

**ORDINANCE NO. 61-24**

**AN ORDINANCE ADOPTING THE 2024 REVISIONS TO THE STANDARD  
CONSTRUCTION DRAWINGS FOR THE CITY OF AVON  
AND DECLARING AN EMERGENCY**

**WHEREAS**, the Administration deems it is necessary to periodically review the Standard Construction Drawings which are used by various city departments and issued to the public; and

**WHEREAS**, these Standard Construction Drawings have gone under an extensive review by staff from the Utilities Department, Streets Department, and the City Engineer in order to better reflect best practices, available materials, relevant specifications, coordination and organization; and

**WHEREAS**, the Planning Commission authorized a Public Hearing on said amendments which was duly publicized according to law and held on May 15, 2024; and

**WHEREAS**, on May 15, 2024, after discussion with the City Engineer and other interested members of the Administration, Planning Commission, by a vote of Five (5) to Zero (0), recommended approval of the revised 2024 Standard Construction Drawings; and

**WHEREAS**, Council finds it to be in the best interests of the public health, safety, and welfare of the citizens of Avon that 2024 Standard Construction Drawings, as revised, be adopted for use, including for all projects in planning and design that have not yet received final engineering plan approval.

**NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF AVON, LORAIN COUNTY, OHIO:**

Section 1 - That the 2024 Standard Construction Drawings are hereby amended as set forth in the attached Exhibit A entitled "2024 Standard Construction Drawings", which are incorporated herein by this reference. Furthermore, upon passage of this ordinance the Standard Construction Drawings shall each be revised to reflect this ordinance number and date of passage prior to being posted for public use.

Section 2 - That the Codifier is hereby instructed to replace any references to previously adopted legislation pertaining to the City's Standard Construction Drawings with reference to the "2024 Standard Construction Drawings".

Section 3 - That it is found and determined that all formal actions of this Council concerning and relating to the passage of this Ordinance were adopted in an open meeting of this Council, and that all deliberations of this Council and of any of its committees that resulted in such formal actions were in meetings open to the public, in compliance with all legal requirements, including Section 121.22 of the Ohio Revised Code.

Ordinance No. 61-24 (Con't)

Section 4 - That this Ordinance is hereby declared to be an emergency measure necessary for the preservation of the public peace, health, safety, and welfare of the citizens of the City of Avon, the immediate emergency being the necessity to adopt the revisions to the Standard Construction Drawings; therefore, this Ordinance shall be in full force and effect immediately upon its passage and approval by the Mayor.

PASSED: May 28, 2024

DATE SIGNED: May 28, 2024

By: Brian Fischer  
Brian Fischer, Council President

DATE APPROVED BY THE MAYOR: May 29, 2024

Bryan K. Jensen  
Bryan K. Jensen, Mayor

APPROVED AS TO FORM:

John A. Gasior  
John A. Gasior, Law Director  
City of Avon, Ohio

ATTEST:

Barbara J. Brooks  
Barbara J. Brooks, Clerk of Council

Posted: May 31, 2024  
Electronically and at City Hall as  
Provided by Council

Prepared By:  
John A. Gasior, Esq.  
Law Director

I, Barbara J. Brooks, Clerk of the Council of the City of Avon, Ohio, hereby certify this document to be a true and exact copy of Ordinance No. 61-24, passed by the Council of said City on May 28, 2024.

IN WITNESS WHEREOF, I have on this 29th day of May 2024, affixed my signature and official seal.

Barbara J. Brooks  
Barbara J. Brooks, Clerk of the Council  
of the City of Avon, Ohio



**CONTAINS UPDATES THROUGH APRIL 14, 2020**

**2024 DRAFT  
REVISIONS SET**



**AVON UTILITY BUILDING  
35030 DETROIT ROAD  
AVON, OHIO 44011  
(440) 937 5714**

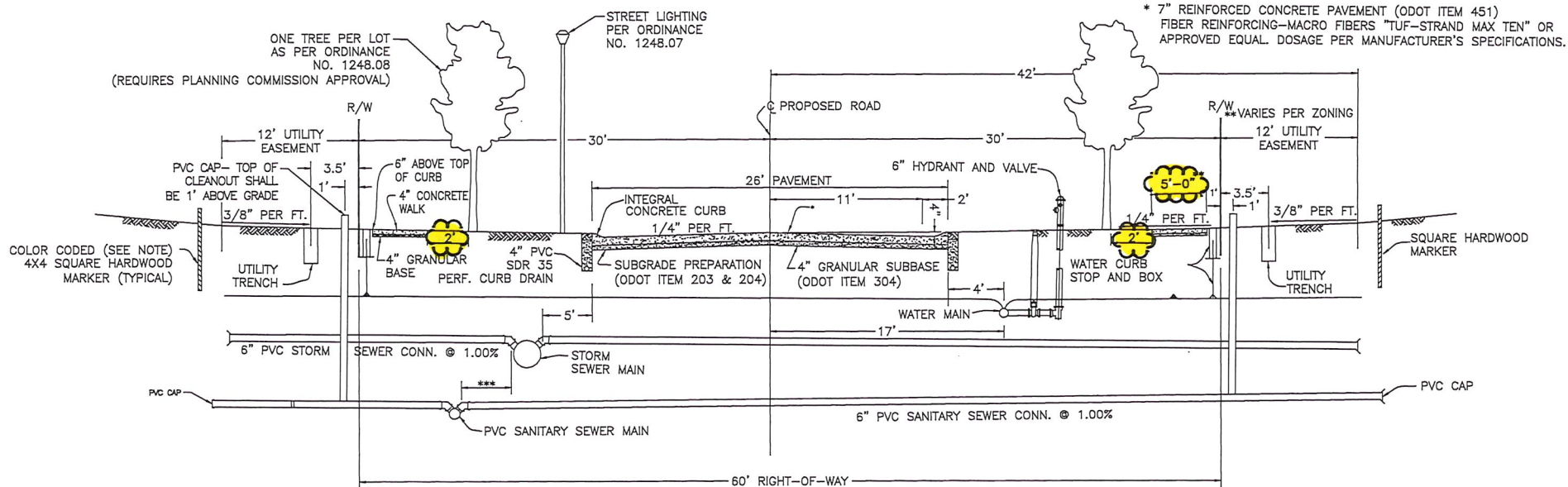
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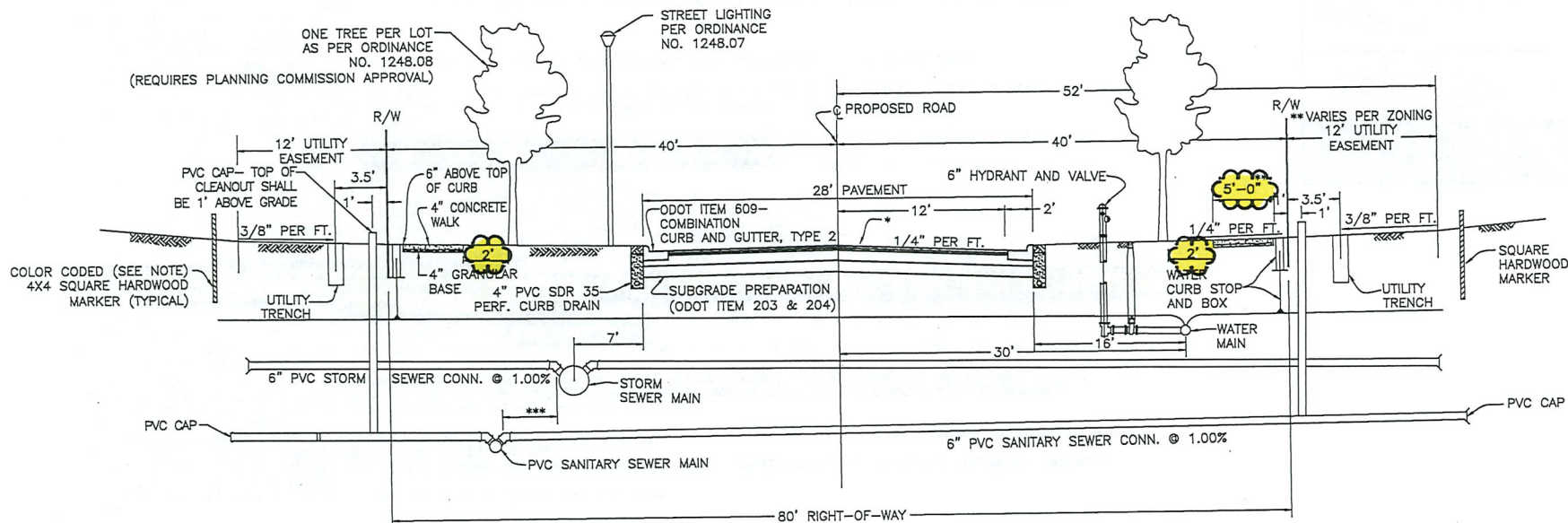




#### GENERAL NOTES:

- CURB CUT MARKINGS ON THE STREET SIDE WILL BE USED REFLECTING THE FOLLOWING:  
W = WATER, + = SAN, - = STORM
- 4x4 SQUARE FIELD MARKERS WILL BE USED AT THE SANITARY AND STORM LATERAL AND WATER CONNECTION TERMINI USING THE FOLLOWING HARDWOOD  
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METER PITS SHALL BE PLACED JUST OUTSIDE OF THE UTILITY EASEMENT ON THE PROPERTY SIDE AS CLOSE TO THE RIGHT-OF-WAY AS POSSIBLE.  
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- TYPICAL SECTION SHOWS THE PREFERRED CROSS SECTION. HOWEVER, THE ACTUAL MAY VARY SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.
- THE GAS MAIN IS TO BE LOCATED ON THE SAME SIDE OF THE ROADWAY AS THE WATER MAIN, 36"-40" IN DEPTH FROM PROPOSED FINISHED GRADE AND  
LOCATED A MINIMUM OF 5 FEET HORIZONTALLY OFFSET FROM THE WATER MAIN (MEASURED CENTER TO CENTER) TOWARD THE RIGHT-OF-WAY LINE AND SHALL  
BE NO LESS THAN 3 FEET INSIDE OF THE RIGHT-OF-WAY LINE.
- PROPERTY LINE S/L MARKINGS ARE TO BE PLACED INTO THE CONC. CURBING. MARKINGS ARE TO BE A MINIMUM 1/4" DIAMETER DRILL HOLES, 1/2" IN DEPTH.
- ANY FILL PLACEMENT IN R/W AND BUILDING PAD AREAS ARE TO BE CONTROLLED FILL TO BE COMPACTION TESTED TO 98% COMPACTION BY A QUALIFIED  
TESTING LABORATORY WITH THE TEST RESULTS SUBMITTED TO THE SERVICE DIRECTOR AND/OR BLDG. INSPECTOR.
- AREAS BETWEEN THE R/W LINE AND PAVED ROADWAY SHALL BE SEED AND MULCHED PRIOR TO ACCEPTANCE BY THE CITY.
- CLAY DAM TO BE PROVIDED 6 FT. FROM THE LATERAL TERMINUS FOR SANITARY, STORM, AND WATER.
- SANITARY M.H.'S SHALL BE LOCATED A MAXIMUM OF 15 FT. FROM BACK OF CURB.
- THE PLACEMENT OF THE FIRE HYDRANTS SHALL BE AT 300 FEET INTERVALS. HOWEVER, IN NO CASE SHALL THEY BE SPACED GREATER THAN 350 FEET  
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- IN THE CASE OF EXISTING ROADWAYS WHERE WIDENING OF THE ROADWAY IS REQUIRED, UTILITIES SHALL BE RELOCATED IN ACCORDANCE WITH THE DIMENSIONAL  
REQUIREMENT FOR A LOCAL ROADWAY.
- ADDITIONAL BASE STABILIZATION IF NEEDED SHALL BE PER THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY ENGINEER.
- \*\*\* IF THE STORM SEWER SIZE IS LESS THAN OR EQUAL TO 24" THE OUT-TO-OUT SEPARATION SHALL BE 5'. IF THE STORM SEWER IS MORE THAN 24" THE  
OUT-TO-OUT SEPARATION SHALL BE 7'.
- PAVEMENT GRANULAR SUBBASE SHALL BE ODOT 304 LIMESTONE. MODIFIED 304 LIMESTONE SHALL ALSO BE ACCEPTABLE AS FOLLOWS:  
40% OR LESS PASSING THE #4 SIEVE  
15% OR LESS PASSING THE #30 SIEVE  
6% OR LESS PASSING THE #200 SIEVE
- CONCRETE PAVEMENT SHALL BE POURED FROM THE SIDE ON TEMPORARY HAUL ROADS. TRUCKS SHALL NOT BE PERMITTED ON THE NEW SUBBASE.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| TYPICAL LOCAL<br>ROADWAY SECTION<br>& GENERAL NOTES          | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING G-1                      | 48-19                 | 8/12/19 |



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- WATER SERVICE CONNECTION SHALL BE ONE CONTINUOUS PIECE OF 1" PIPE (AT A MINIMUM) FROM THE CURB STOP TO THE MAIN SHUT-OFF VALVE AT THE HOUSE. CONTRACTOR SHALL SLEEVE THE UTILITY EASEMENT WITH 2" RIGID PVC PIPE.
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- THE GAS MAIN IS TO BE LOCATED ON THE SAME SIDE OF THE ROADWAY AS THE WATER MAIN, 36"-40" IN DEPTH FROM PROPOSED FINISHED GRADE AND LOCATED A MINIMUM OF 5 FEET HORIZONTALLY OFFSET FROM THE WATER MAIN (MEASURED CENTER TO CENTER) TOWARD THE RIGHT-OF-WAY LINE AND SHALL BE NO LESS THAN 3 FEET INSIDE OF THE RIGHT-OF-WAY LINE.
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\*ODOT ITEM 441 - 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22

ODOT ITEM 407 - TACK COAT FOR SURFACE COURSE

ODOT ITEM 441 - 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22

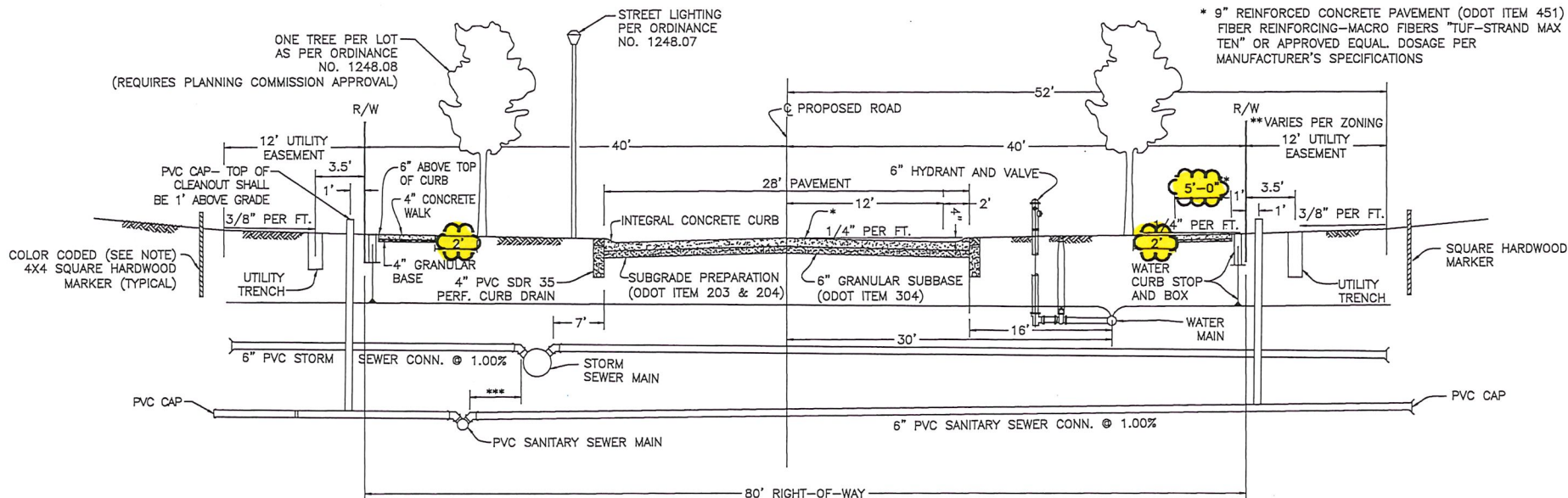
ODOT ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

ODOT ITEM 301 - 6" ASPHALT CONCRETE BASE

ODOT ITEM 304 - 6" LIMESTONE AGGREGATE BASE

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS        |                       |         |
|---------------------------------------------------------------------|-----------------------|---------|
| TYPICAL COLLECTOR<br>ROADWAY SECTION<br>& GENERAL NOTES<br>OPTION 1 | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING G-2                             | 48-19                 | 8/12/19 |





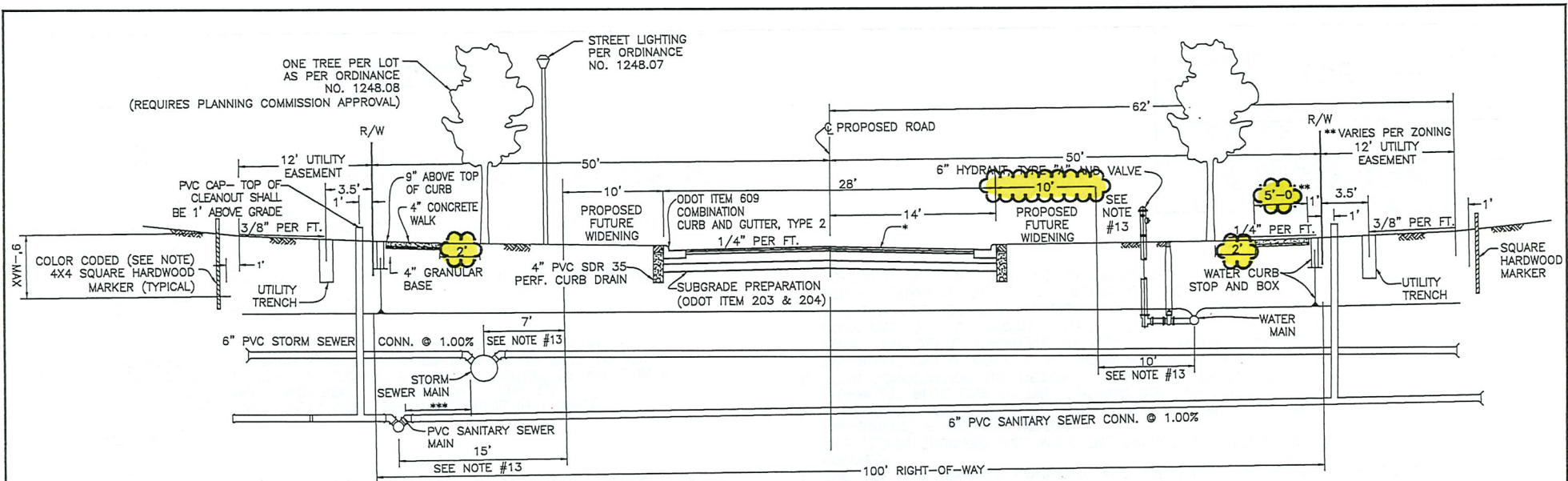
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- CONCRETE PAVEMENT SHALL BE POURED FROM THE SIDE ON TEMPORARY HAUL ROADS. TRUCKS SHALL NOT BE PERMITTED ON THE NEW SUBBASE.

