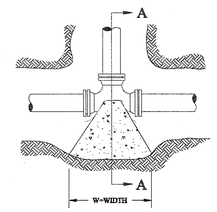
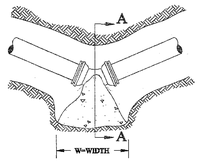
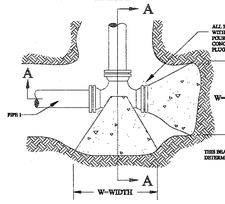


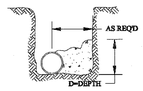

TEE




BEND




TEE WITH PLUG




SECTION A-A

TYPICAL POURED IN PLACE CONCRETE THRUST BLOCK DETAILS

TABLE 1

SAFE BEARING LOADS OF SOILS & MULTIPLICATION FACTORS FOR MODIFICATION OF THRUST BLOCK AREAS

| SOIL | SAFE BEARING LOAD (LBS./SQ.FT.) | FACTOR |
|---|---|---|
| MUCK | 0 | 3.0 |
| SOFT CLAY | 1000 | 2.0 |
| SAND | 2000 | 1.5 |
| SAND AND GRAVEL | 3000 | 0.67 |
| SAND AND GRAVEL CEMENTED WITH CLAY | 4000 | 0.50 |
| SHALE | 10000 | 0.20 |

TABLE 2

REQUIRED BEARING AREAS & DIMENSIONS FOR CONCRETE THRUST BLOCKS

| PIPE SIZE INCHES | TEE AREA | TEE Dimensions | 90° (1/4) BEND AREA | 90° (1/4) BEND Dimensions | 45° (1/8) BEND AREA | 45° (1/8) BEND Dimensions | 22 1/2° (1/16) BEND AREA | 22 1/2° (1/16) BEND Dimensions | 11 1/4° (1/32) BEND AREA | 11 1/4° (1/32) BEND Dimensions |
|---|---|---|---|---|---|---|---|---|---|---|
| | sq. ft. | D x W | sq. ft. | D x W | sq. ft. | D x W | sq. ft. | D x W | sq. ft. | D x W |
| 2 | 0.4 | 0.5x1.0 | 0.7 | 0.5x1.0 | 0.4 | 0.5x1.0 | 0.1 | 0.5x1.0 | 0.1 | 0.5x1.0 |
| 3 | 0.8 | 1.0x1.0 | 1.5 | 1.0x1.0 | 0.8 | 0.5x1.0 | 0.3 | 0.5x1.0 | 0.2 | 0.5x1.0 |
| 4 | 1.4 | 1.0x1.5 | 2.6 | 1.0x0.0 | 1.1 | 1.0x1.0 | 0.6 | 0.5x1.0 | 0.3 | 0.5x1.0 |
| 6 | 3.2 | 1.5x2.5 | 4.5 | 2.0x2.5 | 2.4 | 1.5x2.0 | 1.2 | 1.0x1.5 | 0.6 | 0.5x1.0 |
| 8 | 5.7 | 2.0x3.0 | 8.0 | 2.5x4.0 | 4.3 | 2.0x2.5 | 2.2 | 1.5x1.5 | 1.1 | 1.0x1.0 |
| 10 | 8.8 | 2.5x3.5 | 12.3 | 3.0x4.5 | 6.8 | 2.0x3.5 | 3.4 | 1.5x2.5 | 1.7 | 1.0x1.0 |
| 12 | 12.7 | 3.0x4.5 | 18.0 | 4.0x4.5 | 9.7 | 2.5x4.0 | 5.0 | 2.0x2.5 | 2.5 | 1.5x2.0 |
| 14 | 17.3 | 3.5x5.0 | 24.5 | 4.5x5.5 | 13.3 | 3.0x4.0 | 6.8 | 2.0x3.5 | 3.4 | 1.5x2.5 |
| 16 | 22.6 | 4.0x5.0 | 32.0 | 5.0x6.5 | 17.3 | 3.5x4.5 | 8.8 | 2.5x3.5 | 4.4 | 2.0x2.5 |
| 18 | 28.6 | 5.0x6.0 | 40.5 | 5.5x7.0 | 21.9 | 4.0x5.5 | 11.2 | 3.0x4.0 | 5.6 | 2.0x3.0 |
| 20 | 35.3 | 5.5x6.5 | 50.0 | 6.5x8.0 | 27.0 | 4.5x6.0 | 13.8 | 3.5x4.0 | 6.9 | 2.0x3.5 |

