

MANATEE COUNTY FLORIDA

April 30, 2010

TO: All Interested Bidders

SUBJECT: **Invitation for Bid # 10-0642-DS**
Oneco Terrace, Sunniland and Kirk Haven Water Phase 2
(Project No. 6025570 6.2)

ADDENDUM # 3

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 May 6, 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 28, 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

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April 30, 2010

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Oneco Terrace, Sunniland and Kirk Haven Water Phase 2

(Project No. 6025570 6.2)

ADDENDUM # 3

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 28, 2010 (7 pages).
Subject of Attachment: Responses to submitted questions.**

3. **Attachment: Manatee County Revised Specifications Section 01150 Measurement and Payment Section dated April 2010, Addendum # 3 (8 pages). Discard the previously submitted section and replace with this revised section.**

4. **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: Manatee County Transportation Department, Curb & Gutter Control Details, dated 6/12/07 (8 sheets).**

Bidders: The Bid Forms attached to this Addendum # 3 (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.

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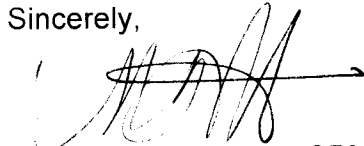
ADDENDUM # 3

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 # 3

The deadline for submitting sealed Bids at the Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205 is May 12, 2010 at 3:00 PM.

Sincerely,



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

/ds

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



April 28, 1010
7880D.10

Subject: Oneco Terrace Waterline Replacement Phase 2

To All Bidders:

The Engineer's Opinion of Probable Construction Cost for the Phase 2 Oneco Terrace Waterline Replacement Project is \$1,173,989 (One Million One Hundred Seventy Three Thousand Nine Hundred Eighty Nine Dollars).

This Opinion of Probable Construction Cost was determined as of April 27, 2010 and was based on the revised plans and specifications issued April 2010 with Addendum No. 3. 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.

G. Dean Milton, P.E.

GDM:maw

cc: Michael O'Reilly, Project Manager
Project File

Enclosure

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

carollo.com



April 28, 2010
7880D.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 Oneco Terrace Phase II

Dear Ms. Stevens:

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

Questions received from Andrew Sitework – February 2, 2010

1. Will it be acceptable by Manatee County to install the new Water Line using the (HDD) Horizontal Directional Drill method.

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.

Questions received from E.T. Mackenzie Company of Florida – February 4, 2010

2. Sheets 4, 8, 9, 10, 11 of the plan set show Double PE services (short). There is no pay item for this service connection.

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

3. Sheets 4 and 9 of the plan set show Single PE services (long). There is no pay item for this service connection.

A bid item has been added for long side single PE services and quantities have been adjusted accordingly on the Bid Form.

4. It is not always clear where 6" PVC and 6" DI is to end or to begin. Please specify more clearly.

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.

5. Are relocation of existing meter boxes to be done "only where shown" on the plan sheets?

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.

6. Are connection to existing meter boxes to be done "only where shown" on the plan sheets?

Connection to existing meter boxes should only be for those specifically indicated. All other meter boxes are proposed (i.e. to be installed by Contractor). Connection to existing meter boxes will be paid under the appropriate bid item for service connections (Bid Item Nos. 13-16)

7. Are installation of proposed meter boxes to be done "only where shown" on the plan sheets?

See response to Question No. 6. Installation of proposed (i.e. to be installed by Contractor) meter boxes will be paid under the appropriate bid item for service connections (Bid Item Nos. 13-16).

8. Would separate pay items for meter boxes help to clarify questions 4, 5 and 6 above?

Separate pay items for proposed (i.e. to be installed by Contractor) meter boxes and connections to existing meter boxes will not be provided. Connection to existing meter boxes will be paid under the appropriate bid item for service connections (Bid Item Nos. 13-16).

9. Can details on the expected traffic control plan with respect to work (WM tie-ins) on 53rd Ave. E. (SR 70) be provided for bidding purposes? Scaling the approximate location of the existing water main on 53rd Ave. E., it appears that both east bound lanes will need to be closed to install tie-ins. Specifically, we need answers to the following:
- Will speed be allowed to be reduced on 53rd Ave. E.?

Per the General Notes, the Contractor is responsible for preparing the Traffic Control Plan (TCP). The TCP shall be prepared in accordance with the current FDOT Design Standards (Index series 600). The contractor shall be required to submit the TCP for approval by Manatee County Staff prior to submittal to FDOT and commencing work.

The FDOT will determine if and how much the speed can be reduced.

- Will two lanes (East bound) be allowed to be temporarily closed on 53rd Ave. E.? If yes, what will be the expected traffic control plan for detouring traffic?

See response to Question No. 9.

- c. Will a temporary concrete barrier wall need to be installed to meet FDOT requirements since the work zone will have a clear zone less than 12' (FDOT Index 600 requires a concrete barrier wall in this case). As a result, can additional pay items be added (with appropriate quantities) for temporary concrete barrier wall and various other traffic devices for traffic control in this area?

See response to Question No. 9.

No additional pay items will be established. All requirements, materials and labor for maintenance of traffic shall be included with Bid Item No. 2 Traffic Control.

- d. Will consideration be given to providing a traffic control plan with minimum requirements on 53rd Ave. E. for bidding purposes? Please note that FDOT requirements for a state highway lane closing and protection of a construction work zone are much more involved than a local street and all bidders should be aware of what they need to include in their bids.

See response to Question No. 9.

10. Several concrete driveways are painted concrete. Will replacement of those drives (after water line installation) require contractor to paint the concrete to match?

Yes.

11. 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 over layed 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.

12. In several areas, curb and gutter will need to be replaced after water line is installed. Will there be consideration given in adding a pay item (similar to concrete driveway and asphalt pavement replacement) to account for this item? Additionally, please include a specification detail for curb replacement.

Separate pay item have been added for curb and gutter replacement. Curb and gutter shall meet the specifications and details established by Manatee County Transportation Department Highway, Traffic & Stormwater Standards, 2007 edition and FDOT standard Roadway and Traffic Design Standards Index No. 300, latest revision. Applicable Manatee

County Standards are attached, bidders can obtain FDOT standards from the FDOT website.

13. In several areas, gutter drains will need to be replaced after water line is installed. Will there be consideration given in adding a pay item (similar to concrete driveway and asphalt pavement replacement) to account for this item? Additionally, please include a specification detail for gutter drain replacement.

See response to Question No. 12.

14. Is it the owner's intention to completely replace or just to patch the asphalt pavement on 1st St. and 3rd St. East after installation of water line? If yes to replacement, please provide more details/specifications as to the pavement removal and the pavement and sub base design.

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 Asphaltic Concrete Overlay. Adjustments have also been made to the measurement and payment items for asphalt driveway and concrete driveway replacement.

15. The following items are located within the right of way and appear to be in direct conflict with the proposed water line installation:
- Fence @ 5416 4th St. E.
 - Extensive Landscaping @ 5415 4th St. Ct. E.
 - Brick Paver Driveway @ 5415 4th St. Ct. E.
 - Fence @ 5328 4th St. E.
 - Fence @ 5304 6th St. E.
 - Masonry Mailbox @ 5431 4th St. Ct. E.

Do these items need to be replaced after installation of water line? If yes, please provide some guidelines for replacement since it will be relatively impossible to replace them in exactly the same manner that they appear now.

Per 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 and/or Engineer".

16. The following addresses appear to contain trees that will need to be removed to install water lines:
- 5411 5th St. Ct. E. – 36" tree (at very least, roots will be severely cut causing severe damage to tree)
 - 5331 5th St. Ct. E. – 20" tree (very doubtful that water line will fit between tree and existing drainage inlet)
 - 5404 4th St. E. – 6" tree

- d. 5424 4th St. Ct. E. – Shrubs/Trees along driveway
- e. 5420 4th St. Ct. E. – 8" tree
- f. 5407 4th St. Ct. E. – Landscaping/Trees
- g. 5403 4th St. Ct. E. – 2 trees
- h. 403 53rd Ave. Dr. E. – landscaping/shrubs
- i. 5328 4th St. E. – tree
- j. 5423 5th St. Ct. E. – triple 6" tree and planter
- k. 5411 5th St. Ct. E. – tree
- l. 5331 5th St. Ct. E. – 2 trees
- m. 5303 5th St. Ct. E. – 8" tree
- n. 5408 6th St. E. – tree
- o. 5404 6th St. E. – 2 trees
- p. 5328 6th St. E. – 2 trees
- q. 5320 6th St. E. – 2 trees
- r. 5312 6th St. E. – 1 tree

Do these trees need to be removed? Do these trees need to be replaced after water line is installed? If replaced, please indicate type, size and variety (along with specifications for such) to be replaced and please include pay item(s) in bid to cover these items so that it is clear to all bidders what is to be done.

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

Questions received from Westra Construction – February 24, 2010

17. Please clarify the Asphalt Replacement pay item. Are we to assume the quantity listed is for the trench patch only? If the County desires any asphalt overlay, another pay item should be added to the bid schedule with a corresponding quantity. This is a very ambiguous issue and we only want to provide what the County desires.

See response to Question No. 14.

18. Please confirm the water service material for the long side services. The copper encased in DIP is an extremely expensive way to go and is different than what Manatee County has used in the past. These services will have to be open cut across the roadway. We assume the asphalt quantity is for the patch work but the question again arises about the overlay. If desired, and asphalt overlay item should be added to the bid schedule so the contractor can provide the County the restoration desired with no ambiguity.

See response to Question No. 4.

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

The Contractor will responsible for obtaining the FDOT Utility Permit. There is no fee associated with this permit. All other necessary permits have been obtained by Manatee County.

Questions received from HD Supply Waterworks – January 8, 2010

20. Questions re oneco terrace
a. does pvc pipe need epdm gaskets?

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.

- b. my understanding of new code is that all waterlines under pavement will be ductile iron elsewhere pvc. is this correct?

See response to Question No. 4.

- c. do only water services coming off ductile iron pipe need to be copper?

See response to Question No. 4.

- d. places call for dip casing for copper tube services, if so do these casing lines need epdm gaskets and poly bag? These are for long services only.

Per the response to Question No. 4, only PVC casing is required for copper water services. Per the response to Question No. 20a, is not required to use EPDM gaskets within the pipe bell of PVC pipes.

- e. d/i pipe can't be directionally drilled. Must be open cut. This will increase patching requirements.

See response to Question No. 4

Questions received from American Cast Iron Pipe Company – March 5, 2010

21. I would like to submit the following questions for clarification
a. I did not see a restrained joint table for this project in the dwgs. Am I to assume all Ductile Iron pipe joints are to be restrained or will restrain be accomplished with thrust blocks.

Thrust restraint shall be either cast-in-place concrete thrust blocks or restrained joint pipe lengths. The drawings have been revised to include the Manatee County typical details (UG-7, UG-8, YG-9 and UG-10) for thrust blocks and restrained pipe lengths for ductile iron and PVC pipe.

- b. If the Ductile Iron pipe is to be restrained but not all joints, please advise the lengths that are required.

See response to Question 21a.

Donna M. Stevens
Manatee County Government
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c. Will American Fastgrip gasket be allowed for restraint of the pipe?

Acceptable restraining devices for mechanical 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.

d. Lastly, please advise if SBR gaskets are require per spec section 2615, 2.01, C. It is our understanding that Manatee County has standardized on EPDM gaskets for all sizes.

See response to Question 20a.

Sincerely,

CAROLLO ENGINEERS, P.C.



G. Dean Milton, P.E.

GDM:maw

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: 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. 5: 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. 6: SHELL 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 shell 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 shell 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. 7: BRICK PAVER 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 shell 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 shell 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. 8: 3' VALLEY CROSSING REMOVAL AND REPLACEMENT

Payment for all work included in these Bid Items will be made at the applicable Contract unit price per lineal foot of 3' Valley Crossing removal and replacement as listed on the Bid Form. Measurement of valley crossing replacement will be per the actual lineal foot replaced. Payment shall represent full compensation for all labor materials and equipment for the cutting and removing the existing curb & gutter and valley gutter, removal, compacting subgrade, form materials, forming, placing concrete, finishing and all incidental necessary to complete the valley crossing removal and replacement as shown on the Contract Drawings and included in the Specifications, all ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 9: TYPE F BARRIER CURB AND GUTTER REMOVAL AND REPLACEMENT

Payment for all work included in these Bid Items will be made at the applicable Contract unit price per lineal foot of Type F Barrier Curb and Gutter removal and replacement as listed on the Bid Form. Measurement of valley crossing replacement will be per the actual lineal foot replaced. Payment shall represent full compensation for all labor materials and equipment for the cutting and removing the existing curb & gutter and valley gutter, removal, compacting subgrade, form materials, forming, placing concrete, finishing and all incidental necessary to complete the valley crossing removal and replacement as shown on the Contract Drawings and included in the Specifications, all ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 10: TYPE A MIAMI CURB AND GUTTER REMOVAL AND REPLACEMENT

Payment for all work included in these Bid Items will be made at the applicable Contract unit price per lineal foot Type A Miami Curb and Gutter removal and replacement as listed on the Bid Form. Measurement of valley crossing replacement will be per the actual lineal foot replaced. Payment shall represent full compensation for all labor materials and equipment for the cutting and removing the existing curb & gutter and valley gutter, removal, compacting subgrade, form materials, forming, placing concrete, finishing and all incidental necessary to complete the valley crossing removal and replacement as shown on the Contract Drawings and included in the Specifications, all ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 11: CURB INLET REMOVAL AND REPLACEMENT

Payment for all work included in these Bid Items will be made at the applicable Contract unit price per each Curb Inlet removed and replacement as listed on the Bid Form. Payment shall represent full compensation for all labor materials and equipment for the cutting and removing

the existing curb inlet, excavation, compacting subgrade, form materials, forming, placing concrete, finishing and all incidental necessary to complete the curb inlet removal and replacement as shown on the Contract Drawings and included in the Specifications, all ready for approval and acceptance by the Engineer/Owner.

BID ITEM NO. 12: 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. 13: 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. 14: 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. 15: 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. 16: 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. 17: 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. 18: 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. 19: 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. 20: 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. 21: 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. 22: 20-INCH BY 6-INCH TAPPING SLEEVE AND VALVE

Payment for all work included in this Bid Item shall be made at the applicable Contract unit price bid per each 20-inch by 6-inch tapping sleeve and 6-inch valve, for furnishing and installing the listed diameter tapping sleeve and valve while the 20-inch waterline remains in service, 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 (select and common fill), compaction, testing and disinfection and equipment required to complete these Bid Items.

BID ITEM NO. 23: 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. 24: 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. 25: 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. 26: 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)

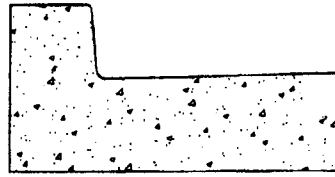
PART 3 EXECUTION (NOT USED)

END OF SECTION

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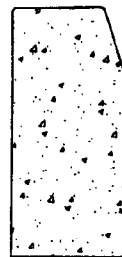
TYPE "A"
MIAMI CURB & GUTTER
STD. 201.1



TYPE "F"
CURB & GUTTER
STD. 201.2



TYPE "AB"
MODIFIED CURB & GUTTER
STD. 201.3



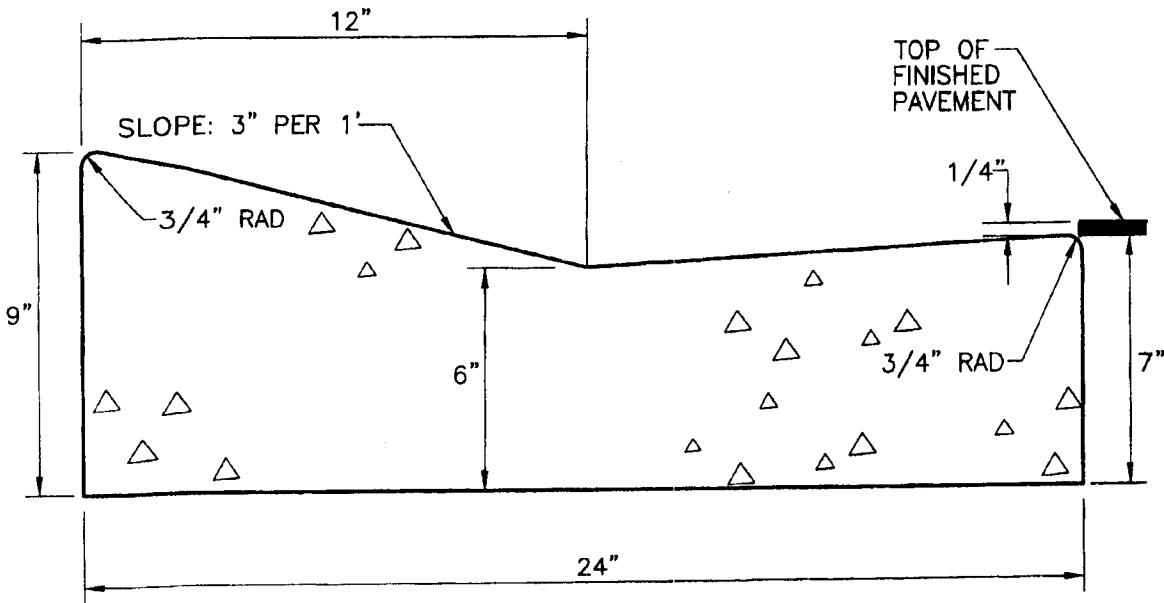
TYPE "D"
CURB
STD. 201.4



INVERTED CROWN
CURB & GUTTER
STD. 201.5

1. ALL CURB & GUTTER SHALL PROVIDE A 0.125" TO 0.25" CONTRACTION JOINT AT 10' CENTERS.
2. ALL CURB & GUTTER SHALL BE CONSTRUCTED IN COMPLIANCE WITH FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.
3. TOP OF FINISHED PAVEMENT SHALL BE 0.25" ABOVE LIP OF GUTTER, LOW SIDE.

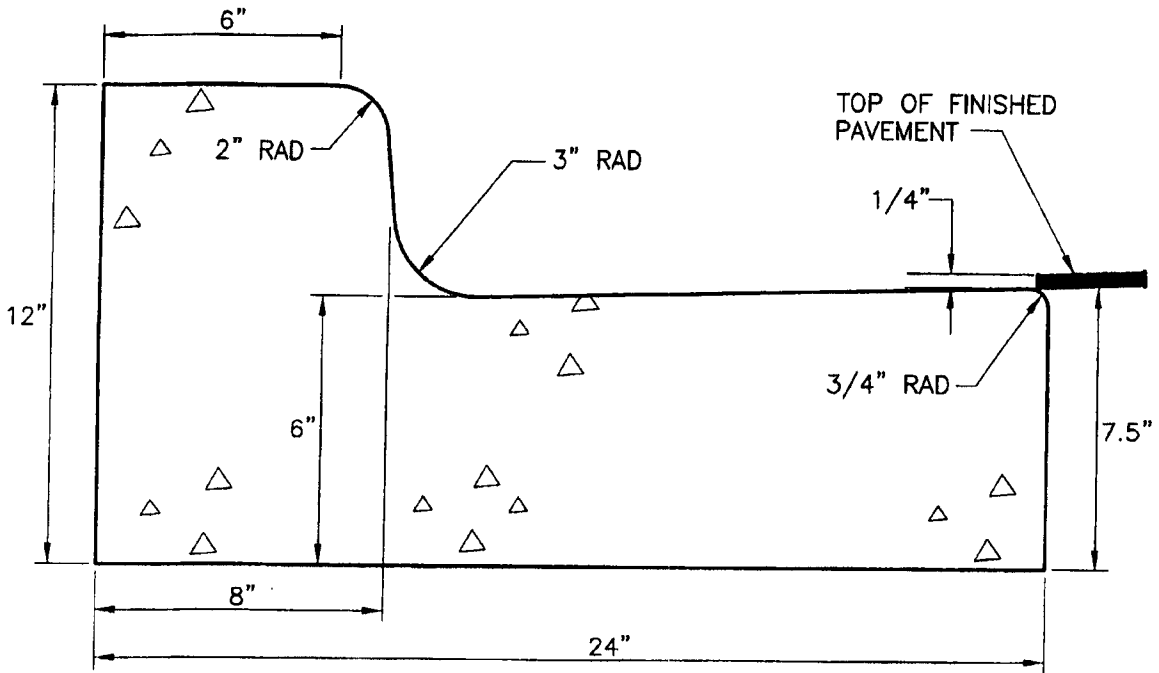
MANATEE COUNTY TRANSPORTATION DEPARTMENT		CURB & GUTTER CONTROL SHEET	201.0
REV. BY	DATE		
	6/12/07		
	DATE OF B.O.C.C. APPROVAL		



TYPE "A"
MIAMI CURB & GUTTER

- A) CLASS 1 CONCRETE 3,000 P.S.I. AT 28 DAYS.
- B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

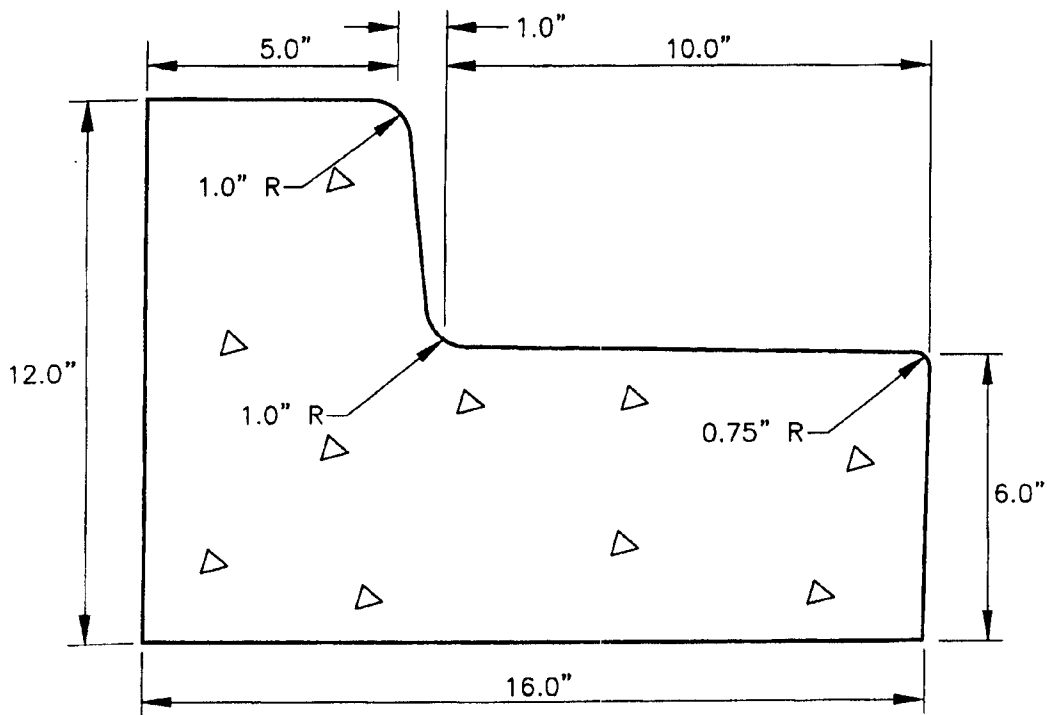
MANATEE COUNTY TRANSPORTATION DEPARTMENT		TYPE A MIAMI CURB & GUTTER	201.1
REV. BY	DATE		
		6/12/07	
		DATE OF B.O.C.C. APPROVAL	



TYPE "F" BARRIER CURB & GUTTER

- A) CLASS 1 CONCRETE 3,000 P.S.I. AT 28 DAYS.
- B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

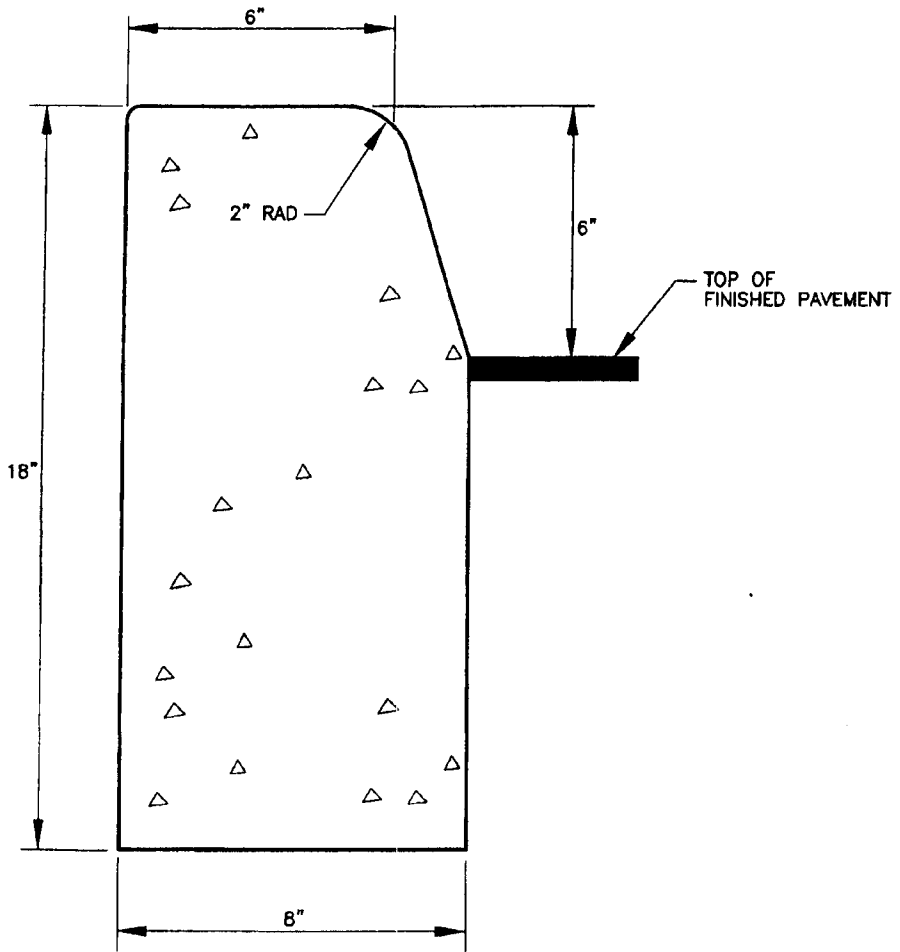
MANATEE COUNTY		TYPE F	201.2
TRANSPORTATION DEPARTMENT			
REV. BY	DATE		
		6/12/07	
		DATE OF B.O.C.C. APPROVAL	



TYPE "AB"
MODIFIED CURB & GUTTER

- A) CLASS 1 CONCRETE 3,000 PSI AT 28 DAYS.
- B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS STANDARDS INDEX NO. 300, LATEST REVISION.

