

**SEMINOLE COUNTY GOVERNMENT
AGENDA MEMORANDUM**

SUBJECT: Approval of an Interlocal Utility Construction Agreement Between Seminole County and the City of Longwood in Conjunction with the Lake Emma Road Project (Longwood Hills Road to Sand Pond Road)

DEPARTMENT: Public Works

DIVISION: Engineering

AUTHORIZED BY: Gary Johnson

CONTACT: Dave Andrews

EXT: 5716

MOTION/RECOMMENDATION:

Approve and authorize the Chairman to execute an Interlocal Utility Construction Agreement between Seminole County and the City of Longwood in conjunction with the Lake Emma Road Project (Longwood Hills Road to Sand Pond Road).

District 4 Carlton D. Henley

Jerry McCollum

BACKGROUND:

The City of Longwood desires to remove and replace existing potable water utilities, at its expense, owned and operated by the City and located within the County's rights-of-way, in conjunction with the Lake Emma Road Project from Longwood Hills Road to Sand Pond Road. This Interlocal Agreement will facilitate including this work as part of the County's road improvement project.

The \$300,000 of funding for the new project, the **Lake Emma Road Utility Relocation project**, has been included in the proposed FY 2009/10 budget, presented this evening at the Second Public Hearing for the Adoption of the FY 2009/10 Budget (CIP 00054102).

STAFF RECOMMENDATION:

Staff recommends that the Board approve and authorize the Chairman to execute an Interlocal Utility Construction Agreement between Seminole County and the City of Longwood in conjunction with the Lake Emma Road Project (Longwood Hills Road to Sand Pond Road).

ATTACHMENTS:

1. Location Map
2. Interlocal Utility Construction Agreement - City of Longwood - Lake Emma Road Project

Additionally Reviewed By:

County Attorney Review (Matthew Minter)

Budget Review (Fredrik Coulter, Lisa Spriggs)



END
PROJECT

LAKE MARY BLVD

Rice Lake

INTERSTATE 4

LAKE EMMA RD

GREENWOOD BLVD

EXCHANGE PL

GREENWOOD BLVD

SAND POND RD

Greenwood Lake

COMMERCE ST

SKYLINE DR

TECHNOLOGY PARK

GREENWAY BLVD

EMMA OAKS TR

MARKHAM WOODS ROAD

LAKE EMMA RD

EQUESTRIENNE CLUB LN

BEGIN
PROJECT

Myrtle Lake

LUCKY TR

FREYER DR

RANCHLAND TR

MYRTLE LAKE HILLS RD

RIDGE RD

SHADOW TR

LAZY ACRES LN

Grace Lake

Lake Alma

E.E.WILLIAMSON RD

LONGWOOD HILLS RD

LAZY ACRE LN

LOCATION MAP

SEMINOLE COUNTY AND CITY OF LONGWOOD
INTERLOCAL UTILITY CONSTRUCTION AGREEMENT
LAKE EMMA ROAD PROJECT

THIS INTERLOCAL AGREEMENT is made and entered into this ____ day of _____, 2009, by and between SEMINOLE COUNTY, a political subdivision of the State of Florida, whose address is Seminole County Services Building, 1101 East First Street, Sanford, Florida 32771, hereinafter referred to as "COUNTY," and the CITY OF LONGWOOD, a Florida municipal corporation, whose address is 175 West Warren Avenue, Longwood, Florida 32750, hereinafter referred to as "CITY".

W I T N E S S E T H:

WHEREAS, the parties hereto have the common power to construct utility and roadway facilities and to contract for the performance of such work; and



WHEREAS, CITY desires, at its expense, to remove certain existing potable water utilities, owned and operated by CITY and located within the COUNTY's rights-of-way, in conjunction with the COUNTY road widening project known as the Lake Emma Road Construction Project (Longwood Hills Road to Sand Pond Road), hereinafter referred to as "COUNTY Project"; and

WHEREAS, CITY has requested that COUNTY include the costs associated with such removal work as defined in Section 2 hereinbelow, in the COUNTY Project in order to meet the CITY's needs and complete the work in a manner that is economical and timely for the CITY; and

WHEREAS, COUNTY is willing to include such work in the COUNTY's Project pursuant to the terms and conditions of this Agreement; and

WHEREAS, this Agreement is authorized by the provisions of Chapters 125, 163 and 166, Florida Statutes, and other applicable law,

NOW, THEREFORE, in consideration of the mutual covenants herein contained and other good and valuable consideration, the receipt, adequacy and sufficiency of which are hereby acknowledged, COUNTY and CITY agree as follows:

Section 1. Recitals. The above recitals are true and correct and form a material part of this Agreement upon which the parties have relied.

Section 2. General.

(a) CITY acknowledges that  certain of its existing potable water infrastructure components are included within the geographic parameters of the COUNTY Project. CITY further acknowledges that such components must be removed and new components installed as shown on the CITY's construction plans and defined in Section 4 below, hereinafter referred to throughout this Agreement as the "CITY Utility Work."

(b) CITY Utility Work includes, but is not limited to, the removal of approximately 465 lineal feet of existing eight inch (8") potable water main pipes and approximately 2,320 lineal feet of existing twelve inch (12") potable water main pipe and installation of

approximately 2,040 lineal feet of new twelve inch (12") PVC potable water main pipe, approximately 70 lineal feet of eight inch (8") ductile iron pipe and approximately 925 lineal feet of twelve inch (12") ductile iron pipe with gate valves, air release valves, thrust collars, line stops tapping sleeves, valves and blow-off valves. CITY shall be solely responsible for payment of the costs associated with the CITY Utility Work tasks as set forth in the CITY Design Plans, a copy of which is attached hereto and incorporated herein as Exhibit "A".

Section 3. Rights-of-Way. The parties acknowledge and agree that the COUNTY Project and the CITY Utility Work shall take place within COUNTY rights-of-way. COUNTY shall not be obligated to perform any CITY Utility Work that requires COUNTY to acquire any property interests, including temporary construction easements, over and above those already acquired by COUNTY or CITY. CITY shall be responsible for acquiring and paying for any additional property interests or other rights that may be necessary to complete the CITY Utility Work prior to performance of said CITY Utility Work by COUNTY.

Section 4. Construction Plans.

(a) Inasmuch as the CITY Utility Work shall occur in an area where COUNTY plans to make grade changes for roadway construction and construct underground stormwater facilities, including pipelines and appurtenant structures, it is in the best interest of CITY and COUNTY

to have the CITY Utility Work and roadway construction performed pursuant to the same construction contract, hereinafter referred to as "COUNTY Contract". Accordingly, CITY, through its consultant, Barnes, Ferland and Associates, Inc. (BFA), 3655 Maguire Boulevard, Suite 150, Orlando, Florida 32803, prepared the design plans for the CITY Utility Work, hereinafter referred to as "CITY Design Plans" and furnished signed and sealed copies of such CITY Design Plans to COUNTY. The parties hereto acknowledge that BFA prepared the CITY Design Plans with the intent that all of the CITY Utility Work shall be performed by COUNTY's contractor, hereinafter referred to as "COUNTY's Contractor". These plans consist of:

LAKE EMMA ROAD - CITY OF LONGWOOD

UTILITY RELOCATION PLANS

<u>SHEET NO.</u>	<u>LATEST DATE</u>	<u>DESCRIPTION</u>
LU-1	April 28, 2009	Key Sheet
LU-2	April 28, 2009	Tabulation of Quantities
LU-3	April 28, 2009	General Notes
LU-4	April 28, 2009	Project Layout Sheets
LU-5 - LU-12	April 28, 2009	Adjustment Sheets
LU-13	April 28, 2009	Utility Cross-Section Sheets
LU-14 - LU-15	April 28, 2009	Water Distribution Details

(b) CITY acknowledges and agrees that COUNTY review of the CITY Design Plans may require CITY to make changes to the plans or submit additional information to COUNTY.

(c) No additional work beyond that specified in Subsection 4(a) shall be performed without notification to and concurrence of CITY; provided, however, that if in the opinion of COUNTY's consulting engineer an emergency exists, the consulting engineer may authorize measures, which in his/her professional opinion, are reasonably

necessary to prevent or mitigate any resulting damages. In the event that the COUNTY's consulting engineer authorizes measures without prior review and concurrence of the CITY, the COUNTY shall provide after the fact notice within three (3) days to the CITY.

(d) Additional work required for the CITY Utility Work beyond that specified in the COUNTY Contract may be authorized by change order issued by COUNTY in accordance with the procedure set forth in Subsection 4(c) and paid for in full by CITY. Any reduction of the cost for the CITY Utility Work made by change order approved by COUNTY will reduce the total amount to be paid by CITY to COUNTY.

Section 5. Utility Specifications. CITY shall provide COUNTY with the signed and sealed specifications for construction of the CITY Utility Work. Such utility specifications shall include copies of issued permits, payment application, submittal requirements, as-built survey and record drawing requirements, testing requirements, requirements for the payment of the two (2) year maintenance bond to be provided by COUNTY's Contractor to CITY and any other information needed by COUNTY or COUNTY's Contractor for construction. CITY acknowledges that COUNTY's review of the specifications may require CITY to make changes to the specifications or submit additional information to COUNTY as set forth in Section 4 hereunder.

Section 6. Permitting. CITY accepts sole responsibility for obtaining, at CITY expense, all necessary Florida Department of Environmental Protection (FDEP) permits for the CITY Utility Work.

The COUNTY's Contractor shall be responsible for obtaining the COUNTY right-of-way permit for the CITY Utility Work.

Section 7. Bidding and County Contract Award. CITY shall provide COUNTY with a bid schedule containing bid items (item number and description), unit of measure and estimated quantity for all major items of the CITY Utility Work. The bid schedule shall be in tabular format with spaces provided for COUNTY's bidders to fill in unit prices and total prices for each bid item. CITY agrees that COUNTY review of the bid schedule may require CITY to make changes to the schedule or submit additional information to COUNTY.

(a) All tasks associated with bidding, including, but not limited to, bid advertisement, distribution of bid documents, bid opening, evaluation of bidders and award of the COUNTY Contract shall be conducted by COUNTY. CITY shall provide written answers to questions from COUNTY and respond as needed to questions raised, if any, during the bidding process. Prior to the bid opening, CITY shall not communicate and shall advise BFA not to communicate in any manner with any prospective bidder, plan holder, subcontractor or other person, firm, or entity regarding the plans and specifications. The parties agree that all information regarding the bid documents, including the CITY Design Plans and specifications, questions, interpretations and explanations regarding same shall be processed through COUNTY.

(b) COUNTY shall provide CITY with a copy of all bids received so CITY can evaluate all submitted prices for the CITY Utility Work.

CITY understands and agrees that COUNTY shall award the COUNTY Contract to the lowest responsive, responsible bidder for the COUNTY Project in accordance with COUNTY's Purchasing Code requirements, and acknowledges that the bid containing the lowest bid for the COUNTY Project may not necessarily include the lowest submitted bid for the CITY Utility Work. The successful bidder shall be referred to hereunder as the COUNTY Contractor.

(c) COUNTY shall not award the COUNTY Contract until receipt of FDEP approval. If FDEP approval is not received within sixty (60) days after determination by COUNTY of the apparent responsive low bidder, then the CITY Utility Work may be deleted from the COUNTY Contract and COUNTY's award and contract execution shall proceed absent the CITY Utility Work.  CITY shall be responsible for subsequent additional costs and charges, if any, caused by issuance of a change order to reincorporate the CITY Utility Work into the awarded COUNTY Contract.

(d) Until twenty (20) calendar days after bid opening, CITY may elect to withdraw the CITY Utility Work from the process by providing written notice to COUNTY. From twenty-one (21) days after bid opening, CITY may not terminate this Agreement without providing thirty (30) days written notice to COUNTY and paying all costs and expenses incurred for the CITY Utility Work by COUNTY and COUNTY's Contractor up to the date of notification of termination by CITY.

Section 8. Administration of County Construction Contract. Any communication with COUNTY's Contractor during construction shall be

through COUNTY or COUNTY's designated Construction Engineering and Inspection Professional Engineer, hereinafter referred to as "CEI Consultant". CITY is authorized to consult with the CEI Consultant during the construction period regarding the CITY Utility Work. Construction layout, construction coordination, including coordination with other utilities and scheduling all work are the sole responsibility of COUNTY, the CEI Consultant and COUNTY's Contractor and not the responsibility of CITY or BFA.

(a) COUNTY shall ensure that the CEI Consultant shall: (1) schedule and attend the preconstruction meeting, progress meetings and project closeout meetings with COUNTY's Contractor; (2) provide on-site inspection services, engineering services, surveys for as-built drawings and final quantities; (3) provide construction coordination with subcontractors, surveyors, layout personnel and construction quality control testing personnel; and (4) issue instructions to COUNTY's Contractor, coordinate the processing of contract change orders, process payment applications and conduct punch list and final inspections of the in-place work to determine if the work is completed substantially in accordance with the plans, specifications and other contract documents.

(b) CITY shall ensure that it and/or BFA attends the preconstruction meeting, reviews and responds to COUNTY, COUNTY's Contractor or CEI Consultant questions or requests for information and reviews proposed construction changes. CITY shall consult with the CEI Consultant during the construction period. CITY shall not issue

directions, interpretations, product approvals or denials, grant time extensions, approve payment of claims, or in any way administer the COUNTY Contract or construction or associated paperwork with the COUNTY's Contractor inasmuch as such actions shall be approved and issued by COUNTY in accordance with applicable provisions of COUNTY's Contract. CITY shall be responsible for the cost of conflict manholes not included in COUNTY's Contract.

(c) CITY shall have the opportunity to review and approve all shop drawings, manufacturers' brochures or catalogs, and change orders related to the CITY Utility Work prior to approval by COUNTY for inclusion in COUNTY's Contract. CITY shall be responsible for payment to COUNTY for costs resulting from approved change orders related to the CITY Utility Work. COUNTY shall make all reasonable efforts to accommodate CITY's request for change orders relating to the CITY Utility Work. In the event of a conflict or dispute relating in any way to the CITY Utility Work, COUNTY shall have final authority.

(d) CITY shall be solely responsible for coordinating and obtaining all FDEP approvals, processes and notifications required for the CITY Utility Work. The COUNTY's Contractor shall take the bacteriological samples and submit satisfactory results, along with the required signed and sealed as-builts and/or record drawing information, to the COUNTY's CEI Consultant. The COUNTY's CEI Consultant shall provide the CITY with copies of the bacteriological sample reports, as-built survey and record drawing information and other supporting documents and coordinate with the CITY in obtaining

the required signatures for FDEP certificates for permit clearances from the CITY and BFA. CITY shall coordinate with BFA and work with the COUNTY's CEI Consultant to ensure that permit clearance processing is handled in a timely manner.

Section 9. Inspection During Construction. CITY and BFA shall have the right at all times to non-intrusively inspect the CITY Utility Work and any and all records relating to the performance of the CITY Utility Work, the contract administration and all inspections. CITY and BFA may inspect the CITY Utility Work and any related construction; however, compliance with the construction documents shall also be evaluated based on geotechnical testing and other reports provided by the CEI Consultant and the coordination of construction activities, including the survey and layout of construction. CITY and BFA shall immediately notify COUNTY and CEI Consultant upon the discovery of any non-compliant records or construction work or other issues of concern. COUNTY shall, upon request, furnish CITY with three (3) copies of all reports requested by CITY. CITY shall ensure that copies of any reports or other documents issued by CITY inspectors or BFA are provided to COUNTY and the CEI Consultant.