**NOTES**

A) FOR REQUIRED BEARING AREA AND DIMENSION D&W SEE TABLE 2 VALUES OF D&W OTHER THAN THOSE SHOWN IN THE TABLE, MAY BE USED PROVIDED THEY YIELD A BEARING AREA EQUAL TO OR LARGER THAN THAT REQUIRED.

B) ALL THRUST BLOCKS SHALL BE 3000 P.S.I. POURED CONCRETE.

C) CONCRETE NOT TO OVERLAP ANY JOINT.

D) CONCRETE TO BE PLACED SO AS NOT TO INTERFERE WITH REMOVING OR INSTALLING ANY OF THE HARDWARE.

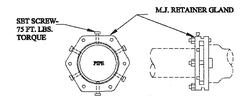
E) VALUES FOR TEE, ALSO APPLY TO END PLUGS, CAPS AND TAPPING SLEEVES.

F) REQUIRED BEARING AREA ARE DUE TO THRUSTS CAUSED BY 150 P.S.I. WORKING PRESSURE PLUS 50% (75 P.S.I.) SURGE ALLOWANCE RESULTING IN 225 P.S.I. TOTAL INTERNAL PRESSURE, NOMINAL PIPE DIAMETER USED.

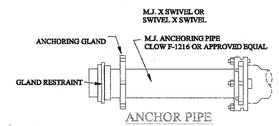
G) REQUIRED BEARING AREAS ARE BASED ON ALLOWABLE SOIL BEARING CAPACITY OF 2000 LBS. PER SQ. FT. FOR SAND. DUE TO OTHER SOIL CONDITIONS ENCOUNTERED, BEARING AREAS MAY BE MODIFIED BY THE ENGINEER BY MULTIPLYING THE AREA GIVEN IN TABLE 1 FOR THE APPROPRIATE PIPE SIZE AND FITTING BY THE LISTED CORRECTION FACTORS.

H) IN MUCK, PEAT OR RECENTLY PLACED FILL, ALL THRUSTS SHALL BE RESISTED BY PILES OR TIE RODS TO SOLID FOUNDATIONS, OR BY PLACING ENOUGH SHORT UNIT AREA MATERIAL AND SUPPLEMENTING WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THE THRUSTS. ALL A.O.B.R.

A. FOR REQUIRED BEARING AREA AND DIMENSION D&W SEE TABLE 2 VALUES OF D&W OTHER THAN THOSE SHOWN IN THE TABLE, MAY BE USED PROVIDED THEY YIELD A BEARING AREA EQUAL TO OR LARGER THAN THAT REQUIRED.