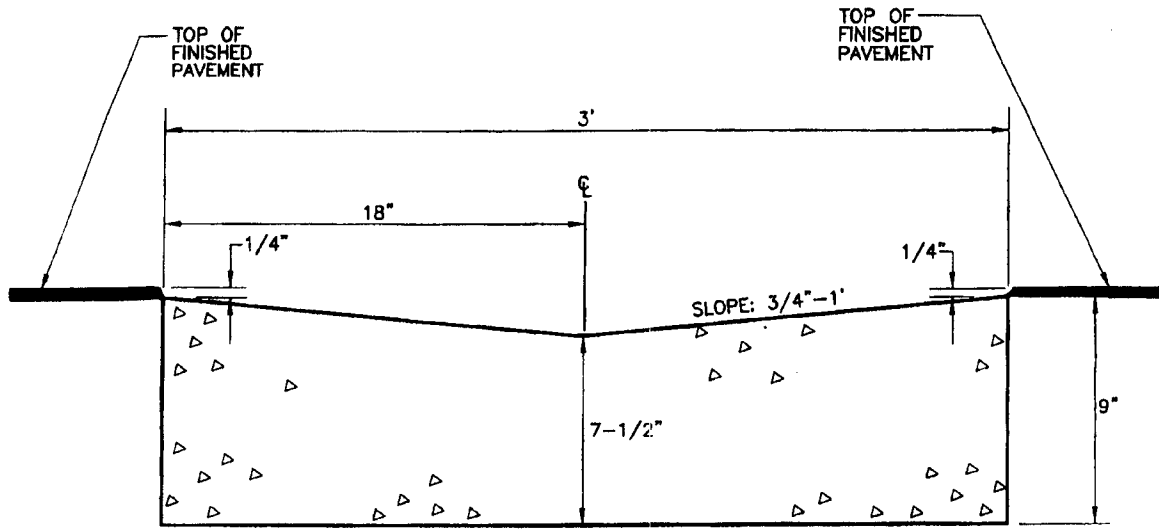
MANATEE COUNTY TRANSPORTATION DEPARTMENT		TYPE "AB" MODIFIED CURB & GUTTER	201.3
REV. BY	DATE		
	6/12/07		
	DATE OF B.O.C.C. APPROVAL		



**TYPE "D"
HIGH BACK CURB**

- A) CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.
- B) CURB SHALL MEET THE SPECIFICATIONS ESTABLISHED BY F.D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

MANATEE COUNTY		TYPE D CURB	201.4
TRANSPORTATION DEPARTMENT			
REV. BY	DATE		
6/12/07			
DATE OF B.O.C.C. APPROVAL			

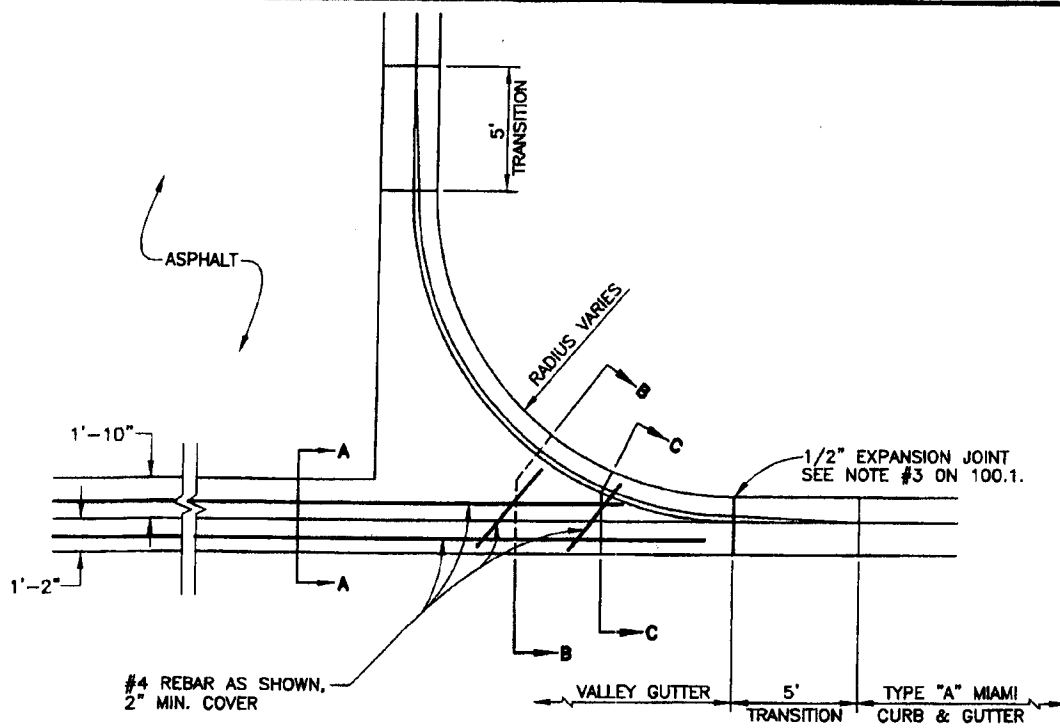


INVERTED CROWN GUTTER

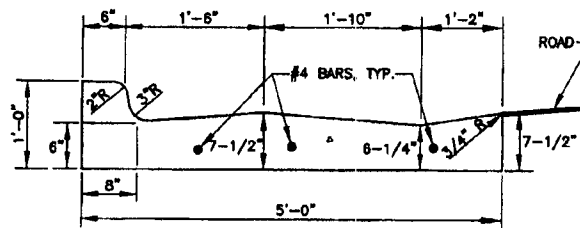
- A) CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.
- B) CURB SHALL MEET SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS, PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.
- C) SEE SHEET 401.9 FOR INVERTED CROWN APPLICATION.

NOTE: THIS TYPICAL SECTION SHALL BE CONSIDERED FOR PRIVATE ROAD USAGE ONLY! IT MUST BE APPROVED THRU THE PLANNING & TRANSPORTATION DEPARTMENTS, JOINTLY.

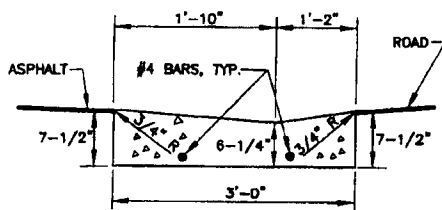
MANATEE COUNTY TRANSPORTATION DEPARTMENT		INVERTED CROWN	201.5
REV. BY	DATE		



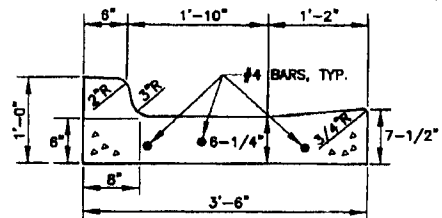
PLAN VIEW



SECTION "B-B"



SECTION "A-A"



SECTION "C-C"

3' VALLEY CROSSING

* CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.

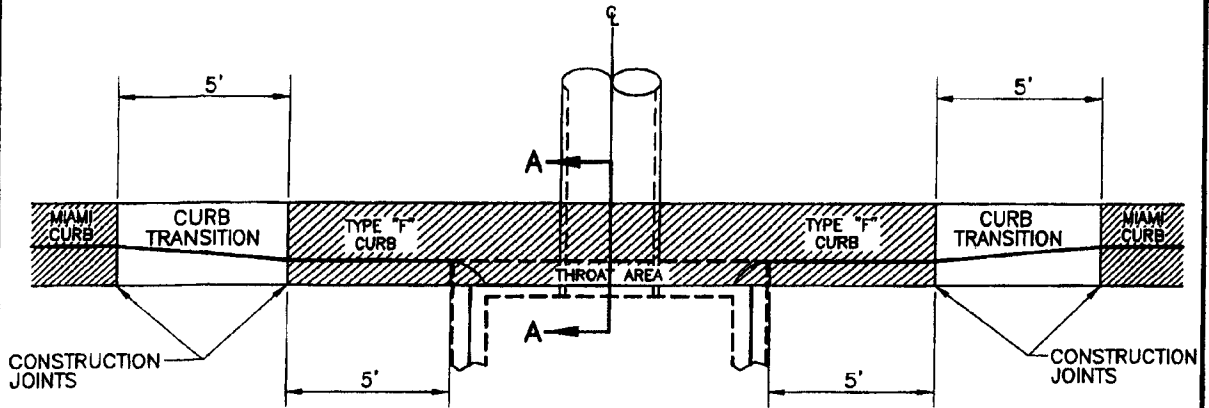
MANATEE COUNTY
TRANSPORTATION DEPARTMENT

REV. BY	DATE

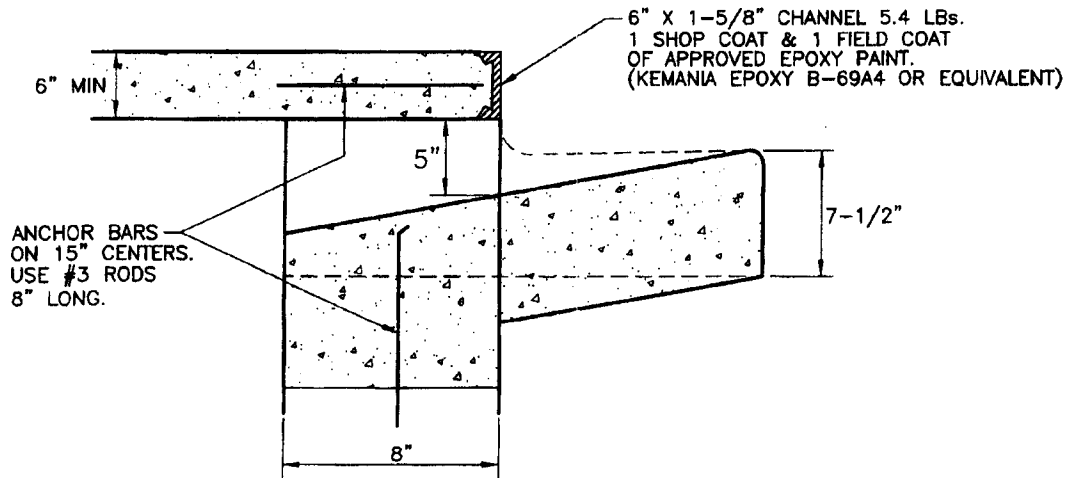
6/12/07
DATE OF B.O.C.C. APPROVAL

VALLEY CROSSING

201.6



PLAN VIEW



SECTION A-A

- A) USE STANDARD CATCH BASIN & JUNCTION BOX DIMENSION INDEX (SHEET # 202.0) DETAILS AND COVER (SHEET # 202.6).
- B) SEE CURB & GUTTER INDEX (SHEET # 201.0) FOR APPLICABLE CURB TYPE.
- C) SEE SHEET # 202.0 "GENERAL NOTES" FOR APPLICABLE INFORMATION.
- D) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS (2006) ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE DIRECTOR OR HIS DESIGNEE.
- E) ANGLE BRACKETS SHOWN ON 202.1 NOT REQUIRED.

MANATEE COUNTY TRANSPORTATION DEPARTMENT		CURB INLET	202.2
REV. BY	DATE		
	6/12/07		
	DATE OF B.O.C.C. APPROVAL		

BID FORM
 (Submit in Triplicate)
 Section 00300

BID "A"

IFB # 10-0642-DS
 Oneco Terrace Waterline Replacement Project--Phase II
 ADDENDUM # 3

BID "A" Based on Completion time of 170 Calendar Days (Project No. 6025570)

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 # 3)	18,050	SF	\$	\$
3b	Asphaltic Concrete Overlay (Addendum # 3)	72,500	SF	\$	\$
4	Concrete Driveway Replacement (Addendum #3)	3,860	SF	\$	\$
5	Asphalt Driveway Replacement (Addendum # 3)	60	SF	\$	\$
6	Shell Driveway Replacement (Addendum # 3)	160	SF	\$	\$
7	Brick Paver Driveway Replacement (Addendum # 3)	60	SF	\$	\$
8	3' Valley Crossing Removal and Replacement (Addendum # 3)	150	LF	\$	\$
9	Type F Barrier Curb and Gutter Removal and Replacement (Addendum # 3)	40	LF	\$	\$
10	Type A Miami Curb and Gutter Removal and Replacement (Addendum # 3)	30	LF	\$	\$
11	Curb Inlet Removal and Replacement (Addendum # 3)	2	EA	\$	\$
12	Sodding (Addendum #3)	15,300	SF	\$	\$
13	Single PE (1") Service Connection (Short Side) (Addendum #3)	10	EA	\$	\$
14	Double PE (2") Service Connection (Short Side) (ADDENDUM # 3)	24	EA	\$	\$

BIDDER (FIRM NAME): _____

AUTHORIZED SIGNATURE: _____

BID FORM
 (Submit in Triplicate)
 Section 00300

BID "A"

IFB # 10-0642-DS
 Oneco Terrace Waterline Replacement Project--Phase II
 ADDENDUM # 3

BID "A" Based on Completion time of 170 Calendar Days (Project No. 6025570)

ITEM #	DESCRIPTION	QTY.	U/M	BID PRICE PER UNIT	TOTAL BID PRICE
15	Single PE (1") Service Connection (Long Side) (Addendum #3)	2	EA	\$	\$
16	Double PE (2") Service Connection (Long Side) (ADDENDUM # 3)	18	EA	\$	\$
17	Single Copper (1") Service Connection (Short Side) (Addendum #3)	1	EA	\$	\$
18	Double Copper (2") Service Connection (Short Side) (Addendum #3)	10	EA	\$	\$
19	Single Copper (1") Service Connection (Long Side) (Addendum #3)	1	EA	\$	\$
20	Double Copper (2") Service Connection (Long Side) (Addendum #3)	16	EA	\$	\$
21	6-inch DIMJ Gate Valve & Box (Addendum # 3)	27	EA	\$	\$
22	20-inch by 6-inch Tapping Sleeve and Valve (Addendum # 3)	3	EA	\$	\$
23	6-inch CL 350 DIP MJ/RJ (open-cut) (Addendum # 3)	3,100	LF	\$	\$
24	6-inch DR 18 C-900 PVC (open-cut) (Addendum # 3)	5,900	LF	\$	\$
25	Hydrant Assembly (Addendum # 3)	16	EA	\$	\$
DISCRETIONARY WORK					\$90,000.00
TOTAL BID PRICE "A"- Based On Completion Time of <u>170</u> Calendar Days					\$

BIDDER (FIRM NAME): _____

AUTHORIZED SIGNATURE: _____

BID FORM
(Submit in Triplicate)
Section 00300

BID "B"

IFB # 10-0642-DS

Oneco Terrace, Sunniland and Kirk Haven Water-Phase 2

ADDENDUM # 3

BID "B" Based on Completion time of 140 Calendar Days (Project No. 6025570)

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 # 3)	18,050	SF	\$	\$
3b	Asphaltic Concrete Overlay (Addendum # 3)	72,500	SF	\$	\$
4	Concrete Driveway Replacement (Addendum #3)	3,860	SF	\$	\$
5	Asphalt Driveway Replacement (Addendum # 3)	60	SF	\$	\$
6	Shell Driveway Replacement (Addendum # 3)	160	SF	\$	\$
7	Brick Paver Driveway Replacement (Addendum # 3)	60	SF	\$	\$
8	3' Valley Crossing Removal and Replacement (Addendum # 3)	150	LF	\$	\$
9	Type F Barrier Curb and Gutter Removal and Replacement (Addendum # 3)	40	LF	\$	\$
10	Type A Miami Curb and Gutter Removal and Replacement (Addendum # 3)	30	LF	\$	\$
11	Curb Inlet Removal and Replacement (Addendum # 3)	2	EA	\$	\$
12	Sodding (Addendum #3)	15,300	SF	\$	\$
13	Single PE (1") Service Connection (Short Side) (Addendum #3)	10	EA	\$	\$
14	Double PE (2") Service Connection (Short Side) (ADDENDUM # 3)	24	EA	\$	\$

BIDDER (FIRM NAME): _____

AUTHORIZED SIGNATURE: _____

BID FORM
 (Submit in Triplicate)
 Section 00300

BID "B"

IFB # 10-0642-DS
Oneco Terrace, Sunniland and Kirk Haven Water-Phase 2
ADDENDUM # 3

BID "B" Based on Completion time of 140 Calendar Days (Project No. 6025570)

ITEM #	DESCRIPTION	QTY.	U/M	BID PRICE PER UNIT	TOTAL BID PRICE
15	Single PE (1") Service Connection (Long Side) (Addendum #3)	2	EA	\$	\$
16	Double PE (2") Service Connection (Long Side) (ADDENDUM # 3)	18	EA	\$	\$
17	Single Copper (1") Service Connection (Short Side) (Addendum #3)	1	EA	\$	\$
18	Double Copper (2") Service Connection (Short Side) (Addendum #3)	10	EA	\$	\$
19	Single Copper (1") Service Connection ((Long Side) (Addendum #3)	1	EA	\$	\$
20	Double Copper (2") Service Connection ((Long Side) (Addendum #3)	16	EA	\$	\$
21	6-inch DIMJ Gate Valve & Box (Addendum # 3)	27	EA	\$	\$
22	20-inch by 6-inch Tapping Sleeve and Valve (Addendum # 3)	3	EA	\$	\$
23	6-inch CL 350 DIP MJ/RJ (open-cut) (Addendum # 3)	3,100	LF	\$	\$
24	6-inch DR 18 C-900 PVC (open-cut) (Addendum # 3)	5,900	LF	\$	\$
25	Hydrant Assembly (Addendum # 3)	16	EA	\$	\$
DISCRETIONARY WORK					\$90,000.00
TOTAL BID PRICE "B"- Based On Completion Time of 140 Calendar Days					\$

BIDDER (FIRM NAME): _____

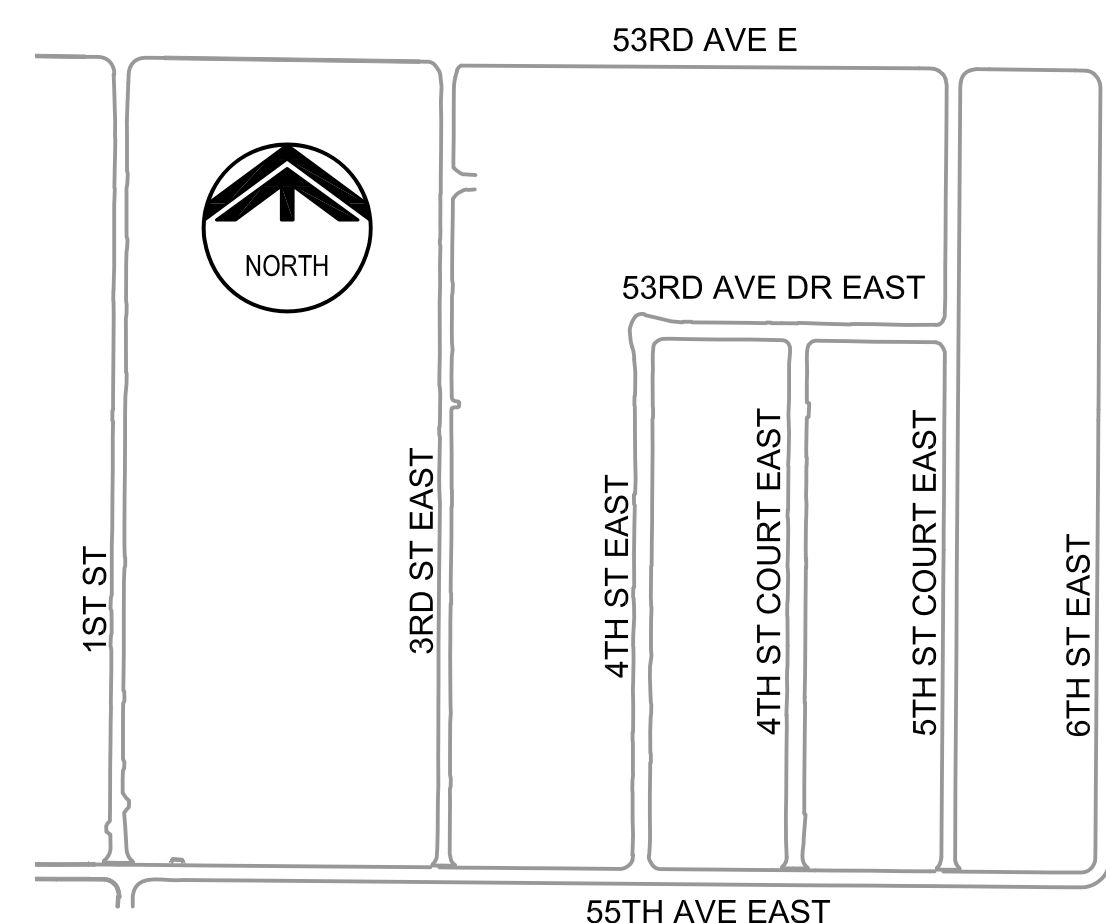
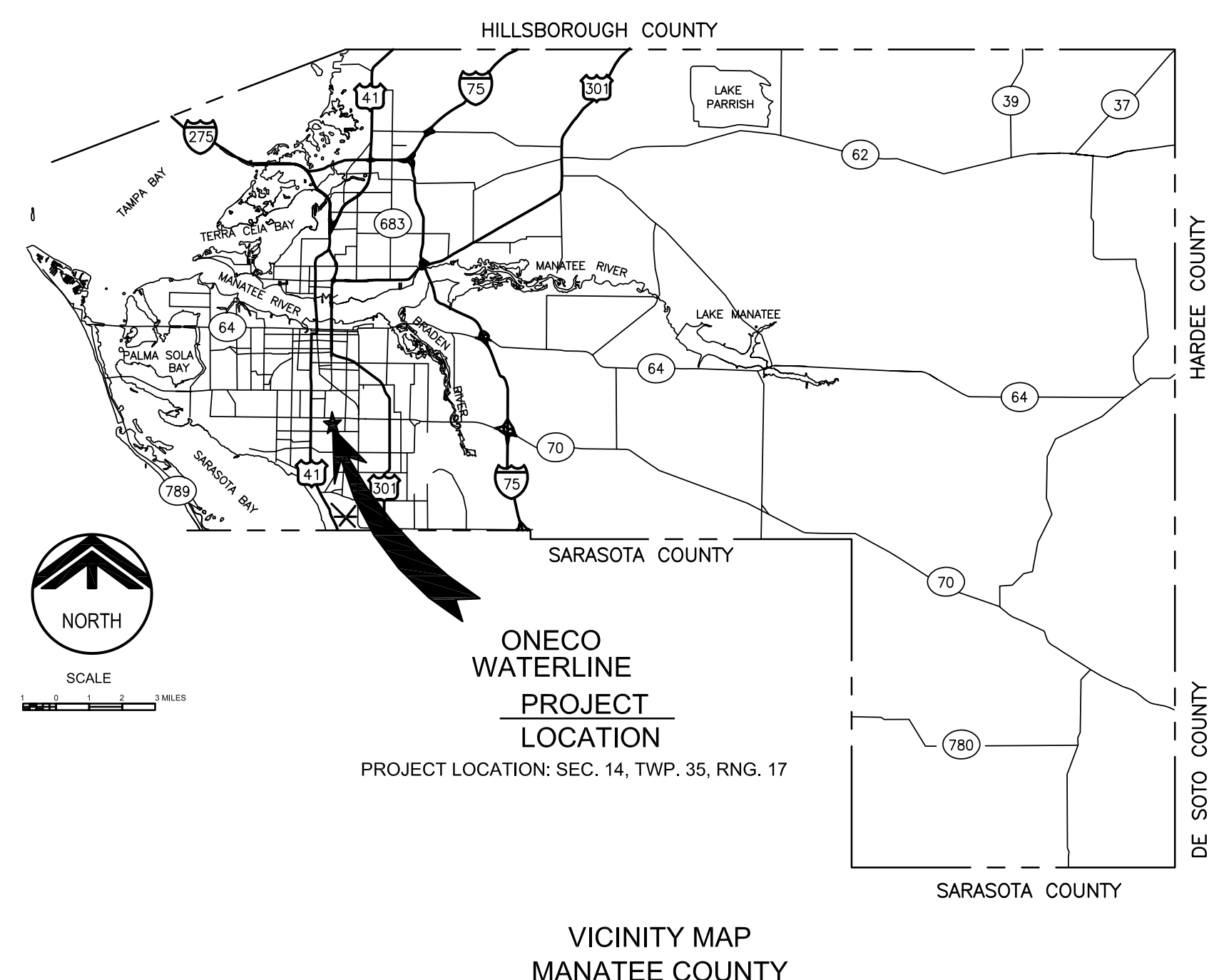
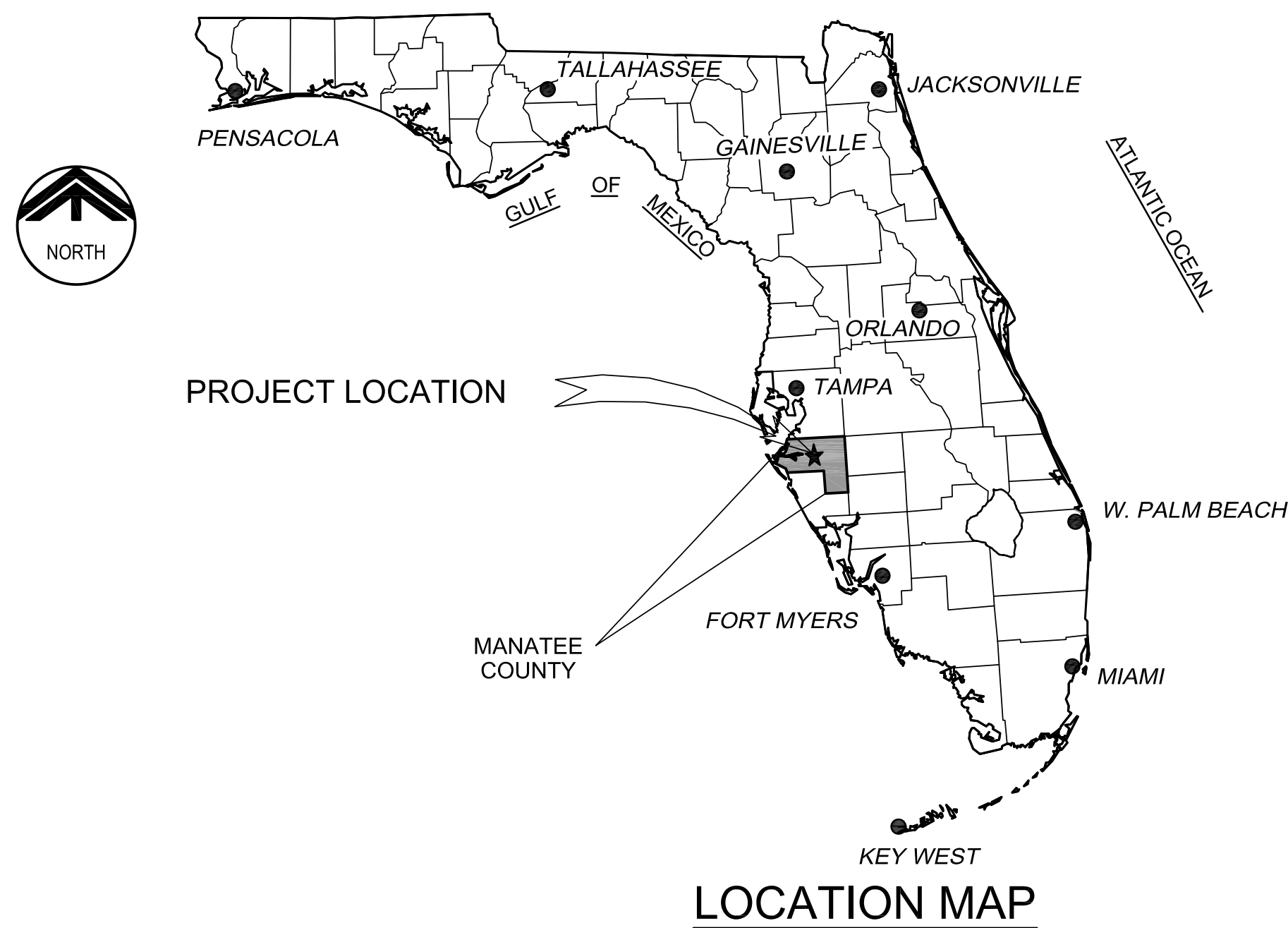
AUTHORIZED SIGNATURE: _____

MANATEE COUNTY GOVERNMENT PUBLIC WORKS DEPARTMENT (MANATEE COUNTY, FLORIDA)

ONECO TERRACE WATERLINE REPLACEMENT (PHASE II)

MANATEE COUNTY PROJECT NO. 6025570

APRIL 2010



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

SHT NO	DWG NO	TITLE
1	G-01	COVER SHEET
2	G-02	GENERAL NOTES
3	G-03	KEY PLAN
4	P-04	WATERLINE PLAN (55TH AVE E, 3RD ST E, 4TH STE & 4TH ST CT E)
5	P-05	WATERLINE PLAN (1ST ST E)
6	P-06	WATERLINE PLAN (3RD ST E)
7	P-07	WATERLINE PLAN (1ST ST & 3RD ST E)
8	P-08	WATERLINE PLAN (4TH ST E & 4TH ST CT E)
9	P-09	WATERLINE PLAN (53RD AVE DR E & 55TH AVE E)
10	P-10	WATERLINE PLAN (5TH ST CT E & 53RD AVE DR E)
11	P-11	WATERLINE PLAN (6TH ST E)
12	T-01	WATERLINE DETAILS
13	T-02	EROSION CONTROL DETAILS
14	T-03	TYPICAL DETAILS

REF: MANATEE COUNTY STANDARDS AND DETAILS, LATEST ADDITION.

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.

