



White House Utility District

WATER & WASTEWATER

Engineer's Packet Water and Sewer

The White House Utility District engineer's packet has been created to help streamline the plan review and plan approval of projects within the White House Utility District service area. This packet contains information that will help you to understand the plan review and approval process.

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WHUD Engineering Department			
P.O. Box 608, White House, TN 37188 • Fax: 615-672-9427			
Brandi Webster	Administrative Assistant	615-672-4110 x241	bwebster@whud.org
Gerard Averill	Engineering Technician	615-672-1033	gaverill@whud.org
Pat Harrell	District Engineer	615-672-9527	pharrell@whud.org

Process for Water & Sewer Utility Plan Approval and Construction

1. Two sets of plans for each utility that White House Utility District (WHUD) will serve need to be submitted to the engineering department. The items that should accompany your plans are:
 - a. the "[Development Information Form](#)", completely filled out
 - b. a check made payable to White House Utility District for \$1,000 to pay for the Plan Review Fee
 - c. If any water meters are shown on your plans that are larger than 5/8" x 3/4" in size, the "[Proposed Meter Inquiry Form](#)" will need to be filled out completely for each meter 1" or larger.
 - d. a Master Utility Plan of your development will be necessary if your project will have any additional phases/sections at any time in the future.

The plans and the documents above will need to be sent to:

Attention: Gerard Averill, Engineering Technician
White House Utility District
P.O. Box 608 (USPS)
3303 Hwy 31W (Other carriers)
White House, TN 37188

2. WHUD will forward a Development Agreement to the developer that outlines the developer's obligations as well as our own. This agreement must be executed prior to WHUD's final plan approval. Failure by the developer to sign and return the development agreement to WHUD prior to plan approval will bring the development process to a halt.
3. The plans will not be reviewed until all of the information listed above (a. – d.) has been received by WHUD. Within 21 business days, plans will receive an initial review by WHUD staff and the engineer will be notified if corrections need to be made to the plans. The engineer will have one set of red-lined plans made available to him/her from which to make corrections. The engineer will need to arrange to have the red-lined plans picked up from the WHUD office. The developer will be sent a letter from WHUD informing him/her that corrections have been sent back to their engineer.
4. The engineer makes corrections to the plans and sends two sets of revised water plans and two sets of revised sewer plans back to WHUD. Within 21 business days, WHUD will review the revised plans and notify the engineer of approval if all corrections have been made. If WHUD issues comments after this review, the engineer will be required have a meeting with WHUD to discuss the comments and any concerns. This must be done before we will review any additional plan

submittals. The developer will be sent a letter informing him/her of the status of their plan review.

5. After WHUD's review meeting has been held, the engineer will need to submit revised plans for review. WHUD will respond to plan submittal within 21 business days. If WHUD issues comments after this review, the developer will be notified of deficiencies in the plans and informed that an additional nonrefundable fee of \$1,000 will be required before WHUD will continue the review process. The fee will cover three additional plan reviews. Each plan review will be completed within 21 business days.
6. Once plans have been reviewed and approved, WHUD will request the Engineer to submit a minimum of eight sets of plans (see item number 7) with all final corrections made for WHUD to stamp "Approved for Construction" along with a digital file of the drawings in .dwg or .dxf format. The file may be emailed or delivered on a CD with the plans. ***Reminder - The approved plans will not be released to the engineer or the developer until the digital file and the signed Development Agreement have been received by WHUD.**
7. After WHUD has approved construction plans and notified the developer in writing, the plans will need to be picked up by the developer or engineer and sent to the Tennessee Department of Environment and Conservation for approval by the Division of Water Supply and the Division of Water Pollution Control. WHUD is not responsible for fees associated with TDEC's review.
8. After State approval, two sets of plans are kept by the State of Tennessee, four sets of plans per utility being installed (4 for water and 4 for sewer) are to be sent to WHUD, and the remaining two sets are for the developer's use. Remember, the contractor will be required to keep state approved plans on the job site at all times. WHUD will also be provided a copy of the state approval letter(s).
9. The developer will need to provide to WHUD any other applicable permits required to complete installation.