Section 10. Maintenance of Facilities. During construction, the maintenance of installed CITY Utility Work is the responsibility of the COUNTY's Contractor. It is anticipated that installation and startup of the CITY Utility Work shall occur prior to completion of the roadway portion of the construction contract. During this period,

CITY shall be allowed to operate its facilities; however, protection of the completed facilities and maintenance during construction shall be the continued responsibility of the COUNTY's Contractor until final contract closeout. If, during the course of the work, cessation of utility services occurs, it shall not constitute a breach of this Agreement on the part of either party hereto and neither party shall be liable to the other for damage resulting from such cessation of services. This release of liability shall not be construed to release COUNTY's Contractor awarded the COUNTY Contract or any other third party from any liability for any damage from whatever cause whatsoever. Upon completion of the COUNTY Contract, acceptance of the CITY Utility Work by CITY, and final payment by CITY, CITY shall own, control, maintain and be responsible for its facilities in accordance with the terms of any and all utility permit(s).

Section 11. Schedule. Except as to delays covered by the force majeure provisions of COUNTY's Contract, should the CITY Utility Work be delayed for any reason within the CITY's control, CITY shall be responsible for the cost of any resultant time delays to COUNTY's roadway portion of the work performed by COUNTY's Contractor and/or CEI Consultant caused by CITY's delay. If resolution of a time delay impact is not promptly reached or if the roadway's completion schedule is materially delayed by the CITY Utility Work, COUNTY shall immediately notify the CITY and may thereafter timely issue a change order to COUNTY's Contractor deleting the CITY's unfinished utility

work from COUNTY's Contract if the CITY cannot resolve the issue in a timely manner.

Section 12. Administrative Agent. COUNTY shall administer this Agreement by and through its departments and officers, consultants and independent contractors.

Section 13. Cost Computation, Payment. CITY shall pay to COUNTY the cost of the CITY Utility Work consistent with the approved and accepted bid, as documented by invoices from COUNTY's Contractor to COUNTY, plus a portion of the cost of the services of the CEI Consultant calculated as stated in this Section.

(a) It is the intent of the parties that all construction costs for the CITY Utility Work, excluding the CEI Consultant services, and including regulatory compliance testing, survey layout, preparation of record drawings and closeout submittals and the maintenance bond, be included in the bid price for the CITY Utility Work. Should COUNTY incur any cost directly related to performance of the CITY Utility Work, other than the CEI Consultant services, not included in the bid price, those costs shall be pre-approved by CITY, if practicable, and included in the amount payable by CITY upon submission to CITY of an invoice supporting the amount thereof.

(b) CITY's share of the fee paid to the CEI Consultant by the COUNTY for maintenance of traffic and mobilization shall be that portion of the CEI Consultant fee billed to COUNTY that bears the same ratio that the CITY Utility Work bears to the COUNTY's total contract price for the COUNTY Project, including the CITY Utility Work.

Initially, the percentage to be used shall be based upon the bid as awarded by COUNTY. At the conclusion of the COUNTY Project, the final percentage shall be calculated based upon the final contract amounts as adjusted by change orders, if any. Any difference between the amount paid using the initial percentage and the amount due using the final calculation shall be paid by CITY or COUNTY, as the case may be, within thirty (30) days after close out of the COUNTY Contract. By way of example, if the COUNTY Contract, as awarded, totals \$15,000,000.00 (including the cost of the CITY Utility Work) and the portion of that amount attributable to the CITY Utility Work is \$3,000,000.00, then the percentage applied to the CEI Consultant billing will be twenty percent (20%) (\$3,000,000.00 divided by \$15,000,000.00). The same method shall be used to calculate the final CEI Consultant fee percentage except the numbers shall reflect the final contract amounts, including all change orders, if any.

(c) On or before the sixty-second (62nd) day after award of the COUNTY Contract, CITY shall deposit with COUNTY twelve percent (12%) of the total bid amount for the CITY Utility Work. Such funds shall be held in a separate account and utilized to pay COUNTY Contractor's invoices related to the CITY Utility Work and the applicable portion of the CEI Consultant's fee. Should funds remain in the account after the COUNTY Contract closeout, such funds shall be credited against any and all other charges payable by CITY to COUNTY pursuant to this Agreement. COUNTY shall refund any remainder to CITY within thirty (30) days of closeout of the COUNTY Contract.

(d) Beginning on the first day of the month following receipt of the first invoice from COUNTY's Contractor, COUNTY shall issue monthly bills to CITY for CITY's portion of payment due for the CITY Utility Work and the fee paid to the CEI Consultant, calculated as stated above. All late payments shall be assessed non-refundable interest at the statutory rate.

Section 14. Closeout. After final completion and acceptance of COUNTY Contractor's work on the CITY Utility Work and the COUNTY Project, CITY shall be entitled to receive one (1) set of twenty-four inches by thirty-six inches (24"x36") reproducible mylar (3 mil or greater) as-built survey drawings and one (1) electronic set of as-built survey drawings reflecting the CITY Utility Work, provided CITY has made all payments required by this Agreement.

Section 15. Duties and Level of Services. The COUNTY shall coordinate in good faith with CITY with regard to all services and work performed pursuant to this Agreement. Notwithstanding the above, however, all services and work hereunder shall be performed to the satisfaction of COUNTY or COUNTY's CEI Consultant, which shall decide, as provided herein, all questions, difficulties and disputes of whatever nature which may arise under or by reason of such services and work, the prosecution and fulfillment of the services and work hereunder and the character, quality, amount and value thereof, which decision upon all claims, questions and disputes shall be final and conclusive with respect to all services and work performed or to be performed.

Section 16. Employee Status. Persons employed by one party in the performance of services and functions pursuant to this Agreement shall have no claim against the other party for pension, workers' compensation, unemployment compensation, civil service or other employee rights or privileges whether granted by operation of law or by policy of the non-employing party.

Section 17. Funding/Termination. The CITY, by approving and executing this Agreement, represents and warrants that sufficient funds are available and have been properly budgeted to pay the anticipated costs of the CITY Utility Work and a portion of the CEI Consultant's fees, all as envisioned by this Agreement. The CITY understands and agrees that it is in the best interest of both parties that the CITY Utility Work be accomplished simultaneously with the COUNTY Project. Accordingly, CITY shall not terminate this Agreement, except in the case of a breach of this contract by COUNTY, and in accordance with the provisions of this paragraph. To facilitate performance pursuant to this Agreement, each party agrees to provide full cooperation and assistance to the other. Except for failure to make payment, the circumstances whereby COUNTY may terminate this Agreement and remove the CITY Utility Work from the COUNTY Project are specified throughout this Agreement and are not subject to the provisions of this paragraph. As to any CITY claim of breach by COUNTY and as to a COUNTY claim of non-payment by CITY, the following shall apply:

(a) Notice. The party making the claim shall provide a written statement of the claim, providing as much detail as reasonably possible under the circumstances. The other party shall have ten (10) days to remedy the claim or, if the matter cannot be resolved in that time period, begin resolution thereof and thereafter, complete in a timely manner resolution of the claim.

(b) Settlement Discussions. If the dispute is not resolved as a result of the notice provided above, the CITY Administrator and COUNTY Manager shall meet and attempt to reach a satisfactory resolution. If the dispute is not so resolved between the CITY Administrator and COUNTY Manager, either party may seek all remedies available at law or in equity. The parties agree, however, prior to commencement of any suit, they shall first engage in dispute resolution as provided in this Section. In all events, CITY shall reimburse COUNTY for all costs and expenses incurred for the CITY Utility Work through the date of termination, including the amounts payable to COUNTY's Contractor and the CEI Consultant.

Section 18. Notices. Whenever either party desires to give notice unto the other, it must be given by written notice, sent by registered United States mail, with return receipt requested, and sent to:

For COUNTY:

County Manager
Seminole County
Seminole County Services Bldg.
1101 East First Street
Sanford, FL 32771

With a copy to:
Director
Department of Public Works
500 W. Lake Mary Blvd.,
Suite 200
Sanford, FL 32773

For CITY:

City Administrator
City of Longwood
175 West Warren Avenue
Longwood, FL 32750

With a copy to:
Utilities Manager
City of Longwood
175 West Warren Avenue
Longwood, FL 32750

Either of the parties may change, by written notice as provided above,
the addresses or persons for receipt of notices.

Section 19. Liability.

(a) To Third Parties. As to the CITY Utility Work, CITY shall, to the extent permitted by Florida Law, indemnify and hold COUNTY harmless from and against all liability, loss, costs, damages and claims of any kind arising from personal injuries, including death, or property damage suffered by third parties as a result of the CITY Utility Work. The term "third parties" is intended to mean all persons, firms, or other legal entities except CITY, COUNTY, COUNTY's Contractor, and the CEI Consultant. COUNTY Contractor's contract and CEI Consultant's contract shall include an indemnity in favor of CITY, as well as in favor of COUNTY, for all liability arising from COUNTY Contractor's work or CEI Consultant's work, respectively. Further, the aforementioned contracts shall include a provision stating that CITY is a third party beneficiary of the respective contracts. In addition, to the extent permitted by law, CITY shall indemnify COUNTY, the COUNTY's Contractor and the CEI Consultant from and against any and all claims related to or arising from the failure of CITY to obtain necessary easements for the location of CITY facilities outside COUNTY's rights-of-way. Nothing herein shall be construed to waive or

expand the provisions and requirements of Section 768.28, Florida Statutes.

(b) To COUNTY. The CITY shall indemnify and hold COUNTY harmless from any and all contract claims made by COUNTY's Contractor or the CEI Consultant for damages, extra compensation, profit, overhead expenses for both home office and field operations, or any such cost or expenses related to, or arising from the CITY Utility Work, it being understood and agreed that COUNTY is including this work in its COUNTY Contract in order to save CITY time and money and that COUNTY is essentially acting as CITY's agent with respect to this work. CITY shall be relieved from the obligations imposed by this paragraph on account of any breach of contract by COUNTY related to this Agreement, COUNTY's Contract with its contractor or its contract with the CEI Consultant; it being the intent of the parties that CITY shall pay the total amount which may be or become payable on account of any claim covered by this paragraph, leaving open the issue of whether CITY is entitled to recover damages from COUNTY on account of the breach of contract. CITY has the right to participate in any settlement discussions with CEI Consultant or COUNTY's Contractor relating to the CITY Utility Work, so long as CITY pays its share of the costs of litigation, including the judgment. Nothing herein shall be construed to waive or expand the provisions and requirements of Section 768.28, Florida Statutes.

(c) These indemnity obligations include any and all charges, expenses and costs, including, but not limited to, attorney's fees

both at trial and on appeal incurred by COUNTY on account of or by reason of any such damages, liability, claims, suits, or losses.

Section 20. Entire Agreement. It is understood and agreed that the entire agreement of the parties is contained herein and that this Agreement supersedes all oral agreements and negotiations between the parties relating to the subject matter hereof as well as any previous agreements presently in effect between the parties relating to the subject matter hereof. Any alterations, amendments, deletions or waivers of the provisions of this Agreement shall be valid only when expressed in writing and duly signed by the parties.

Section 21. Conflict of Interest. The parties agree that they will not contract for or accept employment for the performance of any work or services with any individual, business, corporation, or government unit that would create a conflict of interest in the performance of the obligations of this Agreement.

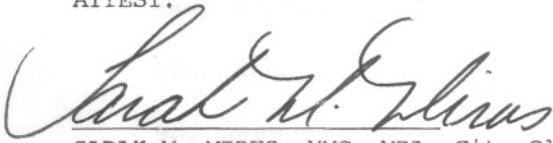
Section 22. Constitutional and Statutory Limitations. The terms and conditions of this Agreement are applicable only to the extent they are within and consistent with the constitutional and statutory limitations on the authority of CITY and COUNTY.

Section 23. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Florida and the parties consent to venue in the Circuit Court in and for Seminole County, Florida as to State actions and the United States District Court for the Middle District of Florida as to Federal actions.

IN WITNESS WHEREOF, the parties hereto have made and executed
this instrument for the purpose herein expressed.

ATTEST:

CITY OF LONGWOOD

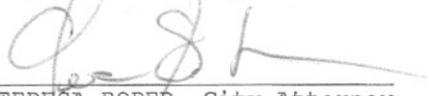


SARAH M. MIRUS, MMC, MBA, City Clerk

By: Haywood G. Bundy Jr
HAYWOOD G. BUNDY, Jr., Mayor

Date: 07/22/09

For the use and reliance of
the City of Longwood only.
Approved as to form and
legal sufficiency.



TERESA ROPER, City Attorney

ATTEST:

BOARD OF COUNTY COMMISSIONERS
SEMINOLE COUNTY, FLORIDA



MARYANNE MORSE
Clerk to the Board of
County Commissioners of
Seminole County, Florida.

By: _____
BOB DALLARI, Chairman

Date: _____

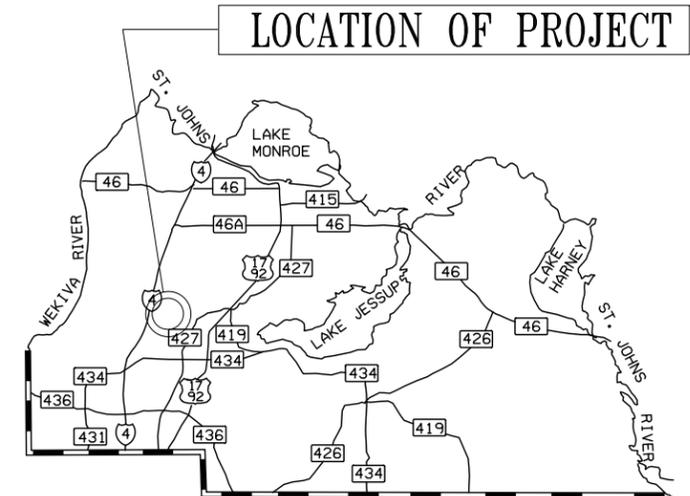
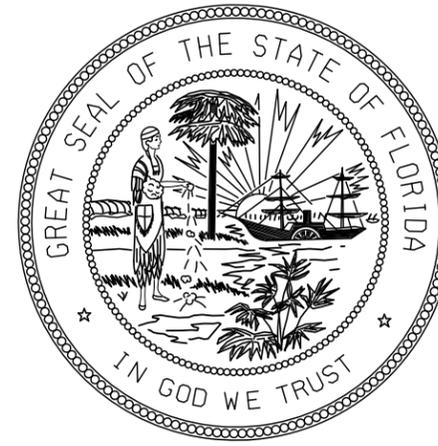
For the use and reliance of
Seminole County only. Ap-
proved as to form and legal
sufficiency.

As authorized for execution by
the Board of County Commissioners
at its _____, 20____,
regular meeting.

County Attorney

SED/sb/lpk
3/31/09 5/8/09 5/18/09
Attachment:
Exhibit "A" - City Design Plans

SEMINOLE COUNTY, FLORIDA



LOCATION MAP

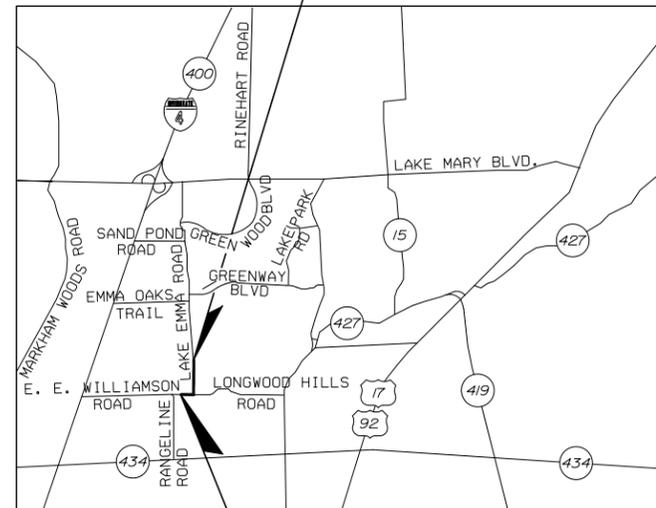
LAKE EMMA ROAD UTILITY RELOCATION PLANS City of Longwood Public Works

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
3655 Maguire Blvd, Suite 150, Orlando, FL 32803
PH: (407) 896-8608 FAX: (407) 896-8822
CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

INDEX OF UTILITY PLANS

SHEET NO.	SHEET DESCRIPTION
LU-1	KEY SHEET
LU-2	SUMMARY OF UTILITY PAY ITEMS
LU-3	GENERAL NOTES
LU-4	PROJECT LAYOUT AND UTILITY PROVIDERS
LU-5 - LU-12	UTILITY CONSTRUCTION PLAN-PROFILES
LU-13	UTILITY CONSTRUCTION CROSS-SECTIONS
LU-14 - LU-15	WATER DISTRIBUTION DETAILS

LAKE EMMA ROAD
STA. 10+00± to STA. 37+80±



LONGWOOD HILLS ROAD
STA. 604+30± to STA. 614+60±



THE SCALE OF THESE PLANS MAY HAVE BEEN CHANGED DUE TO REPRODUCTION.

