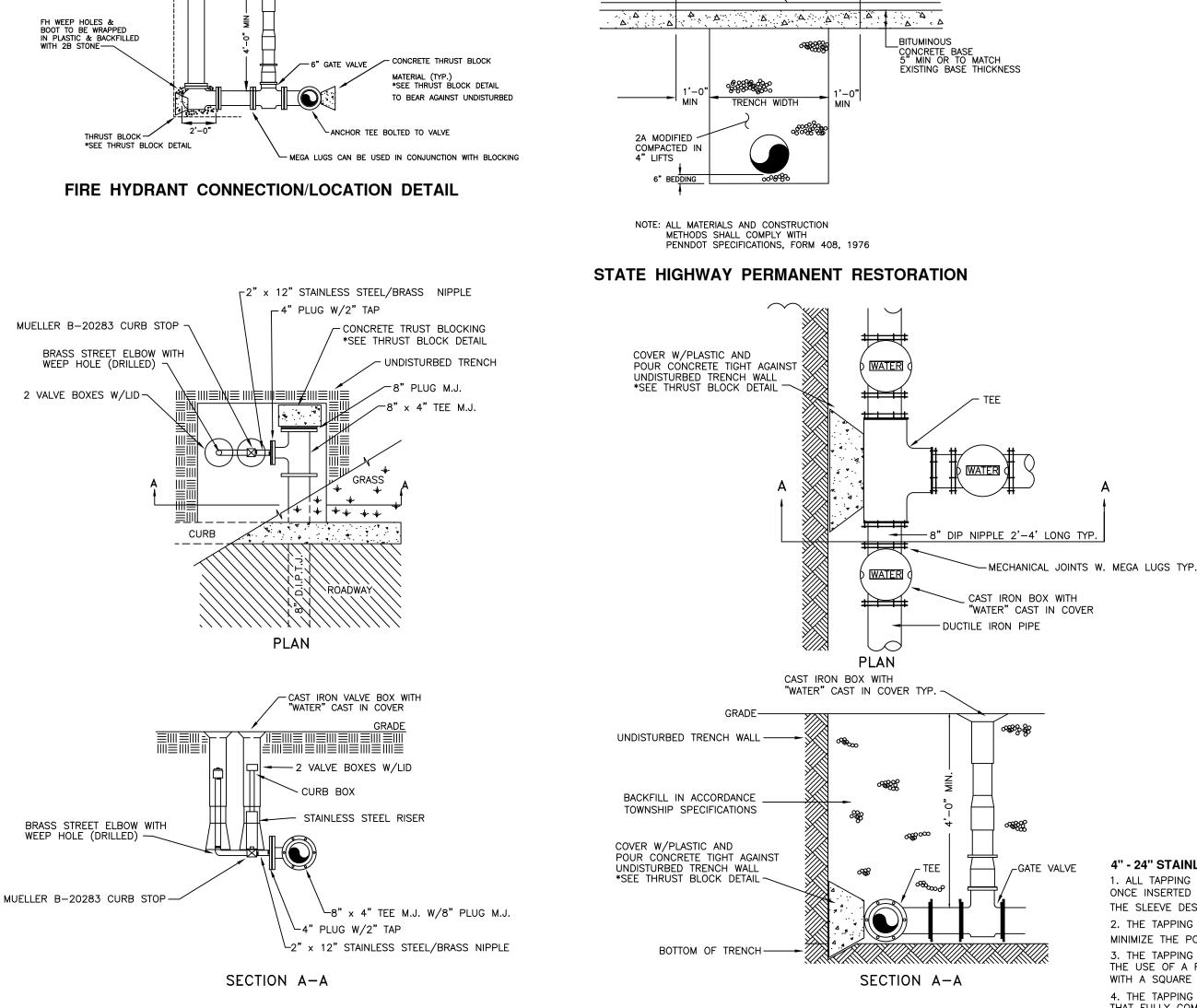
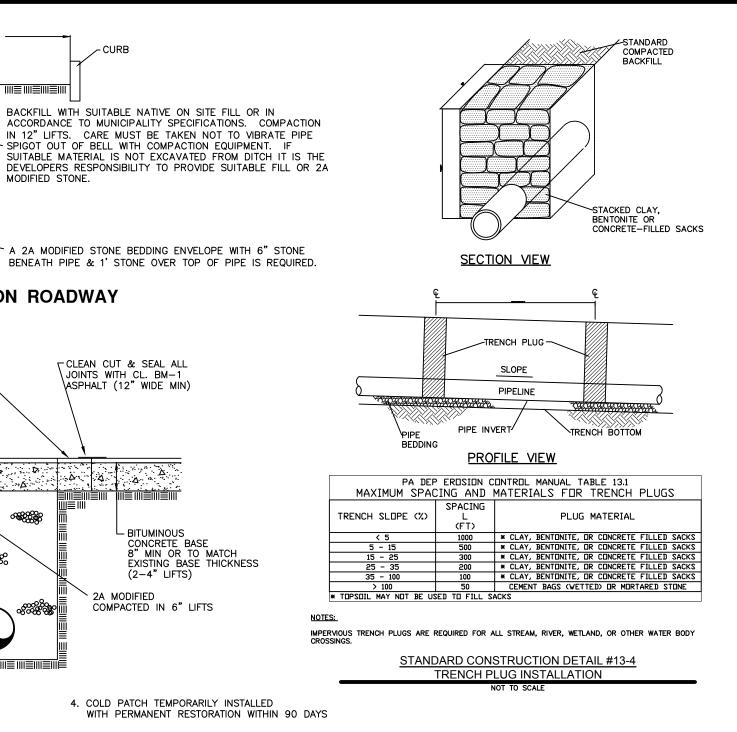