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

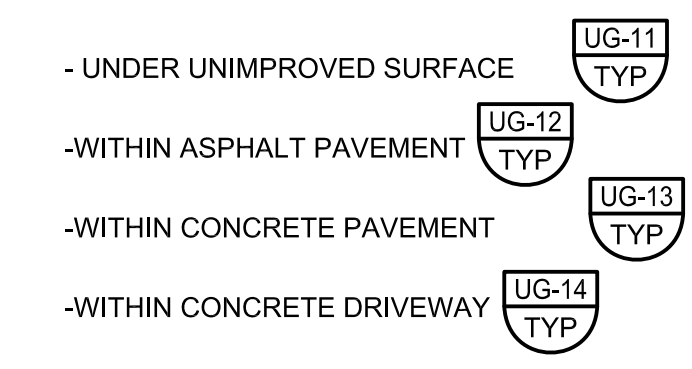
ENGINEER OF RECORD
ROBERT S. CUSHING
STATE OF FLORIDA No. 57828

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

Last Opened by: 4286.10 10/6/09 D:\perry

GENERAL NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL CONDITIONS AND REQUIREMENTS OF ALL PERMITS AND ALL GOVERNING FEDERAL, STATE AND LOCAL AGENCIES.
- 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S CONSTRUCTION MANAGER REGARDING ANY CONFLICTS OR DISCREPANCIES ARISING DURING CONSTRUCTION.
- 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.
- 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.
- ALL ADDITIONAL EXCAVATION AND DEMOLITION MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- 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.
- ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER UNLESS OTHERWISE NOTED.
- 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.
- THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN ALL APPLICABLE PERMITS.
- 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.
- 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.
- THE CONTRACTOR'S WORK SHALL BE SCHEDULED BETWEEN 7:00 AM AND 7:00 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.
- 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".
- 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL PROVIDE ACCESS FOR TRAFFIC AT ALL TIMES DURING CONSTRUCTION.
- NOTIFY THE ENGINEER 48 HOURS PRIOR TO COMMENCEMENT OF OPEN-CUTTING ANY COUNTY ROAD.
- 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.
- THE CONTRACTOR SHALL COORDINATE AND SCHEDULE TIE-INS TO MINIMIZE DOWNTIME.
- THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL CLEARED VEGETATION WITHIN 5 DAYS OF CLEARING AND GRUBBING WORK.
- ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO WITHIN THE MANATEE COUNTY/FDOT RIGHT-OF-WAY AND/OR EASEMENTS SHOWN ON THE DRAWINGS.
- 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.
- 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.
- 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.
- 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.
- RESTORATION SHALL INCLUDE AT A MINIMUM, SOLID SODDING FOR ALL UNPAVED AREAS DISTURBED BY THE CONTRACTOR'S OPERATION WITHIN THE ROAD RIGHT-OF-WAYS.
- 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.
- ALL FILL AND ROAD MATERIALS EXCAVATED SHALL BE DISPOSED OF IN ACCORDANCE WITH THE SPECIFICATIONS.
- NOTIFY PROPERTY OWNER AND ENGINEER 72 HOURS IN ADVANCE OF ALL PLANNED UTILITY INTERRUPTION OR DRIVEWAY CUTS.
- 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.
- ALL BURIED DIP SHALL BE ENCASED IN POLYETHYLENE SLEEVES PER AWWA-C105.
- ALL TRENCHING FOR NEW WATERLINES SHALL BE PER MANATEE COUNTY DETAILS AS NOTED BELOW



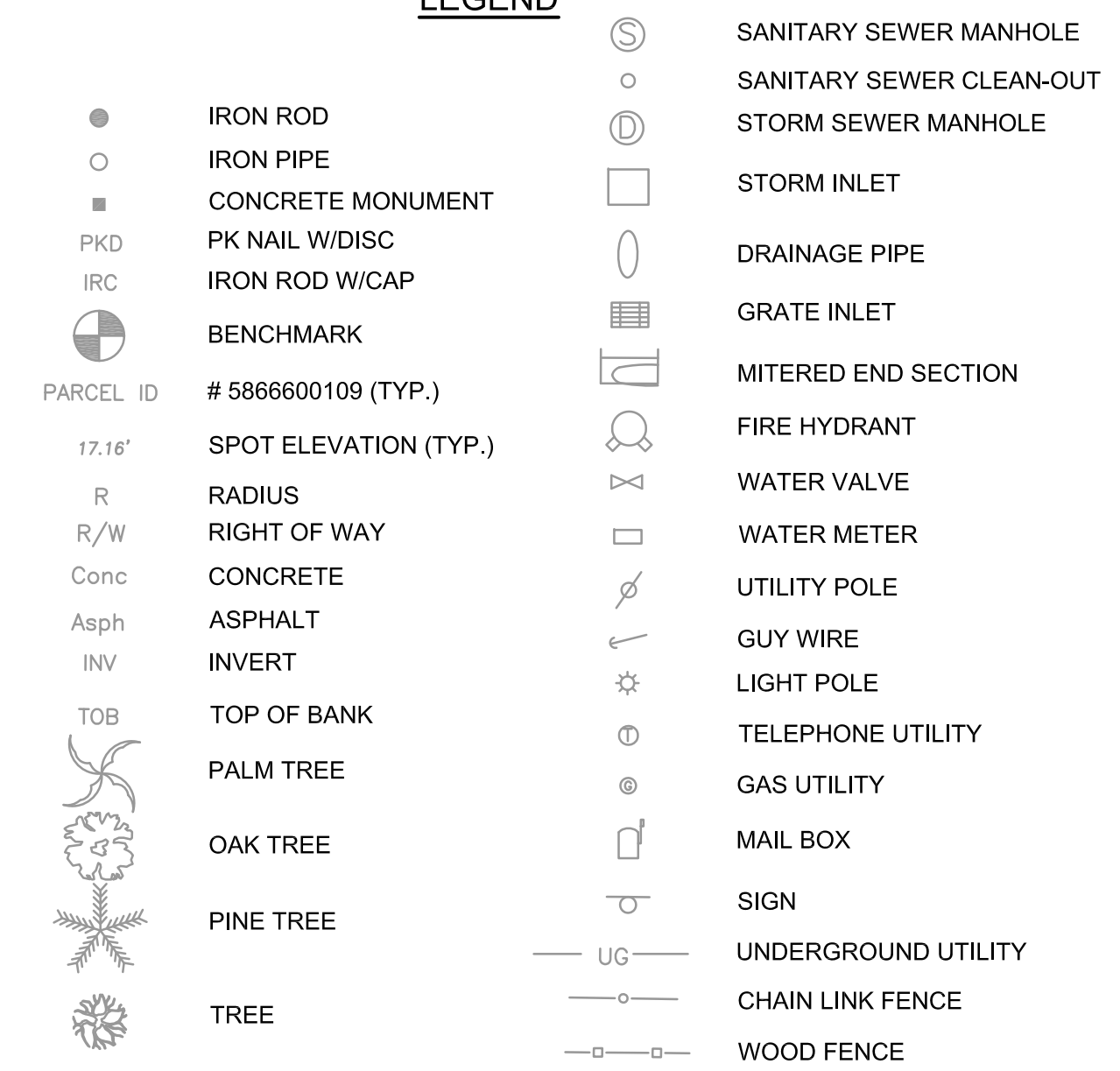
- WATER PIPELINES INSTALLED UNDER EXISTING PAVEMENT, CONCRETE ROADS OR PARKING LOTS SHALL BE DUCTILE IRON WITH TYPE "K" COPPER OR 316 SS SCHEDULE 40 SERVICES.
- DUCTILE IRON PIPE SHALL CONFORM TO AWWA C110 AND AWWA C151 AND SHALL BE PRESSURE CLASS 350.
- ALL DUCTILE IRON PIPE SHALL HAVE A STANDARD 1 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.
- 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.
- 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.
- 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. RESTRAINED JOINT SHALL BE PUSH-ON RESTRAINED OR MECHANICALLY RESTRAINED JOINT.
- ALL PROPOSED FACILITIES SHALL HAVE A MINIMUM DEPTH OF COVER OF 36-INCHES.
- CONTRACTOR SHALL RESTORE EACH STREET WITHIN THREE (3) WEEKS OF STARTING WORK ON THAT STREET.
- RESTRAIN PIPE LENGTHS PER DETAILS UG-8 TYP, UG-9 TYP AND UG-10 TYP.
- 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	18,050
ASPHALT CONCRETE OVERLAY	SF	72,500
ASPHALT DRIVEWAY REPLACEMENT	SF	60
CONCRETE DRIVEWAY REPLACEMENT	SF	3,860
SHELL DRIVEWAY REPLACEMENT	SF	160
BRICK PAVER REPLACEMENT	SF	60
3' VALLEY CROSSING REMOVAL AND REPLACEMENT	LF	150
TYPE F BARRIER CURB AND GUTTER REMOVAL AND REPLACEMENT	LF	40
TYPE A MIAMI CURB AND GUTTER REMOVAL AND REPLACEMENT	LF	30
CURB INLET REMOVAL AND REPLACEMENT	EA	2
SODDING	SF	15,300
SINGLE PE 1" SERVICE CONNECTION (SHORT SIDE)	EA	10
DOUBLE PE 2" SERVICE CONNECTION (SHORT SIDE)	EA	24
SINGLE PE 1" SERVICE CONNECTION (LONG SIDE)	EA	2
DOUBLE PE 2" SERVICE CONNECTION (LONG SIDE)	EA	18
SINGLE COPPER 1" SERVICE CONNECTION (SHORT SIDE)	EA	1
DOUBLE COPPER 2" SERVICE CONNECTION (SHORT SIDE)	EA	10
SINGLE COPPER 1" SERVICE CONNECTION (LONG SIDE)	EA	1
DOUBLE COPPER 2" SERVICE CONNECTION (LONG SIDE)	EA	16
6 INCH DIMJ GATE VALVE & BOX	EA	28
20 INCH BY 6 INCH TAPPING SLEEVE AND VALVE	EA	3
6 INCH CL 350 DIP MJ/RJ (OPEN CUT)	LF	3,100
6 INCH DR 18 C-900 PVC (OPEN CUT)	LF	5,900
HYDRANT ASSEMBLY	EA	14

BASIC CONSTRUCTION SEQUENCE:

- INSTALL NEW WATER LINE, SERVICES AND APPURTENANCES.
- CONNECT NEW WATER LINE TO EXISTING.
- PRESSURE TEST AND BACTERIAL TEST NEW WATER LINES.

LEGEND



Last Opened By: 4-28-10 10:46am DPerry

REV	DATE	BY	DESCRIPTION

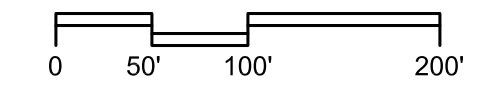
DESIGNED JMS
DRAWN DVP
CHECKED JMF
DATE APRIL 2010
PROJECT ENGINEER

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

MANATEE COUNTY	
ONECO 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. 7880D.10 DRAWING NO. G-02 SHEET NO. 2 OF 14
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GENERAL 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 NORTH SIDE OF 53RD AVENUE WEST AND 39' WEST OF THE CENTERLINE OF 3RD STREET WEST (N.G.V.D. 1929 ELEVATION 18.946), AN "X" CUT ON THE TOP OF A CURB ON THE NORTH SIDE OF 53RD AVENUE EAST AT THE EXTENDED CENTERLINE INTERSECTION OF 6TH STREET EAST AND SAID NORTHERLY CURB LINE (N.G.V.D. 1929 ELEVATION 20.770').
6. THIS SURVEY DRAWING WAS PREPARED FOR THE EXCLUSIVE USE OF THE PARTY OR PARTIES CERTIFIED TO BELOW FOR THE EXPRESS PURPOSE STATED HEREON AND/OR CONTAINED IN THE CONTRACT BETWEEN HYATT SURVEY SERVICES, INC. AND THE CLIENT FOR THIS PROJECT. COPYING, DISTRIBUTING AND/OR USING THIS DRAWING, IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ORIGINALLY INTENDED WITHOUT WRITTEN CONSENT FROM HYATT SURVEY SERVICES, INC. IS STRICTLY PROHIBITED AND RENDERS THE SURVEYOR'S CERTIFICATION, SIGNATURE AND SEAL NULL AND VOID. ANY QUESTIONS CONCERNING THE CONTENT OR PURPOSE OF THIS DRAWING SHOULD BE DIRECTED TO HYATT SURVEY SERVICES, INC.

LEGEND

- 1 BASELINE G = 1ST STREET
- 2 BASELINE H = 3RD STREET EAST
- 3 BASELINE I = 4TH STREET EAST
- 4 BASELINE J = 4TH STREET COURT EAST
- 5 BASELINE K = 5TH STREET COURT EAST
- 6 BASELINE L = 6TH STREET EAST
- 7 BASELINE M = 53RD AVENUE DRIVE EAST
- 8 BASELINE E = 55TH AVENUE EAST

SITE CALIBRATION DATA

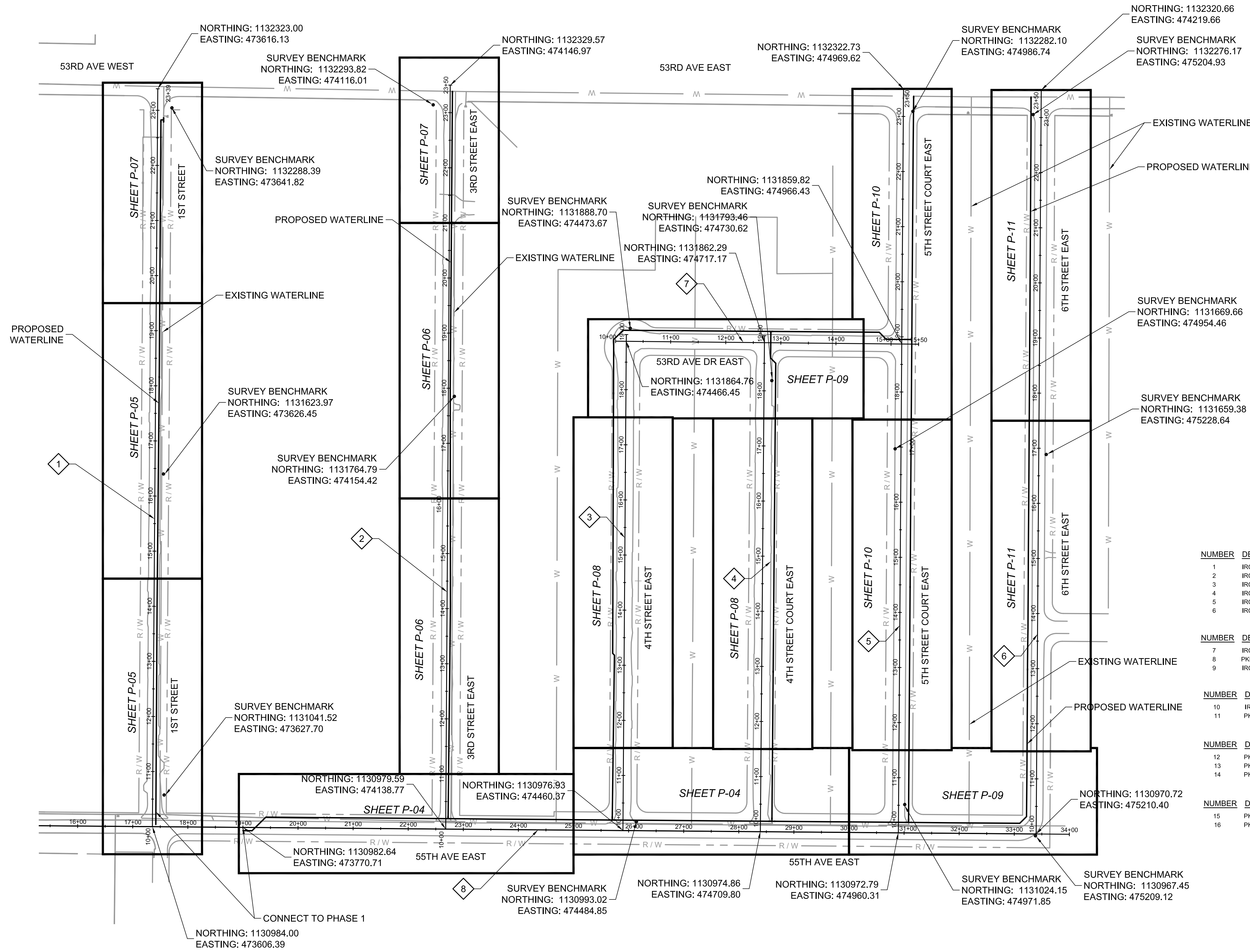
DESIGNATION	NORTHING	EASTING
M 080	1126710.76	478876.34
M 081	1143115.24	478968.28
M 082	1143106.22	462931.59
MANAT RESET	1138850.97	484198.48

BASELINE CONTROL DATA

3RD STREET WEST (South of 55th Avenue East)			53RD AVENUE DRIVE EAST		
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
BEGIN 10+00	1129649.98	472865.76	BEGIN 10+00	1131864.76	474466.45
END 23+40.12	1130990.09	472870.75	EQUATION 12+50.73	1131862.29	474717.17
			END 15+00	1131859.83	474966.43
3RD STREET WEST (North of 55th Avenue East)			4TH STREET EAST		
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
BEGIN 10+00	1130989.17	472981.51	BEGIN 10+00	1130976.93	474460.37
EQUATION 12+52.08	1131241.24	472984.31	END 18+87.86	1131864.76	474466.45
EQUATION 16+59.50	1131648.83	472988.83			
PI 20+73.42	1132062.53	472993.42	3RD STREET EAST		
PI 22+70.11	1132203.21	472855.98	STATION <th>NORTHING</th> <th>EASTING</th>	NORTHING	EASTING
END 24+01.90	1132334.00	472857.49	BEGIN 10+00	1130979.59	474138.77
			END 23+38.31	1132317.87	474146.90
55TH AVENUE EAST			1ST STREET		
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
BEGIN 10+00	1130990.09	472870.75	BEGIN 10+00	1130984.00	473606.39
EQUATION 11+10.77	1130988.17	472981.51	EQUATION 12+50.06	1131246.22	472734.30
EQUATION 14+00.97	1130986.77	473271.70	PI 20+98.05	1132094.15	472734.30
EQUATION 17+35.67	1130984.00	473606.39	PI 22+54.34	1132023.21	472744.02
EQUATION 22+48.07	1130979.59	474138.77			
EQUATION 25+49.68	1130976.93	474460.37	2ND STREET COURT (East)		
EQUATION 28+39.12	1130974.86	474709.80	STATION <th>NORTHING</th> <th>EASTING</th>	NORTHING	EASTING
EQUATION 30+89.64	1130972.79	474960.32	BEGIN 10+00	1130986.77	473271.70
END 33+39.74	1130970.72	475210.40	END 16+56.51	1131643.24	473279.10
6TH STREET EAST			5TH STREET COURT EAST		
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
BEGIN 10+00	1130970.72	475210.40	BEGIN 10+00	1130972.79	474960.32
END 23+36.83	1132307.51	475219.57	EQUATION 18+87.06	1131859.83	474966.43
			END 23+37.17	1132309.93	474969.53
5TH STREET COURT EAST			4TH STREET COURT EAST		
STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
BEGIN 10+00	1130972.79	474960.32	BEGIN 10+00	1130974.86	474709.80
EQUATION 18+87.06	1131859.83	474966.43	END 18+87.46	1131862.29	474717.17
END 23+37.17	1132309.93	474969.53			

SITE HORIZONTAL/VERTICAL CONTROL

3RD STREET WEST						53RD AVENUE DRIVE EAST													
NUMBER	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION	NUMBER	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION						
1	IRC # 7203	10+31.56	30.46' L	1129681.66	472835.43	20.80'	17	PKD # 7203	10+06.98	23.72' L	1131888.42	474473.67	17.72'						
2	IRC # 7203	16+80.14	11.80' L	1130330.16	472856.50	19.75'													
3	IRC # 7203	23+11.32	14.60' L	1130961.35	472856.03	18.65'	4TH STREET EAST												
4	IRC # 7203	13+44.94	12.52' R	1131333.96	472997.86	17.91'	NUMBER <th>DESCRIPTION</th> <th>STATION</th> <th>OFFSET</th> <th>NORTHING</th> <th>EASTING</th> <th>ELEVATION</th>	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION						
5	IRC # 7203	19+01.89	12.25' L	1131891.15	472979.27	17.04'	SEE CONTROL POINT NUMBERS 8 AND 17												
6	IRC # 7203	22+93.25	42.91' R	1132225.85	472899.14	19.19'	3RD STREET EAST												
							NUMBER <th>DESCRIPTION</th> <th>STATION</th> <th>OFFSET</th> <th>NORTHING</th> <th>EASTING</th> <th>ELEVATION</th>	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION						
55TH AVENUE EAST							18	PKD # 7203	10+18.40	18.16' L	1130998.10	474120.73	17.86'						
7	IRC # 7203	14+21.40	16.89' R	1130968.71	473291.99	18.53'	19	IRC # 7203	17+85.28	10.88' R	1131764.79	474154.42	16.48'						
8	PKD # 7203	26+14.02	16.29' L	1130993.02	474484.85	18.62'	20	IRC # 7203	23+14.07	30.74' L	1132293.82	474116.01	19.47'						
9	IRC # 7203	33+38.48	3.28' R	1130967.45	475209.12	16.64'	1ST STREET												
6TH STREET EAST							NUMBER <th>DESCRIPTION</th> <th>STATION</th> <th>OFFSET</th> <th>NORTHING</th> <th>EASTING</th> <th>ELEVATION</th>	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION						
10	IRC # 7203	16+88.77	13.51' R	1131659.38	475228.64	17.83'	21	IRC # 7203	10+57.87	20.89' R	1131841.52	473627.70	18.94'						
11	PKD # 7203	23+05.39	14.42' L	1132276.17	475204.93	20.01'	22	IRC # 7203	16+40.10	15.40' R	1131623.97	473626.45	16.74'						
5TH STREET COURT EAST							23	IRC # 7203	23+04.61	25.94' R	1132288.39	473641.82	17.92'						
NUMBER <th>DESCRIPTION</th> <th>STATION</th> <th>OFFSET</th> <th>NORTHING</th> <th>EASTING</th> <th>ELEVATION</th> <td colspan="6">2ND STREET COURT</td>	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION	2ND STREET COURT												
12	PKD # 7203	10+51.44	11.18' R	1131024.15	474971.85	17.50'	NUMBER <th>DESCRIPTION</th> <th>STATION</th> <th>OFFSET</th> <th>NORTHING</th> <th>EASTING</th> <th>ELEVATION</th>	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION						
13	PKD # 7203	16+96.82	10.66' L	1131669.66	474954.46	16.66'	24	IRC # 7203	12+80.58	4.27' L	1131647.69	473269.44	17.08'						
14	PKD # 7203	23+09.46	17.36' R	1132282.10	474960.70	19.52'	3RD STREET COURT												
4TH STREET COURT EAST							NUMBER <th>DESCRIPTION</th> <th>STATION</th> <th>OFFSET</th> <th>NORTHING</th> <th>EASTING</th> <th>ELEVATION</th>	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION						
NUMBER <th>DESCRIPTION</th> <th>STATION</th> <th>OFFSET</th> <th>NORTHING</th> <th>EASTING</th> <th>ELEVATION</th> <td>25</td> <td>IRC # 7203</td> <td>11+71.42</td> <td>12.41' L</td> <td>1132033.31</td> <td>472730.71</td> <td>18.37'</td>	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION	25	IRC # 7203	11+71.42	12.41' L	1132033.31	472730.71	18.37'						
15	PKD # 7203	10+24.31	14.31' R	1130999.05	474724.34	17.65'	26	PKD # 7203	14+44.39	9.79' L	1131440.65	472726.74	17.82'						
16	PKD # 7203	18+18.74	14.02' R	1131793.46	474730.62	17.14'	27	IRC # 7203	20+37.06	12.62' L	1132288.39	473641.82	17.31'						



DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

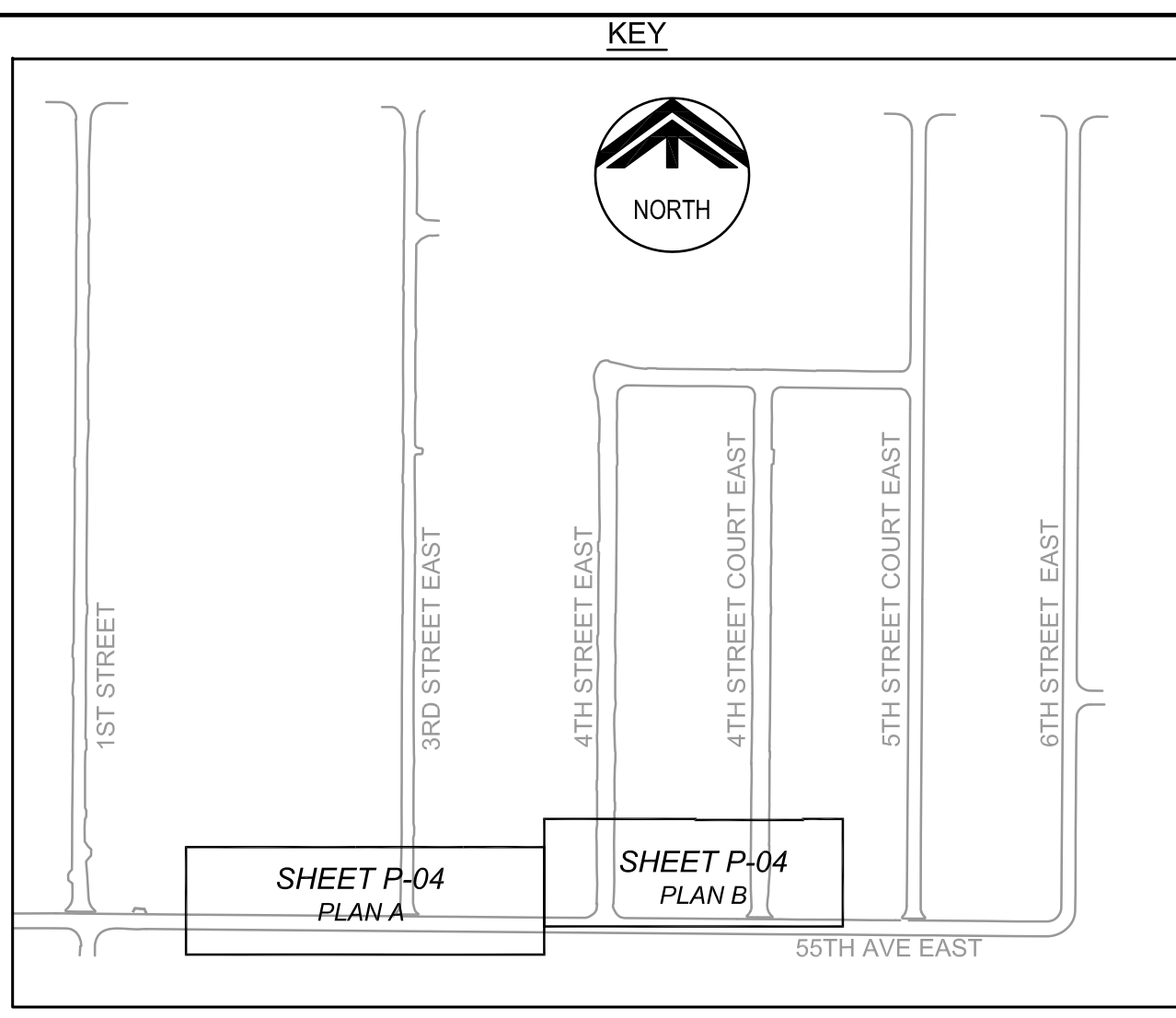
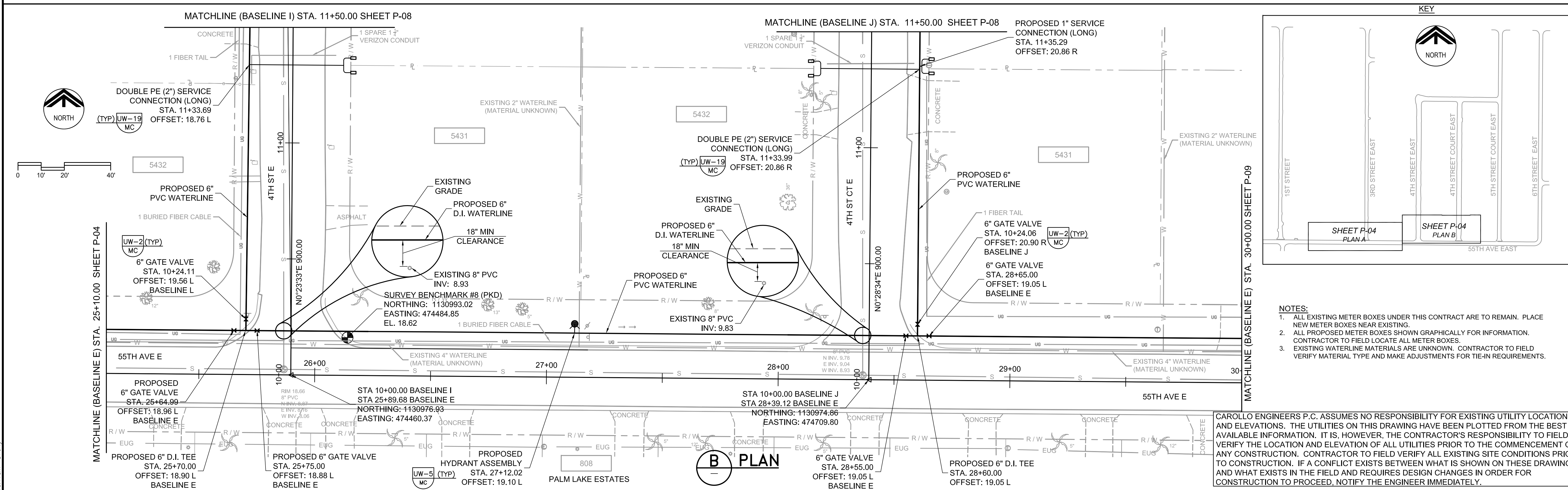
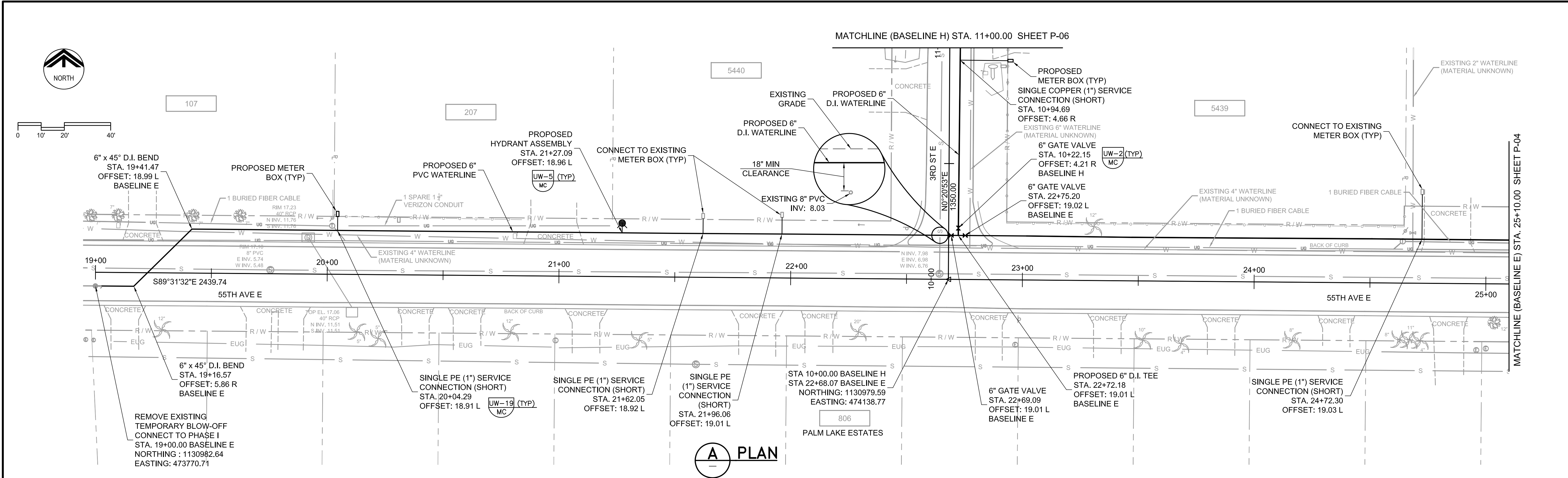
REV	DATE	BY	DESCRIPTION

