MANATEE COUNTY
FLORIDA

April 23, 2010

TO: All Interested Bidders

SUBJECT: **Invitation for Bid # 10-0634-DS**
Pic Town Waterline Replacement Project-Phase 2
(Project No. 6074870)

ADDENDUM # 5

Bidders are hereby notified that this Addendum shall be acknowledged on page 00300-1 of the Bid Form and made a part of the above named bidding and contract documents.

The following items are issued to add to, modify, and clarify the bid and contract documents. These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices. Bids to be submitted on the specified bid date, shall conform to the additions and revisions listed herein.

The deadline for clarification of questions has been **amended to read April 29, 2010 at 2:00 PM.** This deadline has been established to maintain fair treatment of all potential bidders, while maintaining the expedited nature of the Economic Stimulus that the contracting of this work may achieve.

1. **Attached is a revised copy of the engineer's estimate letter (1) page dated April 23, 2010. It is important to note that Manatee County Government is currently receiving competitive bids which are up to 50% lower than engineer's estimates.**

Finance Management Department
Mailing Address: Purchasing Division: 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205
PHONE: 941-708-7528 * FAX: 941-708-7544
www.mymanatee.org

ADDENDUM # 5

The following answers to the questions have been provided by Mr. G. Dean Milton, P.E. of Carollo Engineer, Sarasota Florida.

2. **Attachment: Carollo Engineers, Letter dated April 23, 2010 (15 pages). Subject of Attachment: Responses to submitted questions.**

3. **Attachment: Manatee County Revised Specifications Section 01150 Measurement and Payment Section dated April 2010, Addendum # 5 (6 pages). Discard the previously submitted section and replace with this revised section.**

4. **Attachment: Manatee County Revised Specifications Section 02622 Polyvinyl Chloride (PVC) Pipe and Fittings (AWWA Specifications C900 & C905) dated April 2010, Addendum # 5 (4 pages). Discard the previously submitted section and replace with this revised section.**

5. **Attachment: Carollo Engineer, Revised Planset dated (April 2010), the attached planset supersedes all other plansets previously issued for this solicitation and must be used in formulating your bid response to this Invitation for Bid. (14 sheets).**

6. **Attachment: Carollo Engineers, Project Sign Set up (PDF).**

Invitation for Bid # 10-0634-DS
Pic Town Waterline Replacement Project-Phase 2
(Project No. 6074870)

ADDENDUM # 5

Bidders: The Bid Forms attached to this Addendum # 5 (Bid "A" 2 pages and Bid "B" 2 pages) (Total four (4) pages for bid forms) supersede all other Bid Forms issued for this solicitation and must be used in submission of your bid in response to this Invitation for Bid.

If you have submitted a bid prior to receiving this addendum, you may request in writing that your original, sealed bid be returned to your firm. All sealed bids received will be opened on the date stated.

END OF ADDENDUM # 5

The deadline for submitting sealed Bids at the Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205 is May 6, 2010 at 3:00 PM.

Sincerely,

/R. C. "Rob" Cuthbert, CPM, CPPO
Purchasing Official

/ds (attachments)

Finance Management Department
Mailing Address: Purchasing Division: 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205
PHONE: 941-708-7528 * FAX: 941-708-7544
www.mymanatee.org

carollo

Engineers...Working Wonders With Water™

April 23, 2010
7880E.10

Subject: Pic Town Waterline Replacement Phase 2

To All Bidders:

The Engineer's Opinion of Probable Construction Cost for the Phase 2 Pic Town Waterline Replacement Project is $904,326 (Nine Hundred Four Thousand Three Hundred Twenty Six Dollars).

This Opinion of Probable Construction Cost was determined as of April 22, 2010 and was based on the revised plans and specifications issued April 2010 with Addendum No. 5. Subsequent changes to plans or specifications by future addenda to this bid may not be accounted for in this opinion of cost.

Sincerely,

CAROLLO ENGINEERS, P.C.

Dean Milton

G. Dean Milton, P.E.

GDM:maw

cc: Michael O'Reilly, Project Manager
Project File

401 N. Cattlemen Road, Suite 306, Sarasota, Florida 34232
P. 941.371.9832 F. 941.371.9873
carollo.com

carollo

Engineers...Working Wonders With Water™

April 23, 2010
7880E.10

Donna M. Stevens
Construction Buyer
Manatee County Government
1022 26th Avenue East
Bradenton, Florida 34208

Subject: Responses to Pre-Bid and Bid Questions for Pic Town Phase II

Dear Ms. Stevens:

Carollo is pleased to provide Manatee County with the following responses to the pre-bid questions.

Questions received from McLeod Land Services, Inc. – January 6, 2010

1. Section 01050 Surveying - It would be useful to have some offsets (show how many feet you want) between the baselines and the proposed pipelines on all the drawings.

   Offset distances from the baselines are shown on the drawings for bends, service connections, hydrant assemblies, which is adequate to define the location of the pipe.

2. Section 01380 Construction Photographs - How many individual photo images (2 prints required of each) must be provided with the pay estimate each month.

   As specified in Section 01380 - 1.03.G, the Contractor shall consult with the Engineer at each pay period of photography for instructions concerning views required. The number of photographs required will be based on status of the work.

3. Section 01510 Temporary Utilities - Do we have to pay for water used for flushing, chlorinating, and pigging the new lines?

   As specified in Section 02618, 1.02, A the Contractor is responsible for all necessary supply water. If the Contractor proposes to use water from the Manatee County potable water system, then the water supply must be metered and the Manatee County utility reimbursed by the Contractor for all water used.

4. Section 01580 Project Identification Sign - Please provide a detailed sign design for this project showing the size and specific graphic content desired. This should not be left up to the contractor - to design a project sign.

   Please see attached Project Sign Detail.

5. Section 02064 Para. 3.05 In-Place Grouting of Existing Pipe - From the plans, it is unclear to me what is new pipe recently installed by others, what is old pipe to remain in service and

what must be grouted and abandoned under this contract. It would be highly beneficial to have an overall scale drawing showing exactly which existing water lines must be grouted and abandoned under this contract, so we can figure out how many feet of pipe we will have to grout. It would also be useful if this same drawing could show the locations of valves existing on the old system. Homes on some streets are being served from the back and now will be served from the front. Therefore, it may be beneficial to make provisions in the contract for remobilization to grout these lines later, unless new service lines have already been installed out the front of the house to the new meter box location at the street.

The Phase I portion of this project has not been constructed so the Drawings have been revised to remove reference or connection designs to those waterlines. All existing waterlines are to remain in service.

Grouting of abandoned waterlines will be part of a future project and as such is not part of this contract. Drawings have been revised to eliminate references to grouting of abandoned water lines.

6. Bid Items 13 and 14 -6" Pipe - The 6" pipe quantity (combined DIP and/or PVC) is about 160 feet short. I have measured it several times.

   We have re-evaluated the quantity takeoff and reviewed the documents for coordination. The quantity has been revised to reflect this review.

7. The Measurement and Payment section (01150) calls for class 52 iron pipe, but the spec section 02615 calls for thickness class 50. Please clarify which thickness is required. Also, there are spec sections for ductile iron pipe and for polyethylene pipe, but no spec sections for PVC pipe. We could also use a spec or detail for the 6" cut-in valve shown on sheet 8.

   Provide ductile iron pipe in accordance with specification Section 02615 – Ductile Iron Pipe, 2.01.A. – Ductile iron pipe shall conform to ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51. Thickness of pipe shall be Class 50 or pressure Class 350.

   Specification Section 02622 for PVC pipe has been included with this response letter. General Note No. 46, which specified general requirements for the PVC pipe has been deleted to avoid confusion or conflicts.

8. Bid Item 3 Asphalt Pavement Replacement - It looks like 51st Avenue West will be torn up pretty bad and the whole thing should probably be overlaid after the trenches are patched. This street is 780'x18' or 14,040sf. The bid quantity for asphalt pavement replacement has only 4,880sf. Do we just get paid for the trench patches or for the overlay too? How is this item measured for payment? The detail on the plans may not be the best for this situation. Maybe we should have separate items for patching and for overlay.

   The quantities for asphalt pavement replacement and the measurement and payment items have been revised to describe and quantify the intent of payment for asphalt pavement, asphalt driveway and concrete driveway replacement. The measurement and payment items for piping include the piping trench per detail UG-12, UG-13 or UG-14, as applicable, up to the top of existing base or bottom of the Asphaltic Concrete Friction Course. Separate

bid items have been added for Asphaltic Concrete Friction Course and 1-1/2" S-III Asphaltic Concrete Overlay. Adjustments have also been made to the measurement and payment items for asphalt driveway and concrete driveway replacement.

9. Bid Item 5 Concrete Driveways - There are about 1,200LF of pipe crossing concrete driveways. At 5' wide this would require 6,000SF of patching. The bid quantity has only 3,510SF. I can see a lot of potential for bickering with residents about this item. A lot of times they will want concrete removed back to the next existing expansion joint - not just over the trench.

   Detail UG-14 requires that if there is an existing expansion joint within 3 ft of the proposed joint, then the driveway replacement is to extend to the existing joint. The Concrete driveway replacement quantity has been revised to accommodate the potential for the additional concrete replacement. This is based on the assumption of a 5 ft wide concrete replacement section per lineal foot of pipe.

10. Bid Items 7 through 10 Services –

    a. Drawing 7 of 13 has the pipe running up the roadway on 51st Avenue West. Services on both sides of the pipe (long and short since the pipe isn't exactly in the center of the road) will need to be copper since they're in the road. There is no bid item for short side copper services. Are these services all considered to be long?

       A bid item has been added for short side copper services and quantities have been adjusted accordingly on the Bid Form.

    b. Some services require relocations of existing meter boxes. Some services require new meter boxes. There are no specs or details for the new meter boxes or meter setting yokes required (might be in the standards I don't have). Who will be responsible (in each case - relocated and for new) for connecting the meter box to the service on the house side of the box? Similarly to the grouting item above, if we are responsible to connect the new meter boxes to the house service, this might be something that we would have to return to the job and do later.

       The project will not include relocation of meter boxes. The intent is for all existing services to remain active while the new pipeline and water services are being constructed. The Drawings have been modified to remove reference to relocated meter boxes. Contractor is to supply all materials and labor for new water services and meter boxes as shown on Detail UW-19, except for the meter. Manatee County will provide the meter for the Contractor to install. Rerouting and connection of water services on private property are part of a separate contract.

    c. The service detail on the plans calls for 2" PE or copper service pipe for a double service. The bid item (section 01150) calls for 1-1/2". Please confirm the diameter sizes you want for the services. Also the drawing detail shows SDR-21 PVC for casing pipe but spec sections 02325 and 02448 specify steel. Please confirm that PVC casing pipe is okay and what diameters you want for single and for double service sleeves.

Provide a 2-inch service pipe for a double meter box connection as shown on detail UW-19. Section 01150 has been revised to coordinate with detail UW-19.

Steel casing is for new waterline installed by jack-and-bore method, which is not used on this project. Sections 02325 and 02448 have been removed from the bidding documents.

Questions received from Harris-McBurney Company – January 8, 2010

11. There is no mill & resurface line item on the bid. That said, plans show main being installed under travel lane on 51 St Ave West. What is the mill and resurface requirement either side of the cut? Manatee County spec UG-12 would seem applicable to a road crossing but not a parallel installation. Please advise.

    See response to Question No. 8.

    Replacement of paving is shown on Detail UG-12, which requires asphaltic concrete overlay 25 ft on both sides of the asphaltic friction course replacement. If the additional overlay of 25 ft extends beyond the edge of the pavement, the Contractor shall only overlay width of existing roadway.

12. It is our understanding that directional boring methods and HDPE pipe can be utilized throughout the project. Would this include the aforementioned segment under 51 St Ave West? If HDPE is utilized, is there a pipe upsizing requirement? If this segment can be bored w/ HDPE, what would be the mill and resurface requirements at the location for service connections to the main in the road?

    Installation of the main waterline shall be by open-cut method only. Horizontal Directional Drill (HDD) installation of piping is not allowed except for water services crossing roadways. HDPE material for the mainline piping is not allowed for the project.

13. Please clarify "Copper Service Connection" for long side services as depicted by plans and specs. Should this not be PE as well?

    If the new waterline is outside of existing pavement limits (roadways or parking lots) material shall be PVC with PE services. PE services across existing roadways shall be installed by horizontal directional drilling (HDD) with HDPE or ASTM 2241, SDR 21 PVC casing.

    If the new waterline is within existing pavement limits (roadways or parking lots) material shall be ductile iron with copper or stainless steel services. Copper or stainless services shall be installed by open-cut method and have an ASTM 2241, SDR 21 PVC casing per detail UW-19.

Questions received from Sheppard Electrical Services – January 8, 2010

14. Will there be milling and overlay items added to this bid?

    See response to Question No. 8.

15. Will Manatee County provide a plumber to connect to the street side?

    Manatee County will provide the meter for the Contractor to install. Manatee County will provide a licensed plumber to reconnect residences to new meter boxes as part of a separate contract.

Questions received from HD Supply Waterworks – January 8, 2010

16. Pay item 13- calls for mj restrained pipe cl-350. mcu uses cl-350 but tyton or slip joint pipe. Mj pipe is now a special order item that is very infrequently used.

    Pressure Class 350 pipe is required as either mechanical joint pipe with restraining device or manufacturer's restrained push-on joint pipe. Acceptable restraining devices for mechcanical joint pipe shall be Mega-Lug or approved equal. Acceptable restrained push-on joint pipe shall be American's Flex Ring pipe or US Pipe's TR Flex, or approved equal.

17. If said pipe is to be push on pipe are restrained gaskets acceptable, or do the restrainers need to be bolt on type for exterior application?

    See response to Question No. 16.

18. Above pipe is spec at 3 different location and 3 different types. Cl-52, cl 50 and bid form shows cl-350 normal for mcu is cl350.

    See response to Question No. 16.

19. Single and double long services on bid form call for service tubing to be copper. Mcu usually only uses copper or st. steel in contaminated areas. Is blue pe tubing allowed?

    See response to Question No. 13.

    If the new waterline is located in areas of contaminated soils it shall be ductile iron with copper or stainless steel services. It is Manatee County's understanding that there are no contaminated soils in the project area.

20. All pipe is to have epdm gaskets. PVC pipe gaskets are rubber w/ metal rings inserted. Reba gasket. Not all manufacturers Will make this pvc pipe in small quantities, some will. Not all suppliers can buy from all manufacturers of this pipe. If my supplier makes the pipe but others have no access who gets the bid award. If low bid does not buy from me what happens? If I quote epdm and others don't because they don't have access, I will price my clients out of the bid by virtue of the fact epdm pipe cost more than non epdm gasketed pipe.

    For this project it is not required to use EPDM gaskets within the pipe bell of PVC pipes.It is required that fittings and valves still maintain the EPDM requirement.

Questions received from Andrew Sitework – January 12, 2010

21. Will it be a requirement of the county to open cut for installation of the pipe on this project or may the use of a Directional Drill contractor for pipe installation be permitted. If so will the pipe requirements then change to HDPE pipe over PVC, and the DIP pipe then also no longer be required. This would surely result in lower costs to the county for both pipe installation as well as restoration.

    See response to Question No. 12.

Questions received from Westra Construction – January 18, 2010

22. What permits must the contractor obtain and what, if any, are the related costs for them?

    All necessary permits have been obtained by Manatee County.

Questions received from Westra Construction – January 18, 2010

23. The pay item for asphalt pavement is 4,880 SF. Since DIP is used in all roadway cuts and the quantity of 6" DIP is 1190 LF, this would mean that only a 4' wide road patch has been included for payment. Is the intent to pay for only 4' wide? The trenches will have to be wider to safely and adequately install the watermain.

    See response to Question No. 8.

Questions received from McLeod Land Services – January 21, 2010

24. Since the long services will be directional drilled this seems like the 2" (or 1-1/2" as the spec says) service lines should be PE instead of copper since this material is more appropriate for installation inside a sleeve. Also it cost less than one dollar a foot as opposed to fifteen dollars for copper – save the county some money. No real benefit to using copper. Just a suggestion – my opinion. No problem really leaving it like it is – just clarify what size they should be 2" or 1-1/2" as I requested earlier.

    See response to Questions Nos. 10c and 13.

    Provide a 2-inch pipe for a double service connection as shown on detail UW-19. Section 01150 has been modified to agree with detail UW-19.

Questions received from HD Supply Waterworks – January 21, 2010

25. Bid sheet calls for long side services, single & double to be 2" copper inside 4" DI pipe casing. Does 2" copper have to be insulated to stop concrete liner in DI pipe from attacking copper tube?

    See response to Question No. 13.

26. Does DI pipe casing need to have poly bag?

    DI pipe casing is not required.

Questions received from Westra Construction – January 25, 2010

27. Please clarify the Asphalt Pavement Replacement pay item. Are we to assume the quantity listed for the trench patch only? The specs refer to the details on the plans and the typical detail in the plans shows a trench patch along with an overlay. If the intent is to also provide an overlay then another pay item should be added to cover this work as well.

    See response to Question No. 8.

Questions received from Gator Grading & Paving, LLC – January 26, 2010

28. Plan view shows no gate valves prior to hydrant. The hydrant detail shows a gate valve, include it or not?

    The drawing symbol for the hydrant is intended to include all items shown on details UW-5 and UW-6 including the gate valve. The cost for providing and installing the gate valve should be included with the Bid Item No. 20 Hydrant Assembly.

29. The plan view for double service shows 1" connection, the detail shows 2" and the County standard is 1 ½". What is the correct tap size?

    See response to Question No. 10c.

30. Is the type of existing waterline (as on Orlando Ave.) known?

    Information has been added to the plans to identify the existing waterline size (if available from record information) however, no record information is available for the material.

31. Some sheets indicate relocate existing meter boxes some sheets say install new meter boxes, what is the intent? All new or all relocate?

    See Response to Question No. 10b.

32. Will plumbing permits be required to reconnect existing services or will none be required as in Tideview Estates.

    Plumbing permits are not required. Rerouting and connection of water services on private property are part of a separate contract.

33. Regarding the long services, is it the intent of the County to bore the casing or open cut the roadway? If open cut is an option will the contractor be required to pave 25' either side of the cut?

    See response to Question No. 13.

34. Will jumpers be required at all tie-ins?

    Jumpers are not required.

35. Given note #41. Sht.G-02. Please clarify, does this mean that "all" services have to be copper or s.s., or only if the tap is on D.I.P. under the road.

See response to Question No. 13.

Questions received from Ferguson Waterworks – January 26, 2010

36. The plans show PVC and DIP installed via open cut method. Is horizontal direction drill utilizing HDPE an approved method of installation?

    See Response to Question No. 12.

37. If HDPE is approved, can it be SDR11? Do we need to upsize the pipe if we use HDPE?

    See Response to Question No. 12.

38. Manatee details show Brass saddles with SS bands to make service taps. Are these saddles okay for use on HDPE Pipe? Manufacturer recommends a different mechanical saddle for use with HDPE. Either an Epoxy coated saddle with SS bands or an electrofusion saddle recommended.

    See Response to Question No. 12.

39. In Section 02640, valves and appurtenances, item 2.09 says corporation stops "shall be all brass or bronze suitable for 180PSI operating pressure and similar to Mueller Co. H-10046 or approved equal". This Mueller item is only rated for 100 PSI. Is a 100 PSI corporation stop allowed?

    Corporation cocks shall be suitable for 100 psi operating pressure for sizes 1/2-inch through 1-inch and 80 psi operating pressure for sizes 1-1/4-inch through 2-inch.

40. The bid item sheet list copper as the piping material for long side double and single water service connections under the road. Will polytubing be allowed as an alternate to copper tubing? If poly is not allowed under the road can we use poly on the doubles after the branch connection?

    See response to Question No. 13.

    PE tubing is allowed after the branch connection.

Questions received from Harris-McBurney Company – January 26, 2010

41. With the understanding that we have yet to see any addendum addressing our previous questions, I wanted to raise another issue related to the bid form format. The bid form depicts an open cut method of construction using DIP & PVC with logical quantities allotted for asphalt and concrete replacement as well as sodding. If it is deemed acceptable to utilize HDPE/directional boring methods there would then be no line item for HDPE on the current format. In addition, the current quantities for concrete/asphalt replacement and sodding would be far in excess and out of formula for a directional boring bid or install. Thank you for your attention to this matter.

    See Response to Question No. 12.

Questions received from Frederick Derr & Company, Inc. – January 26, 2010

42. Plan sheet 4, Station 23+31, Should there be an 8" gate valve at the point of tie in to test against and use as isolation? It is rather dangerous testing against an old existing valve.

    The tie-in to the existing waterline has been revised; see Drawings P-06 and T-01.

43. Plan sheet 4, station 35+70+/-, I assume the tie-in will be done as a visual inspection. Is this assumption correct?

    That assumption is correct.

44. Plan sheet 11, Detail 2 P-06, A thrust block is shown behind the tee. Is this what is required or will the 8" line be restrained as MANCO Specs require?

    A thrust block is required at the tee as shown on attached detail UG-7. Piping shall be restrained according to attached details UG-8, UG-9 and UG-10, as applicable.

45. How are we to determine which water services are PE and which are Copper? If the Engineer was capable of producing a quantity for the bid form I would think he could label the services on the plans.

    See response to Question No. 13.

    The drawings have been revised to label the new services by size and material.

Questions received from Phillips & Jordan, Inc. – January 28, 2010

46. There seems to be a lot more than the 4,800 SF on the bid for. On street 51st Ave W, there is more than the 4,800 SF and there are several other streets that will have replacement. Please clarify the limits of the asphalt pavement replacement.

    See response to Question No. 8.

47. What is the limits of existing watermain to be removed or abandoned? Is the existing waterline on Mineola street the only watermain to be removed?

    No existing waterlines will be removed or abandoned as part of this project. Abandoned water lines will be grouted as part of a future project and as such is not part of this contract. Drawings have been revised to show connection of new water lines to existing.

48. What is the width of the concrete replacement for crossing the existing drives? Will it be left up to the contractor to determine how wide to make the trench? Will we be paid for this amount, or will the width be set by the engineer?

    See response to Question No. 9.

49. Per the detail UW-19 we are to install 2" piping and corps with 3" casing but the measurement and payment section states 1 ½" piping. Which is correct?

See response to Question No. 10c.

50. Also per that same detail, it lists several material options including poly. Can we use poly pipe? The bid form states the long services as Copper service, please clarify.

See response to Question No. 13.

Questions received from All American Concrete, Inc. – January 28, 2010

51. Regarding Bid Item No. 3, Asphalt Roadway Replacement is the 1 ½" overlay the area that is to be measured for payment of this item.

See response to Question No. 8.

52. Note 7 of Detail UG-12 on Sheet 13 of the plans states that the minimum thickness for crushed concrete and ABC-3 base is 8 inches. In section 02575 Part 2, Paragraph 2.01B of the Specifications it states that the minimum thickness for ABC-3 base is 6 inches and the minimum for crushed concrete base is 10 inches. Which is correct?

Provide crushed concrete and ABC-3 base of 8 inches per Detail UG-12.

53. Regarding the copper tubing services. Is the copper tubing beyond the blue 2" or 3" PVC casing to be wrapped in blue polyethylene or will the blue #10 copper tracer wire meet the color coding requirement?

Blue #10 copper tracer wire is not acceptable for the color coding. Provide polyethylene wrap.

54. The plans and specs state that all waterlines under pavement shall be ductile iron. Does this include concrete and asphalt driveways?

No, this requirement is only for the waterline that is installed under roadways or parking lots.

55. There are a number of walkways and areas where the right-of- way is all concrete that will be impacted by this project. Is the restoration of these areas to be paid for under Bid Item No. 5 since there is not an item for concrete sidewalk?

Restoration of these areas shall be paid for under Bid Item No. 5 Concrete Driveway Replacement.