ALL STATION OFF-SETS SHOWN ON THE PLANS ARE BASED ON THE CENTERLINE OF ROAD CONSTRUCTION.

THE PLAN AND PROFILE DESIGN HEREON IS BASED ON ROAD PLANS PRODUCED BY BOWYER SINGLETON & ASSOC.

PLANS PREPARED BY: BARNES, FERLAND & ASSOCIATES, INC.
3655 MAGUIRE BOULEVARD, SUITE 150
ORLANDO, FLORIDA 32803
407-896-8608

UTILITY CONSTRUCTION
PLANS APPROVED BY: DANIEL L. ALLEN, P.E. DATE
FLORIDA REGISTRATION NO. 37891

REVISIONS		
BY	DATE	DESCRIPTION

CONSTRUCTION COMPLETED _____
FIELD VERIFIED _____
CITY OF LONGWOOD PROJECT MANAGER RICHARD KORNBLOH

SUMMARY OF UTILITY PAY ITEMS

ITEM NO.	ITEM DESCRIPTION	UNIT	QUAN.	FINAL
<i>CONSTRUCTION - WATER RELOCATION PROJECT</i>				
1	WATER PIPE (DUCTILE IRON) 8"	LF	70	
2	WATER PIPE (PVC) C-900 12"	LF	2,040	
3	WATER PIPE (DUCTILE IRON) 12"	LF	925	
4	GATE VALVE (W/VALVE BOX) 8"	EA	1	
5	GATE VALVE (W/VALVE BOX) 12"	EA	6	
6	FIRE HYDRANT ASSEMBLY	EA	1	
7	WATER FITTINGS (DUCTILE IRON)	TN	10.0	
8	THRUST COLLAR 8" WATER PIPE	EA	1	
9	THRUST COLLAR 12" WATER PIPE	EA	2	
10	RESTRAIN EXISTING 12" WATER PIPE (5 LOCATIONS ON PLANS)	EA	5	
11	JOINT RESTRAINT (PROPOSED) 12" WATER PIPE	EA	160	
12	JOINT RESTRAINT (PROPOSED) 8" WATER PIPE	EA	20	
13	LINE STOP 8"	EA	1	
14	LINE STOP 12"	EA	4	
15	TAPPING SLEEVE & VALVE ASSEMBLY 8"	EA	2	
16	TAPPING SLEEVE & VALVE ASSEMBLY 12"	EA	1	
17	BLOW-OFF VALVE ASSEMBLY (2")	EA	1	
18	SAMPLE POINT	EA	9	
19	CONCRETE ENCASEMENT	CY	3.6	
<i>DEMOLITION - WATER DISTRIBUTION SYSTEM</i>				
20	EXISTING WATER PIPE REMOVAL 8"	LF	465	
21	EXISTING WATER PIPE REMOVAL 12"	LF	2,320	

REVISIONS

DATE	BY	DESCRIPTION									

BFA Environmental Consultants
 Barnes, Ferland and Associates, Inc.
 3655 Maguire Blvd., Suite 150, Orlando, FL 32803
 P.O. BOX 200-2000 FAX: 407-896-1522
 CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

SEMINOLE COUNTY

SUMMARY OF UTILITY PAY ITEMS
 LAKE EMMA ROAD
 CITY OF LONGWOOD UTILITY CONSTRUCTION

CONSTRUCTION DRAWINGS

GENERAL NOTES:

- THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE (1) COPY OF THE CONTRACT DOCUMENTS, INCLUDING PLANS, SPECIFICATIONS AND COPIES OF ALL REQUIRED CONSTRUCTION PERMITS.
- THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.
- THE LOCATION AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHOD AND BY HAND EXCAVATION IN COORDINATION WITH ALL UTILITY COMPANIES PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. ANY AND ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED IMPROVEMENTS SHALL BE RESOLVED BY THE ENGINEER AND THE CITY PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. PIPE LENGTHS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL LENGTHS ARE TO BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE HIS COMPLETE FAMILIARITY WITH THE PROJECT SITE AND COMPONENTS INCLUDING SUBSURFACE CONDITIONS OF SOIL AND GROUNDWATER TABLE. BY SUBMITTING OF A BID FOR THIS PROJECT, THE CONTRACTOR ACKNOWLEDGES HIS COMPLETE UNDERSTANDING AND RESPONSIBILITIES WITH RESPECT TO THE CONSTRUCTION ACTIVITIES REQUIRED UNDER THE SCOPE OF THIS PROJECT. EXISTING SURVEY PROVIDED BY: BOYER-SINGLETON & ASSOC., INC. BFA AND THE CITY ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THE SURVEY.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND RESTORATION (IF DAMAGED) OF ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT, INCLUDING BUT NOT LIMITED TO; WALLS, FENCES, POWER POLES, MAIL BOXES, DRAINAGE STRUCTURES, LANDSCAPING, ETC. THE CONTRACTOR SHALL PROTECT EXISTING WATER METERS AND SERVICE CONNECTIONS DURING CONSTRUCTION. SOD ALL DISTURBED AREAS UNLESS OTHERWISE DIRECTED. SOD SHALL MATCH EXISTING SOD TYPE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING 48 HOURS BEFORE DIGGING:
 - PROGRESS ENERGY CORPORATION
 - EMBARQ TELEPHONE
 - BRIGHT HOUSE NETWORKS - CABLE TV
 - SUNSHINE STATE ONE CALL OF FLORIDA INC.
 - CITY OF LONGWOOD - WATER, SEWER AND ROADWAY LIGHTING POWER
 - FLORIDA PUBLIC UTILITIES CO. - GAS
 - ANY OTHER KNOWN UTILITY IN THE WORK AREA
- THE CITY OF LONGWOOD WRITTEN SPECIFICATIONS AND STANDARD DETAILS (LATEST EDITION) ARE TO BE CONSIDERED PART OF THESE DOCUMENTS AND CONSTRUCTION SHALL BE ENFORCED TO AT LEAST THESE MINIMUM STANDARDS WHICH ARE AVAILABLE THROUGH THE CITY OF LONGWOOD PUBLIC WORKS DEPARTMENT, OR ON-LINE AT: <http://www.longwoodfl.org/content/blogcategory/71/183/> UNDER PROCEDURAL AND TECHNICAL STANDARDS, MANUALS OF STANDARDS, "WATER AND WASTEWATER MANUAL OF STANDARDS"
- ALL MATERIAL MUST CONFORM TO APPROVED SHOP DRAWINGS. ANY CHANGES MUST BE APPROVED BY THE ENGINEER AND THE CITY PRIOR TO INSTALLATION. FAILURE OF THE INSPECTOR TO CALL TO THE ATTENTION OF THE CONTRACTOR ANY ITEM NOT IN CONFORMANCE WITH PLANS AND SPECS SHALL NOT CONSTITUTE ACCEPTANCE OF THE ITEM.
- CITY REPRESENTATIVES SHALL BE PRESENT DURING ALL OPERATIONS INVOLVING EXISTING UTILITIES.

- THE MINIMUM COVER TO FINISHED GRADE OVER WATER MAINS SHALL BE 30 INCHES EXCEPT WHERE NOTED. UNDER PAVEMENT, THE MINIMUM COVER SHALL BE 36 INCHES. THE MINIMUM COVER IN STATE ROADS SHALL BE 36 INCHES, THE MINIMUM COVER UNDER DITCH/CANAL BOTTOMS SHALL BE 24 INCHES. MAXIMUM COVER SHALL BE 48 INCHES UNLESS OTHERWISE APPROVED BY THE CITY.
- DIP SHALL BE REQUIRED IN THE FOLLOWING CIRCUMSTANCES:
 - WITHIN 6' OF SANITARY AND 3' OF STORM PIPES.
 - WITHIN 15 FEET OF STRUCTURES, CANALS OR LAKES.
 - CROSSINGS OVER AND UNDER SEWERS, CANAL CROSSINGS, GAS AND STORM PIPES WITH LESS THAN 12" SEPARATION, WITH NO JOINT ALLOWED WITHIN 6 FEET OF CROSSING.
 - BENEATH ALL PAVED AREAS (UNLESS OTHERWISE NOTED), EXCLUDING DRIVEWAYS OR SIDEWALKS.
 - WITHIN EASEMENTS
- TAPPING SLEEVES SHALL BE A MINIMUM OF 6 FEET FROM A PIPE JOINT AND SERVICE TAPS SHALL BE A MINIMUM OF 18 INCHES APART AND 18 INCHES FROM A BELL OR FITTING.
- 2 INCH SCHEDULE 40 PVC SLEEVES ARE REQUIRED FOR ALL SERVICES THAT CROSS UNDER PAVEMENT. SLEEVES SHALL BE INSTALLED BY TRENCHLESS CONSTRUCTION.
- METALIC BACKED INDICATOR TAPE IS REQUIRED OVER ALL PVC MAINS.
- FIRE HYDRANTS SHALL MAINTAIN A 5 FOOT RADIUS CLEAR ZONE. NEW FIRE HYDRANTS SHALL BE LOCATED AS SHOWN ON THE PLANS.
- PAVEMENT REPLACEMENT, INCLUDING CURB, GUTTERS AND STRIPING SHALL OCCUR WITHIN SEVEN (7) WORKING DAYS FOLLOWING COMPLETION OF OPEN CUT WORK, SAWCUT CONCRETE DRIVEWAYS AS REQUIRED FOR CONSTRUCTION.
- VALVES SHALL BE PROVIDED WITH A FULLY ADJUSTABLE VALVE BOX AND STEM WITH EXTENSIONS WHERE THE CENTERLINE OF PIPE TO GRADE IS GREATER THAN FOUR (4) FEET.
- ALL REQUIRED RESTRAINING OF EXISTING PIPING SHALL BE TO LENGTHS CALLED FOR ON THE RESTRAINED PIPE TABLE SHOWN ON THE DETAIL SHEETS. FOR RESTRAINT OF EXISTING PVC OR DI PIPE THE CONTRACTOR SHALL UNCOVER THE JOINTS AND USE "UNI-FLANGE" TYPE RESTRAINT, UNLESS UNDER PAVEMENT WHERE THRUST COLLARS WILL BE UTILIZED.
- WHERE PROPOSED WATER MAINS ARE TO BE LOCATED IN CLOSE PROXIMITY TO EXISTING WATER MAINS, USE EXTREME CAUTION WHEN EXCAVATING NEAR OR CONNECTING TO EXISTING WATER MAINS. THE CONTRACTOR IS RESPONSIBLE FOR BYPASSING FLOWS WHEN NECESSARY. EXISTING WATER MAINS ARE TO REMAIN IN SERVICE UNTIL THE PROPOSED WATER MAINS ARE ACCEPTED FOR SERVICE AND ALL SERVICES ARE TRANSFERRED TO THE NEW WATER MAIN. THE CONTRACTOR SHALL COORDINATE WITH THE WATER DEPARTMENT AT LEAST (5) FIVE WORKING DAYS IN ADVANCE FOR ALL THE TIE-INS REQUIRING SHUT DOWN OF EXISTING WATER MAINS. IN GENERAL, ALL SUCH SHUTDOWNS SHALL BE LIMITED TO THE HOURS BETWEEN NINE (9) A.M. AND THREE (3) P.M.
- ALL EXIST. WATER MAINS, TO BE TAKEN OUT OF SERVICE, WILL BE REMOVED UNLESS OTHERWISE NOTED ON PLANS.
- THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL AND SAFETY DEVICES, IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND THE LATEST FLORIDA DEPARTMENT OF TRANSPORTATION "ROADWAY DESIGN STANDARDS".
- "AS-BUILT" DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR'S REGISTERED SURVEYOR TO THE ENGINEER. "AS-BUILT" INFORMATION SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 9 - RECORD INFORMATION PER THE CITY OF LONGWOOD, DEPARTMENT OF PUBLIC WORKS, PUBLIC UTILITIES DIVISION, MANUAL OF STANDARDS.

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ADJ	ADJUST	MES	MITERED END SECTION
AV	AVENUE	MH	MANHOLE
ASPH	ASPHALT	MIN	MINIMUM
B	BEND	NTS	NOT TO SCALE
BL	BASE LINE	OE	OVERHEAD ELECTRIC
BM	BENCH MARK	OT	OVERHEAD TELEPHONE
CB	CATCH BASIN	OUP	OVERHEAD UTILITY POLE
CI	CAST IRON	PI	POINT OF INTERSECTION
CL	CENTER LINE	PC	POINT OF CURVATURE
CLF	CHAIN LINK FENCE	PT	POINT OF TANGENCY
CONC	CONCRETE	PL	PROPERTY LINE
CONST	CONSTRUCTION	PLS	PROFESSIONAL LAND SURVEYOR
CMP	CORRUGATED METAL PIPE	PP	POWER POLE
CONN	CONNECT	PRM	PERMANENT REFERENCE MONUMENT
CULV	CULVERT	PVC	POLYVINYL CHLORIDE
C&G	CURB & GUTTER	r	RADIUS
C	CUT	R	RATE
CM	CONCRETE MONUMENT	RAS	RETURN ACTIVATED SLUDGE
Δ	DELTA	RCP	REINFORCED CONCRETE PIPE
DBI	DITCH BOTTOM INVERT	RD	ROAD
DOT	DEPT OF TRANSPORTATION	RJ	RESTRAINED JOINT
DI	DUCTILE IRON	RT	RIGHT
DIP	DUCTILE IRON PIPE	R/W	RIGHT OF WAY
E'LY	EASTERLY	RD	ROOF DRAIN
EOP	EDGE OF PAVEMENT	RR	RAIL ROAD
ELEV / EL	ELEVATION	SB	SOIL BORING
ELL	ELLIPTICAL	S/W	SIDE WALK
EW	EACH WAY	STA	STATION
EXIST	EXISTING	ST	STREET
EXP JT	EXPANSION JOINT	SAN	SANITARY SEWER
F	FILL	T	TANGENT
FH	FIRE HYDRANT	TC	TERRACOTTA CLAY
FL	FLOW LINE	TOB	TOP OF BERM/BANK
FM	FORCE MAIN	(TYP)	TYPICAL
GALV	GALVANIZED	UGE	UNDERGROUND ELECTRIC
G	GAS	UGT	UNDERGROUND TELEPHONE
GRAV	GRAVITY	USC & GS	UNITED STATES COASTAL & GEODETIC SURVEY DATUM
GV	GATE VALVE	VC	VITRIFIED CLAY
HW	HEAD WALL	W	WATER
HC	HIGH CURB	WM	WATER MAIN
INT	INTERSECTION	W/	WITH
INV	INVERT	W/M	WATER METER
IP	IRON PIPE	W'LY	WESTERLY
L	ARC LENGTH	YD	YARD
LF	LINEAL FEET		
LT	LEFT		

PROPOSED LEGEND

WATER MAIN	
TAPPING SLEEVE AND TAPPING GATE VALVE	
GATE VALVE	
FIRE HYDRANT ASSEMBLY	
LINE STOP	
D.I.P. FITTINGS (TYPICAL)	
CAP / PLUG	
90° BEND	
45° BEND	
TEE	
REDUCER/ INCREASER	
RESTRAINED JOINT PIPE LIMIT	

SPECIFICATIONS:

WATER MAINS SHALL BE EITHER DUCTILE IRON PIPE (DIP) OR POLYVINYL CHLORIDE (PVC) AS CALLED FOR ON THE PLANS. DUCTILE IRON PIPE MAY BE USED WHERE PVC PIPE IS CALLED FOR ON THE PLANS. PVC PIPE MAY NOT BE USED WHERE DI PIPE IS CALLED FOR ON THE PLANS. DUCTILE IRON PIPE SHALL CONFORM TO AWWA C151/ANSI A21.51. (U.S. PIPE, AMERICAN OR McWAYNE) DUCTILE IRON PIPE SHALL BE PRESSURE CLASS 350 AND PVC PIPE SHALL BE C900 DR18 FOR WATER MAINS 12-INCHES IN DIAMETER OR LESS. DUCTILE IRON PIPE AND FITTINGS SHALL BE CEMENT LINED IN ACCORDANCE WITH AWWA C104. MECHANICAL JOINT GLANDS SHALL BE DUCTILE IRON. PIPE FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C110. MECHANICAL JOINT HARDWARE SHALL BE CORTEN STEEL. RUBBER-RING GASKETS SHALL CONFORM TO AWWA C111 AND SHALL BE FURNISHED BY THE PIPE MANUFACTURER WITH THE PIPE. A NONTOXIC VEGETABLE SOAP LUBRICANT SHALL BE SUPPLIED WITH THE PIPE AND SHALL BE APPROVED BY NSF FOR USE WITH POTABLE WATER MAINS.