NPWA STANDARD 2" BLOW-OFF VALVE INSTALLATION





BACKFILL WITH SUITABLE NATIVE ON SITE FILL OR IN

CLEAN CUT & SEAL ALL

JOINTS WITH CL. BM-1

BITUMINOUS CONCRETE BASE

(2-4" LIFTS)

4. COLD PATCH TEMPORARILY INSTALLED

5. THIS SPEC WILL BE FOLLOWED UNLESS

6. FINAL RESTORATION NO SOONER THAN

CLEAN CUT & SEAL ALL

TYPICAL INTERSECTION INSTALLATION

ASPHALT (12" WIDE MIN)

30 DAYS AFTER BACKFILL COMPACTION

AMENDED BY AGREEMENT WITH TOWNSHIP

COMPACTED IN 6" LIFTS

A MODIFIED

" MIN OR TO MATCH

EXISTING BASE THICKNESS

CUT BACK ROADWAY 1' FOR

PERMANENT ASPHALT PATCH -

DAMAGE FROM BUCKETS OR OUTRIGGERS

PENNDOT SPECIFICATIONS, FORM 408, CURRENT EDITION

WITH 2A MODIFIED WITHIN 3' OF ASPHALT ROAD SURFACE

1-1/2" I.D. 2A WEARING COURSE —

2" I.D. 2A BINDER COURSE -

METHODS SHALL COMPLY WITH

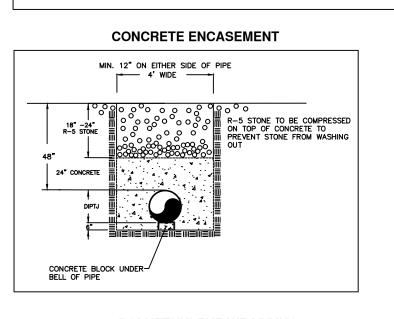
2" I.D. 2A WEARING COURSE -

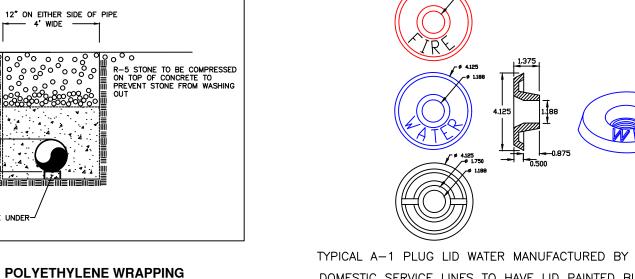
TYPICAL SUBDIVISION ROADWAY

TYPICAL MUNICIPAL ROADWAY RESTORATION

SPIGOT OUT OF BELL WITH COMPACTION EQUIPMENT. IF

STREAM CROSSING CROSS-SECTION STRAW AND SEED TO BE USED TO STABILIZE AREA R-5 STONE ¬ 24" R-5 STONE ON TOP OF CONCRET 4144 CONCRETE POLYWRAP DUCTILE PIPE FROM BEND TO BEND **CONCRETE ENCASEMENT** 