DEVELOPMENT INFORMATION FORM

Development Name: _____

Phase #: _____

Section #: _____

Developer Name: _____

Developer's Address: _____

(This is the address you wish
all correspondence from

WHUD to be sent.) _____

Developer's Phone Number: _____

Developer's Fax Number: _____

Developer's E-mail Address: _____

Engineer Name: _____

Engineer's Address: _____

Engineer's Phone Number: _____

Engineer's Fax Number: _____

Engineer's E-mail Address: _____

Contact Person Responsible for Plan Correction: _____

Contact person's Phone Number: _____

PROPOSED METER INQUIRY FORM

This form must be filled out completely in order for WHUD to ensure your project is matched with the correct size water meter that will meet the needs of your project.

(One form needs to be filled out for each water meter larger than 3/4" in size)

Is this a NEW structure or development? Yes No

Date of Inquiry:	Date Service is Required:	
Company Name: <i>(leave blank if residential)</i>		
Contact Name:		
Phone:		
Address / Location of Proposed Meter:		
Size of Proposed Meter: <input type="checkbox"/> 1" <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> 6" <input type="checkbox"/> 8"		
Usage of Proposed Meter: <input type="checkbox"/> Commercial or <input type="checkbox"/> Residential		
Please complete only one of the three boxes below:		
<input type="checkbox"/> Domestic Only <hr style="width: 100%;"/> Maximum anticipated flow in gallons per minute	<input type="checkbox"/> Irrigation Only <hr style="width: 100%;"/> Maximum anticipated flow in gallons per minute	<input type="checkbox"/> Fire Protection & Domestic <hr style="width: 100%;"/> Maximum anticipated FIRE flow in gallons per minute <hr style="width: 100%;"/> Maximum anticipated DOMESTIC flow in gallons per minute
<p><i>Please Note: You will be required to install a backflow preventer, and your device must be tested by WHUD personnel prior to receiving water service from this meter.</i></p> <p>The Engineering Department will review this request and contact you within fifteen business days.</p>		

GUIDELINES AND CHECKLIST FOR WHITE HOUSE UTILITY DISTRICT WATER WORK

I. Master Plan

A. General Criteria for Master Plans

1. A Master Plan is required for developments with two or more phases.
2. A Master Utility Plan shall be submitted a minimum of 30 days prior to plan submittal or with the first phase of any project. The review of the proposed development plans will not take place until the Master Plan has been submitted.
3. Proposed utility layout sheet and water mains must be in agreement with the WHUD approved Master Plan. If the submitted plans do not match with the Master Plan, a revised Master Plan must be submitted for WHUD approval prior to the completion of the phase review.

B. Master Plan Requirements

The Developer/Consultant shall assure that the following criteria are met prior to submitting plans for review:

1. Plans submitted to WHUD must meet all of the WHUD rules and regulations and any other governing agency's rules and regulations that may apply to the project.
2. Plan shall be on 24" x 36" sheets.
3. Plan shall be a minimum of 1"=100' scale.
4. A North Arrow is required on all plan sheets.
5. Plan shall include all proposed and existing utilities within the proposed development.
6. Plan shall include the approximate location of all proposed and existing drainage channels with flow arrows.
7. Plan shall show where the development will be split into phases/sections.
8. Plan shall include a chart noting the number of lots per phase and/or sections.
9. Plan shall include topography with 10' major contours and 2' minor contours.
10. Plan shall show approximate location of all fire hydrants and sanitary sewer manholes.
11. Plan shall notate the approximate linear footage of water mains (total and broken down by size per phase).
12. Plan shall notate the approximate linear footage of sewer mains (total and broken down by type and size per phase).
13. Engineer's Seal with signature needs to be on the final plan for WHUD acceptance.