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 SARASOTA, FL 34232
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 CA 00008571

MANATEE COUNTY
ONECO WATERLINE REPLACEMENT (PHASE II)
 KEY PLAN

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

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



- 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.
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DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

REV	DATE	BY	DESCRIPTION

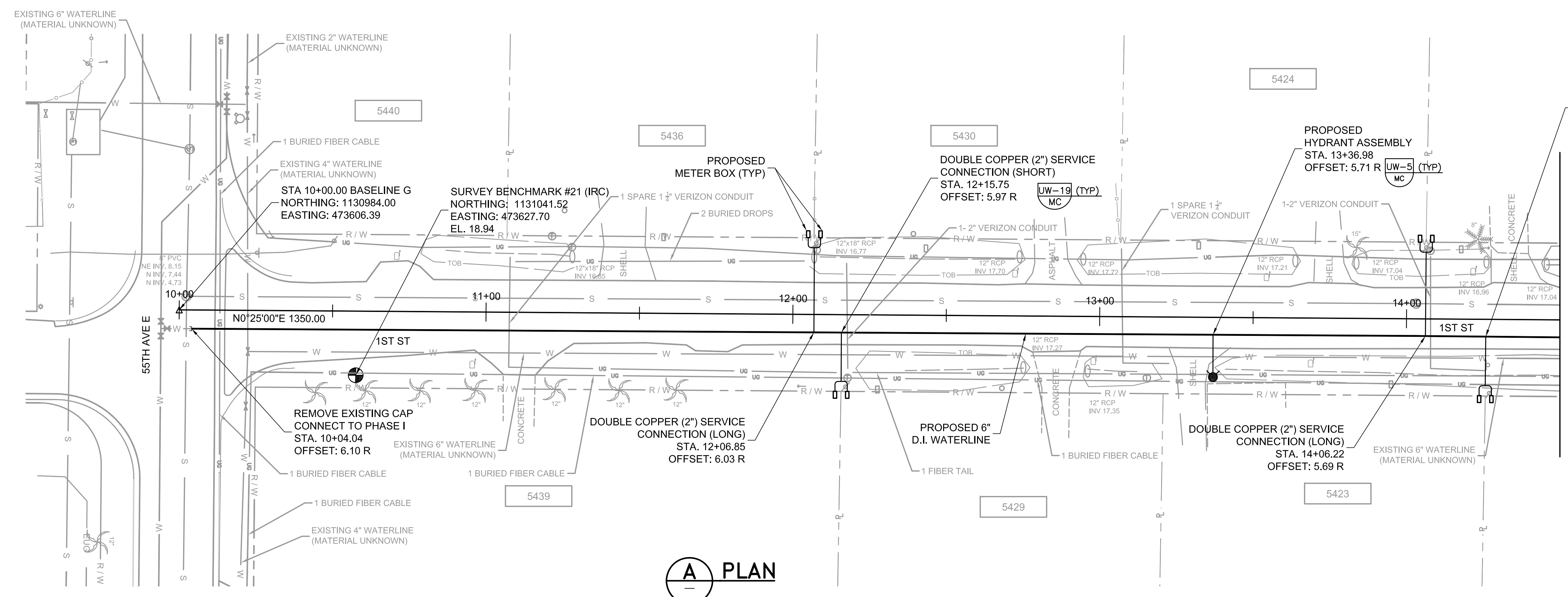
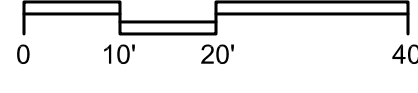
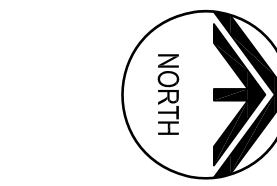
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MANATEE COUNTY
ONECO WATERLINE REPLACEMENT (PHASE II)

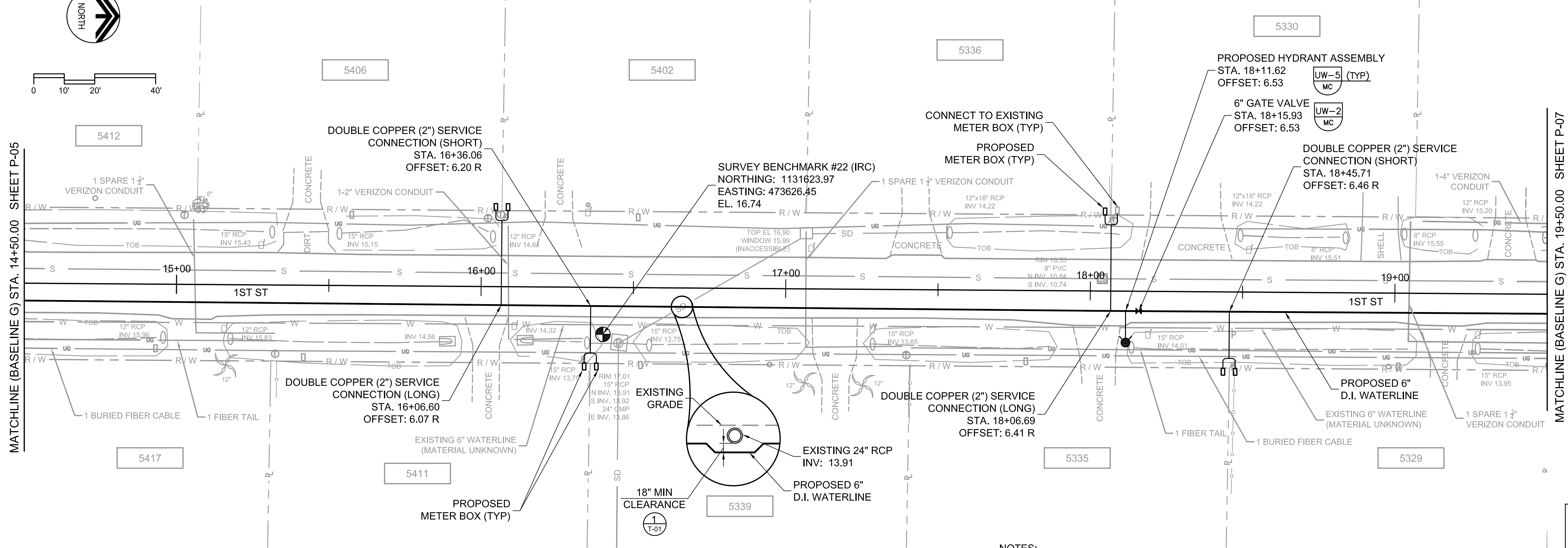
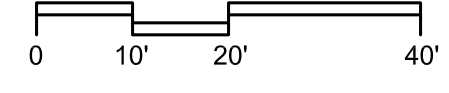
WATERLINE PLAN
 BASELINE E STA. 19+00.00 TO 30+00.00 (55TH AVE E)
 BASELINE H STA. 10+00.00 TO 11+00.00 (3RD ST E)
 BASELINE I STA. 10+00.00 TO 11+00.00 (4TH ST E)
 BASELINE J STA. 10+00.00 TO 11+00.00 (4TH ST CT E)

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

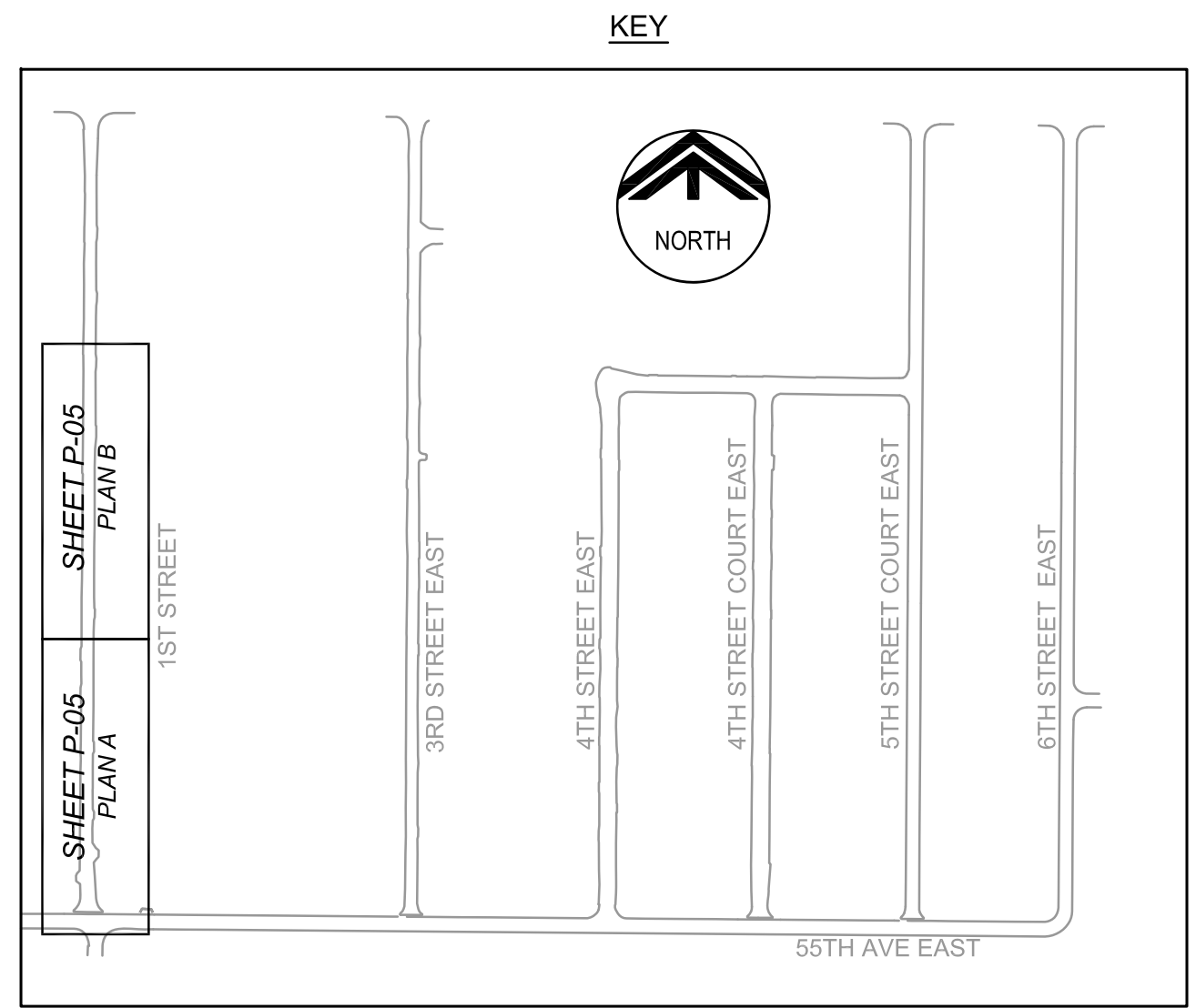
JOB NO. 7880D.10
 DRAWING NO. P-04
 SHEET NO. 4 OF 14



A PLAN



B PLAN



KEY

- NOTES:**
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DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

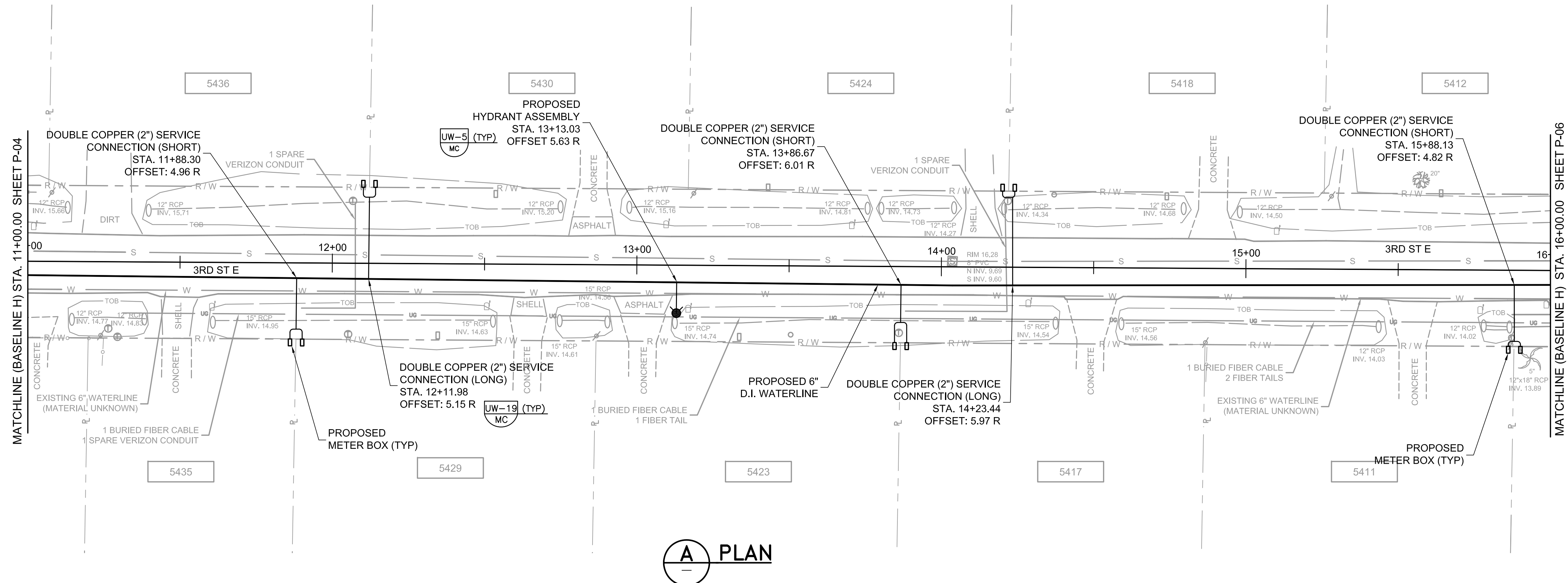
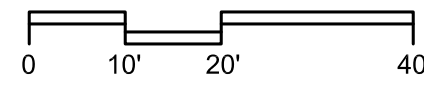
REV	DATE	BY	DESCRIPTION

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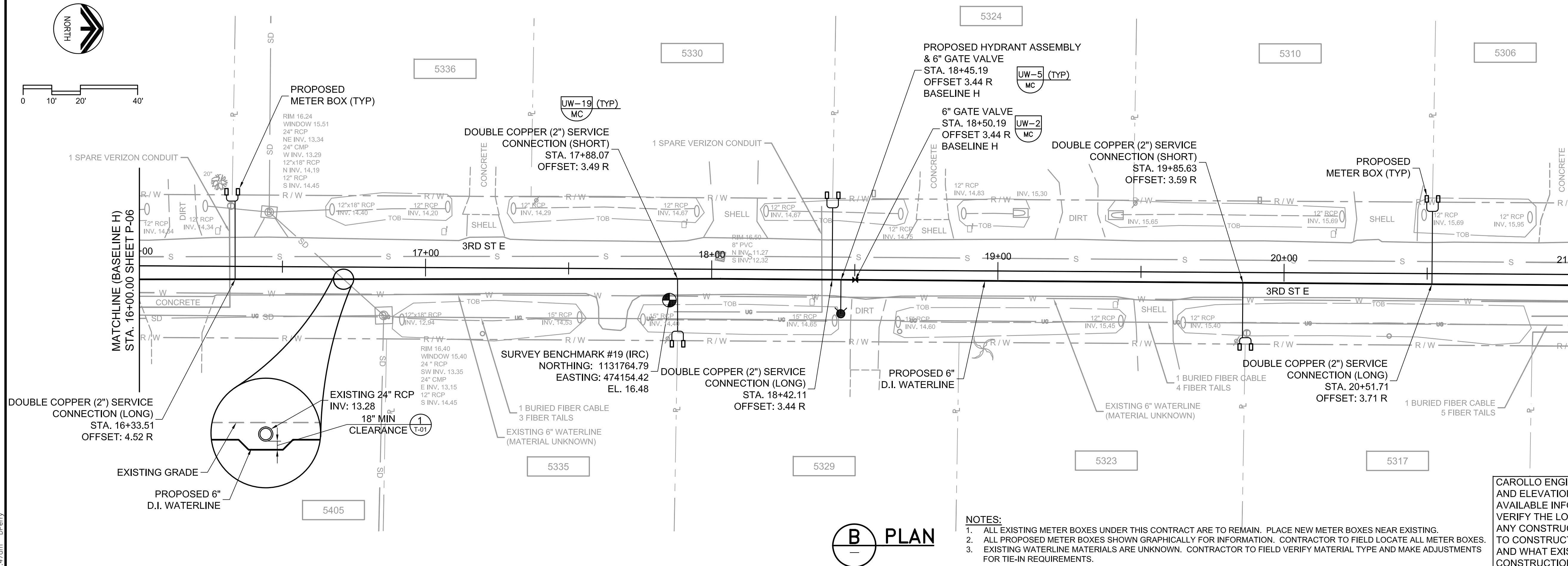
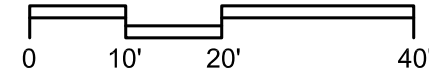
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 CA 00008571

MANATEE COUNTY
ONECO WATERLINE REPLACEMENT (PHASE II)
 WATERLINE PLAN
 BASELINE G STA. 10+00.00 TO 19+50.00 (1ST ST)

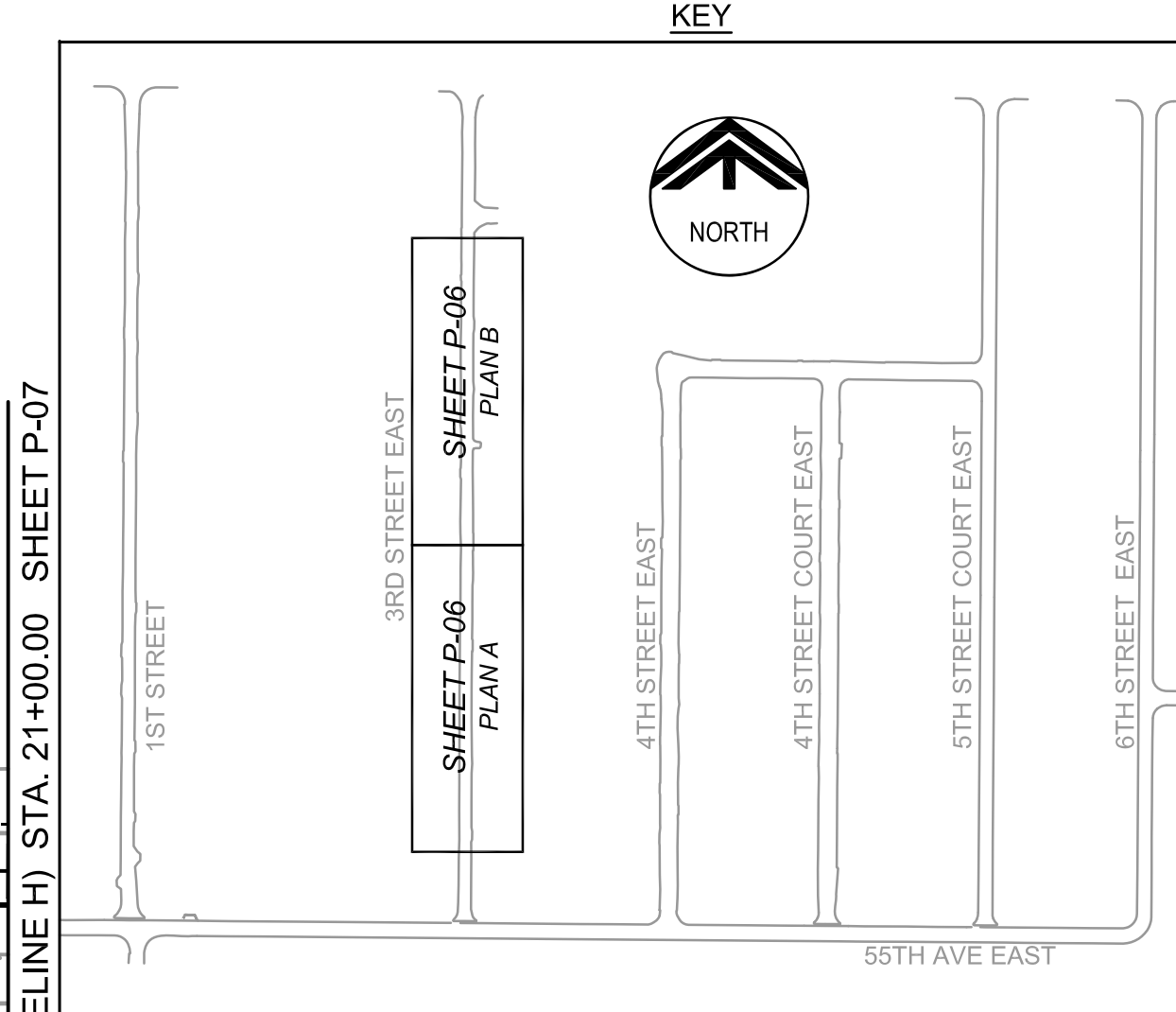
VERIFY SCALES	JOB NO.
BAR IS ONE INCH ON ORIGINAL DRAWING	7880D.10
0 1"	DRAWING NO.
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	P-05
	SHEET NO.
	5 OF 14



A PLAN



B PLAN



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.