TYPICAL A-1 PLUG LID WATER MANUFACTURED BY BINGHAM & TAYLOR DOMESTIC SERVICE LINES TO HAVE LID PAINTED BLUE AND ARE TO BE PLACED TO THE RIGHT FIRE SERVICE LINES TO HAVE LID PAINTED RED WITH 'FIRE' DESIGNATION AND ARE TO BE PLACED TO THE LEFT

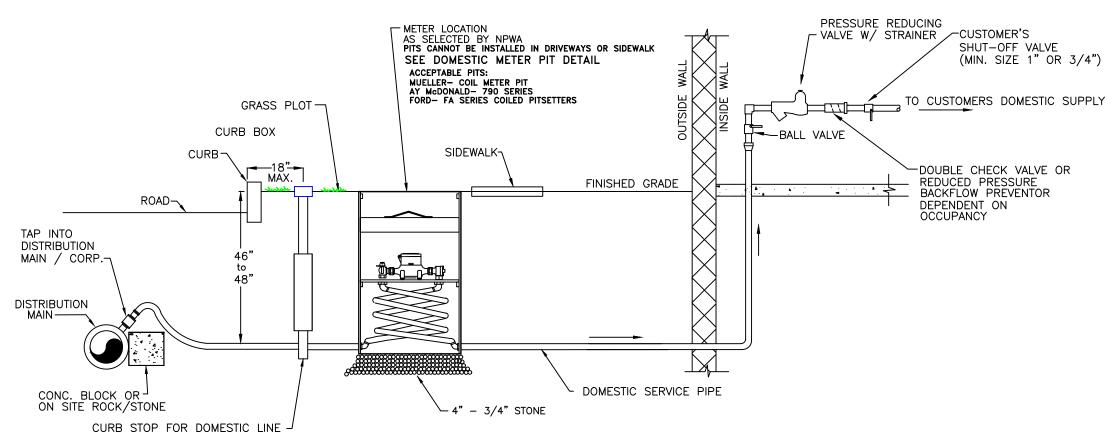
TYPICAL SERVICE CURB STOP LID

PHOTO DOCUMENTATION OF

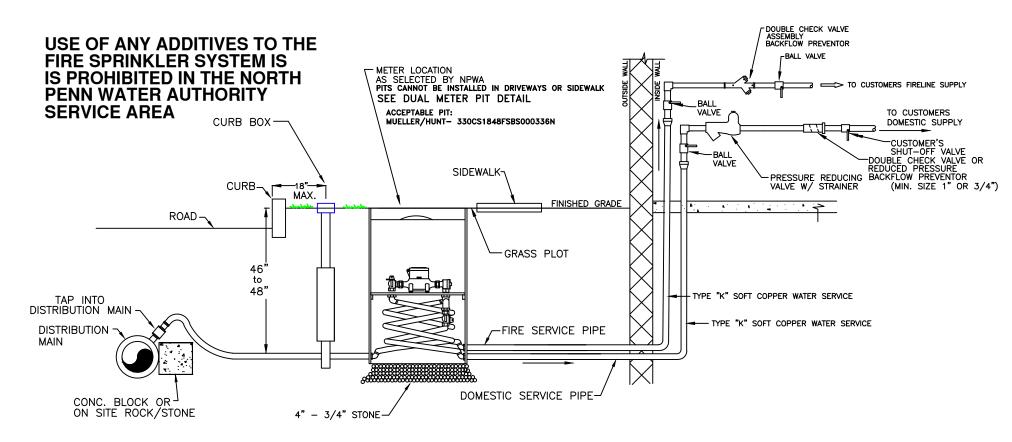
TYPICAL PIPE STOCKPILE

TYPICAL WATER MAIN STREAM CROSSING DETAILS

ONE LENGTH OF POLYETHYLENE TUBE, WITH 1' OVERLAP AT THE JOINTS FOR EACH LENGTH OF PIPE



**OUTSIDE METER PIT** DOMESTIC SERVICE CONNECTION DETAIL **APPLICABLE TO 3/4" OR 1" SERVICES** 



**DUAL OUTSIDE METER PIT** DOMESTIC & FIRE SERVICE CONNECTION DETAIL

## 4" - 24" STAINLESS STEEL TAPPING SLEEVES SPECIFICATION

1. ALL TAPPING SLEEVES SHALL BE THE SPLIT SLEEVE, DROP-IN BOLT DESIGN. ONCE INSERTED THE BOLTS SHALL BE 'CAPTURED' TO PREVENT THEM FROM SPINNING DURING TIGHTENING. THE SLEEVE DESIGN SHALL ALLOW THE BOLTS TO BE REVERSED TO EASE INSTALLATION. 2. THE TAPPING SLEEVE SHELL SHALL BE FULL BODIED AND MANUFACTURED OF 304L STAINLESS STEEL TO

MINIMIZE THE POTENTIAL FOR CARBIDE PRECIPITATION CORROSION. 3. THE TAPPING SLEEVE OUTLET SHALL BE AT LEAST 12 GAUGE MATERIAL AND 1/2" OVERSIZED TO ALLOW THE USE OF A FULL SIZE SHELL CUTTER. THE OUTLET SHALL BE PROVIDED WITH A 3/4" NPT TEST PLUG WITH A SQUARE HEAD FOR QUICK AND EASY REMOVAL. THE PLUG SHALL BE COMPOSED OF BRASS. 