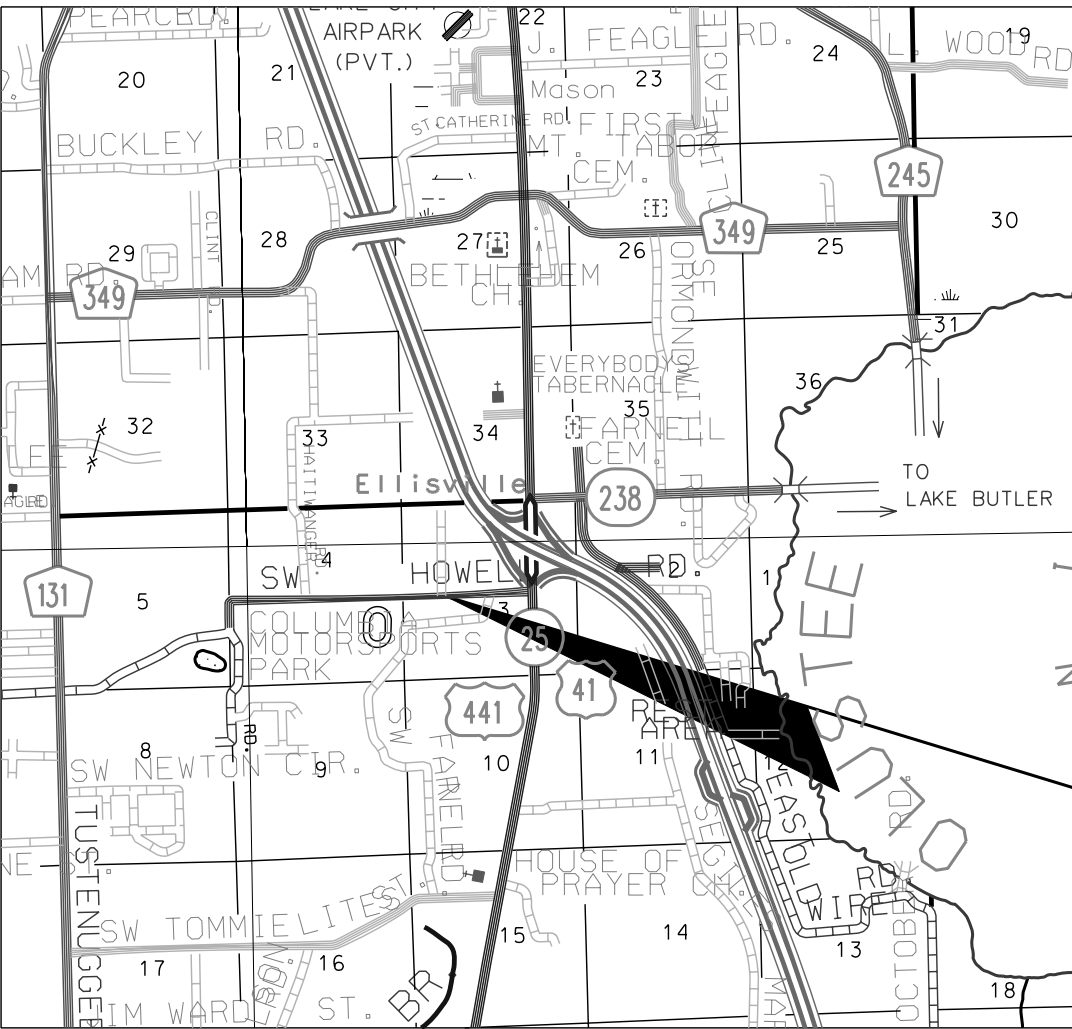
**Lake City**  
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www.gtcdesigngroup.com