Questions received from E.T. Mackenzie Company of Florida – January 28, 2010

56. On Plan Sheets 4 of 13 some of the service connections indicate a "Relocation of Existing Meter Box" and some do not. Some services show connect to existing meter box. Are we to assume that we need to relocate the existing Meter Box or connect to existing meter box only where so indicated on the plans? Or will we have to relocate all existing Meter Box locations or connect to existing meter box at all locations? Please Clarify.

See response to Question 10b.

57. What is the size of the existing water lines to be grout filled?

    See response to Question No. 5 and No. 30.

58. Can we shift (slightly) the proposed water line so as not to conflict with the existing water line it is replacing (proposed design on sheets 4 and 8 is where this potential problem exists)? If not, please share with us the engineering/design concept used to keep the existing water line in service while the new water line is installed.

    Yes, the proposed waterline can be shifted up to 48 inches to avoid any conflict with the existing utilities, however approval from the engineer must be received prior to any construction.

59. Please clarify General Note 41 on sheet 2 of the plan set as to the type of pipe to be used for water mains and for water services when crossing drives, streets/roads and parking lots.

    See response to Question No. 13.

60. Will the contractor be allowed to use an alternative method of installing services across existing roads (with trenchless technology) without using the open cut method? If yes, will the contractor still be paid, according to the typical section/details provided, for the asphalt pavement that was to be installed (so as to offset the alternative method costs)? Alternatively, will there be consideration to add alternate bid items eliminating open cut trenches for services and associated restorations for some (or all) crossings of pavement?

    See response to Question No. 13.

61. Will crushed (recycled) concrete be allowed as an approved material for the compacted base?

    Crushed concrete is allowed but Contractor must submit certification that material meets the sizing requirements and that material does not contain hazardous materials or other contaminants.

62. Due to the requirements for asbestos pipe outlined in Section 02064 of the specification package, please indicate whether any of the existing water lines that are to be filled or attached to contain asbestos. We will need that information to prepare an accurate cost estimate for proper asbestos abatement and treatment.

    The existing waterlines material is unknown.

63. Will it be necessary to strip and stockpile existing topsoil in grassing restoration areas? Alternately, will the contractor be able to simply grade and finish whatever soil is encountered in the areas to be grassed?

    Contractor shall stockpile existing topsoil and reuse to ensure that new sodding takes root and grows.

64. Sheet 6 of 13 (Drawing P-08) shows 1 run of 6" DI Waterline on 9th St. W. All other runs of 6" Water Line are shown to be 6" PVC. It is not clear where the PVC stops and the DI begins. Similar situation occurs on Sheet 7 of 13 (P-09) along 9th St. W. Please clarify this.

    See response to Question No. 13.

65. General Notes indicate that contractor will not be allowed to close streets to traffic. Will the contractor be allowed to partially close (1 lane) a street while installing water line in the street in certain areas?

    In accordance with General Note No. 23 the Contractor shall provide access for traffic at all times during construction so complete closure of streets will not be allowed. Contractor is allowed to partially close one lane of traffic, if traffic flow is maintained.

66. Sheet 6 of 13 shows proposed meter boxes typical for selected services. Does this include all services on this sheet or just those shown?

    Unless otherwise indicated all meter boxes are proposed.

67. Sheet 7 of 13 shows connect to existing meter boxes typical for selected services. Does this include all services on this sheet or just those shown?

    Connection to existing meter boxes should only be for those specifically indicated. All other meter boxes are proposed.

68. Sheet 5 of 13 shows proposed meter boxes typical for selected services. Does this include all services on this sheet or just those shown?

    See response to Question No. 66.

69. Sheet 8 of 13 shows relocate existing meter boxes typical for selected services. Does this include all services on this sheet or just those shown?

    See response to Question 10b.

70. Sheet 9 of 13 shows proposed meter boxes typical for selected services. Does this include all services on this sheet or just those shown?

    See response to Question No. 66.

71. Sheet 10 of 13 shows relocate existing meter boxes typical for selected services. Does this include all services on this sheet or just those shown?

    See response to Question No. 69.

Questions received from Woodruff & Sons, Inc. – January 28, 2010

72. Is the grouting of the abandoned lines (as noted on plan sheet 2 note 39) inclusive of the installed pipe or may a line item be added for this scope of work?

See response to Question No. 5.

Questions received from E.T. Mackenzie Company of Florida – January 28, 2010

73. Please confirm that landscaping, fences and misc. trees that are in conflict with proposed water lines, that have to be removed, do not need to be replaced by the contractor.

    In accordance with General Note No. 12, the contractor shall be responsible for repairing or replacing any damaged items such as driveways, mailboxes, street signs, fences, etc. as deemed necessary by the County Authority and/or Engineer.

74. Please confirm that the following trees will need to be removed due to their direct or indirect (severe root cut by nature of being too close) conflict with the proposed water line:
    a. oak @ 905 50th Ave. Terrace West
    b. Series of 7 (ea) 12-14" palms @ 901, 907 and 911 52nd Ave West
    c. 10" Tree @ 909 51st Ave. Terrace W.
    d. 10" Tree @ 1011 51st Ave. Terrace W.
    e. 10" Tree @ 911 50th Ave. Terrace W.

    Bidder shall assume that all trees in conflict with the proposed water line are to be removed and not replaced.

75. Please also confirm that if removal is necessary, the trees will not have to be replaced.

    See response to Question No. 74.

76. It appears that most, if not all, of this project is in potential conflict with Verizon Fiber optic utility. Have the Verizon owned utilities been mapped in the design of this project? If yes, can that information be overlayed on the proposed design so that the contractors bidding can accurately account for their costs to work around the Verizon utilities and can this map be provided to bidders pre-bid? If the Verizon utilities have not been accounted for in the design process, please explain the process by which the owner/engineer will locate and adjust designs prior to construction? We do not believe that the contractor in this case will be allowed to locate or relocate Verizon's Fiber Optics unless under the direct employ of Verizon.

    The drawings currently show existing potable water, sanitary sewer, stormwater and natural gas utilities. Drawings have been revised to include utility information from Verizon. The remaining utility in the project area, Bright House Networks (cable TV), is located overhead on the existing power poles

Questions received from Westra Construction – February 2, 2010

77. Please confirm the long water service material as stated in Item 41 on plan sheet 2 is correct. This will be an extremely expensive service with copper inside DIP.

    See response to Question No. 13.

78. Do the asphalt quantities represent trench patches only? These services will require open cuts thru roadways due to the DIP sleeve.

See response to Question No. 8.

79. Will an asphalt overlay be required per the detail or simply a trench patch? If an overlay is required then another pay item should be added to address this requirement.

See response to Question No. 8.

Questions received from Westra Construction – February 3, 2010

80. On sheet 10 of 13 lot #906 at the corner of 50th Ave. Plz. W. and 9th St. W. the driveway coming off the property to the North does not seem to be shown. The plans indicate installing a fire hydrant right in the middle of where this driveway is located.

The fire hydrant assembly has been relocated, see revised Drawing P-12.

Questions received from Woodruff & Sons, Inc. – February 5, 2010

81. The bid drawings for the above referenced project do not show any existing utilities. In order for the County to get accurate bids and minimize change orders, it is crucial for all bidders to have this information during the bidding process. Please see if the engineer can issue drawings that include this information.

See response to Question No. 76.

Questions received from Andrew Sitework – February 8, 2010

82. Is it Manatee County's intent to have the waterline on the (Pic Town) Project installed using only the open cut/direct bury method? Or will it be allowed to use the Horizontal Directional Drill method for waterline installation? I am aware however if the (HDD) method is utilized in the installation, the requirement on materials IE pipe and fitting will most likely change. It is surely apparent that restoration expenses will be significantly lower, as well as the aggravation saved by not having to replace custom driveways, finishes, coating, etc. This would also change the asphalt replacement quantity significantly. My experience has shown me this is much easier on the home owners in the construction area as well as the contractor.

See Response to Question No. 12.

Questions received from WilsonMiller, Inc. – February 17, 2010

83. Are the baselines established (points set) in the field?

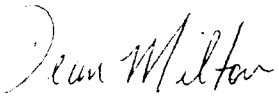
Points are not set in the field for the baselines. Contractor is required to establish baselines necessary for construction.

84. Is the bench mark data with elevations included in the plan set or project documents? If not, is there a survey for the project available with the baseline control and benchmark information?

Drawings have been revised to show elevations and offsets for benchmarks shown on Drawing G-03 and on the corresponding P drawings. Baseline and benchmark information shown in the project documents is base on survey performed by Hyatt Survey Services, Inc.

Sincerely,

CAROLLO ENGINEERS, P.C.



G. Dean Milton, P.E.

GDM:maw

BID FORM
(Submit in Triplicate)
Section 00300

BID "A"

IFB # 10-0634-DS
ADDENDUM # 5
Pic Town Waterline Replacement Phase II
BID "A" Based on Completion time of 125 Calendar Days (Project No. 6074870)

ITEM #	DESCRIPTION	QTY.	U/M	BID PRICE PER UNIT	TOTAL BID PRICE
1	Mobilization/Demobilization	1	LS	$	$
2	Traffic Control	1	LS	$	$
3a	**Asphaltic Concrete Friction Course (Addendum # 5)**	**7,250**	**SF**	**$**	**$**
3b	**Asphaltic Concrete Overlay (Addendum # 5)**	**38,380**	**SF**	**$**	**$**
4	**Asphalt Driveway Replacement (Addendum # 5)**	**50**	**SF**	**$**	**$**
5	**Concrete Driveway Replacement (Addendum # 5)**	**6,760**	**SF**	**$**	**$**
6	**Sodding (Addendum # 5)**	**12,450**	**SF**	**$**	**$**
7	**Single PE (1") Service Connection (Short Side) (Addendum # 5)**	**6**	**EA**	**$**	**$**
8	**Double PE (2") Service Connection (Short Side) (Addendum # 5)**	**41**	**EA**	**$**	**$**
9	**Single PE (1") Service Connection (Long Side) (Addendum # 5)**	**9**	**EA**	**$**	**$**
10	**Double PE (2") Service Connection (Long Side) (Addendum # 5)**	**44**	**EA**	**$**	**$**
11	**Single Copper (1") Service Connection (Short Side) (Addendum # 5)**	**3**	**EA**	**$**	**$**
12	**Double Copper (2") Service Connection (Short Side) (Addendum # 5)**	**7**	**EA**	**$**	**$**
13	**Single Copper (1") Service Connection (Long Side) (Addendum # 5)**	**2**	**EA**	**$**	**$**
14	**Double Copper (2") Service Connection (Long Side) (Addendum # 5)**	**10**	**EA**	**$**	**$**

BIDDER:_____

SIGNATURE_____

(Submit in Triplicate)
Section 00300

BID "A"

IFB # 10-0634-DS
ADDENDUM # 5
Pic Town Waterline Replacement Phase II
BID "A" Based on Completion time of 125 Calendar Days (Project No. 6074870)

ITEM #	DESCRIPTION	QTY.	U/M	BID PRICE PER UNIT	TOTAL BID PRICE
15	6-inch DIMJ Gate Valve & Box (Addendum # 5)	42	EA	$	$
16	8-inch DIMJ Gate Valve & Box (Addendum # 5)	10	EA	$	$
17	6-inch CL 350 DIP MJ/RJ (open-cut) (Addendum # 5)	1,210	EA	$	$
18	6-inch DR-18 C-900 PVC (open-cut) (Addendum # 5)	4,270	LF	$	$
19	8-inch DR-18 C-900 PVC (open-cut) (Addendum # 5)	1,250	LF	$	$
20	Hydrant Assembly (Addendum # 5)	14	EA	$	$
	DISCRETIONARY WORK				$90,000.00
	TOTAL BID PRICE "A"- Based On Completion Time of 125 Calendar Days				$

BIDDER:_____

SIGNATURE_____

BID FORM
(Submit in Triplicate)
Section 00300

BID "B"

IFB # 10-0634-DS

ADDENDUM # 5
Pic Town Waterline Replacement Phase II
BID "B" Based on Completion time of 100 Calendar Days (Project No. 6074870)

ITEM #	DESCRIPTION	QTY.	U/M	BID PRICE PER UNIT	TOTAL BID PRICE
1	Mobilization/Demobilization	1	LS	$	$
2	Traffic Control	1	LS	$	$
3a	**Asphaltic Concrete Friction Course (Addendum # 5)**	**7,250**	**SF**	**$**	**$**
3b	**Asphaltic Concrete Overlay (Addendum # 5)**	**38,380**	**SF**	**$**	**$**
4	**Asphalt Driveway Replacement (Addendum # 5)**	**50**	**SF**	**$**	**$**
5	**Concrete Driveway Replacement (Addendum # 5)**	**6,760**	**SF**	**$**	**$**
6	**Sodding (Addendum # 5)**	**12,450**	**SF**	**$**	**$**
7	**Single PE (1") Service Connection (Short Side) (Addendum # 5)**	**6**	**EA**	**$**	**$**
8	**Double PE (2") Service Connection (Short Side) (Addendum # 5)**	**41**	**EA**	**$**	**$**
9	**Single PE (1") Service Connection (Long Side) (Addendum # 5)**	**9**	**EA**	**$**	**$**
10	**Double PE (2") Service Connection (Long Side) (Addendum # 5)**	**44**	**EA**	**$**	**$**
11	**Single Copper (1") Service Connection (Short Side) (Addendum # 5)**	**3**	**EA**	**$**	**$**
12	**Double Copper (2") Service Connection (Short Side) (Addendum # 5)**	**7**	**EA**	**$**	**$**
13	**Single Copper (1") Service Connection (Long Side) (Addendum # 5)**	**2**	**EA**	**$**	**$**
14	**Double Copper (2") Service Connection (Long Side) (Addendum # 5)**	**10**	**EA**	**$**	**$**

BIDDER: _____

SIGNATURE: _____

BID FORM
(Submit in Triplicate)
Section 00300

BID "B"

IFB # 10-0634-DS

ADDENDUM # 5
Pic Town Waterline Replacement Phase II
BID "B" Based on Completion time of 100 Calendar Days (Project No. 6074870)

ITEM #	DESCRIPTION	QTY.	U/M	BID PRICE PER UNIT	TOTAL BID PRICE
15	6-inch DIMJ Gate Valve & Box (Addendum # 5)	42	EA	$	$
16	8-inch DIMJ Gate Valve & Box (Addendum # 5)	10	EA	$	$
17	6-inch CL 350 DIP MJ/RJ (open-cut) (Addendum # 5)	1,210	EA	$	$
18	6-inch DR-18 C-900 PVC (open-cut) (Addendum # 5)	4,270	LF	$	$
19	8-inch DR-18 C-900 PVC (open-cut) (Addendum # 5)	1,250	LF	$	$
20	Hydrant Assembly (Addendum # 5)	14	EA	$	$
	DISCRETIONARY WORK				$90,000.00
	TOTAL BID PRICE "A"- Based On Completion Time of 100 Calendar Days				$

BIDDER:_____

SIGNATURE:_____

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE

A. The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Form section of the Contract Documents. Payment will be made based on the specified items included in the description in this section for each bid item.

B. All contract prices included in the Bid Form section will be full compensation for all shop drawings, working drawings, labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the Drawings and/or as specified in the Contract Documents to be performed under this Contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the Specifications. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this Contract.

1.02 ESTIMATED QUANTITIES

A. The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The Owner/Engineer does not assume any responsibility for the final quantities, nor shall the Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for satisfactorily completed quantity of each item.

1.03 WORK OUTSIDE AUTHORIZED LIMITS

A. No payment will be made for work constructed outside the authorized limits of work.

1.04 MEASUREMENT STANDARDS

A. Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

1.05 AREA MEASUREMENTS

A. In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

1.06 LUMP SUM ITEMS

A. Where payment for items is shown to be paid for on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum items.

Lump sum contracts shall be complete, tested and fully operable prior to request for final payment. Contractor may be required to provide a break-down of the lump sum totals.

1.07 UNIT PRICE ITEM

A. Separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the work shall be considered to be included in the scope of the appropriate listed work items.

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work. Final payments shall not be requested by the Contractor or made by the Owner until as-built (record) drawings have been submitted and approved by the Engineer.

1. Shop Drawings, Working Drawings.
2. Clearing, grubbing and grading except as hereinafter specified.
3. Erosion control
4. Trench excavation, including necessary pavement removal and rock removal, except as otherwise specified.
5. Dewatering and disposal of surplus water.
6. Structural fill, backfill, and grading.
7. Replacement of unpaved roadways, and shrubbery plots.
8. Cleanup and miscellaneous work.
9. Foundation and borrow materials, except as hereinafter specified.
10. Testing and placing system in operation.
11. Any material and equipment required to be installed and utilized for the tests.
12. Pipe, structures, pavement replacement, asphalt and shell driveways and/or appurtenances included within the limits of lump sum work, unless otherwise shown.
13. Maintaining the existing quality of service during construction.
14. Appurtenant work as required for a complete and operable system.
15. Seeding and hydromulching.
16. As-built Record Drawings.

BID ITEM NO. 1: MOBILIZATION/DEMOBILIZATION

Measurement and payment for this Bid Item shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond, all required insurance for the project and the Contractor's mobilization and demobilization costs as shown in the Bid Form.

Payment for mobilization shall not exceed 5 percent (5%) of the total Contract cost unless the Contractor can prove to the Owner that his actual mobilization cost exceeds 5 percent (5%).

BID ITEM NO. 2: TRAFFIC CONTROL

Payment for all work included under this Bid Item shall be made at the Contract lump sum price bid listed in the Bid Form and shall represent full compensation for all labor, materials and equipment required to perform all the work as shown on the Contract Drawings and specified herein and any other miscellaneous work not specifically included for payment under other Bid Items obviously necessary to complete the Contract. Partial payments will be based on the breakdown of the Bid Item in accordance with the Schedule of Values submitted by the Contractor and approved by the Engineer. Payment shall also include full compensation for

traffic control and related items and any and all other items required to complete the project in accordance with Contract Documents.

BID ITEM NO. 3A: ASPHALTIC CONCRETE FRICTION COURSE

Payment for all work included under this Bid Item will be made at the Contract unit price bid per square foot of asphaltic concrete friction course for furnishing, installing and testing the road restoration pavement section within these Specifications and as listed on the Bid Form. Measurement will be based on the actual number of square feet of asphaltic concrete friction course installed, tested, complete and approved. The measurement will be from saw cut joint to saw cut joint of existing asphalt as shown on the Contract Drawings, but not greater than the 18" from the outside edge of piping trench. Payment will include complete restoration of the asphaltic concrete friction course in accordance with the applicable details on the Contract Drawings, but not less than the asphaltic concrete friction course, in accordance with these Specifications. No payment for restoration of a private driveway within or outside the right-of-way shall be made under this Bid Item. Payment shall include all items and incidentals necessary to complete the asphaltic concrete friction restoration in accordance with the requirements of Manatee County ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 3B: ASPHALTIC CONCRETE OVERLAY

Payment for all work included under this Bid Item will be made at the Contract unit price bid per square foot of asphaltic concrete overlay for furnishing, installing and testing the restoration section within these Specifications and as listed on the Bid Form. Measurement will be based on the actual number of square feet of asphaltic concrete overlay restoration installed, tested, complete and approved. The measurement will be from face of curb to face of curb or as specified, but not greater than the width of the existing roadway prior to construction. Payment will include complete restoration of 1-1/2 inches of FDOT Type III asphaltic concrete in accordance with the applicable details on the Contract Drawings and these Specifications. No payment for restoration of a private driveway within or outside the right-of-way shall be made under this Bid Item. Payment shall include all items and incidentals necessary to complete the asphaltic concrete overlay restoration in accordance with the requirements of Manatee County ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 4: ASPHALT DRIVEWAY REPLACEMENT

Payment for all work included in these Bid Items will be made at the applicable Contract unit price bid per square foot of asphaltic concrete restoration as listed on the Bid Form. Measurement of driveway restoration will be per the actual number of square feet replaced. Payment shall represent full compensation for all labor, materials and equipment for cutting the edges of existing driveways, compacting subgrade, furnishing and installing the asphaltic concrete and all incidentals necessary to complete the driveway restoration as shown on the Contract Drawings and included in the Specifications, all ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 5: CONCRETE DRIVEWAY REPLACEMENT

Payment for all work included in these Bid Items will be made at the applicable Contract unit price bid per square foot of concrete driveway restoration as listed on the Bid Form. Measurement of driveway restoration will be per the actual number of square feet replaced. Payment shall represent full compensation for all labor, materials and equipment for cutting the edges of existing driveways, compacting subgrade, furnishing and installing the concrete and all incidentals necessary to complete the driveway restoration as shown on the Contract Drawings and included in the Specifications, all ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 6: SODDING

Payment for all work included in these Bid Items will be made at the applicable Contract unit price bid per square foot for furnishing and installing sodding as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, materials, necessary equipment, and incidentals necessary to complete the work, ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 7: SINGLE PE (1") SERVICE CONNECTION (SHORT SIDE)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid for each service type for furnishing and installing the listed PE 1" single water service lines, short side, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation (including rock), bedding, backfill, compaction, service lateral, meter box horizontal directional drilling, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 8: DOUBLE PE (2") SERVICE CONNECTION (SHORT SIDE)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid for each service type for furnishing and installing the listed PE 2" double water service lines, short side, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation, including rock, bedding, backfill, compaction, service lateral, meter box, horizontal directional drilling, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 9: SINGLE PE (1") SERVICE CONNECTION (LONG SIDE)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid for each service type for furnishing and installing the listed PE 1" single water service lines, long side, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation (including rock), bedding, backfill, compaction, service lateral, meter box, horizontal directional drilling, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 10: DOUBLE PE (2") SERVICE CONNECTION (LONG SIDE)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid for each service type for furnishing and installing the listed PE 2" double water service lines, long side, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation (including rock), bedding, backfill, compaction, service lateral, meter box, horizontal directional drilling, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 11: SINGLE COPPER (1") SERVICE CONNECTION (SHORT SIDE)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid for each service type for furnishing and installing the listed copper 1" single water service lines, short side, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation (including rock), bedding, backfill, compaction, service lateral, meter box, testing and disinfection and equipment required to complete these Bid Items

BID ITEM NO. 12: DOUBLE COPPER (2") SERVICE CONNECTION (SHORT SIDE)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid for each service type for furnishing and installing the listed copper 2" double water service lines, short side, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation (including rock), bedding, backfill,

compaction, service lateral, meter box, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 13: SINGLE COPPER (1") SERVICE CONNECTION (LONG SIDE)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid for each service type for furnishing and installing the listed copper 1" single water service lines, long side, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation (including rock), bedding, backfill, compaction, service lateral, meter box, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 14: DOUBLE COPPER (2") SERVICE CONNECTION (LONG SIDE)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid for each service type for furnishing and installing the listed copper 2" double water service lines, long side, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation (including rock), bedding, backfill, compaction, service lateral, meter box, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 15: 6-INCH DIMJ GATE VALVE AND BOX

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each valve for furnishing and installing the listed diameter valve, box, cover and concrete pad as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation, including rock as necessary, bedding, backfill, compaction, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 16: 8-INCH DIMJ GATE VALVE AND BOX

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each valve for furnishing and installing the listed diameter valve, box, cover and concrete pad as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, excavation, including rock as necessary, bedding, backfill, compaction, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 17: 6-INCH CL 350 DIP MJ/RJ (OPEN-CUT)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter DIP water main pipe and fittings as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the 6-inch diameter pipe installed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, bedding, backfill (select and common fill), replacement of existing asphalt pavement base, compaction, testing and disinfection and equipment required to complete these Bid Items. No additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

BID ITEM NO. 18: 6-INCH DR18 C-900 PVC (OPEN-CUT)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter PVC water main pipe and fittings as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the 6-inch diameter pipe installed and will represent full compensation for all labor, materials, excavation, including rock, dewatering, bedding, backfill (select and common fill), replacement of existing pavement and driveway base, compaction, testing and disinfection and equipment required to complete these Bid Items. No

additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

BID ITEM NO. 19: 8-INCH DR18 C-900 PVC (OPEN-CUT)

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter PVC water main pipe and fittings as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the 8-inch diameter pipe installed and will represent full compensation for all labor, materials, excavation (including rock), dewatering, bedding, backfill(select and common fill) , replacement of existing pavement and driveway base, compaction, testing and disinfection and equipment required to complete these Bid Items. No additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

BID ITEM NO. 20: HYDRANT ASSEMBLY

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each hydrant assembly, including hydrant lead, tee, gate valve, box cover, concrete pads, restraining rods and/or thrust blocks, as shown on the Contract Drawings and listed on the Bid Form. Payment shall represent full compensation for all labor, material, equipment, excavation, including rock, bedding, backfill, compaction, testing and disinfection required to complete this Bid Item.