4. THE TAPPING SLEEVE SHALL HAVE A CLASS 125 OUTLET FLANGE WITH DRILLING AND DIMENSIONS THAT FULLY COMPLY WITH ANSI B16.1 THE OUTLET SHALL ALSO HAVE A MACHINED RECESS TO MATCH THE MACHINED PROJECTIONS ON STANDARD TAPPING VALVES TO ASSURE CORRECT ALIGNMENT IN ACCORDANCE

WITH MSS-SP 60. THE FLANGE MATERIAL SHALL BE 304 STAINLESS. 5. ALL 10 INCH AND LARGER SLEEVES SHALL HAVE AN ANTI-EXTRUSION RING WELDED TO EACH END OF THE THE SLEEVE BODY IN ORDER TO PREVENT THE GASKET FROM COLD-FLOWING PAST THE SLEEVE BODY ENDS.

6. THE TAPPING SLEEVE SHALL HAVE A RATED WORKING PRESSURE OF 250 PSIG IN THE SIZES 4" - 12" AND 200 PSIG IN SIZES 14" - 24". THE TAPPING SLEEVE SHALL HAVE A COMPLETE CIRCLE GASKET ON THE INTERIOR OF THE SHELL. THE GASKET SHALL BE COMPOSED OF NBR (NITRILE) VIRGIN RUBBER AND BE OF THE WAFFLE DESIGN.

THE SHELL GASKET SHALL BE INTEGRAL AND PROVIDE A COMPLETE 360° SEAL. THE OUTLET GASKET SHALL BE PROVIDED WITH A MINIMUM OF TWO CONCENTRIC RAISED SURFACES TO MAXIMIZE SEALING ON THE PIPE SURFACE

8. THE TAPPING SLEEVE BOLTS, NUTS, AND WASHERS SHALL BE TYPE 304 STAINLESS STEEL. THE NUTS SHALL BE OF THE HEAVY HEX TYPE. THE BOLTS SHALL BE ROLLED THREAD, DROP-IN STYLE, COATED WITH AN ANTI-GALLING COMPOUND.

9. THE TAPPING SLEEVE SHALL HAVE AN INTEGRAL GAP BRIDGING THAT ELIMINATES SEPERATE GAP BRIDGES AND REDUCES DEFORMATION OF THE BRIDGE UNDER HIGH TORQUES ON SLEEVES UP TO 12". TAPPING SLEEVES IN LARGER SIZES SHALL HAVE GAP BRIDGES.