II. General Design Criteria for Proposed Water Main Installation

- A. New Water Main Installation can take place within the street Right-of-Way, private easement, or as specified by WHUD depending on the following conditions:
1. Proposed water main design must comply with WHUD Specifications and any other governing entity ordinance or codes. These agency requirements supersede any of the requirements listed in this guideline.
 2. Unless otherwise noted, water mains shall be Ductile Iron.
 3. Maintain a three foot (3') minimum separation distance between the new water main and the existing water main. Water mains are not to be replaced in place.
 4. Whenever possible the new water main shall not be constructed under existing or proposed sidewalks, curbs, and pavements.
 5. Each dwelling unit is to be within 500 feet of a fire hydrant or as directed by applicable ordinances. The 500 foot distance is to be measured along the R.O.W.
 6. As a general rule, size on size tapping sleeve is not allowed. For size on size mains, propose cut-in tees.
 7. Permanent dead-end assemblies are required at the end of 25 feet or longer pipe sections.
 8. Permanent dead-end assemblies are to be used at the end of dead-end mains instead of fire hydrants.
 9. The top of pipe elevation of the water main must maintain a minimum 1.5 foot (1.5') vertical clearance where the water main crosses under existing and proposed utilities.
 10. Steel casing pipe shall be proposed where water mains cross under Box Culverts or large Storm Drain Pipes. Casing sizes shall be in accordance with WHUD specifications.
 11. Where applicable, Developer/Consultant must consider the need to maintain water service to residential and commercial establishments. Developer / Consultant may request temporary water system or non-standard working hours, subject to WHUD approval.
 12. Valves are to be placed every 1,000 feet and at locations deemed necessary by WHUD to isolate the water distribution system.
 13. Water mains are to be a minimum of 36" below grade.

III. General Criteria for Water Mains, Service Lines, and Meter Box Adjustments

- A. Water Mains shall be replaced/adjusted/relocated/installed within the parkway depending on the following conditions:
1. Water Master Plan or Capital Improvement Program requires a new/upgraded water main. WHUD to inform Developer/Consultant.

2. At the discretion of WHUD, if the existing top of pipe elevation of the water main is less than 30" below the proposed subgrade elevation. Existing top of pipe elevations can be determined by the following:

a) Gate Valves

- i. When gate valves are present, calculate the top of pipe elevation by adding the field-measured existing valve stem depth below the existing grade and the stem length.

b) Pot-holing

- i. The Developer/Consultant shall request in writing the exposure of the water facilities to identify potential conflicts with the proposed design work.
- ii. For developer driven projects, WHUD will review request to determine if Developer will be allowed to pot-hole area. Developer will be responsible for all costs associated with the pot-holing and repair.
- iii. For capitol improvement projects, WHUD will coordinate any excavation if necessary. WHUD **may** allow the Consultant handle this step.
- iv. **Regardless of project type, written requests must be submitted four (4) weeks in advance in order to avoid delays with the design schedule.**

3. Existing water mains located in the Right-of-Way that are to remain in service must be at least 30" below the proposed subgrade elevation under proposed driveways or roadways. Existing water mains may be replaced/adjusted/ concrete encased depending on the type of pipe material and proposed coverage.

4. New water main extension will require WHUD approval.

5. Visit WHUD web page at <http://www.whud.org/devpacket.asp> for the latest specification and revisions for water and sanitary sewer construction and WHUD Standard Details.

B. Water service lines are installed, relayed, relocated, or replaced as described below:

1. All non copper services are to be replaced with new copper services.
2. Long and short service lines are relayed when the water main is proposed for replacement.
3. If existing water mains are in the parkway and not being replaced but the long service lines cross the proposed street, the replacement of the long service is required.
4. All residential lots shall be provided a minimum of ¾" service line.

C. Meter Boxes are relocated or replaced (with meter) as described below:

1. From on-site field investigations, existing meter boxes within private property, behind fences, and those that are in conflict with the proposed sidewalks, and street widening/improvements must be relocated.