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DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

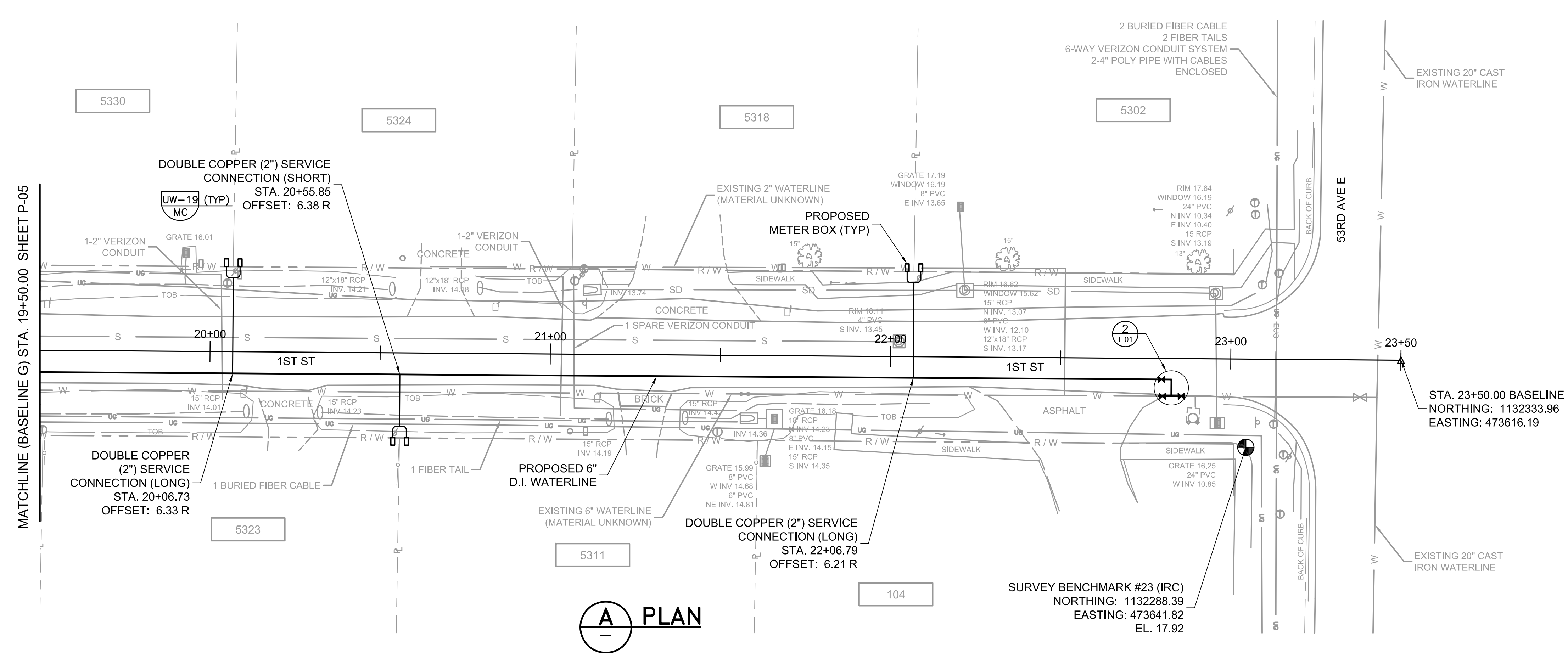
REV	DATE	BY	DESCRIPTION

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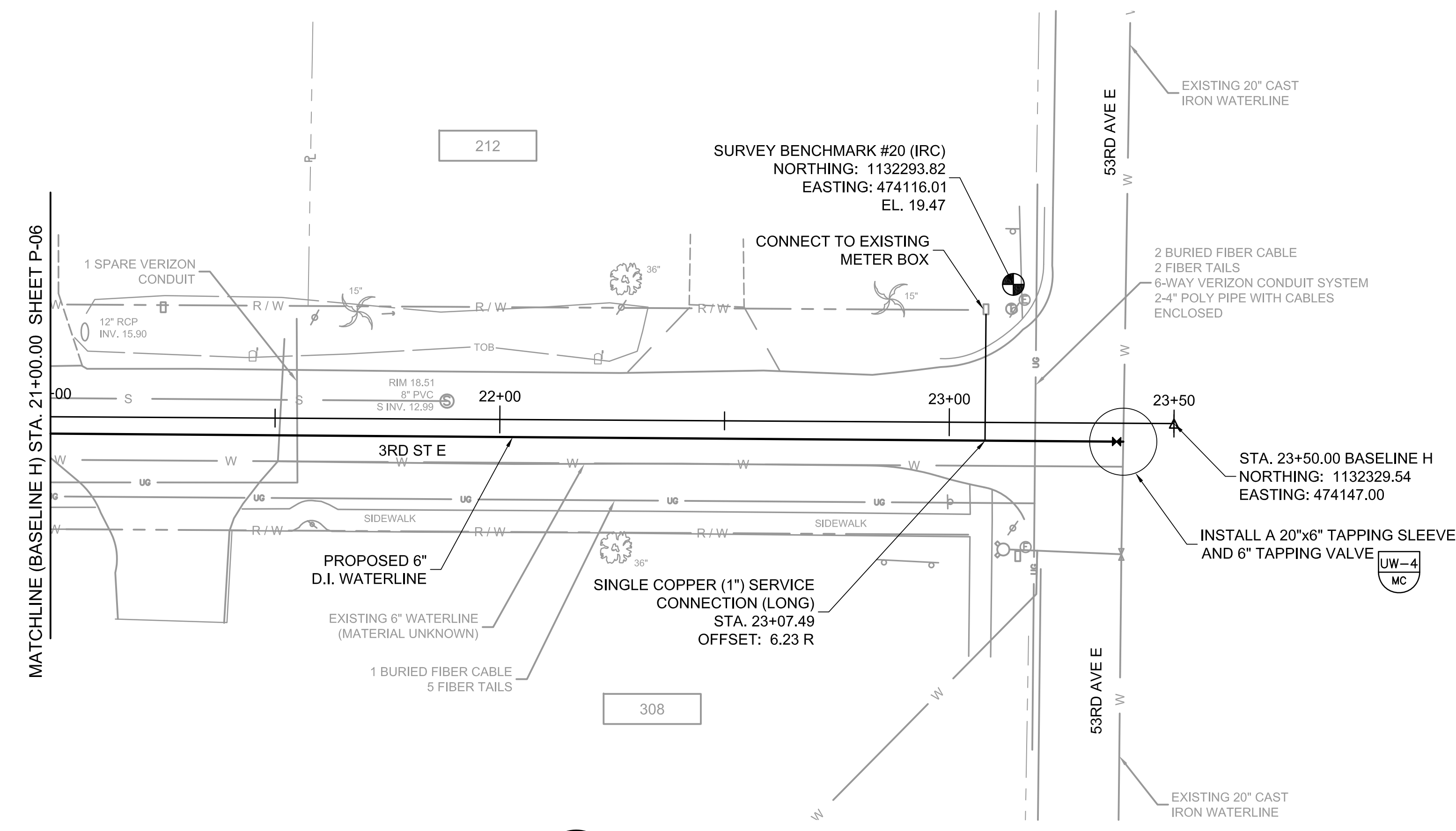
MANATEE COUNTY
ONECO WATERLINE REPLACEMENT (PHASE II)
 WATERLINE PLAN
 BASELINE H STA. 11+00.00 TO 21+00.00 (3RD ST E)

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1" = 10'
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

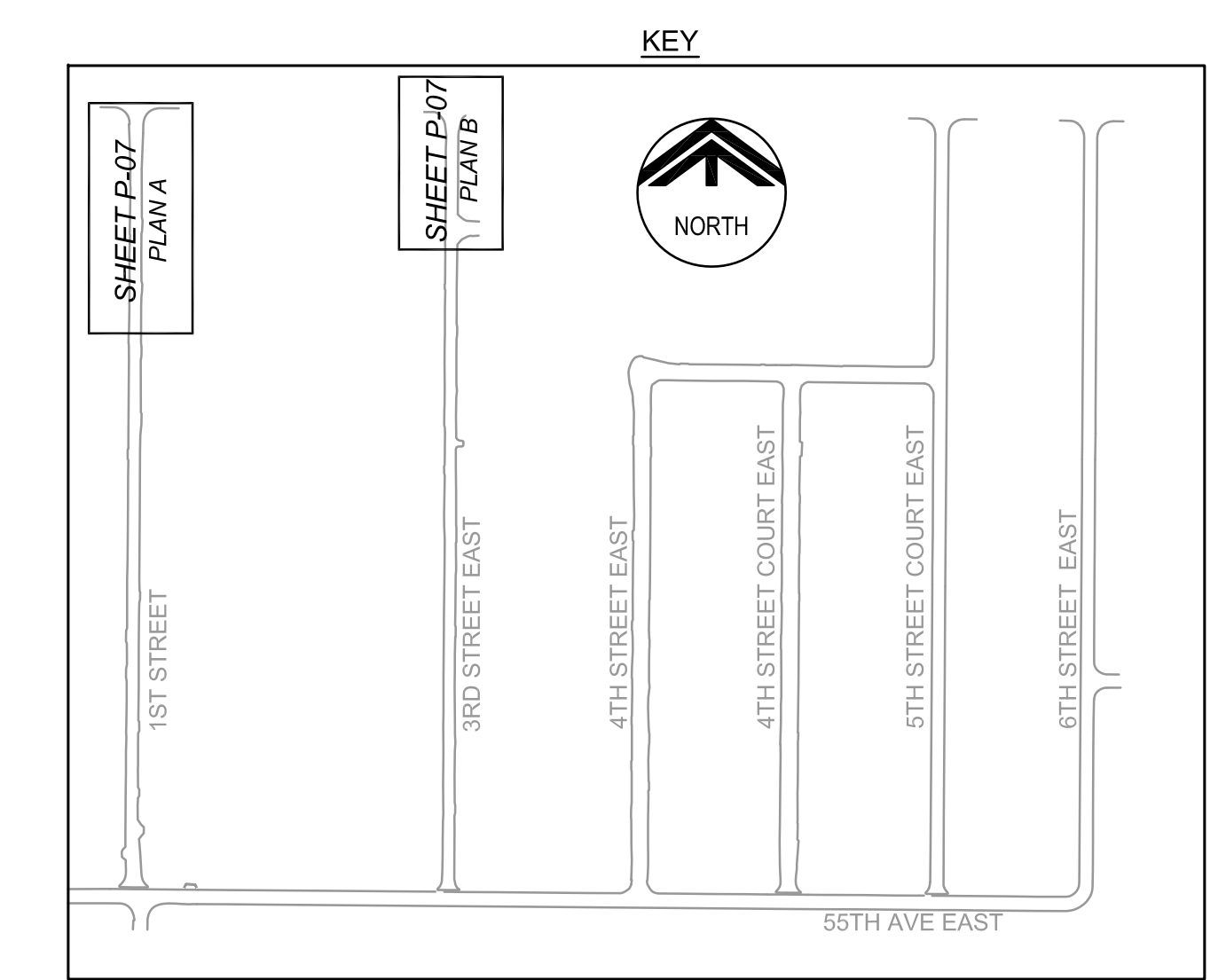
JOB NO. 7880D.10
 DRAWING NO. P-06
 SHEET NO. 6 OF 14



A PLAN



B PLAN



- NOTES:**
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REV	DATE	BY	DESCRIPTION

DESIGNED JMS	PROJECT ENGINEER
DRAWN DVP	
CHECKED JMF	
DATE APRIL 2010	

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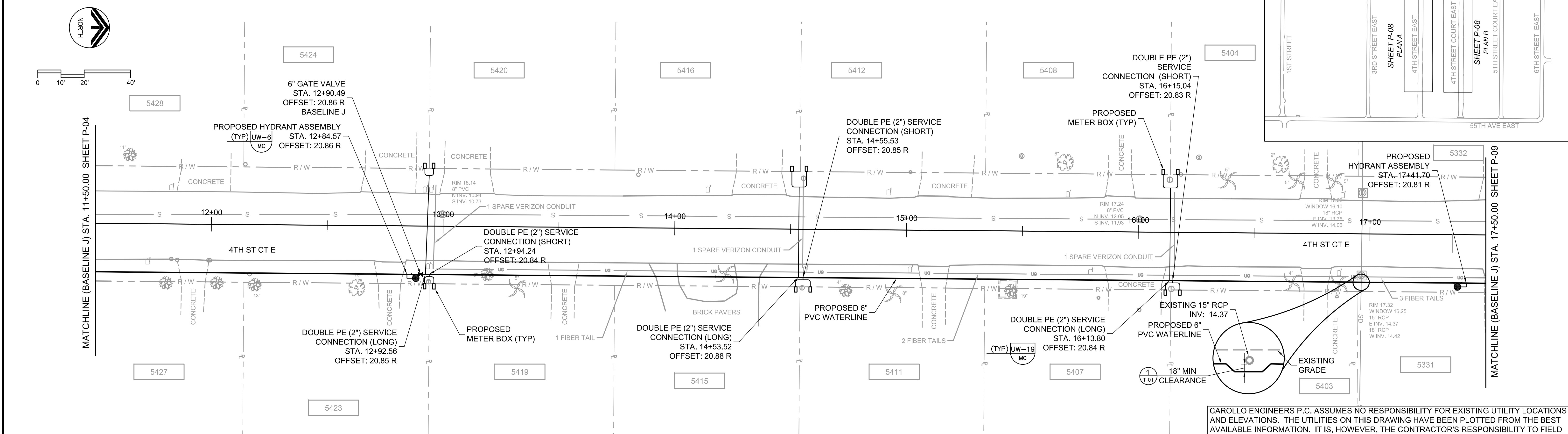
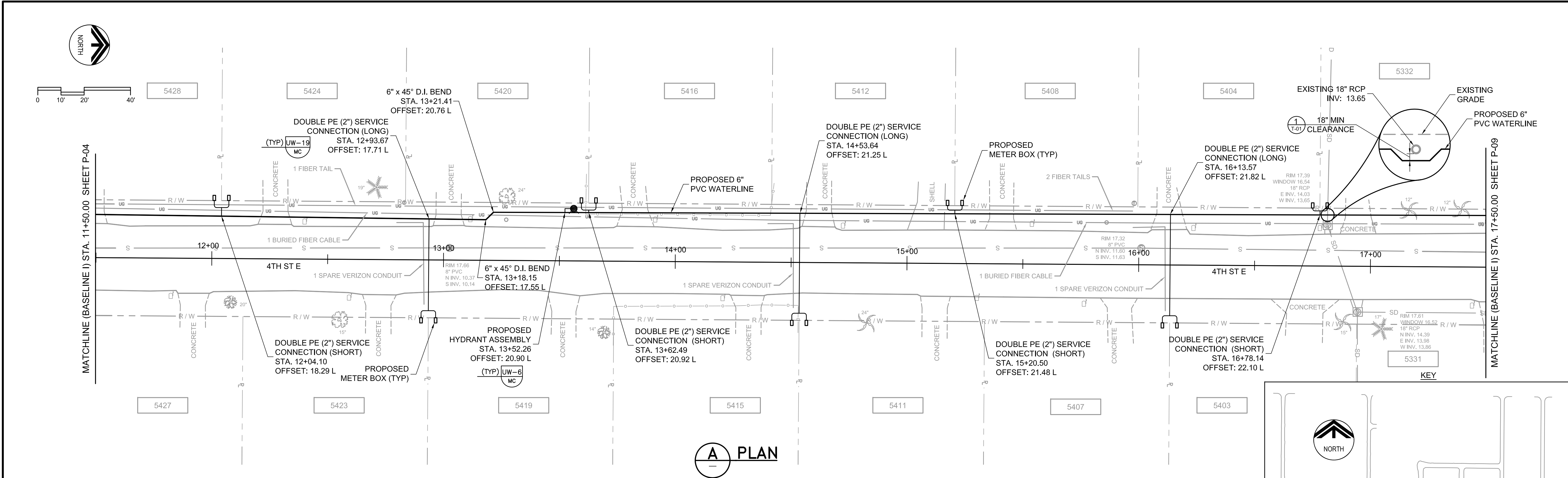
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CA 00008571

MANATEE COUNTY
ONCO WATERLINE REPLACEMENT (PHASE II)

WATERLINE PLAN
BASELINE G STA. 19+50.00 TO 23+50.00 (1ST ST)
BASELINE H STA. 21+00.00 TO 23+50.00 (3RD ST E)

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING	JOB NO. 7880D.10
0 1" SCALE BAR	DRAWING NO. P-07
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 7 OF 14

Last Opened By: 4-28-10 10:47am DPerry



NOTES:

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DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

REV	DATE	BY	DESCRIPTION

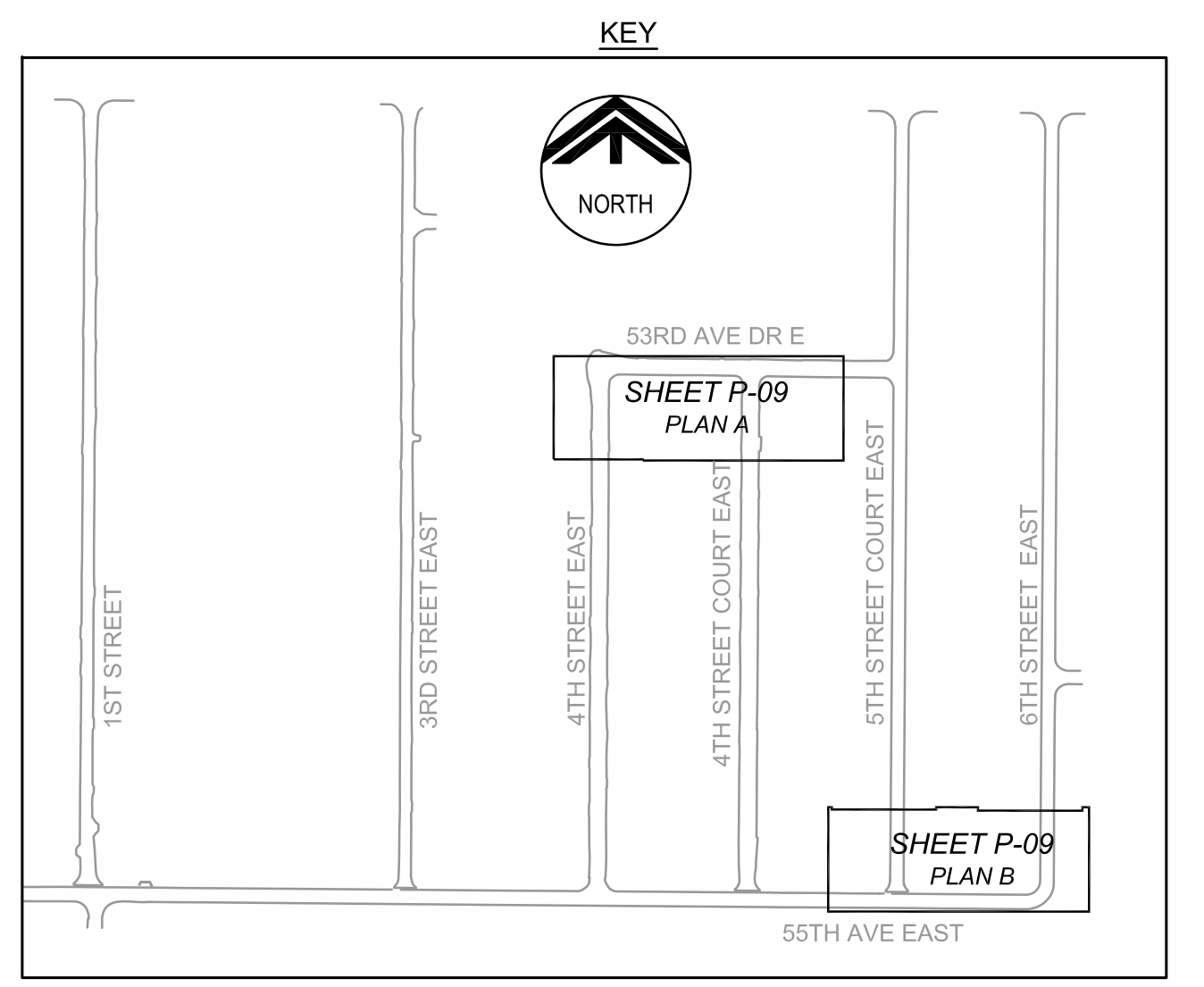
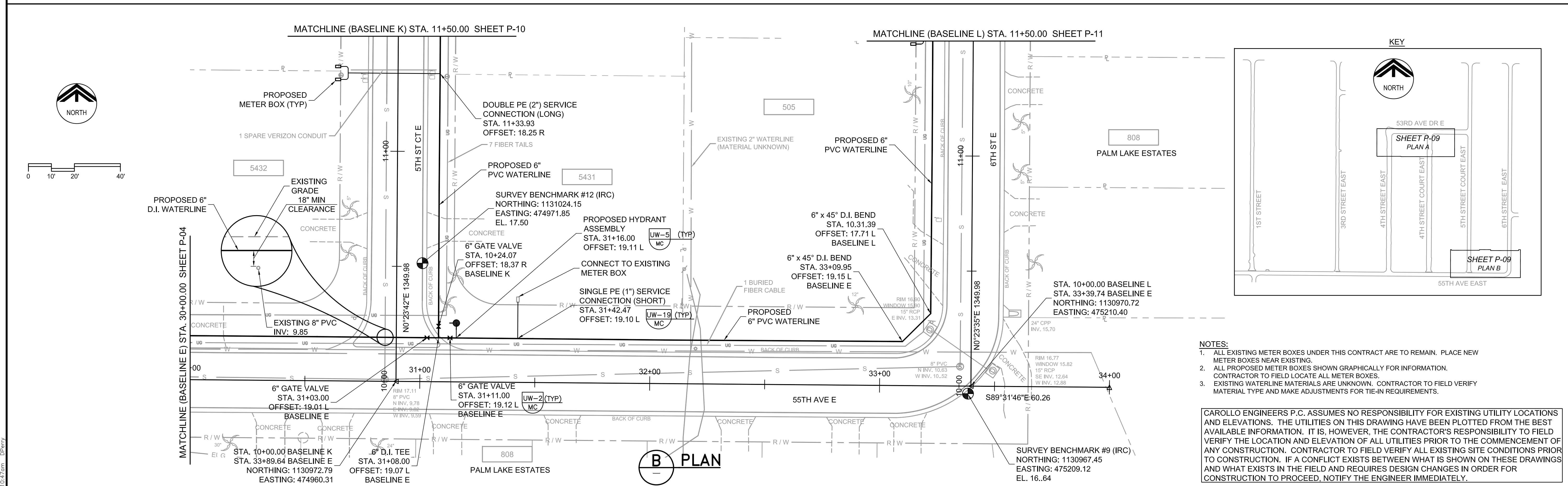
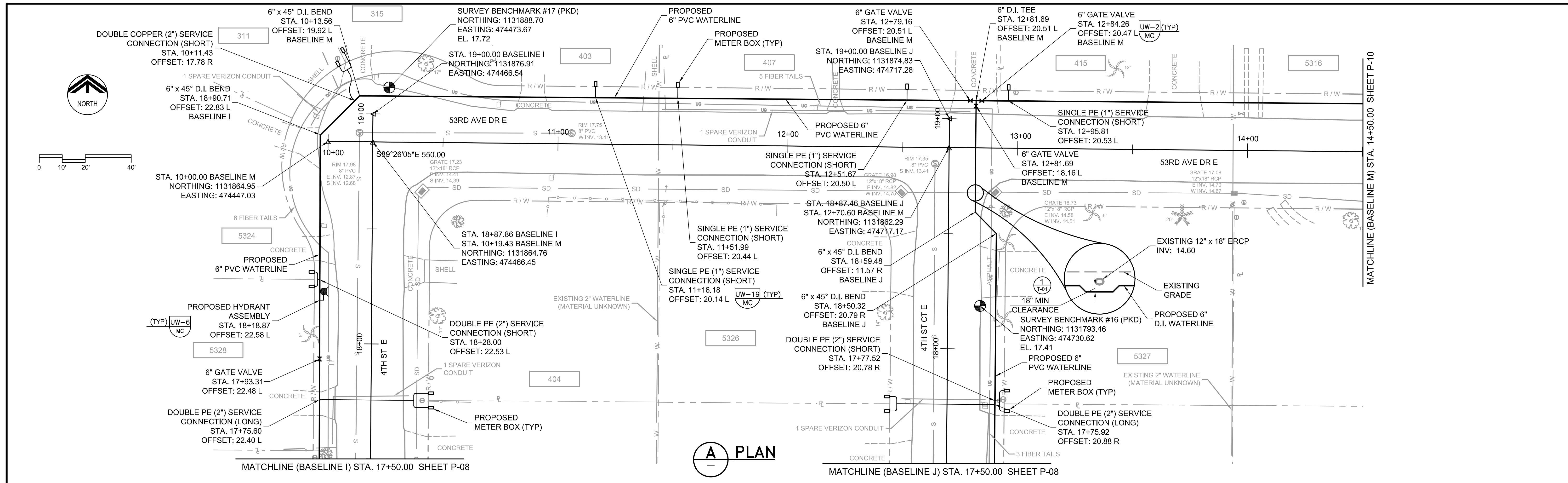
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 CA 00008571

MANATEE COUNTY
ONECO WATERLINE REPLACEMENT (PHASE II)
 WATERLINE PLAN
 BASELINE I STA. 11+50.00 TO 17+50.00 (4TH ST E)
 BASELINE J STA. 11+50.00 TO 17+50.00 (4TH ST CT E)

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

JOB NO. 7880D.10
 DRAWING NO. P-08
 SHEET NO. 8 OF 14

Last Opened By: 4-28-10 10:47am D:\Perry



NOTES:

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DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

REV	DATE	BY	DESCRIPTION

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MANATEE COUNTY

ONECO WATERLINE REPLACEMENT (PHASE II)

WATERLINE PLAN - 53RD AVE DR E, 55TH AVE E, 4TH ST E,
 4TH ST CT E, 5TH ST CT E & 6TH ST E

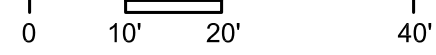
BASELINE E STA. 30+00 TO 34+00	BASELINE K STA. 10+00 TO 11+50
BASELINE I STA. 17+50 TO 19+00	BASELINE L STA. 10+00 TO 11+50
BASELINE J STA. 17+50 TO 19+00	BASELINE M STA. 10+00 TO 14+50

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

JOB NO.
7880D.10

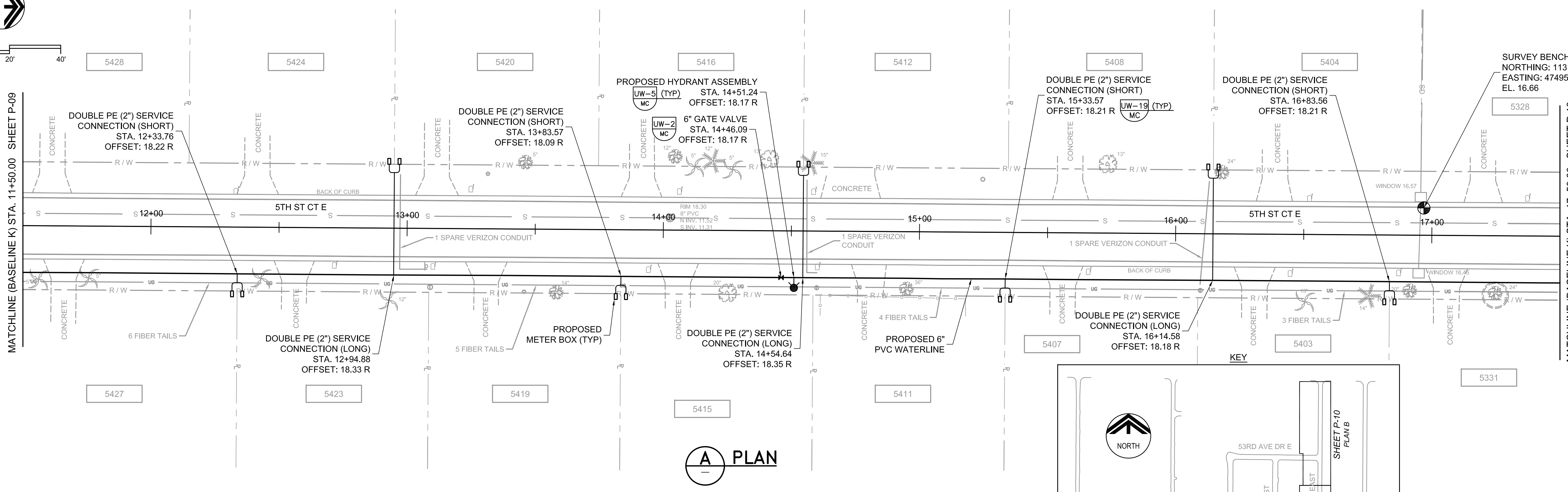
DRAWING NO.
P-09

SHEET NO.
9 OF 14

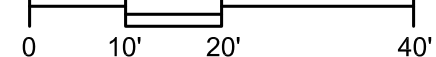
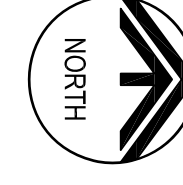