BID ITEM NO. 21: DISCRETIONARY WORK

Payment for all work under DISCRETIONARY WORK shall be made only at the Owner's discretion in order to satisfactorily complete the project in accordance with the Plans and Specifications.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 02622

POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

(AWWA SPECIFICATIONS C900 & C905)

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install the plastic piping, fittings and appurtenances complete and ready for use as specified in the Contract Documents and these Standards.

1.02 DESCRIPTION OF SYSTEM

A. The Contractor shall install the piping in the locations as shown on the Drawings.

1.03 QUALIFICATIONS

A. All plastic pipe, fittings and appurtenances shall be furnished by a single manufacturer who is fully experienced, reputable, qualified and specializes in the manufacture of the items to be furnished. The pipe and fittings shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.

1.04 SUBMITTALS

A. The Contractor shall submit shop drawings to the Engineer including, but not limited to, dimensions and technical specifications for all piping.

B. The Contractor shall submit to the Engineer, samples of all materials specified herein.

C. The Contractor shall submit and shall comply with pipe manufacturer's recommendation for handling, storing and installing pipe and fittings.

D. The Contractor shall submit pipe manufacturer's certification of compliance with these Specifications.

1.05 TOOLS

A. The Contractor shall supply special tools, solvents, lubricants, and caulking compounds required for proper installation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Pressure Class-Rated Polyvinyl Chloride (PVC) Pipe

1. Pressure class-rated PVC pipe and accessories 4- to 12-inch diameter, shall meet the requirements of AWWA Specification C-900 "Polyvinyl Chloride (PVC) Pressure Pipe". Pipe shall be Class 150, meeting requirements of Dimension Ratio (DR) 18 and shall have the dimension of ductile iron outside diameters. Each length of pipe shall be hydrotested to four (4) times its class pressure by the manufacturer in accordance with AWWA C900.
2. PVC pipe 14- through 36-inch shall meet the requirements of AWWA Standard C905, Polyvinyl Chloride (PVC) Water Transmission Pipe. Pipe 14- through 24-inch for potable and reclaim water shall meet the requirements for dimension ratio (DR) 18. Each length of pipe shall be tested at twice the pressure rating (PR 235 psi) for a minimum dwell of 5 seconds in accordance with AWWA C905. 14- through 36-inch PVC pipe for sewer force mains shall meet AWWA C905 requirements for dimension ratio (DR) 21. Each length of pipe shall be tested at twice the pressure rating (PR 200 psi) for a minimum dwell of five seconds in accordance with AWWA C905. Pipe shall be listed by Underwriters Laboratories. Provisions shall be made for expansion and contraction at each joint with an elastomeric ring, and shall have an integral thickened bell as part of each joint. PVC Class pipe shall be installed as recommended by the manufacturer. Pipe shall be furnished in nominal lengths of approximately 20 feet, unless otherwise directed by the Engineer. Pipe and accessories shall bear the NSF mark indicating pipe size, manufacturer's names, AWWA and/or ASTM Specification number, working pressure, and production code.
3. Gaskets for 16-inch diameter and larger pipe used for potable water pipe shall be EPDM (Ethylene-Propylene Dine Monomer).
4. PVC pipe 3-inch and less in diameter may be constructed using pipe conforming to ASTM D2241 with push-on joints. Pipe shall be 200 psi pipe-SDR 21 unless otherwise specified by the Engineer. This PVC pipe shall not be used for working pressures greater than 125 psi.
5. Pipe shall be blue for potable water mains, green for sewage force mains and purple for reclaimed water mains. All potable water pipe shall be NSF certified and copies of lab certification shall be submitted to the Engineer.
6. Where colored pipe is unavailable, white PVC color coded spiral wrapped pipe shall be installed.

B. Joints
1. The PVC joints for pipe shall be of the push-on type unless otherwise directed by the Engineer so that the pipe and fittings may be connected on the job without the use of solvent cement or any special equipment. The push-on joint shall be a single resilient gasket joint designed to be assembled by the positioning of a continuous, molded resilient ring gasket in an annular recess in the pipe or fitting socket and the forcing of the plain end of the entering pipe into the socket, thereby compressing the gasket radially to the pipe to form a positive seal. The gasket and annular recess shall be designed and shaped so that the gasket is locked in place against displacement as the joint is assembled. The resilient ring joint shall be designed for thermal expansion or contraction with a total temperature change of at least 75 degrees F in each joint per length of pipe. The bell shall consist of an integral wall section with a solid cross section elastomeric ring which shall meet requirements of ASTM F-477. The thickened bell section shall be designed to be at least as strong as the pipe wall. Lubricant furnished for lubricating joints shall be nontoxic, shall not support the growth of bacteria, shall have no deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water.

Gaskets shall be suitable for use with potable water, reclaimed water or sanitary sewer as applicable.

2. Restrained joints shall be provided at all horizontal and vertical bends and fittings, at casings under roads and railroads and at other locations shown on the Contract Drawings. PVC joints for pipe shall be restrained by the following methods: thrust blocks, restraining glands such as Certa-Lok Restraining Joint Municipal Water Pipe or approved equal. All Grip, Star Grip, MJR. Restrained joint PVC pipe shall be installed in strict accordance with the manufacturer's recommendation.

C. Fittings

1. All fittings for class-rated PVC pipe shall be ductile iron with mechanical joints and shall conform to the specifications for ductile iron fittings, unless otherwise directed. Class 200, C900 PVC fittings are allowable for sewage force main applications up to and including 12-inch diameter only. DR ratio shall be the same as the pipe.
2. The manufacturer of the pipe shall supply all polyvinyl chloride accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein. Standard double bell couplings will not be accepted where the pipe will slip completely through the coupling.

PART 3 EXECUTION

3.01 INSTALLATION

A. The Contractor shall install the plastic pipe in strict accordance with the manufacturer's technical data and printed instructions. Direct bury pipe shall have 3-inch detectable metallic tape of the proper color placed directly above the pipe 12 inches below finished grade or 6-inch detectable tape between 12 and 24 inches below grade.

3.02 INSPECTION AND TESTING

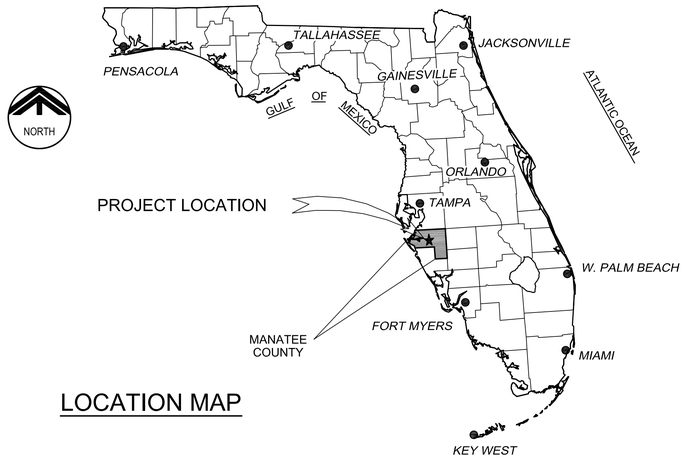
A. All pipe lines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipe lines shall be subjected to a hydrostatic pressure test for two (2) hours at full working pressure, but not less than 180 psi for water/reclaimed (150 psi for force main). All visible leaks shall be repaired and retested for approval by the County. Prior to testing, the pipe lines shall be supported in a manner approved by the Engineer to prevent movement during tests.

END OF SECTION

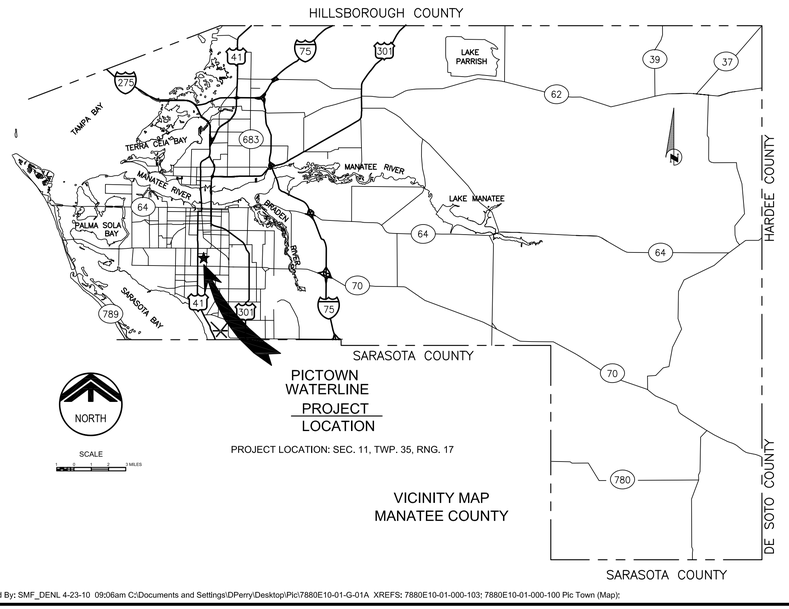
THIS PAGE LEFT BLANK INTENTIONALLY

MANATEE COUNTY GOVERNMENT
PUBLIC WORKS DEPARTMENT
(MANATEE COUNTY, FLORIDA)
PIC TOWN WATERLINE REPLACEMENT (PHASE II)
MANATEE COUNTY PROJECT NO. 6074870

APRIL 2010

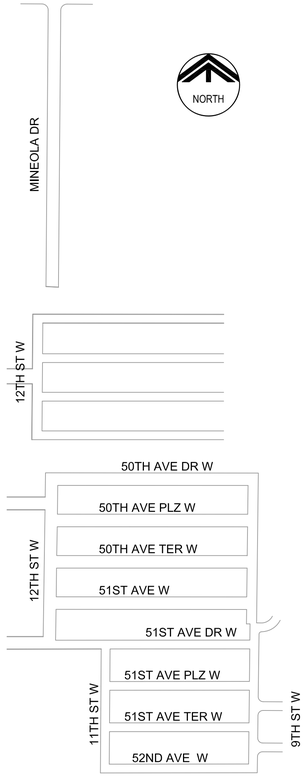


LOCATION MAP



PROJECT LOCATION: SEC. 11, TWP. 35, RNG. 17

VICINITY MAP
MANATEE COUNTY



CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

ENGINEER OF RECORD
ROBERT S. CUSHING
STATE OF FLORIDA No. 57828

carollo
Engineers...Working Wonders With Water™

401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FLORIDA 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

GENERAL

CIVIL

TYPICAL DETAILS

SURVEY PROVIDED BY:
HYATT SURVEY SERVICES, INC.
LB NO. 7203 GEOGRAPHIC DATA SPECIALISTS
1107 8TH AVENUE EAST
BRADENTON, FL. 34212
PHONE: (941) 748-4693 FAX: (941) 747-1643

JOB NO. 7880E.10
DRAWING NO. G-01
SHEET NO. 1 OF 14

Last Opened by: 4-23-10 09:07am DPerry

FILENAME: Last Saved By: SMF_DENL 4-23-10 09:06am C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-G-01A XREFS: 7880E10-01-000-103; 7880E10-01-000-100 Plc Town (Map);

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS AND ALL GOVERNING FEDERAL, STATE AND LOCAL AGENCIES.

2. EXISTING UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN LOCATED FROM THE BEST AVAILABLE SURVEY DATA AND RECORDS AND THEIR LOCATIONS MUST ONLY BE CONSIDERED AS APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES SHOWN ON THE PLANS AND ANY OTHER UTILITIES WHICH MAY NOT BE SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN THE AREA AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION. CALL FLORIDA SUNSHINE STATE ONE CALL CENTER AT 1-800-432-4770. ALL COORDINATION AND REQUIRED UTILITY COMPANY TEMPORARY PROTECTION SHALL ALL BE AT THE CONTRACTOR'S EXPENSE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE UNINTERRUPTION OF SERVICE AND REPLACEMENT OF DAMAGED UTILITIES. UTILITY COMPANIES WITH LOCATED FACILITIES WITHIN THE PROJECT AREA INCLUDE: TECO/PEOPLES GAS CO., VERIZON FLORIDA INC., FLORIDA POWER & LIGHT, BRIGHTHOUSE NETWORKS, MANATEE COUNTY.

3. A HORIZONTAL SPACING OF 10 FEET EDGE TO EDGE SHALL BE MAINTAINED BETWEEN POTABLE WATER MAINS AND ANY SANITARY SEWER MAINS. IN THE EVENT OF A CROSSING, A VERTICAL SEPARATION OF NOT LESS THAN 6 INCHES ABOVE AND 12 INCHES BELOW SHALL BE MAINTAINED.

4. THE CONTRACTOR SHALL PROVIDE ALL DEWATERING EQUIPMENT NECESSARY TO KEEP ALL EXCAVATIONS DRY AND SHALL PROVIDE ALL NECESSARY SHEETING, SHORING AND BRACING TO PROTECT ADJACENT STRUCTURES, UTILITIES AND PAVEMENT OR TO MINIMIZE TRENCH WIDTH ALL IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

5. THE CONTRACTOR SHALL PROVIDE HAY BALES AND/OR SILT FENCES AROUND THE CONSTRUCTION ACTIVITY AS NECESSARY TO PREVENT THE TRANSPORTATION OF SEDIMENTS DOWNSTREAM INTO STREETS, STORM SEWERS, OPEN DITCHES, LAKES, RETENTION PONDS, PRIVATE PROPERTY, ETC. AND SHALL PERFORM ALL NECESSARY INSPECTIONS AND MAINTENANCE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL GOVERNING AGENCY REQUIREMENTS.

6. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S CONSTRUCTION MANAGER REGARDING ANY CONFLICTS OR DISCREPANCIES ARISING DURING CONSTRUCTION.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES, STRUCTURES OR UTILITIES CAUSED BY CONSTRUCTION OPERATIONS WHICH HAVE BEEN PREVIOUSLY LOCATED BY THEIR RESPECTIVE OWNERS.

8. CONNECTIONS TO EXISTING FACILITIES SHALL BE DONE IN THE PRESENCE OF THE UTILITY OWNER AND THE ENGINEER. THE CONTRACTOR SHALL GIVE AT LEAST 2 WEEKS NOTICE TO ALL PARTIES CONCERNED PRIOR TO BEGINNING WORK.

9. ALL ADDITIONAL EXCAVATION AND DEMOLITION MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT, 90-96, LAWS OF FLORIDA EFFECTIVE OCTOBER 1, 1990 AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION EXCAVATION SAFETY STANDARDS, 29 CFR 1926.650, SUBPART P AS AMENDED. THE CONTRACTOR SHALL INCLUDE IN THE TOTAL BID PRICE ALL COSTS OF COMPLIANCE WITH THESE REGULATIONS.

11. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE NOTED.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY DAMAGED ITEMS SUCH AS DRIVEWAYS, MAILBOXES, STREET SIGNS, FENCES, ETC. AS DEEMED NECESSARY BY THE COUNTY AUTHORITY AND/OR ENGINEER.

13. THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN ALL APPLICABLE PERMITS.

14. ALL FITTINGS USED ON THIS PROJECT SHALL BE DUCTILE IRON UNLESS OTHERWISE SHOWN. ALL MECHANICAL JOINT FITTINGS AND VALVES ARE TO BE RESTRAINED USING THE "MEGA-LUG" SYSTEM OR EQUAL.

15. THE EXHAUST SYSTEM OF ALL GASOLINE AND DIESEL ENGINES SHALL BE EQUIPPED WITH MUFFLERS THAT MEET THE EQUIPMENT MANUFACTURER'S REQUIREMENTS FOR NOISE SUPPRESSION. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER DUE TO RESIDENTIAL COMPLAINTS, INSTALL NOISE ABATEMENT BAFFLES POSITIONED TO BREAK LINE-OF-SITE FROM THE NOISE SOURCE TO AFFECTED RESIDENCES AS APPROVED BY THE ENGINEER.

16. THE CONTRACTOR'S WORK SHALL BE SCHEDULED BETWEEN 7:00 AM AND 5:30 PM WITH A MAXIMUM OF 10 HOURS PER DAY AND 5 DAYS PER WEEK. SHOULD THE CONTRACTOR REQUIRE MORE WORK HOURS TO MAINTAIN THE CONTRACT SCHEDULE, A REQUEST SHALL BE SUBMITTED IN WRITING TO THE ENGINEER STATING THE REASON WHY AND HOW MANY ADDITIONAL HOUR ARE NEEDED. ALSO, THE CONTRACTOR SHALL REQUEST IN WRITING TO THE ENGINEER WITH A MINIMUM OF 72 HOURS ADVANCE NOTICE OF ANY PLANS FOR WORKING ON ANY WEEKEND DAYS OR OBSERVED NATIONAL HOLIDAYS. SHOULD THE ENGINEER APPROVE THE REQUEST FOR ADDITIONAL HOURS, THE CONTRACTOR SHALL REIMBURSE THE OWNER FOR ACTUAL COSTS FOR RESIDENT INSPECTION INCURRED DURING THE ADDITIONAL HOURS APPROVED. THE HOURLY RATE FOR THESE ADDITIONAL HOURS WILL BE $90.00 PER HOUR.

17. THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING: "STATE OF FLORIDA MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS", "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", MANATEE COUNTY STANDARDS, APPLICABLE FDOT 600 SERIES STANDARD INDEXES FOR TRAFFIC CONTROL THROUGH WORK ZONES AND "FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".

18. THE CONTRACTOR SHALL PREPARE AND SUBMIT A TRAFFIC CONTROL PLAN (TCP). THE TCP SHALL BE PREPARED IN CONFORMANCE WITH AND IN THE FORM OUTLINED IN THE CURRENT VERSION OF THE "ROADWAY PLANS PREPARATION MANUAL". THE PLAN SHALL INDICATE A TCP FOR EACH PHASE OF THE CONTRACTOR'S ACTIVITY.

19. THE CONTRACTOR SHALL FULLY IMPLEMENT THE TCP PRIOR TO COMMENCEMENT OF ANY POTENTIAL TRAFFIC DISTURBING ACTIVITIES. IN NO CASE SHALL THE CONTRACTOR BEGIN WORK USING THE TCP UNTIL SUCH PLAN HAS BEEN APPROVED IN WRITING BY MANATEE COUNTY AND THE PROJECT ENGINEER. EXCEPT IN AN EMERGENCY, NO CHANGES TO THE APPROVED PLAN WILL BE ALLOWED UNTIL WRITTEN APPROVAL TO CHANGE SUCH PLAN HAS BEEN RECEIVED. THE TCP SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA.

20. THE CONTRACTOR SHALL PROVIDE PROPER WARNING SIGNS, BARRICADES, TEMPORARY FENCING AND OTHER APPROPRIATE SAFETY DEVICES DURING THE EXECUTION OF THE WORK TO PROVIDE PUBLIC PROTECTION AND SAFETY.

21. MAINTENANCE OF TRAFFIC SIGNS AND OTHER TRAFFIC CONTROL DEVICES SHALL BE PROVIDED BY THE CONTRACTOR DURING CONSTRUCTION AS REQUIRED BY THE F.D.O.T.

22. THE CONTRACTOR SHALL PROVIDE ACCESS FOR TRAFFIC AT ALL TIMES DURING CONSTRUCTION.

23. NOTIFY THE ENGINEER 48 HOURS PRIOR TO COMMENCEMENT OF OPEN-CUTTING ANY COUNTY ROAD.

24. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TO THE ENGINEER, A SILTATION/EROSION PLAN MEETING ALL REQUIREMENTS OF FDOT INDEX NO.'S 102 AND 103 FOR APPROVAL AND INSTALLATION PRIOR TO ANY CONSTRUCTION.

25. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE TIE-INS TO MINIMIZE DOWNTIME.

26. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL CLEARED VEGETATION WITHIN 5 DAYS OF CLEARING AND GRUBBING WORK.

27. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE MANATEE COUNTY/FDOT RIGHT-OF-WAY AND/OR EASEMENTS SHOWN ON THE DRAWINGS.

28. THE CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO REFERENCE AND RESTORE PROPERTY CORNER MONUMENTS, PINS, AND LANDMARKS THAT MAY BE DISTURBED BY CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.

29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL DAMAGED STORM WATER STRUCTURES, PIPING, ENTRANCE PIPE AND HEADWALLS WHETHER SHOWN ON THE PLANS OR NOT. THE HEADWALLS SHALL BE REPLACED IN ACCORDANCE WITH F.D.O.T. STANDARDS.

30. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH IN THE FIELD THE RIGHT-OF WAY LINES, BASELINES, BENCH MARKS (ELEV.), CENTER LINES, AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.

31. FIELD DEFLECTIONS FOR THE PIPELINES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS. OTHERWISE APPROPRIATE FITTING SHALL, AT NO ADDITIONAL COST, BE USED. CONTRACTOR SHALL DETERMINE AND PROVIDE FITTINGS AS REQUIRED FOR DEFLECTIONS BASED UPON FIELD CONDITIONS WHERE SPECIFIC FITTING REQUIREMENTS ARE NOT IDENTIFIED.

32. RESTORATION SHALL INCLUDE AT A MINIMUM, SOLID SODDING FOR ALL UNPAVED AREAS DISTURBED BY THE CONTRACTOR'S OPERATION WITHIN THE ROAD RIGHT-OF-WAYS.

33. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM ROAD PAVEMENTS, DRIVEWAYS, SIDEWALKS AND DRAINAGE SWALES AND EXISTING PATTERNS RESTORED AT THE COMPLETION OF WORK EACH DAY.

34. ALL FILL AND ROAD MATERIALS EXCAVATED SHALL BE DISPOSED OF IN ACCORDANCE WITH THE SPECIFICATIONS.

35. NOTIFY PROPERTY OWNER AND ENGINEER 72 HOURS IN ADVANCE OF ALL PLANNED UTILITY INTERRUPTION OR DRIVEWAY CUTS.

36. ALL DRIVEWAYS, SIDEWALKS AND OTHER RIGHT-OF-WAY OR EASEMENT ENCROACHMENTS SHALL BE RESTORED EQUAL TO OR BETTER THAN EXISTING CONDITIONS. COMMERCIAL DRIVEWAYS SHALL REMAIN OPERATIVE DURING NORMAL BUSINESS HOURS UNLESS A DETOUR IS PROVIDED AND APPROVED BY THE ENGINEER.

37. ALL BURIED DIP SHALL BE ENCASED IN POLYETHYLENE SLEEVES PER AWWA-C105.

38. ALL TRENCHING FOR NEW WATERLINES SHALL BE PER MANATEE COUNTY DETAILS AS NOTED BELOW

- UNDER UNIMPROVED SURFACE UG-11 TYP
- -WITHIN ASPHALT PAVEMENT UG-12 TYP
- -WITHIN CONCRETE PAVEMENT UG-13 TYP
- -WITHIN CONCRETE DRIVEWAY UG-14 TYP

39. WATER PIPELINES INSTALLED UNDER EXISTING PAVEMENT, CONCRETE ROADS OR PARKING LOTS SHALL BE DUCTILE IRON WITH TYPE "K" COPPER OR 316 SS SCHEDULE 40 SERVICES.