\* 9" REINFORCED CONCRETE PAVEMENT (ODOT ITEM 451)  
FIBER REINFORCING—MACRO FIBERS "TUF-STRAND MAX TEN" OR APPROVED EQUAL. DOSAGE PER MANUFACTURER'S SPECIFICATIONS

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS        |                       |         |
|---------------------------------------------------------------------|-----------------------|---------|
| TYPICAL COLLECTOR<br>ROADWAY SECTION<br>& GENERAL NOTES<br>OPTION 2 | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING<br><b>G-3</b>                   | 48-19                 | 8/12/19 |





#### GENERAL NOTES:

- CURB CUT MARKINGS ON THE STREET SIDE WILL BE USED REFLECTING THE FOLLOWING: W = WATER, + = SAN, - = STORM
- 4x4 SQUARE FIELD MARKERS WILL BE USED AT THE SANITARY AND STORM LATERAL AND WATER CONNECTION TERMINI USING THE FOLLOWING HARDWOOD COLOR CODE: BLUE = WATER, ORANGE/RED = SAN, GREEN = STORM
- 10 FT. BARREL TO BARREL SHALL BE MAINTAINED BETWEEN WATER & STORM SERVICES WITH A MINIMUM OF 10 FT. DISTANCE BARREL TO BARREL BETWEEN SANITARY AND WATER SERVICES.
- CURB STOP & BOX ARE TO BE LOCATED ONE FOOT WITHIN THE RIGHT-OF-WAY. METER PITS SHALL BE PLACED JUST OUTSIDE OF THE UTILITY EASEMENT ON THE PROPERTY SIDE AS CLOSE TO THE RIGHT-OF-WAY AS POSSIBLE. METER PIT LIDS SHALL BE SET TO FINISH GRADE. THIS SHALL BE DONE IN ALL CASES WHERE POSSIBLE. CITY APPROVAL WILL BE REQUIRED FOR ALL OTHER PROPOSED LOCATIONS.
- WATER SERVICE CONNECTION SHALL BE ONE CONTINUOUS PIECE OF 1" PIPE (AT A MINIMUM) FROM THE CURB STOP TO THE MAIN SHUT-OFF VALVE AT THE HOUSE. CONTRACTOR SHALL SLEEVE THE UTILITY EASEMENT WITH **2" RIGID PVC PIPE**.
- TYPICAL SECTION SHOWS THE PREFERRED CROSS SECTION. HOWEVER, ACTUAL MAY VARY SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.
- THE GAS MAIN IS TO BE LOCATED ON THE SAME SIDE OF THE ROADWAY AS THE WATER MAIN, 36"-40" IN DEPTH FROM PROPOSED FINISHED GRADE AND LOCATED **A MINIMUM OF 5 FEET HORIZONTALLY OFFSET FROM THE WATER MAIN (MEASURED CENTER TO CENTER) TOWARD THE RIGHT-OF-WAY LINE AND SHALL BE NO LESS THAN 3 FEET INSIDE OF THE RIGHT-OF-WAY LINE.**
- PROPERTY LINE S/L MARKINGS ARE TO BE PLACED INTO THE CONC. CURBING. MARKINGS ARE TO BE A MINIMUM 1/4" DIAMETER DRILL HOLES, 1/2" IN DEPTH.
- ANY FILL PLACEMENT IN R/W AND BUILDING PAD AREAS ARE TO BE CONTROLLED FILL TO BE COMPACTION TESTED TO 98% COMPACTION BY A QUALIFIED TESTING LABORATORY WITH THE TEST RESULTS SUBMITTED TO THE SERVICE DIRECTOR AND OR BLDG. INSPECTOR.
- AREAS BETWEEN THE R/W LINE AND PAVED ROADWAY SHALL BE SEED AND MULCHED PRIOR TO ACCEPTANCE BY THE CITY.
- CLAY DAM TO BE PROVIDED 6 FT. FROM THE LATERAL TERMINUS FOR SANITARY, STORM, AND WATER.
- SANITARY M.H.'S SHALL BE LOCATED A MAXIMUM OF 15 FT. FROM BACK OF CURB.
- THE PLACEMENT OF THE FIRE HYDRANTS SHALL BE AT 200 FEET INTERVALS. HOWEVER, IN NO CASE SHALL THEY BE SPACED GREATER THAN 350 FEET MEASURED IN A STRAIGHT LINE DISTANCE. **WATER VALVES TO BE LOCATED EVERY 800 FEET MAXIMUM.**
- IN THE CASE OF EXISTING ROADWAYS WHERE WIDENING OF THE ROADWAY IS REQUIRED, UTILITIES SHALL BE RELOCATED IN ACCORDANCE WITH THE DIMENTIONAL REQUIREMENT FOR A LOCAL ROADWAY.
- ADDITIONAL BASE STABILIZATION IF NEEDED SHALL BE PER THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY ENGINEER.
- \*\*\* IF THE STORM SEWER SIZE IS LESS THAN OR EQUAL TO 24" THE OUT-TO-OUT SEPARATION SHALL BE 5'. IF THE STORM SEWER IS MORE THAN 24" THE OUT-TO-OUT SEPARATION SHALL BE 7'.
- PAVEMENT GRANULAR SUBBASE SHALL BE ODOT 304 LIMESTONE. MODIFIED 304 LIMESTONE SHALL ALSO BE ACCEPTABLE AS FOLLOWS:  
40% OR LESS PASSING THE #4 SIEVE  
15% OR LESS PASSING THE #30 SIEVE  
6% OR LESS PASSING THE #200 SIEVE

\*ODOT ITEM 441 - 1-1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-22

ODOT ITEM 407 - TACK COAT FOR SURFACE COURSE

ODOT ITEM 441 - 1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, PG 64-22

ODOT ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE

ODOT ITEM 301 - 8" ASPHALT CONCRETE BASE

ODOT ITEM 304 - 6" LIMESTONE AGGREGATE BASE

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| TYPICAL ARTERIAL<br>ROADWAY SECTION<br>& GENERAL NOTES       | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>G-4</b>               | 48-19                 | 8/12/19 |

### "AS-BUILT" REQUIREMENTS

AS-BUILTS SHALL BE PREPARED AND SUBMITTED IN ACCORDANCE WITH AVON CODIFIED ORDINANCES 1050 AND 1244.

AS-BUILT PLAN SET SHALL HAVE A PROFESSIONAL SURVEYOR'S CERTIFICATION STATEMENT, STAMP, AND DATE.

IF AS-BUILT SET CONTAINS AN SCM, AN AS-BUILT CERTIFICATION INCLUDING AS-BUILT SURVEY AND INSPECTION MUST BE SEALED AND DATED BY A PROFESSIONAL ENGINEER AND SURVEYOR WITH A STATEMENT CERTIFYING THAT THE SCMS, AS DESIGNED AND INSTALLED MEET THE REQUIREMENTS OF THE COMPREHENSIVE STORM WATER MANAGEMENT PLAN APPROVED BY THE CITY ENGINEER.

THE FOLLOWING LISTED ITEMS ARE TO APPEAR ON A SET OF "AS-BUILT" PLANS SUBMITTED TO THE CITY.

#### SANITARY SYSTEM

1. SANITARY SYSTEM REVISIONS I.E., RIM, INVERTS, PIPE SLOPES AND MANHOLE LOCATIONS. PRESENT CORRECTED INFORMATION OR PLAN SET WITH A LINE THROUGH PROPOSED DATA.
2. SANITARY WYE LOCATIONS FROM DSM, RISERS WITH ELEVATIONS, LATERAL LENGTH AND DEPTH AT TERMINUS.

#### STORM SYSTEM

1. STORM SYSTEM REVISIONS, I.E. RIM, INVERTS, PIPE SLOPES AND MANHOLE AND CATCH BASIN LOCATIONS. PRESENT CORRECTED INFORMATION OR PLAN SET WITH A LINE THROUGH PROPOSED DATA.
2. STORM KOR-N-BOOT LOCATIONS FROM DSM, LATERAL LENGTH AND DEPTH AT TERMINUS.

#### WATER MAIN

1. LOCATION REVISION IN PLAN VIEW, DEPTH REVISIONS IN PROFILE.
2. LINE VALVE, HYDRANT AND BEND LOCATIONS AS INSTALLED.
3. SERVICE LINE CORPORATION LOCATIONS FROM A HYDRANT OR VALVE IN A STRAIGHT LINE DISTANCE, LENGTH TO CURB STOP, CURB STOP LOCATION, LENGTH FROM CURB STOP TO TERMINUS, WITH DEPTH AT TERMINUS.

#### STORM WATER MANAGEMENT SYSTEM

1. INVERT AND SIZES OF ALL OUTLET STRUCTURE PIPES/ORIFICES/WEIRS. INCLUDE RIM ELEVATION.
2. INVERTS, SIZES, SLOPES OF ALL INLET PIPES.
3. DETENTION VOLUME VERIFICATION COMPLETE WITH CONTOUR AREA TABLE AND SPOT GRADE ELEVATIONS.
4. OVERFLOW LOCATION, ELEVATION, AND WIDTH.
5. CALCULATIONS VERIFYING AS-BUILT DATA IS SUFFICIENT TO MEET STORM WATER MANAGEMENT REQUIREMENTS AS APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.

#### ROADS

1. CENTERLINE ELEVATIONS AT ALL POINTS OF INFLECTION.
2. CENTERLINE ELEVATIONS AT ALL INTERSECTIONS.

### TRAFFIC

1. ALL AT GRADE OR ABOVE GROUND TRAFFIC IMPROVEMENTS SHALL BE LOCATED, I.E., SIGNAL POLES, PEDESTRIAN POLES, CONTROLLERS, ETC.

### GENERAL

1. SANITARY, STORM AND WATER SERVICE LOCATIONS IF DIFFERENT THAN PLAN PROPOSAL.
2. ALL PIPE CROSSING CLEARANCE INFORMATION.
3. LOCATE ANY AND ALL EXISTING ITEMS ENCOUNTERED DURING EXCAVATION I.E., GAS LINES/SERVICES. LATERALS, DRAIN LINES, M.H.'S, C.B'S, WATER MAINS/SERVICES, INDICATING STATION DEPTH AND SIZE.

### "AS-BUILT" SUBMISSION PROCEDURE

1. FIELD INSPECTORS MARKED-UP SET OF PLANS ARE TO BE PROVIDED TO THE CITY.
2. MARKED-UP PLANS ARE GIVEN TO THE PROJECT DESIGN ENGINEER TO REVISE PLANS BASED ON HIS SURVEY INFORMATION AND INSPECTION MARK-UPS, THUS BECOMING A SET OF "AS-BUILT" PLANS.
3. MARKED-UP PLANS AND A SET OF BLUE LINE ARE TO BE SUBMITTED TO THE CITY BY THE ENGINEER.
4. THE CITY WILL LOG-IN THE "AS-BUILTS" AND FORWARD THE MARKED-UP BLUE LINE PLANS TO THE CITY ENGINEER'S OFFICE FOR REVIEW. THE CITY ENGINEER'S OFFICE WILL ASSURE THAT ALL MARK-UP INFORMATION HAS BEEN TRANSFERRED TO THE "AS-BUILT" PLAN SET.
5. THE CITY ENGINEER'S OFFICE WILL PROVIDE THE CITY WITH REVIEW COMMENTS AND REVISION MARK-UPS. BOTH PLAN SETS ARE TO BE GIVEN TO THE CITY WITH THE COMMENTS.
6. THE CITY WILL FORWARD COMMENTS AND ADDITIONAL MARK-UPS TO THE DESIGN ENGINEER.
7. THE DESIGN ENGINEER WILL MAKE THE APPROPRIATE REVISIONS TO THE "AS-BUILTS" IF ANY ARE NEEDED.
8. IF REVISIONS ARE NEEDED THE DESIGN ENGINEER WILL RE-SUBMIT A REVISED "AS-BUILT" BLUE LINE TO THE CITY FOR CONFIRMATION.
9. UPON CONFIRMATION THE DESIGN ENGINEER WILL PROVIDE THE CITY WITH AN "AS-BUILT" DIGITAL COPY. IF NO REVISIONS ARE REQUIRED THE CITY WILL SO NOTIFY THE DESIGN ENGINEER. AN "AS-BUILT" DIGITAL COPY AND 1 HARD COPY WILL THEN BE PROVIDED TO THE CITY.
10. THE CITY WILL FORWARD THE DIGITAL COPY TO THE CITY ENGINEER'S OFFICE FOR A PERMANENT "AS-BUILT" RECORD OF THE PROJECT.
11. AS-BUILTS WILL BE PREPARED AND SUBMITTED PRIOR TO FINAL ACCEPTANCE.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                    |
|--------------------------------------------------------------|-----------------------|--------------------|
| AS-BUILT<br>REQUIREMENTS                                     | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING G-5                      | 48-19<br>28-20        | 8/12/19<br>4/14/20 |
|                                                              |                       | SHEET<br>1 OF 2    |



### FINAL WALK-THROUGH ACCEPTANCE CHECKLIST

THE FOLLOWING ITEMS WILL BE INSPECTED AND VERIFIED TO BE IN COMPLIANCE PRIOR TO THE ACCEPTANCE OF A PROJECT BY THE CITY OF AVON.

#### SANITARY SEWER

1. INSTALL DSM PLUG
2. LATERALS MARKED AND COLORED. (RED)
3. MANHOLE CASTINGS ADJUSTED TO GRADE.
4. CASTING AND RISER PORRIDGED.
5. PIPE INVERTS MORTARED.
6. MANHOLES CLEANED.
7. LIFT HOLES MORTARED.
8. AIR TEST PERFORMED.
9. MANDREL TEST PERFORMED.
10. MANHOLE VACUUM TEST PERFORMED.
11. VIDEO AND FLUSHING PERFORMED.
12. REMOVE DSM PLUG.

#### STORM SEWER

1. LATERALS MARKED AND COLORED, (GREEN)
2. MANHOLE CASTINGS ADJUSTED TO GRADE.
3. CASTING AND RISER PORRIDGED.
4. CONDUITS BRICK/MORTARED, IN/OUT INTO STRUCTURES.
5. INVERTS POURED.
6. MANHOLES CLEANED OUT.
7. CATCH BASIN INSTALLED.
8. CATCH BASIN CONDUITS MORTARED IN/OUT.
9. CATCH BASIN INVERTS POURED.
10. CATCH BASIN BOX OUTS POURED.
11. CATCH BASIN GRATES FABRIC COVERED.
12. DETENTION BASIN CONFIRMED.
13. MANDREL TEST PERFORMED THRU 18" DIAMETER.
14. VIDEO AND FLUSHING PERFORMED ON ALL PIPES.

#### WATERLINES

1. LATERALS MARKED AND COLORED. (BLUE)
2. HYDROSTATIC PRESSURE TEST PERFORMED.
3. BACTERIA TEST APPROVED BY CITY.
4. LINE VALVES AND WATCH VALVES KEYED.
5. SERVICES BOXES CHECKED/KEYED.
6. HYDRANT OIL LEVEL CHECKED.
7. HYDRANT KEY PROVIDED TO SERVICE DEPARTMENT.
8. HYDRANTS ARE TO BE REPAINTED AT THE DIRECTION OF THE CITY WHEN NEEDED.

#### 3-YEAR WALK-THROUGH

AT 2 YEARS AND 8 MONTHS THE CONTRACTOR AND A CITY REPRESENTATIVE SHALL WALK THE SITE AND VISUALLY INSPECT THE CONDITION OF THE CLEANOUTS. THE CONTRACTOR SHALL CLEAN AND TELEWISE ALL SEWERS. THE CONTRACTOR SHALL REMEDY ALL DEFICIENCIES TO THE SATISFACTION OF THE CITY.

#### PAVEMENT

1. ALL JOINTS TARRED.
2. BACK OF CURBS MORTARED.
3. HANDICAPPED RAMP DEPRESSIONS IN PLACE.
4. UNDERDRAINS INSTALLED AND CONNECTED TO C.B.
5. MONUMENT BOXES INSTALLED.
6. SURVEY PINS SET.
7. UTILITY CURB MARKINGS COMPLETED.
8. ROADWAY BROOM SWEEP AND CLEANED.
9. ALL REQUIRED SIGNAGE INSTALLED.
10. SUBLOT CURB DRILL HOLE MARKINGS COMPLETED.

#### RIGHT-OF-WAY

1. UTILITY CONDUITS CROSSING PAVEMENT INSTALLED.
2. GAS MAINS INSTALLED.
3. ELECTRIC CONDUIT/ TRANSFORMERS/STREET LIGHTS INSTALLED.
4. FINAL GRADING COMPLETED.
5. SEEDING AND MULCHING COMPLETED.
6. EROSION CONTROL IN PLACE.

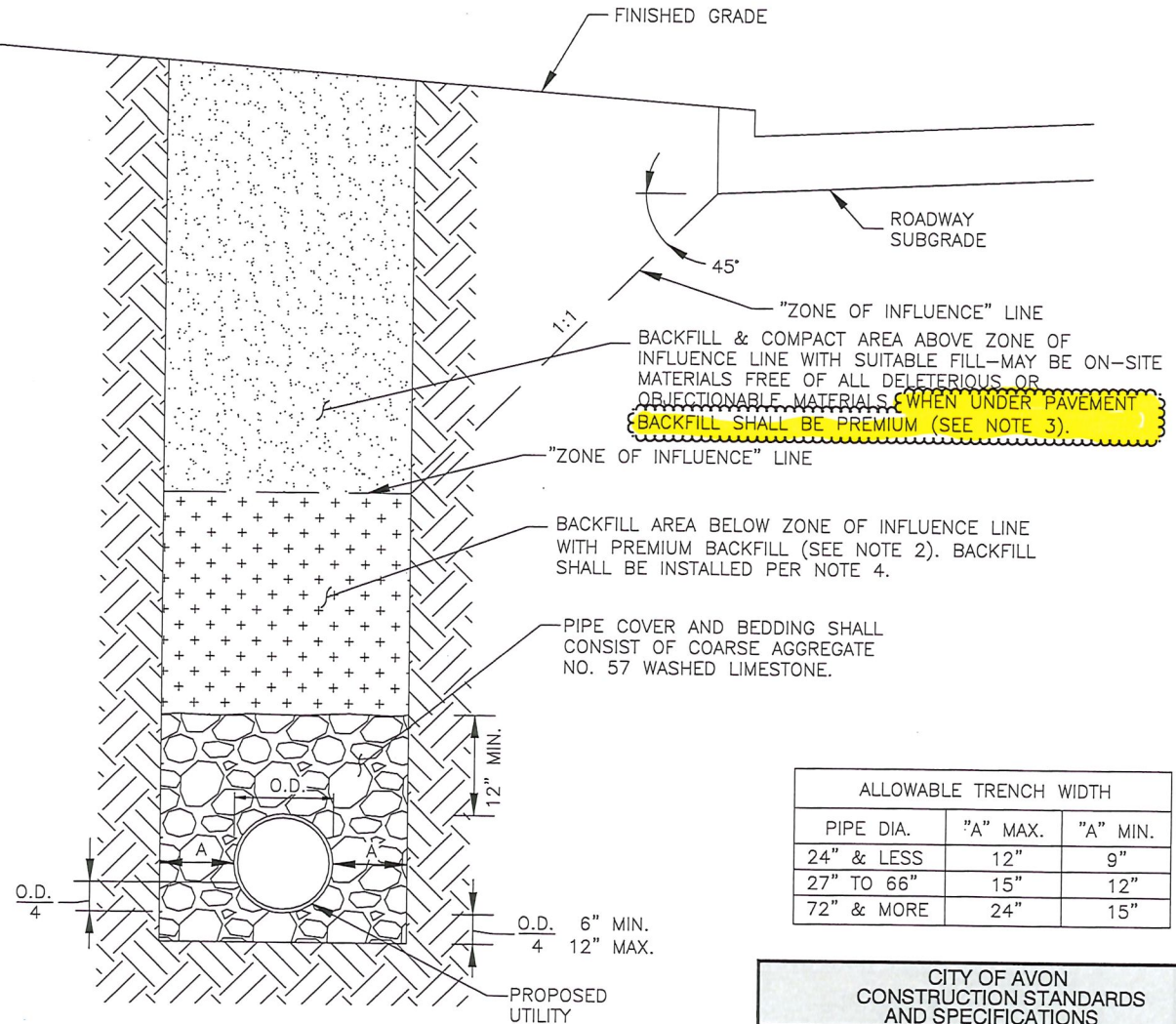
#### GENERAL

1. EPA WATER/SANITARY PERMIT TO INSTALL.
2. NPDES-STORM APPROVAL.
3. FINANCIAL SETTLEMENTS.
4. CLOMR SUBMITTALS.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                    |
|--------------------------------------------------------------|-----------------------|--------------------|
| AS-BUILT<br>REQUIREMENTS                                     | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING G-5                      | 48-19<br>28-20        | 8/12/19<br>4/14/20 |
|                                                              |                       | SHEET<br>2 OF 2    |