MATCHLINE (BASELINE K) STA. 11+50.00 SHEET P-09

MATCHLINE (BASELINE K) STA. 17+50.00 SHEET P-10

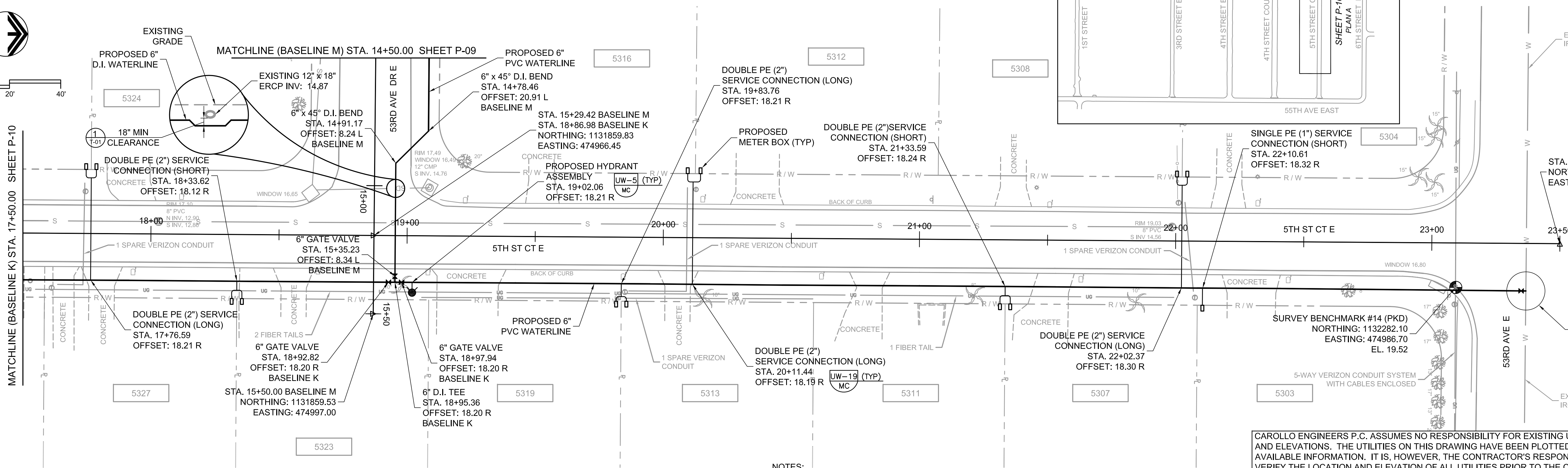


A PLAN



MATCHLINE (BASELINE K) STA. 17+50.00 SHEET P-10

MATCHLINE (BASELINE M) STA. 14+50.00 SHEET P-09



B PLAN

- NOTES:**
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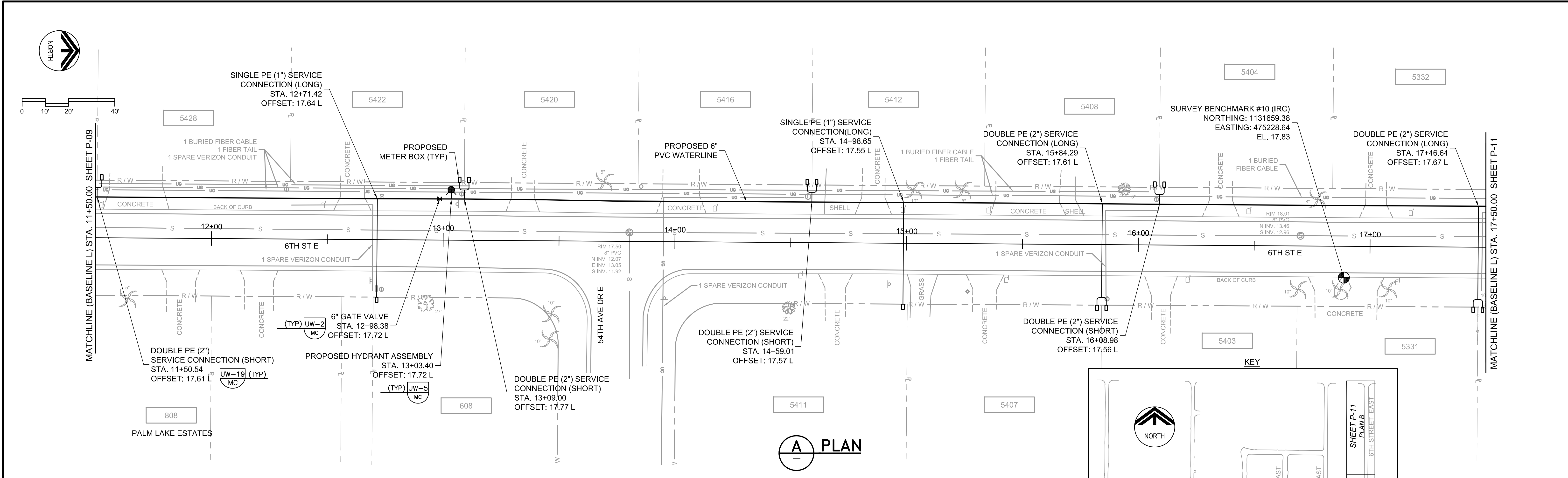
DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

REV	DATE	BY	DESCRIPTION

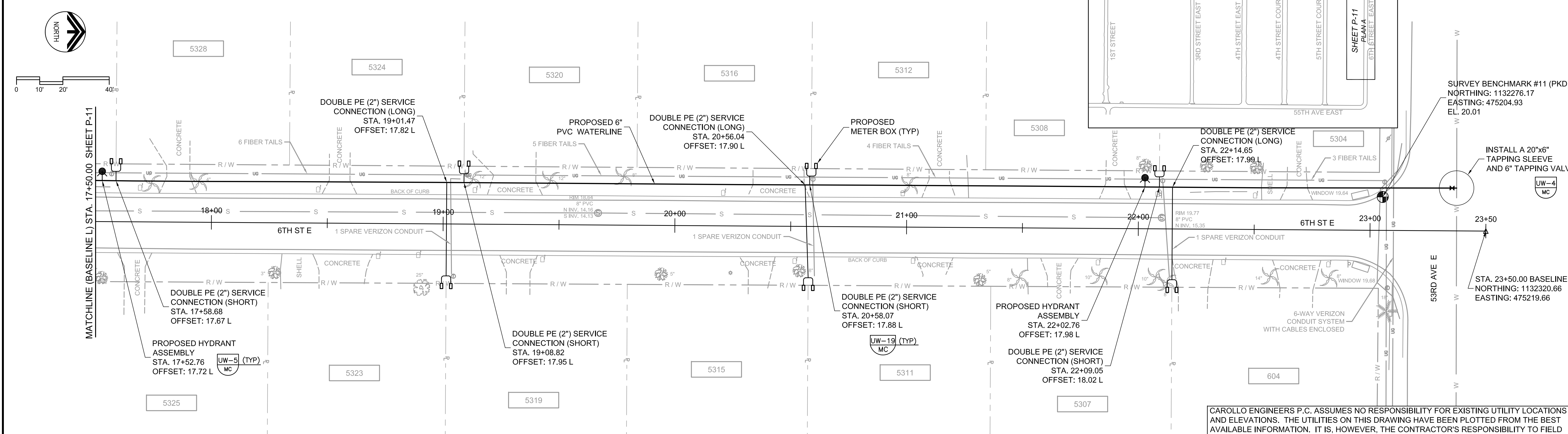
MANATEE COUNTY	ONCO WATERLINE REPLACEMENT (PHASE II)
WATERLINE PLAN	
BASELINE K STA. 11+50.00 TO 23+50.00 (5TH ST CT E)	
BASELINE M STA. 14+50.00 TO 15+50.00 (53RD AVE DR E)	

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VERIFY SCALES	JOB NO.
BAR IS ONE INCH ON ORIGINAL DRAWING	7880D.10
0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO.
	P-10
	SHEET NO.
	10 OF 14



A PLAN



B PLAN

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DATE	APRIL 2010
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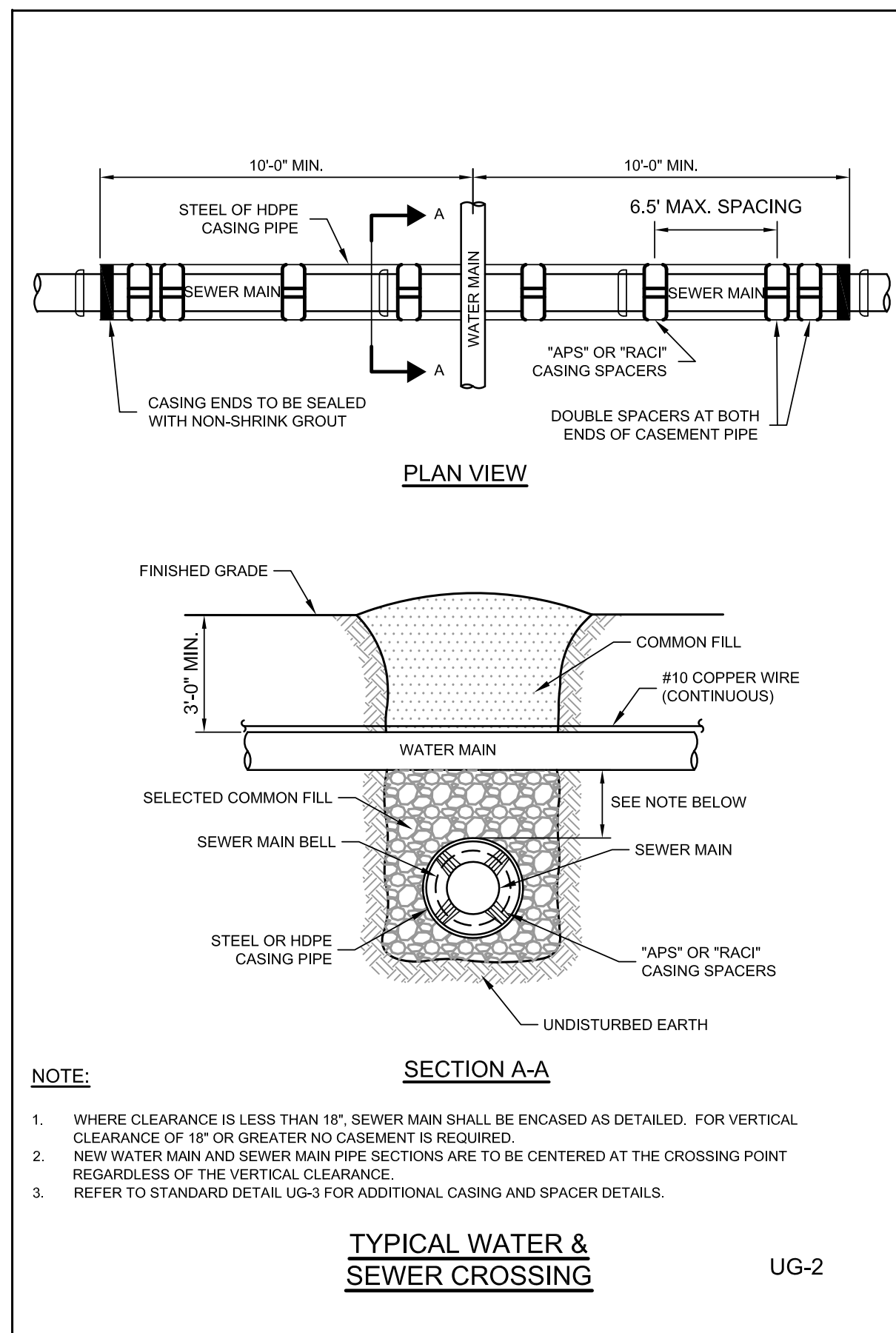
REV	DATE	BY	DESCRIPTION

MANATEE COUNTY	ONCO WATERLINE REPLACEMENT (PHASE II)
WATERLINE PLAN	BASELINE L STA. 11+50.00 TO 23+50.00 (6TH ST E)

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 CA 00008571

VERIFY SCALES	JOB NO. 7880D.10
BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. P-11
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	SHEET NO. 11 OF 14

Last Opened By: 4-28-10 10:48am DPerry



THRUST BLOCK DIMENSIONS 8" x d Inches

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

REINFORCEMENT MAT SCHEDULE

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:

- ALL THRUST BLOCKS SHALL BE CAST IN PLACE. FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED IN POLYETHYLENE.
- THIS TABLE IS BASED ON WATER PRESSURE=180 PSI WITH AN ALLOWABLE SOIL BEARING PRESSURE=2000 PSF. CONCRETE STRENGTH 4000 PSI. REINFORCEMENT fy=60.0 KSI. THRUST BLOCK SHALL BE CAST AGAINST FIRM UNDISTURBED SOIL.
- 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.
- 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.

TEE OR DEAD END UG-7

CONCRETE THRUST BLOCKS

45° WYE UG-7

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

MAIN PIPE SIZE	HORIZ. BENDS	TEES			REDUCERS			PLUGS	VALVES				
		90°	45°	22.5°	SIZE	LENGTH	SIZE			LENGTH			
24	90	38	18	X24	X20	X16	X12	X10	X20	X16	X12	214	107
20	78	32	16	X20	X16	X12	X10	X8	X16	X12	X10	184	92
16	66	27	13	X16	X12	X10	X8	X6	X12	X10	X8	151	76
12	52	22	10	X12	X10	X8	X6	X4	X10	X8	X6	118	59
10	44	18	9	X10	X8	X6	X4	X3	X8	X6	X4	214	50
8	37	15	7	X8	X6	X4	X3	X2	X6	X4	X3	83	42
6	29	12	6	X6	X4	X3	X2	X1	X4	X3	X2	63	32
4	21	8	4	X4	X3	X2	X1	X1	X3	X2	X1	45	23

NOTES:

- RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
- ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
- ALL ISOLATION VALVES MUST BE PROPERLY ANCHORED OR RESTRAINED TO RESIST A 180 PSI TEST PRESSURE IN EITHER DIRECTION.
- PIPE SIZES ARE GIVEN IN INCHES.
- RESTRAINED PIPE LENGTHS ARE GIVEN IN FEET.
- LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 180 PSI.
- 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.
- 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	TEES			REDUCERS			PLUGS	VALVES				
		90°	45°	22.5°	SIZE	LENGTH	SIZE			LENGTH			
36	142	59	28	X36	X30	X24	X20	X16	X30	X24	X20	453	227
30	124	51	25	X30	X24	X20	X16	X12	X24	X20	X16	391	196
24	106	44	21	X24	X20	X16	X12	X10	X20	X16	X12	327	164
20	92	38	18	X20	X16	X12	X10	X8	X16	X12	X10	280	140
16	77	32	15	X16	X12	X10	X8	X6	X12	X10	X8	231	116
12	61	25	12	X12	X10	X8	X6	X4	X10	X8	X6	181	91
10	52	22	10	X10	X8	X6	X4	X3	X8	X6	X4	153	77
8	44	18	9	X8	X6	X4	X3	X2	X6	X4	X3	128	64
6	34	14	7	X6	X4	X3	X2	X1	X4	X3	X2	98	49
4	24	10	5	X4	X3	X2	X1	X1	X3	X2	X1	69	35

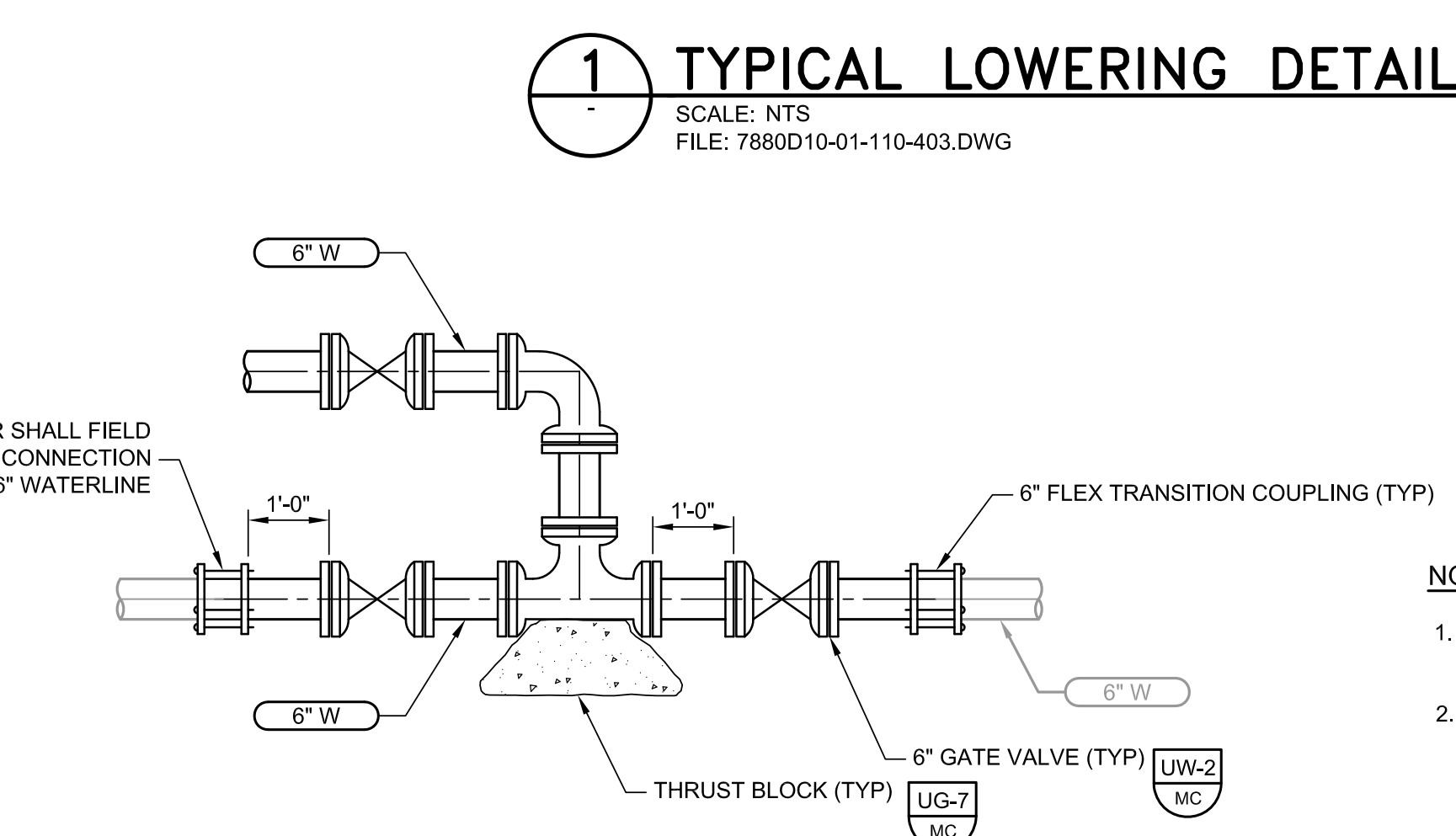
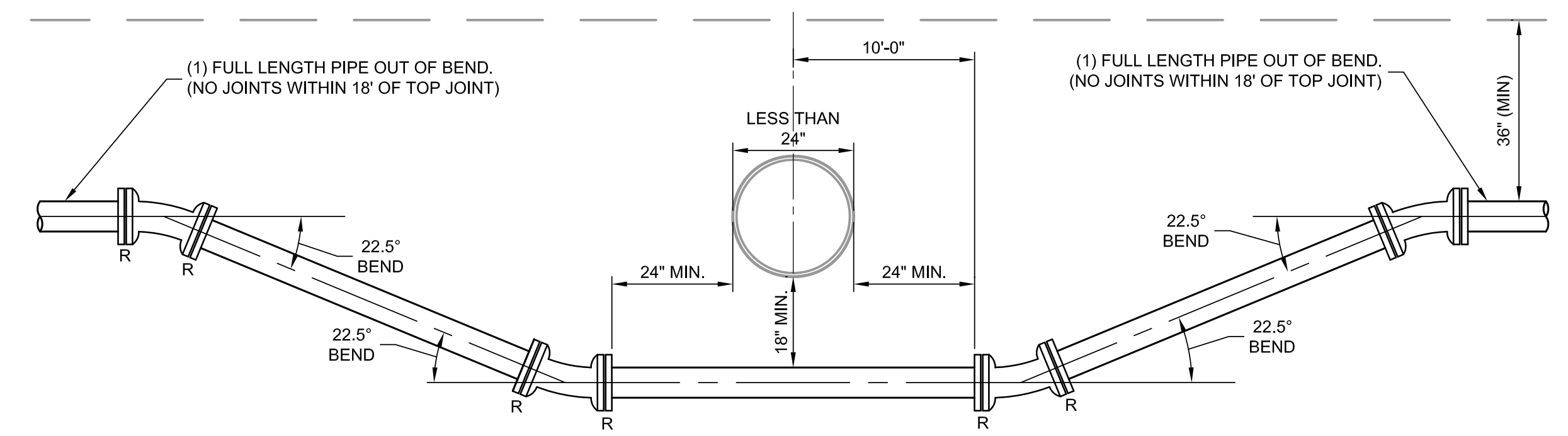
REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR DIP (NON-WRAPPED)

MAIN PIPE SIZE	HORIZ. BENDS	TEES			REDUCERS			PLUGS	VALVES				
		90°	45°	22.5°	SIZE	LENGTH	SIZE			LENGTH			
36	100	42	20	X36	X30	X24	X20	X16	X30	X24	X20	188	94
30	88	37	18	X30	X24	X20	X16	X12	X24	X20	X16	162	81
24	75	31	15	X24	X20	X16	X12	X10	X20	X16	X12	135	68
20	65	27	13	X20	X16	X12	X10	X8	X16	X12	X10	116	58
16	54	22	11	X16	X12	X10	X8	X6	X12	X10	X8	96	48
12	43	18	8	X12	X10	X8	X6	X4	X10	X8	X6	75	38
10	37	15	7	X10	X8	X6	X4	X3	X8	X6	X4	63	32
8	30	13	6	X8	X6	X4	X3	X2	X6	X4	X3	53	27
6	24	10	5	X6	X4	X3	X2	X1	X4	X3	X2	41	21
4	17	7	3	X4	X3	X2	X1	X1	X3	X2	X1	29	15

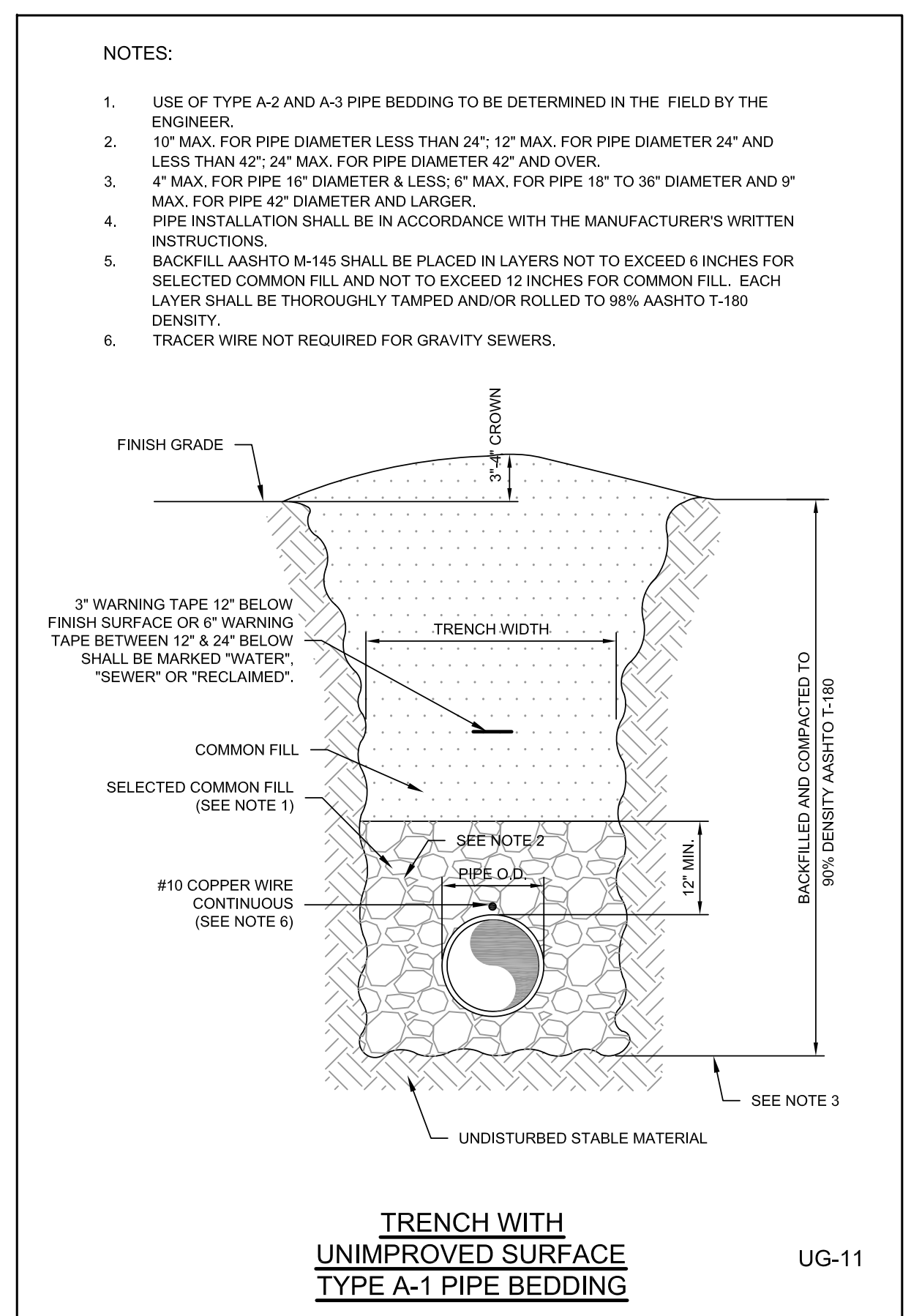
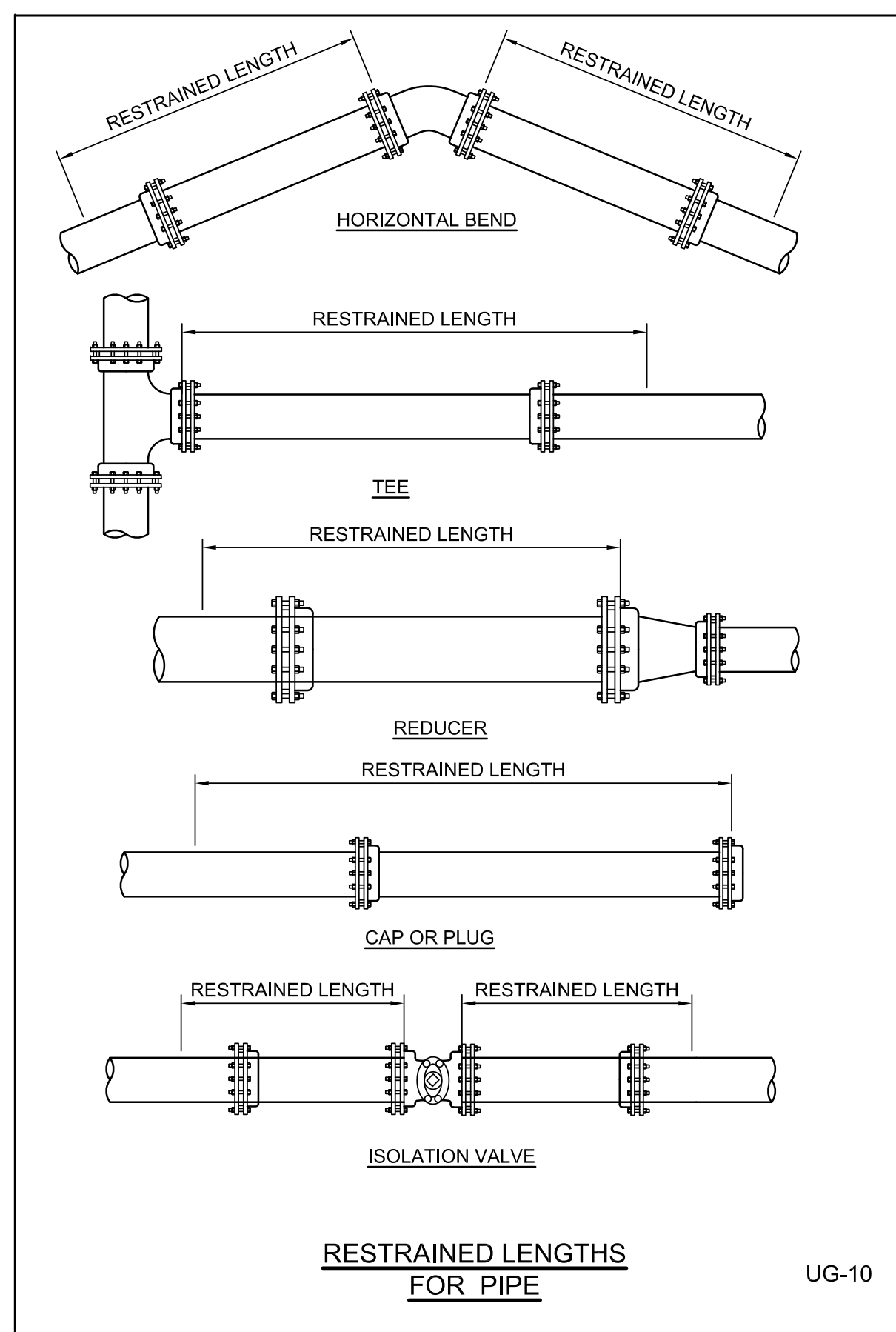
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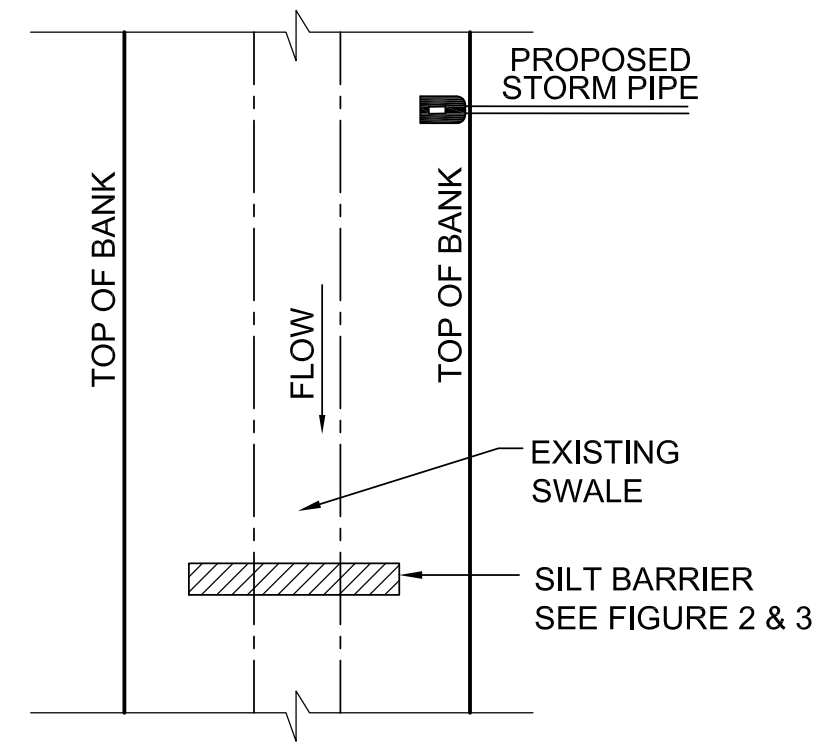
SEE "RESTRAINED LENGTHS FOR PVC PIPE" DETAIL FOR NOTES 1 THROUGH 8 THAT ARE ALSO APPLICABLE TO RESTRAINED LENGTHS FOR DIP.