PVC PIPE 4-INCH TO 12-INCH DIAMETER SHALL CONFORM TO AWWA C900. PVC PIPE 14-INCH TO 36-INCH DIAMETER SHALL CONFORM TO AWWA C905. ALL PVC PIPE FOR POTABLE WATER SERVICE SHALL BEAR THE APPROVED STAMP OF THE NATIONAL SANITATION FOUNDATION. PVC PIPE FOR POTABLE WATER MAIN APPLICATIONS SHALL BE COLOR CODED BLUE FOR WATER OR SPIRAL WRAPPED WITH BLUE MARKER TAPE AT NOT MORE THAN 18-INCHES ON CENTER. UNLESS SHOWN OTHERWISE ON THE PLANS DIP SHALL BE USED WITHIN 6 FEET OF SANITARY OR 3' OF STORM PIPES; WITHIN 15' OF STRUCTURES, CANALS OR LAKES; CROSSINGS OVER OR UNDER SEWERS, AND CANAL CROSSINGS; GAS AND STORM PIPE CROSSINGS WITH LESS THAN 12-INCHES SEPARATION, WITH NO JOINT ALLOWED WITHIN 10 FEET OF THE CROSSING.

ALL FITTINGS AND VALVES SHALL BE RESTRAINED BY USE OF RESTRAINED JOINT PIPE OR JOINT RESTRAINERS AS LISTED BELOW: FOR 12-INCH PIPE AND SMALLER - RESTRAINED JOINTS SHALL BE U.S. PIPE FIELD LOK, AMERICAN DUCTILE IRON PIPE LOK-FAST, EBAA IRON MEGA-LUG OR AND EQUIVALENT PRODUCT.

GATE VALVES 4-INCHES TO 12-INCHES SHALL BE AWWA C509. (AMERICAN FLOW CONTROL, KENNEDY OR PRATT)

SERVICE LINE TUBING SHALL CONFORM TO AWWA C901, SDR 9. THE MINIMUM SINGLE SERVICE SIZE IS 1-INCH. THE MIN. DOUBLE SERVICE SHALL BE 1-1/2-INCH. SERVICES CROSSING UNDER STREETS SHALL BE ROUTED THROUGH A 2"(SINGLE) OR 2-1/2" (DOUBLE) PVC SCHEDULE 40 SLEEVE.

FIRE HYDRANTS SHALL CONFORM TO AWWA C502. TWO 2-1/2" THREADED NOZZLES, ONE 4-1/2" THREADED NOZZLE, A 5-1/4" INTERIOR VALVE OPENING AND RESTRAINED JOINTS FROM TEE TO HYDRANT ARE REQUIRED. (AMERICAN #B84B-6", CLOW MEDALION OR MUELLER CENTURION)

ALL HYDROSTATIC TESTING SHALL BE IN ACCORDANCE WITH ANSI/AWWA C600-93, SECTION 4 FOR D.I. PIPE AND ANSI/AWWA C605, SECTION 7 FOR PVC PIPE.

THE DISINFECTION OF WATER MAINS SHALL BE IN COMPLIANCE WITH "RULES OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION CHAPTER 62-555 " PERMITTING AND CONSTRUCTION OF PUBLIC WATER SYSTEMS". THE PROCEDURE WILL MEET AND EXCEED THE REQUIREMENTS SET FORTH IN ANSI/AWWA STANDARDS 651-92.

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER SYSTEM CONSTRUCTION NOTES**

- UTILITY SEPARATION - VERTICAL CLEARANCE**
- WHERE WATER AND GRAVITY SANITARY SEWER MAINS CROSS WITH LESS THAN 12 INCHES VERTICAL CLEARANCE OR THE GRAVITY SANITARY SEWER MAIN IS ABOVE THE WATER MAIN, THEN THE SANITARY SEWER WILL BE 20 FEET, CENTERED ON THE POINT OF CROSSING, OF EITHER:
 - DUCTILE IRON PIPE AND HYDROSTATICALLY PRESSURE TESTED; OR
 - CONCRETE ENCASED; ENCLOSED IN A WATER TIGHT CARRIER PIPE OR
 - PVC PIPE UPGRADED TO WATER MAIN STANDARDS AND PRESSURE TESTED MEETING THE AWWA C-900 OR C-905 SPECIFICATION.
 - WHERE WATER MAINS AND STORM SEWER PIPES CROSS WITH LESS THAN 12 INCHES VERTICAL CLEARANCE, BELOW AND 6 INCHES ABOVE, OR THE STORM MAIN IS ABOVE THE WATER MAIN, THEN THE WATER MAIN SHALL BE 20 FEET OF DUCTILE IRON PIPE CENTERED ON THE POINT OF CROSSING.
 - WHERE WATER MAINS CROSS SEWAGE FORCE MAINS WITH LESS THAN 12" MIN. SEPARATION (ABOVE OR BELOW FORCE MAIN) THE WATER MAIN SHALL BE 20 FEET OF DUCTILE IRON PIPE CENTERED ON THE POINT OF CROSSING.
- UTILITY SEPARATION - HORIZONTAL SEPARATION**
- WHEN A WATER MAIN PARALLELS A GRAVITY SANITARY SEWER MAIN, A SEPARATION (MEASURED EDGE TO EDGE) OF AT LEAST SIX FEET SHOULD BE MAINTAINED. WHERE THIS SEPARATION IS NOT MET, ONE OF THE FOLLOWING MUST OCCUR:
 - THE WATER MAIN IS LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 6 INCHES ABOVE THE TOP OF THE SEWER, OR;
 - IF BOTH SANITARY SEWER AND POTABLE WATER MAINS ARE PROPOSED AND THE ABOVE (A) IS NOT MET, THE SANITARY SEWER PIPES SHALL BE ENCASED IN CONCRETE, ENCLOSED IN A WATER TIGHT CARRIER PIPE OR UPGRADED TO DUCTILE IRON PIPE OR PRESSURE RATED PVC (MEETING THE AWWA C-900 OR C-905 SPECIFICATION) AND PRESSURE TESTED.
 - IF THE SANITARY SEWER IS EXISTING AND THE POTABLE WATER MAIN IS PROPOSED, THE WATER MAIN SHALL, AT A MINIMUM, BE UPGRADED TO RESTRAINED JOINT DUCTILE IRON PIPE, CONSTRUCTED IN SEPARATE TRENCHES, LAID AT A HIGHER ELEVATION THAN THE SANITARY SEWER AND UTILIZE STAGGERED JOINTS.
 - WHERE WATER MAINS PARALLEL STORM SEWER PIPES WITH LESS THAN 3 FEET HORIZONTAL CLEARANCE, THE WATER MAIN SHALL BE AWWA C150/C151 DUCTILE IRON W/ RESTRAINED JOINTS IN THOSE LOCATIONS.
 - SEPARATION REQUIREMENTS OF 6 FEET HORIZONTAL AND 12 INCHES VERTICAL (ABOVE & BELOW) CLEARANCE BETWEEN FORCE MAINS AND POTABLE WATER MAINS MUST BE MAINTAINED OR INSTALL DUCTILE IRON PIPE W/ RESTRAINED JOINTS WHERE LESS.
 - WHERE WATER MAINS AND UNRESTRICTED ACCESS REUSE PIPES CROSS WITH LESS THAN 12 INCHES VERTICAL CLEARANCE OR 3 FEET HORIZONTAL CLEARANCE (ABOVE & BELOW) THE UNRESTRICTED ACCESS REUSE MAIN SHALL BE UPGRADED AND HYDROSTATICALLY TESTED IN THE SAME MANNER AS GRAVITY SANITARY SEWER MAINS (SEE A. ABOVE).
 - SEPARATION REQUIREMENTS BETWEEN POTABLE WATER MAINS AND ANY TYPE OF REUSE MAINS OTHER THAN UNRESTRICTED ACCESS REUSE IS 3 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE (ABOVE & BELOW).

REVISIONS

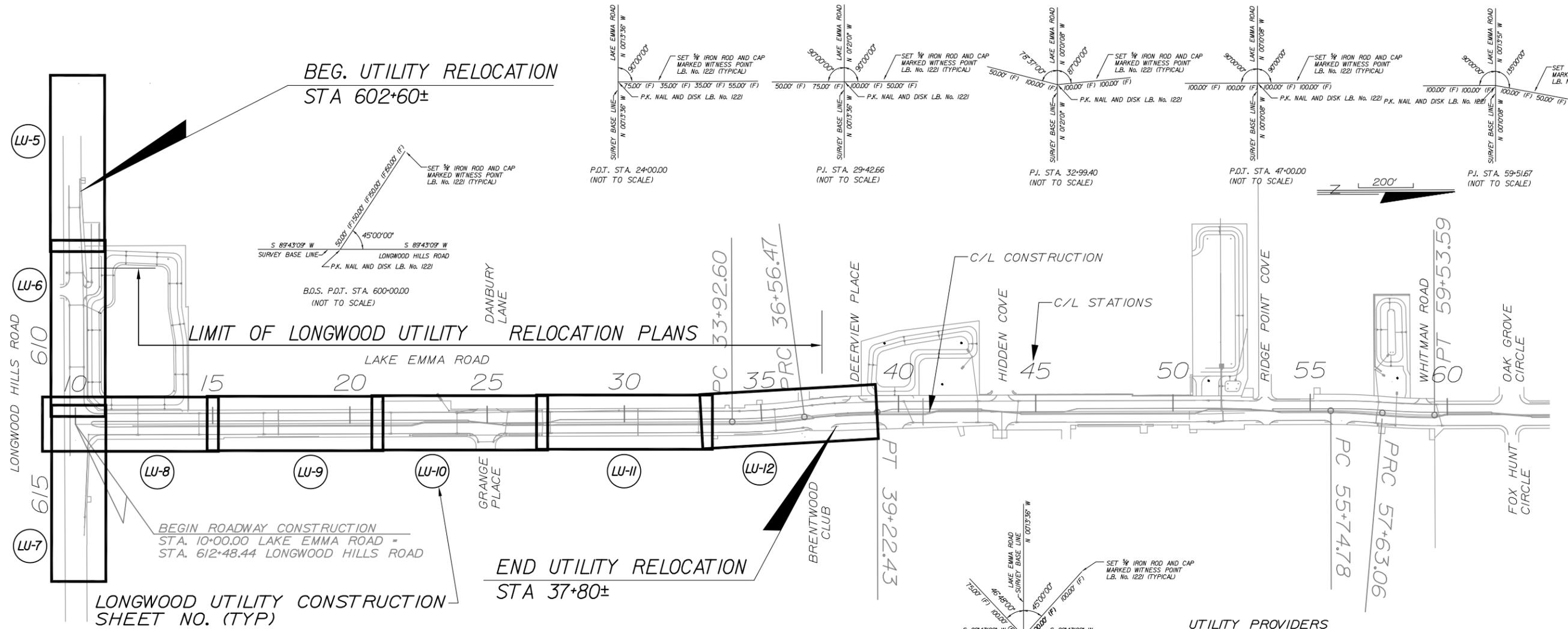
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
3655 Maguire Blvd., Suite 150, Orlando, FL 32803
PH: (407) 296-8000 FAX: (407) 296-1822
CERTIFICATE OF AUTHORIZATION NUMBER: 00066899

SEMINOLE COUNTY

GENERAL NOTES
LAKE EMMA ROAD
CITY OF LONGWOOD UTILITY CONSTRUCTION

CONSTRUCTION DRAWINGS



LONGWOOD UTILITY CONSTRUCTION SHEET NO. (TYP)

BEGIN ROADWAY CONSTRUCTION
 STA. 10+00.00 LAKE EMMA ROAD -
 STA. 612+48.44 LONGWOOD HILLS ROAD

END UTILITY RELOCATION
 STA 37+80±

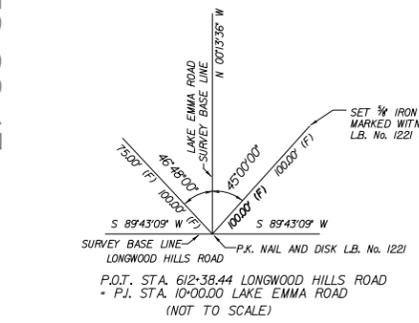
GENERAL NOTES

- GRADES SHOWN ARE FINISHED GRADES.
- B.M. DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD-'29).
- EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED.
- ANY NGVD-'29 MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OR DAMAGED, THE CONTRACTOR SHOULD NOTIFY:

 GEODETIC INFORMATION CENTER
 ATTN: MARK MAINTENANCE SECTION
 ATTN: N/CG-162
 6001 EXECUTIVE BOULEVARD
 ROCKVILLE, MARYLAND 20852
 TELEPHONE NO. 301-443-8319
- ALL SURVEY CORNERS INDICATED ON THE PLANS SHALL BE REFERENCED AND CERTIFIED BY A REGISTERED PROFESSIONAL LAND SURVEYOR PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL CORNERS DESTROYED OR OBLITERATED BY CONSTRUCTION SHALL BE RESET AND SO CERTIFIED BY THE LAND SURVEYOR PRIOR TO COMPLETION OF THE PROJECT. CERTIFIED SKETCHES SHALL BE SUBMITTED TO: SEMINOLE COUNTY, EXISTING SURVEY AND REFERENCE DATA IS BY BOYER SINGLETON & ASSOCIATES.
- ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THE CONSTRUCTION WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE EXISTING PRE-CONSTRUCTION CONDITION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. COST TO BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION TO BE ALLOWED.
- PERMANENT TURNOUTS AND DRIVEWAY CONNECTIONS TO PRIVATE PROPERTY THAT LIE OUTSIDE THE LIMITS OF RIGHT-OF-WAY AND WHERE ACCESS RIGHTS HAVE NOT BEEN ACQUIRED SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TURNOUT DETAILS AND STATE STANDARD SPECIFICATIONS REFERENCED ON THE KEY SHEET OF THESE PLANS. THE COUNTY, OR THE COUNTY'S CONTRACTOR SHALL NOT ISOLATE ADJACENT AND OR REMAINDER PROPERTY UNLESS ACCESS RIGHTS ARE ACQUIRED. ACCESS SHALL BE PROVIDED TO SUCH PROPERTY WHENEVER CONSTRUCTION INTERFERES WITH THE EXISTING MEANS OF ACCESS.
- DURING CONSTRUCTION, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES,' ALSO, SEE GENERAL NOTE 68 ON SHEET U-3.
- TEMPORARY DRAINAGE SHALL BE PROVIDED DURING CONSTRUCTION TO ELIMINATE ANY FLOODING OF PRIVATE PROPERTY CAUSED BY CONSTRUCTION ACTIVITIES.
- THE LOCATION OF THE EXISTING UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION.
- THE CONTRACTOR SHALL USE EXTREME CAUTION WHILE WORKING IN HYDROLOGICALLY SENSITIVE WETLANDS AREAS. EROSION CONTROL TO BE IN ACCORDANCE WITH FOOT INDEXES 102 & 103.
- ANY MAIL BOX WITHIN THE LIMITS OF CONSTRUCTION IS TO BE TAKEN DOWN AND RESET IN ACCORDANCE WITH POSTAL REQUIREMENTS BY THE CONTRACTOR. COST TO BE INCLUDED UNDER CLEARING AND GRUBBING.
- EXISTING DEVELOPMENT WALLS AND FENCES SHALL REMAIN UNLESS OTHERWISE NOTED.