40. DUCTILE IRON PIPE SHALL CONFORM TO AWWA C110 AND AWWA C151 AND SHALL BE PRESSURE CLASS 350.

41. ALL DUCTILE IRON PIPE SHALL HAVE A STANDARD 1 MIL ASPHALTIC COATING PER AWWA C151 ON THE EXTERIOR AND SHALL HAVE A STANDARD THICKNESS CEMENT LINING ON THE INSIDE IN ACCORDANCE WITH AWWA C104. ALL DUCTILE OR GRAY IRON FITTINGS SHALL HAVE STANDARD THICKNESS CEMENT LININGS ON THE INSIDE PER AWWA C104 AND AN ASPHALTIC EXTERIOR COATING OR A FACTORY APPLIED FUSION BONDED EPOXY COATING BOTH INSIDE AND OUTSIDE IN ACCORDANCE WITH AWWA C550.

42. THRUST RESTRAINT DEVICES FOR DUCTILE IRON PIPE SHALL BE EITHER CAST-IN-PLACE CONCRETE THRUST BLOCKS OR RESTRAINED JOINT, LENGTH PER TYPICAL DETAIL. CAST-IN-PLACE CONCRETE FOR THRUST BLOCKS SHALL HAVE A 28-DAY STRENGTH OF 3000 PSI. RESTRAINED JOINT SHALL BE PUSH-ON RESTRAINED OR MECHANICALLY RESTRAINED JOINT.

43. ALL FITTINGS FOR PVC PIPE SHALL BE DUCTILE OR GRAY IRON WITH MECHANICAL JOINTS AND SHALL CONFORM TO AWWA C110 OR AWWA C153.

44. ALL WATER PIPELINES INSTALLED IN TRENCHES SHALL HAVE A CONTINUOUS, NO.10 GAUGE SOLID COPPER WIRE ATTACHED TO THE PIPE WITH MINIMUM 30-MILS POLYETHYLENE INSULATION RATED UF OR USE. THE WIRE INSULATION SHALL BE COLOR CODED BLUE, LAID ON TOP OF THE PIPE AND SECURED IN PLACE AT EVERY JOINT AND AT 5-FOOT INTERVALS.

45. ALL WATER PIPELINES INSTALLED IN TRENCHES SHALL BE MARKED WITH WARNING TAPE BURIED DIRECTLY OVER THE PIPE CONTINUOUSLY. 3-INCH WIDE WARNING TAPE SHALL BE PLACED 12-INCHES BELOW FINISHED GRADE OR 6-INCH WIDE WARNING TAPE SHALL BE PLACED BETWEEN 12 AND 24-INCHES BELOW FINISHED GRADE.

46. ALL PROPOSED FACILITIES SHALL HAVE A MINIMUM DEPTH OF COVER OF 36-INCHES.

47. CONTRACTOR SHALL RESTORE EACH STREET WITHIN THREE (3) WEEKS OF STARTING WORK ON THAT STREET.

48. RESTRAIN PIPE LENGTHS PER DETAILS UG-8 TYP, UG-9 TYP AND UG-10 TYP.

49. WHERE REMOVAL OF EXISTING FIRE HYDRANTS ARE CALLED FOR ON THE DRAWINGS, REMOVE HYDRANT, BARRELL CONCRETE PAD, THRUST BLOCK AND PIPING UP TO ISOLATION VALVE. CLOSE GATE VALVE AND INSTALL PLUG.

ESTIMATED QUANTITIES

DESCRIPTION	UNIT	QUANTITY
ASPHALT CONCRETE FRICTION COURSE	SF	7,250
ASPHALT CONRETE OVERLAY	SF	38,380
ASPHALT DRIVEWAY REPLACEMENT	SF	50
CONCRETE DRIVEWAY REPLACEMENT	SF	6,760
SODDING	SF	12,450
SINGLE PE 1" SERVICE CONNECTION (SHORT SIDE)	EA	6
DOUBLE PE 2" SERVICE CONNECTION (SHORT SIDE)	EA	41
SINGLE PE 1" SERVICE CONNECTION (LONG SIDE)	EA	9
DOUBLE PE 2" SERVICE CONNECTION (LONG SIDE)	EA	44
SINGLE COPPER 1" SERVICE CONNECTION (SHORT SIDE)	EA	3
DOUBLE COPPER 2" SERVICE CONNECTION (SHORT SIDE)	EA	7
SINGLE COPPER 1" SERVICE CONNECTION (LONG SIDE)	EA	2
DOUBLE COPPER 2" SERVICE CONNECTION (LONG SIDE)	EA	10
6 INCH DIMJ GATE VALVE & BOX	EA	42
8 INCH DIMJ GATE VALVE & BOX	EA	10
6 INCH CL 350 DIP MJ/RJ (DIRECT BURY)	LF	1,210
6 INCH DR 18 C-900 PVC (DIRECT BURY)	LF	4,270
8 INCH DR 18 C-900 PVC (DIRECT BURY)	LF	1,250
HYDRANT ASSEMBLY	EA	14

BASIC CONSTRUCTION SEQUENCE:

1. INSTALL NEW WATER LINE, SERVICES AND APPURTENANCES.
2. CONNECT NEW WATER LINE TO EXISTING.
3. PRESSURE TEST AND BACTERIAL TEST NEW WATER LINES.
4. TRANSFER SERVICES.

LEGEND

●	IRON ROD	Ⓢ	SANITARY SEWER MANHOLE
○	IRON PIPE	○	SANITARY SEWER CLEAN-OUT
■	CONCRETE MONUMENT	Ⓓ	STORM SEWER MANHOLE
PKD	PK NAIL W/DISC		
IRC	IRON ROD W/CAP	□	STORM INLET
	BENCHMARK	⬭	DRAINAGE PIPE
PARCEL ID	# 5866600109 (TYP.)	▤	GRATE INLET
17.16'	SPOT ELEVATION (TYP.)	⊏	MITERED END SECTION
R	RADIUS		
R/W	RIGHT OF WAY		FIRE HYDRANT
Conc	CONCRETE	⋈	WATER VALVE
Asph	ASPHALT	▭	WATER METER
INV	INVERT		UTILITY POLE
TOB	TOP OF BANK		GUY WIRE
	PALM TREE	☼	LIGHT POLE
	OAK TREE	☎	TELEPHONE UTILITY
	PINE TREE	⊛	GAS UTILITY
	TREE		MAIL BOX
			SIGN
		UG	UNDERGROUND UTILITY
			CHAIN LINK FENCE
			WOOD FENCE

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE II)
GENERAL NOTES

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. G-02
SHEET NO. 2 OF 14

Last Opened by:4-23-10 08:39am DPerry

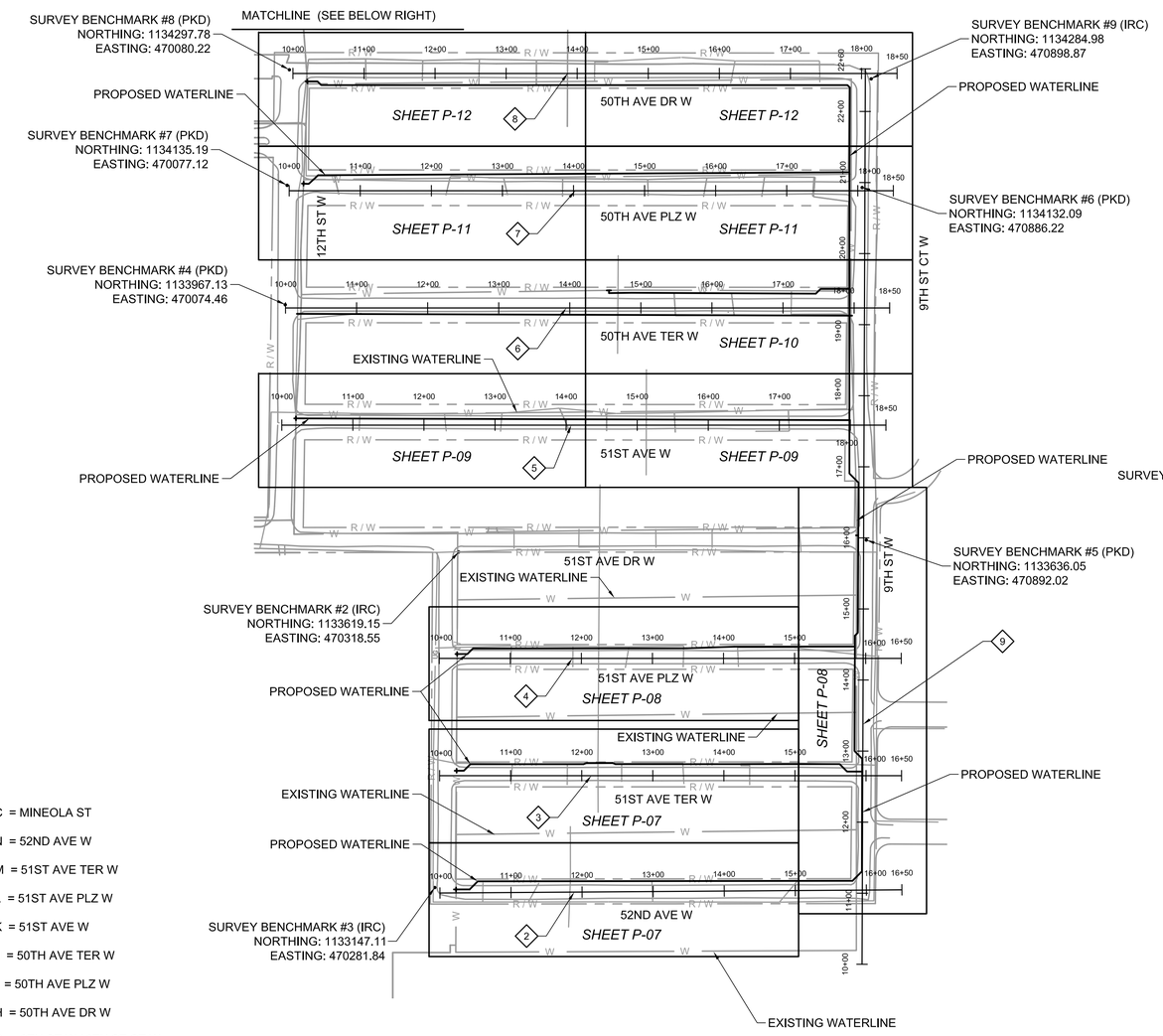
FILENAME: Last Saved By: SMF_DENL 4-23-10 08:42am C:\Documents and Settings\DPerry\Desktop\Pic\7880E10-01-G-02A XREFS: 3624bdr2: 7880E10-00-000-101

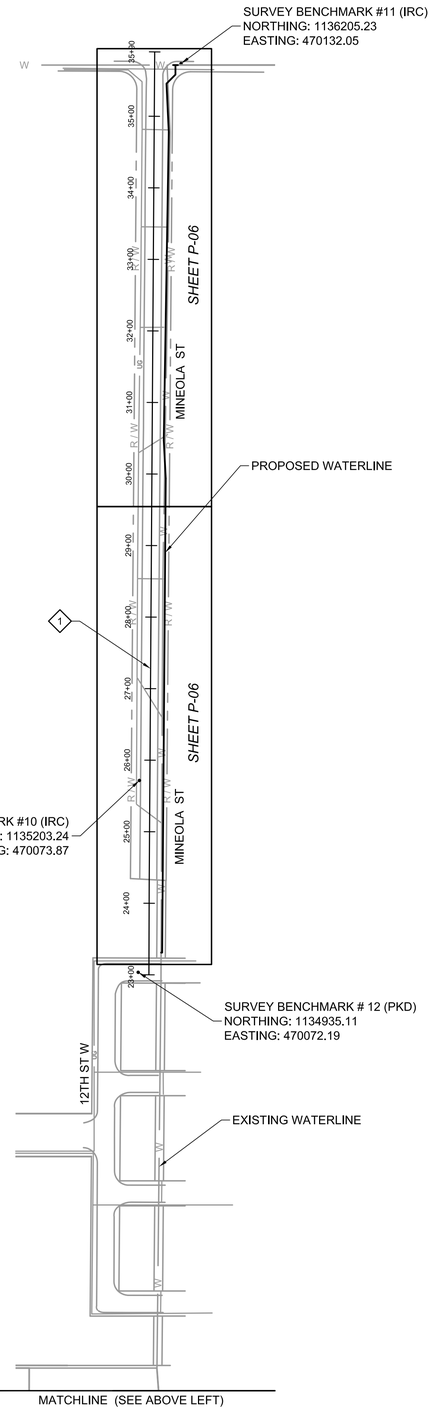
GENERAL SURVEY NOTES

1. THESE PLANS DO NOT REFLECT A TRUE BOUNDARY OR RIGHT-OF-WAY SURVEY. THE LOCATION OF THE STREET RIGHT-OF-WAY LINES SHOWN ARE APPROXIMATE AND HAVE BEEN BASED ON INFORMATION CONTAINED IN THE SUBDIVISION PLATS, RIGHT-OF-WAY MAPS ON RECORD IN MANATEE COUNTY AND TOPOGRAPHIC DATA COLLECTED ALONG EACH OF THE RIGHTS-OF-WAY. CONSEQUENTLY, THE RIGHT-OF-WAY LINES SHOWN ARE NOT INTENDED TO INDICATE THE EXACT BOUNDARIES.
2. THIS SURVEY IS SUBJECT TO PERTINENT EASEMENTS, RIGHTS-OF-WAY AND RESTRICTIONS OF RECORD, IF ANY.
3. TITLE WORK WAS NOT PROVIDED FOR THIS SURVEY.
4. THE BEARINGS INDICATED HEREIN ARE A PROJECTION OF THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE NAD 1983/1990).
5. THE ELEVATIONS SHOWN HEREIN HAVE BEEN BASED ON THE FOLLOWING TWO BENCHMARKS CONTAINED IN MANATEE COUNTY BENCH RUN # 4: AN "X" CUT ON THE TOP OF A CURB ON THE EAST SIDE OF U.S. 41 AND 68' SOUTH OF THE CENTERLINE OF THE ENTRANCE TO CHINA PALACE RESTAURANT (N.G.V.D. 1929 ELEVATION 17.671'). AN "X" CUT ON THE TOP OF A CURB ON THE EAST SIDE OF U.S. 41 AND 181' SOUTH OF THE CENTERLINE OF ORLANDO AVENUE (N.G.V.D. 1929 ELEVATION 16.148').

NORTH

0 50' 100' 200'





LEGEND

1. BASELINE C = MINEOLA ST
2. BASELINE N = 52ND AVE W
3. BASELINE M = 51ST AVE TER W
4. BASELINE L = 51ST AVE PLZ W
5. BASELINE K = 51ST AVE W
6. BASELINE J = 50TH AVE TER W
7. BASELINE I = 50TH AVE PLZ W
8. BASELINE H = 50TH AVE DR W
9. BASELINE O = 9TH ST W / 9TH ST CT W

BASELINE CONTROL DATA

11TH STREET WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1133039.10	470292.41
EQUATION 11+00.24	1133139.34	470292.14
EQUATION 12+65.46	1133304.56	470291.65
EQUATION 14+30.42	1133469.52	470291.16
PI 16+01.23	1133640.33	470290.76
END 16+50.01	1133689.11	470290.63

12TH STREET WEST / MINIOLA STREET

STATION	NORTHING	EASTING
BEGIN 10+00	1133631.92	470064.38
PI 10+09.79	1133641.70	470064.69
EQUATION 11+65.89	1133797.72	470069.62
EQUATION 13+30.88	1133962.63	470074.83
EQUATION 14+95.89	1134127.56	470080.05
PI 15+64.61	1134196.24	470082.22
EQUATION 16+60.97	1134292.55	470085.26
END 36+23.18	1136254.74	470095.47

9TH STREET WEST / 9TH STREET COURT WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1133039.10	470886.06
EQUATION 11+04.77	1133143.87	470886.44
EQUATION 12+72.28	1133311.37	470887.05
EQUATION 14+37.32	1133476.41	470887.65
EQUATION 15+97.63	1133636.73	470888.25
EQUATION 17+67.08	1133806.18	470888.85
EQUATION 19+31.96	1133971.06	470889.45
EQUATION 20+96.83	1134135.93	470890.05
END 22+59.68	1134298.77	470890.64

EAST OF U.S. 41

STATION	NORTHING	EASTING
BEGIN 10+00	1133243.39	469745.50
PI 14+00.23	1133643.62	469745.50
END 14+54.42	1133697.81	469745.50

51ST AVENUE DRIVE WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1133644.77	469555.82
PI 11+89.68	1133643.62	469745.50
PI 15+08.87	1133641.70	470064.69
PI 17+34.95	1133640.33	470290.76
END 23+32.45	1133636.73	470888.25

6' PLATTED EASEMENT

STATION	NORTHING	EASTING
BEGIN 10+00	1134374.96	469611.71
PI 13+49.01	1134378.81	469960.70
END 14+86.71	1134380.33	470098.39

52ND AVENUE WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1133139.34	470292.14
END 15+94.32	1133143.87	470886.44

51ST AVENUE TERRACE WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1133304.56	470291.65
END 15+95.44	1133311.37	470887.05

51ST AVENUE PLAZA WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1133469.52	470291.16
END 15+96.52	1133476.41	470887.65

51ST AVENUE WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1133797.72	470069.62
END 18+19.27	1133806.18	470888.85

50TH AVENUE TERRACE WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1133962.63	470074.83
END 18+14.66	1133971.06	470889.45

50TH AVENUE PLAZA WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1134127.56	470080.05
END 18+10.04	1134135.93	470890.05

50TH AVENUE DRIVE WEST

STATION	NORTHING	EASTING
BEGIN 10+00	1134292.55	470085.26
END 18+05.41	1134298.77	470890.64

50TH AVENUE PLAZA WEST (West of 12th Street)

STATION	NORTHING	EASTING
BEGIN 10+00	1134196.24	469485.39
PI 14+74.99	1134196.24	469960.38
PI 15+96.82	1134196.24	470082.22
END 16+21.60	1134196.24	470107.00

SITE HORIZONTAL/VERTICAL CONTROL

11TH STREET WEST

NUMBER	DESCRIPTION	STATION OFFSET	NORTHING	EASTING	ELEVATION
3	IRC # 7203	11+07.98 7.28' L	1133147.06	470284.84	17.17'
2	IRC # 7203	15+79.97 27.73' R	1133619.15	470318.55	17.29'

51ST AVENUE DRIVE WEST

NUMBER	DESCRIPTION	STATION OFFSET	NORTHING	EASTING	ELEVATION
1	PKD # 7203	14+69.66 0.86' L	1133642.79	470025.48	17.17'
2	IRC # 7203	17+62.87 21.02' R	1133619.15	470318.55	17.29'

9TH STREET WEST

NUMBER	DESCRIPTION	STATION OFFSET	NORTHING	EASTING	ELEVATION
5	PKD # 7203	15+96.97 3.79 R	1133636.05	470892.02	18.18'

12TH STREET WEST

NUMBER	DESCRIPTION	STATION OFFSET	NORTHING	EASTING	ELEVATION
4	PKD # 7203	13+35.36 0.51' L	1133967.13	470074.46	17.24'
7	PKD # 7203	15+03.43 3.16' L	1134135.19	470077.12	17.38'
8	PKD # 7203	16+66.18 5.05' L	1134297.78	470080.22	17.48'

9TH STREET COURT WEST

NUMBER	DESCRIPTION	STATION OFFSET	NORTHING	EASTING	ELEVATION
6	PKD # 7203	20+92.99 3.82' L	1134132.09	470886.22	18.38'
9	IRC # 7203	22+45.92 8.29 R	1134284.98	470898.87	18.25'

50TH AVENUE PLAZA WEST

NUMBER	DESCRIPTION	STATION OFFSET	NORTHING	EASTING	ELEVATION
6	PKD # 7203	18+06.17 3.80' R	1134132.09	470886.22	18.38'

49TH AVENUE WEST

NUMBER	DESCRIPTION	STATION OFFSET	NORTHING	EASTING	ELEVATION
12	PKD # 7203	23+03.48 15.03' L	1134935.11	470072.19	18.67'

MINIOLA STREET

NUMBER	DESCRIPTION	STATION OFFSET	NORTHING	EASTING	ELEVATION
10	IRC # 7203	25+71.57 14.68' L	1135203.24	470073.87	18.15'
11	IRC # 7203	35+73.91 36.90' R	1136205.23	470132.05	17.10'

SITE CALIBRATION DATA

DESIGNATION	NORTHING	EASTING
M 080	1126710.76	478876.34
M 081	1143115.24	478968.28
M 082	1143106.22	462931.59
MANAT RESET	1138850.97	484198.48

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

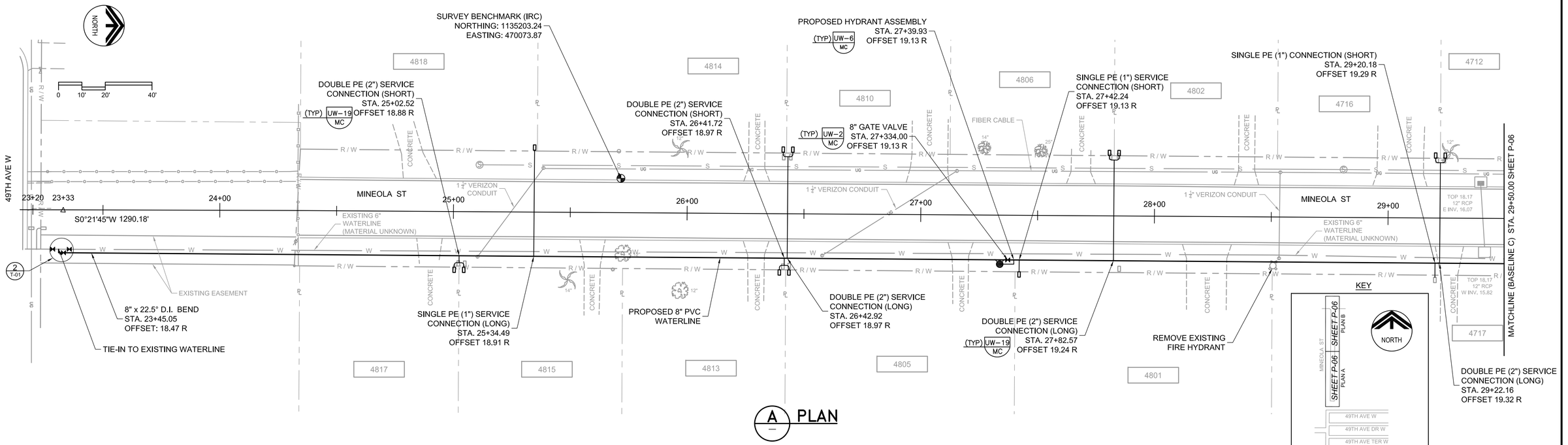
MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE II)
KEY PLAN

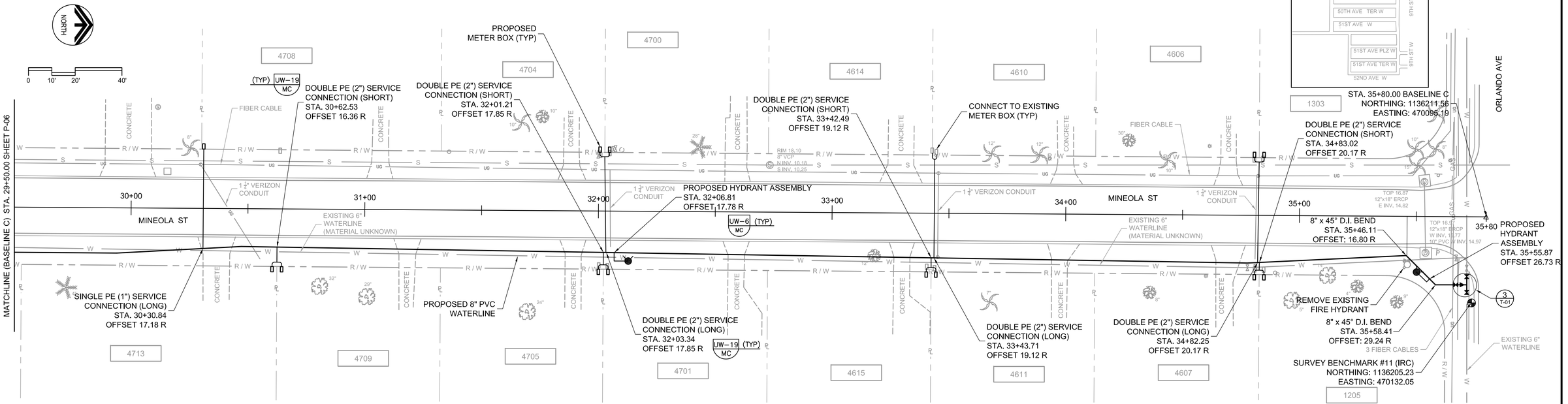
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. G-03
SHEET NO. 3 OF 14

Last Opened by: 4-23-10 09:59am DPerry

FILENAME: Last Saved By: DPerry 4-22-10 11:18am C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-G-03A XREFS: 7880E10-01-010-100; 7880E10-01-010-900; 3624bdr2 Mineola_St_(11x17); Plc Town (Map);





A PLAN

B PLAN

NOTES:
1. ALL EXISTING METER BOXES UNDER THIS CONTRACT ARE TO REMAIN. PLACE NEW METER BOXES NEAR EXISTING.
2. ALL PROPOSED METER BOXES SHOWN GRAPHICALLY FOR INFORMATION. CONTRACTOR TO FIELD LOCATE ALL METER BOXES.
3. EXISTING WATERLINE MATERIALS ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY MATERIAL TYPE AND MAKE ADJUSTMENTS FOR TIE-IN REQUIREMENTS.

CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

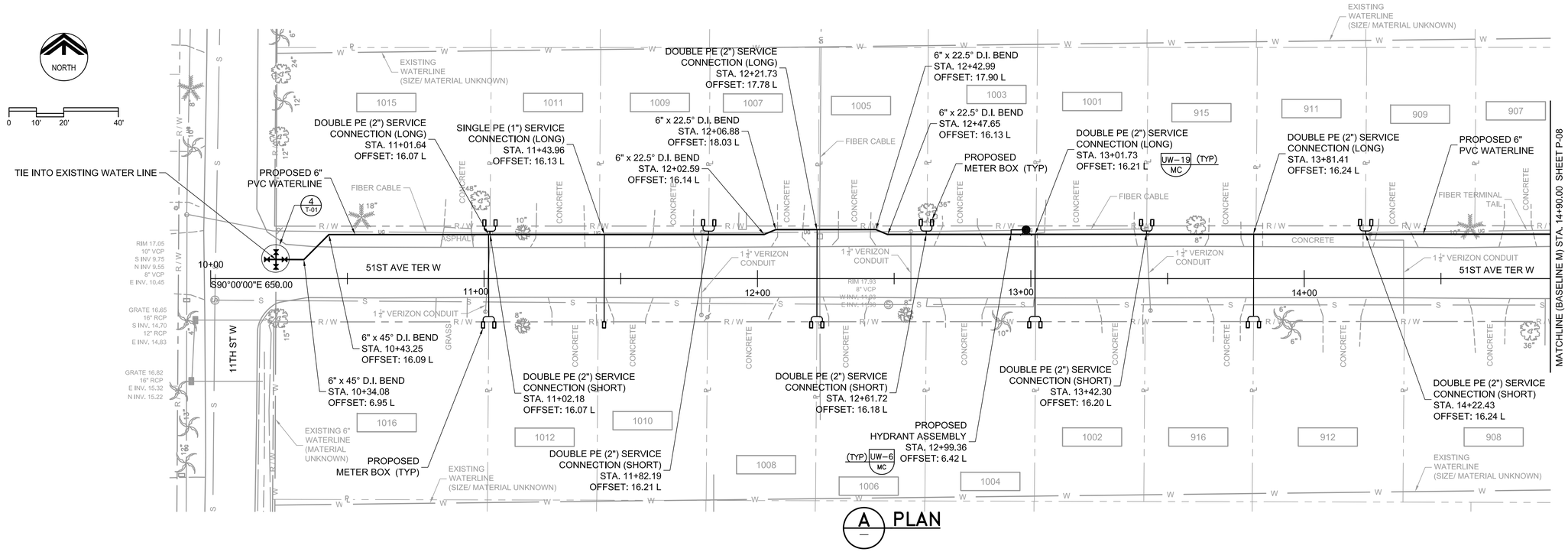
MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE II)
WATERLINE PLAN
BASELINE C STA. 23+20.00 TO 35+80.00

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

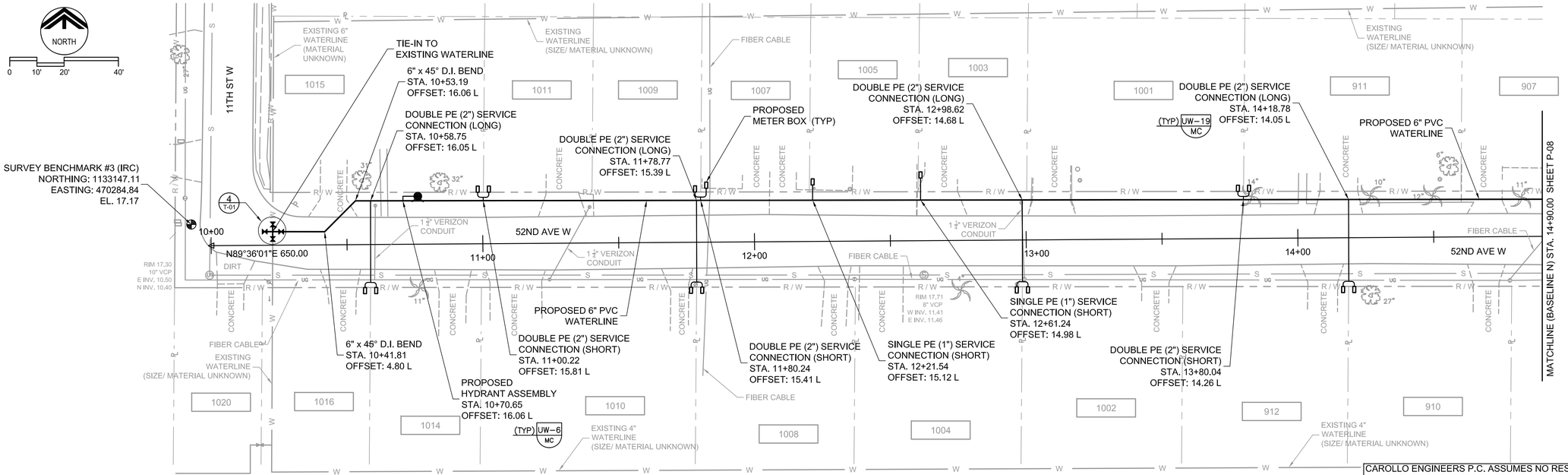
JOB NO. 7880E.10
DRAWING NO. P-06
SHEET NO. 4 OF 14

Last Opened by: 4-23-10 08:39am DPerry

FILENAME: Last Saved By: SMF_DENL 4-23-10 08:40am C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-P-06 XREFS: 7880E10-01-010-200; 7880E10-01-010-100; 3624bdr2; 7880E10-01-010-900 Mineola_St_(11x17); Plc Town (Map);

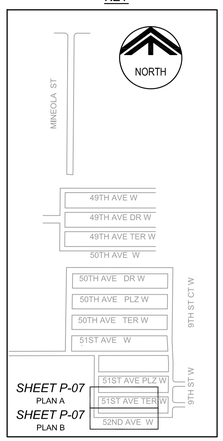


A PLAN



B PLAN

KEY



NOTES:
1. ALL EXISTING METER BOXES UNDER THIS CONTRACT ARE TO REMAIN. PLACE NEW METER BOXES NEAR EXISTING.
2. ALL PROPOSED METER BOXES SHOWN GRAPHICALLY FOR INFORMATION. CONTRACTOR TO FIELD LOCATE ALL METER BOXES.
3. EXISTING WATERLINE MATERIALS ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY MATERIAL TYPE AND MAKE ADJUSTMENTS FOR TIE-IN REQUIREMENTS.

CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY

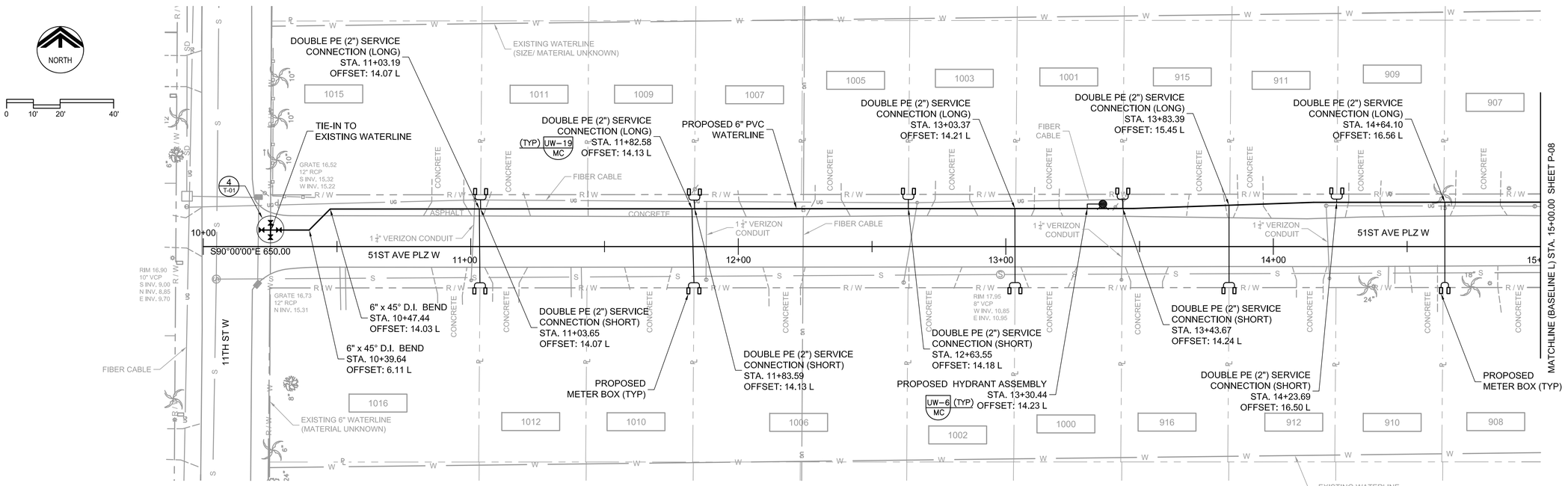
PIC TOWN WATERLINE REPLACEMENT (PHASE II)

WATERLINE PLAN
BASELINE M STA. 10+00.00 TO 15+00.00 (51ST AVE TER W)
BASELINE N STA. 10+00.00 TO 14+90.00 (52ND AVE W)

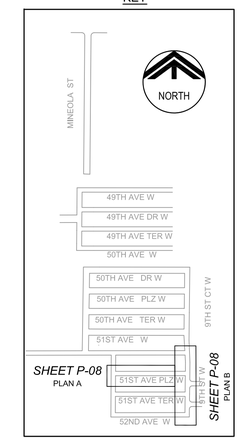
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

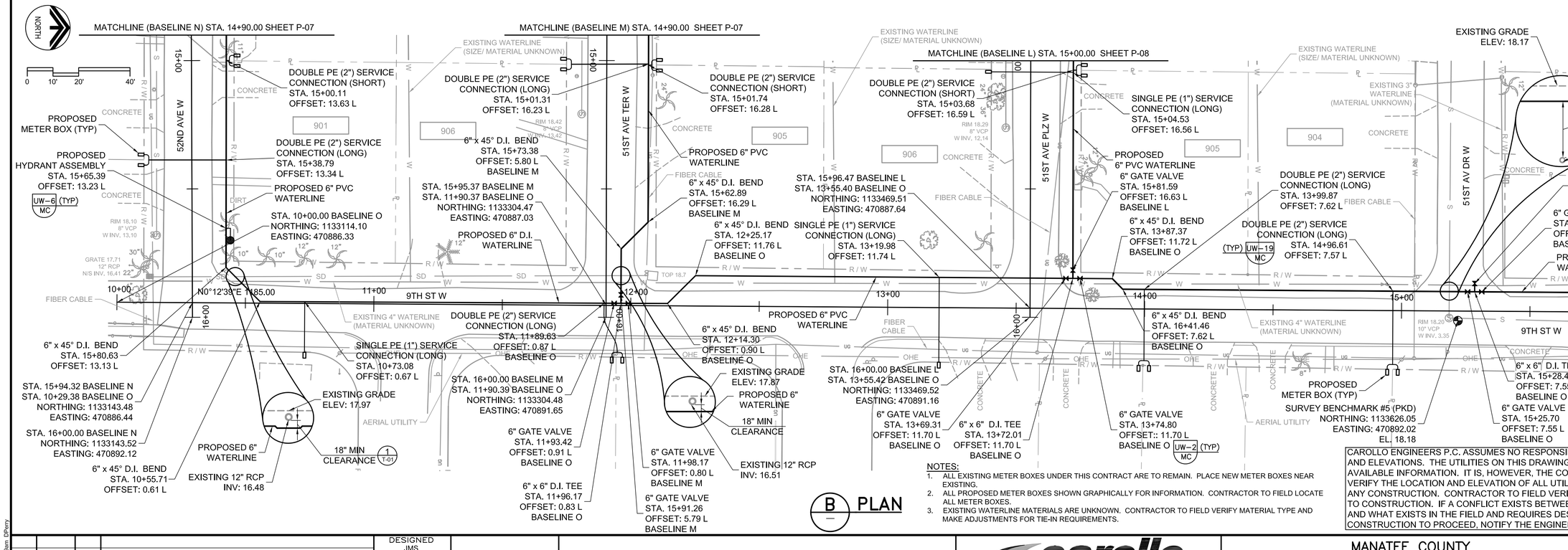
JOB NO. 7880E.10
DRAWING NO. P-07
SHEET NO. 5 OF 14

Last Opened by: 4-23-10 08:38am DPerry
FILENAME: Last Saved By: SMF_DENL 4-23-10 08:37am C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-P-07 XREFS: 7880E10-01-010-200; 7880E10-01-010-900; 3624bdr2; 7880E10-01-010-100 Mineola_St_(11x17); Plc Town (Map);



A PLAN





B PLAN

NOTES:
1. ALL EXISTING METER BOXES UNDER THIS CONTRACT ARE TO REMAIN. PLACE NEW METER BOXES NEAR EXISTING.
2. ALL PROPOSED METER BOXES SHOWN GRAPHICALLY FOR INFORMATION. CONTRACTOR TO FIELD LOCATE ALL METER BOXES.
3. EXISTING WATERLINE MATERIALS ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY MATERIAL TYPE AND MAKE ADJUSTMENTS FOR TIE-IN REQUIREMENTS.

CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY

PIC TOWN WATERLINE REPLACEMENT (PHASE II)

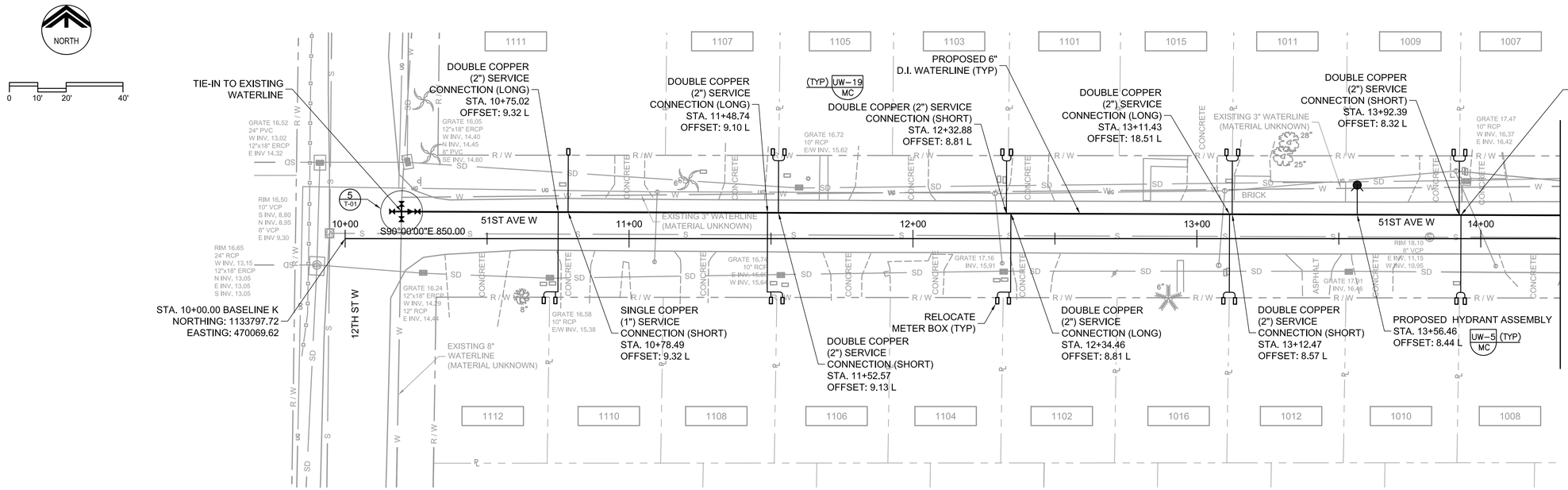
WATERLINE PLAN
BASELINE L STA. 10+00.00 TO 16+00.00 (51ST AVE PLZ W)
BASELINE M STA. 15+00.00 TO 16+00.00 (51ST AVE TER W)
BASELINE N STA. 14+90.00 TO 16+00.00 (52ND AVE W)
BASELINE O STA. 10+00.00 TO 15+97.00 (9TH ST W)

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

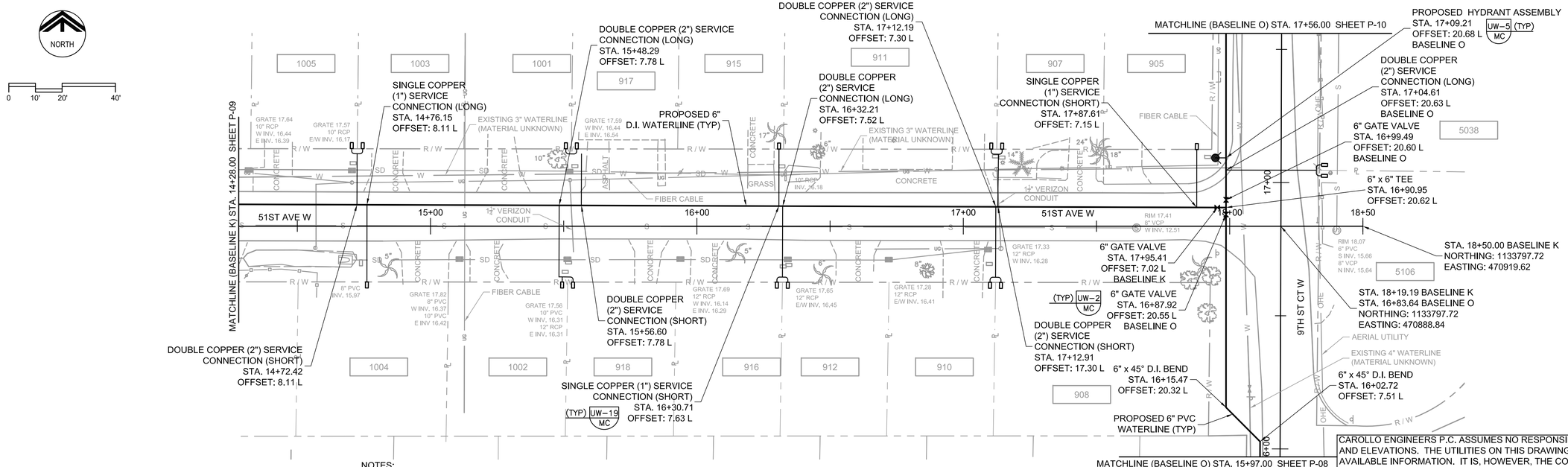
JOB NO. 7880E.10
DRAWING NO. P-08
SHEET NO. 6 OF 14

Last Opened by: 4-23-10 08:59am DPerry

FILENAME: Last Saved By: SMF_DENL 4-23-10 08:22am C:\Documents and Settings\DPerry\Desktop\Pic\7880E10-01-P-08 XREFS: 7880E10-01-010-200; 7880E10-01-010-900; 3624bdr2; 7880E10-01-010-100 Pic Town (Map); Mineola_St_(11x17); Pic Town (Map);



A PLAN



B PLAN

NOTES:
1. ALL EXISTING METER BOXES UNDER THIS CONTRACT ARE TO REMAIN. PLACE NEW METER BOXES NEAR EXISTING.
2. ALL PROPOSED METER BOXES SHOWN GRAPHICALLY FOR INFORMATION. CONTRACTOR TO FIELD LOCATE ALL METER BOXES.
3. EXISTING WATERLINE MATERIALS ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY MATERIAL TYPE AND MAKE ADJUSTMENTS FOR TIE-IN REQUIREMENTS.

CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY

PIC TOWN WATERLINE REPLACEMENT (PHASE II)

WATERLINE PLAN
BASELINE K STA. 10+00.00 TO 18+50.00 (51ST AVE W)
BASELINE O STA. 15+97.00 TO 17+56.00 (9TH ST W)

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. P-09
SHEET NO. 7 OF 14

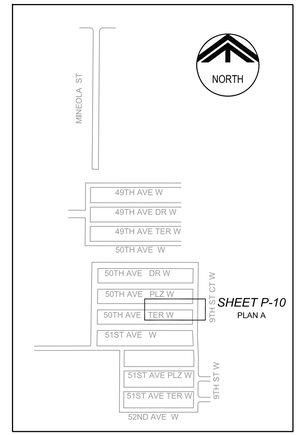
Last Opened by: 4-23-10 09:00am DPerry

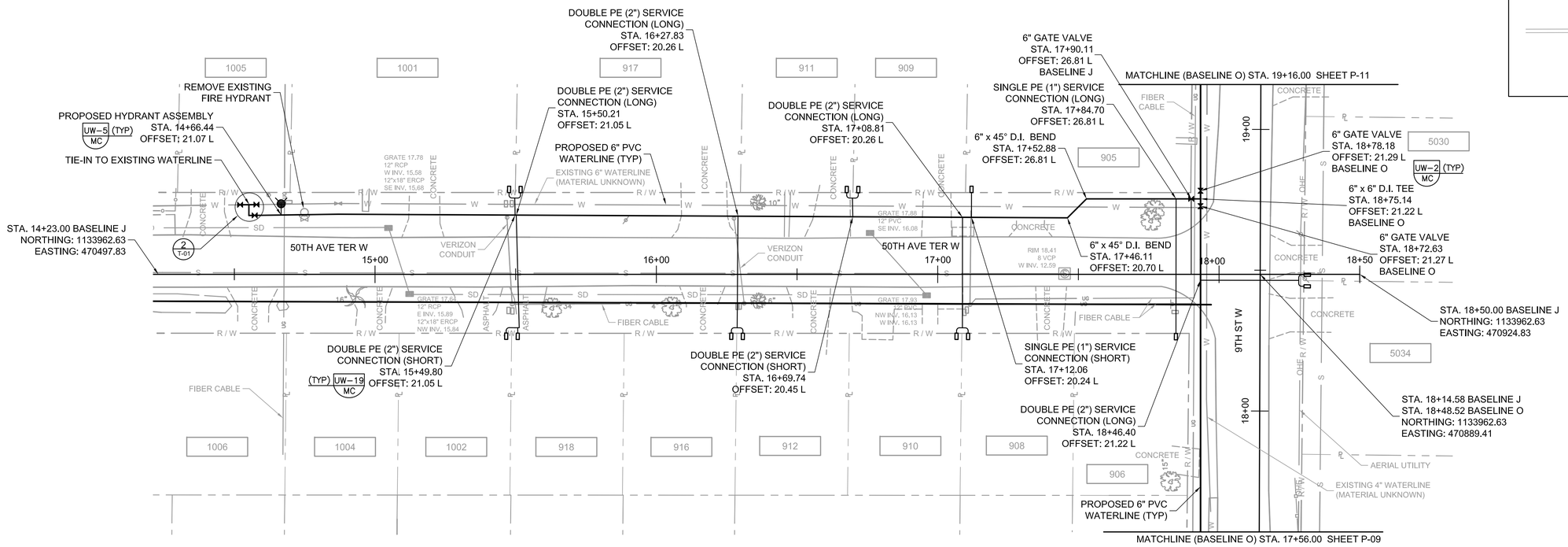
FILENAME: Last Saved By: DPerry 4-22-10 05:09pm C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-P-09 XREFS: 7880E10-01-010-200; 7880E10-01-010-900; 3624bdr2; 7880E10-01-010-100 Mineola_St_(11x17); Pic Town (Map);

NORTH

0 10' 20' 40'

KEY





A PLAN

NOTES:
1. ALL EXISTING METER BOXES UNDER THIS CONTRACT ARE TO REMAIN. PLACE NEW METER BOXES NEAR EXISTING.
2. ALL PROPOSED METER BOXES SHOWN GRAPHICALLY FOR INFORMATION. CONTRACTOR TO FIELD LOCATE ALL METER BOXES.
3. EXISTING WATERLINE MATERIALS ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY MATERIAL TYPE AND MAKE ADJUSTMENTS FOR TIE-IN REQUIREMENTS.

CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY

PIC TOWN WATERLINE REPLACEMENT (PHASE II)

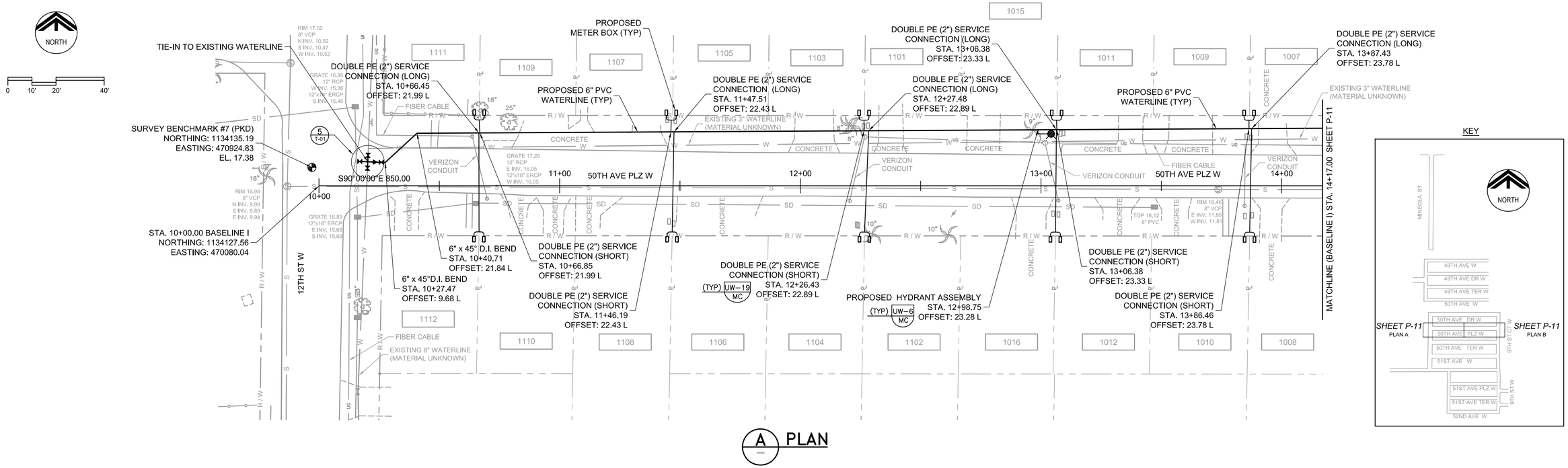
WATERLINE PLAN
BASELINE J STA. 14+23.00 TO 18+50.00 (50TH AVE TER W)
BASELINE O STA. 17+56.00 TO 19+16.00 (9TH ST W)

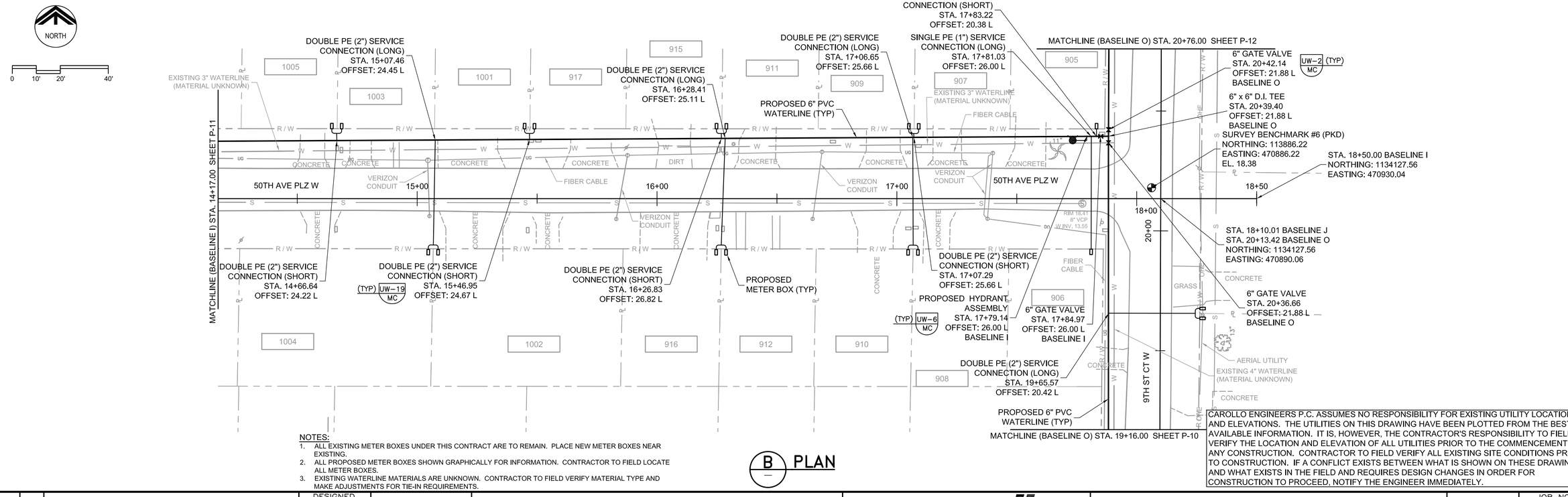
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. P-10
SHEET NO. 8 OF 14

Last Opened by: 4-23-10 09:03am DPerry

FILENAME: Last Saved By: SMF_DENL 4-23-10 08:23am C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-P-10 XREFS: 7880E10-01-010-200; 7880E10-01-010-900; 3624bd\2; 7880E10-01-010-100 Mineola_St_(11x17); Plc Town (Map);





NOTES:
1. ALL EXISTING METER BOXES UNDER THIS CONTRACT ARE TO REMAIN. PLACE NEW METER BOXES NEAR EXISTING.
2. ALL PROPOSED METER BOXES SHOWN GRAPHICALLY FOR INFORMATION. CONTRACTOR TO FIELD LOCATE ALL METER BOXES.
3. EXISTING WATERLINE MATERIALS ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY MATERIAL TYPE AND MAKE ADJUSTMENTS FOR TIE-IN REQUIREMENTS.

CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY

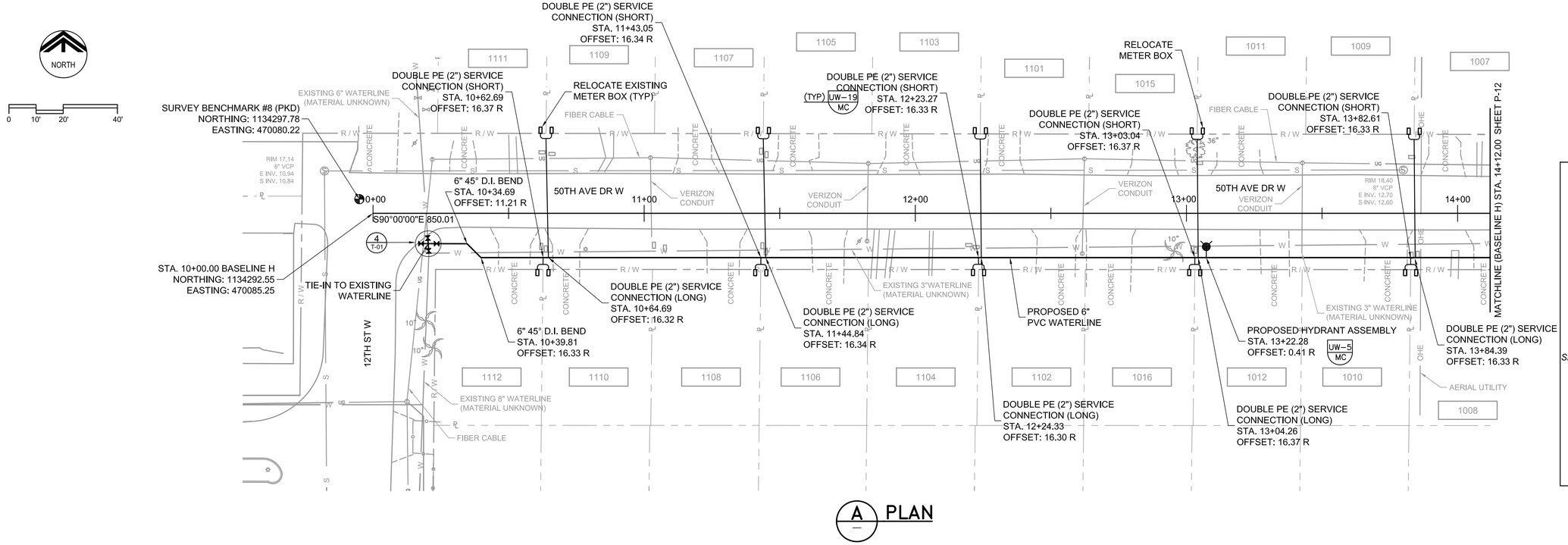
PIC TOWN WATERLINE REPLACEMENT (PHASE II)

WATERLINE PLAN
BASELINE I STA. 10+00.00 TO 18+50.00 (50TH AVE PLZ W)
BASELINE O STA. 19+16.00 TO 20+76.00 (9TH ST W)

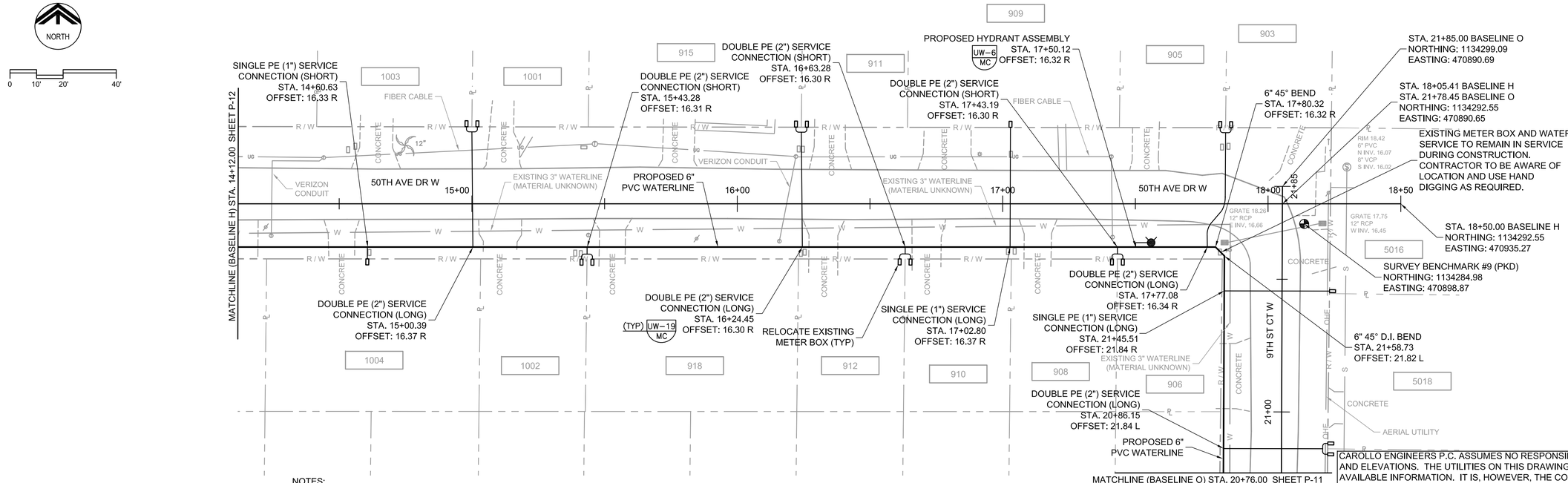
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. P-11
SHEET NO. 9 OF 14

Last Opened by:4-23-10 09:00am DPerry
FILENAME: Last Saved By: DPerry 4-22-10 05:13pm C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-P-11 XREFS: 7880E10-01-010-200; 7880E10-01-010-900; 3624bdr2; 7880E10-01-010-100 Mineola_St_(11x17); Plc Town (Map);



A PLAN



B PLAN

NOTES:
1. ALL EXISTING METER BOXES UNDER THIS CONTRACT ARE TO REMAIN. PLACE NEW METER BOXES NEAR EXISTING.
2. ALL DOUBLE PE (2") METER BOXES SHOWN GRAPHICALLY FOR INFORMATION. CONTRACTOR TO FIELD LOCATE ALL METER BOXES.
3. EXISTING WATERLINE MATERIALS ARE UNKNOWN. CONTRACTOR TO FIELD VERIFY MATERIAL TYPE AND MAKE ADJUSTMENTS FOR TIE-IN REQUIREMENTS.

CAROLLO ENGINEERS P.C. ASSUMES NO RESPONSIBILITY FOR EXISTING UTILITY LOCATIONS AND ELEVATIONS. THE UTILITIES ON THIS DRAWING HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION. IF A CONFLICT EXISTS BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT EXISTS IN THE FIELD AND REQUIRES DESIGN CHANGES IN ORDER FOR CONSTRUCTION TO PROCEED, NOTIFY THE ENGINEER IMMEDIATELY.

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

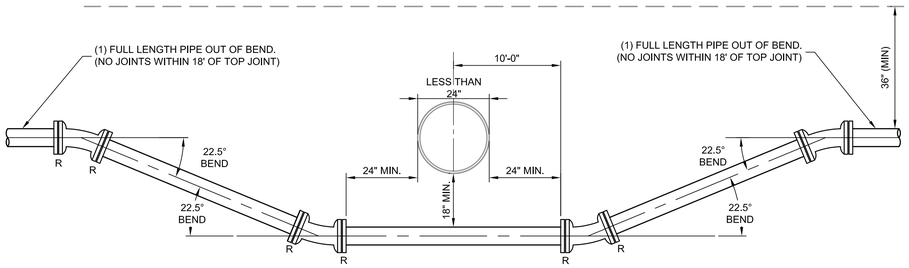
MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE II)
WATERLINE PLAN
BASELINE H STA. 10+00.00 TO 18+50.00 (50TH AVE DR W)
BASELINE O STA. 20+76.00 TO 21+85.00 (9TH ST W)

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. P-12
SHEET NO. 10 OF 14

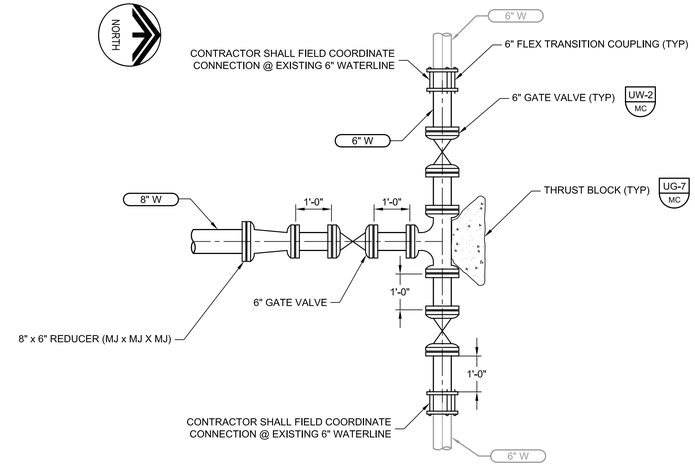
Last Opened by: 4-23-10 09:09am DPerry

FILENAME: Last Saved By: SMF_DENL 4-23-10 08:28am C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-P-12 XREFS: 7880E10-01-010-200; 7880E10-01-010-900; 3624bd\2; 7880E10-01-010-100 Mineola_St_(11x17); Plc Town (Map);



1 TYPICAL LOWERING DETAIL

SCALE: 1/2" = 1'-0"
FILE: 7880E10-01-110-403.DWG

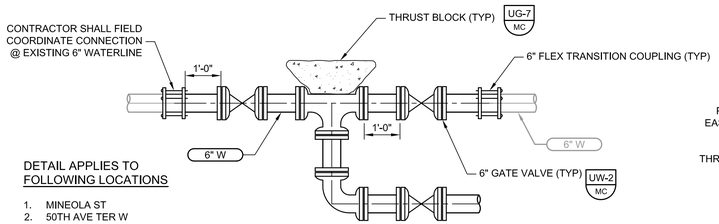


3 DETAIL– NEW 8"x 6" WATERLINE TIE–IN @ ORLANDO AVE

SCALE: 1/2" = 1'-0"
FILE: 7880E10-01-110-403.DWG

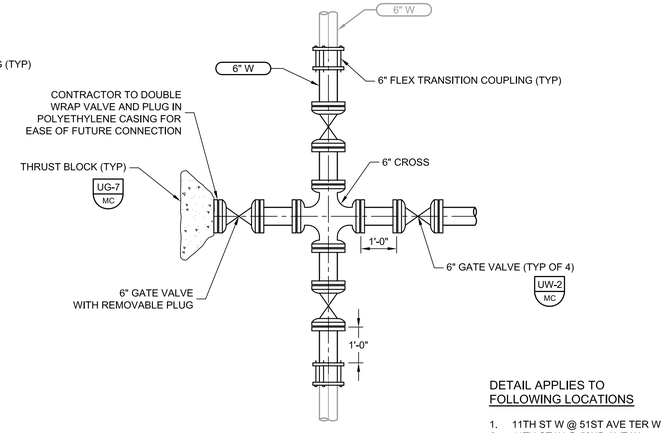
GENERAL NOTES:

1. CONTRACTOR SHALL NOTE THAT THE EXISTING WATERLINES MAY BE ASBESTOS CONCRETE PIPE (ACP) AND SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR ALTERING AND DISPOSING OF ACP MATERIALS.
2. FLEX TRANSITION COUPLING (A.C.P. ROUGH BARREL BY D.I.) WITH 316 STAINLESS STEEL RESTRAINING HARNESS (MINIMUM CENTER SLEEVE LENGTH OF 12").
3. ALL MECHANICAL JOINTS SHALL BE RESTRAINED.



2 DETAIL– NEW 6" WATERLINE TIE–IN

SCALE: 1/2" = 1'-0"
FILE: 7880E10-01-110-403.DWG

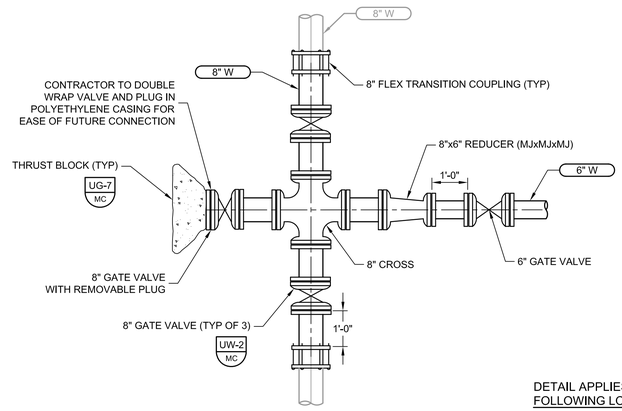


DETAIL APPLIES TO
FOLLOWING LOCATIONS

1. 11TH ST W @ 51ST AVE TER W
2. 11TH ST W @ 52ND AVE W
3. 11TH ST W @ 51ST AVE DR W
4. 12TH ST W @ 50TH AVE DR W

4 DETAIL– NEW 6"x 6" WATERLINE TIE–IN

SCALE: 1/2" = 1'-0"
FILE: 7880E10-01-110-403.DWG



DETAIL APPLIES TO
FOLLOWING LOCATIONS

1. 12TH ST W @ 51ST AVE W
2. 12TH ST W @ 50TH AVE PLZ W

5 DETAIL– NEW 8"x 6" WATERLINE TIE–IN

SCALE: 1/2" = 1'-0"
FILE: 7880E10-01-110-403.DWG

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

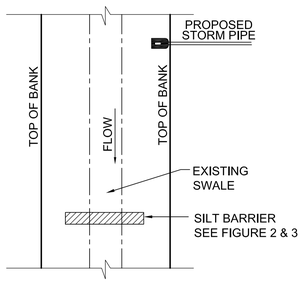
MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE II)
WATERLINE DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

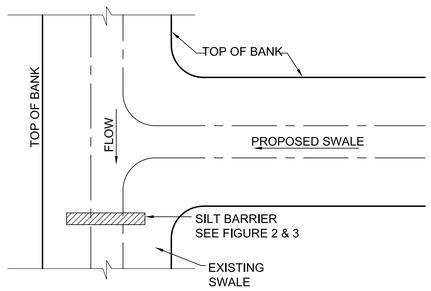
JOB NO. 7880E.10
DRAWING NO. T-01
SHEET NO. 11 OF 14

Last Opened by: 4-23-10 09:00am DPerry

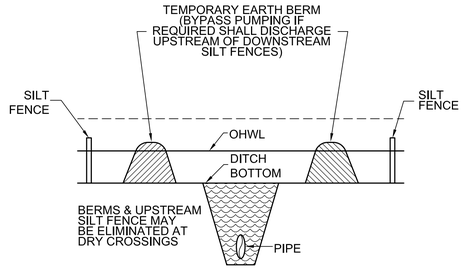
FILENAME: Last Saved By: SMF_DENL 4-23-10 08:40am C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-T-01A XREFS: 7880E10-01-110-403; 3624bdr2