RESTRAINED LENGTHS FOR DIP UG-9

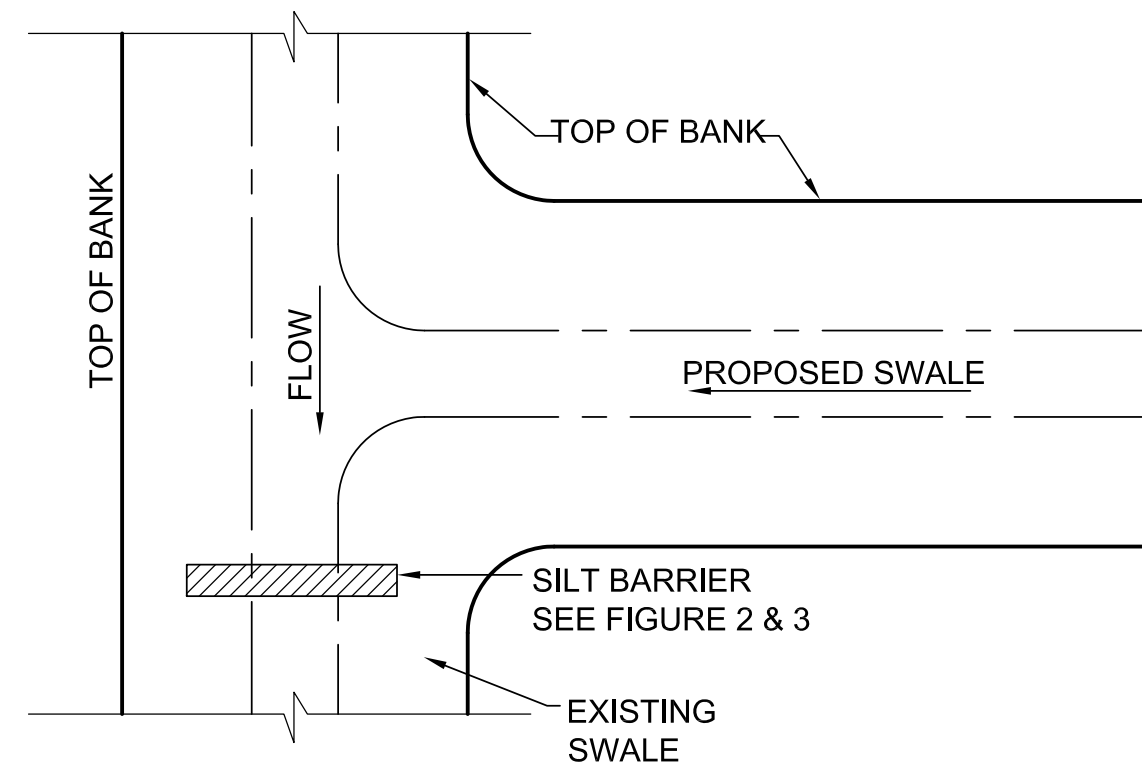


- NOTES:**
- PIPELINE DIAMETER VARIES THROUGHOUT SYSTEM. USE APPROPRIATE SIZE VALVES AND FITTINGS.
 - CONTRACTOR SHALL NOTE THAT THE EXISTING WATERLINES MAY BE ASBESTOS CONCRETE PIPE (ACP) AND SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS FOR ALTERING AND DISPOSING OF ACP MATERIALS.
 - ALL MECHANICAL JOINTS SHALL BE RESTRAINED.
 - FLEX TRANSITION COUPLING (A.C.P. ROUGH BARREL BY D.I.) WITH 316 STAINLESS STEEL RESTRAINING HARNESS (MINIMUM CENTER SLEEVE LENGTH OF 12").

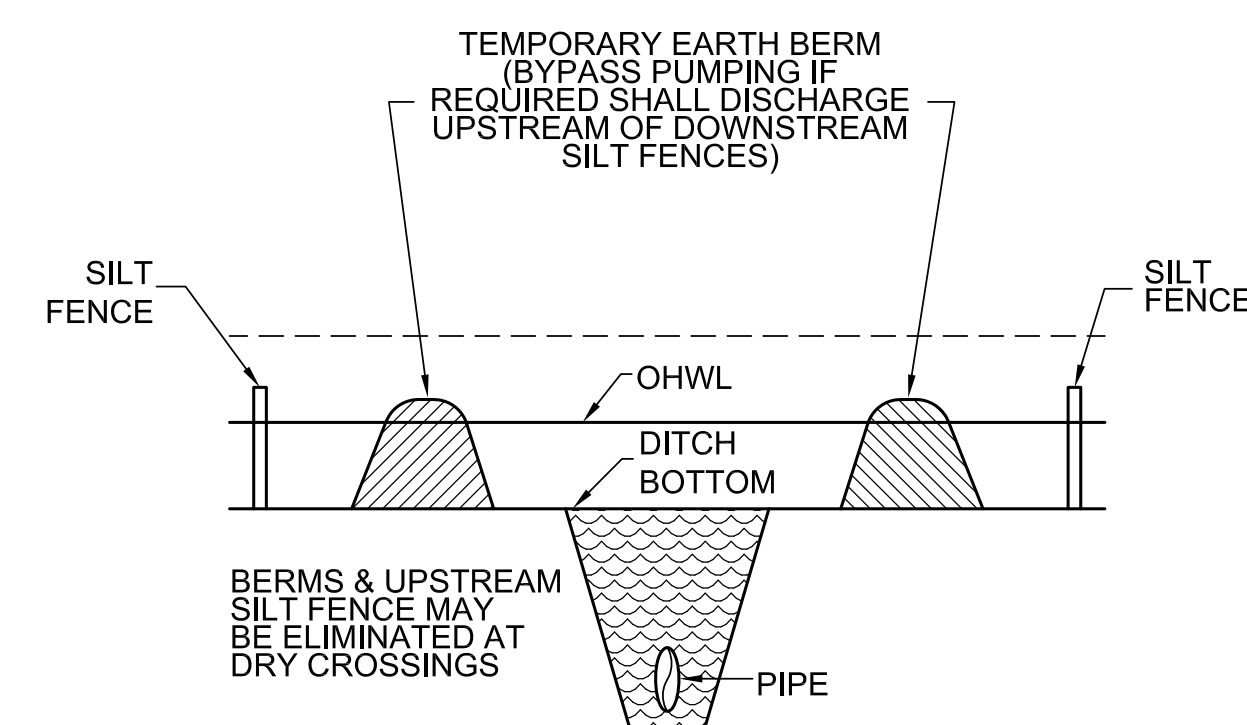




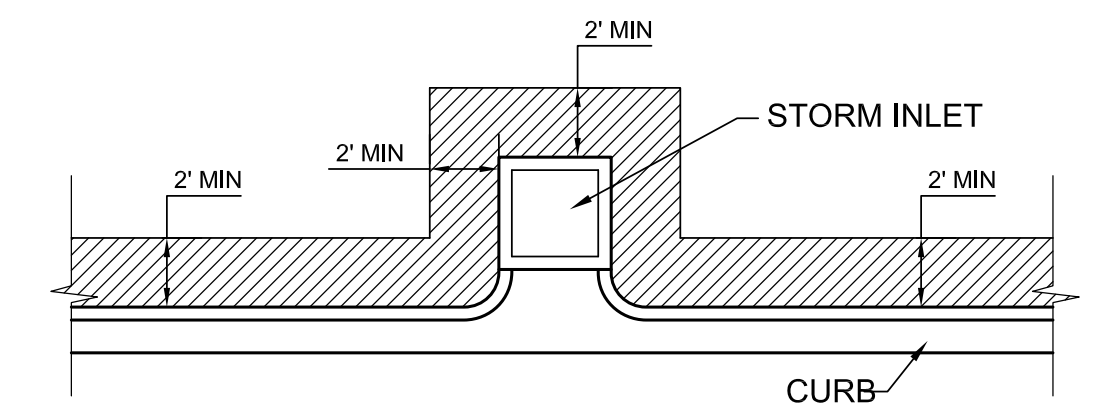
SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING SWALE



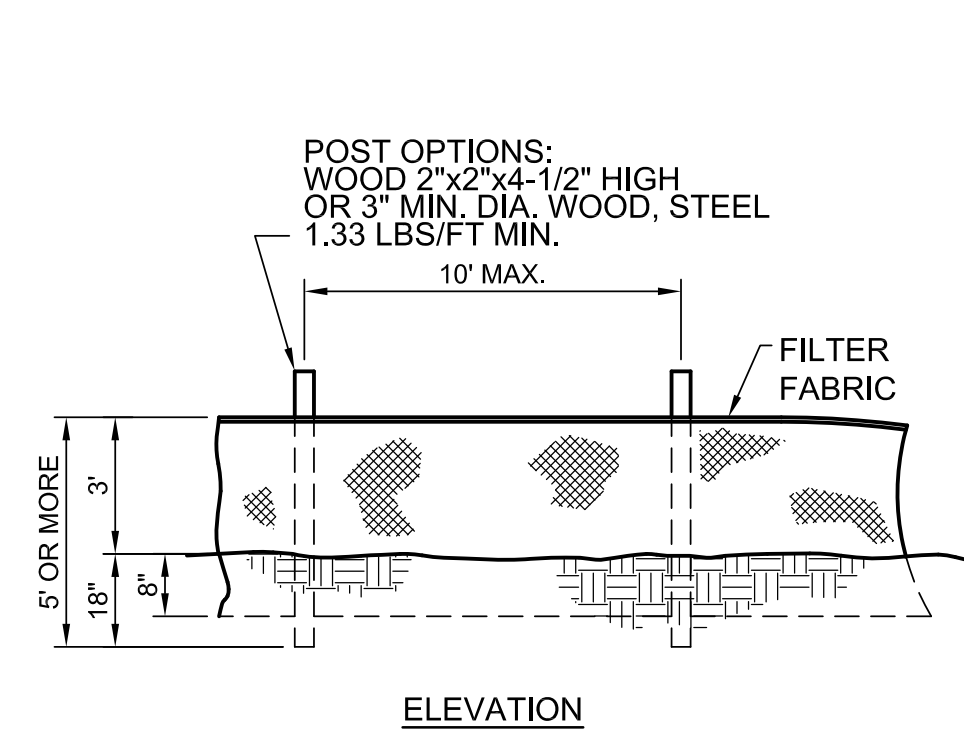
SILT BARRIER AT CONNECTION OF SWALE TO EXISTING SWALE



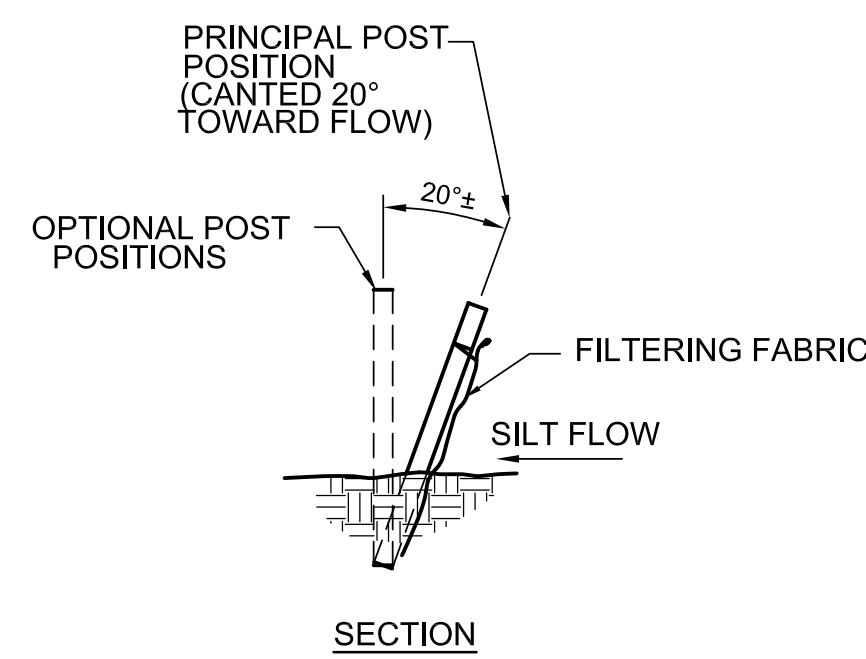
UNDERGROUND PIPE CROSSING



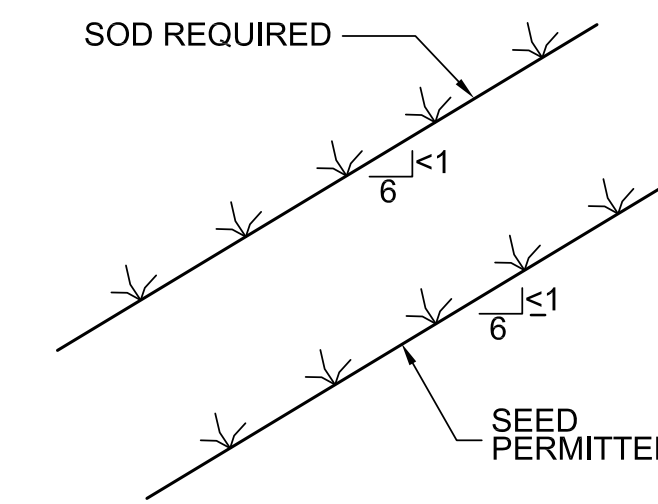
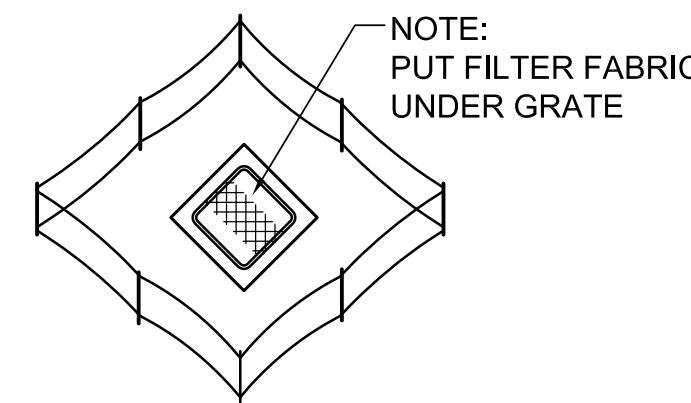
SOD ALONG CURB AND AROUND INLET



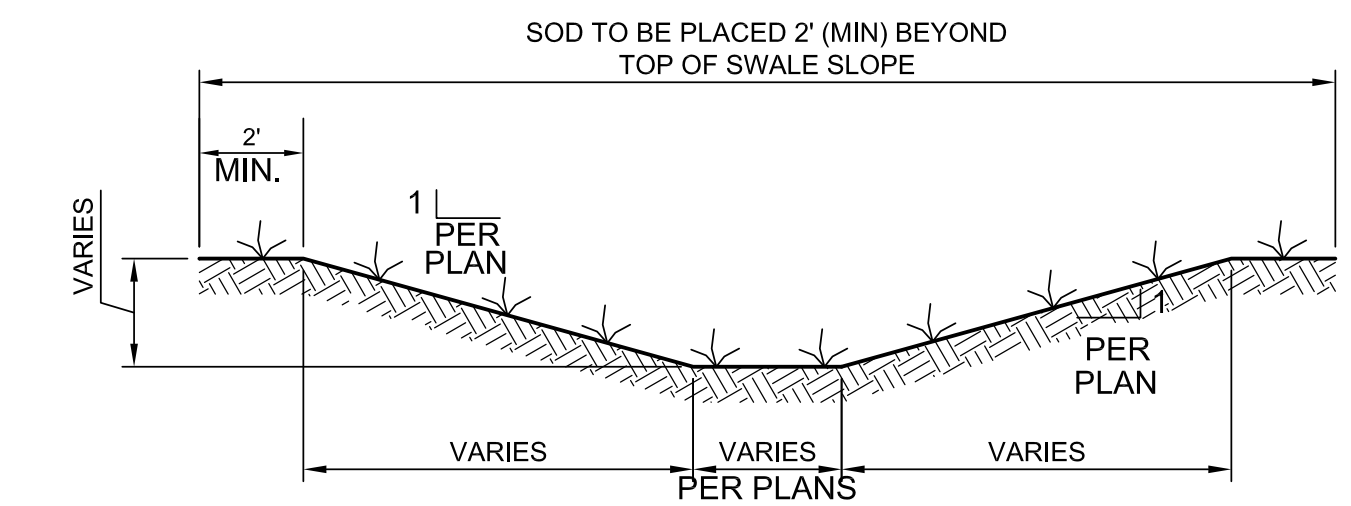
TYPICAL SILT FENCE



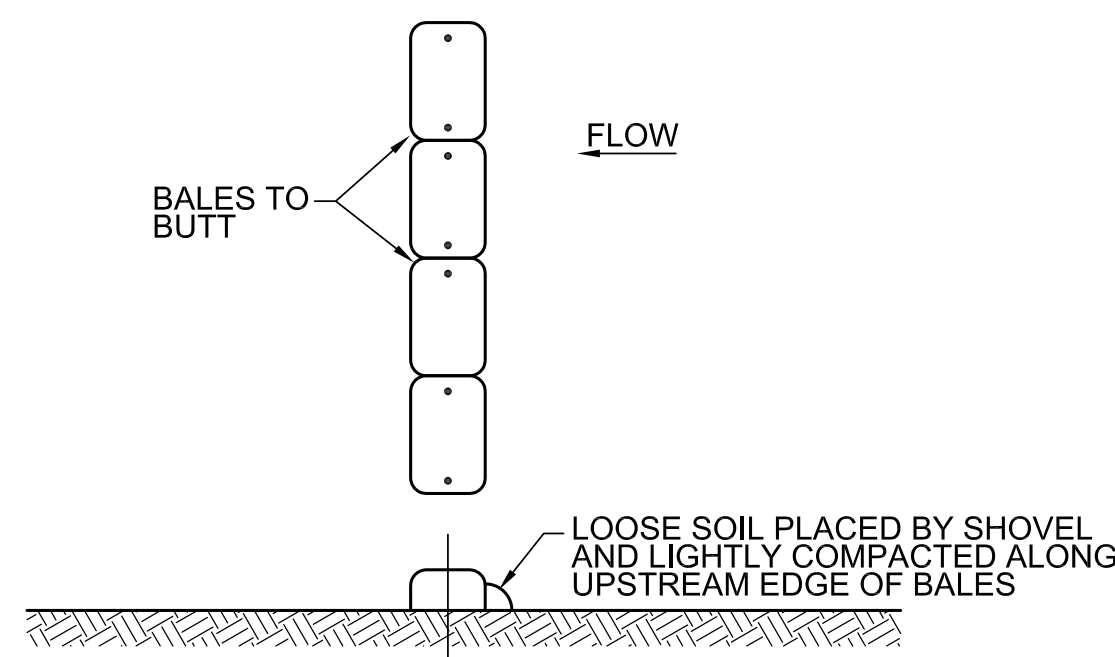
PROTECTION AROUND DITCH BOTTOM INLETS



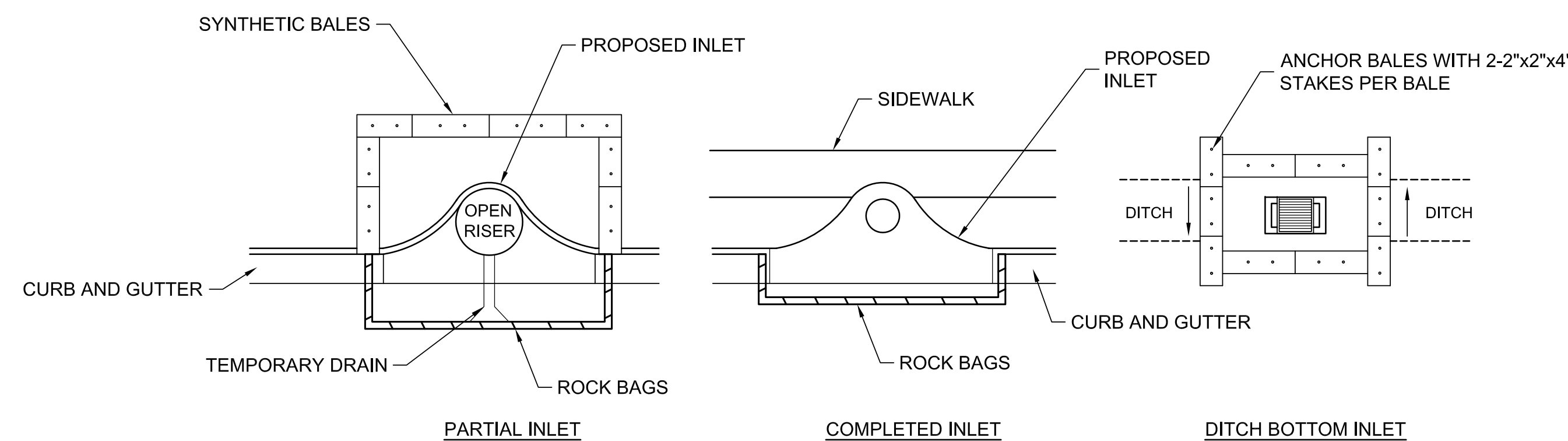
GRASS SLOPES



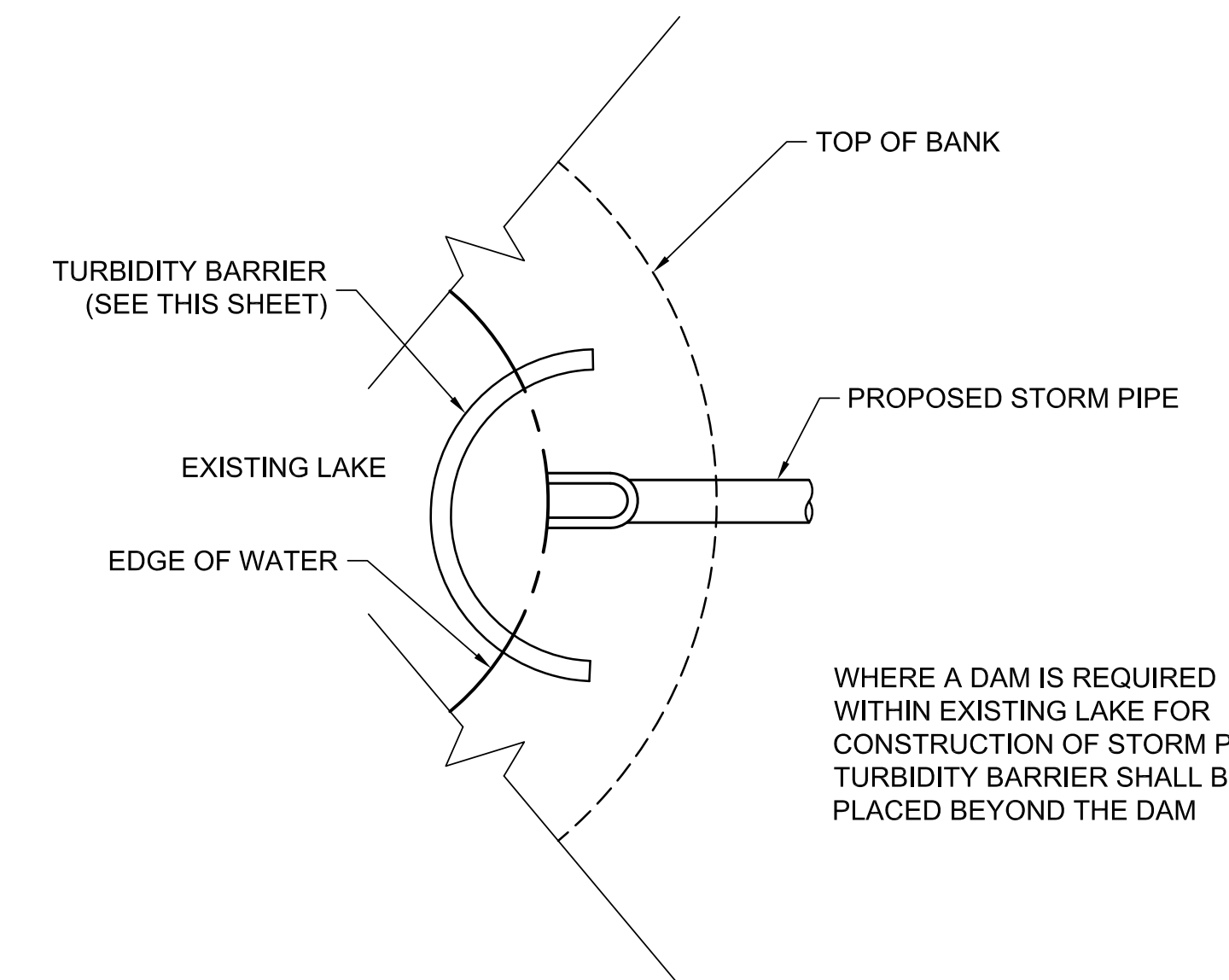
TYPICAL SWALE SECTION



TYPICAL STAKED HAY BALES



SYNTHETIC BALE PROTECTION AROUND INLETS OF SIMILAR STRUCTURES



TURBIDITY BARRIER AT CONNECTION OF STORM PIPE TO EXISTING LAKE

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DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