UTILITY PROVIDERS

- FLORIDA PUBLIC UTILITIES, INC.**
 450 S. HIGHWAY 17-92
 DEBARRY, FLORIDA 32713
 CONTACT: MR. DAN SCRIBBEN
 386-668-2600
- CITY OF LAKE MARY**
 P.O. BOX 958445
 LAKE MARY, FLORIDA 32795-8445
 CONTACT: MR. DAVE DOVAN, P.E.
 407-333-8211
- PROGRESS ENERGY (TRANSMISSION)**
 3300 EXCHANGE PLACE
 LAKE MARY, FLORIDA 32746
 CONTACT:
 407-942-9471
- PROGRESS ENERGY (DISTRIBUTION)**
 3300 EXCHANGE PLACE
 LAKE MARY, FLORIDA 32746
 CONTACT:
 407-942-9471
- CITY OF LONGWOOD**
 180 EAST WARREN STREET
 LONGWOOD, FLORIDA 32750
 CONTACT: MR. RICHARD KORNBLOH, P.E.
 407-263-2388
- AT&T**
 1151-C N, KELLER ROAD
 ORLANDO, FLORIDA 32810
 CONTACT: MR. ROGER AGANS
 407-563-0032
- FPL - FIBERNET**
 9250 W. FLAGLER STREET
 MIAMI, FLORIDA 33174
 CONTACT: MR. NOEL REESE
 305-552-3249
- BELLSOUTH TELECOMMUNICATIONS**
 450 N. GOLDENROD RD
 ORLANDO, FLORIDA 32807
 CONTACT: MR. JAMES FARRELL
 407-273-5084
- BRIGHTHOUSE NETWORKS**
 844 MAGUIRE ROAD
 OCOEE, FLORIDA 34761
 CONTACT: MR. MARVIN USRY, JR.
 407-532-8519
- SEMINOLE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES**
 500 W. LAKE MARY BLVD.
 SANFORD, FLORIDA 32773
 CONTACT: MR. HUGH SIPES
 407-665-2117
- SPRINT - FLORIDA, INC.**
 P.O. BOX 1530000, MC 4043
 ALTAMONTE SPRINGS, FLORIDA 32715-3000
 CONTACT: MR. RICHARD KENNEDY
 407-830-3428
- UTILITIES, INC. OF FLORIDA**
 200 WEATHERSFIELD AVENUE
 ALTAMONTE SPRINGS, FLORIDA 32714
 CONTACT: MR. DAVID ORR
 407-869-8588 EXT 226
- SPRINT - METRO**
 P.O. BOX 162922
 ALTAMONTE SPRINGS, FLORIDA 32716-2922
 CONTACT: MR. ROBERT SAWDY
 407-899-1264
- FLORIDA GAS TRANSMISSION**
 601 S. LAKE DESTINY DRIVE
 MAITLAND, FLORIDA 32751
 CONTACT: MR. JOE SANCHEZ
 407-838-7171



REVISIONS

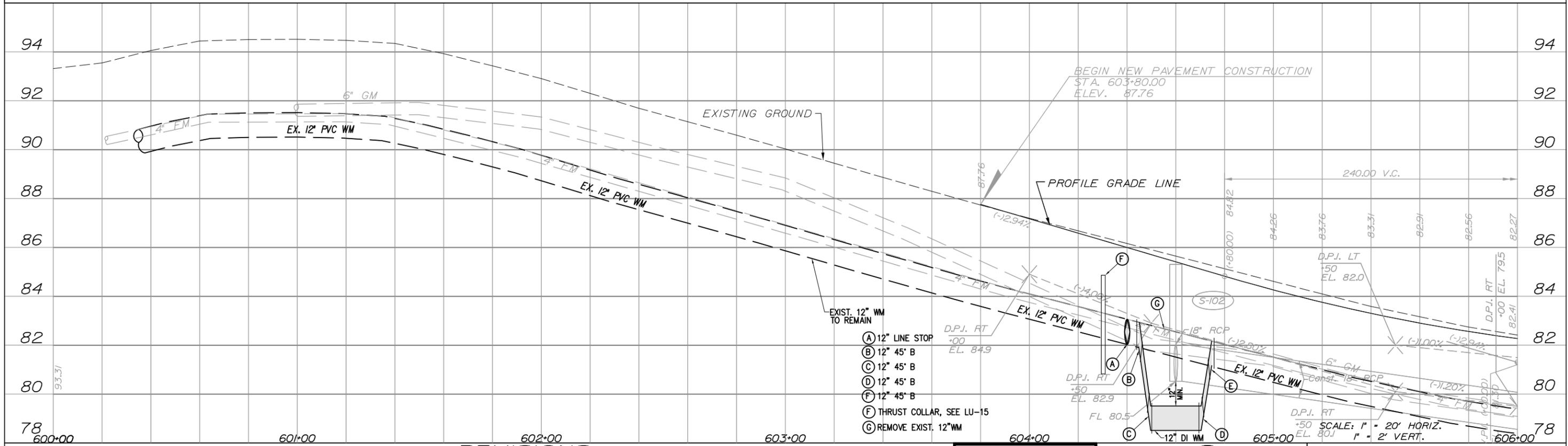
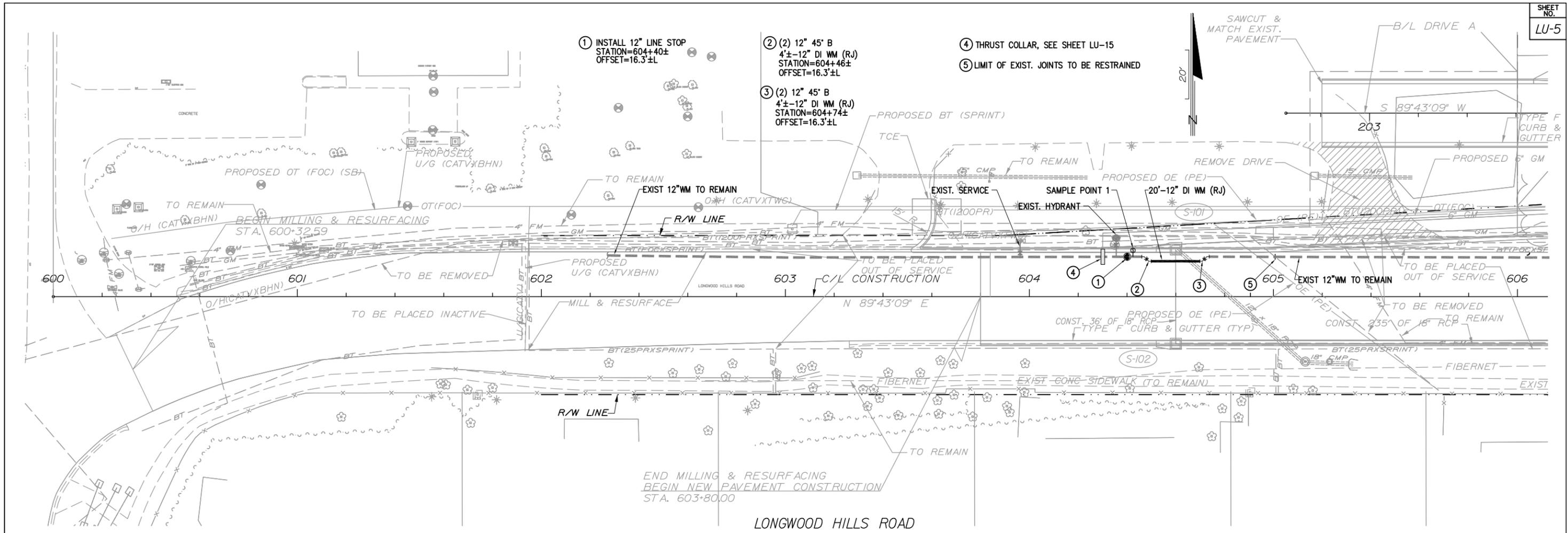
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

BFA Environmental Consultants
 Barnes, Ferland and Associates, Inc.
 3655 Maguire Blvd., Suite 150, Orlando, FL 32803
 PH: (407) 896-8000 FAX: (407) 896-1822
 CERTIFICATE OF AUTHORIZATION NUMBER: 00066899

SEMINOLE COUNTY

PROJECT LAYOUT
 LAKE EMMA ROAD
 CITY OF LONGWOOD UTILITY CONSTRUCTION

CONSTRUCTION DRAWINGS



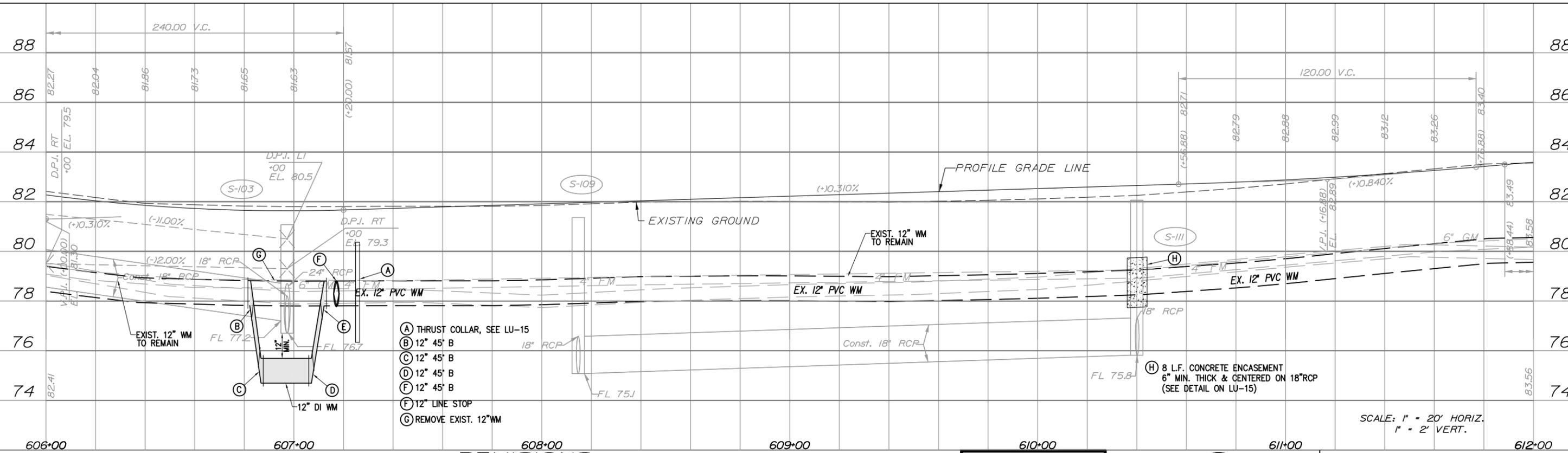
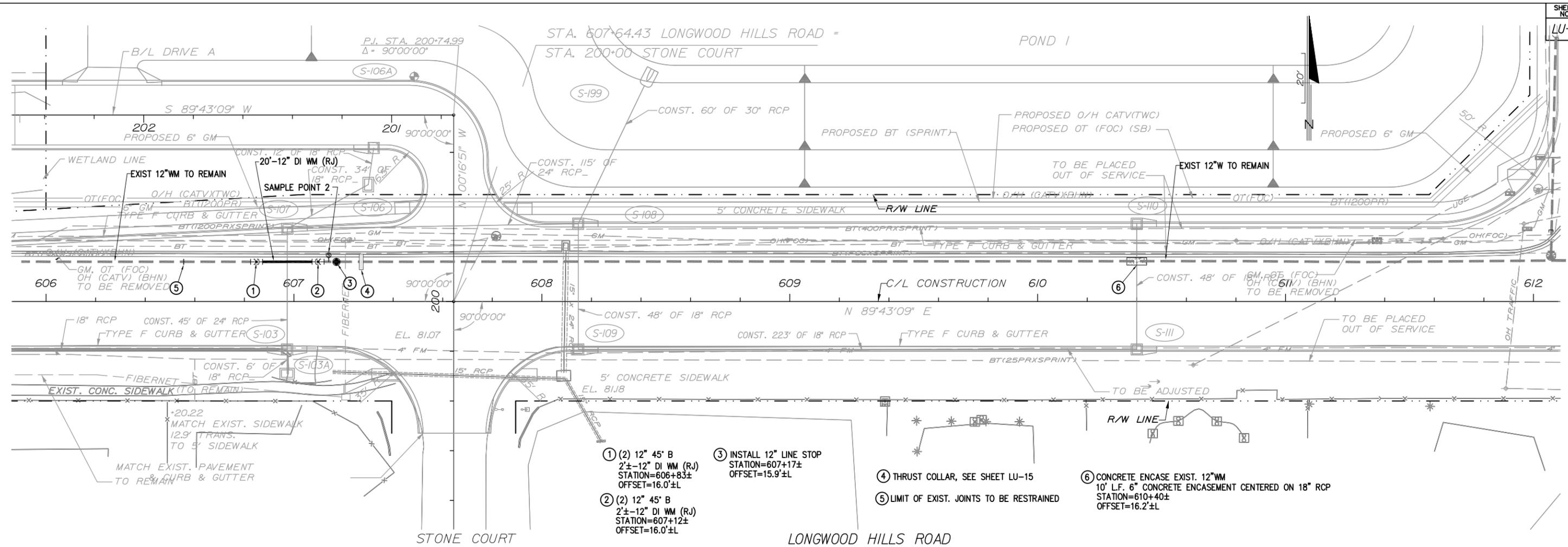
DATE	BY	DESCRIPTION									

BFA Environmental Consultants
 Barnes, Ferland and Associates, Inc.
 3655 Maguire Blvd., Suite 150, Orlando, FL 32803
 TEL: (407) 896-8000 FAX: (407) 896-1822
 CERTIFICATE OF AUTHORIZATION NUMBER: 00006899



LONGWOOD UTILITY ADJUSTMENTS
 STA. 600+00 to STA. 606+00

CONSTRUCTION DRAWINGS



- (A) THRUST COLLAR, SEE LU-15
- (B) 12" 45° B
- (C) 12" 45° B
- (D) 12" 45° B
- (E) 12" 45° B
- (F) 12" LINE STOP
- (G) REMOVE EXIST. 12" WM

- (H) 8 L.F. CONCRETE ENCASEMENT 6" MIN. THICK & CENTERED ON 18" RCP (SEE DETAIL ON LU-15)

SCALE: 1" = 20' HORIZ.
1" = 2' VERT.