2. A damaged or substandard meter box must be replaced.

IV. Water Distribution Plan Requirements

- A. The Developer/Consultant shall assure that the following criteria are met prior to submitting plans for review:
 1. Plans submitted to WHUD must meet all of the WHUD rules and regulations and any other governing agency's rules and regulations that may apply to the project.
 2. Plan shall be on 24" x 36" sheets.
 3. Plan scale shall be as follows:
 - a) For developer driven projects, the scale shall be no smaller than 1"=50'.
 - b) For capitol improvement projects, the scale shall be no smaller than 1"=20'.
 4. Project name must match the name used on the approved Master Plan.
 5. A WHUD cover sheet with the applicable General Water Notes, Job Numbers, Location Map and any other notes pertinent to the project. The Location Map must show the project limits. The Job Numbers will be supplied during WHUD's initial review of the project.
 6. For Capitol Improvement Projects, detailed Estimated Quantities are to be submitted with the plans.
 7. WHUD Job Numbers are to be shown on all plan sheets.
 8. Plans must show Lot Numbers, Addresses (if known), existing and proposed street names, and R.O.W. Adjoining property owner information is also required.
 9. Show all property lines, turnarounds, creeks, existing and proposed easements (both permanent and temporary).
 10. A North Arrow is required on all plan sheets.
 11. Existing and proposed sanitary sewer, storm sewer, and all utilities are shown on plan and profile views.
 12. For Capitol Improvement Projects, the length of proposed mains from fitting to fitting is required. Length is to be rounded to the nearest 1' increment. For Subdivision Projects, this will be required in the As-builts.
 13. Plans must have match lines that correspond to the proposed mains on other sheets.
 14. WHUD legend is shown on each water plan sheet.
 15. Show fire hydrant, water services, air release, dead-end, and trenching details on plans.
 16. Show cut and replace existing asphalt or sidewalk, if applicable.
 17. Size of service lines larger than ¾" shall be indicated for each service line.
 18. For water mains 12" or larger, a profile is required.
 19. Visit WHUD web page at www.whud.org for the latest specification and revisions for water and sanitary sewer construction and Standard Details.
 20. Engineer's Seal with signature needs to be on the final plan for WHUD acceptance.

21. For developer driven projects, a block with the required information shall be included on each plan sheet. The following information in the block is required:

- a) Developer's name
- b) Developer's address
- c) Developer's phone number
- d) Developer's fax number
- e) Engineer's name
- f) Engineer's address
- g) Engineer's phone number
- h) Engineer's fax number
- i) Project Name
- j) WHUD Job Number
- k) Number of Lots
- l) Linear Footage of Pipe on page
- m) Total Linear Footage of Pipe

Example

Project Name: _____		
WHUD Job #: _____	Total Number of Lots: _____	
Page Total of Linear Footage of Pipe: _____	Total Linear Footage of Pipe: _____	
Developer's Name: _____		
Address: _____		
City: _____	State: _____	Zip Code: _____
Phone #: (____) _____	Fax #: (____) _____	
Engineer's Name: _____		
Address: _____		
City: _____	State: _____	Zip Code: _____
Phone #: (____) _____	Fax #: (____) _____	

GUIDELINES AND CHECKLIST FOR WHITE HOUSE UTILITY DISTRICT SEWER WORK

I. Master Plan

A. General Criteria for Master Plans

1. A Master Plan is required for developments with two or more phases.
2. A Master Utility Plan shall be submitted a minimum of 30 days prior to plan submittal or with the first phase of any project. The review of the proposed development plans will not take place until the Master Plan has been submitted.
3. Proposed utility layout sheet and sewer mains must be in agreement with the WHUD approved Master Plan. If the submitted plans do not match with the Master Plan, a revised Master Plan must be submitted for WHUD approval prior to the completion of the phase review.

B. Master Plan Requirements:

The Developer/Consultant shall assure that the following criteria are met prior to submitting plans for review:

1. Plans submitted to WHUD must meet all of the WHUD rules and regulations and any other governing agency's rules and regulations that may apply to the project.
2. Plan shall be on 24" x 36" sheets.
3. Plan shall be a minimum of 1"=100' scale.
4. A North Arrow is required on all plan sheets.
5. Plan shall include all proposed and existing utilities within the proposed development.
6. Plan shall include the approximate location of all proposed and existing drainage channels with flow arrows.
7. Plan shall show where the development will be split into phases/sections.
8. Plan shall include a chart noting the number of lots per phase and/or sections.
9. Plan shall include topography with 10' major contours and 2' minor contours.
10. Plan shall show approximate location of all fire hydrants and sanitary sewer manholes.
11. Plan shall notate the approximate linear footage of water mains (total and broken down by size per phase).
12. Plan shall notate the approximate linear footage of sewer mains (total and broken down by type and size per phase).
13. Engineer's Seal with signature needs to be on the final plan for WHUD acceptance.

