

| D | X | W |
|-----|--------|--------|
| 12" | 1'-4" | 7'-4" |
| 15" | 1'-7" | 7'-7" |
| 18" | 1'-10" | 7'-10" |
| 24" | 2'-6" | 8'-6" |
| 30" | 3'-1" | 9'-1" |
| 36" | 3'-8" | 9'-8" |
| 42" | 4'-5" | 10'-5" |
| 48" | 5'-0" | 11'-0" |

NOTE:
1. FOR REFERENCE, SEE NCDOT STANDARD 654.01

DETAIL NO: NCDOT-PAVEMENT REPAIRS
SCALE: NOT TO SCALE
CFPUA REV. NO: 2

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DETAIL NO: WS-3
SHEET NO: -

WS-3 NCDOT PAVEMENT REPAIRS
NOT TO SCALE

COMPACTION NOTES:
1. ALL ZONES: 95% STD EFFORT PER ASTM D698, EXCEPT AS STATED IN COMPACTION NOTE 2.
2. 12" SUBGRADE UNDER PAVEMENT: 98% STD EFFORT PER ASTM D698.

DETAIL NO: PIPE EMBEDMENT TYPES
SCALE: NOT TO SCALE
CFPUA REV. NO: 2

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DETAIL NO: WS-4
SHEET NO: -

WS-4 PIPE EMBEDMENT TYPES
NOT TO SCALE

NOTES:
1. TRACER WIRE SHALL PENETRATE VALVE BOX THROUGH DRILLED HOLE APPROX. 6" BELOW GRADE WITH MINIMUM 2'-FEET EXTRA LENGTH COILED IN THE VALVE BOX. SEE WS-6.

DETAIL NO: VALVE DETAIL
SCALE: NOT TO SCALE
CFPUA REV. NO: 2

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DETAIL NO: WS-5
SHEET NO: -

WS-5 VALVE DETAIL
NOT TO SCALE

NOTES:
1. TRACER WIRE SHALL BE INSTALLED PER THE CFPUA MSM.
2. WIRE SHALL BE STRAPPED TO ALL PVC PIPING WITH ADHESIVE TAPE AT 12 FOOT INTERVALS.
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH ADHESIVE TAPE.
4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURY SPLICE KITS.

DETAIL NO: TRACER WIRE DETAIL
SCALE: NOT TO SCALE
CFPUA REV. NO: 2

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DETAIL NO: WS-6
SHEET NO: -

WS-6 TRACER WIRE DETAIL
NOT TO SCALE

NOTES:
1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. PIPE & FITTING TO BE WRAPPED IN 10 MIL. PLASTIC OR 15 LB. ASPHALTIC FELT PRIOR TO THRUST BLOCK BEING POURED.
3. TEST PRESSURE SHALL NOT BE APPLIED FOR A MINIMUM OF 7 DAYS AFTER THRUST BLOCK PLACEMENT.
4. BRANCH SHALL NOT EQUAL RUN DIAMETER UNLESS APPROVED BY CFPUA ENGINEERING.

DETAIL NO: TAPPING SLEEVE AND VALVE ASSEMBLY (4"-24")
SCALE: NOT TO SCALE
CFPUA REV. NO: 2

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DETAIL NO: WS-9
SHEET NO: -

WS-9 TAPPING SLEEVE AND VALVE ASSEMBLY (4"-24")
NOT TO SCALE

NOTES:
1. USE PRESSURE CLASS 350 DIP, UNLESS SPECIFIED OTHERWISE.
2. ALL BURIED PIPES, VALVES AND FITTINGS SHALL BE RESTRAINED.
3. MINIMUM DEPTH REQUIRED, UNLESS SPECIFIED OTHERWISE BY CFPUA:
a. IN DOT R/W, 36" MIN. TYPICAL, OR 24" MIN. WHEN CROSSING A DITCH LINE.
b. ALL OTHER LOCATIONS, 30" MIN.
c. WHEN STORM DRAIN INVERT IS BURIED AT OR BELOW ABOVE DEPTHS, WATER MAIN AND STORM DRAIN SHALL BE CONSTRUCTED OF FERROUS MATERIALS WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10'-FEET EACH SIDE OF THE POINT OF CROSSING.

DETAIL NO: PRESSURE MAIN DITCH AND STORM DRAIN DITCH CROSSING DIP
SCALE: NOT TO SCALE
CFPUA REV. NO: 2

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DETAIL NO: WS-10
SHEET NO: -

WS-10 PRESSURE MAIN DITCH AND STORM DRAIN DITCH CROSSING DIP
NOT TO SCALE

NOTES:
1. THRUST BLOCKING IS NOT PERMITTED EXCEPT IN SPECIAL INSTALLATIONS WHERE DESIGNED BY ENGINEER AND APPROVED BY CFPUA.
2. ALLOW 7-DAY MINIMUM CONCRETE CURE TIME BEFORE PLACING LOAD ON THRUST BLOCK BASED ON 160 PSI TEST PRESSURE AND 2,000 PSF SOIL BEARING CAPACITY.
3. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
4. ALL BEARING SURFACES TO BE WRAPPED IN 10 MIL PLASTIC PRIOR TO THRUST BLOCK BEING POURED.