## NOTES

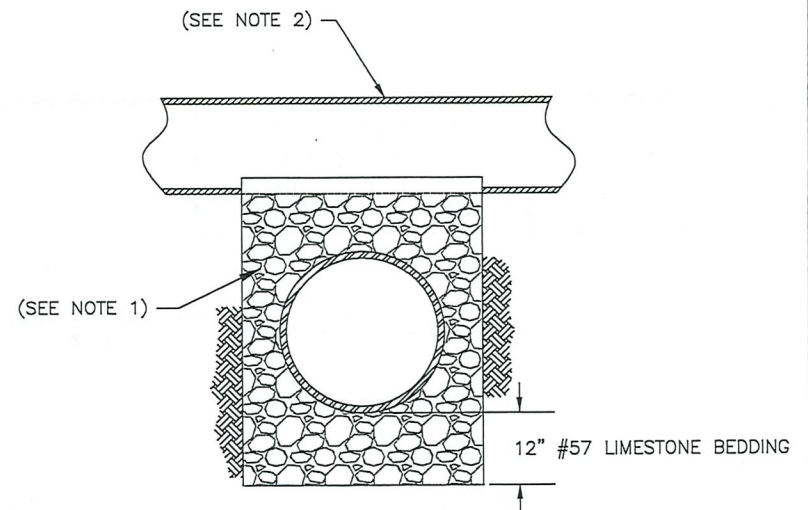
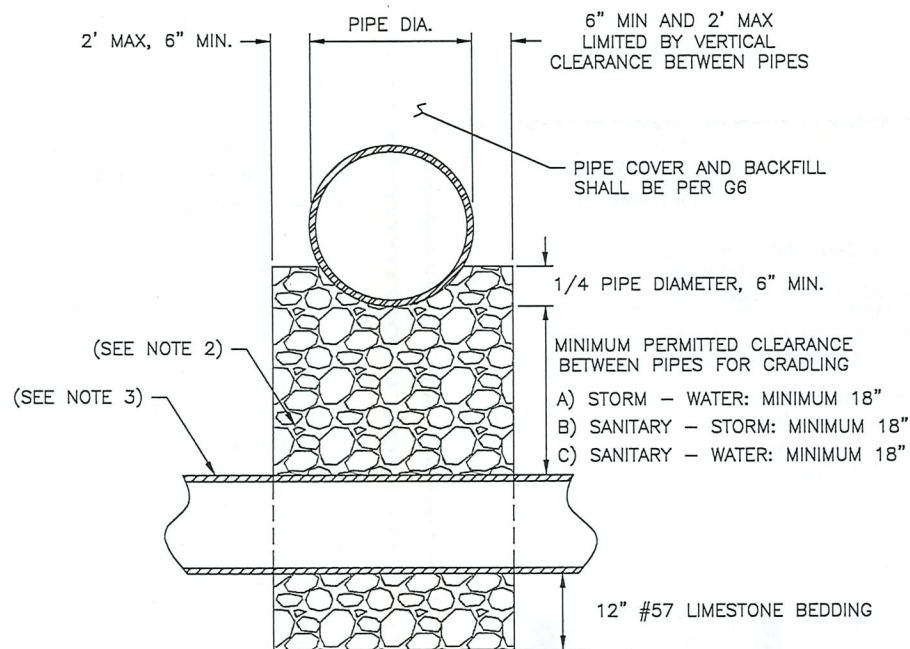
1. CONTRACTOR SHALL PROVIDE GRADE STAKES OR OTHER REFERENCE POINTS AS DIRECTED BY THE CITY ENGINEER TO AID FIELD INSPECTION PERSONNEL IN THE DETERMINATION OF THE ZONE OF INFLUENCE LINE ELEVATION.
2. ACCEPTABLE PREMIUM BACKFILL MATERIALS SHALL CONSIST OF COURSE INTERLOCKING LIMESTONE AGGREGATE NO. 304. NO SLAG OR LIMESTONE SCREENINGS.
3. PREMIUM BACKFILL SHALL BE INSTALLED TO THE TOP OF SUBGRADE FOR TRENCHES UNDER WALKS, DRIVES, AND PAVEMENTS FOR CURRENT AND FUTURE PHASES.
4. BACKFILL MATERIALS UNDER EXISTING OR FUTURE PAVEMENT SHALL BE THOROUGHLY COMPACTED TO A MINIMUM OF 98% COMPACTION BY TAMPING IN LAYERS OF NOT MORE THAN 1 FOOT IN DEPTH.
5. THE SURFACE AT THE BOTTOM OF THE TRENCH SHALL BE FREE OF ANY PROTRUSIONS WHICH MAY CAUSE POINT LOADING OF ANY PORTION OF THE PIPE AND SHALL PROVIDE A FIRM, STABLE AND UNIFORM SUPPORT FOR THE PIPE.
6. INITIAL BACKFILL OVER THE TOP OF PIPE IN USING COMPACTION EQUIPMENT. AVOID CONTACT WITH THE PIPE AND DO NOT COMPACT DIRECTLY OVER THE PIPE UNTIL SUFFICIENT BACKFILL HAS BEEN PLACED OVER THE PIPE TO AVOID DAMAGES TO THE PIPE. LITTLE OR NO TAMPING OF THE INITIAL BACKFILL DIRECTLY OVER AND AROUND THE PIPE TO A POINT 12 INCHES ABOVE THE PIPE SHALL BE PERMITTED. FINAL BACKFILL SHALL BE COMPACTED TO AN APPROVED DENSITY EQUAL TO ADJOINING SOIL MATERIALS AND AS STATED ABOVE FOR TRENCHES UNDER EXISTING OR PROPOSED PAVEMENT.
7. SEE DETAIL W-2 FOR WATER MAIN TRENCH.



| ALLOWABLE TRENCH WIDTH |          |          |
|------------------------|----------|----------|
| PIPE DIA.              | "A" MAX. | "A" MIN. |
| 24" & LESS             | 12"      | 9"       |
| 27" TO 66"             | 15"      | 12"      |
| 72" & MORE             | 24"      | 15"      |

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| STORM AND SANITARY<br>TRENCH DETAILS                         | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>G-6</b>               | 48-19                 | 8/12/19 |





NOTE:

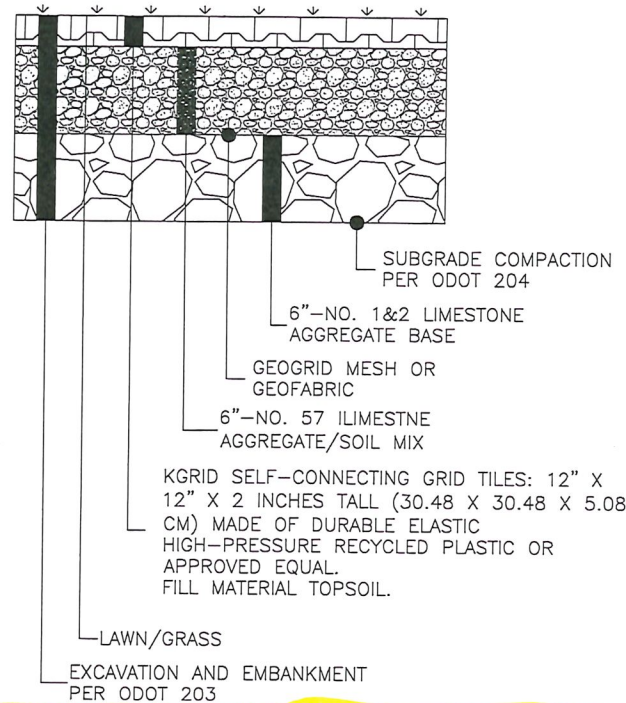
1. IN NO CASE SHALL THE CLEARANCE BE PERMITTED TO BE LESS THAN 6".
2. CRADLING MAY BE PERMITTED BY THE CITY. HOWEVER, THE USE OF A CASING OR D.I.P. SHALL BE REQUIRED WHEN PIPE CLEARANCE IS LESS THAN THE MINIMUM PERMITTED CLEARANCE DETAILED ABOVE, THE CRADLING MATERIAL SHALL BE NO. 57 LIMESTONE, OR AS DIRECTED BY THE CITY ENGINEER.
3. SEWER PIPE IS TO BE 20 FOOT MINIMUM LENGTH OF DUCTILE IRON PIPE CENTERED AT THE CROSSING. SEE SHEET SAN-1.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| MONOLITHIC CRADLING<br>OF UPPER PIPE                         | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>G-7</b>               | 48-19                 | 8/12/19 |

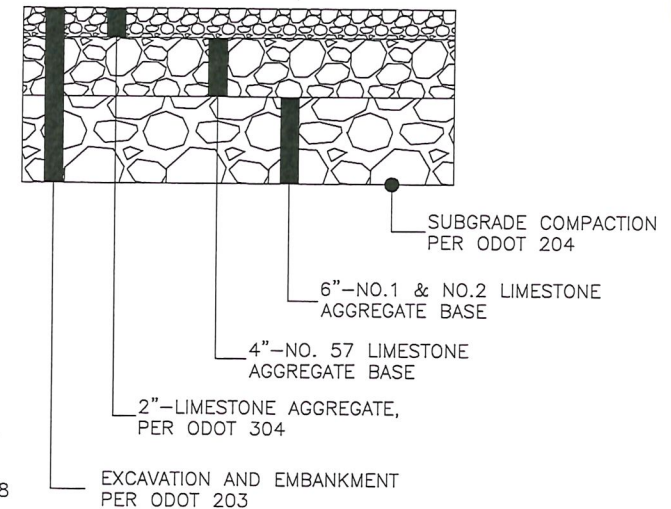
KGRID OR APPROVED EQUAL SPECS:

- CELL WIDTH: 2.1 INCHES
- WALL THICKNESS: 0.0215
- INDIVIDUAL CELL WEIGHT 2.15LBS/FT<sup>2</sup>
- POROSITY: 82% OPEN
- COMPRESSIVE STRENGTH: IN EXCESS OF 35 UST/FT<sup>2</sup>
- LOAD BEARING CAPACITY: 35 TONS/AXLE
- THE GRID TILES ARE RESISTANT TO FRACTURE (FLEXIBLE FROM -58 TO +194 F, -50 TO +90 C) RESISTANT TO UV AND FREEZING.
- RESISTANT TO AMMONIA, MOST ACIDS, STREET SALT, GASOLINE, AND PETROLEUM PRODUCTS 100% RECYCLED CONTENT/RECYCLABLE CONTENT.
- MATERIAL: 100% RECYCLED PLASTIC, PROPRIETARY BLEND (<5% PIGMENT, ANTI-UV, CARRIER AGENTS, ETC.)
- COLORANT: STABILITY OF SHAPE: CHANGE OF SHAPE: ABSORPTION OF MOISTURE: ENVIRONMENTAL COMPATIBILITY:
- SOLUBILITY:
- COLORING BY MEANS OF 1-3% PIGMENT, UV-STABILIZED TEMPERATURES FROM -58 TO +194 F (-50 - +90 C) <0.5% (AT MEDIAN TEMPERATURE +68 TO +176 F) 0.01% HARMLESS TO PLANTS, SOIL, AIR, AND WATER MICRO-ORGANISMS, GROUNDWATER NEUTRAL RESISTANT TO ACIDS AND SOLUTIONS (SALT, AMMONIA, ACID RAIN, ETC.) AS WELL AS ALCOHOL.

OPTION 1



OPTION 2



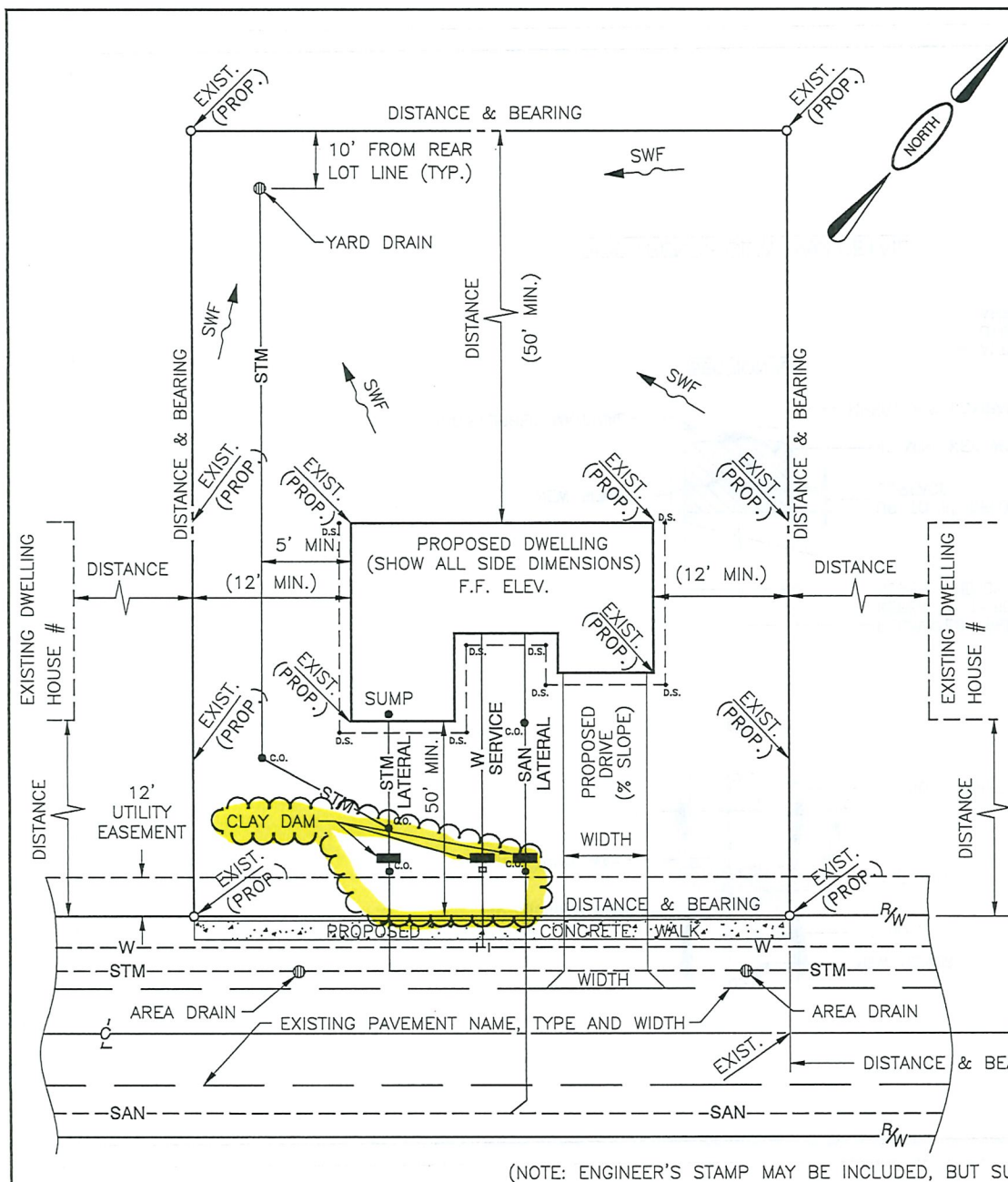
- OPTION 1 SHALL BE THE CONSTRUCTION STANDARD.
- OPTION 2 SHALL REQUIRE APPROVAL FROM THE CITY OF AVON'S SERVICE DIRECTOR.

NOTES:

1. DRIVE SHALL BE A MINIMUM 12' WIDTH WITH A CONCRETE APRON AT THE ROADWAY. ADDITIONAL WIDTH MAY BE REQUIRED BY THE UTILITY DEPARTMENT BASED ON SITE CONDITIONS OR UTILITY LOCATIONS
2. PLACEMENT LOCATION MUST BE APPROVED BY THE UTILITY DEPARTMENT.
3. THE ACCESS DRIVE IS TO BE PROOF ROLLED PER THE CURRENT ODOT SPECIFICATION FOR PROOF ROLLING.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| UTILITY ACCESS DRIVE                                         | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>G-8</b>               | 48-19                 | 8/12/19 |





(NOTE: ENGINEER'S STAMP MAY BE INCLUDED, BUT SURVEYOR'S STAMP IS REQUIRED)

# PLOT PLAN

P.P.N. \_\_\_\_\_  
 SUBDIVISION \_\_\_\_\_  
 S/L NO. \_\_\_\_\_  
 HOUSE NO. \_\_\_\_\_  
 DEVELOPER \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_

BUILDER \_\_\_\_\_  
 PHONE NO. \_\_\_\_\_  
 1ST FLOOR EL. \_\_\_\_\_  
 TOP OF FOOTER EL. \_\_\_\_\_

## GENERAL NOTES:

1. FINAL PROPOSED GRADE SHALL CONFORM TO THE APPROVED MASTER GRADING PLAN.
2. YARD GRADE AT BUILDING SHALL BE A MINIMUM OF 18" ABOVE TOP OF PAVEMENT OR CURB, IF CURBING EXISTS
3. DOWNSPOUT AND SUMP PUMP CONNECTION TO THE LATERAL ARE TO BE WITHIN FIVE FEET OF THE FOUNDATION.
4. BENCHMARK IS TO BE SHOWN ON THE PLAN AND REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD) 88".
5. THE MONUMENT BOX NEAREST THE SUBLOT SHALL BE SHOWN AND IDENTIFIED.
6. FOR EXISTING UTILITY LATERAL CONNECTIONS, REFER TO SHEET STM-9.
7. FOR DRIVEWAY AND SIDEWALK CONSTRUCTION, REFER TO SHEET P-13.
8. STORM SYSTEM FOR THE REAR YARD DRAIN AND HOUSE ARE TO BE INSTALLED AS SHOWN WITH A CLEAN OUT EVERY 100' AND AT EACH BEND.
9. IDENTIFY ALL EXISTING UTILITIES BY DEPTH, GRADE, SIZE AND TYPE OF PIPE.
10. STORM SEWER LATERAL TO BE INSTALLED OUTSIDE THE BASEMENT DIG.
11. HORIZONTAL CLEARANCE:  
 WATER AND SANITARY LATERALS=10'  
 WATER AND STORM LATERALS=10'  
 STORM AND SANITARY LATERALS=5'
12. PIPE TRENCH CLAY DAM TO BE INSTALLED OUTSIDE OF UTILITY EASEMENT AND PRIOR TO ANY BRANCHES ON THE STORM, SANITARY AND WATER CONNECTIONS PER DETAILS G-10.
13. UTILITY DEPARTMENT REPRESENTATIVE MUST BE PRESENT WHEN PHYSICAL CONNECTION TO HOME LATERALS ARE MADE. A MINIMUM OF 24 HOUR NOTICE MUST BE PROVIDED TO THE UTILITY DEPARTMENT PRIOR TO SUCH CONNECTION.