II. General Design Criteria for Proposed Sanitary Sewer Main Installation

- A. New Sanitary Sewer Main Installation can take place within the street Right-of-Way, private easement, or as specified by WHUD depending on the following conditions:
1. Proposed sewer main design must comply with WHUD Specifications and any other governing entity ordinance or codes. These agency requirements supersede any of the requirements listed in this guideline.
 2. Sanitary sewer shall be laid in straight alignment with uniform grade between manholes.
 3. If the sanitary sewer main is shallow, Developer/Engineer shall insure that all building laterals can be laid at a minimum of 2% slope to Right-of-Way.
 4. On any sewer main aligned parallel to a proposed or existing underground utility, the Developer/Consultant must assure that all lateral services can be installed with a minimum of 2% slope and do not conflict with the existing/proposed underground utilities.
 5. Developer/Consultant to field verify the existing sanitary sewer invert elevations.
 6. Proposed sewer mains and service laterals to be a minimum of 3 feet of cover from top of pipe to finish grade.
 7. Unless otherwise noted, sewer mains shall be
 - a) SDR 26 – PVC for mains with a depth of cover 18' or less.
 - b) C900 – PVC for mains with a depth of cover between 18' and 24'.
 - c) Ductile Iron for mains with a depth of cover greater than 24'.
 - i. Ductile Iron mains must have Protecto 401 Coating or other WHUD approved coating system.
 8. Whenever possible the new sewer main shall be aligned in the center of the proposed pavement section.
 9. Pump Stations shall comply with current WHUD specifications.

III. General Design Criteria for Proposed Sanitary Sewer Force Main Installation

- A. New Sanitary Sewer Force Main Installation can take place within the street Right-of-Way, private easement, or as specified by WHUD depending on the following conditions:
1. Proposed sewer main design must comply with WHUD Specifications and any other governing entity ordinance or codes. These agency requirements supersede any of the requirements listed in this guideline.
 2. Maintain a three foot (3') minimum separation distance between the new force main and the existing sewer mains and 10' minimum separation distance between existing water mains. Force mains are not to be replaced in place.
 3. Whenever possible the new force main shall not be constructed under existing or proposed sidewalks, curbs, and pavements.
 4. The top of pipe elevation of the force main must maintain a minimum two foot (2') vertical clearance where the force main crosses under existing and proposed utilities.

5. Steel casing pipe shall be proposed where force mains cross under Box Culverts or large Storm Drain Pipes. Casing sizes shall be in accordance with WHUD specifications.
6. Valves are to be placed every 1,000 feet and at locations deemed necessary by WHUD to isolate the sewer distribution system.
7. Force main is to be a minimum of 36" below grade.

IV. General Criteria for Relocation of Sanitary Sewer Mains, Service Laterals, and Sanitary Sewer Manholes:

A. Sanitary Sewer services shall be installed or replaced as described below:

1. Replace service laterals if the main is to be replaced.
2. Insure all platted lots are provided with a gravity fed sewer lateral to the property line (if appropriate).
3. Laterals shall be centered on proposed lots.
4. If sanitary sewer main does not require replacement, check with WHUD contact person to determine if laterals need replacement.

B. Sanitary Sewer Main and laterals are to be protected as follows:

1. Concrete encasement to be proposed if there is less than 3 feet of cover between the top of the proposed sewer main to the subgrade of the road.
2. Concrete encasement shall be used if there is less than 2 feet (horizontal distance) between outside diameters of proposed sanitary sewer and storm sewer.

C. Sanitary Sewer Manholes are replaced, installed, or adjusted as follows:

1. Existing Sanitary Sewer Manholes to be adjusted/reconstructed/replaced if located within the proposed street reconstruction boundaries.
2. Install a manhole at the end of a proposed sewer main.
3. Install a manhole at each angle point.
4. Maximum distance between manholes is 300 feet.
5. Install a manhole if the distance between existing manholes is greater than 300 feet.
6. Provide Internal Drop Assemblies and show a detail when the difference in the inlet to outlet elevation is 24" or greater.
7. For inlet/outlet invert elevations between 0.2' and 2', a smooth transition between in and out inverts are required.
8. Where applicable, investigate the possibility of eliminating any unnecessary manholes in the proposed line, while meeting the above criteria.

V. Sanitary Sewer Plan Requirements:

A. The Developer/Consultant shall assure that the following criteria are met prior to submitting plans for review:

1. Plans submitted to WHUD must meet all of the WHUD rules and regulations and any other governing agency's rules and regulations that may apply to the project.
2. Plan shall be on 24" x 36" sheets.