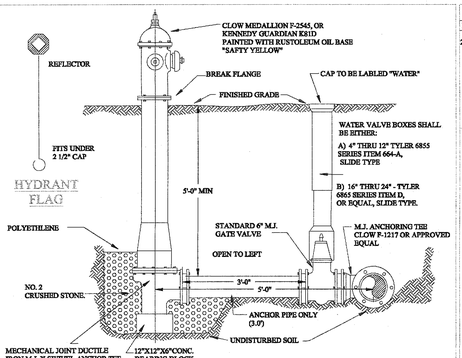



RETAINER GLAND



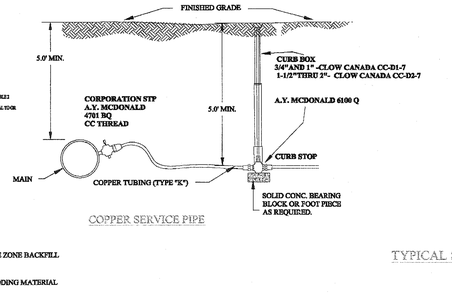

ANCHOR PIPE

THRUST RESTRAINT OPTIONS




TYPICAL HYDRANT INSTALLATION

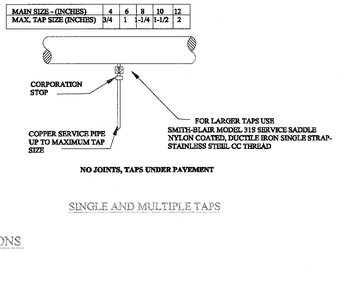
CURB BOXES SHALL BE EITHER :
A) FOR 3/4" AND 1 -CLOW CANADA CC-D1-7 CLOW CANADA CC-D2-7
5'-6" ADJUSTABLE WITH 35" X 5/8" DIAMETER GRADE 304 STAINLESS STEEL ROD AND BRASS COTTER PIN.
B) FOR 1 1/2" THRU 2", OR EQUAL, 5'-6" ADJUSTABLE WITH 35" X 5/8" DIAMETER GRADE 304 STAINLESS STEEL ROD AND BRASS COTTER PIN.




COPPER SERVICE PIPE

MAXIMUM TAP SIZES

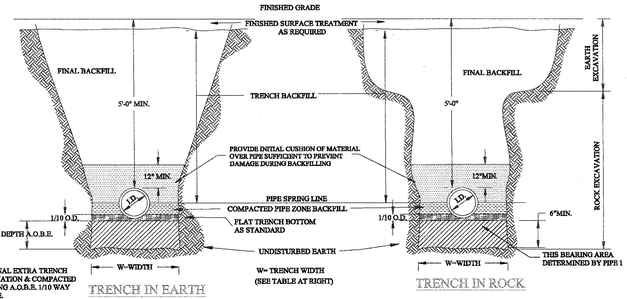
| MAIN SIZE - (INCHES) | 4 | 6 | 8 | 10 | 12 |
|---|---|---|---|---|---|
| MAX. TAP SIZE (INCHES) | 3/4 | 1 | 1-1/4 | 1-1/2 | 2 |




SINGLE AND MULTIPLE TAPS

TYPICAL SERVICE CONNECTIONS

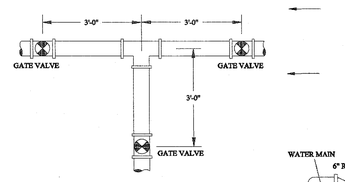
ELEVATIONS




TYPICAL TRENCH DETAILS

TRENCH WIDTH

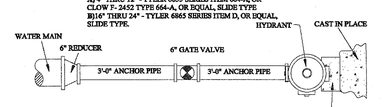
| PIPE SIZE I.D. (INCHES) | MIN. REQUIRED TRENCH WIDTH FOR JOINT PLACEMENT (O.D. BELL PLUS 12") | MAX. TRENCH WIDTH 24" ABOVE TOP OF PIPE |
|---|---|---|
| I.D. | W MIN. | W MAX. |
| 2 | 18 | 20 |
| 3 | 18 | 27 |
| 4 | 18 | 28 |
| 6 | 21 | 30 |
| 8 | 24 | 32 |
| 10 | 26 | 34 |
| 12 | 28 | 36 |
| 14 | 30 | 38 |
| 16 | 32 | 40 |
| 18 | 35 | 42 |
| 20 | 37 | 44 |




TYPICAL SPACING

WATER VALVES SHALL HAVE THEIR EXTERIOR AND INTERIOR SURFACES FUSION EPOXY COATED CONFORMING TO AWWA C550-81. ALL SHALL BE MECHANICAL JOINT AND OPEN TO THE LEFT. FIELD -LOCK GASKETS REQUIRED ON LAST THREE JOINTS.