10. THE TAPPING SLEEVE WELDS SHALL BE PASSIVATED, IN ADDITION TO THE ENTIRE SLEEVE, TO MAINTAIN OPTIMUM 1. NORTH PENN WATER AUTHORITY REQUIRES THEIR CONTRACTORS TO SUPPLY THE AUTHORITY CORROSION RESISTANCE, IN ACCORDANCE WITH ASTM A380. 11. THE TAPPING SLEEVES SHALL BE MUELLER H304 OR APPROVED EQUAL

**GENERAL NOTES** 

WATER MAIN PREPARATION SURVEYORS ARE REQUIRED TO PLACE 5' OFFSET STAKES FROM FACE OF CURB OR EDGI OF ROADWAY AT 50' INTERVALS SHOWING THE FACE OF CURB AND TOP OF CURB

INSTALLATION MAY COMMENCE WHEN DEVELOPERS ESCROWS SIGNED AGREEMENTS AND BOARD APPROVALS ARE IN PLACE. 72 HOUR NOTICE MUST PROVIDED BEFORE PIPE MAY BE WHEN WATER MAIN IS BEING INSTALLED IN AN AREA WHERE THE GRADE IS ABOVE THE ROAD

SURFACE. THE WATER MAIN MUST BE INSTALLED WITH FOUR FEET OF COVER FROM THE TOP WATER MAIN INSTALLED UNDER A CREEK BED, A GAS MAIN OR IN CORROSIVE SOIL WILL REQUIRE EACH SECTION OF WATER MAIN TO BE ENCASED WITH POLYETHYLENE FILM. THE POLYETHYLENE FILM SHOULD BE FITTED WITH MINUMUM SPACE BETWEEN THE FILM AND THE PIPE. OVERLAPS AND ENDS SHOULD BE SECURED WITH ADHESIVE TAPE OR PLASTIC TIE

STRAPS. STREAM CROSSINGS ARE REQUIRED TO BE IN COMPLIANCE WITH DEP AND

CONSERVATION DISTRICT REGULATIONS. PIPE STOCKPILED FOR MORE THAN 24 HOURS ON THE JOB SITE WILL HAVE THE BELLS AND SPIGOTS WRAPPED WITH A POLYETHYLENE FILM AND/OR TARP TO PREVENT CONTAMINATION, UNLESS FIELD CONDITIONS DICTATE IMMEDIATE WRAPPING. (SEE PHOTO DOCUMENTATION OF TYPICAL PIPE STOCKPILE) THE PIPELINE MUST BE ADJUSTED TO AVOID INSTALLATION OF THE PIPE BELL UNDER ANY

UTILITY CROSSINGS **DUCTILE IRON PIPE AND FITTINGS** 

JOINT FITTINGS SHALL BE SECURED WITH MEGA LUGS.

1. DUCTILE IRON PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI A21.51 (AWWA C151) AMERICAN STANDARD FOR DUCTILE IRON PIPE.

2. PIPE SHALL BE CLASS 52 THICKNESS IN ACCORDANCE WITH ANSI A21.51 (AWWA C151). 3. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE CEMENT LINED AND COATED OUTSIDE WITH A BITUMINOUS SEAL COAT IN ACCORDANCE WITH ANSI A21.4 (AWWA C104) OR EPOXY COATED. 4. THE FITTINGS SHALL BE SHORT BODY MECHANICAL JOINT FITTINGS AND SHALL CONFORM TO AWWA 153SSB EXCEPT WHERE DETAILED OTHERWISE ON THE DRAWINGS. ALL MECHANICAL

5. FIELD LOCKS GASKETS ARE TO BE INSTALLED PER THE MANUFACTURERS SPECIFICATIONS AND AS DIRECTED BY THE FIELD INSPECTOR. **VALVES AND VALVE BOXES** 

VALVES CONNECTED TO LIVE WATER MAINS MAY ONLY BE OPERATED BY NPWA PERSONNEL. CONTRACTORS AND DEVELOPERS MAY NOT OPERATE ANY CHARGED WATER MAIN OPEN TO THE 1. ALL GATE VALVES REQUIRED FOR 4" THRU 16" DIAMETER MAIN SHALL BE EITHER OR APPROVED EQUAL:

- MUELLER #T-2360-16D GATE VALVE MANUFACTURED BY MUELLER CO., DECATUR, ILLINOIS. - U.S. PIPE METRO SEAL 250 MANUFACTURED BY U.S. PIPE AND FOUNDRY CO., BIRMINGHAM,