Chadwick W. Williams, PE 63144

Auth. #: 9461

#### GENERAL NOTES

- The contractor shall verify all existing conditions and dimensions at the job site to insure that all new work will fit in the manner intended on the plans. Should any conditions exist that are contrary to those shown on the plans, the contractor shall notify the engineer and Columbia County Public Works of such differences immediately & prior to proceeding with the work.
- The contractor shall maintain the construction site at all times in a secure manner. All open trenches and excavated areas shall be protected from access by the general public.
- Boundary and topographical information shown was obtained from a survey performed by Donald F. Lee & Associates, Inc., P.S.M. Florida Certificate #7042.
- Any public land corner within the limits of construction is to be protected. If a corner monument is in danger of being destroyed and has not been properly referenced, the contractor should notify the engineer.
- Contractor shall contact GTC Design Group, LLC and Columbia County Department of Public Works to perform site inspections.
- Contractors shall adhere to the Erosion Control Plan. All erosion control measures shall be implemented prior to construction and be continued until construction is complete. Any failure of erosion measures must be corrected immediately per SWPPP.
- Contractor shall sod slopes of 6' horizontal to 1' vertical to 3' horizontal to 1' vertical and shall staple sod all slopes steeper than 3' horizontal to 1' vertical. Areas not requiring sod shall be seeded with a mixture of long-term vegetation and quick-growing short-term vegetation for the following conditions: For the months from September through March, the mix shall consist of 70 pounds per acre of long-term seed and 20 pounds per acre of winter rye. For the months of April through August, the mix shall consist of 70 pounds per acre of long-term seed and 20 pounds per acre of millet.
- The contractor shall waste all excess earth on site as directed by the engineer.
- Contractor shall provide an as-built survey meeting the requirements of Chapter 6J-17.051 F.A.C. for the potable water system. Include horizontal and vertical dimensional data so that improvements are located and delineated relative to the boundary. Provide sufficient detailed data to determine whether the improvements were constructed in accordance with the plans. Submit the survey to the engineer on reproducible 20 lb. vellum and in .DWG format in State Plane Coordinates.
- Contractor shall review and become familiar with all required utility connections prior to bidding and determine exact location during construction. Contractor shall provide all work and materials required to complete connection to the existing utilities. The location of the utilities shown in the plans is approximate only. The exact location shall be determined by the contractor during construction. This includes, but is not limited to, manhole coring, wet taps, pavement repairs and directional boring.
- Potable water will be supplied by the Columbia County.
- The materials and construction shall be certified by a testing laboratory retained by the contractor. Copies of all test results shall be provided prior to acceptance.
- All traffic control and safety items (stripping, stop bars, regulatory signs, etc.) shall be in place before final approval.
- The temporary grass shall be sufficient to control erosion during periods of construction when earth work areas are left for more than 7 calendar days.
- Final inspection for acceptance to be performed by GTC Design Group and Columbia County Public Works Director.
- Contract Time - The contract time will require substantial completion by January 1, 2010. Liquidated damages shall be \$500.00 per calendar day.
- Construction and Materials - All construction and materials shall conform to the requirements of the Florida Department of Transportation Specifications for Road and Bridge Construction, Latest Edition. Certification by an approved testing laboratory is required (contractor responsibility). Payment shall be as specified in the bid proposal.