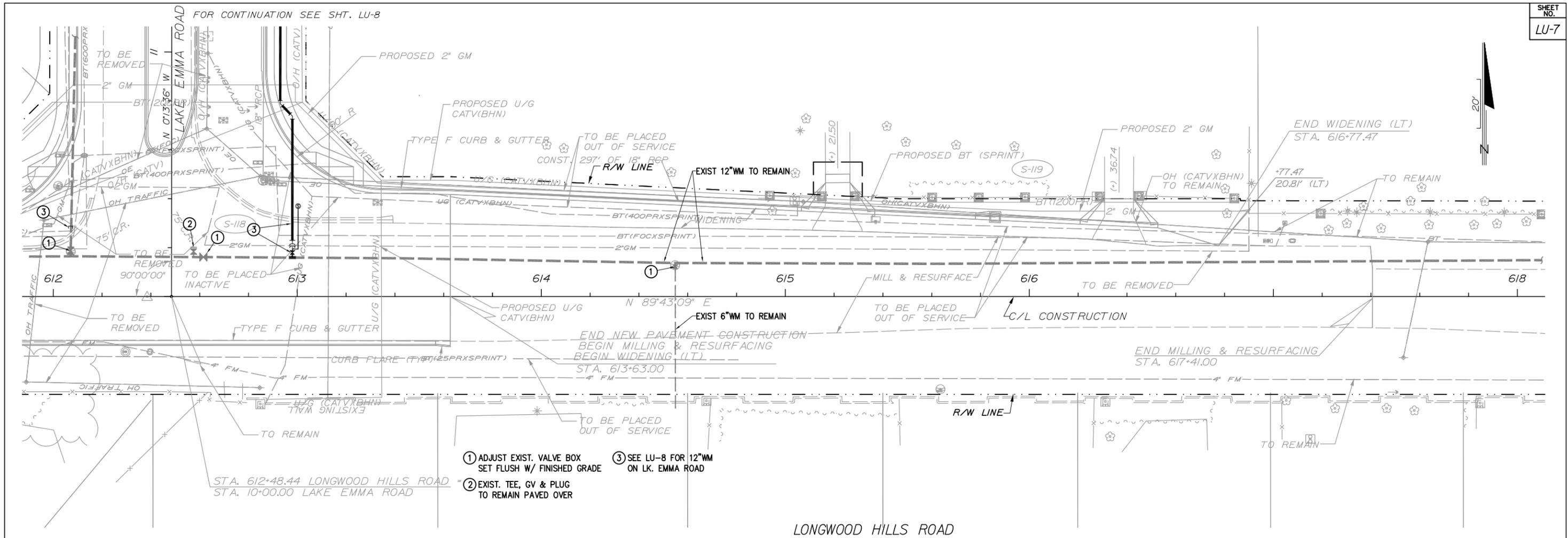
DATE	BY	DESCRIPTION									

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
3655 Maguire Blvd., Suite 150, Orlando, FL 32803
PH: (407) 896-9000 FAX: (407) 996-1822
CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

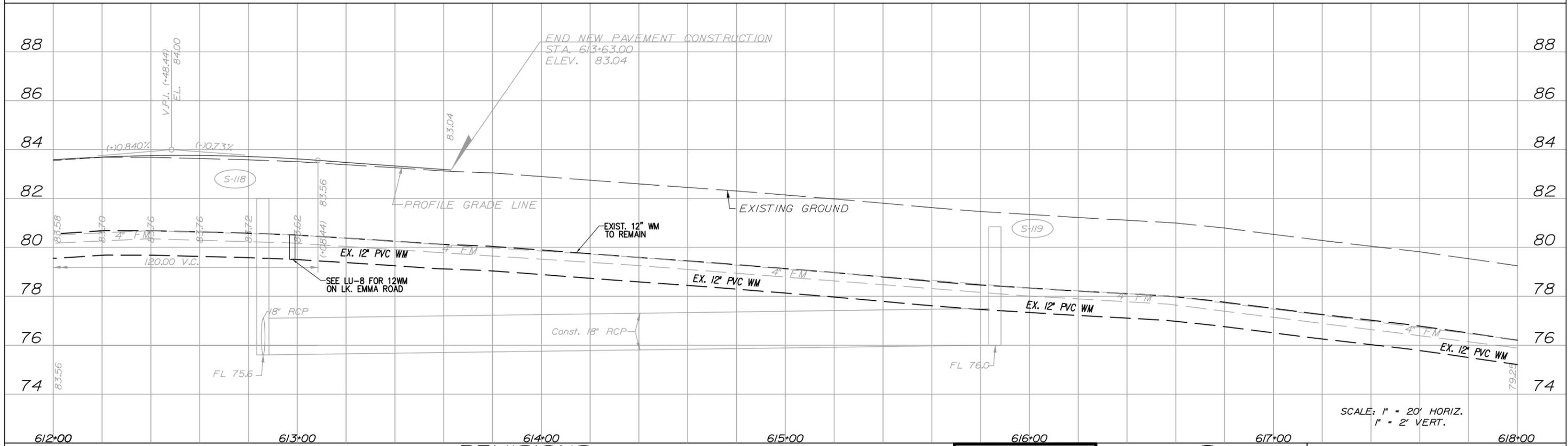


LONGWOOD UTILITY ADJUSTMENTS
STA. 606+00 to STA. 612+00

CONSTRUCTION DRAWINGS



- ① ADJUST EXIST. VALVE BOX SET FLUSH W/ FINISHED GRADE
- ② EXIST. TEE, GV & PLUG TO REMAIN PAVED OVER
- ③ SEE LU-8 FOR 12" WM ON LK. EMMA ROAD



SCALE: 1" = 20' HORIZ.
1" = 2' VERT.

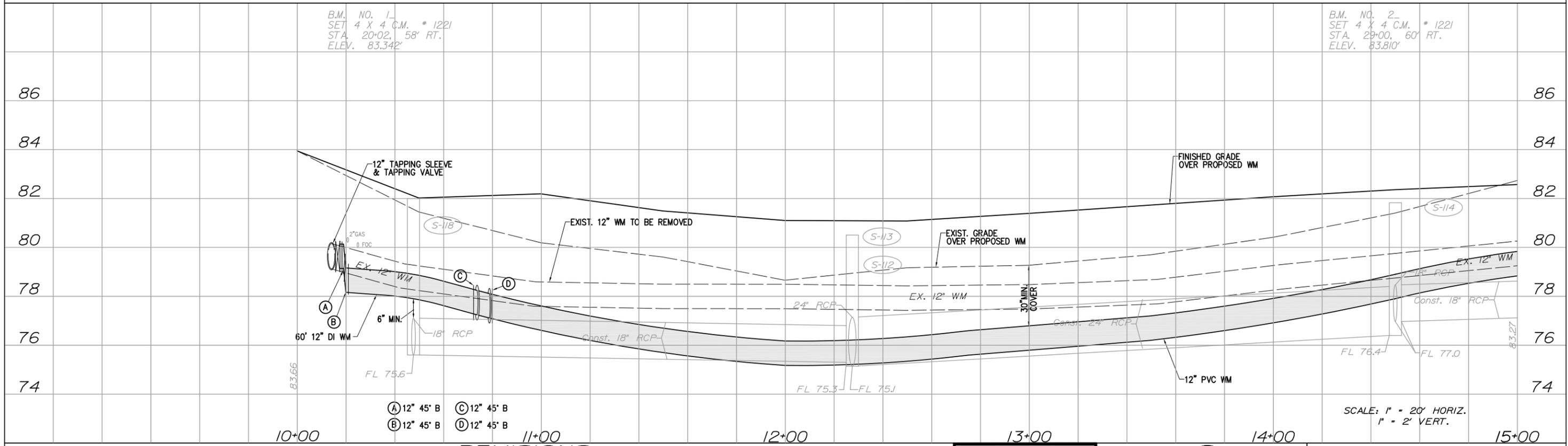
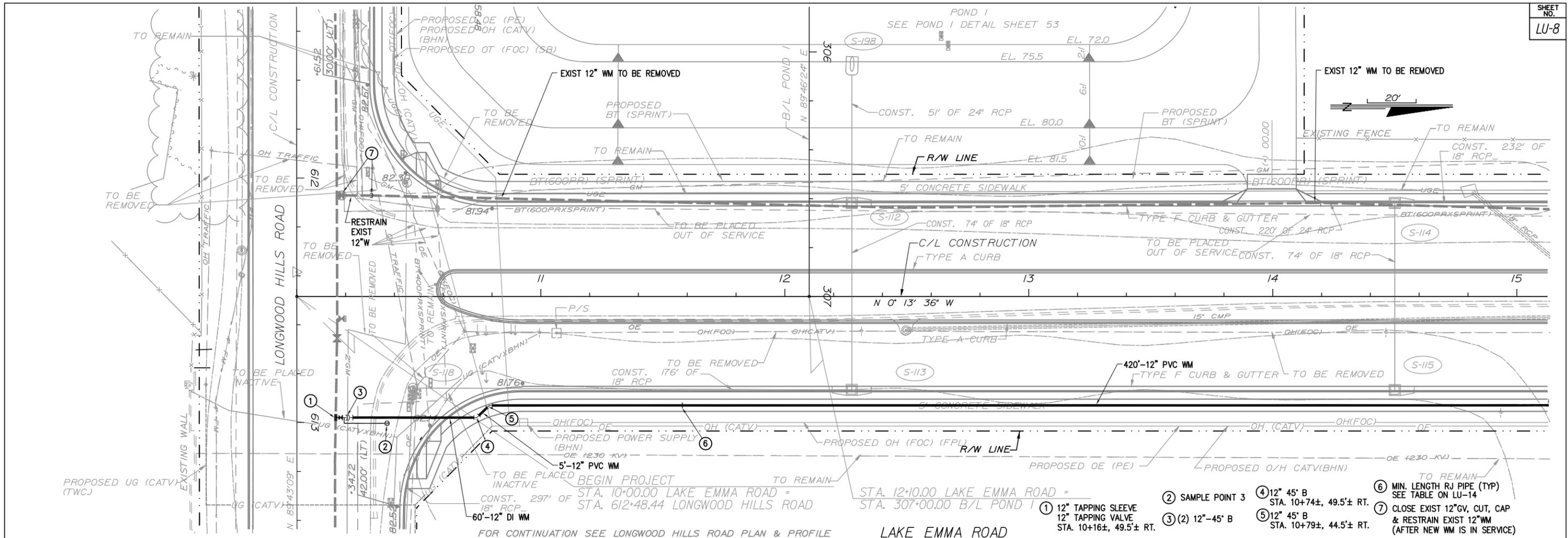
DATE	BY	DESCRIPTION									

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
3655 Maguire Blvd., Suite 150, Orlando, FL 32803
TEL: (407) 996-9099 FAX: (407) 996-1892
CERTIFICATE OF AUTHORIZATION NUMBER: 00006899



LONGWOOD UTILITY ADJUSTMENTS
STA. 612+00 to STA. 618+00

CONSTRUCTION DRAWINGS



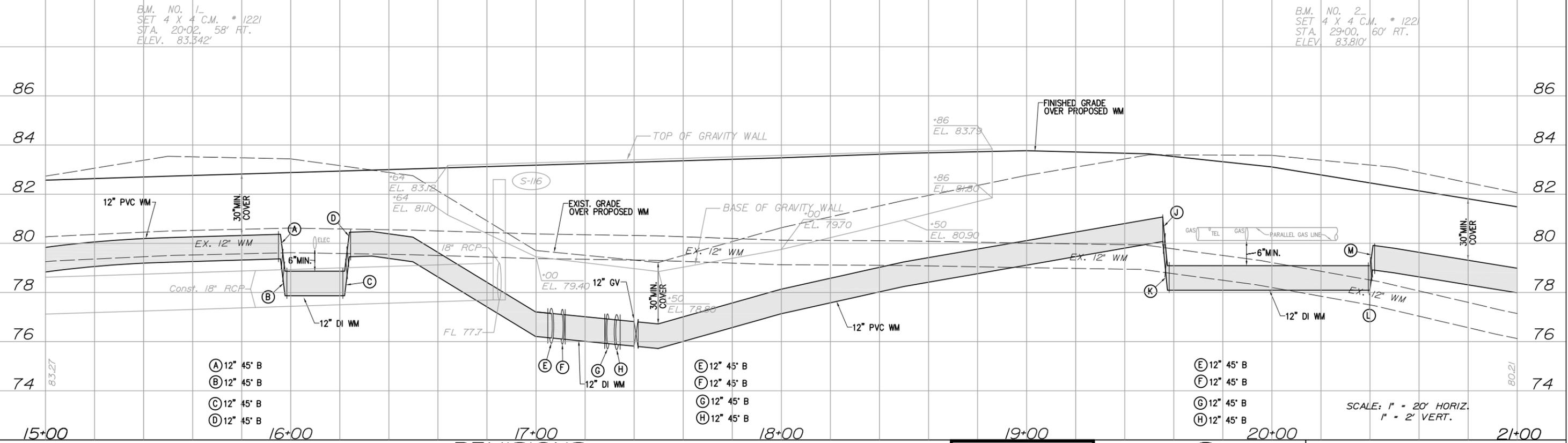
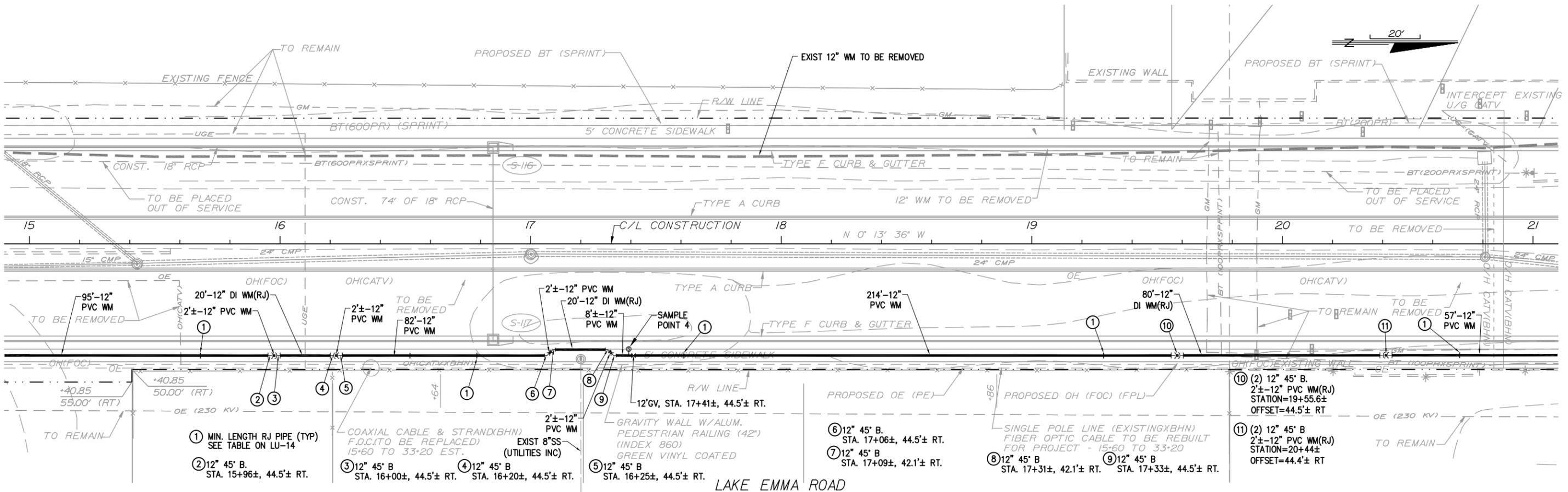
DATE	BY	DESCRIPTION									