3. Plan scale shall be as follows:
 - a) For Subdivision Projects, the scale shall be no smaller than 1"=20' (horizontal) and 1"=5' (vertical). Scale must be consistent on all plan and profile sheets
 - b) For Capitol Improvement Projects, the scale shall be no smaller than 1"=20' and 1"=5' (vertical). Scale must be consistent on all plan and profile sheets.
4. A WHUD cover sheet with the applicable General Sanitary Sewer Notes, Job Numbers, Location Map and any other notes pertinent to the project. The Location Map must show the project limits. The Job Numbers will be supplied during WHUD's initial review of the project.
5. Plans and Profiles are drawn from low point to high point, left to right.
6. In the profile view, invert elevations shall be shown every 50 feet along the gravity sewer main sections and at all manhole main penetrations.
7. Stationing shall be shown at every manhole and at 50 foot intervals.
8. For Capitol Improvement Projects, detailed Estimated Quantities are to be submitted with the plans.
9. WHUD Job Numbers are to be shown on all plan sheets.
10. Plans must show Lot Numbers, Addresses (if known), existing and proposed street names, and R.O.W. Adjoining property owner information is also required.
11. Show all property lines, turnarounds, creeks, existing and proposed easements (both permanent and temporary).
12. A North Arrow is required on all plan sheets.
13. Existing and proposed sanitary sewer, storm sewer, and all utilities are shown on plan and profile views.
14. Indicate sewer main lengths, slopes, and pipe diameter and material between manholes on all profile sheets.
15. Plans must have match lines that correspond to the proposed mains on other sheets.
16. WHUD legend is shown on the overall sewer plan.
17. Show manhole details and trenching detail in plans.
18. Show standard manhole, drop manhole, sewer service laterals, concrete encasement/cap, and trenching details on plans.
19. Visit WHUD web page at www.whud.org for the latest specification and revisions for water and sanitary sewer construction and Standard Details.

20. For developer driven projects, a block with the required information shall be included in the lower right corner on each plan sheet. The following information in the block is required:

- a) Developer's name
- b) Developer's address
- c) Developer's phone number
- d) Developer's fax number
- e) Engineer's name
- f) Engineer's address
- g) Engineer's phone number
- h) Engineer's fax number
- i) Project Name
- j) WHUD Job Number
- k) Number of Lots
- l) Linear Footage of Pipe on page
- m) Total Linear Footage of Pipe

Example

Project Name: _____		
WHUD Job #: _____	Total Number of Lots: _____	
Page Total of Linear Footage of Pipe: _____	Total Linear Footage of Pipe: _____	
Developer's Name: _____		
Address: _____		
City: _____	State: _____	Zip Code: _____
Phone #: (____) _____	Fax #: (____) _____	
Engineer's Name: _____		
Address: _____		
City: _____	State: _____	Zip Code: _____
Phone #: (____) _____	Fax #: (____) _____	

GENERAL WATER NOTES TO BE INCLUDED ON ALL WATER PLANS

1. The Contractor shall not proceed with any pipe installation work until a Pre-Construction Meeting has been held and they have been notified by the White House Utility District to proceed with the work.
2. The locations and depths of existing utilities, including service laterals, and drainage structures shown on the plans are approximate only. The Contractor shall verify the exact location and depths of underground utilities at least 48 hours prior to construction whether shown on plans or not, and to protect the same during construction.
3. The Contractor will be responsible for restoring to its original or better condition from damage done to existing fences, curbs, streets, driveways, landscaping and structures.
4. No meter boxes to be set in driveways. Any meter boxes set in driveways will be relocated at the Contractor's and/or Developer's expense.
5. The Contractor shall maintain service to existing utilities at all times during construction.
6. All water mains greater than two (2) inches in diameter shall be Ductile Iron Class 350 Pipe.
7. All water mains shall be installed at a minimum depth of 36 inches unless otherwise noted on the construction plans.
8. Water mains and sewer mains must maintain a minimum of ten (10) foot horizontal clearance and/or eighteen (18) inches vertical clearance at all times.
9. The Contractor will keep the area on top of and around the water meter box free of all objects and debris.
10. All testing will be done in accordance with the most recent White House Utility District standards.
11. In no case are valves to be located within paved areas.
12. Adequate space shall be provided for the installation and maintenance of meter vaults, backflow prevention assemblies and water mains.
13. Contractor is responsible for removal of all waste materials upon project completion. The Contractor shall not permanently place any waste materials in the flood plain without first obtaining required permits.
14. All temporary erosion and sedimentation controls shall be removed by the Contractor at final acceptance of the project by the White House Utility District.