PROJECT LOCATION

## LOCATION MAP

SECTION 3, TOWNSHIP 6 SOUTH, RANGE 17 EAST

COLUMBIA COUNTY, FLORIDA

#### POTABLE WATER NOTES

- Contractor shall keep existing water mains and service lines in operation during construction.
- Contractor shall construct all pipe, pipe fittings, pipe joint packing and jointing materials, valves, fire hydrants, and meters to conform to applicable American Water Works Association (AWWA) standards.
- Contractor shall construct all public water system components, excluding fire hydrants, that will come into contact with drinking water, shall conform to NSF International Standard 61 as adopted in Rule 62-555.335, F.A.C., or other applicable standards, regulations, or requirements referenced in paragraph 62-555.320(3)(b), F.A.C.
- All pipe and pipe fittings installed under this project will contain no more than 8.0% lead, and any solder or flux used in this project will contain no more than 0.2% lead.
- All pipe and pipe fittings installed under this project will be color coded or marked in accordance with subparagraph 62-555.320(21)(b)3, F.A.C., using blue as a predominant color. Underground plastic pipe will be solid-wall blue pipe, will have a co-extruded blue external skin, or will be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall. Pipe striped during manufacturing of the pipe will have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint will be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe, for pipe with an internal diameter of 24 inches or greater, tape or paint will be applied in continuous lines along each side of the pipe as well as along the top of the pipe. Aboveground pipe will be painted blue or will be color coded or marked like underground pipe.
- All new or altered dead-end water mains included in this project will be provided with a fire or flushing hydrant or blow-off for flushing purposes.
- All fire hydrants that will be installed under this project and that will have unplugged, underground drains will be located at least three feet from any existing or proposed storm sewer, stormwater force main, pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., or vacuum-type sanitary sewer, at least six feet from any existing or proposed gravity, or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C., and at least ten feet from any existing or proposed "on-site sewage treatment and disposal system."
- At high points where air can accumulate in new or altered water mains included in this project, provisions will be made to remove the air by means of air relief valves, and automatic air relief valves will not be used in situations where flooding of the valve manhole or chamber may occur.
- The open end of the air relief pipe from all automatic air relief valves installed under this project will be extended to at least one foot above grade and will be provided with a screened, downward-facing elbow. All new or altered chambers, pits, or manholes that contain valves, blow-offs, meters, or other such water distribution system appurtenances and that are included in this project will not be connected directly to any sanitary or storm sewer, and blow-offs or air relief valves installed under this project will not be connected directly to any sanitary or storm sewer.
- All new or altered water mains included in this project will be installed in accordance with applicable AWWA standards or in accordance with manufacturers' recommended procedures.
- A continuous and uniform bedding will be provided in trenches for underground pipe installed under this project; backfill material will be tamped in layers around underground pipe installed under this project and to a sufficient height above the pipe to adequately support and protect the pipe; and unsuitable sized stones (as described in applicable AWWA standards or manufacturers' recommended installation procedures) found in trenches will be removed for a depth of at least six inches below the bottom of underground pipe installed under this project.
- All water main tees, bends, plugs, and hydrants installed under this project will be provided with thrust blocks or restrained joints to prevent movement.
- Contractor shall provide pressure and leakage tests in accordance with AWWA Standard C603 or C605, respectively, as incorporated into Rule 62-555.330, F.A.C., for all new or altered water mains that are constructed of asbestos-cement or polyvinyl chloride. And Contractor shall provide pressure and leakage tests for all other new or altered water mains in accordance with AWWA Standard C600 as incorporated into Rule 62-555.330.
- Contractor shall provide disinfection and bacteriologically evaluation in accordance with Rule 62-555.340, F.A.C., on all new or altered water mains, including fire hydrant leads and including service lines that will be under the control of a public water system and that have an inside diameter of three inches or greater.
- All new or altered water mains that are included in this project and that will be installed in areas where there are known aggressive soil conditions will be protected through use of corrosion-resistant water main materials, through encasement of the water mains in polyethylene, or through provision of cathodic protection.
- All new or relocated, underground water mains included in this project will be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed vacuum-type sanitary sewer, storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed gravity-type sanitary sewer (or a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.); and a horizontal distance of at least six feet between the outside of the water main and the outside of any existing or proposed "on-site sewage treatment and disposal system."
- All new or relocated, underground water mains that are included in this project and that will cross any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer will be laid so the outside of the water main is at least six inches above the other pipeline or at least 12 inches below the other pipeline; and new or relocated, underground water mains that are included in this project and that will cross any existing or proposed pressure-type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water will be laid so the outside of the water main is at least 12 inches above or below the other pipeline.
- If a utility crossings described in Part II.C.1.w above, is required, a single full length of water main pipe will be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline or the pipes will be arranged so that all water main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.
- All new or altered water mains that are included in this project and that will cross above surface water will be adequately supported and anchored, protected from damage and freezing, and accessible for repair or replacement.
- All new or altered water mains that are included in this project and that will cross under surface water will have a minimum cover of two feet.
- All new or altered water mains that are included in this project and that will cross under surface water courses greater than 15 feet in width will have flexible or restrained, watertight pipe joints and will include valves at both ends of the water crossing so the underwater main can be isolated for testing and repair; the aforementioned isolation valves will be easily accessible and will not be subject to flooding; the isolation valve closest to the water supply source will be in a manhole, and permanent taps will be provided on each side of the isolation valve within the manhole to allow for insertion of a small meter to determine leakage from the underwater main and to allow for sampling of water from the underwater main.

#### LEGEND

##### EXISTING

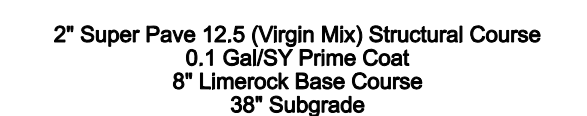
CONCRETE MONUMENT FOUND  
IRON PIPE FOUND  
ELECTRIC METER  
ELECTRIC MANHOLE  
LIGHT STANDARD  
POWER POLE  
SHARED POWER POLE W/ TRANSFORMER  
SHARED POWER POLE  
TELEPHONE POLE  
REDUCER  
WATER METER  
WATER VALVE  
FIRE HYDRANT  
BACKFLOW PREVENTER  
SANITARY SEWER VALVE  
SANITARY MANHOLE  
STORMWATER MANHOLE  
FDOT STORMWATER MANHOLE  
GROUND CONTOUR  
D.O.T. MARKER FOUND  
GAS METER  
GAS VALVE  
SOIL BORING LOCATION  
SINGLE POST SIGN  
BENCH MARK  
SECTION CORNER

##### PROPOSED

TELEPHONE POLE  
TELEPHONE MANHOLE  
ELECTRIC MANHOLE  
ELECTRIC METER  
LIGHT  
STANDARD POWER POLE  
POWER POLE SHARED  
POWER POLE SHARED W/ TRANSFORMER  
GAS METER  
GAS VALVE  
WATER METER  
WATER VALVE  
WATER REDUCER  
WATER TEE  
WATER 90° BEND  
SINGLE WATER SERVICE  
DOUBLE WATER SERVICE  
FIRE HYDRANT  
BACKFLOW PREVENTER  
SANITARY MANHOLE  
SANITARY VALVE  
SANITARY SINGLE SERVICE  
SANITARY DOUBLE SERVICE  
GROUND CONTOUR  
DITCH BLOCK  
STORMWATER MANHOLE  
FLOW ARROW  
HANDICAP PARKING  
MITERED END  
SIGN