| SIZE | 90 BENDS | | 45 BENDS | | 22-1/2 BENDS | | TEES/PLUGS | | 45 VERT. BENDS |
|------|----------|-----|----------|-----|--------------|-----|------------|-----|----------------|
| | A | B | A | B | A | B | A | B | |
| 3" | 8" | 6" | 5" | 6" | 3" | 7" | 6" | 8" | 27" |
| 4" | 8" | 9" | 5" | 8" | 3" | 11" | 6" | 9" | 28" |
| 6" | 14" | 11" | 9" | 9" | 8" | 8" | 12" | 9" | 36" |
| 8" | 16" | 16" | 12" | 12" | 10" | 13" | 14" | 13" | 42" |
| 10" | 18" | 22" | 15" | 14" | 14" | 16" | 18" | 15" | 50" |
| 12" | 20" | 28" | 18" | 17" | 16" | 16" | 22" | 18" | 62" |
| 14" | 26" | 29" | 21" | 19" | 18" | 18" | 26" | 20" | 72" |
| 16" | 33" | 29" | 25" | 21" | 20" | 21" | 32" | 21" | 83" |
| 18" | 40" | 30" | 28" | 24" | 22" | 23" | 36" | 24" | 88" |

DETAIL NO: THRUST BLOCK
SCALE: NOT TO SCALE
CFPUA REV. NO: 2

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DETAIL NO: WS-13
SHEET NO: -

WS-13 THRUST BLOCK DETAIL
NOT TO SCALE

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

- ALL PROPOSED ADDITIONS TO THE CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA) WATER DISTRIBUTION AND SANITARY SEWER COLLECTION SYSTEMS, AS SHOWN AND SPECIFIED HEREIN, SHALL BE DESIGNED AND CONSTRUCTED TO CONFORM TO STATE RULES AND THE CFPUA'S MINIMUM TECHNICAL STANDARDS. THE CFPUA'S MINIMUM TECHNICAL STANDARDS ARE CONTAINED IN THE CURRENT DESIGN GUIDANCE MANUAL, MATERIAL SPECIFICATION MANUAL, TECHNICAL SPECIFICATIONS FOR CONSTRUCTION, AND STANDARD DRAWING DETAILS.
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE 18" INSIDE RIGHT-OF-WAY LINE.
- ALL SEWER SERVICES CONNECTING INTO DUCTILE IRON MAINS SHALL ALSO BE CONSTRUCTED OF DIP.
- MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FASTENERS SHALL BE TYPE 316.
- CLEANOUTS SHALL BE LOCATED A MINIMUM OF 5 FEET FROM ALL PROPERTY CORNERS.
- WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.
- UNUSED SERVICES SHALL BE ABANDONED. ABANDONED WATER SERVICES SHALL BE DISCONNECTED FROM MAIN.
- A MINIMUM OF 10' OF MAIN LINE, 5' UPSTREAM AND 5' DOWNSTREAM SHALL BE REPLACED FOR NEW CUT IN CONNECTIONS TO EXISTING CLAY GRAVITY SEWER MAINS.
- A MINIMUM OF 20' OF MAIN LINE, 10' UPSTREAM AND 10' DOWNSTREAM SHALL BE REPLACED FOR NEW CUT IN MANHOLES ON EXISTING CLAY GRAVITY SEWER MAINS.
- PROVIDE A MINIMUM DISTANCE OF SIX (6) INCHES BETWEEN EDGE OF MANHOLE CORE HOLES AND MANHOLE BARREL JOINTS. PROVIDE A MINIMUM DISTANCE OF SIX (6) INCHES BETWEEN EDGES OF CORE HOLES. CORING THE MANHOLE CONE IS NOT PERMITTED.
- WATER MAIN AND FORCE MAIN PIPE, INSTALLED BY OPEN CUT SHALL BE BURIED AT A MINIMUM OF THREE (3) FEET AND A MAXIMUM OF FIVE (5) FEET BELOW FINISHED GRADE. DEPTHS GREATER THAN FIVE (5) FEET MUST BE APPROVED BY CFPUA.
- ALL MANHOLE MAIN LINE AND SERVICE PIPING TO BE INSTALLED AT A MINIMUM OF CROWN TO CROWN OF THE LARGEST DIAMETER PIPE.

DETAIL NO: STANDARD NOTES
SCALE: NOT TO SCALE
CFPUA REV. NO: 2

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

DETAIL NO: WS-14
SHEET NO: -

WS-14 STANDARD NOTES
NOT TO SCALE

| REV. NO. | DESCRIPTION | DATE |
|----------|-------------|------|
| | | |
| | | |
| | | |
| | | |

7TH STREET EXTENSION
WILMINGTON NORTH CAROLINA

DATE: 10/22/20
Scale: AS SHOWN
Drawn: NNC
Checked: WSL
Project No: HM0220
Sheet No: WSD1

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

RIGHT ANGLE ENGINEERING, P.C.
212 PRINCESS STREET
WILMINGTON, NC 28401
(910) 251-8544 FAX (910) 251-2208