## LEGEND

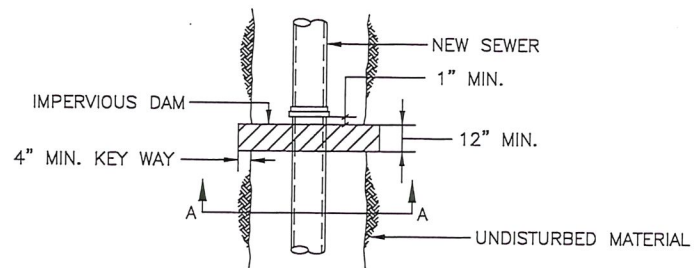
- EXIST. (PROP.) SPOT GRADE ELEVATION
- SAN — SAN. SEWER, SAN. LATERAL 6" MIN. @ 1% GRADE
- STM — STORM SEWER, STM. LATERAL 6" MIN. @ 1% GRADE
- W — WATER MAIN, WATER SERVICE LINE, 1" K COPPER MIN.
- C.O. CLEAN OUT
- SWF → SURFACE WATER FLOW DIRECTION
- D.S. DOWNSPOUT
- ⊙ AREA DRAIN, IF REQUIRED
- CURB STOP

SURVEYORS SEAL

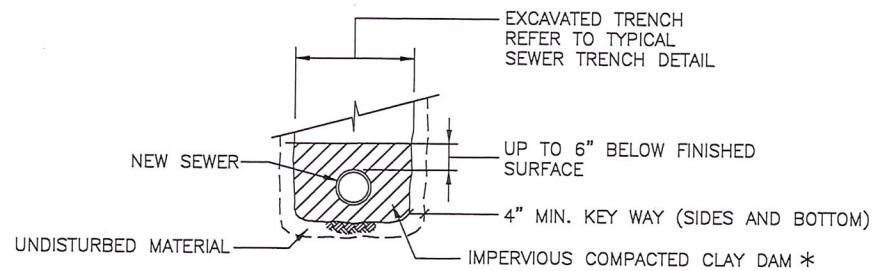
SURVEYOR SIGNATURE AND CERTIFICATION

## CITY OF AVON CONSTRUCTION STANDARDS AND SPECIFICATIONS

| TYPICAL PLOT PLAN LAYOUT DETAIL   | ADOPTION ORDINANCE | DATE            |
|-----------------------------------|--------------------|-----------------|
| STANDARD CONSTRUCTION DRAWING G-9 | 48-19 28-20        | 8/12/19 4/14/20 |



PLAN



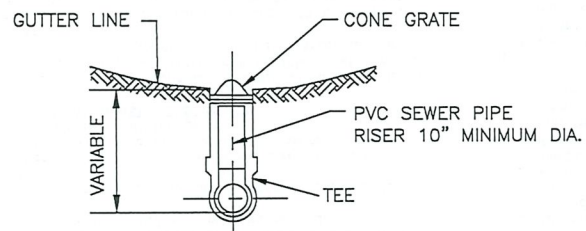
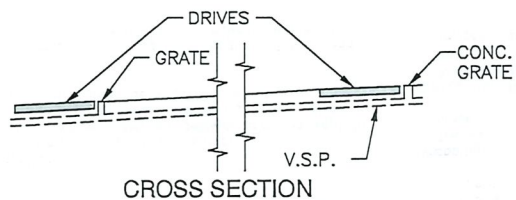
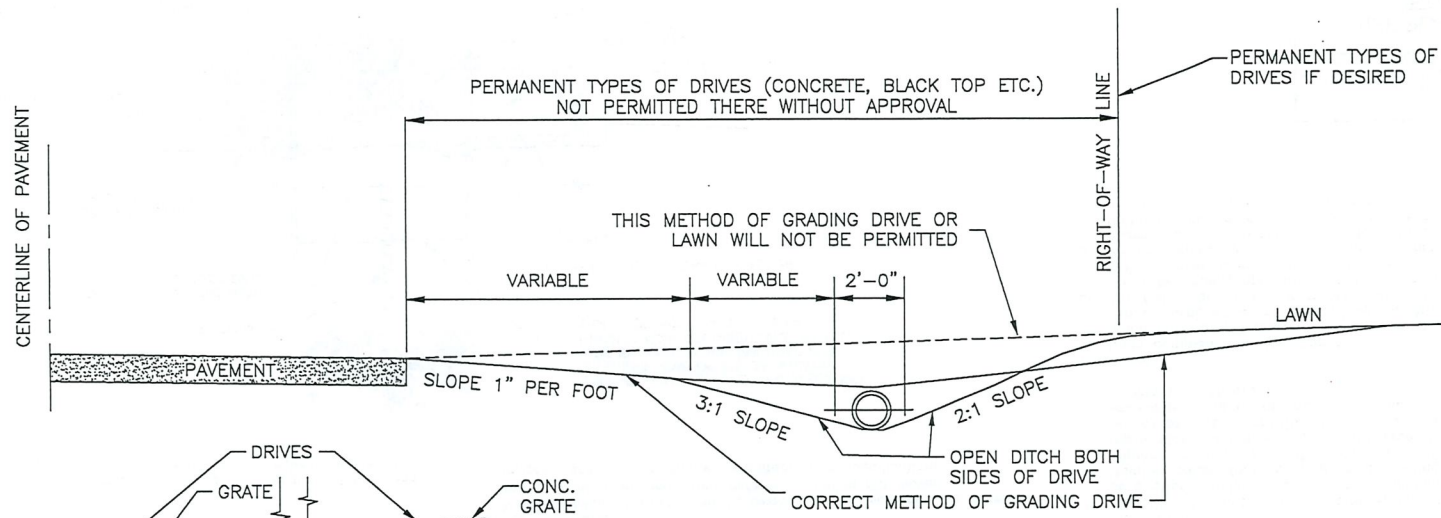
SECTION A-A

\* ALTERNATE MATERIALS MAY BE  
UTILIZED WITH PRIOR WRITTEN  
APPROVAL OF THE CITY ENGINEER

PIPE TRENCH CLAY DAM DETAIL

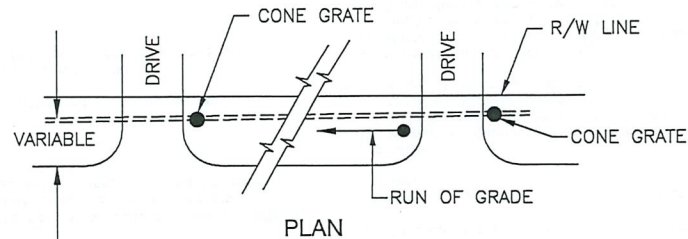
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| PIPE TRENCH CLAY<br>DAM DETAIL                               | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>G-10</b>              | 48-19                 | 8/12/19 |





WHERE TILE EXISTS IN ROAD DITCH AN INLET IS TO BE PLACED ON UPSTREAM SIDE OF DRIVE.

BEFORE INSTALLING DRIVE PIPE OR TILE IN ROAD DITCH PERMISSION MUST BE SECURED FROM SUPERINTENDENT OF STREETS.



| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| APPROVED METHOD OF<br>PRIVATE DRIVES &<br>GRADING LAWNS      | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>G-11</b>              | 48-19                 | 8/12/19 |

#### Qualifications of workmen:

Provide at least one person who shall be present at all times during execution of this portion of the Work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct all work performed under this Section.

#### Codes, Regulations and Standards:

- All plants and planting material shall meet or exceed the Specifications of Federal, State and County laws requiring inspection for plant disease and insect control.
- Quality and Size:
  - General: Quality and size shall conform with the current edition of 'Horticultural Standards' for number one grade nursery stock as adopted by the American Association of Nurserymen.
  - Deciduous Trees: Deciduous trees will measure in units of an average caliper at point 6 inches above the ground.
  - Evergreen trees will measure in units of average height in feet above the ground.
  - Plant stock: Each ball shall be of sufficient size to insure successful fibrous feeding roots necessary to insure successful recovery and development of the plant.
  - Topsoil shall conform to ASTM D 5268-92.
- Balled and Burlapped Stock: Care should be taken at all times as to not damage the bark or branches. Plants shall be lifted and handled from the bottom of the ball as much as possible in order to prevent damage to the plant.
- Plant stock to be delivered B & B shall be moved with a compact natural ball of earth so firmly wrapped in burlap, that upon delivery the soil in the ball is still firm and compact about the small feeding roots.

#### Temporary Storage and Protection:

- Protect plants at all times from sun or drying winds.
- Plants that cannot be planted immediately on delivery shall be kept in the shade, well protected with soil, shredded hardwood mulch, straw or other acceptable material, and shall be kept well watered.

#### Topsoil Backfill:

The topsoil backfill shall be a mixture of 3-parts of onsite material and 1-part compost by volume. Free from admixture of subsoil, heavy clay,

coarse sand, stones, plants, roots, sticks, and other foreign materials as per ASTM D 5268-92. 95% of topsoil shall pass a 2.0 mil sieve. Organic content shall be 4% to 12% of total dry weight.

- If the quality or quantity of on-site topsoil stockpiled is insufficient to complete the work, provide imported topsoil. Obtain rights and pay all costs for imported topsoil material.
- Proposed topsoil shall be acceptable to Architect and Soils Testing Firm.
- Provide a history of the crops grown in and the chemicals applied to imported topsoil.
- Submit an analysis of both existing and imported topsoil to determine the necessary soil amendments and recommended rates of application for each type of plant to be grown.

#### Trees:

- All trees and evergreens shall be sound, healthy, vigorous, first-class, freshly dug, nursery grown in a climate similar to or more severe than Ohio.
- All plant material shall be free of insects, insect eggs, and larvae.
- Plants shall be free of mechanical or cultural injury by rodents, and free of noticeable after-effects of insects (borers).
- Plants shall be true to scientific names. The names used are those of 'Standardized Plant Names'.

#### Mulch:

- 2-4 inches deep.
- At least as wide as the planting hole and square with curb/sidewalk.
- 3-4 inches mulch free around root collar.
- Size to vary to allow air flow, water infiltration, and greater nutrients.

#### Wrapping:

Tree-wrap tape not less than four inches (4") wide, designed to prevent bore damage and winter freezing.

#### Stakes and Guys:

Provide stakes of sound new hardwood, treated softwood, or redwood, free of knot holes and other defects. Provide flat woven polypropylene ties. Install per manufacturer's specifications.

#### Tree pits:

- Depth of the pits—deep enough as is necessary to accommodate the ball or roots and to permit the required preparation of the bottom of the pit so that when the tree is settled in the pit, it will not be necessary to raise or lower the tree.
- Width of the pits — Twice the diameter of the root ball, or spread of roots.
- Plant tree in topsoil in the center of the pit unless otherwise specified or show on the Drawings. Remove all burlap, ropes, staves, etc., off of the root balls and remove from the pit before it is filled in. Completely remove all burlap or ropes from planting pits. Remove entire wire basket from root ball and pit before it is filled in.
- Thoroughly tamp and water during and after backfilling.

#### Water:

- Deep soak.
- 5 gallons per inch caliper + 5 gallons.

- All trees are to be wrapped and staked per planting details.

- Dress all beds with a uniform 3" layer of finely shredded hardwood bark.

#### Protection:

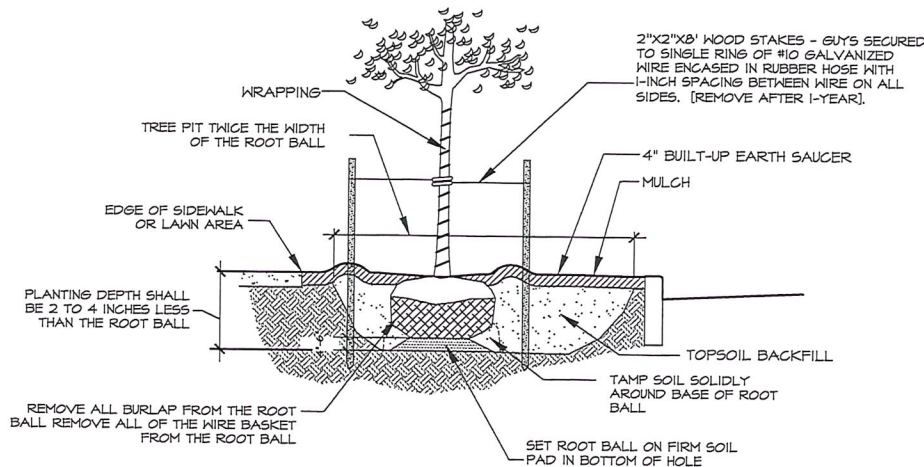
- Protect all planting areas and plants from damage. If any plants are injured, treat and replace as required. Execute no work in or over prepared planting areas, or adjacent to planting without proper safeguards and protection.

#### Maintenance During Installation:

- Maintain immediately following the accomplishment of planting operations of any plant unit.
- Spray foliage with water, where required, during the evening after sundown or otherwise as directed. Keep all plantings in a healthy, growing condition by watering, weeding, cultivating, pruning, spraying, trimming and by performing any other necessary operations of maintenance.
- Maintain trees until final acceptance, but in no case less than 60 days after substantial completion of planting.
- Maintain trees plants by pruning, cultivating, watering and weeding as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

#### Clean up:

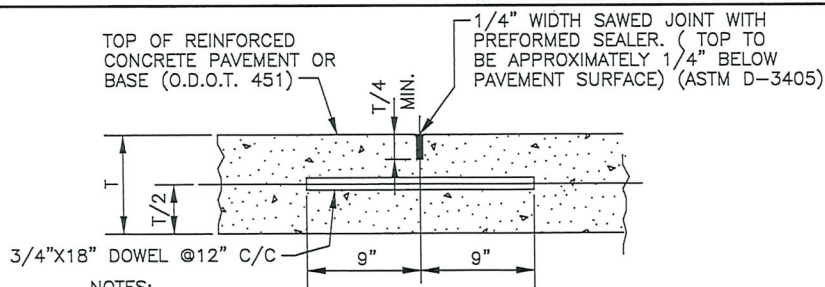
- Upon completion of the planting, all excess soil, stones and debris which has not previously been cleaned up shall be removed from the site or disposed of as directed by the Architect.
- Any soil, peat, or similar material which has been brought onto paved areas by hauling operations or otherwise shall be removed promptly, keeping these areas clean at all times.
- Protect landscape work and materials from damage due to landscape operations, contractors and trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed.



**TREE PLANTING DETAIL**  
NO SCALE

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |            |
|--------------------------------------------------------------|-----------------------|------------|
| TREE PLANTING<br>DETAIL                                      | ADOPTION<br>ORDINANCE | DATE       |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | G-12                  | #-# 0/0/00 |

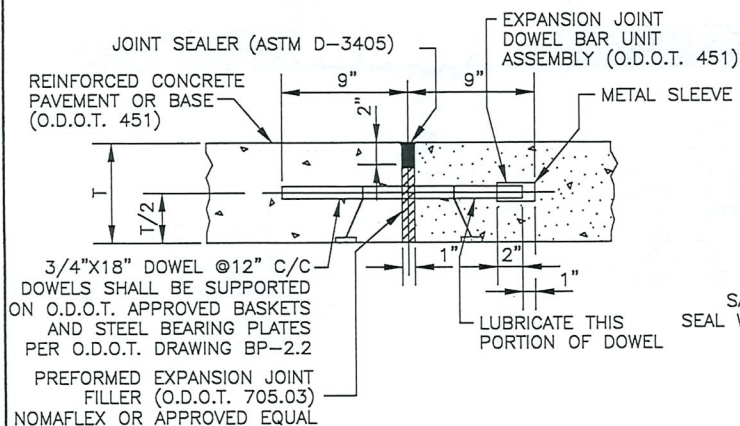




NOTES:

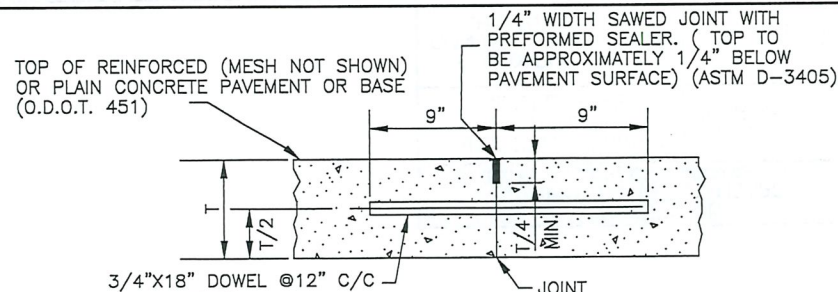
1. MAXIMUM JOINT SPACING SHALL BE 15 FT.
2. DOWELS USED IN CONTRACTION JOINTS IN REINFORCED CONCRETE PAVEMENT SHALL BE SMOOTH BARS AND FREE MOVEMENT SHALL BE PROVIDED BY APPLYING A COATING OF GREASE AS A BONDBREAKING MATERIAL JUST PRIOR TO PLACING THE CONCRETE.
3. DISCONTINUE REINFORCING MESH  $12" \pm 2"$  ON EACH SIDE OF JOINT.

CONTRACTION JOINT FOR REINFORCED CONCRETE PAVEMENT OR BASE



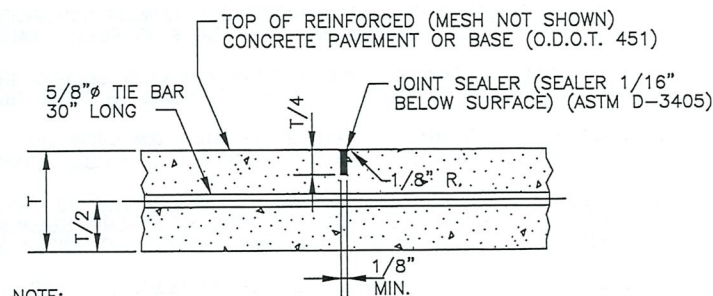
NOTE: EXPANSION JOINTS TO BE PLACED AT 500 FT INTERVALS AND AT STREET INTERSECTIONS, P.C.'S, P.T.'S, AND CHANGES IN PAVEMENT WIDTHS.

EXPANSION JOINT FOR CONCRETE PAVEMENT OR BASE



NOTE: CONSTRUCTION JOINTS ARE NOT TO BE LOCATED CLOSER THAN 10'-0" TO ANOTHER PARALLEL JOINT

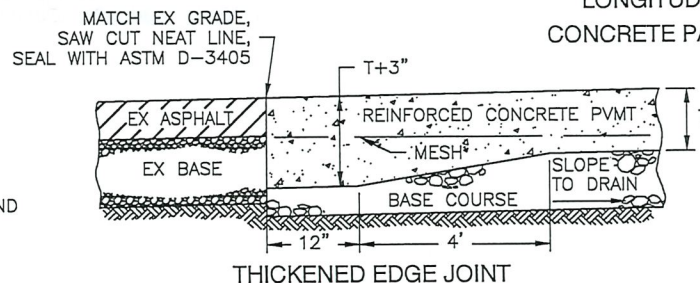
CONSTRUCTION JOINT FOR CONCRETE PAVEMENT OR BASE



NOTE:

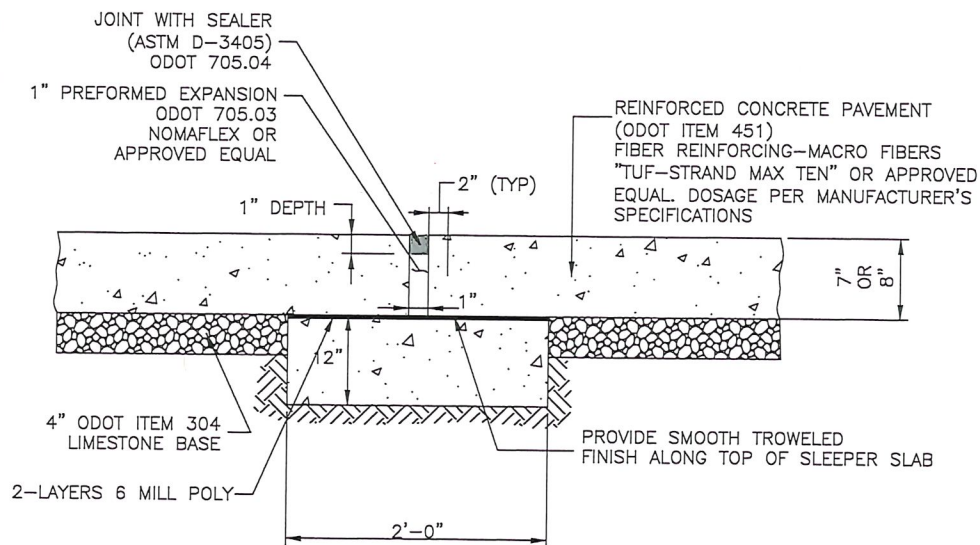
1. LONGITUDINAL JOINTS TO BE USED FOR RESTORING EXISTING LONGITUDINAL JOINTS.
2. SEAL NOT REQUIRED FOR BASE.
3. DISCONTINUE REINFORCING MESH 2" ON EACH SIDE OF JOINT.