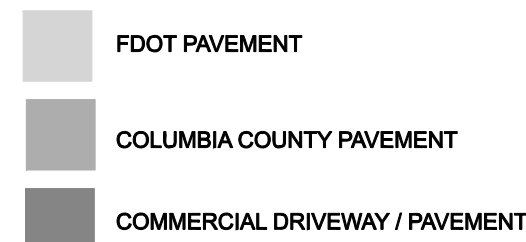
#### ABBREVIATIONS

PL	PROPERTY LINE	IP	IRON PIPE
CL	CENTER LINE	MH	MANHOLE
BL	BASE LINE	G	GAS
SAN	SANITARY SEWER	UC	UNDERGROUND CABLE
ST	STORM SEWER	OC	OVERHEAD CABLE
E	ELECTRIC	W	WATER LINE
OHE	OVERHEAD ELECTRIC	HDPE	HIGH-DENSITY POLYETHYLENE
UG	UNDERGROUND ELECTRIC	RCP	REINFORCED CONCRETE PIPE-ROUND
OHT	OVERHEAD TELEPHONE	RCPA	REINFORCED CONCRETE PIPE-ARC
UT	UNDERGROUND TELEPHONE	RCPE	REINFORCED CONCRETE PIPE-ELLIPTICAL
R	RADIUS	CMC	CORRUGATED METAL PIPE-ROUND
CO	CLEANOUT	CMPA	CORRUGATED METAL PIPE-ARC
BM	BENCH MARK	BCOMP	BITUMINOUS COATED CORRUGATED METAL PIPE
IE	INVERT ELEVATION	BCCSP	BITUMINOUS COATED CORRUGATED STEEL PIPE
LF	LINEAR FEET		

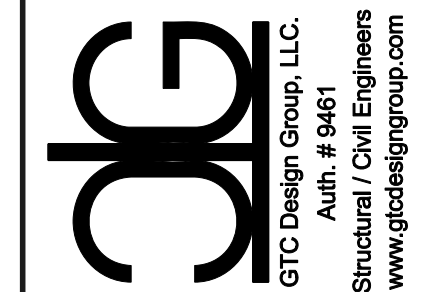


**NOTES:**  
SUBGRADE SHALL BE COMPACTED TO  
100% OF MAXIMUM DRY DENSITY AS ESTABLISHED  
BY ASTM T-99.  
THIS TYPICAL SECTION IS FOR ALL  
ROADWAY CONSTRUCTION INSIDE FDOT  
RIGHT-OF-WAY.

OPEN CUT AND REPLACE  
DETAIL - NTS



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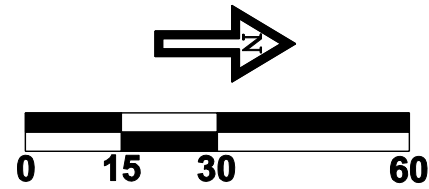
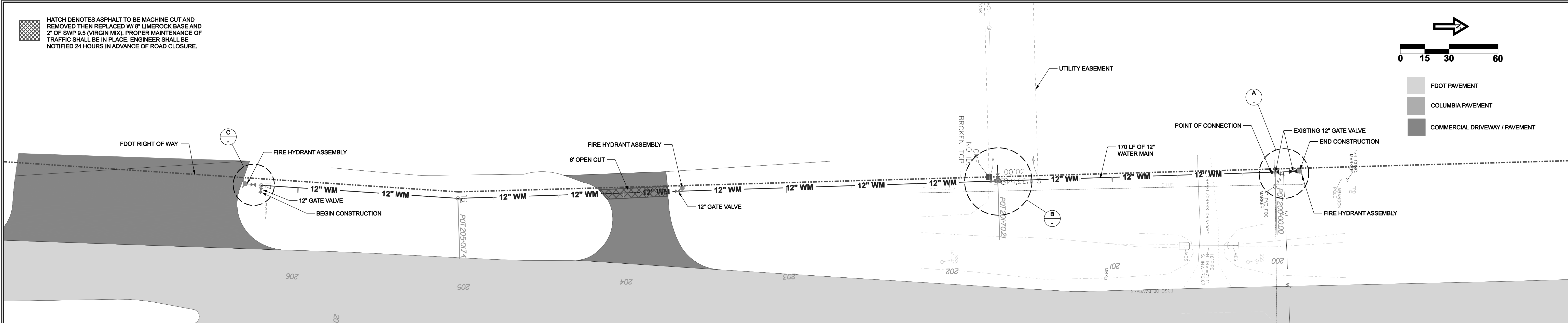