BLASTING

15. When allowable, blasting shall be performed in accordance with the appropriate criteria established by the National Fire Protection Association or applicable local codes.
16. When blasting is allowing, blasting for sewer line excavation must be done in such a manner as to minimize the fracturing of rock beyond the required excavation. The Contractor shall consider the elevation of the existing water main in relation to the blasting charge and the relative direction of existing and proposed trenches. Blasting within such areas shall be accomplished only by qualified blasting contractors who hold blasting licenses from a qualified agency. Any damage to existing water mains resulting from blasting shall be repaired and retested by the contractor at his own expense.
17. **Work completed by the Contractor which has not received a Notice to Proceed by the White House Utility District will be subject to removal and replacement by and at the expense of the Contractor.**

GENERAL SEWER NOTES TO BE INCLUDED ON ALL SEWER PLANS

1. The Contractor shall not proceed with any pipe installation work until a Pre-Construction Meeting has been held and they have been notified by the White House Utility District to proceed with the work.
2. The locations and depths of existing utilities, including service laterals, and drainage structures shown on the plans are approximate only. The Contractor shall verify the exact location and depths of underground utilities at least 48 hours prior to construction whether shown on plans or not, and to protect the same during construction.
3. The Contractor will be responsible for restoring to its original or better condition from damage done to existing fences, curbs, streets, driveways, landscaping and structures.
4. The Contractor shall maintain service to existing utilities at all times during construction.
5. All residential gravity fed sewer service laterals shall be extended to the property line and capped and sealed.
6. Water mains and sewer mains must maintain a minimum of ten (10) foot horizontal clearance and/or eighteen (18) inches vertical clearance at all times.
7. On all manholes to be abandoned, the rings and covers shall be salvaged in accordance with the most current White House Utility District standards. The hole should be backfilled to the satisfaction of the Inspector.
8. Contractor is responsible for removal of all waste materials upon project completion. The Contractor shall not permanently place any waste materials in the flood plain without first obtaining required permits.
9. All temporary erosion and sedimentation controls shall be removed by the Contractor at final acceptance of the project by the White House Utility District.
10. After construction is complete, testing will be done by TV camera by the Contractor and observed by the Inspector, as the camera is run through all lines. Any abnormalities, such as broken pipe, misaligned joints or non-uniform slope, must be replaced by the Contractor at his expense. All testing will be done in accordance with the most recent White House Utility District standards.

BLASTING

11. When allowable, blasting shall be performed in accordance with the appropriate criteria established by the National Fire Protection Association or applicable local codes.
12. When blasting is allowing, blasting for sewer line excavation must be done in such a manner as to minimize the fracturing of rock beyond the required excavation. The Contractor shall consider the elevation of the existing sanitary sewer main in relation to the blasting charge and the relative direction of existing and proposed trenches. Blasting within such areas shall be accomplished only by qualified blasting contractors who hold blasting licenses from a qualified agency. Any damage to existing sanitary sewers resulting from blasting shall be repaired and retested by the contractor at his own expense.

SUPPLEMENTARY

13. Unless otherwise noted on the plans, all Sewer Pipe shall conform to the following chart:

	Depth of Main	Pipe Material
1	0 to 18'	SDR 26
2	18' to 24'	C900
3	>24'	Ductile Iron

- 14. Work completed by the Contractor which has not received a Notice to Proceed by the White House Utility District will be subject to removal and replacement by and at the expense of the Contractor.**

AS-BUILT REQUIREMENTS

General Information:

1. Initial As-built drawings should be submitted to WHUD in a paper format for review. The initial package should include the following:
 - a. Paper version of As-builts (page size: 24"x36"). Plans are not required to be sealed and signed by an engineer at this time.
 - b. Contractor red-line drawings.
2. WHUD will review initial As-built submittal within five business days of receipt and notify the Developer/Consultant in writing of whether or not the As-builts have been approved.
3. Upon receiving approval, the Developer/Consultant shall submit to WHUD the Final As-built Package. This package should include the following:
 - a. Signed and Sealed Original of approved As-built drawings.
 - b. Digital file of approved As-built drawings. This must be submitted in DWG and PDF formats.