LONGITUDINAL JOINT FOR CONCRETE PAVEMENT OR BASE



THICKENED EDGE JOINT

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| CONCRETE PAVEMENT<br>JOINT DETAIL                            | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-1                   | 48-19   |
|                                                              |                       | 8/12/19 |



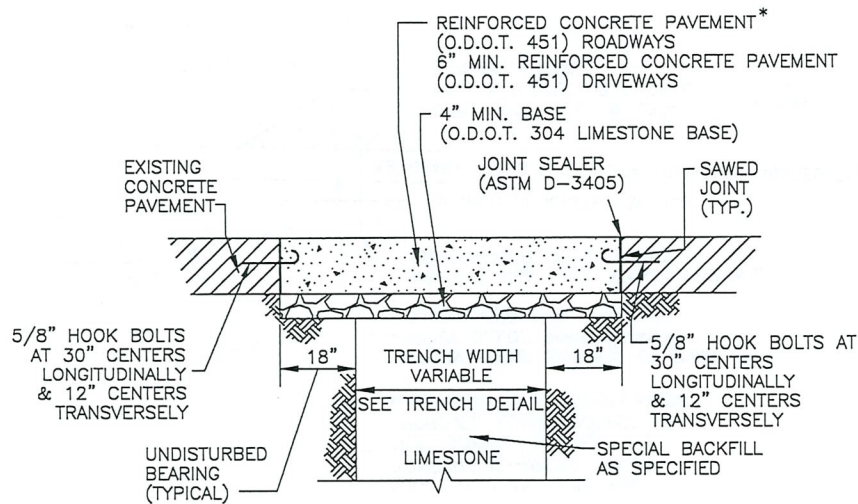
**TRANSVERSE EXPANSION JOINT DETAIL**  
SLEEPER SLAB

**NOTES**

- 1) SLEEPER SLAB ASSEMBLIES MAY BE PERMITTED BY THE CITY IN LIEU OF AN EXPANSION JOINT ASSEMBLY FOR CONCRETE PAVEMENT, AS SHOWN ON SHEET P-1.  
(AT 500 FEET INTERVALS, STREET INTERSECTIONS & P.C.'S & P.T.'S)
- 2) EXCAVATION OF SLEEPER SLABS SHALL BE AN EXACT 2 FT. WIDTH. HOWEVER, SHOULD AN OVER DIG OCCUR, THE ENTIRE EXCAVATION SHALL BE CONCRETE FILLED AND PROVIDED WITH A SMOOTH TROWELED FINISH.
- 3) JOINTS RESTING ON THE SLEEPER SLAB SHALL NOT EXCEED 1" IN WIDTH. A 1/4" WIDER WIDTH TOLERANCE MAY BE PERMITTED AT THE CITY'S DISCRETION.
- 4) CARE SHALL BE TAKEN TO FINISH THE SUBGRADE SURFACE UNDER AND AROUND THE SLEEPER SLAB IN A SMOOTH FIRMLY COMPACTED MANNER.
- 5) (2)TWO LAYERS OF 6 MILL POLY ARE REQUIRED FOR SEPARATION BETWEEN THE SLEEPER SLAB AND CONCRETE ROADWAY.
- 6) ALL BARS & BASKETS SHALL BE EPOXY COATED.

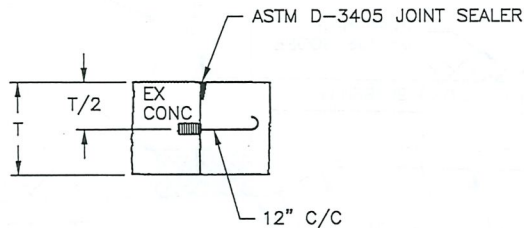
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| TRANSVERSE EXPANSION<br>JOINT DETAIL<br>SLEEPER SLAB         | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>P-2</b>               | 48-19                 | 8/12/19 |





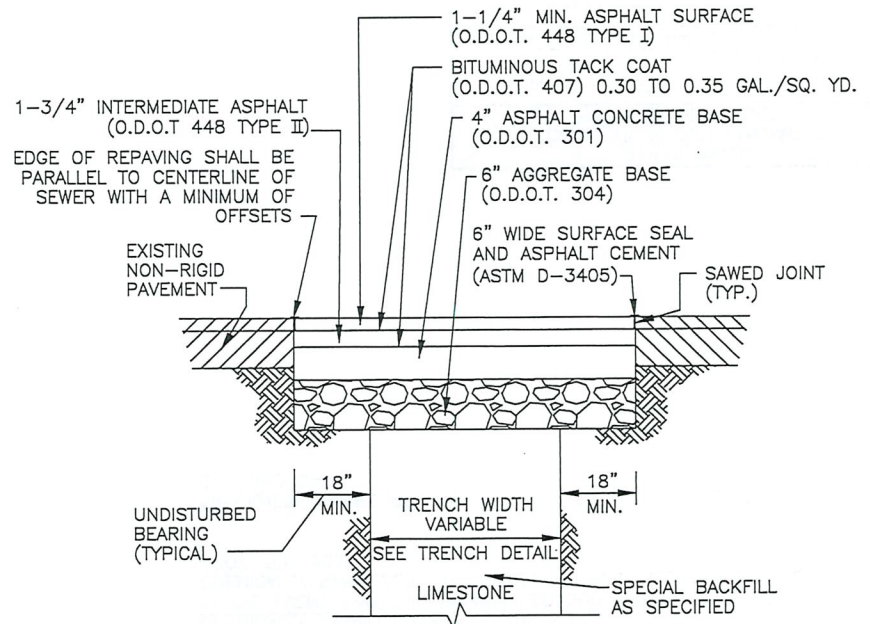
DETAIL FOR RESTORING  
CONCRETE PAVEMENT

\* 7" THICK FOR RESIDENTIAL  
9" THICK FOR COMMERCIAL OR INDUSTRIAL  
W/TUF STRAND MAX TEN FIBERS OR APPROVED EQUAL.



BUTT JOINT

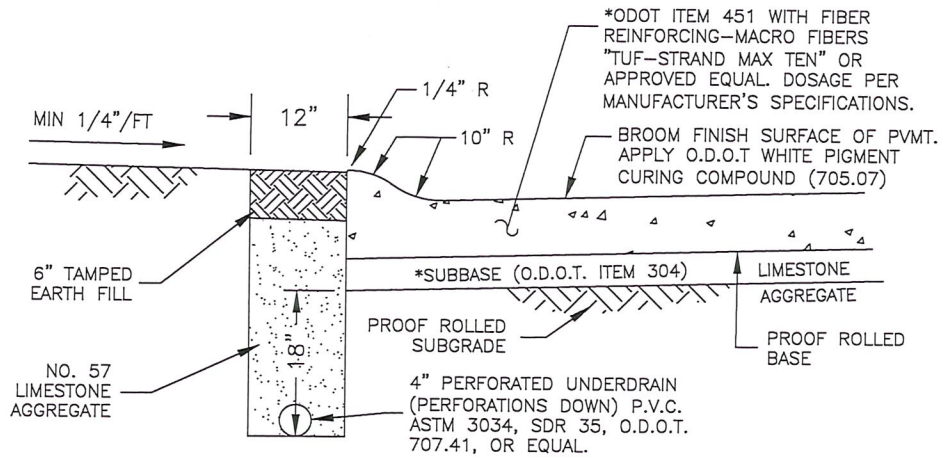
NOTE:  
NEITHER SLAG NOR SCREENINGS WILL BE PERMITTED AS A BASE COURSE MATERIAL. RECYCLED MATERIAL IS NOT ALLOWED IN ANY CIRCUMSTANCE



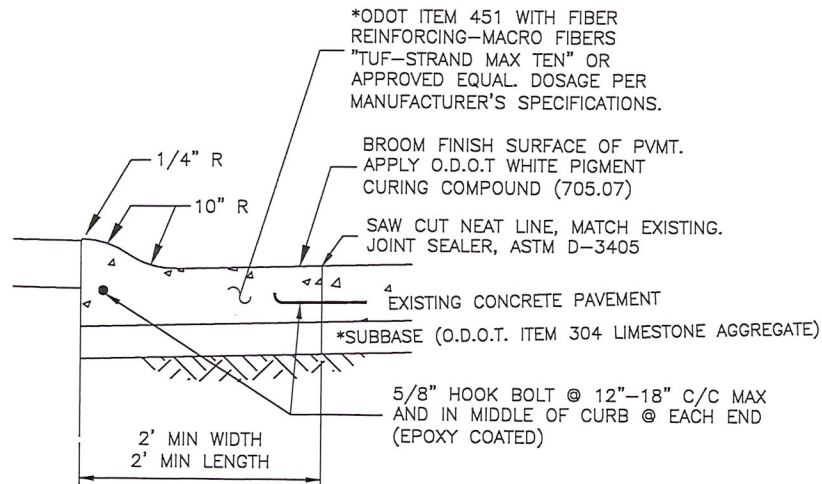
DETAIL FOR RESTORING  
ASPHALT CONCRETE PAVEMENT  
ON NON-RIGID BASE

- NOTES:
1. ASPHALT REPAIRS ALONG ROADWAY EDGES DAMAGED DUE TO ADJACENT CONSTRUCTION SHALL BE REMOVED TO A DEPTH OF 3" AND WIDTH OF 3' MINIMUM.
  2. SOFT BASE AREAS ARE TO BE REMOVED TO A DEPTH OF 6" AND BACKFILLED WITH COMPACTED 304 LIMESTONE.
  3. JOINTS ARE TO BE CRACKSEALED WITH ASTM 3405 SEALER OR AL-20, USING A SQUEEGY.
  4. HOOK BOLTS SHALL BE EPOXY COATED.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| PAVEMENT<br>RESTORATION                                      | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-3                   | 48-19   |
|                                                              |                       | 8/12/19 |



TYPICAL CURB AND UNDERDRAIN DETAIL (NEW INSTALLATION)



CURB REPAIR DETAIL

PROOF ROLLING & COMPACTION NOTES

PROOF ROLLING SHALL BE PERFORMED VIA A TANDEM AXLE DUMP TRUCK WITH A GROSS WEIGHT OF 60,000 LBS.

COMPACTION REQUIREMENTS SHALL CONFORM TO ODOT ITEM 203.

ANY FILL PLACEMENT IN THE R/W AREAS SHALL BE VERIFIED BY AND COMPACTION TESTED BY A QUALIFIED TESTING LABORATORY WITH THE TESTING REPORTS AND RESULTS SUBMITTED TO THE SERVICE DIRECTOR AND/OR ENGINEER FOR REVIEW. EMBANKMENT SOIL COMPACTION REQUIREMENTS SHALL BE IN CONFORMANCE WITH ODOT 203 AND THE TABLE BELOW:

| MAXIMUM LABORATORY<br>DRY WEIGHT<br>(POUNDS / CUBIC FOOT) | MINIMUM COMPACTION<br>REQUIREMENTS<br>(PERCENT LABORATORY)<br>MAXIMUM |
|-----------------------------------------------------------|-----------------------------------------------------------------------|
| 90 - 104.9                                                | 102                                                                   |
| 105 - 119.9                                               | 100                                                                   |
| 120 - HIGHER                                              | 98                                                                    |

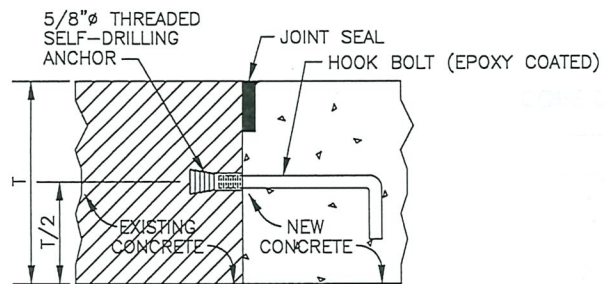
CHEMICALLY STABILIZED SUB-GRADE NOTES

IN THE EVENT THAT THE ESTABLISHED SUB-GRADE IS TO BE CHEMICALLY STABILIZED, THIS STABILIZATION SHALL CONFORM TO ODOT ITEM 206.

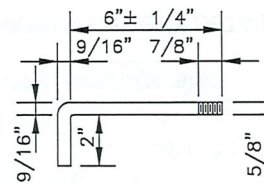
\*THICKNESS VARIES PER ROADWAY CLASSIFICATION. REFER TO G-1 AND G-3.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| CONCRETE CURB<br>AND<br>UNDER DRAIN DETAILS                  | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING P-4                      | 48-19                 | 8/12/19 |

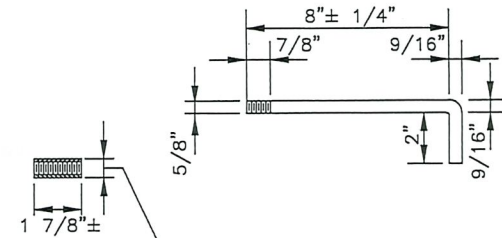




TRANSVERSE HOOK BOLTS @ 12" C/C

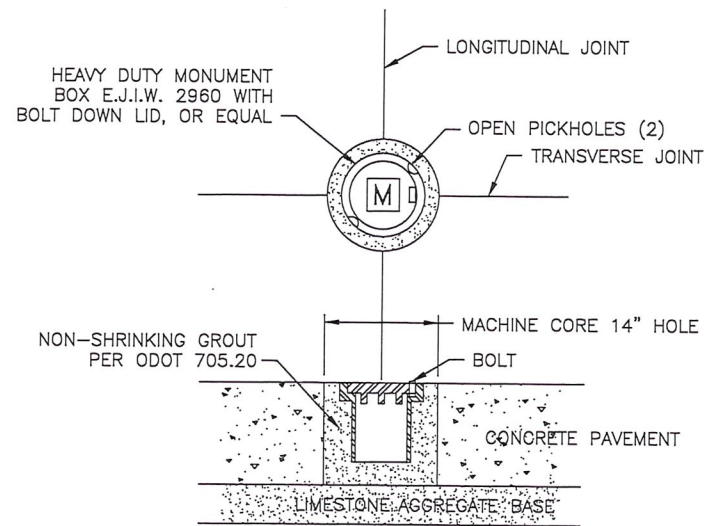


LONGITUDINAL HOOK BOLTS @ 30" C/C



STEEL COUPLING TO PROVIDE BOLT  
STRENGTH EQUIV. TO 11,000 LB.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| HOOK BOLT DETAILS                                            | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>P-5</b>               | 48-19                 | 8/12/19 |



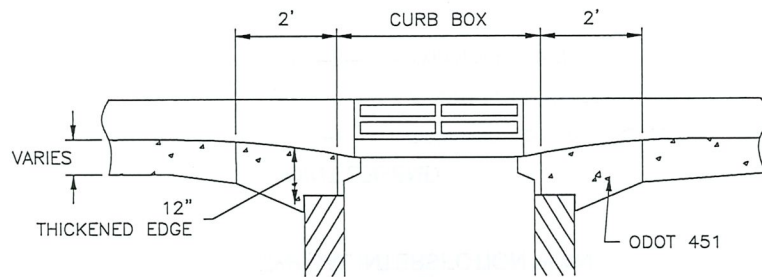
CORE DRILLED MONUMENT BOX DETAIL

NOTE:

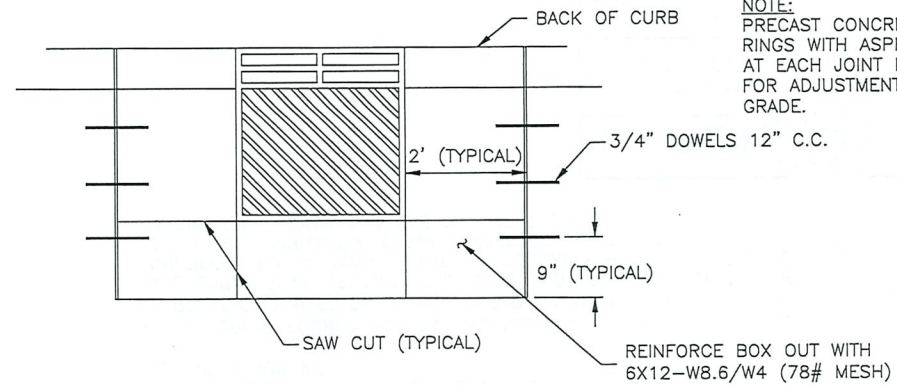
- 1) MONUMENT BOXES WILL NOT BE PERMITTED TO FALL IN AN EXPANSION JOINT. EXPANSION JOINTS ARE TO BE MOVED 5 FEET OUT OF THE CURVE SO AS NOT TO CONFLICT WITH THE MONUMENT BOX LOCATION.
- 2) SHOULD THE CITY PERMIT THE USE OF CAST RISERS IN CERTAIN CIRCUMSTANCES, A (3) THREE POINT WELD SHALL BE REQUIRED ON THE ROUND MONUMENT BOX.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| MONUMENT BOX DETAILS                                         | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING P-6                      | 48-19                 | 8/12/19 |

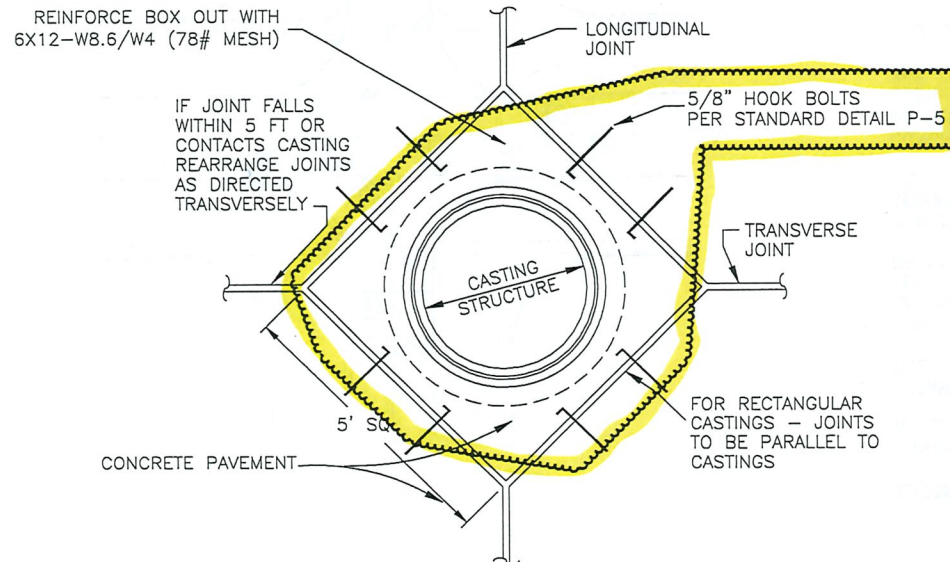




CATCH BASIN BOX OUT SECTION



CATCH BASIN BOX OUT DETAIL

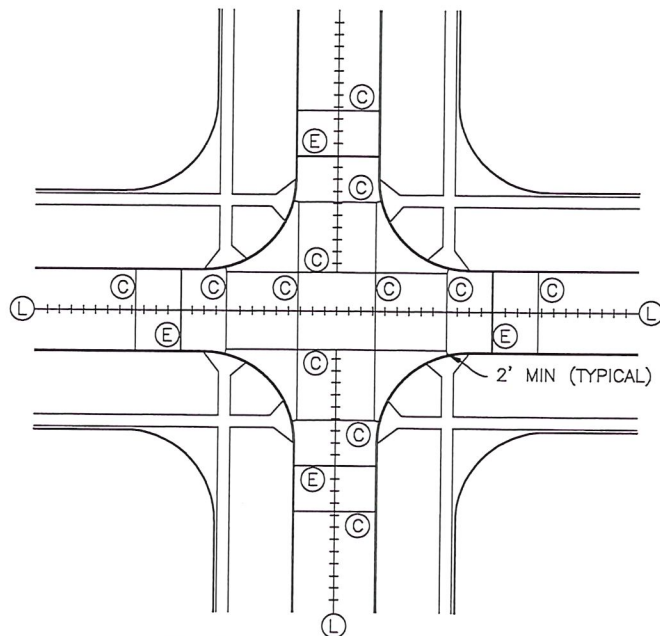


TYPICAL CASTING BOX OUT DETAIL

NOTE:

1. PROVIDE A BOND BREAK BETWEEN CASTING AND CONCRETE WITH OIL, PAINT OR OTHER SUITABLE MATERIAL.
2. SUBGRADE AND BASE GRADE ARE TO BE COMPACTED PRIOR TO PLACING CONCRETE IN MANHOLE OR CATCH BASIN BOX OUTS.
3. IN THE CASE OF EXISTING ROADWAYS, THE CITY MAY PERMIT THE USE OF CAST RISERS FOR ELEVATIONAL ADJUSTMENT OF MANHOLES AND OTHER TYPE OF CASTINGS. IN SUCH CASES, A (3) THREE POINT WELD SHALL BE REQUIRED ON ROUND CASTINGS AND A (4) POINT WELD SHALL BE REQUIRED ON SQUARE CASTINGS.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| BOX OUT DETAILS                                              | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING P-7                      | 48-19                 | 8/12/19 |



TYPICAL INTERSECTION PLAN

JOINT LEGEND

- (L) - - - - - STANDARD LONGITUDINAL JOINT  
 (C) ——— STANDARD CONTRACTION JOINT  
 (E) ——— EXPANSION JOINT

CONSTRUCTION NOTES AND STANDARDS

1. CONTRACTION JOINT SAW CUTS SHALL BE DONE AS SOON AS THE MACHINE CAN MAKE A CLEAN CUT WITH STRAIGHT EDGES MAXIMUM SPACING SHALL BE 15 FEET.
2. EXPANSION JOINTS IN CONFLICT WITH MONUMENT BOX LOCATIONS SHALL BE MOVED FIVE (5) FEET IN EITHER DIRECTION.
3. CONCRETE POURS OF ONE HUNDRED (100) CUBIC YARDS OR LESS IN ANY ONE (1) DAY SHALL REQUIRE THE TAKING MINIMUM OF TWO (2) 6"x12", OR THREE (3) 4"x8" TEST CYLINDERS BY A QUALIFIED TESTING LAB WITH ACI CERTIFIED TECHNICIAN AND OBTAIN A COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
4. CONCRETE POURS OF TEN (10) CUBIC YARDS OR LESS IN ANY ONE (1) DAY WILL NOT REQUIRE THE TAKING OF TEST CYLINDERS. HOWEVER, THE CONTRACTOR MAY DO SO AT HIS OPTION.
5. CONCRETE TEST CYLINDERS SHALL BE MADE DURING PAVING OPERATIONS AT THE MINIMUM RATE OF TWO (2) 6"x12", OR THREE (3) 4"x8" PER ONE HUNDRED (100) CUBIC YARDS AND TWO (2) TEST BEAMS FOR EACH DAY'S PLACEMENT OF CONCRETE, ONE (1) BEAM IN THE A.M. & ONE (1) BEAM IN THE P.M.
6. CYLINDERS AND BEAMS SHALL BE TAKEN BY A QUALIFIED TESTING LAB.
7. A BEAM IS TO BE TESTED AT SEVEN (7) DAYS CURING PERIOD. NO TRAFFIC SHALL BE PERMITTED ON THE NEWLY PLACED CONCRETE UNLESS THE SEVEN (7) DAY BEAM BREAK IS AT LEAST 600 PSI FLEXURAL STRENGTH.
8. ALL CONCRETE IS TO BE ODOT CLASS "QC-1" 4000 PSI WITH 7% AIR ENTRAINMENT, PLUS OR MINUS 2%.
9. ALL CONCRETE POURED FOR THE INSTALLATION OF ANY PUBLICLY DEDICATED (FUTURE OR PRESENT) STREET SHALL BE POURED BY AN AGITATING HAUL UNIT. NON-AGITATING HAUL UNITS (DUMP TRUCKS, ETC.) SHALL NOT BE USED FOR THE DELIVERY OF CONCRETE FROM A BATCH PLANT. A CONCRETE BATCH TICKET SHALL BE DELIVERED TO THE SITE INSPECTOR, SERVICE DIRECTOR, OR CITY ENGINEER WITH EACH LOAD OF CONCRETE DELIVERED FOR USE ON THE PROJECT.

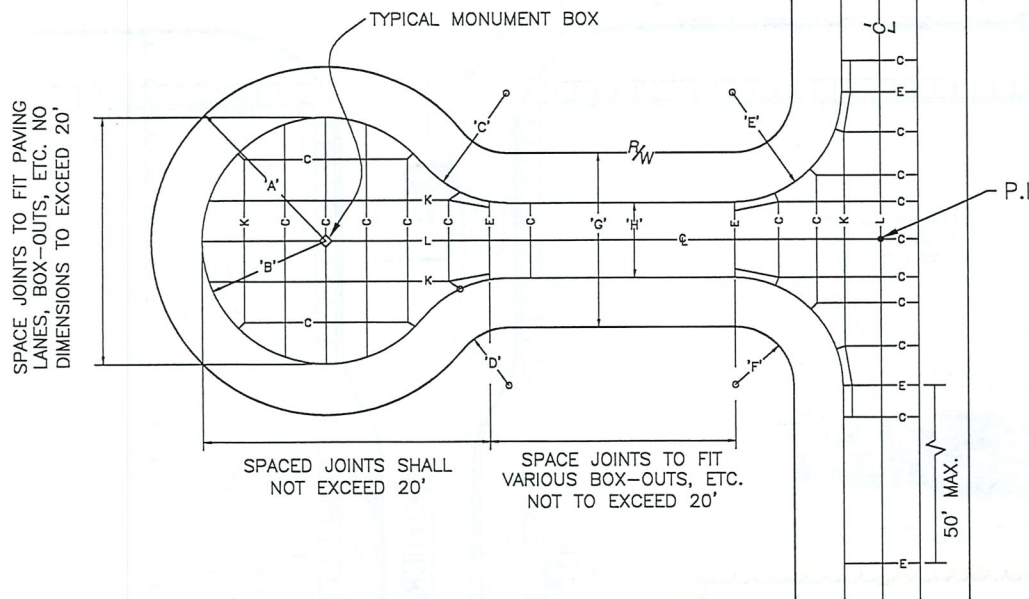
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| TYPICAL<br>INTERSECTION                                      | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING P-8                      | 48-19                 | 8/12/19 |



# JOINT LEGEND

C = CONTRACTION JOINT  
E = EXPANSION JOINT  
L = LONGITUDINAL JOINT  
K = CONSTRUCTION JOINT

## TYPICAL INTERSECTION AND CUL-DE-SAC PLAN



### SCHEDULE OF MINIMUM DIMENSIONS

|   | INDUSTRIAL | RESIDENTIAL |
|---|------------|-------------|
| A | 86'        | 67'         |
| B | 60'        | 50'         |
| C | 44'        | 30'         |
| D | 26'        | 17'         |
| E | 44'        | 40'         |
| F | 26'        | 17'         |
| G | 80'        | 60'         |
| H | 28'        | 26'         |

### NOTES:

ALL CATCH BASINS AND MANHOLES SHALL BE SEPARATED FROM THE PAVEMENT AND CURB BY BOXING-OUT.

ALL PAVEMENT JOINTS TO RUN FROM BACK OF TO BACK OF CURB.

TO PERMIT JOINT ON CENTERLINE OF CATCH BASINS AND MANHOLES, ADJUST ONE OR MORE PANELS ON EITHER SIDE OF OPENINGS.

CONSTRUCT EXPANSION JOINTS AT ALL P.C.'S, P.T.'S, EXISTING CONSTRUCTION JOINTS AND AT CHANGES IN WIDTH OF PAVEMENT. HOWEVER, EXPANSION JOINTS IN CONFLICT WITH MONUMENT BOX LOCATIONS MAY BE SHIFTED A MINIMUM OF FIVE (5) FEET IN EITHER DIRECTION. SLEEPER SLABS MAY ALSO BE PERMITTED AT EXPANSION JOINT AREAS (SEE SHEET P-2)

### TEMPORARY CUL-DE-SAC NOTES:

PAVED TEMPORARY CUL-DE-SACS, CONFORMING TO THE DIMENSIONAL REQUIREMENTS OF PAVED CUL-DE-SACS, SHALL BE PROVIDED IN CASES WHERE THE PROPOSED TEMPORARY TERMINUS OF A ROADWAY IS 150 FEET IN LENGTH OR LONGER.

TEMPORARY CUL-DE-SACS SHALL BE PLACED WITHIN THE DEDICATED RIGHT-OF-WAY. THE DIAMETER SHALL MATCH THE DEDICATED RIGHT-OF-WAY DIMENSION FOR CITY OF AVON CODIFIED ORDINANCE 1246.04 A-B.

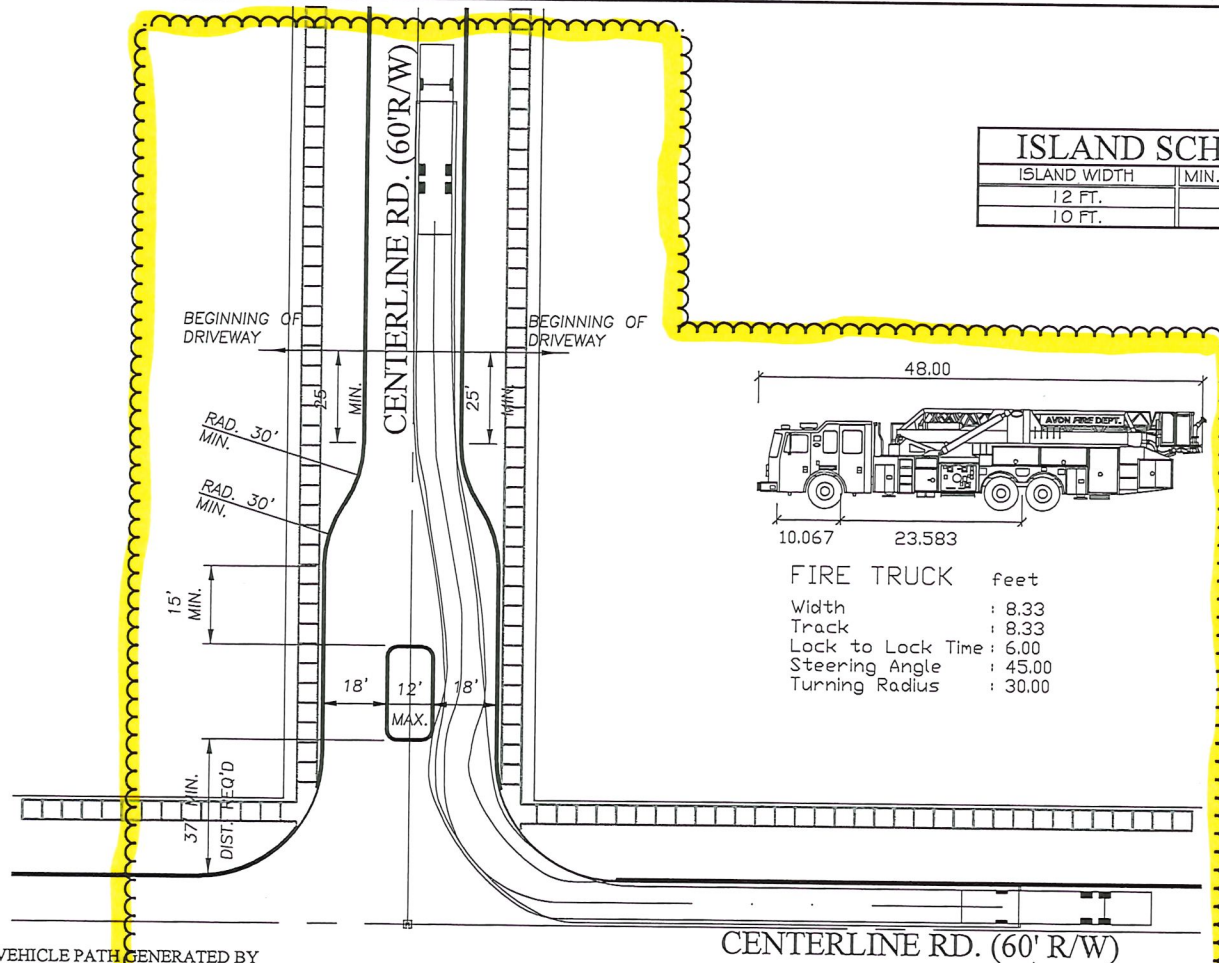
PAVEMENT SECTIONS ARE AS FOLLOWS:

A) CASE #1 - TERMINUS LESS THAN 600 FT., AS MEASURED FROM THE P.I.  
4" COMPACTED 304 LIMESTONE  
2-1/2" OF 448 TYPE 1

B) CASE #2 - TERMINUS GREATER THAN 600 FT., AS MEASURED FROM THE P.I.  
CONCRETE PAVEMENT STANDARDS TO BE FOLLOWED.  
ASPHALT MAY BE USED IF AN APPROVED DEVELOPER'S AGREEMENT EXISTS FOR A SUBSEQUENT PHASE OF DEVELOPMENT THAT ENCOMPASSES THE LOCATION OF THE TEMPORARY CUL-DE-SAC.

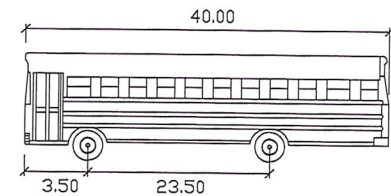
### CITY OF AVON CONSTRUCTION STANDARDS AND SPECIFICATIONS

| INTERSECTION<br>AND<br>CUL-DE-SAC DETAIL | ADOPTION<br>ORDINANCE | DATE               |
|------------------------------------------|-----------------------|--------------------|
| STANDARD<br>CONSTRUCTION<br>DRAWING P-9  | 48-19<br>28-20        | 8/12/19<br>4/14/20 |



| ISLAND SCHEDULE |                     |
|-----------------|---------------------|
| ISLAND WIDTH    | MIN. PAVEMENT WIDTH |
| 12 FT.          | 18 FT.              |
| 10 FT.          | 16 FT.              |

| FIRE TRUCK        |         |
|-------------------|---------|
| Width             | : 8.33  |
| Track             | : 8.33  |
| Lock to Lock Time | : 6.00  |
| Steering Angle    | : 45.00 |
| Turning Radius    | : 30.00 |



| School Bus        |         |
|-------------------|---------|
| Width             | : 8.50  |
| Track             | : 7.50  |
| Lock to Lock Time | : 6.00  |
| Steering Angle    | : 38.40 |

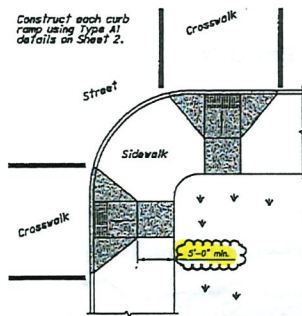
VEHICLE PATH GENERATED BY  
AUTODESK VEHICLE TRACKING VERSION 2022.1

### NOTES:

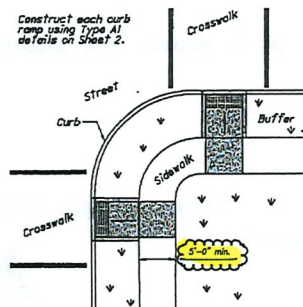
- 1.) VEHICLE PATH GENERATED BY AUTOTURN VERSION 4.1 OR LATER BY TRANSOFT SOLUTIONS, OR EQUAL APPROVED BY THE CITY ENGINEER.
- 2.) VEHICLE PATH SHOWN IS PROVIDED AS AN EXAMPLE ONLY. ALL TURNING MOVEMENTS IN AND OUT OF A PROPOSED ROADWAY OR DEVELOPMENT MUST BE MODELED AND FOUND ACCEPTABLE BY THE AVON FIRE CHIEF.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |            |
|--------------------------------------------------------------|-----------------------|------------|
| TYPICAL<br>ENTRY/EXIT AND<br>ISLAND SETBACK                  | ADOPTION<br>ORDINANCE | DATE       |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-10                  | 48-19 2024 |



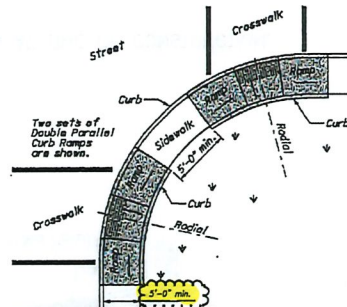


Use curb ramps with flared sides at locations with wide sidewalks.



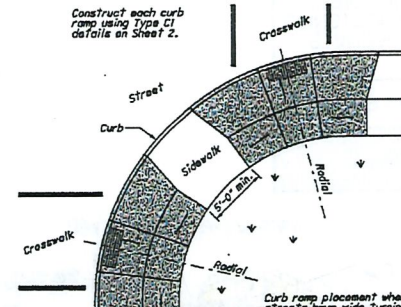
Use curb ramps with returned curbs where buffer is wide enough to accommodate ramp slope.

PERPENDICULAR CURB RAMPS



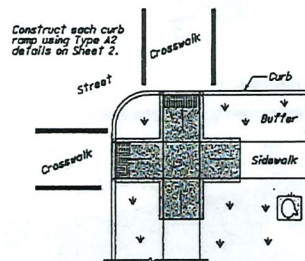
Place on streets having wide turning radius and where sidewalks are narrow.

PARALLEL CURB RAMPS

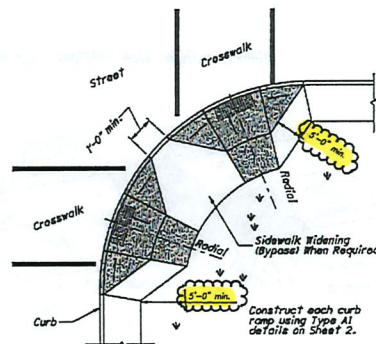


Curb ramp placement where streets have wide turning radius, and sufficient sidewalk width.

COMBINATION CURB RAMPS

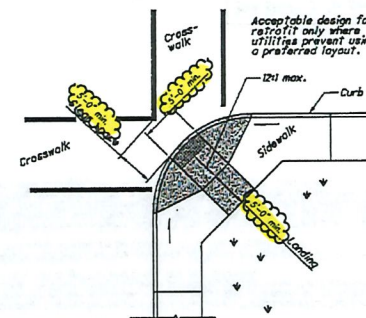


PREFERRED CONSTRUCTION PLACEMENT



Acceptable design on corners with wide turning radius where user is able to maneuver within crosswalk limits so as not to encroach into adjacent traveled lanes.

PERPENDICULAR RAMPS



Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0".

DIAGONAL RAMP (Type D)

## NOTES

**GENERAL:** This drawing shows curb ramp types details and placement examples for curb ramp construction, including the installation of detectable warnings.

Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.

Curb ramps added to an existing intersection or walk should be individually detailed on the project plans to assure that the design is appropriate for site constraints and all items can be constructed to ADA standards. The contractor may adjust the placement of curb ramps if existing field conditions warrant with the approval of the Engineer.

**PAYMENTS:** Measure and pay for the ramp area within the shaded limits of this drawing as Item 608 Curb Ramps, Square Foot. This includes the cost of any additional materials, installation, grading, forming, and finishing required within the shaded area.

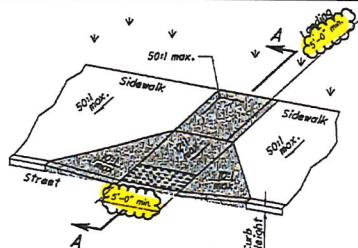
Work beyond the shaded ramp/landing area is paid for as curb (608) and walk (608). Removal of existing curb, walk for existing curb ramps are paid under Item 202.

For at-grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the strip of detectable warnings as Item 608 Detectable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 5'-0".

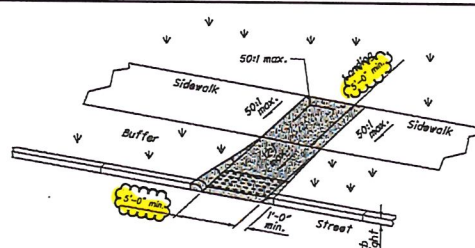
ACCEPTABLE CONSTRUCTION PLACEMENT

NOTE: MOST CURRENT ODOT VERSION TO BE USED AT TIME OF CONSTRUCTION.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| CURB RAMP DETAIL                                             | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING P-11                     | 48-19                 | 8/12/19         |
|                                                              |                       | SHEET<br>1 OF 3 |

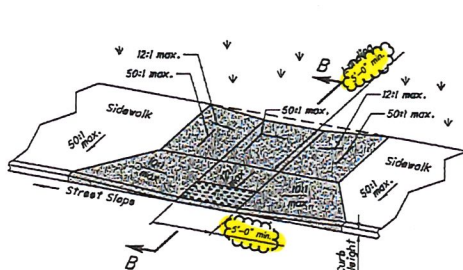


Type A1 (Perpendicular with flared sides)

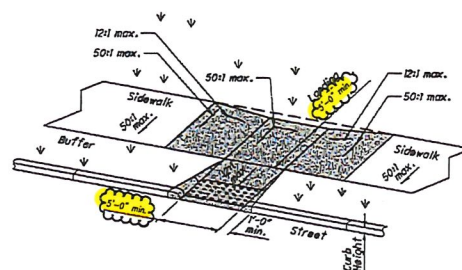


Type A2 (Perpendicular with returned curb)

### PERPENDICULAR CURB RAMP DETAILS

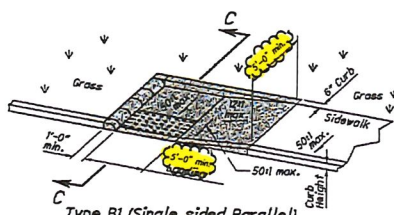


Type C1 (Combined with flared sides)

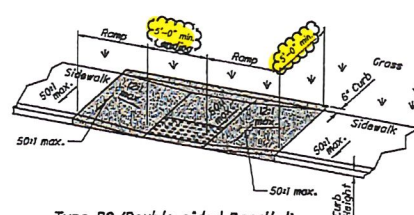


Type C2 (Combined with returned curb)

### COMBINED CURB RAMP DETAILS

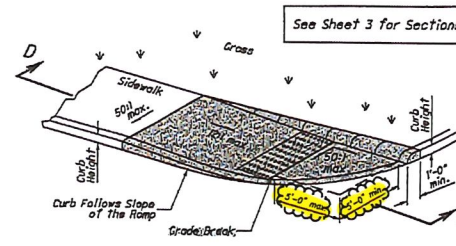


Type B1 (Single sided Parallel)



Type B2 (Double sided Parallel)

### PARALLEL CURB RAMP DETAILS



Type B3 (Single sided Parallel)

### NOTES CONTINUED

The running slope of the ramp is preferred to be 2:1 or flatter. In existing sidewalks, where the maximum ramp slope is not feasible due to site constraints (e.g. utility poles or vaults, right-of-way limited) it may be reduced as follows:

- A) 10:1 for a max. rise of 6".
- B) 8:1 for a max. rise of 3".
- C) 6:1 over a max. run of 2'-0" for historic areas where a flatter slope is not feasible.

To prevent chasing the grade indefinitely, the transition from existing sidewalk to the graded curb ramp area is not required to exceed 15 feet in length.

While ramps may be skewed to the crosswalk, the entire lower landing area must fall within the crosswalk that the ramp serves and cannot be located in the traveled lane of opposing traffic.

The counter slope of the gutter or street at the foot of a curb ramp, landing, or blended transitions shall be 20:1 or flatter.

The bottom edge of the ramp shall change planes perpendicular to the landing.

The edge of the curb shall be flush with the edge of the adjacent pavement and gutter and surface slopes that meet grade breaks shall also be flush.

Ramp landings shall be 5'-0" max. x 5'-0" min. with a 50:1 or flatter cross slope and running slopes.

**DETECTABLE WARNING:** Install Detectable Warnings on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer's written instructions.

**DRAINAGE:** Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 1/8" between the 1) pavement and gutter, and 2) gutter and ramp, are not allowed.

**SURFACE TEXTURE:** Texture concrete surfaces by coarse brooming transverse to the ramp slopes to be rougher than the adjacent walk.

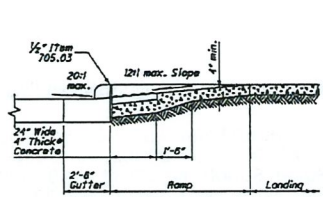
**JOINTS:** Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a 1/2" Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp edges and slope changes, and do not necessarily indicate joint lines.

NOTE: MOST CURRENT ODOT VERSION TO BE USED AT TIME OF CONSTRUCTION.

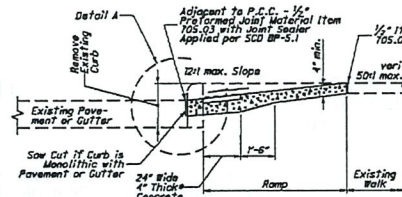
See Sheet 3 for Sections.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| CURB RAMP DETAIL                                             | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-11                  | 48-19           |
|                                                              |                       | 8/12/19         |
|                                                              |                       | SHEET<br>2 OF 3 |

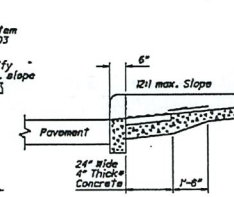




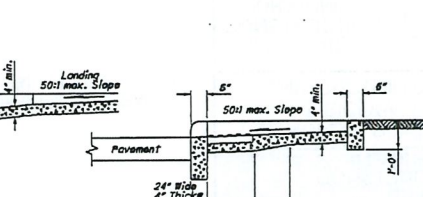
SECTION A-A  
NORMAL DETAIL  
See Sheet 2.



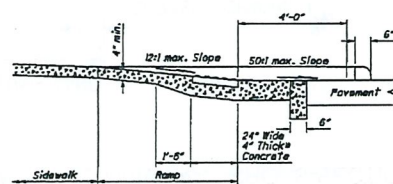
SECTION A-A  
EXISTING WALK DETAIL  
See Sheet 2.



SECTION B-B  
See Sheet 2.

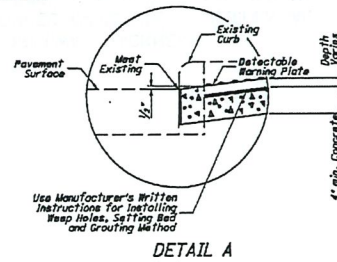


SECTION C-C  
See Sheet 2.

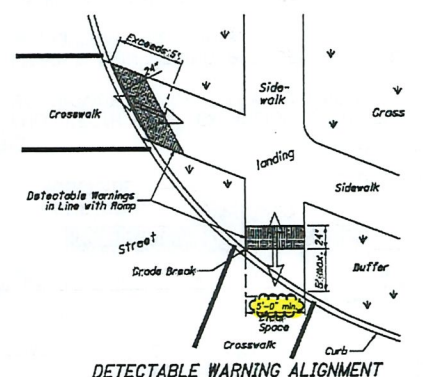


SECTION D-D  
See Sheet 2.

\*Where possible, pour ramp area integral with the curb, otherwise use 6" thick walk.



DETAIL A



DETECTABLE WARNING ALIGNMENT

### DETECTABLE WARNINGS NOTES

**GENERAL:** Detectable Warnings are a distinctive surface pattern of truncated domes which are detectable by cane or underfoot to alert people with vision impairments of their approach to streets and hazardous drop-offs.

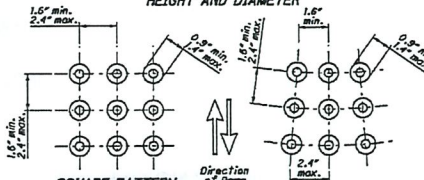
**PLACEMENT:** Detectable warnings are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps or at blended curbs. A 24" strip of domes is to be installed for the full width of the ramp or walk. Typical street corner placement locations are shown on Sheet 1.

The depth of concrete underneath detectable warning products shall be a minimum of 4". See DETAIL A.

**ALIGNMENT:** Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally the detectable warnings should be flush with the back of the curb, but for skewed conditions, see DETECTABLE WARNING ALIGNMENT Detail for non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

**PRODUCTS & COLORS:** Color of the detectable warnings should contrast with surrounding concrete walk and ramp. Black is not an acceptable color. Approved products and guidance on color may be found on the Office of Roadway Engineering Service's Detectable Warnings Approved List. Install products as per manufacturer's printed instructions.

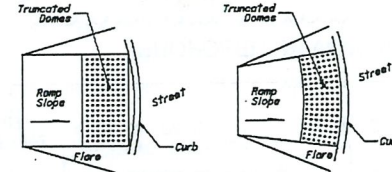
### HEIGHT AND DIAMETER



SQUARE PATTERN,  
PARALLEL ALIGNMENT

RADIAL ALIGNMENT

TRUNCATED DOMES DETAILS



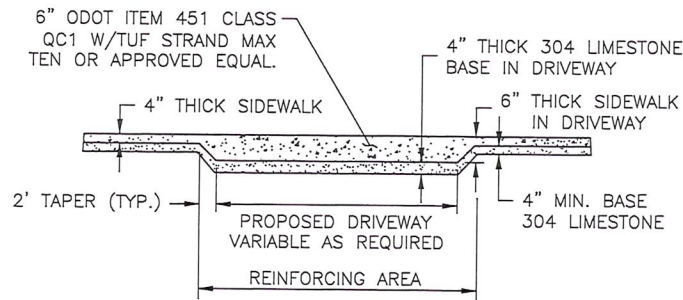
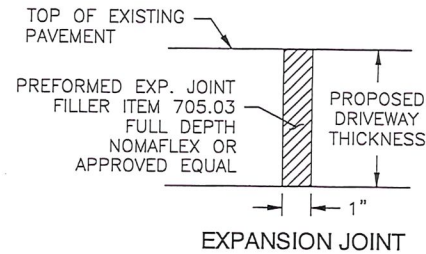
DOMES ALIGNMENT ON RADIUS CURB

NOTE: MOST CURRENT ODOT VERSION TO BE USED AT TIME OF CONSTRUCTION.

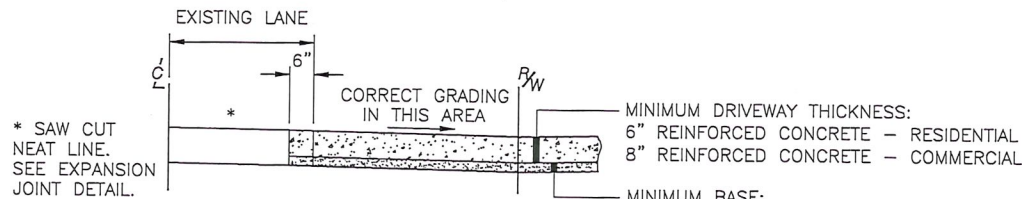
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| CURB RAMP DETAIL                                             | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-11                  | 8/12/19         |
|                                                              |                       | SHEET<br>3 OF 3 |

# SIDEWALK WIDTHS BY ZONING DISTRICT

RESIDENTIAL 5' (R1 & R2)  
 COMMERCIAL 6' (R3, M1, O1, O2, C1, C3 & C4)  
 FRENCH CREEK DISTRICT 6' (C2)  
 \*PER CODIFIED ORDINANCE 1246.05



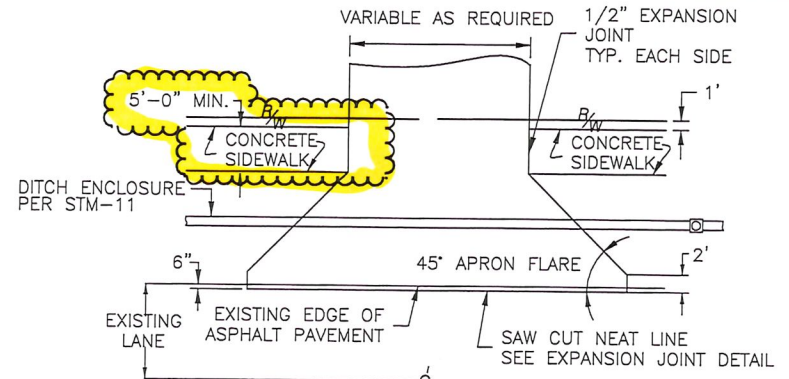
PROPOSED DRIVEWAY CROSS-SECTION



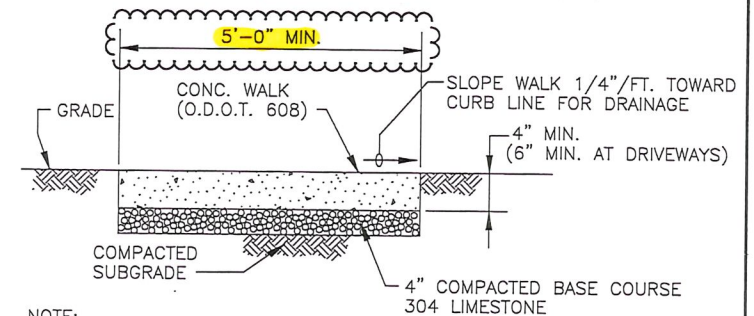
AVON BUILDING DEPARTMENT SHALL BE NOTIFIED IN WRITING AT LEAST 24 HOURS PRIOR TO PLACEMENT OF CONCRETE TO ALLOW SCHEDULING FOR CITY INSPECTION.

PROPOSED DRIVEWAY PROFILE

NOTE:  
 FULL DEPTH, 1/2" EXPANSION JOINT FILLER SHALL BE PROVIDED ONCE EVERY 50 LINEAL FEET OF WALK



PROPOSED DRIVEWAY PLAN VIEW



- NOTE:
- 1.) FULL DEPTH, 1/2" EXPANSION JOINT FILLER SHALL BE PROVIDED ONCE EVERY 50 LINEAL FEET OF WALK.
  - 2.) FIBROUS REINFORCING PER DRIVEWAY CROSS-SECTION IN DRIVEWAY AREA ONLY.
  - 3.) TROVELED JOINT SHALL BE PROVIDED EVERY 5'.

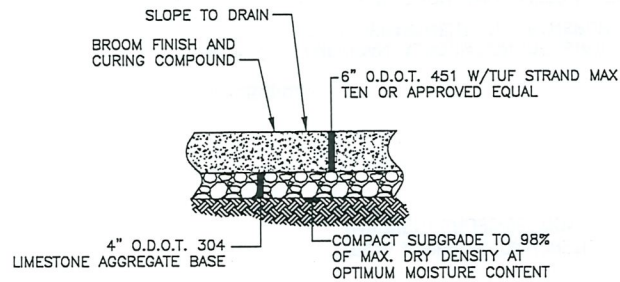
CONCRETE WALK DETAIL

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |               |
|--------------------------------------------------------------|-----------------------|---------------|
| CONCRETE DRIVEWAY<br>& SIDEWALK<br>CONSTRUCTION DETAIL       | ADOPTION<br>ORDINANCE | DATE          |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-12                  | 48-19 8/12/19 |

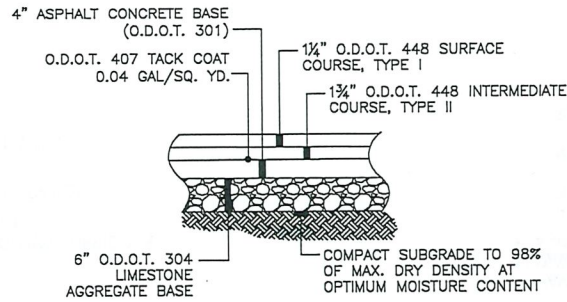


# CONCRETE DRIVEWAY NOTES

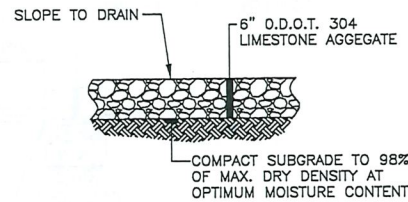
- USE QC-1 4000 P.S.I. @ 28 DAYS WITH 7 ±2% AIR ENTRAINMENT
- APPLY O.D.O.T. 451.10 CURING COMPOUND TO CONCRETE SURFACE A.S.A.P.
- SAW ALL JOINTS AS SOON AS SAW CAN BE PUT ON PAVEMENT WITHOUT CHIPPING OF SAWCUTS.
- SEAL ALL JOINTS (INCLUDING TOP OF EXPANSION JOINTS) WITH 1" MIN. DEPTH O.D.O.T. 705.04 JOINT SEALER.