**COLUMBIA COUNTY BOARD OF COUNTY COMMISSIONERS**  
**ELLISVILLE UTILITIES**  
**COMMERCIAL LOOP**  
**PHASE 1**

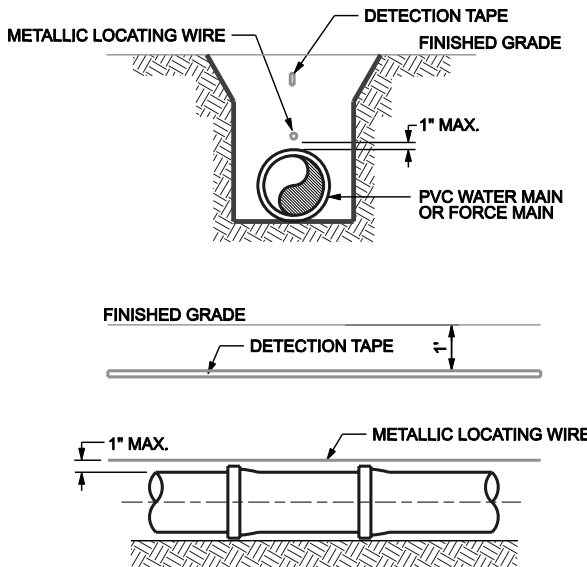
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PROJECT NUMBER  <b>PF10-013</b>	
SHEET  <b>C1</b>	



HATCH DENOTES ASPHALT TO BE MACHINE CUT AND REMOVED THEN REPLACED W/ 8" LIMEROCK BASE AND 2" OF SWP 9.5 (VIRGIN MIX). PROPER MAINTENANCE OF TRAFFIC SHALL BE IN PLACE. ENGINEER SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF ROAD CLOSURE.

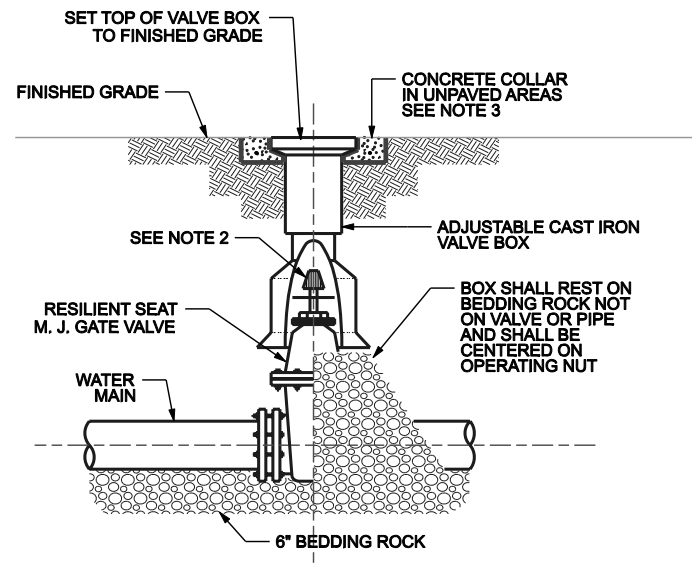


- FDOT PAVEMENT  
COLUMBIA PAVEMENT  
COMMERCIAL DRIVEWAY / PAVEMENT



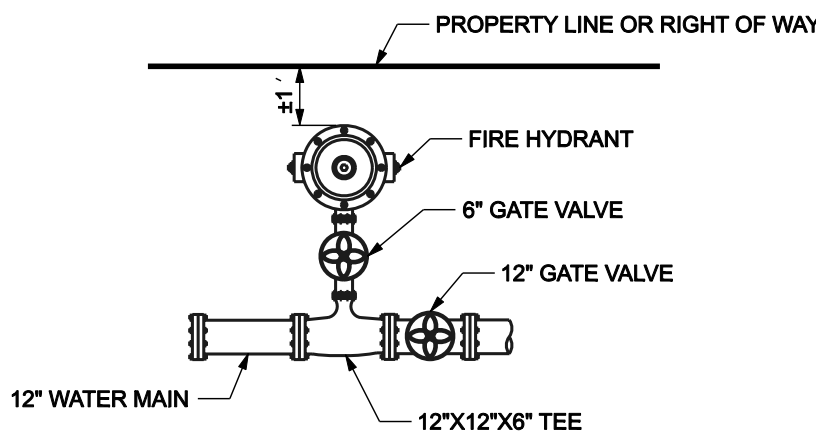
- NOTES:**
- PVC PIPE SHALL REQUIRE INSULATED METALLIC LOCATING WIRE (1/4" GAUGE COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR. WIRE SHALL BE BURIED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE. LOCATING WIRE SHALL TERMINATE AT THE TOP OF EACH VALVE BOX AND BE CAPABLE OF EXTENDING 12" ABOVE THE TOP OF SUCH A MANNER SO AS NOT TO INTERFERE WITH VALVE OPERATION. USE DUCT TAPE AS NECESSARY TO HOLD WIRE DIRECTLY ON THE TOP OF THE PIPE.
  - LOCATING TAPE SHALL BE INSTALLED 1 FOOT BELOW FINAL GRADE OVER THE CENTERLINE OF THE PIPE. THE TAPE SHALL BE INSTALLED 1 FOOT BELOW FINAL GRADE SHALL BE THE DETECTABLE PIPE. THE TAPE SHALL BE LAID CONTINUOUSLY WITHOUT GAPS BETWEEN ENDS. OVERALL INSTALLED PERKS THE TAPE SHALL HAVE THE WORDS "CAUTION WATER LINE BURIED BELOW" PRINTED CONTINUOUSLY ALONG LENGTH.