BFA Environmental Consultants
 Barnes, Ferland and Associates, Inc.
 3655 Maguire Blvd., Suite 150, Orlando, FL 32803
 PH: (407) 896-9600 FAX: (407) 996-1892
 CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

SEMINOLE COUNTY

LONGWOOD UTILITY ADJUSTMENTS
 STA. 10+00 TO STA. 15+00

CONSTRUCTION DRAWINGS



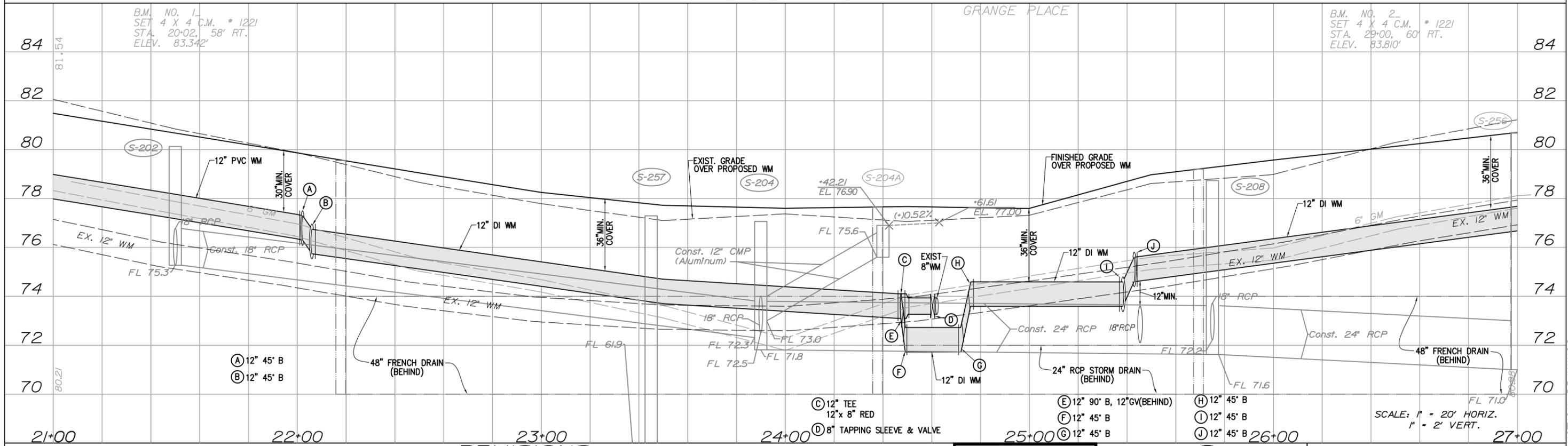
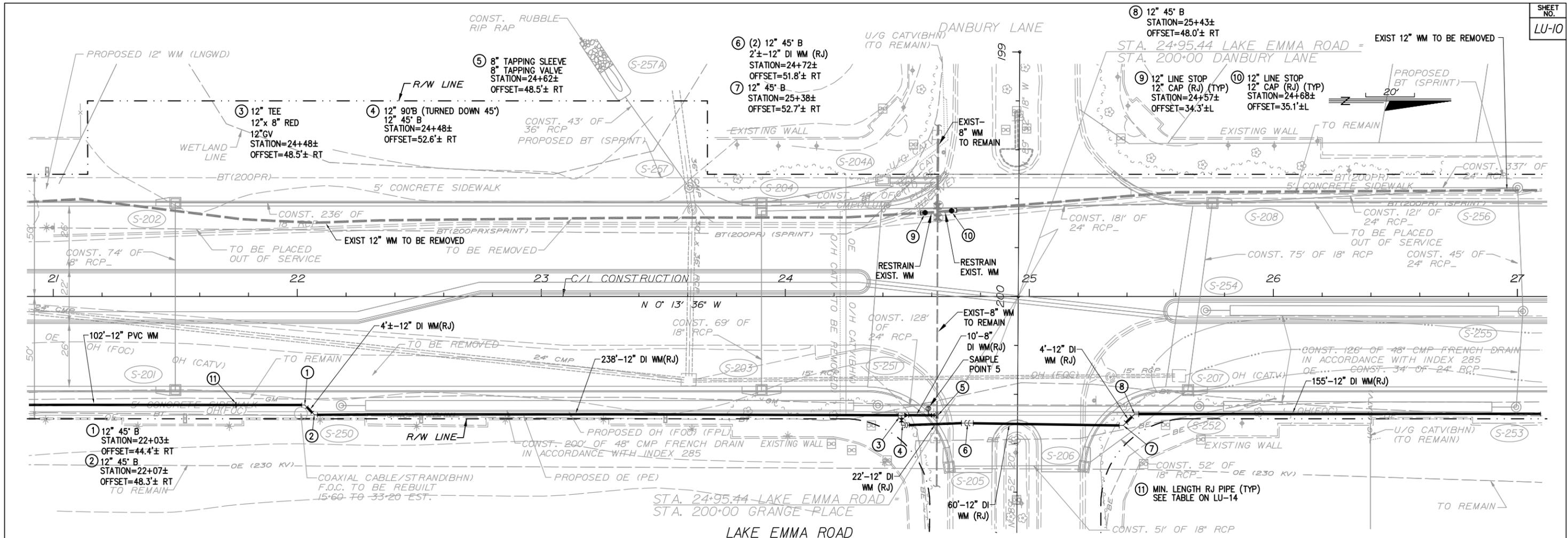
DATE	BY	DESCRIPTION									

BFA Environmental Consultants
 Barnes, Ferland and Associates, Inc.
 3655 Maguire Blvd., Suite 150, Orlando, FL 32803
 TEL: (407) 896-8000 FAX: (407) 896-1822
 CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

SEMINOLE COUNTY

LONGWOOD UTILITY ADJUSTMENTS
 STA. 15+00 to STA. 21+00

CONSTRUCTION DRAWINGS



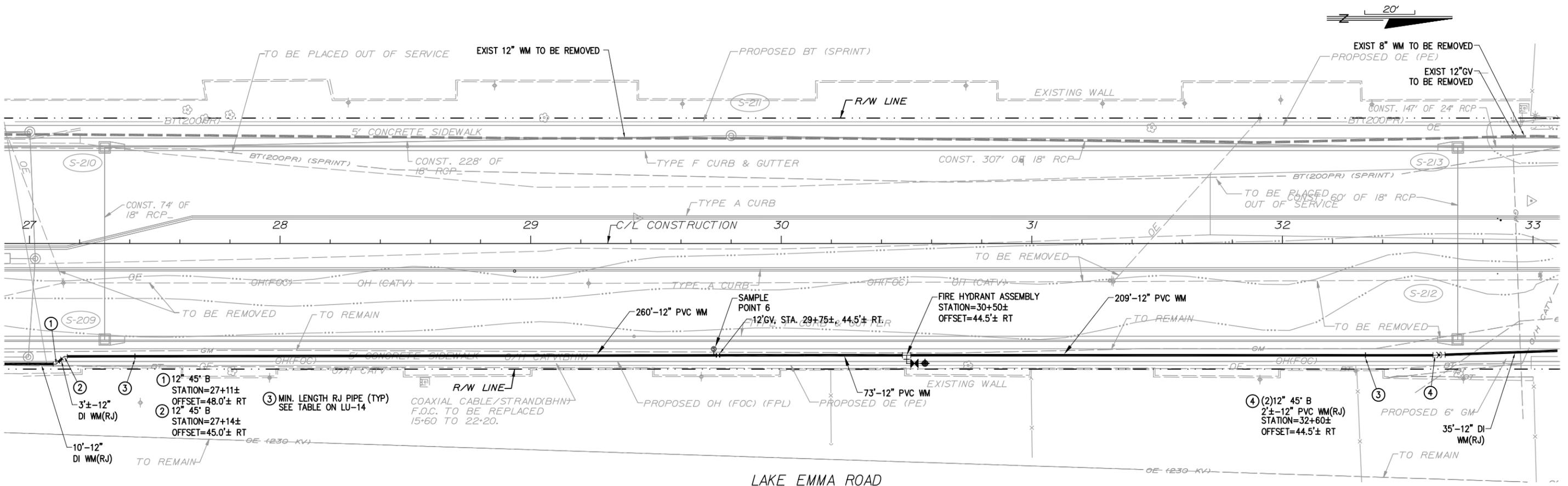
DATE	BY	DESCRIPTION									

BFA Environmental Consultants
 Barnes, Ferland and Associates, Inc.
 3655 Maguire Blvd., Suite 150, Orlando, FL 32803
 TEL: (407) 996-9699 FAX: (407) 996-1892
 CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

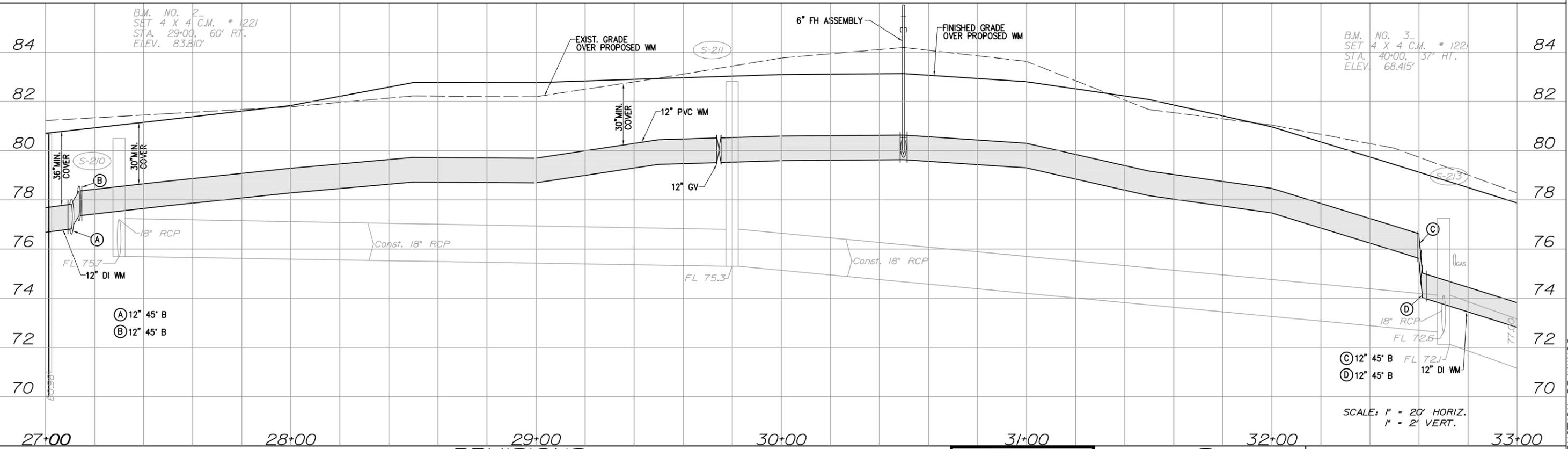


LONGWOOD UTILITY ADJUSTMENTS
 STA. 21+00.00 TO STA. 27+00.00

CONSTRUCTION DRAWINGS



LAKE EMMA ROAD



SCALE: 1" = 20' HORIZ.
1" = 2' VERT.

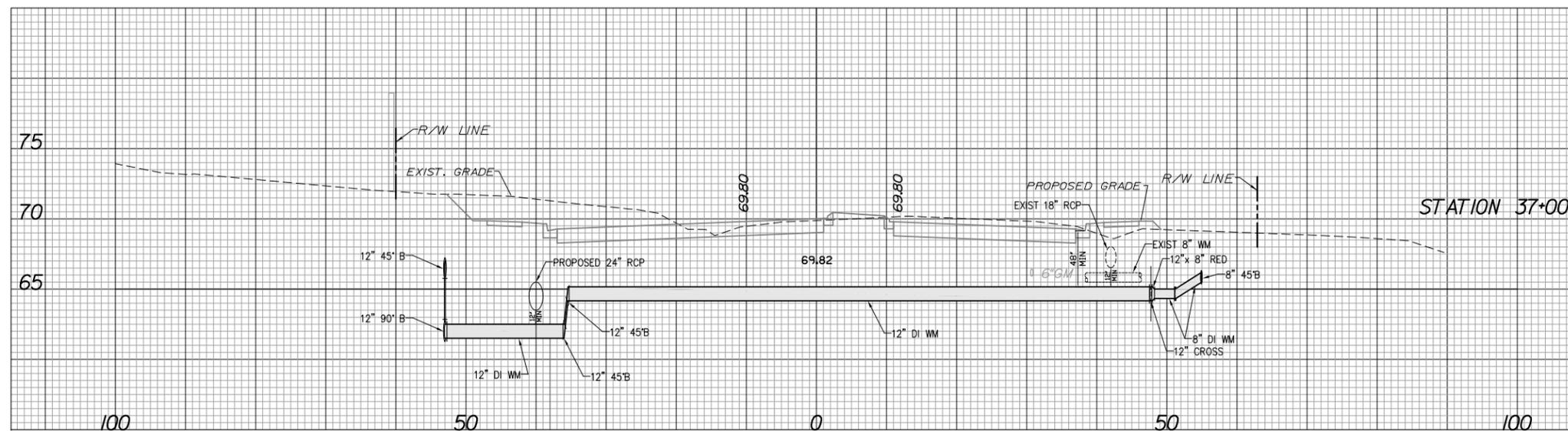
REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
3655 Maguire Blvd., Suite 150, Orlando, FL 32803
TEL: (407) 996-9699 FAX: (407) 996-1822
CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

SEMINOLE COUNTY

LONGWOOD UTILITY ADJUSTMENTS
STA. 27+00 TO STA. 33+00

CONSTRUCTION DRAWINGS



SCALE: 1"=10' HORIZ.
1"=5' VERT.

REVISIONS

DATE	BY	DESCRIPTION									

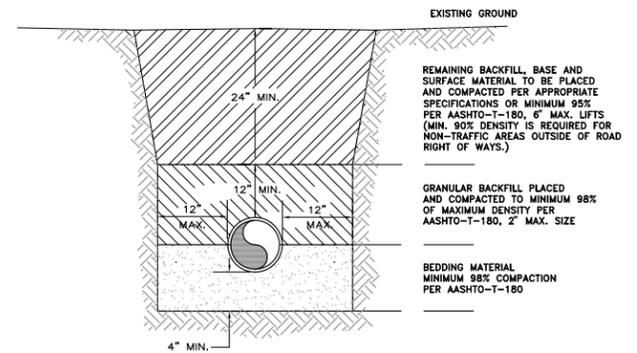
BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
3655 Maguire Blvd., Suite 150, Orlando, FL 32803
TEL: 407.296-2000 FAX: 407.296-1522
CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

SEMINOLE COUNTY



UTILITY CROSS-SECTIONS
LAKE EMMA ROAD
CITY OF LONGWOOD UTILITY CONSTRUCTION

CONSTRUCTION DRAWINGS

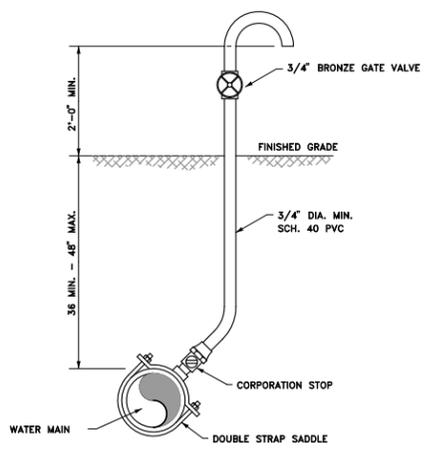


NOTES:

- BEDDING MATERIAL SHALL CONSIST OF IN-SITU GRANULAR MATERIAL (IF IN-SITU SOILS ARE STRATUM ONE SOILS PER SOILS REPORT (NO STRATUM TWO OR 3 SOILS TO BE USED FOR PIPE BEDDING), OR WASHED AND GRADED LIMEROCK 3/8"-7/8" SIZING, UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
- THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
- THE PIPE SHALL BE PLACED IN A DRY TRENCH. WHERE DEWATERING IS NOT PERMITTED, TRENCH BOTTOM SHALL BE STABILIZED AS REQUIRED WITH GRANULAR BEDDING MATERIAL (CRUSHED STONE OR GRAVEL PER ASTM C-33, GRADATION NO. 67 W/ NO STONES LARGER THAN 1" IN ANY DIRECTION).
- BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGER ROCK, MUCK AND DEBRIS.
- DENSITY TEST ARE REQUIRED IN ONE (1) FOOT LIFTS ABOVE PIPE AT INTERVALS OF 400 FT. MAXIMUM, OR AS DIRECTED BY THE CITY.
- THE DEVELOPER / CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL APPLICABLE TRENCH-SAFETY LAWS AND REGULATIONS.
- THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT / CONTRACT DOCUMENTS.