WATER VALVES SHALL BE EITHER:
A) 4" THRU 12"- CLOW F-5065, OR EQUAL, DOUBLE GATE VALVE.
B) 4" THRU 12" - CLOW F-6100, OR KENNEDY 4571, RESILIENT WEDGE VALVE
WATER VALVE BOXES SHALL BE EITHER:
A) 4" THRU 12" - TYLER 6855 SERIES ITEM 664-A, OR CLOW F- 2452 TYPE 664-A, OR EQUAL, SLIDE TYPE
B)16" THRU 24" - TYLER 6865 SERIES ITEM D, OR EQUAL, SLIDE TYPE.




TYPICAL END OF MAIN HYDRANT

**REVISIONS**

| DATE | BY | DESCRIPTION |
|---|---|---|
| 2/15/06 | | |

# WATER DISTRIBUTION DETAILS

# TOWN OF BETHLEHEM
## DEPARTMENT OF PUBLIC WORKS
445 DELAWARE AVE. DELMAR, NY 12054

**SHEET 2 OF 5**

INCHES
Town of Bethlehem, NY

STATE OF NEW YORK · KEVIN J. MARIA · 071225 · LICENSED PROFESSIONAL ENGINEER
6/27/2012

| NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION | NEW YORK STATE DEPARTMENT OF HEALTH | TOWN OF BETHLEHEM PLANNING BOARD — TOWN OF BETHLEHEM ALBANY COUNTY, NEW YORK — This Site Plan Approved. Title Chairman. Date 07/23/2012 SPA 165 A1 | ALBANY COUNTY HEALTH DEPARTMENT — ALBANY COUNTY DEPARTMENT OF HEALTH DIVISION OF ENVIRONMENTAL HEALTH SERVICE: By direction of the Commissioner of Health, these plans are hereby approved. See first sheet for date and signature. |
|---|---|---|---|
| | | | |

REF. SCALE 1 INCH


Stantec
Stantec
3 Columbia Circle Suite 6
Albany, NY U.S.A.
12203
Tel. 518.452.4358
Fax. 518.452.9234
www.stantec.com



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**TOWN OF BETHLEHEM STANDARD DETAILS**

VAN DYKE SPINNEY
AT DELMAR, NEW YORK
VAN DYKE ROAD
TOWN OF BETHLEHEM- COUNTY OF ALBANY - STATE OF NEW YORK

| DATE | REMARKS |
|---|---|
| 8/24/10 | REVISED PER LAND CONSERVANCY MEETING |
| 5/5/10 | REVISED PER TOWN REVIEW COMMENTS |
| 4/29/10 | REVISED LANDSCAPING AND LAYOUT |
| 2/23/10 | PLANNING BOARD SUBMISSION. |
| 2/5/10 | REVISED PER TOWN REVIEW COMMENTS - RESUBMIT |
| 10/30/09 | TOWN OF BETHLEHEM - PLANNING BOARD SUBMISSION |
| 9/23/09 | TOWN OF BETHLEHEM - PRELIMINARY SWPPP SUBMISSION |

| DATE | REMARKS |
|---|---|
| 1/26/11 | REVISED FER TOWN COMMENTS - RESUBMIT TO ENG. DEPT. |
| 12/6/10 | REVISED FER TOWN COMMENTS - RESUBMIT TO PLAN. BOARD |
| 9/17/10 | REVISED FER TOWN COMMENTS - RESUBMIT TO PLAN. BOARD |
| 5/5/10 | REVISED FER LAND CONSERVANCY MEETING |
| 5/26/10 | REVISED PER EASTON AND LOUDOCE COMMENTS |

REVISIONS

Drawn
Checked KJM
Approved

Project No. 0540811
Date: Sept. 2009

Title
**DT-5**

Sheet No.
**23**


Planning Approval
08-01003B_SPA165A1