PVC PIPE LOCATING WIRE DETAIL  
NTS



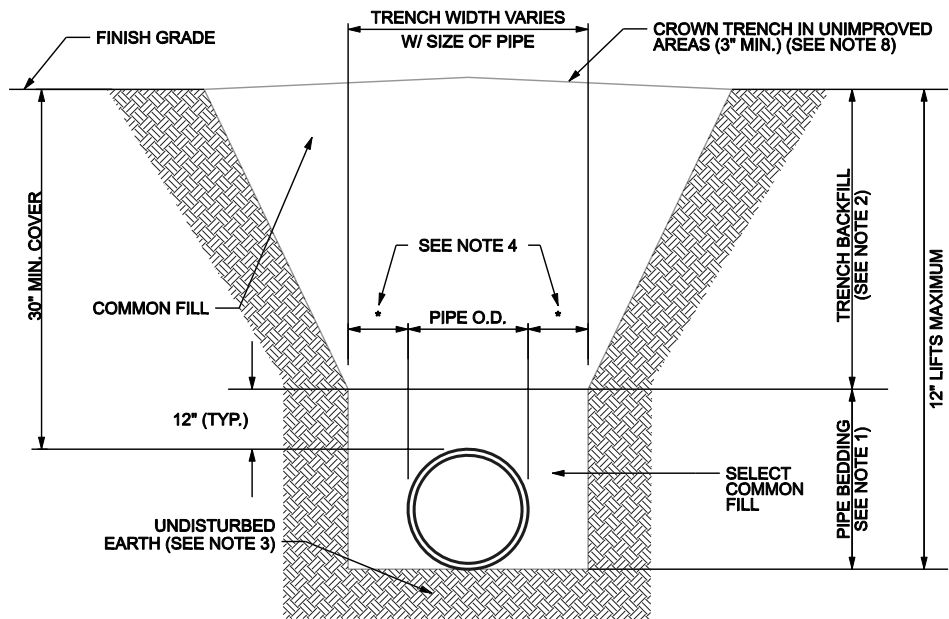
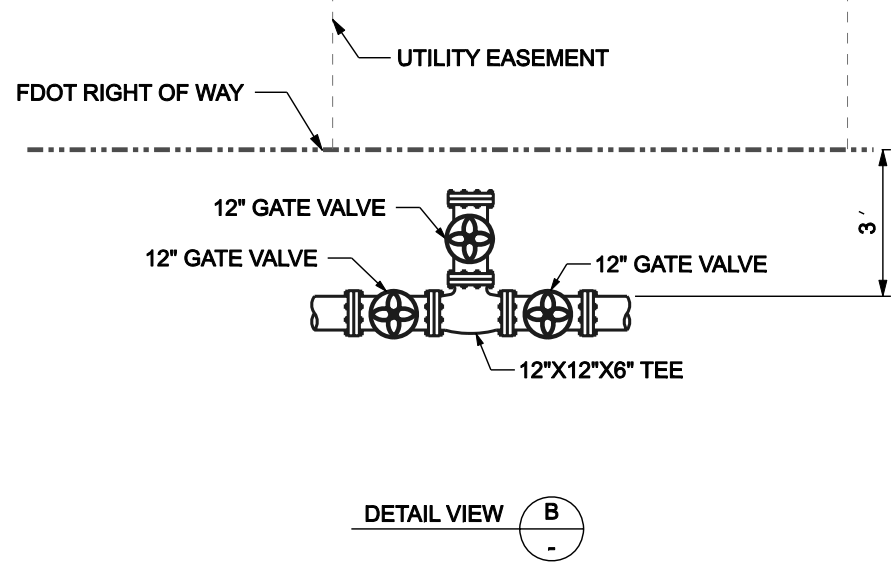
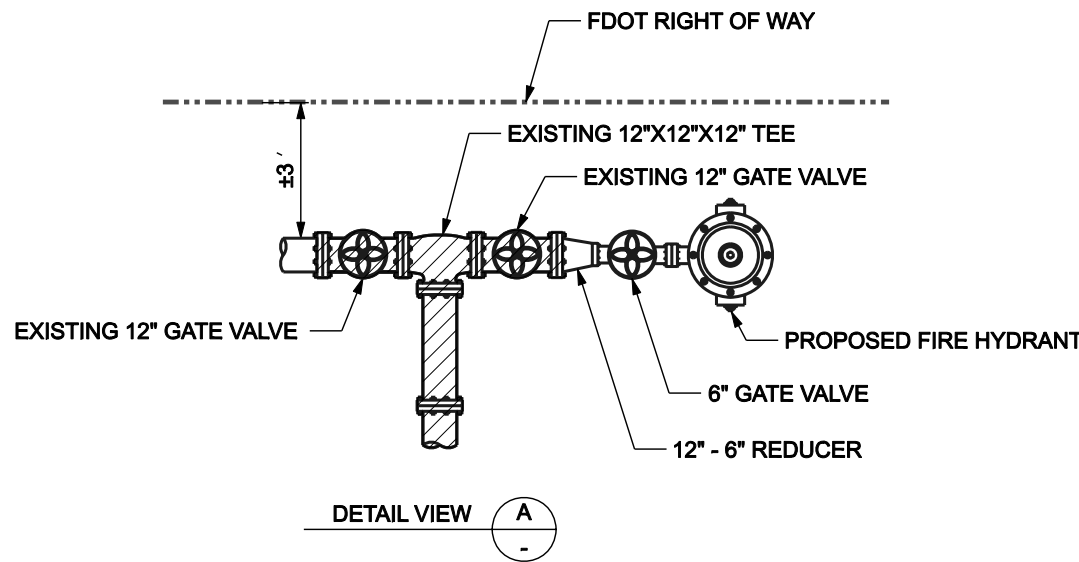
- NOTES:**
- PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
  - THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.
  - VALVE COLLAR SHALL BE 18"X18"X6" CONCRETE COLLAR W/ 4" BARS.