Water As-built Requirements:

1. Place "As-built" on each plan sheet with the date when the As-built was submitted.
2. Show everything to scale.
3. All Lot lines and numbers, street names and addresses must be shown.
4. The length of pipe, size of pipe, and material type of the proposed mains are required from fitting to fitting.
5. The following objects are to receive two (2) tie-downs to the closest permanent structures available:
 - a. All valves
 - b. End of Line Flushing Assemblies
 - c. Air release valves
 - d. Check valves
6. Some objects that are considered to be permanent structures are as follows:

a. Catch basins	e. Manholes
b. Electrical boxes	f. Fire Hydrants
c. Phone pedestals	g. Headwalls
d. Power poles	
7. Permanent structures are to be represented with a symbol and labeled as to what the structure is. All measurements must begin or end at the center of the structure.
8. All bends must be labeled stating the size of the bend and the degree of the bend.
9. Show locations of all casing pipe (diameter and length).
10. Any valves or pipe intersections where bends are used must have a blow-up detail containing tie-down structures and measurements.
11. All changes should be made in such a manner that they are clear, legible, and neat.

Gravity Sewer As-built Requirements:

1. Place "As-built" on each plan sheet with the date when the As-built was submitted.
2. Show everything to scale.
3. All Lot lines and numbers, street names and addresses must be shown.
4. Show As-built linear feet pipe distances from manhole to manhole.
5. Show sewer laterals with lateral station and lateral information:

Example: Sta. 3+25 (Lt/Rt)
1 – wye
25' – 6" pipe
18" deep

6. The invert elevation, station numbers, slope percent, pipe material and pipe length should be revised as constructed.
7. Show locations of all casing pipe (diameter and length).
8. All changes should be made in such a manner that they are clear, legible and neat.

Force Main Sewer As-built Requirements:

1. Place "As-built" on each plan sheet with the date when the As-built was submitted.
2. Show everything to scale.
3. All Lot lines and numbers, and addresses must be shown.
4. The length of pipe, size of pipe, and material type of the proposed mains are required from fitting to fitting.
5. The following objects are to receive two (2) tie-downs to a permanent structure:
 - a. All valves
 - b. End of Line Flushing Assemblies
 - c. Check valves
6. Some objects that are considered to be permanent structures are as follows:

a. Catch basins	e. Manholes
b. Electrical boxes	f. Fire Hydrants
c. Phone pedestals	g. Headwalls
d. Power poles	
7. Permanent structures are to be represented with a symbol and labeled as to what the structure is. All measurements must begin or end at the center of the structure.
8. All bends must be labeled stating the size of the bend and the degree of the bend.
9. Show locations of all casing pipe (diameter and length).
10. Any valves or pipe intersections where bends are used must have a blow-up detail containing tie-down structures and measurements.
11. All changes should be made in such a manner that they are clear, legible, and neat.

CAPITAL IMPROVEMENT PROJECT CONSULTANT CHECKLIST

1. Consultant to submit sets of WHUD plans to TDOT, city and/or county engineers' dependant on project.
2. Plans should include:
 - a. WHUD Layout Plan Sheets for water and sewer. Layout will need to show existing water and sewer mains and proposed water and sewer mains.
 - b. WHUD General Notes will need to be included.
 - c. Estimated Quantities. Quantities will need to be separated for water and sewer.
 - d. A Construction Phasing Plan if applicable.
3. Bid Packages should include the following:
 - a. WHUD proposals. Proposals will need to be separated for water and sewer.
 - b. Contract documents. Include special provisions if applicable.
 - c. Contract Addendums if applicable
4. Cost Estimates:
 - a. Consultant to submit separate detailed Cost Estimates for Water and Sewer Design Phase plan submittals
5. Payment:
 - a. Payment shall follow outline setup in Engineering Services Attachment II – Compensation for Professional Services in the contract.