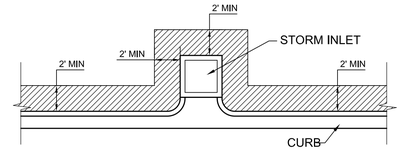
SILT BARRIER AT CONNECTION OF
STORM PIPE TO EXISTING SWALE



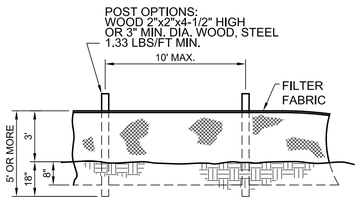
SILT BARRIER AT CONNECTION OF
SWALE TO EXISTING SWALE



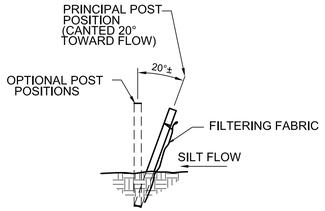
UNDERGROUND PIPE CROSSING



SOD ALONG CURB AND AROUND INLET

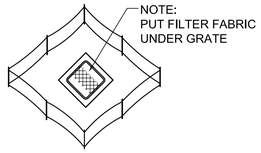


ELEVATION

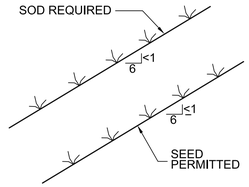


SECTION

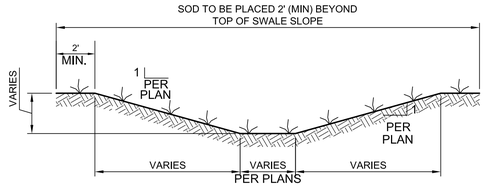
TYPICAL SILT FENCE



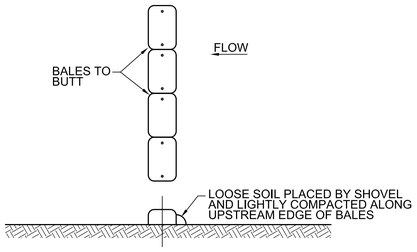
PROTECTION AROUND DITCH
BOTTOM INLETS



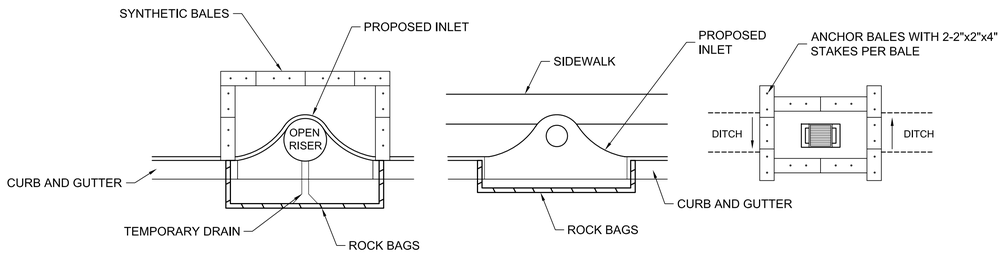
GRASS SLOPES



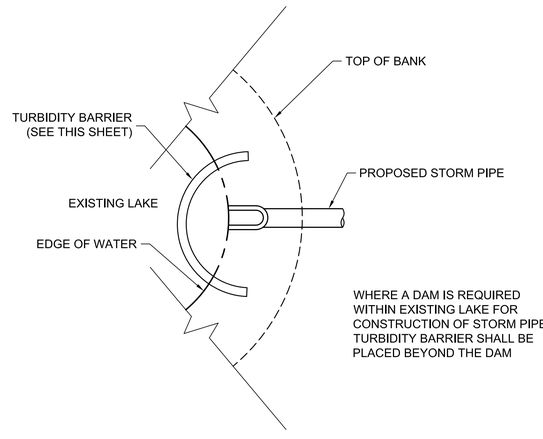
TYPICAL SWALE SECTION



TYPICAL STAKED HAY BALES



SYNTHETIC BALE PROTECTION AROUND
INLETS OF SIMILAR STRUCTURES



TUBIDITY BARRIER AT CONNECTION OF
STORM PIPE TO EXISTING LAKE

Last Opened by:4-22-10 09:09am DPerry

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

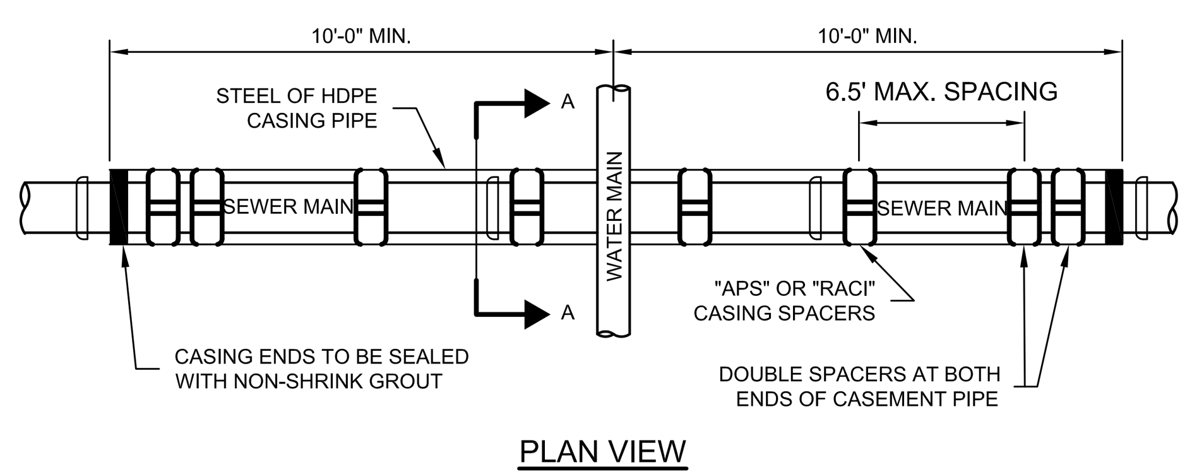
carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE II)
EROSION CONTROL DETAILS

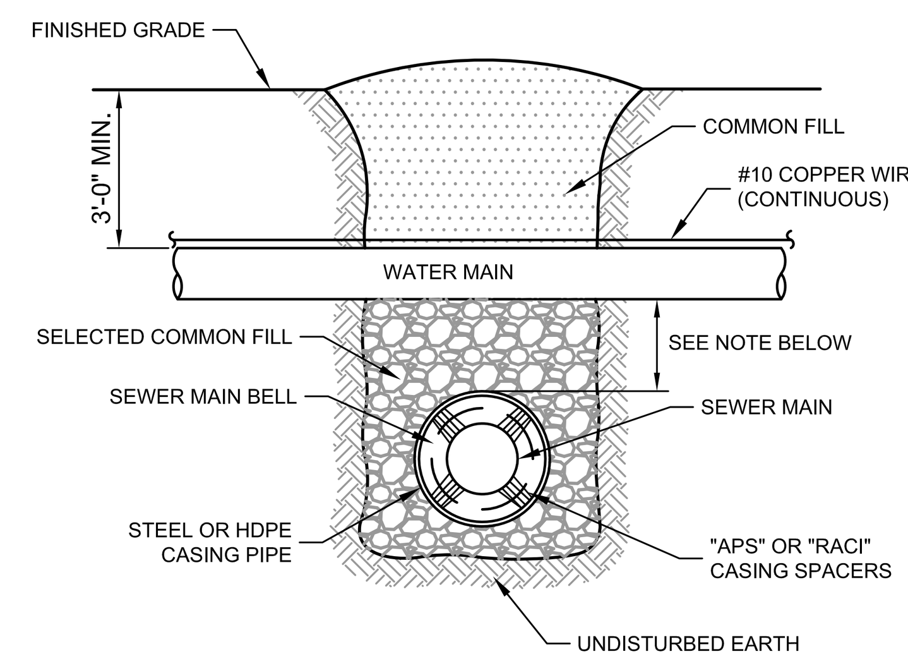
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. T-02
SHEET NO. 12 OF 14

FILENAME: Last Saved By: DPerry 4-22-10 11:36am C:\Documents and Settings\DPerry\Desktop\Pic\7880E10-01-T-02A XREFS: 3624bdr2: 7880E10-01-110-404



PLAN VIEW



SECTION A-A

NOTE:

1. WHERE CLEARANCE IS LESS THAN 18", SEWER MAIN SHALL BE ENCASED AS DETAILED. FOR VERTICAL CLEARANCE OF 18" OR GREATER NO CASEMENT IS REQUIRED.
2. NEW WATER MAIN AND SEWER MAIN PIPE SECTIONS ARE TO BE CENTERED AT THE CROSSING POINT REGARDLESS OF THE VERTICAL CLEARANCE.
3. REFER TO STANDARD DETAIL UG-3 FOR ADDITIONAL CASING AND SPACER DETAILS.

TYPICAL WATER & SEWER CROSSING

UG-2

THRUST BLOCK DIMENSIONS 8ft. x d inches

PIPE SIZE	90° BEND		45° BEND		22.5° BEND		11.25° BEND		DEAD END & TEE		45° WYE	
(IN.)	B	d	B	d	B	d	B	d	B	d	B	d
4	1.5	3 1/2	1.1	3 1/2	0.8	3 1/2	0.6	3 1/2	1.3	3 1/2	1.1	3 1/2
6	2.2	5 1/2	1.6	3 3/4	1.2	3 1/2	0.8	3 1/2	1.9	4 1/2	1.6	4 3/4
8	2.9	7	2.1	5	1.5	3 1/2	1.1	3 1/2	2.4	5 3/4	2.0	4 3/4
10	3.5	8 1/2	2.6	6 1/4	1.9	4 1/2	1.3	3 1/2	3.0	7 1/4	2.5	6
12	4.2	10	3.1	7 1/2	2.2	5 1/4	1.6	3 3/4	3.5	8 1/2	3.0	7 1/4
14	4.9	11 3/4	3.6	8 3/4	2.6	6 1/4	1.8	4 1/4	4.1	9 3/4	3.4	8 1/4
16	5.5	13 1/4	4.1	9 3/4	2.9	7	2.1	5	4.7	11 1/4	3.9	9 1/4
18	6.2	15	4.6	11	3.3	8	2.3	5 1/2	5.2	12 1/2	4.4	10 1/2
20	6.9	16 1/2	5.0	12	3.6	8 3/4	2.6	6 1/4	5.8	14	4.9	11 3/4
24	8.2	19 3/4	6.0	14 1/2	4.3	10 1/4	3.1	7 1/2	6.9	16 1/2	5.8	14
30	10.1	24 1/4	7.5	18	5.3	12 3/4	3.8	9	8.5	20 1/2	7.2	17 1/4
36	12.1	29	8.9	21 1/4	6.4	15 1/4	4.5	10 3/4	10.2	24 1/2	8.6	20 3/4

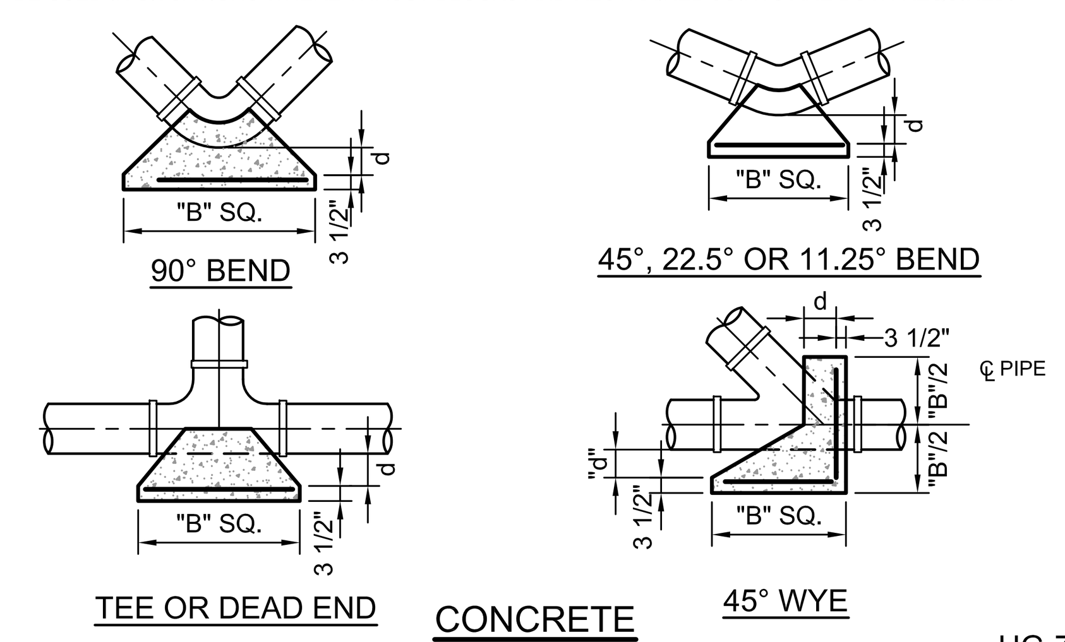
REINFORCEMENT MAT SCHEDULE

"B" SQ. d ℄ MAT 3 1/2"

FOR DIM. "B" BETWEEN 5.75' & 11.5' USE #4 @ 8" EACH WAY
FOR DIM. "B" LESS THAN 5.75' USE #3 @ 8" EACH WAY

NOTES:

1. ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
2. THIS TABLE IS BASED OF WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF, CONCRETE STRENGTH fc=3000 PSI, REINFORCEMENT fy=60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
3. FOR LARGER "B" DIMENSIONS IT IS NECESSARY TO CHECK THAT PIPE IS SUFFICIENTLY DEEP TO ALLOW 15"MIN. SOIL COVER OVER TOP EDGE OF THRUST BLOCK.
4. RESTRAINED JOINTS SHALL BE USED IN LIEU OF THRUST BLOCKS TO SAVE SPACE. THRUST BLOCKS SHALL BE USED IN SITUATIONS WHERE THRUST BLOCKS AND RESTRAINED JOINTS ARE BOTH REQUIRED.



CONCRETE THRUST BLOCKS

UG-7

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DR-18 PVC PIPE

MAIN PIPE SIZE	HORIZ. BENDS 90°	HORIZ. BENDS 45°	HORIZ. BENDS 22.5°	TEES (SIZE / LENGTH)					REDUCERS (SIZE / LENGTH)			PLUGS	VALVES
24	90	38	18	X24 169	X20 132	X16 90	X12 38	X10 6	X20 64	X16 117	X12 158	214	107
20	78	32	16	X20 141	X16 101	X12 53	X10 24	X8 1	X16 65	X12 115	X10 149	184	92
16	66	27	13	X16 111	X12 67	X10 41	X8 12		X12 64	X10 107	X8 111	151	76
12	52	22	10	X12 80	X10 56	X8 31	X6 1		X10 58	X8 62	X6 86	118	59
10	44	18	9	X10 63	X8 40	X6 7			X8 33	X6 61	X4 81	214	50
8	37	15	7	X8 49	X6 18	X4 1			X6 35	X4 60		83	42
6	29	12	6	X6 29	X4 1				X4 33			63	32
4	21	8	4	X4 12								45	23

NOTES:

1. RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5 BENDS.
2. AL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
3. ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
4. PIPE SIZES ARE GIVEN IN INCHES.
5. RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
6. LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
7. THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON SOIL CLASSIFICATION SP WITH AWWA TYPE 3 TRENCH CONDITIONS, 180 PSI TEST PRESSURE, 3 FEET OF COVER AND 1.5 FACTOR OF SAFETY. ACTUAL BURY CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY.
8. SEE RESTRAINED LENGTHS FOR PIPE STD. DETAIL UG-10.

RESTRAINED LENGTHS FOR PVC PIPE

UG-8

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (POLY-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS 90°	HORIZ. BENDS 45°	HORIZ. BENDS 22.5°	TEES (SIZE / LENGTH)						REDUCERS (SIZE / LENGTH)				PLUGS	VALVES
36	142	59	28	X36 393	X30 318	X24 232	X20 165	X16 84	X12 1	X30 137	X24 247	X20 309	X16 359	453	227
30	124	51	25	X30 333	X24 252	X20 189	X16 115	X12 23	X10 1	X24 137	X20 213	X16 276		391	196
24	106	44	21	X24 270	X20 211	X16 143	X12 61	X10 10	X8 1	X20 98	X16 178	X12 241		327	164
20	92	38	18	X20 225	X16 161	X12 85	X10 39	X8 1		X16 98	X12 176	X10 227		280	140
16	77	32	15	X16 177	X12 107	X10 65	X8 19	X6 1		X12 98	X10 163	X8 169		231	116
12	61	25	12	X12 127	X10 89	X8 50	X6 1			X10 88	X8 96	X6 131		181	91
10	52	22	10	X10 101	X8 64	X6 11				X8 51	X6 94	X4 125		153	77
8	44	18	9	X8 78	X6 30	X4 1				X6 54	X4 92			128	64
6	34	14	7	X6 46	X4 1					X4 50				98	49
4	24	10	5	X4 19										69	35

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

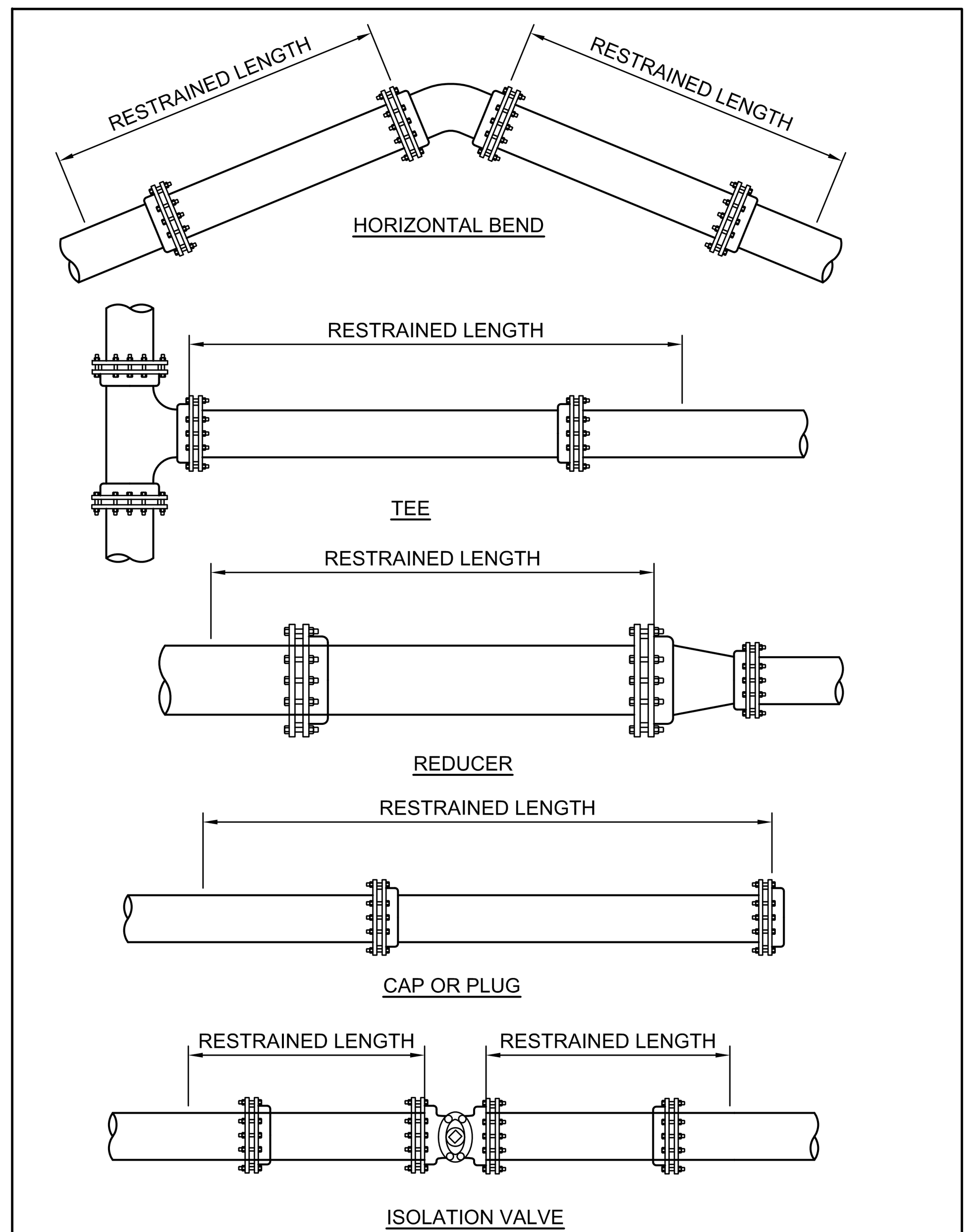
MAIN PIPE SIZE	HORIZ. BENDS 90°	HORIZ. BENDS 45°	HORIZ. BENDS 22.5°	TEES (SIZE / LENGTH)						REDUCERS (SIZE / LENGTH)				PLUGS	VALVES
36	100	42	20	X36 163	X30 132	X24 96	X20 68	X16 35	X12 1	X30 57	X24 103	X20 128	X16 149	188	94
30	88	37	18	X30 138	X24 104	X20 78	X16 48	X12 10	X10 1	X24 57	X20 88	X16 114		162	81
24	75	31	15	X24 112	X20 87	X16 59	X12 25	X10 4	X8 1	X20 40	X16 74	X12 100		135	68
20	65	27	13	X20 93	X16 67	X12 35	X10 16	X8 1		X16 41	X12 73	X10 94		116	58
16	54	22	11	X16 73	X12 44	X10 27	X8 8	X6 1		X12 41	X10 68	X8 70		96	48
12	43	18	8	X12 53	X10 37	X8 21	X6 1			X10 37	X8 40	X6 54		75	38
10	37	15	7	X10 42	X8 26	X6 5				X8 21	X6 39	X4 52		63	32
8	30	13	6	X8 32	X6 12	X4 1				X6 22	X4 38			53	27
6	24	10	5	X6 19	X4 1					X4 21				41	21
4	17	7	3	X4 8										29	15

NOTE:

SEE "RESTRAINED LENGTHS FOR PVC PIPE" DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

RESTRAINED LENGTHS FOR DIP

UG-9

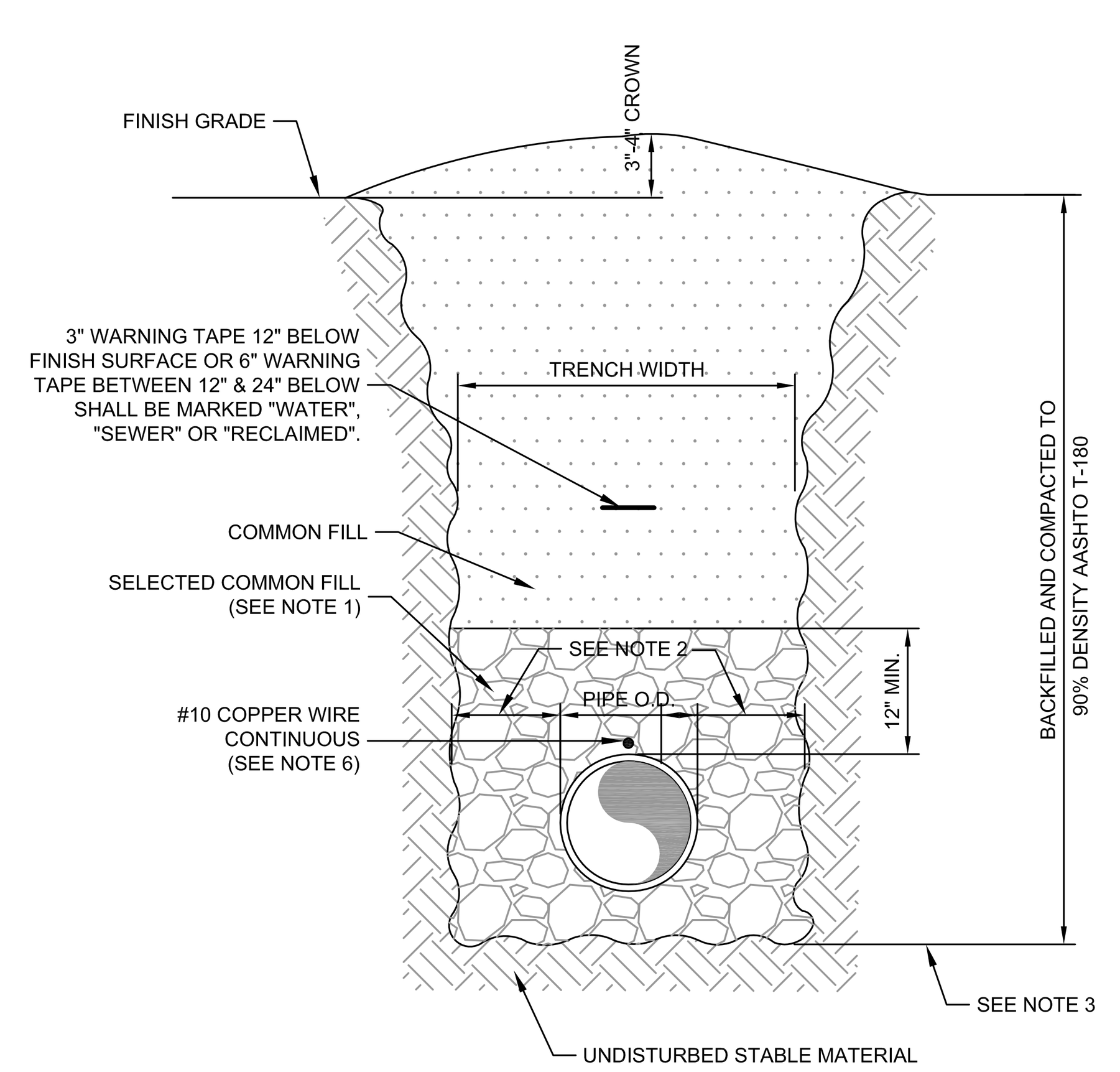


RESTRAINED LENGTHS FOR PIPE

UG-10

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
3. 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES FOR SELECTED COMMON FILL AND NOT TO EXCEED 12 INCHES FOR COMMON FILL. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.
6. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