GATE VALVE AND BOX DETAIL  
NTS



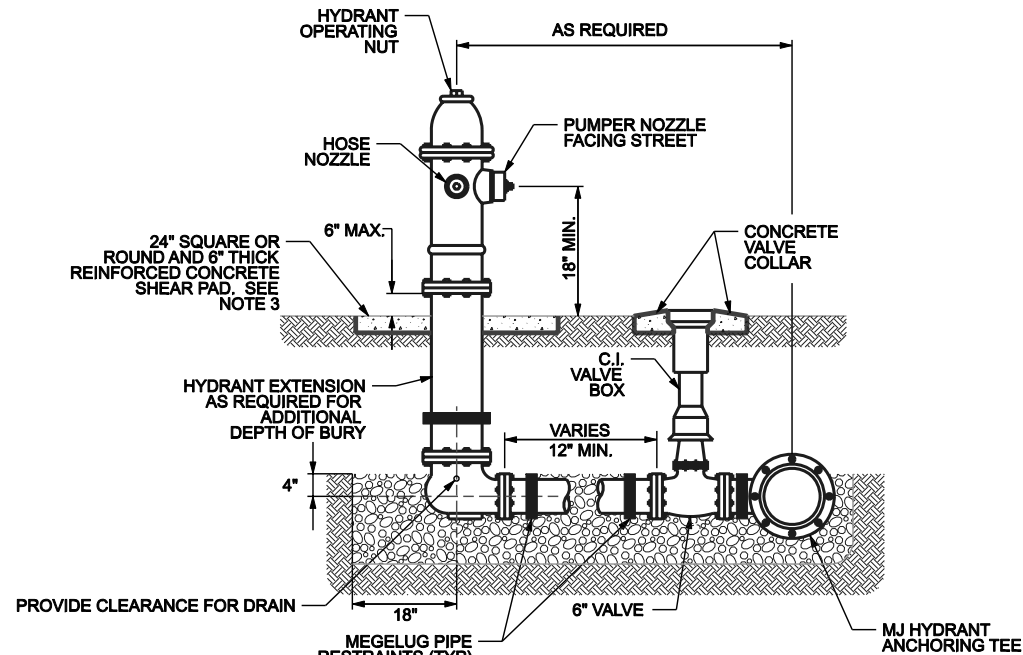
NOTE: ATYPICAL FIRE HYDRANT CONNECTION ASSEMBLIES ARE DETAILED INDIVIDUALLY.

FIRE HYDRANT ASSEMBLY WITH 12" GATE VALVE  
NTS



- NOTES:**
- PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 85% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
  - TRENCH BACKFILL: COMMON FILL COMPACTED TO 85% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
  - PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK WILL BE REQUIRED IF OVER-EXCAVATION OCCURS.
  - 7" - 10" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.
  - WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
  - ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
  - PROVIDE TRENCH SLOPING AND BRACINGS AS REQUIRED FOR SAFETY.
  - FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN PAVED AREAS SHALL COMPLY WITH THE REQUIREMENTS OF THE ROAD CONSTRUCTION SPECIFICATIONS.