TYPICAL TRENCH DETAIL

NTS



NOTE: SAMPLE POINT SHOULD BE A SERVICE LINE OR FIRE HYDRANT IF POSSIBLE.

SAMPLING POINT (ON MAIN)

NTS

FITTINGS	PIPE SIZE IN INCHES				
	4	6	8	10	12
90° BEND	20	29	37	44	51
45° BEND	8	12	15	18	21
22 1/2° BEND	4	6	7	9	10
11 1/4° BEND	2	3	5	5	6
BRANCH OF TEE	42	59	77	93	108
PLUG OR DEAD END	42	59	77	93	108

DESIGN PRESSURE = 150 P.S.I. SOIL DESIGNATION = SAND / SILT LAYING CONDITION = TYPE 5
DEPTH OF COVER = 30" SAFETY FACTOR = 1.5

NOTES:

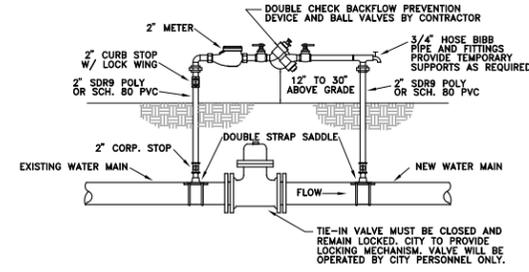
- INSTALL FULL LENGTH JOINTS WITH TOTAL NUMBER OF JOINTS EQUAL TO OR GREATER THAN SHOWN IN THE TABLE AND FOR THE TOTAL EQUIVALENT LENGTH REQUIRED.
- LENGTHS ARE BASED ON DUCTILE IRON PIPE. FOR PVC PIPE OR POLYETHYLENE WRAPPED DI PIPE, INCREASE LENGTH BY 1.25
- WHERE TWO OR MORE FITTINGS ARE TOGETHER USE FITTINGS WHICH YIELD THE GREATEST NUMBER OF RESTRAINED JOINTS.
- CONTRACTOR SHALL SUBMIT FOR REVIEW AND COMMENT, DRAWINGS FOR RESTRAINED JOINT SYSTEM. SHOP DRAWINGS TO BE SUBMITTED TO THE CITY FOR ENGINEER APPROVAL.
- RESTRAINED PIPE SCHEDULE SHALL BE COMPLETED BY THE ENGINEER, BASED ON ALL DESIGN CONSIDERATIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING: PIPE TYPE, SOIL BEARING CAPACITY, SOIL TYPE, DEPTH OF COVER, TEST PRESSURE, LAYING CONDITIONS AND SAFETY FACTOR.

PIPING RESTRAINT TABLE

3. FLUSHING OF 10" DIAMETER AND LARGER WATER MAINS MAY BE DONE THROUGH THE TIE-IN VALVE UNDER VERY CONTROLLED CONDITIONS.

THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

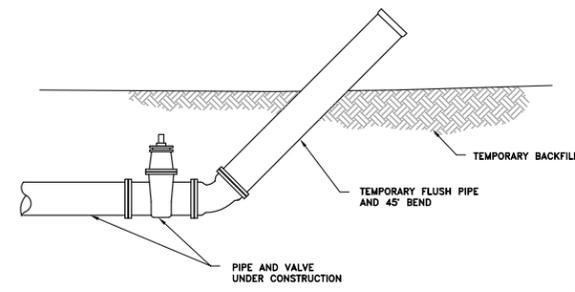
- THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO TIE-IN. VALVES WHICH ARE NOT WATER TIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.
- THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.
 - FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAINS.
 - ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE-IN VALVE.
 - PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE-IN POINT. THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 PSI.
 - TIE-IN VALVE SHALL BE OPENED A FEW TURNS ONLY, ENSURING A PRESSURE DROP ACROSS THE VALVE IS ALWAYS GREATER THAN 10 PSI.
- THE TIE-IN VALVE SHALL BE LOCKED CLOSED BY THE UTILITY COMPANY UNTIL FLUSHING BEGINS.
- THE TIE-IN VALVE SHALL BE OPENED ONLY FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE UTILITY COMPANY AND OBSERVED BY THE ENGINEER.
- AFTER FLUSHING, THE TIE-IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY.
- THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE DOUBLE CHECK BACKFLOW PREVENTION DEVICE HAS BEEN TESTED WITHIN ONE YEAR AT THE TIME OF INSTALLATION, AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION. THE TEST SHALL BE PERFORMED BY A QUALIFIED BACK FLOW PREVENTION TECHNICIAN AS APPROVED BY CITY OF LONGWOOD CROSS-CONNECTION CONTROL PROGRAM.
- EXCEPT AS REQUIRED TO FLUSH LINES OF GREATER THAN 8" IN DIAMETER, THE TIE-IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY. THE TIE-IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.
- UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
- ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE, FITTINGS, VALVE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



- A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
- THE DETAIL ABOVE IS TO BE USED FOR FILLING ANY NEW WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY) AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING, AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED BY CITY OF LONGWOOD UTILITIES. THIS JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS ALL THE TIME AFTER DISINFECTION AND UNTIL THE FDEP CLEARANCE LETTER IS OBTAINED. ADEQUATE THRUST BLOCKING AND/OR RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, LATEST EDITION. THE TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C651.

TEMPORARY JUMPER CONNECTION

NTS

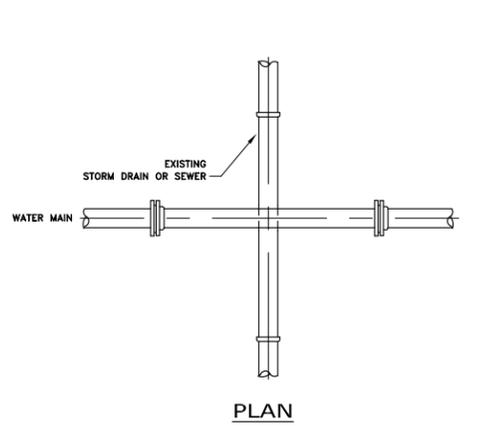
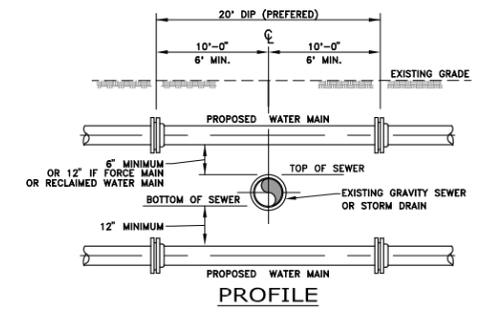


NOTES:

- UPON COMPLETION OF THE PIPE INSTALLATION FOR ANY SECTION, THE MAINS SHALL BE CANNON FLUSHED TO REMOVE DIRT AND ANY OTHER FOREIGN MATTER BY ACHIEVING A MINIMUM VELOCITY OF 2.5 FEET PER SECOND IN THE PIPE. MAINS MAY BE EITHER TEMPORARILY LAID ABOVE GRADE OR TEMPORARY FITTINGS, PIPE ETC. MAY BE USED TO FACILITATE CANNON FLUSHING.
- INSTALL A 45° BEND AND ASSOCIATED PIPING AS SHOWN TO DIRECT THE FLUSHING WATER AWAY FROM THE IMMEDIATE WORK AREA AND EXERCISE DUE CARE SO AS TO ENSURE THAT THE WATER USED IN FLUSHING DOES NOT CAUSE A NUISANCE OR INFLECT PROPERTY DAMAGE.
- BENDS AND PIPING SHALL BE THE SAME SIZE AS THE LINE TO BE FLUSHED.
- PRIOR TO THE ACTUAL LINE FLUSHING OPERATION, THE CONTRACTOR SHALL PROPERLY NOTIFY THE CITY INSPECTOR OF SUCH INTENDED WATER USE.
- NO EXISTING VALVES SHALL BE TURNED ON OR OFF, EXCEPT BY AUTHORIZED CITY PERSONNEL.
- FLUSHING SHALL NOT BE ACCOMPLISHED WITHOUT THE ACTUAL PRESENCE OF THE CITY INSPECTOR.
- AFTER THE LINE UNDER CONSTRUCTION HAS BEEN SUCCESSFULLY FLUSHED THE CONTRACTOR SHALL REMOVE THE TEMPORARY PIPING ARRANGEMENT AND PROCEED WITH THE REMAINING CONSTRUCTION AS SPECIFIED.
- ALL PIPING SHALL BE MECHANICALLY RESTRAINED IN ACCORDANCE WITH CITY STANDARDS. THE NUMBER OF PIPE LENGTHS TO BE RESTRAINED SHALL BE PER MANUFACTURERS RECOMMENDATION.

CANNON FLUSHING DETAIL

NTS



NOTES: (UNLESS SHOWN DIFFERENTLY ABOVE THE FOLLOWING NOTES APPLY)

- MINIMUM 12 INCHES VERTICAL SEPARATION BELOW AND 6 INCHES ABOVE SHALL BE MAINTAINED BETWEEN ALL POTABLE WATER LINES AND SANITARY SEWER LINES.
- MAINTAIN A MINIMUM 6 FOOT HORIZONTAL SEPARATION BETWEEN WATER AND SEWER.
- FORCE MAIN CROSSING WATER MAIN - WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL SEPARATION OF 12 INCHES BETWEEN THE PIPES WITH WATER MAIN CROSSING OVER FORCE MAIN. PIPES SHALL HAVE 6" MIN. HORIZONTAL SEPARATION.
- ALL CROSSINGS SHALL CONFORM TO FDEP/HEALTH DEPT. STANDARD SEPARATION REQUIREMENTS.

WATER AND SEWER MAIN CROSSING

NTS

REVISIONS

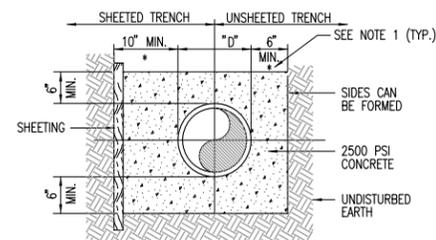
DATE	BY	DESCRIPTION									

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
3655 Maguire Blvd., Suite 150, Orlando, FL 32803
PH: (407) 296-8000 FAX: (407) 296-1822
CERTIFICATE OF AUTHORIZATION NUMBER: 00006899

SEMINOLE COUNTY
OFFICE OF THE COUNTY ENGINEER

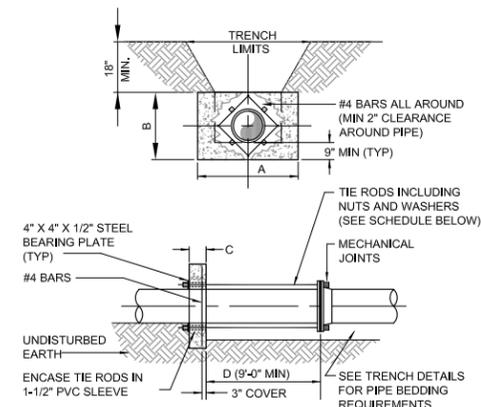
WATER DISTRIBUTION DETAILS
LAKE EMMA ROAD
CITY OF LONGWOOD UTILITY CONSTRUCTION

CONSTRUCTION DRAWINGS



- NOTES:
1. "D" REFERS TO THE DIAMETER OF THE PIPE.
 2. "T" REFERS TO THE THICKNESS OF THE PIPE.

CONCRETE ENCASEMENT DETAIL
NTS

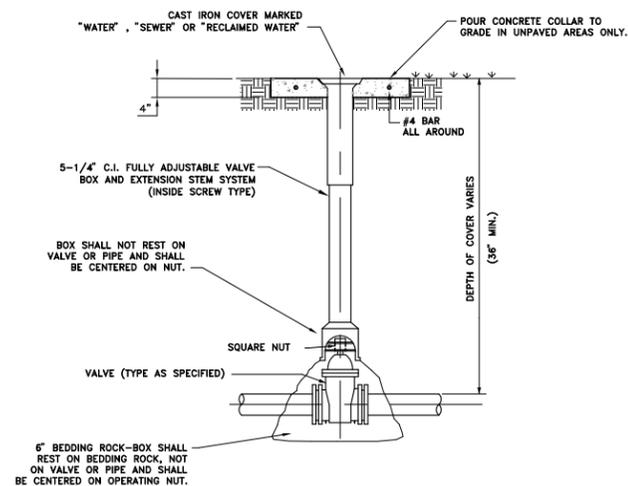
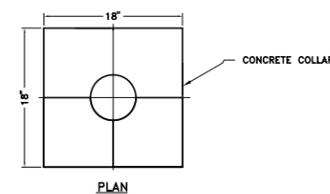


- NOTES:
1. ADDITIONAL REINFORCEMENTS SHALL BE AS SPECIFIED BY THE ENGINEER.
 2. MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE SHALL BE 3000 PSI.
 3. BEDDING, BACKFILL, AND COMPACTION SHALL BE AS SPECIFIED ELSEWHERE IN THE STANDARD DRAWINGS.
 4. ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACKFILL.
 5. NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL AND THE THRUST COLLAR.
 6. DESIGN PRESSURE: 150 PSI.

PIPE SIZE (INCHES)	DIMENSIONS (FT.)				TIE RODS REQ'D	
	A	B	C	D	DIA.	NO.
8	3.5	2.75	1.0		3/4"	2
12	6.25	4.0	1.5		1"	4

NOTE: THRUST COLLAR AREAS TO BE COMPUTED ON BASIS OF 2000 LBS/SF SOIL RESTRAINT BEARING.

THRUST COLLAR DETAIL
NTS



- NOTES:
1. VALVES SHALL NOT BE LOCATED IN STREET CURBS.

TYPICAL VALVE SETTING DETAIL
NTS

REVISIONS

DATE	BY	DESCRIPTION									

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
3655 Maguire Blvd., Suite 150, Orlando, FL 32803
PH: 407.296-2000 FAX: 407.296-1522
CERTIFICATE OF AUTHORIZATION NUMBER: 00066899

SEMINOLE COUNTY
CITY OF LONGWOOD UTILITY CONSTRUCTION

WATER DISTRIBUTION DETAILS
LAKE EMMA ROAD
CITY OF LONGWOOD UTILITY CONSTRUCTION