REV	DATE	BY	DESCRIPTION

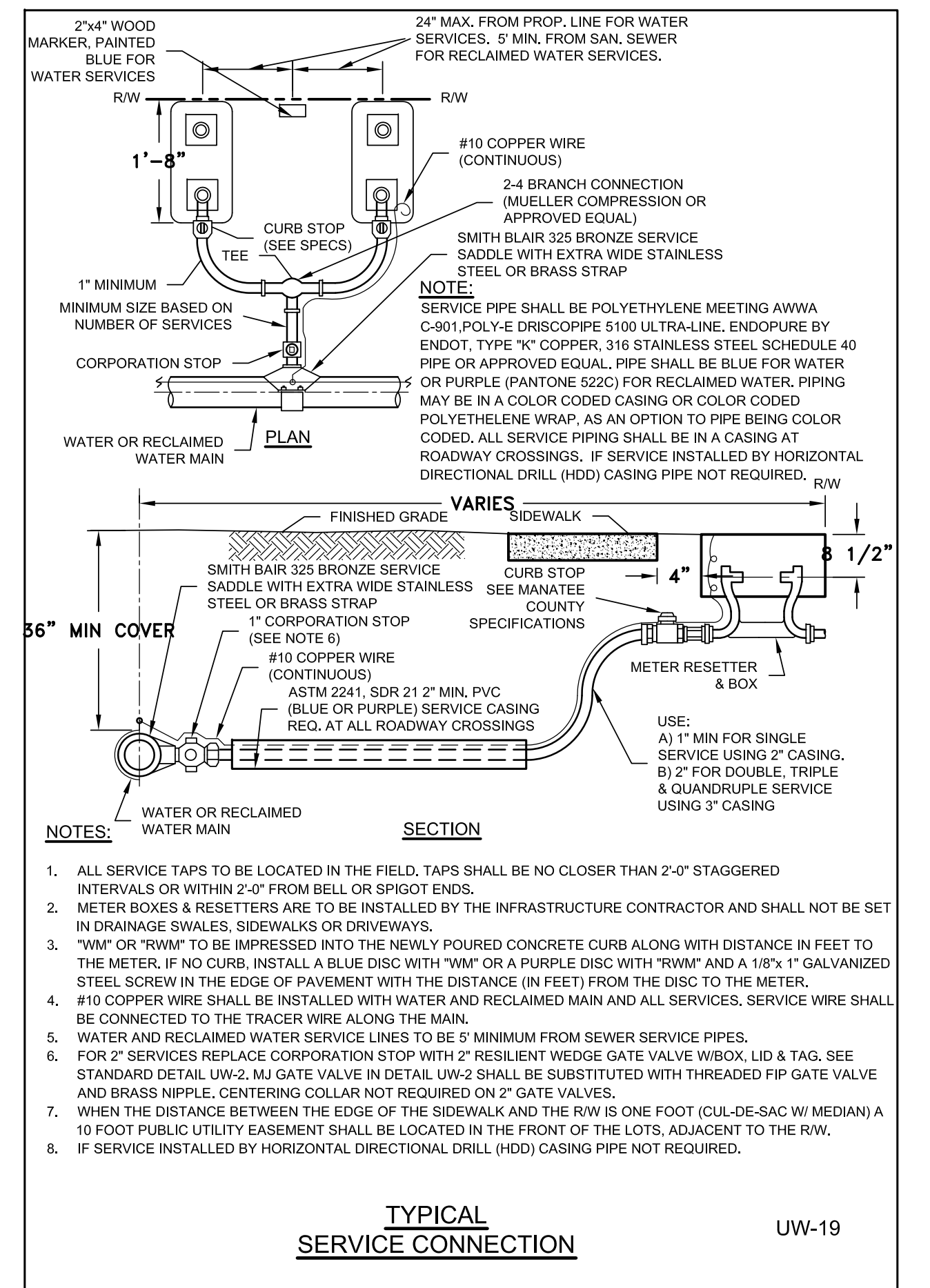
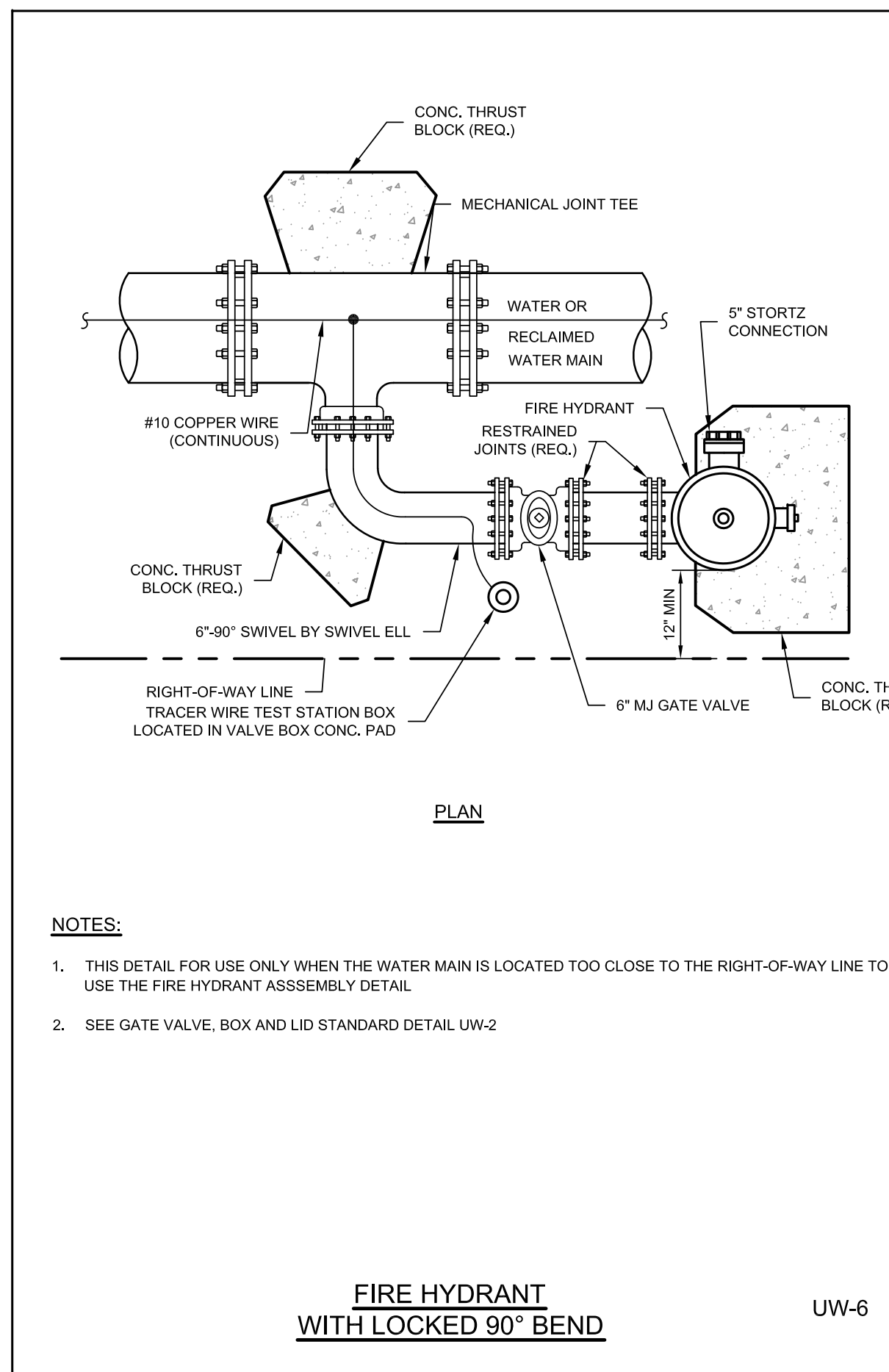
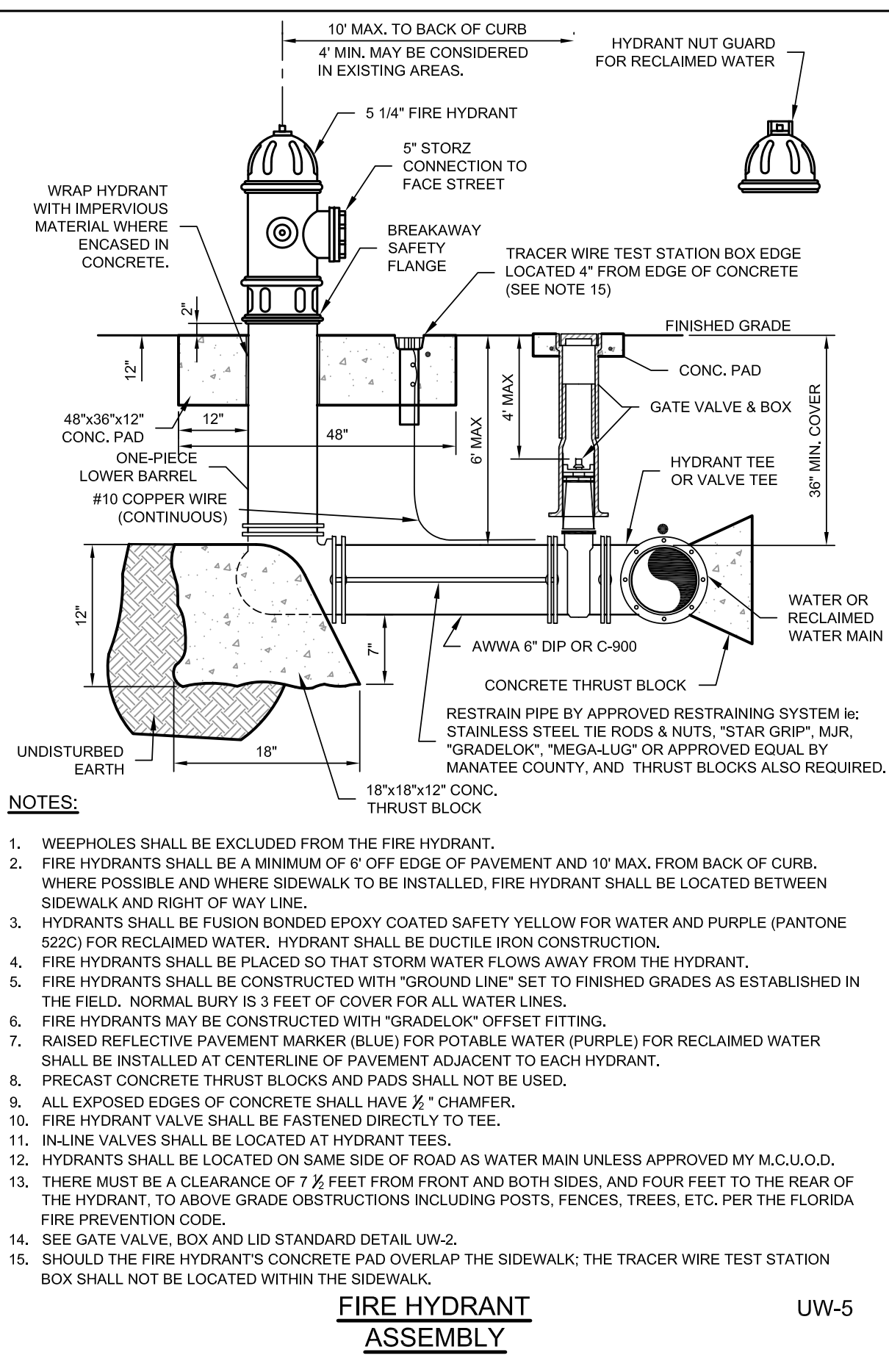
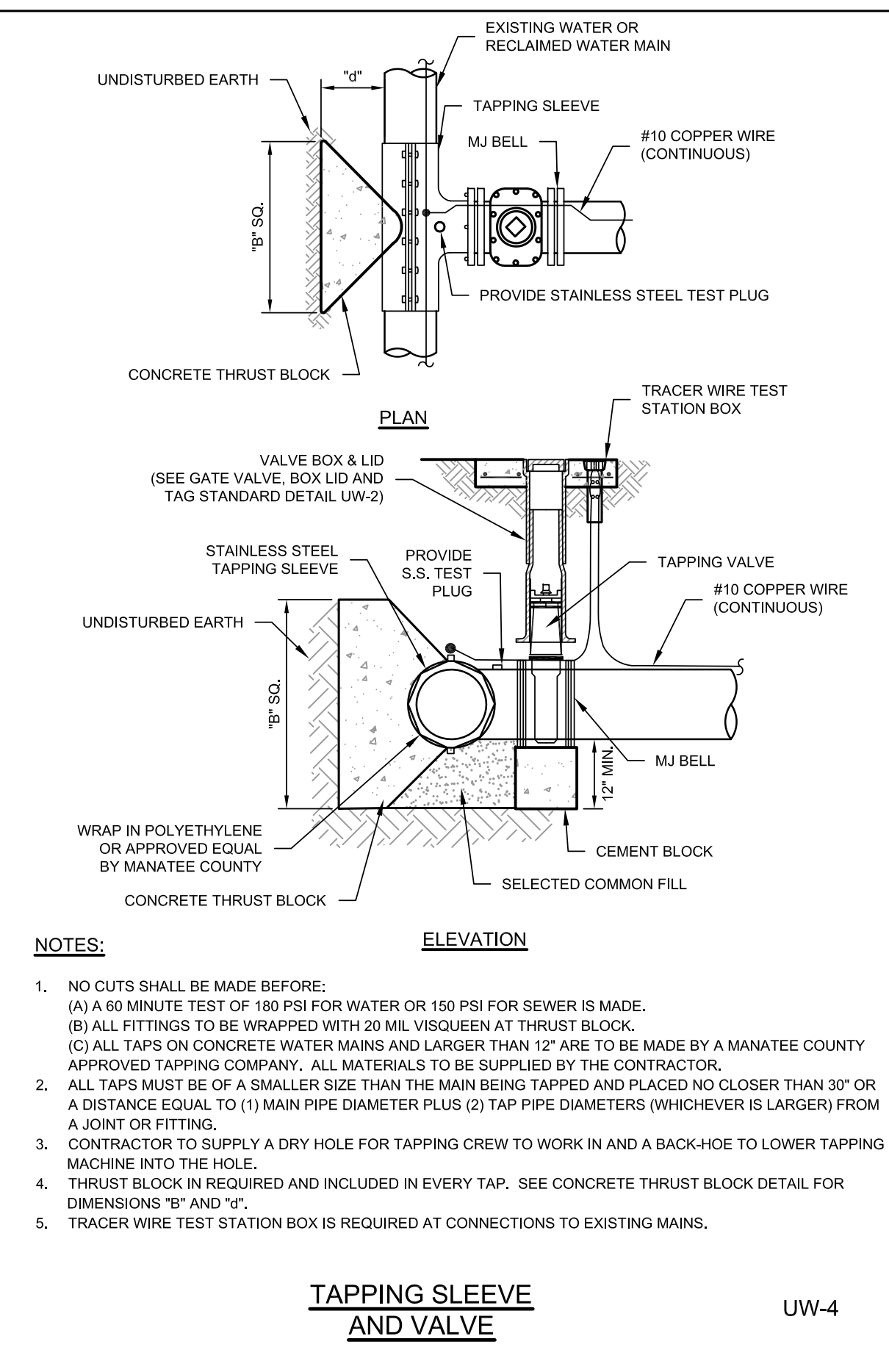
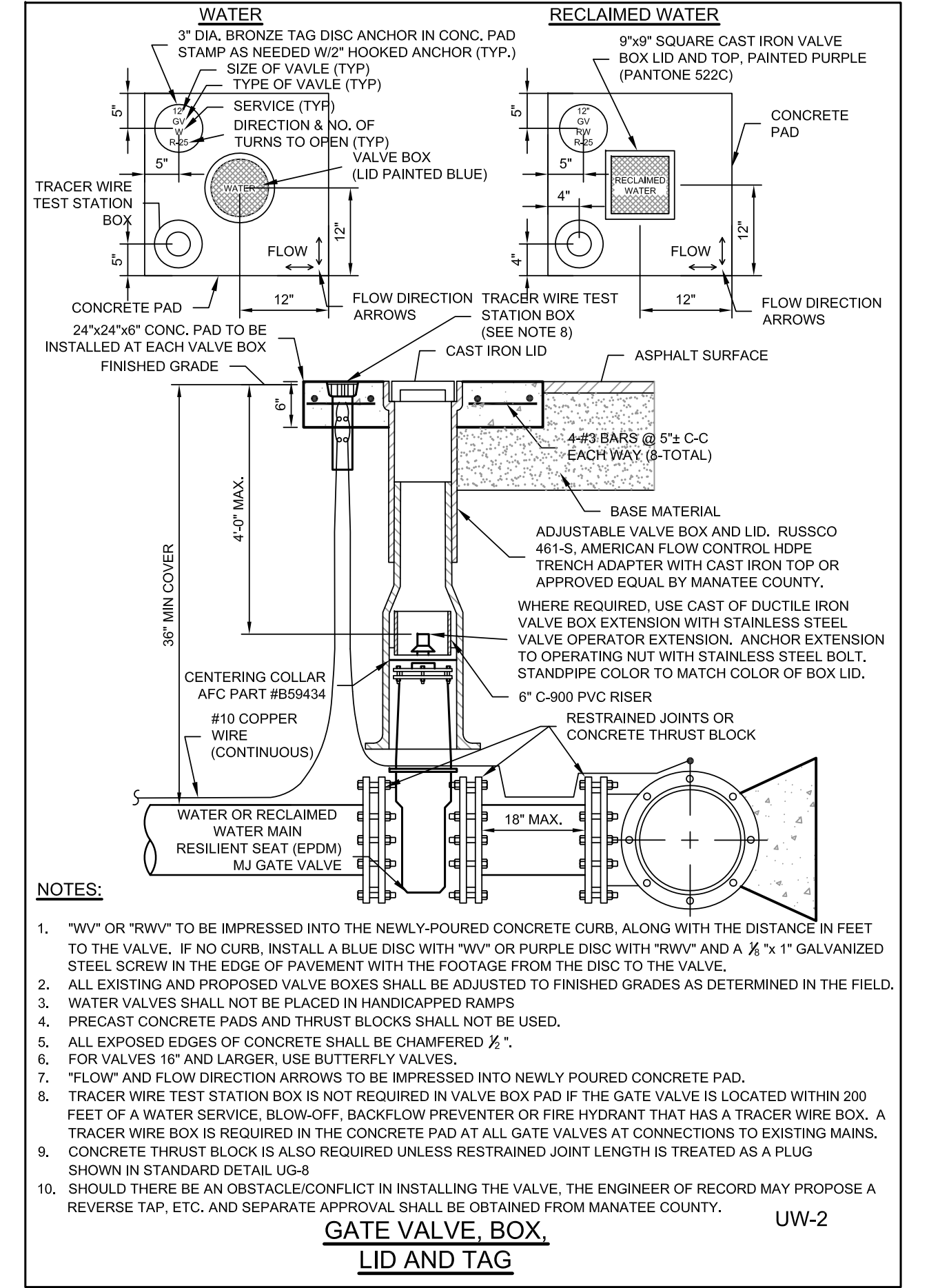
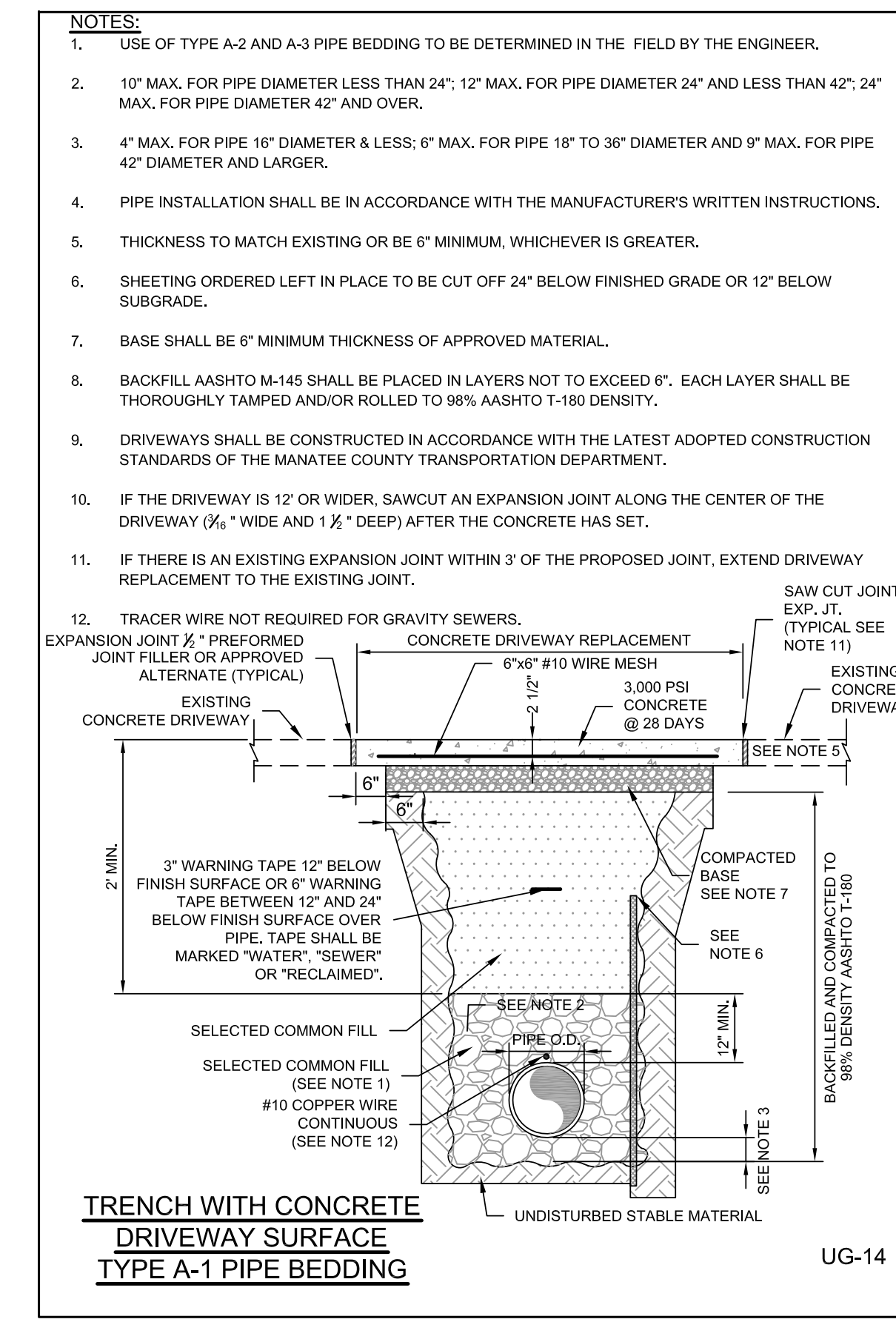
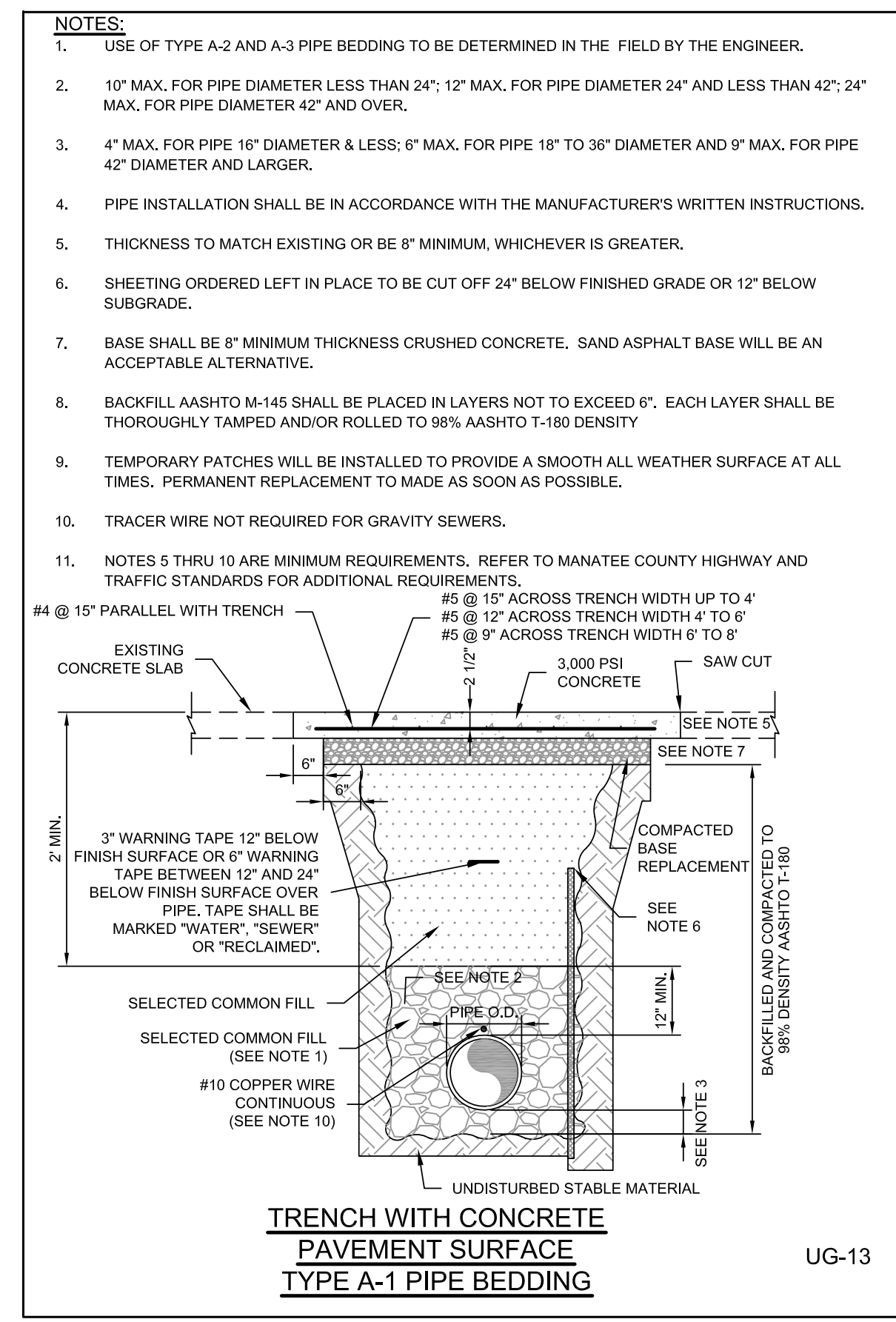
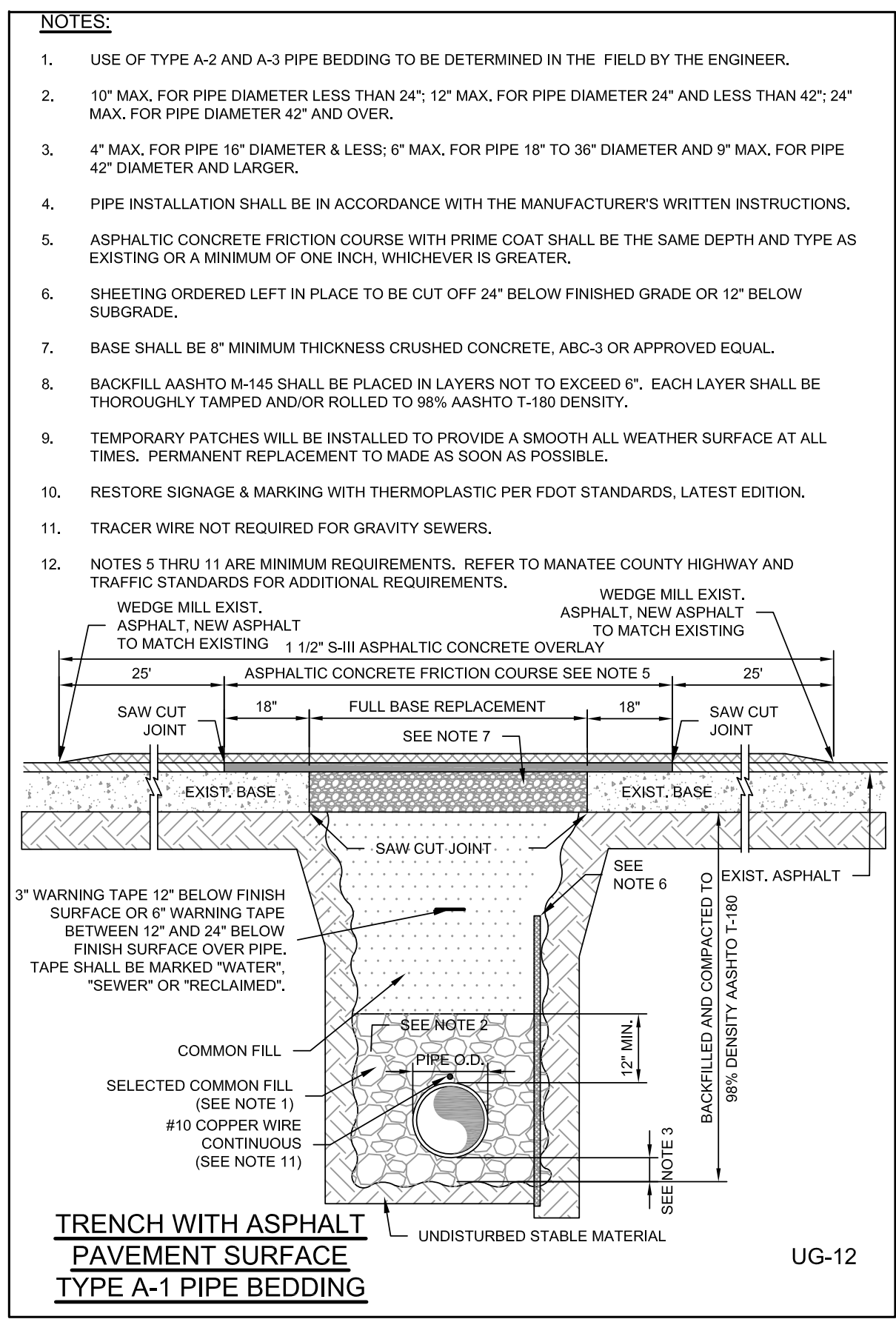
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MANATEE COUNTY
 ONECO WATERLINE REPLACEMENT (PHASE II)
 EROSION CONTROL DETAILS

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

JOB NO. 7880D.10
 DRAWING NO. T-02
 SHEET NO. 13 OF 14



DESIGNED	JMS
DRAWN	DVP
CHECKED	JMF
DATE	APRIL 2010
PROJECT ENGINEER	

REV	DATE	BY	DESCRIPTION

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MANATEE COUNTY
ONECO 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. 7880D.10
 DRAWING NO. T-03
 SHEET NO. 14 OF 14