- KENNEDY KENSEAL II RESILIENT WEDGE VALVE MANUFACTURED BY KENNEDY VALVE, ELMIRA,

- AMERICAN FLOW CONTROL SERIES 2500 RESILIENT WEDGE VALVE MANUFACTURED BY AFC, LATHAM, NY

2. VALVES SHALL BE MOUNTED VERTICALLY, EXCEPT IF OTHER WISE NOTED ON THE DRAWINGS AND SHALL HAVE MECHANICAL JOINT ENDS.

3. ALL VALVES SHALL OPEN BY TURNING COUNTERCLOCKWISE AND SHALL HAVE A STANDARD 2" OPERATING NUT.

4. ALL BURIED VALVES SHALL BE FURNISHED WITH A CAST IRON VALVE BOX. ALL VALVE BOXES SHALL BE FITHER: - BUFFALO TYPE-TWO (2) PIECE SCREW TYPE 5-1/4" SHAFT

- TYLER SERIES 6850, MANUFACTURED BY TYLER PIPE COMPANY.

5. VALVE BOXES SHALL BE TWO-PIECE, SCREW-TYPE INSTALLED OVER THE BONNET AND OPERATING NUT. VALVE BOXES SHALL BE OF SUFFICIENT LENGTH TO REACH THE SURFACE OF THE GROUND BUT NOT EXTEND ABOVE THE GROUND SURFACE. VALVE NUT EXTENSIONS SHALL BE INSTALLED AS NECESSARY TO INSURE THE VALVE CAN BE TURNED FROM GROUND LEVEL WITH A 6' LONG VALVE NUT KEY WRENCH.

6. DEVELOPERS AND THIER CONTRACTORS SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTAINCE OF VALVE BOXES. VALVE BOXES SHALL BE IN A VERTICAL OPERABLE CONDITION. ALL BROKEN, BURIED OR FILLED VALVE BOXES WILL BE DUG OUT AND REPAIRED AT THEIR EXPENSE.

FIRE HYDRANTS

1. ALL FIRE HYDRANTS SHALL BE EITHER: - MUELLER CENTURION 5-1/4-INCH FIRE HYDRANT AWWA TYPE FIRE HYDRANT MANUFACTURED BY MUELLER CO., DECATUR, ILLINOIS. - KENNEDY K-81D, 5 1/4-INCH FIRE HYDRANT AWWA TYPE FIRE HYDRANI MANUFACTURED BY KENNEDY VALVE, ELMIRA, NEW YORK. - AMERICAN FLOW CONTROL, 5 1/4-INCH FIRE HYDRANT AWWA B62B TRAFFIC MODEL FIRE HYDRAN

2. ALL FIRE HYDRANTS SHALL HAVE: - 6-INCH MECHANICAL JOINT INLET CONNECTION - ONE (1) 4-1/2-INCH STEAMER NOZZLE

- TWO (2) 2-1/2 -INCH HOSE NOZZLE OPEN LEFT HYDRANT OPERATING & NOZZLE CAP NUTS; FIRE HYDRANT STEAMER & HOSE THREADS TO BE NATIONAL STANDARD OR NORTH PENN THREADS AS NOTED ON DRAWING. - NON METERED WATER FROM FIRE HYDRANTS MAY NOT BE USED FOR ANY PURPOSE BY THE DEVELOPER OR CONTRACTOR. METERS MAY BE OBTAINED BY CONTACTING NPWA'S CUSTOMER SERVICE DEPARTMENT BETWEEN APRIL 1ST & NOVEMBER 1ST. UNAUTHORIZED USE OF WATER FROM FIRE HYDRANTS IS SUBJECT TO CRIMINAL CHARGES.

## **CHLORINE DOSAGES**

Diameter of pipe in inches	2	3	4	6	80	10	12	16	24
No. of 65% Ca(Ocl) <sub>2</sub> Tablets/pipe	1	1	1	1	2	3	4	6	14

1. TABLETS WILL BE ATTACHED WITH TYTON JOINT PIPE GREASE IN EACH PIECE OF PIPE 2. CALCIUM HYPO CHLORITE CONFORMING TO NSI/AWWA B300 IS AVAILABLE IN 5-g ABLETS, AND CONTAINS APPROX. 65 PERCENT AVAILABLE CHLORINE BY WEIGHT.