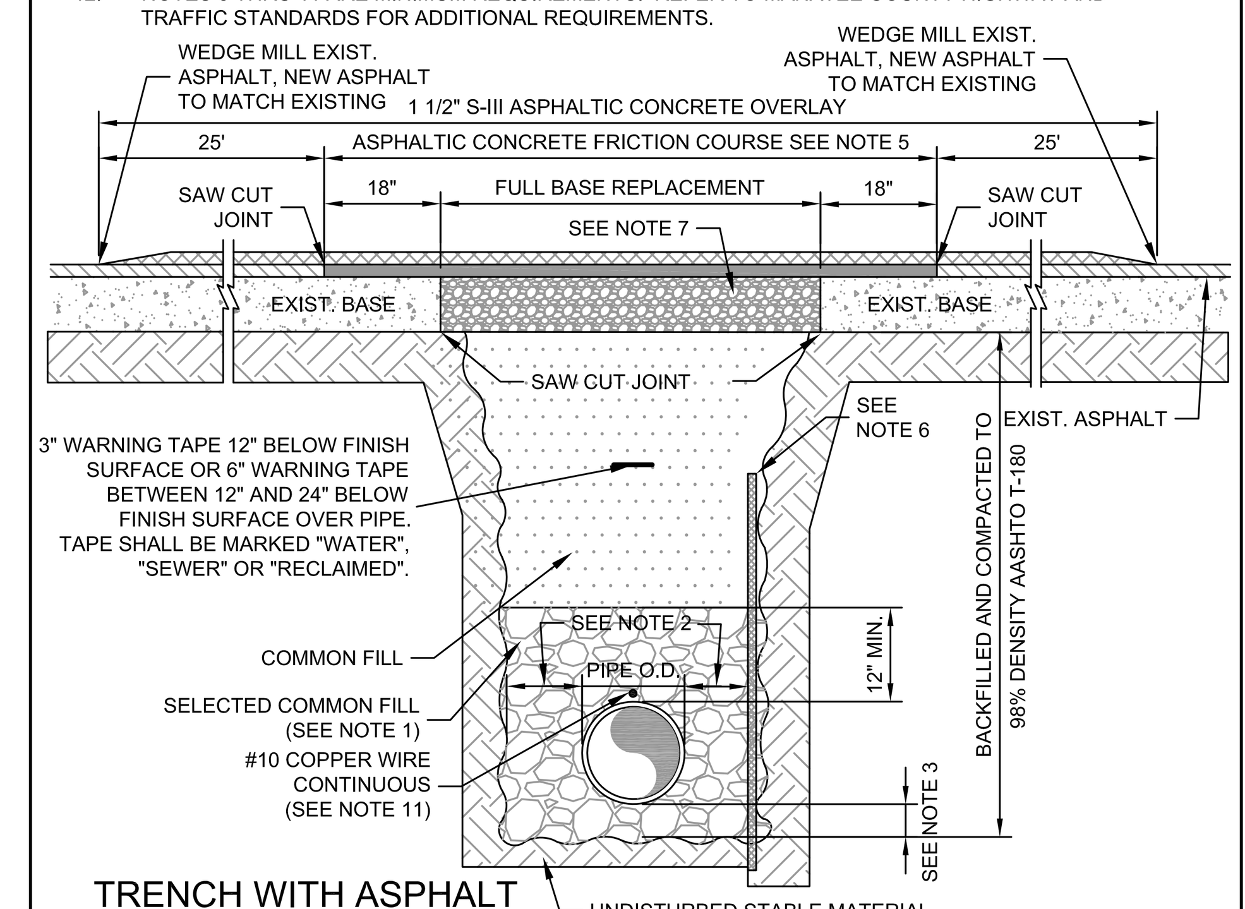


TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING

UG-11

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
3. 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. ASPHALTIC CONCRETE FRICTION COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF ONE INCH, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE, ABC-3 OR APPROVED EQUAL.
8. BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6". EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.
9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO MADE AS SOON AS POSSIBLE.
10. RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
12. NOTES 5 THRU 11 ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.

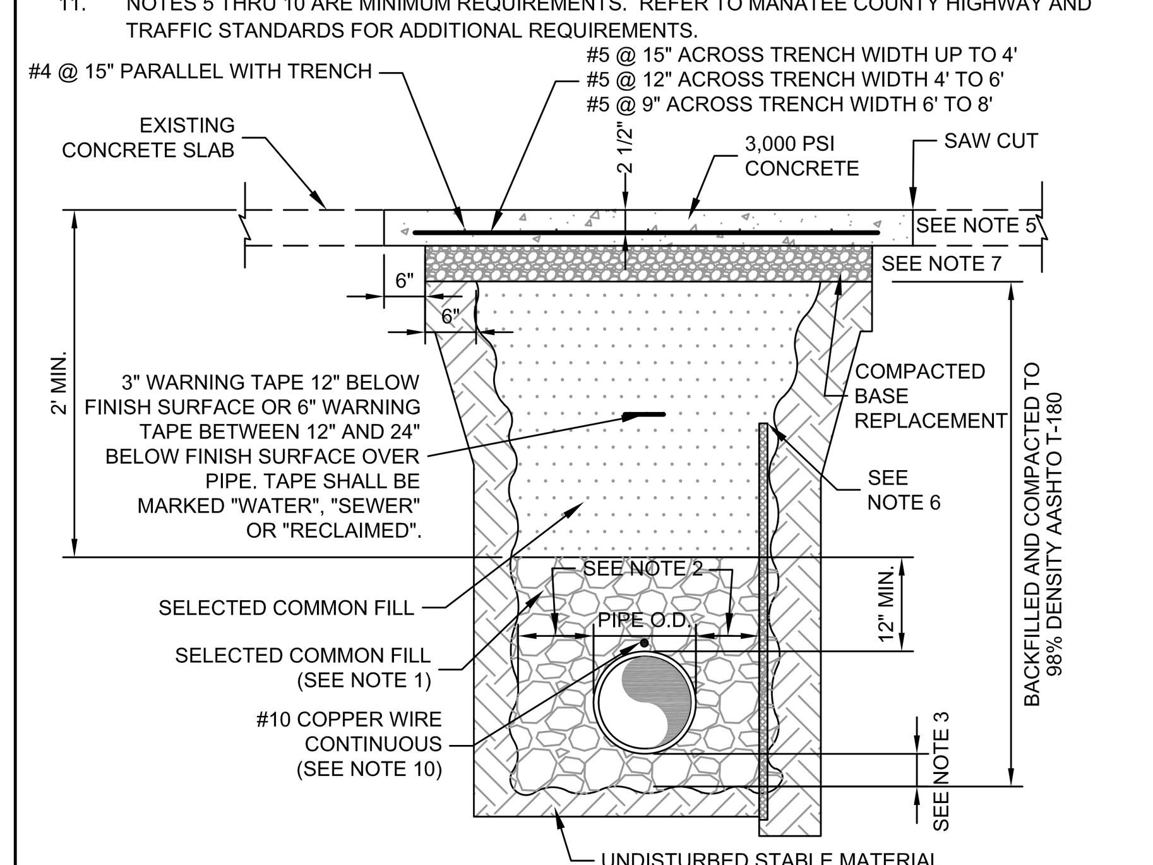


TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING

UG-12

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
3. 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE. SAND ASPHALT BASE WILL BE AN ACCEPTABLE ALTERNATIVE.
8. BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6". EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY
9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO MADE AS SOON AS POSSIBLE.
10. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
11. NOTES 5 THRU 10 ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING

UG-13

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY
PIC TOWN WATERLINE REPLACEMENT (PHASE II)
TYPICAL DETAILS

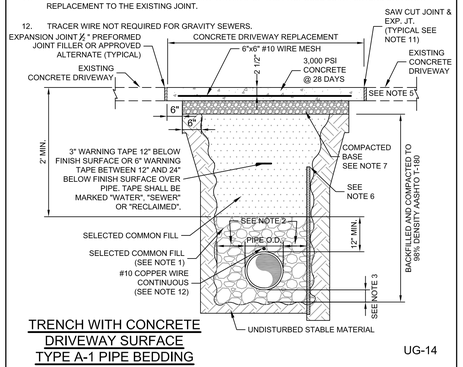
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. T-03
SHEET NO. 13 OF 14

Last Opened by: 4-23-10 09:01am DPerry
FILENAME: Last Saved By: DPerry 4-22-10 11:35am C:\Documents and Settings\DPerry\Desktop\Pic\7880E10-01-T-03A XREFS: 3624bdr2; 7880E10-01-110-405

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
3. 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 6" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE 6" MINIMUM THICKNESS OF APPROVED MATERIAL.
8. BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6". EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY.
9. DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST ADOPTED CONSTRUCTION STANDARDS OF THE MANATEE COUNTY TRANSPORTATION DEPARTMENT.
10. IF THE DRIVEWAY IS 12' OR WIDER, SAWCUT AN EXPANSION JOINT ALONG THE CENTER OF THE DRIVEWAY (⅝ " WIDE AND 1 ½ " DEEP) AFTER THE CONCRETE HAS SET.
11. IF THERE IS AN EXISTING EXPANSION JOINT WITHIN 3' OF THE PROPOSED JOINT, EXTEND DRIVEWAY REPLACEMENT TO THE EXISTING JOINT.
12. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.

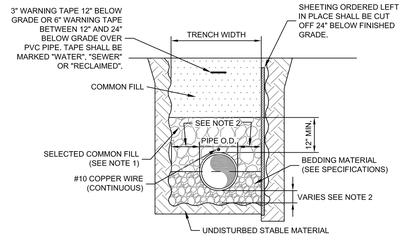


TRENCH WITH CONCRETE DRIVEWAY SURFACE TYPE A-1 PIPE BEDDING

UG-14

NOTES:

1. 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
2. 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
3. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6". EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY

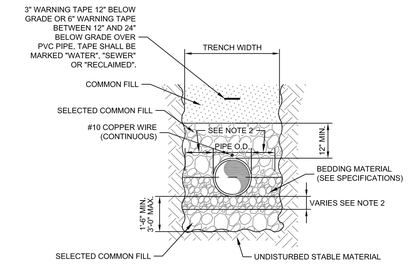


TRENCH WITH TYPE A-2 PIPE BEDDING

UG-15

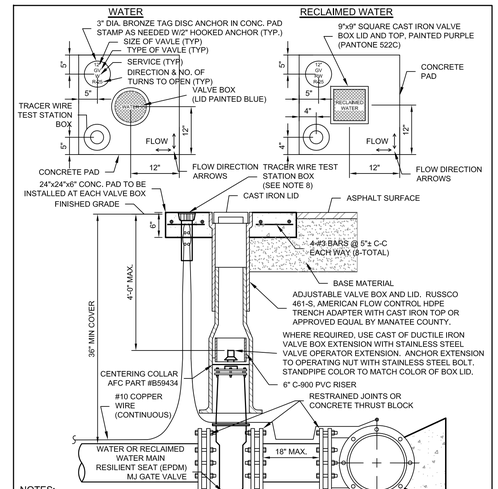
NOTES:

1. 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
2. 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
3. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6". EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% AASHTO T-180 DENSITY



TRENCH WITH TYPE A-3 PIPE BEDDING

UG-16

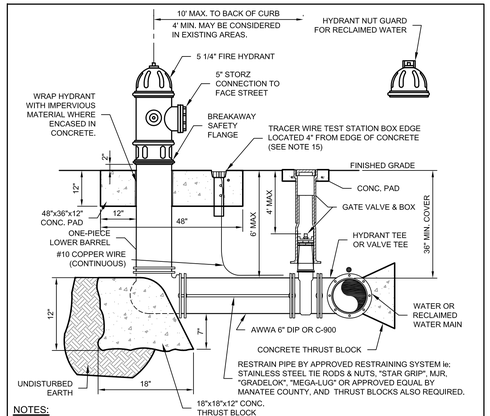


NOTES:

1. "WV" OR "RWV" TO BE IMPRESSED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH THE DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC WITH "WV" OR PURPLE DISC WITH "RWV" AND A ¾"x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE FOOTAGE FROM THE DISC TO THE VALVE.
2. ALL EXISTING AND PROPOSED VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADES AS DETERMINED IN THE FIELD.
3. WATER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS
4. PRECAST CONCRETE PADS AND THRUST BLOCKS SHALL NOT BE USED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ½ ".
6. FOR VALVES 16" AND LARGER, USE BUTTERFLY VALVES.
7. "FLOW" AND FLOW DIRECTION ARROWS TO BE IMPRESSED INTO NEWLY POURED CONCRETE PAD.
8. TRACER WIRE TEST STATION BOX IS NOT REQUIRED IN VALVE BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 200 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTER OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX. A TRACER WIRE BOX IS REQUIRED IN THE CONCRETE PAD AT ALL GATE VALVES AT CONNECTIONS TO EXISTING MAINS.
9. CONCRETE THRUST BLOCK IS ALSO REQUIRED UNLESS RESTRAINED JOINT LENGTH IS TREATED AS A PLUG SHOWN IN STANDARD DETAIL UG-8
10. SHOULD THERE BE AN OBSTACLE/CONFLICT IN INSTALLING THE VALVE, THE ENGINEER OF RECORD MAY PROPOSE A REVERSE TAP, ETC, AND SEPARATE APPROVAL SHALL BE OBTAINED FROM MANATEE COUNTY.

GATE VALVE, BOX, LID AND TAG

UW-2

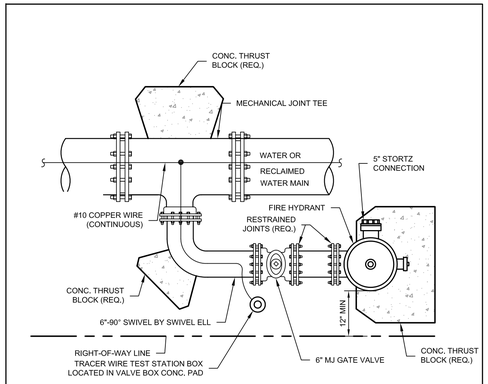


NOTES:

1. WEEPHOLES SHALL BE EXCLUDED FROM THE FIRE HYDRANT.
2. FIRE HYDRANTS SHALL BE A MINIMUM OF 6' OFF EDGE OF PAVEMENT AND 10' MAX. FROM BACK OF CURB. WHERE POSSIBLE AND WHERE SIDEWALK TO BE INSTALLED, FIRE HYDRANT SHALL BE LOCATED BETWEEN SIDEWALK AND RIGHT OF WAY LINE.
3. HYDRANTS SHALL BE FUSION BONDED EPOXY COATED SAFETY YELLOW FOR WATER AND PURPLE (PANTONE 522C) FOR RECLAIMED WATER. HYDRANT SHALL BE DUCTILE IRON CONSTRUCTION.
4. FIRE HYDRANTS SHALL BE PLACED SO THAT STORM WATER FLOWS AWAY FROM THE HYDRANT.
5. FIRE HYDRANTS SHALL BE CONSTRUCTED WITH "GROUND LINE" SET TO FINISHED GRADES AS ESTABLISHED IN THE FIELD. NORMAL BURY IS 3 FEET OF COVER FOR ALL WATER LINES.
6. FIRE HYDRANTS MAY BE CONSTRUCTED WITH "GRADELOK" OFFSET FITTING.
7. RAISED REFLECTIVE PAVEMENT MARKER (BLUE) FOR POTABLE WATER (PURPLE) FOR RECLAIMED WATER SHALL BE INSTALLED AT CENTERLINE OF PAVEMENT ADJACENT TO EACH HYDRANT.
8. PRECAST CONCRETE THRUST BLOCKS AND PADS SHALL NOT BE USED.
9. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE ½ " CHAMFER.
10. FIRE HYDRANT VALVE SHALL BE FASTENED DIRECTLY TO TEE.
11. IN-LINE VALVES SHALL BE LOCATED AT HYDRANT TEES.
12. HYDRANTS SHALL BE LOCATED ON SAME SIDE OF ROAD AS WATER MAIN UNLESS APPROVED MY M.C.U.O.D.
13. THERE MUST BE A CLEARANCE OF 7 ½ FEET FROM FRONT AND BOTH SIDES, AND FOUR FEET TO THE REAR OF THE HYDRANT, TO ABOVE GRADE OBSTRUCTIONS INCLUDING POSTS, FENCES, TREES, ETC. PER THE FLORIDA FIRE PREVENTION CODE.
14. SEE GATE VALVE, BOX AND LID STANDARD DETAIL UW-2.
15. SHOULD THE FIRE HYDRANT'S CONCRETE PAD OVERLAP THE SIDEWALK; THE TRACER WIRE TEST STATION BOX SHALL NOT BE LOCATED WITHIN THE SIDEWALK.

FIRE HYDRANT ASSEMBLY

UW-5



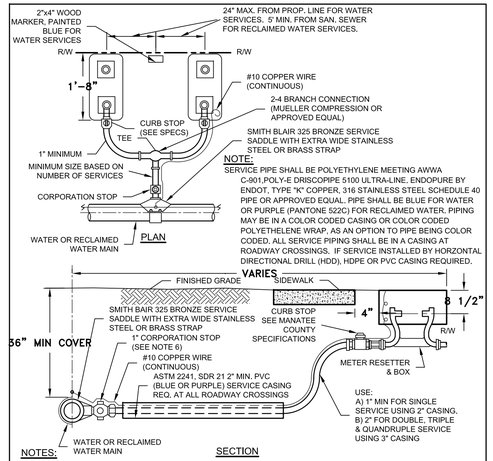
PLAN

NOTES:

1. THIS DETAIL FOR USE ONLY WHEN THE WATER MAIN IS LOCATED TOO CLOSE TO THE RIGHT-OF-WAY LINE TO USE THE FIRE HYDRANT ASSSEMBLY DETAIL
2. SEE GATE VALVE, BOX AND LID STANDARD DETAIL UW-2

FIRE HYDRANT WITH LOCKED 90° BEND

UW-6



NOTE:
SERVICE PIPE SHALL BE POLYETHYLENE MEETING AWWA C-901,POLY-E DRISCOPIPE 5100 ULTRA-LINE. ENDOPURE BY ENDOT. TYPE "K" COPPER, 316 STAINLESS STEEL SCHEDULE 40 PIPE OR APPROVED EQUAL. PIPE SHALL BE BLUE FOR WATER OR PURPLE (PANTONE 522C) FOR RECLAIMED WATER. PIPING MAY BE IN A COLOR CODED CASING OR COLOR CODED POLYETHELENE WRAP. AS AN OPTION TO PIPE BEING COLOR CODED. ALL SERVICE PIPING SHALL BE IN A CASING AT ROADWAY CROSSINGS. IF SERVICE INSTALLED BY HORZONTAL DIRECTIONAL DRILL (HDD), HDPE OR PVC CASING REQUIRED.

NOTES:

1. ALL SERVICE TAPS TO BE LOCATED IN THE FIELD. TAPS SHALL BE NO CLOSER THAN 2'-0" STAGGERED INTERVALS OR WITHIN 2'-0" FROM BELL OR SPIGOT ENDS.
2. METER BOXES & RESETTERS ARE TO BE INSTALLED BY THE INFRASTRUCTURE CONTRACTOR AND SHALL NOT BE SET IN DRAINAGE SWALES, SIDEWALKS OR DRIVEWAYS.
3. "WM" OR "RWM" TO BE IMPRESSED INTO THE NEWLY POURED CONCRETE CURB ALONG WITH DISTANCE IN FEET TO THE METER. IF NO CURB, INSTALL A BLUE DISC WITH "WM" OR A PURPLE DISC WITH "RWM" AND A 1/8"x 1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE (IN FEET) FROM THE DISC TO THE METER.
4. #10 COPPER WIRE SHALL BE INSTALLED WITH WATER AND RECLAIMED MAIN AND ALL SERVICES. SERVICE WIRE SHALL BE CONNECTED TO THE TRACER WIRE ALONG THE MAIN.
5. WATER AND RECLAIMED WATER SERVICE LINES TO BE 5' MINIMUM FROM SEWER SERVICE PIPES.
6. FOR 2" SERVICES REPLACE CORPORATION STOP WITH 2" RESILIENT WEDGE GATE VALVE W/BOX, LID & TAG. SEE STANDARD DETAIL UW-2. MJ GATE VALVE IN DETAIL UW-2 SHALL BE SUBSTITUTED WITH THREADED FIP GATE VALVE AND BRASS NIPPLE. CENTERING COLLAR NOT REQUIRED ON 2" GATE VALVES.
7. WHEN THE DISTANCE BETWEEN THE EDGE OF THE SIDEWALK AND THE R/W IS ONE FOOT (CUL-DE-SAC W/ MEDIAN) A 10 FOOT PUBLIC UTILITY EASEMENT SHALL BE LOCATED IN THE FRONT OF THE LOTS, ADJACENT TO THE R/W.
8. IF SERVICE INSTALLED BY HORZONTAL DIRECTIONAL DRILL (HDD), HDPE OR PVC CASING REQUIRED.

TYPICAL SERVICE CONNECTION

UW-19

Last Opened by: 4-23-10 09:01am DPerry

REV	DATE	BY	DESCRIPTION

DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

carollo
Engineers...Working Wonders With Water ™
401 NORTH CATTLEMEN ROAD, SUITE 306
SARASOTA, FL 34232
PHONE: (941) 371-9832 FAX: (941) 371-9873
CA 00008571

MANATEE COUNTY

PIC TOWN WATERLINE REPLACEMENT (PHASE II)

TYPICAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7880E.10
DRAWING NO. T-04
SHEET NO. 14 OF 14

FILENAME: Last Saved By: SMF_DENL 4-23-10 08:36am C:\Documents and Settings\DPerry\Desktop\Plc\7880E10-01-T-04A XREFS: 3624bdr2; 7880E10-01-110-405

PIC TOWN WATERLINE REPLACEMENT (PHASE II)

Board of County Commissioners

DONNA G. HAYES

CHAIRMAN

LARRY BUSTLE

JOHN R. CHAPPIE

RON GETMAN

DR. GWENDOLYN Y. BROWN

JOE McCLASH

CAROL WHITMORE

CONSTRUCTION COST
$Enter Amount

PRIME CONTRACTOR
Enter Contractor Name