TRENCH AND BACKFILL DETAIL  
NTS



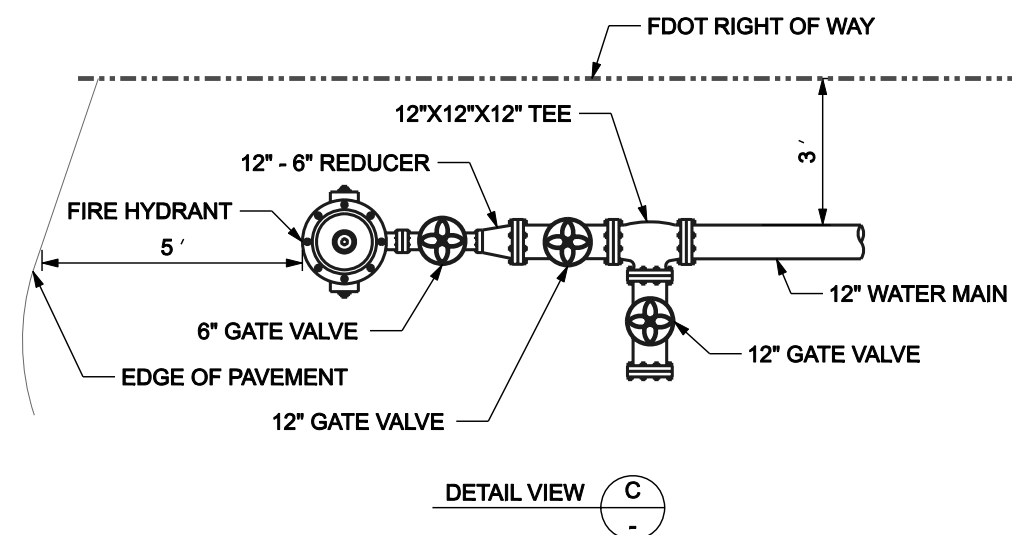
- NOTES:**
- GRAVEL TO BE PLACED AROUND DRAIN.
  - ALL MECHANICAL JOINTS SHALL BE RESTRAINED BY MEGELUG RESTRAINTS OR APPROVED EQUAL.
  - THE DEVELOPER MAY INSTALL THE SHEAR PAD RECESSED UP TO 4 INCHES BELOW FINISHED GRADE AND 800 THE RECESSED SECTION

FIRE HYDRANT ASSEMBLY  
NTS

	PIPE SIZE					
	6"	8"	10"	12"	16"	20"
90° BEND	1	1	2	2	2	2
45° BEND	0	1	1	1	1	1
22-1/2° BEND	0	0	0	0	1	1
11-1/4° BEND	1	1	2	2	3	4
PLUG OR BRANCH OFF TEE	2	3	3	4	5	6

- DUCTILE IRON (DI) FITTINGS TO BE RESTRAINED TO PVC (C900) PIPE WITH SERIES OF 2000PVC MECHANICAL RESTRAINT GLANDS AS MANUFACTURED BY EBAN IRON, INC. OR APPROVED EQUAL. DI FITTINGS TO BE RESTRAINED TO DIP PER CURRENT DIPRA STANDARDS.
- WATER MAIN TO BE RESTRAINED EACH SIDE OF FITTINGS FOR LENGTHS AS NOTED IN TABLE BELOW. RESTRAINT SHALL BE ACCOMPLISHED WITH DUCTILE IRON RESTRAINT HARNESSSES FOR PVC CONFORMING TO ASTM A-838. RESTRAINT HARNESSSES TO BE SERIES 1800 AS MANUFACTURED BY EBAN IRON, INC. OR APPROVED EQUAL. RESTRAINT FOR DIP SHALL BE BY INTERNAL RESTRAINT GASKETS PER CURRENT DIPRA STANDARDS.
- THE TABLE BELOW SHOWS TYPICAL NUMBERS, IN 20' SECTIONS, OF PIPE TO BE RESTRAINED FOR THE FOLLOWING ASSUMPTIONS: (1) DEPTH OF COVER = 36", (2) TEST PRESSURE = 150 PSI, (3) SAFETY FACTOR = 1.5, (4) LAYING CONDITIONS = PIPE EMBEDDED IN LOOSE CLEAN SAND AND COMPACTED TO TOP OF PIPE (APPROXIMATELY 90% STANDARD PROCTOR).

RESTRAINED PIPE DETAIL

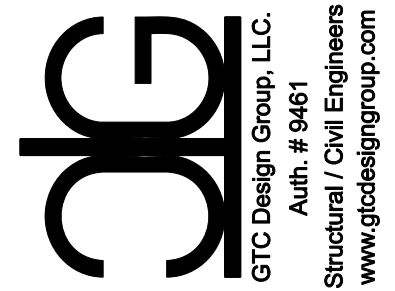


COLUMBIA COUNTY BOARD OF COUNTY COMMISSIONERS  
ELLISVILLE UTILITIES  
COMMERCIAL LOOP  
PHASE 1

REVISION NOTES

DATE

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DRAWN BY  
AS

CHECKED BY  
CW

PROJECT NUMBER  
PF10-013

SHEET  
C2