1. TRAFFIC CONTROL ON ALL STATE, TOWNSHIP AND BOROUGH ROADWAYS WILL BE IN ACCORDANCE WITH PENN DOT SPECIFICATIONS; PUBLICATION 213, FIG. 10A & 10B. **ROADWAY AND RIGHT OF WAY** 

1. ROADWAY RIGHT OF WAY RESTORATION WILL BE IN ACCORDANCE WITH PENN DOT SPECIFICATIONS ON STATE ROADWAYS, TOWNSHIP AND BOROUGH SPECIFICATION ON LOCAL MUNICIPALLY MAINTAINED ROADWAYS.

1. ALL SERVICE TRENCHS ARE REQUIRED TO HAVE 2A MODIFIED STONE BACKFILL. 2. ALL TAPS ARE INSTALLED BY EITHER NPWA OR CONTRACTOR. 3. SERVICES WILL BE INSTALLED AT THE LOCATION DETERMINED BY DEVELOPER. 4. SERVICE TAPS WILL BE INSTALLED ONLY WHEN THE FOLLOWING REQUIREMENTS ARE MET: - NPWA WILL FILL THE WATER MAIN WAIT 48 HOURS THEN FLUSH THE MAINS. - A PRESSURE TEST WITH A MINIMUM PRESSURE OF 200 PSI FOR FOUR (4) HOURS WITHOUT LEAKS, CONDUCTED BY THE CONTRACTOR AND WITNESSED BY N.P.W.A. - A BACTERIA TEST IS TAKEN AFTER THE LINES ARE FLUSHED WITH RESIDUAL CHLORINE OF 1.0 PPM OR LESS, CONDUCTED BY NPWA. 5. CURB BOXES WILL BE MAINTAINED IN A VERTICAL OPERABLE CONDITION. IT IS THE DEVELOPERS DEVELOPERS RESPONSIBILITY TO REPAIR, REPLACE AND RESTORE ALL DAMAGED, DESTROYED OR 6. ALL BRASS CORPORATIONS & CURB STOPS SHALL BE A COMPRESSION TYPE MEETING THE

STANDARD MUELLER #B-25008 & MUELLER #B25209 WITH PRESSURE RATING OF 300 PSI. 7. CURB BOXES WILL BE TELESCOPING TYPE WITH PENTAGON PLUG IN CENTER OF LID. RISER PIPE WILL BE 1" DIAMETER TO ACCOMODATE THE STAINLESS STEEL CURB ROD. 8. SERVICE LINE WILL BE TYPE "K" COPPER.

1. ANY OBSOLETE VALVE BOXES AND HYDRANTS WILL BE IDENTIFIED AND REMOVED UNDER THE DIRECTION OF A NPWA INSPECTOR.

. ABANDONED VALVE BOXES ARE TO HAVE THE UPPER PORTION REMOVED 1' BELOW THE GRADE. THE VALVE BOX WILL BE FILLED USING 2-A MODIFIED STONE WHEN WORKING IN PAVING OR SUITABLE FILL WHEN WORKING OUTSIDE THE PAVED AREA. THE WORK AREA WILL BE RESTORED TO THE SURROUNDING CONDITIONS.

3. ABANDONED NON-BREAKAWAY HYDRANTS ARE TO BE CUT 1' BELOW THE GROUND SURFACE. ABANDONED BREAKAWAY HYDRANTS ARE TO BE EXTRACTED FROM THE MECHANICAL JOINT OF THE CONNECTING PIPE. THE HYDRANT EXTENSION WILL BE FILLED USING 2-A MODIFIED STONE WHEN WORKING IN PAVING OR SUITABLE FILL WHEN WORKING OUTSIDE THE PAVED AREA. BREAKAWAY HYDRANTS WILL BE SAVED AND RETURNED TO INVENTORY.

4. ONCE REMOVAL IS COMPLETE THE WORK AREA WILL BE RESTORED TO THE PRE-EXISTING SURROUNDING CONDITIONS.

FIELD NOTES & FIELD DIMENSIONS WITH DAILY FIELD NOTES AND AN AS-BUILT DRAWING. NPWA'S CONSTRUCTION INSPECTOR WILL SUPPLY DAILY FIELD NOTE SHEETS.

**ENN** *IORIT* 

DETAIL ANDAR

PLAN SHEET NUMBER

DRAWING No.