

PROJECT TYPICAL DETAILS

JOHNSTON COUNTY

PROJECT REFERENCE NO.		SHEET NO.	
HN-0040		UC-3C	
DESIGNED BY:	ELM		
DRAWN BY:	ELM		
CHECKED BY:	MUP		
APPROVED BY:	MUP		
REVISED:			
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION			
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NOTE:
WATER LINE SHALL BE DUCTILE IRON PIPE
AT ALL AREAS WHERE MIN 12" CLEARANCE
CANNOT BE MAINTAINED. INSTALL AT LEAST
ONE JOINT CENTERED OVER STORM DRAIN.

PROPOSED WATER MAIN
1 EA. JOINT OF DUCTILE
IRON PIPE CENTERED
UNDER STORM DRAIN
IF TOP OF PIPE IS
WITHIN 3 FEET OF
BOTTOM OF STORM PIPE.

STORM PIPE O.D. + 3'

EXISTING STORM PIPE

12" MIN.
(24" IN NCDOT ROW)
CLEARANCE

NO. 57 WASHED STONE

10' MIN D.I.P. OR
HDPE FUSED PIPE

10' MIN D.I.P. OR
HDPE FUSED PIPE

STORM SEWER CROSSING DETAILS
NOT TO SCALE

Drawn By:	Name	Date	
Checked By:			
Approved By:			
Scale:			
Rev.	Description	Date	Init.

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Department of Public Utilities
P.O. Box 2263
Smithfield, NC 27577

**STANDARD
WATER DETAIL**
Storm Sewer
Crossing

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FINISHED GRADE

PROPOSED WATER MAIN

DIP

12" MIN.
(24" MIN. IN
NCDOT ROW)

DIP

THRUST COLLAR

45° BEND

3/4" S.S. THREADED RODS

10' D.I.P. OR HDPE
FUSED PIPE

10' D.I.P. OR HDPE
FUSED PIPE

45° BEND

THRUST COLLAR
(TYP)

1 EA. JOINT OF DUCTILE IRON
OR HDPE FUSED PIPE PIPE
CENTERED UNDER STORM
DRAIN. PIPE SHALL BE BEDDED
BACKFILLED TO 6" ABOVE PIPE
IN WASHED STONE.

**STORM DRAIN
PIPE CROSSING DETAIL**
NOT TO SCALE

NOTES:

1. CULVERT CROSSINGS IN EXISTING NCDOT RIGHT-OF-WAY REQUIRE 24" MIN. SEPARATION FROM BOTTOM OF CULVERT TO TOP OF WATER MAIN.
2. IN LIEU OF RESTRAINT (TIE) RODS, APPROVED RESTRAINT JOINT PIPE MAY BE USED.

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**WATER
STANDARD DETAIL**
Storm Pipe Crossing

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NOTE: PIPE SHALL BE BEDDED UP TO
SPRING LINE AND MINIMUM 4" BELOW
BOTTOM OF PIPE WHEN WET AREAS ARE
ENCOUNTERED.

HAND PLACED
DENSELY COMPACTED
BACKFILL TO 1 FT.
ABOVE TOP OF PIPE

BEDDED PIPE

SHAPED SUBGRADE
SHALL PROVIDE BEARING
ALONG ENTIRE LENGTH
OF PIPE BARREL

PIPE O.D.

1/2 PIPE O.D.

24" ± O.D. MAX.
12" ± O.D. MIN.

ELECTRONIC MARKER BALLS AT 100' ON
CENTER & AT BENDS. MARKER BALLS SHALL
BE INSTALLED AT 1 1/2 TO 2' DEEP.

UNDISTURBED EARTH

NOTE: MARKER BALLS SHALL BE INSTALLED
CONCURRENTLY WITH PIPE. MARKER
BALLS SHALL NOT BE INSTALLED AFTER
TRENCH HAS BEEN COMPLETELY
BACKFILLED.

PIPE LAYING CONDITION
NOT TO SCALE

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**WATER
STANDARD DETAIL**
Pipe Laying
Condition

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FASTEN BRIDLE RODS TO FITTING
FLANGE USING 3/4" TURNED EYE BOLTS.

3/4" S.S. BRIDLE RODS SHALL BE
WELDED TO THE ENCASEMENT PIPE.
WELD AREAS SHALL BE PAINTED WITH
2 COATS OF BITUMINOUS BASE PAINT.

STAINLESS STEEL
SPACERS

ENCLOSE ENDS WITH
BRICK MASONRY & GROUT

PLAN

120°

120°

120°

120°

STEEL ENCASEMENT PIPE
CONFORMING TO ASTM
SPECIFICATION A252-81 GRADE 2
AND A BITUMINOUS COATING ON
THE OUTSIDE.

CARRIER PIPE

SECTION

STAINLESS STEEL SPACERS

NOTES:

1. CARRIER PIPE SHALL BE D.I.P. UNLESS EXPRESSLY APPROVED BY THE COUNTY.
2. STAINLESS STEEL SPACERS SHALL BE USED. NO TIMBER SKIDS ARE ALLOWED.
3. TWO SPACERS PER JOINT SHALL BE USED FOR D.I.P. CARRIER PIPE.
4. THREE SPACERS PER JOINT SHALL BE USED FOR PVC CARRIER PIPE.
5. ENCASED BORES ALONG GRAVITY COLLECTION SYSTEMS SHALL NOT REQUIRE BRIDLE RODS.
6. 2 EA. 3/4" S.S. BRIDLE RODS SHALL BE REQUIRED ON ALL LINES 8"Ø AND SMALLER. 4 EA. 3/4" S.S. BRIDLE RODS SHALL BE REQUIRED ON ALL LINES 10"Ø AND LARGER.
7. CARRIER PIPE SHALL BE INSTALLED USING 'FIELD LOK' GASKETS OR APPROVED EQUAL.

STANDARD BORE ENCASEMENT
NOT TO SCALE

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**WATER
STANDARD DETAIL**
Standard Bore
Encasement

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