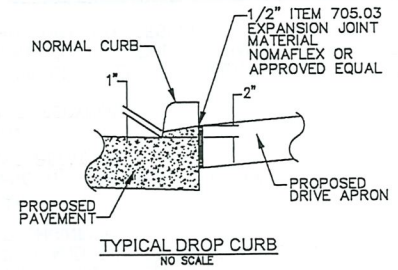
CONCRETE DRIVEWAY APRON  
NO SCALE



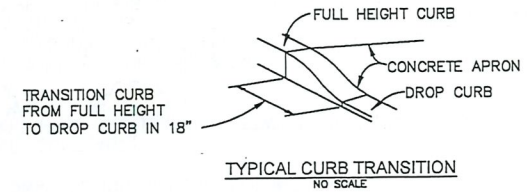
ASPHALT DRIVE APRON  
NO SCALE



GRAVEL DRIVEWAY APRON  
NO SCALE

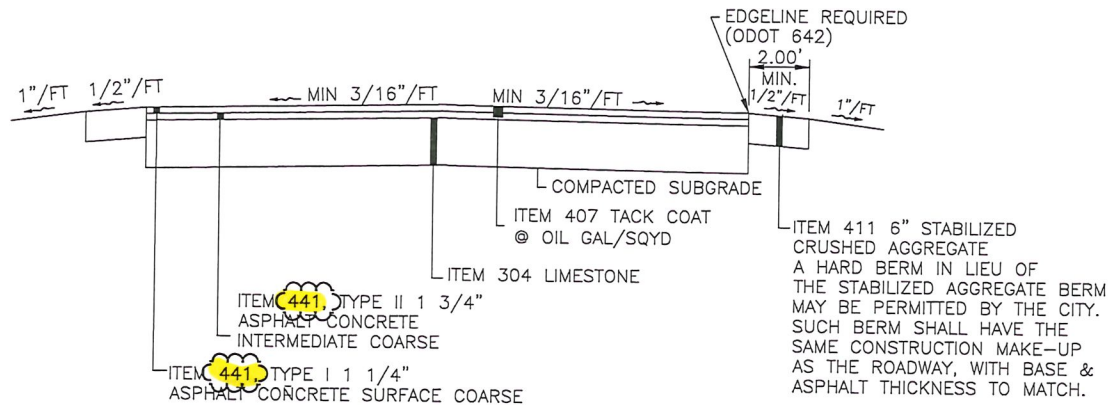


TYPICAL DROP CURB  
NO SCALE



TYPICAL CURB TRANSITION  
NO SCALE

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                  |
|--------------------------------------------------------------|-----------------------|------------------|
| RESIDENTIAL<br>DRIVE APRONS                                  | ADOPTION<br>ORDINANCE | DATE             |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-13                  | 48-19<br>8/12/19 |



TYPICAL ASPHALTIC CONCRETE PAVEMENT CROSS-SECTION

#### REFERENCES

AASHTO — AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS  
 ODOT — OHIO DEPARTMENT OF TRANSPORTATION  
     \* CONSTRUCTION AND MATERIAL SPECIFICATION  
     \* LOCATION AND DESIGN MANUAL  
 ASTM — AMERICAN SOCIETY FOR TESTING MATERIALS  
 AI — ASPHALT INSTITUTE

#### MINIMUM ASPHALT DESIGN REQUIREMENTS

REGULAR DUTY (TRUCK TRAFFIC LESS THAN 70,000 LBS)

- 6" O.D.O.T. 304 LESTONE
- 6" O.D.O.T. 301 ASPHALT (IN 2 LIFTS)
- 1 3/4" O.D.O.T. 441 TYPE II INTERMEDIATE COURSE
- 1 1/4" O.D.O.T. 441 TYPE I SURFACE COURSE

HEAVY DUTY

- 6" O.D.O.T. 304 LESTONE
- 8" O.D.O.T. 301 ASPHALT (IN 2 LIFTS)
- 1 3/4" O.D.O.T. 441 TYPE II INTERMEDIATE COURSE
- 1 1/4" O.D.O.T. 441 TYPE I SURFACE COURSE

NOTES:

#### NEW ASPHALT PAVEMENT

- 1) ALL NEW ASPHALT CONCRETE PAVEMENT SHALL BE DESIGNED BY OR UNDER THE SUPERVISION OF A QUALIFIED ENGINEER, EMPLOYING THE DESIGN PARAMETERS OUTLINED IN THE MOST RECENT ISSUE OF THE AASHTO PAVEMENT DESIGN GUIDES AND ODOT ROADWAY DESIGN MANUAL, VOLUME ONE.

#### TACK COAT (ODOT 407)

- 2) TACK COAT SHALL BE REQUIRED BETWEEN PAVEMENT LAYERS OF 301 441 TYPE II & 441 TYPE I.

#### ASPHALTIC CONCRETE REHABILITATION

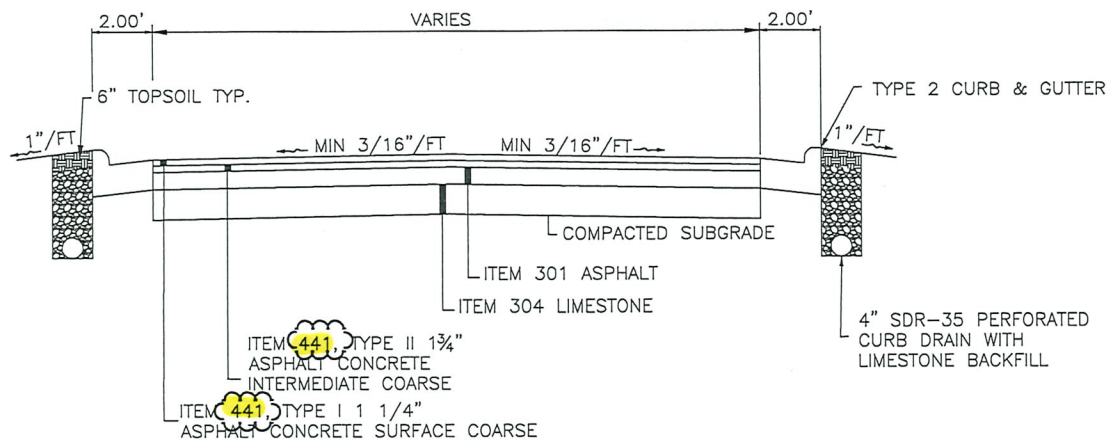
THE FOLLOWING PROCEDURES MAY BE USED FOR THE REHABILITATION OF EXISTING ASPHALTIC PAVEMENTS. THE SELECTION OF THE TYPE OF REHABILITATION IS OFTEN INFLUENCED BY ECONOMICS, BUT A DESIGN ANALYSIS SHOULD BE PERFORMED BY A QUALIFIED ENGINEER WHO SHALL MAKE A RECOMMENDATION BASED ON THE CONDITION OF EXISTING PAVEMENT AND BASE, TRAFFIC LOADING PATTERNS, AND A LIFE-CYCLE COST ANALYSIS. A MATERIAL, CONSTRUCTION AND PERFORMANCE SPECIFICATION SHALL BE PREPARED BY THE ENGINEER.

- \* PAVEMENT OVERLAY
- \* PAVEMENT PLANNING W/ PAVEMENT OVERLAY
- \* ASPHALT PAVEMENT RECYCLING
  - A. PULVAMIXING
  - B. SINGLE-PASS RECYCLING

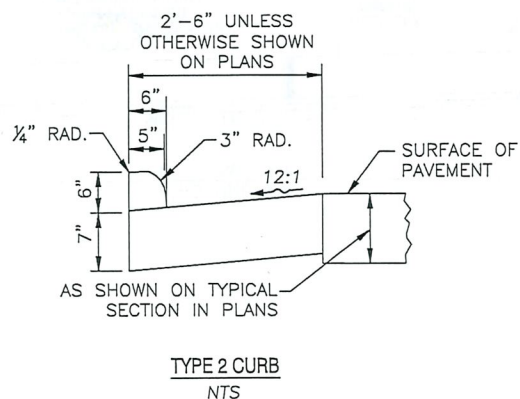
NOTE: AN INDEPENDENT TESTING LABORATORY SHOULD BE EMPLOYED TO ANALYZE THE EXISTING PAVEMENT MIX AND RECOMMEND THE FINAL MIX DESIGN.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| ASPHALT PAVEMENT<br>DETAIL                                   | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-14 48-19            | 8/12/19 |





TYPICAL ASPHALTIC CONCRETE PAVEMENT  
WITH CONCRETE CURB & GUTTER



#### MINIMUM ASPHALT DESIGN REQUIREMENTS

##### REGULAR DUTY (TRUCK TRAFFIC LESS THAN 70,000 LBS)

- 6" O.D.O.T. 304 LIMESTONE
- 6" O.D.O.T. 301 ASPHALT (IN 2 LIFTS)
- 1 1/4" O.D.O.T. 441 TYPE II INTERMEDIATE COURSE
- 1 1/4" O.D.O.T. 441 TYPE I SURFACE COURSE

##### HEAVY DUTY

- 6" O.D.O.T. 304 LIMESTONE
- 8" O.D.O.T. 301 ASPHALT (IN 2 LIFTS)
- 1 1/4" O.D.O.T. 441 TYPE II INTERMEDIATE COURSE
- 1 1/4" O.D.O.T. 441 TYPE I SURFACE COURSE

#### NOTES:

##### NEW ASPHALT PAVEMENT

- 1) ALL NEW ASPHALT CONCRETE PAVEMENT SHALL BE DESIGNED BY OR UNDER THE SUPERVISION OF A QUALIFIED ENGINEER, EMPLOYING THE DESIGN PARAMETERS OUTLINED IN THE MOST RECENT ISSUE OF THE AASHTO PAVEMENT DESIGN GUIDES AND ODOT ROADWAY DESIGN MANUAL, VOLUME ONE.

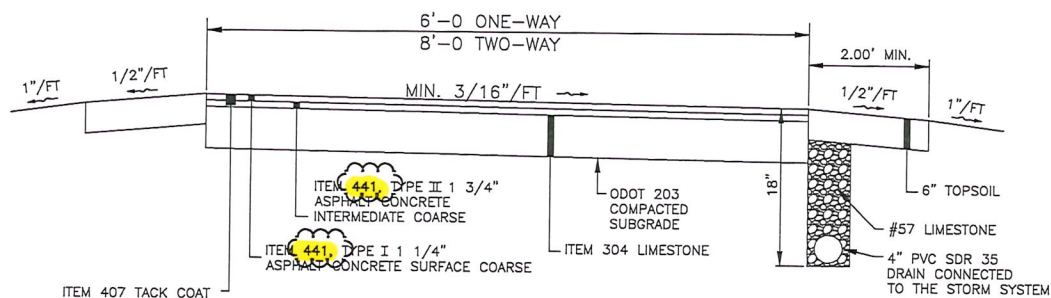
##### TACK COAT (ODOT 407)

- 2) TACK COAT SHALL BE REQUIRED BETWEEN PAVEMENT LAYERS OF 301 441 TYPE II & 441 TYPE I.

#### REFERENCES

- AASHTO - AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS
- ODOT - OHIO DEPARTMENT OF TRANSPORTATION
  - \* CONSTRUCTION AND MATERIAL SPECIFICATION
  - \* LOCATION AND DESIGN MANUAL
- ASTM - AMERICAN SOCIETY FOR TESTING MATERIALS
- AI - ASPHALT INSTITUTE

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| ASPHALT PAVEMENT<br>DETAIL WITH CONCRETE<br>CURB & GUTTER    | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>P-15</b>              | 48-19                 | 8/12/19 |



TYPICAL WALK, BICYCLE & CARPATH CROSS-SECTION

#### ASPHALT DESIGNS

LIGHT DUTY - (WALKWAY, BIKEWAY AND CARPATH)

7" O.D.O.T. #304 LIMESTONE (COMPACTED IN TWO LIFTS)

1 3/4" O.D.O.T. #441 TYPE II ASPHALT CONCRETE INTERMEDIATE COARSE

1 1/4" O.D.O.T. #441 TYPE I ASPHALT CONCRETE SURFACE COARSE

#### NOTE:

TACK COAT (ODOT 407)

TACK COAT SHALL BE REQUIRED BETWEEN PAVEMENT LAYERS OF  
#441 TYPE II & #441 TYPE I.

#### WALK, BICYCLE & CARPATHS

DESIGN AND CONSTRUCTION OF BICYCLE FACILITIES SHOULD BE CONSIDERED CAREFULLY TO ACCOUNT FOR UNIQUE VERTICAL AND HORIZONTAL ALIGNMENT REQUIREMENTS, AS WELL AS UNIQUE TRAFFIC CONTROL AND SURFACE REQUIREMENTS. THE GUIDELINES PRESENTED IN THE LATEST PUBLICATION: "GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES" BY AASHTO, SHALL BE USED AS A DESIGN REFERENCE.

#### NOTES:

- CART PATHS, WALKING PATHS & BICYCLE PATHS  
REQUIRED WIDTH IS 8'  
REQUIRED WIDTH IN R-1 & R-2 ZONED AREAS IS 6'  
-MATERIAL SHALL BE ASPHALT (PREFERRED)  
-IN R-1 & R-2 ZONED AREAS ONLY  
CONCRETE WILL BE CONSIDERED/REVIEWED

- COMPACTED SUBGRADE SHALL COMPLY WITH ODOT ITEM 203 UNLESS ALTERNATE METHOD IS APPROVED BY THE CITY ENGINEER. PROOF ROLL IS REQUIRED. MINIMUM 40,000 LBS.

#### REFERENCES

- AASHTO - AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS  
ODOT - OHIO DEPARTMENT OF TRANSPORTATION  
\* CONSTRUCTION AND MATERIAL SPECIFICATION  
\* LOCATION AND DESIGN MANUAL  
ASTM - AMERICAN SOCIETY FOR TESTING MATERIALS  
AI - ASPHALT INSTITUTE

#### CITY OF AVON CONSTRUCTION STANDARDS AND SPECIFICATIONS

| WALK, BICYCLE<br>CARPATH DETAIL          | ADOPTION<br>ORDINANCE | DATE    |
|------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING P-16 | 48-19                 | 8/12/19 |



## STREET SIGN SPECIFICATIONS

- 1) GENERAL: ALL SIGNING MATERIALS SHALL MEET THE LATEST VERSIONS OF THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", ODOT'S "CONSTRUCTION AND MATERIAL SPECIFICATIONS" AND ODOT'S "STANDARD CONSTRUCTION DRAWINGS".
- 2) STREET NAME SIGNS: FOR GROUND MOUNTED STREET NAME SIGNS NOT AT INTERSECTIONS OF MULTI-LANE ROADS WITH SPEED LIMIT OF 40 MPH OR **LESS**, STREET NAME SIGNS SHALL BE DOUBLE FACED ON NINE (9) INCH EXTRUDED BLANKS USING COMBINATION UPPER CASE (6 INCH) AND LOWER CASE (4½ INCH) WHITE LETTERING ON A GREEN BACKGROUND. THE EXTRUDED ALUMINUM BLANKS SHALL HAVE A MINIMUM THICKNESS OF 0.063 INCH AND THICKER STIFFENED EDGES. HIGH INTENSITY GRADE, RETRO-REFLECTIVE SHEETING SHALL BE APPLIED TO BOTH SIDES FOR BOTH THE WHITE AND GREEN MATERIALS. FOR GROUND MOUNTED STREET NAME SIGNS AT INTERSECTIONS OF MULTI-LANE ROADS WITH SPEED LIMIT OF 40 MPH OR GREATER, STREET NAME SIGNS SHALL BE DOUBLE FACED ON TWELVE (12) INCH FLAT SHEET BLANKS USING COMBINATION UPPER CASE (8 INCH) AND LOWER CASE (6 INCH) WHITE LETTERING ON A GREEN BACKGROUND. FOR OVERHEAD SIGNS, SEE THE CITY ENGINEER FOR DETAILS AND SPECIFICATIONS.
- 3) SIGN POSTS: SIGN POSTS FOR STOP SIGNS AND STREET NAME SIGNS SHALL BE TEN (10) FEET IN LENGTH, FOURTEEN (14) GAUGE GALVANIZED, 2" X 2" TELESAR QWIK-PUNCH POST. EACH INSTALLATION SHALL INCLUDE A TEN (10) FOOT LENGTH AND A FOUR (4) FOOT LENGTH SHALL BE INSTALLED INTO THE GROUND TO A DEPTH OF FORTY-TWO (42) INCHES. THE TEN (10) FOOT LENGTH SHALL BE ATTACHED TO THE FOUR (4) FOOT LENGTH OF 2 ¼ " X 2 ¼" TELESAR BASE 12 GAUGE TO ALLOW THE BOTTOM OF TRAFFIC CONTROL SIGNS TO BE MOUNTED AT A MINIMUM HEIGHT OF SEVEN (7) FEET ABOVE THE GROUND FOR SINGLE SIGN ATTACHMENTS. STREET NAME SIGNS WILL BE MOUNTED ON TOP OF SIGN POSTS FOR STOP SIGNS TO COMBINE SIGNAGE FOR BETTER AESTHETICS. SEE ITEM 4A BELOW.
- 4) OTHER TRAFFIC CONTROL SIGNS:
  - A) STOP SIGNS SHALL BE FLAT SHEET ALUMINUM, WITH A MINIMUM SIZE OF THIRTY (30) BY THIRTY (30) INCHES WITH MICRO-PRISMATIC, DIAMOND GRADE, RETRO-REFLECTIVE SHEETING.
  - B) NO PARKING SIGNS SHALL BE A MINIMUM SIZE OF TWELVE (12) BY EIGHTEEN (18) INCHES WITH, HIGH INTENSITY GRADE, RETRO-REFLECTIVE SHEETING.
  - C) SPEED LIMIT SIGNS SHALL BE TWENTY-FOUR (24) BY THIRTY (30) INCHES WITH MICRO-PRISMATIC, DIAMOND GRADE, RETRO-REFLECTIVE SHEETING.

- D) SIGN POSTS FOR TRAFFIC CONTROL SIGNS SHALL BE GALVANIZED U-CHANNEL TYPE STEEL POSTS, RATED AT THREE (3) POUNDS PER FOOT. EACH SIGN INSTALLATION SHALL INCLUDE A TEN (10) FOOT LENGTH AND A FIVE (5) FOOT LENGTH. THE FIVE (5) FOOT LENGTH SHALL BE DRIVEN INTO THE GROUND TO A DEPTH OF FORTY-TWO (42) INCHES. THE TEN (10) FOOT LENGTH SHALL BE ATTACHED TO THE FIVE (5) FOOT LENGTH TO ALLOW THE BOTTOM OF TRAFFIC CONTROL SIGNS TO BE MOUNTED AT A MINIMUM HEIGHT OF SEVEN (7) FEET ABOVE THE GROUND FOR SINGLE SIGN ATTACHMENTS. IF TWO SIGNS ARE ATTACHED TO ONE POST INSTALLATION, THEN THE BOTTOM OF THE PRIMARY SIGN SHALL BE MOUNTED AT SEVEN (7) FEET UNLESS THE BOTTOM OF THE SECONDARY SIGN IS MOUNTED LESS THAN SIX (6) FEET, THEN THE SIGNS SHALL BE RAISED SO THAT THE SECONDARY SIGN IS MOUNTED NO LESS THAN SIX (6) FEET ABOVE THE GROUND.
- E) **NO** PARKING SIGNS AND SPEED LIMIT SIGNS SHALL BE GALVANIZED U-CHANNEL TYPE STEEL POSTS, RATED AT THREE (3) POUNDS PER FOOT. EACH SIGN INSTALLATION SHALL INCLUDE A TEN (10) FOOT LENGTH AND A FIVE (5) FOOT LENGTH. THE FIVE (5) FOOT LENGTH SHALL BE DRIVEN INTO THE GROUND TO A DEPTH OF FORTY-TWO (42) INCHES. THE TEN (10) FOOT LENGTH SHALL BE ATTACHED TO THE FIVE (5) FOOT LENGTH TO ALLOW THE BOTTOM OF TRAFFIC CONTROL SIGNS TO BE MOUNTED AT A MINIMUM HEIGHT OF SEVEN (7) FEET ABOVE THE GROUND FOR SINGLE SIGN ATTACHMENTS. IF TWO SIGNS ARE ATTACHED TO ONE POST INSTALLATION, THEN THE BOTTOM OF THE PRIMARY SIGN SHALL BE MOUNTED AT SEVEN (7) FEET UNLESS THE BOTTOM OF THE SECONDARY SIGN IS MOUNTED LESS THAN SIX (6) FEET, THEN THE SIGNS SHALL BE RAISED SO THAT THE SECONDARY SIGN IS MOUNTED NO LESS THAN SIX (6) FEET ABOVE THE GROUND.
- 5) BEFORE INSTALLATION OF ANY SIGNAGE IN SUBDIVISIONS, THE CONTRACTOR SHALL CONTACT UNDERGROUND PROTECTION SERVICES FOR UTILITY LOCATIONS BEFORE ANY SIGN POSTS ARE DRIVEN INTO THE GROUND.
- 6) DEVELOPER SHALL SUBMIT SIGNING PLAN TO CITY FOR APPROVAL PRIOR TO INSTALLATION.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| STREET SIGN<br>SPECIFICATIONS                                | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | P-17<br>48-19         | 8/12/19 |





## NOTES

1. CENTER LINE MARKERS SHALL BE PLACED BETWEEN THE LINES WHEN SINGLE OR DOUBLE SOLID LINES ARE USED. MARKERS INSTALLED ALONG AN EDGE LINE OR CHANNELIZING LINE SHALL BE PLACED SO THAT THE CASTING IS NO MORE THAN 1 INCH (25 MM) FROM THE NEAR EDGE OF THE LINE. MARKERS INSTALLED ALONG A LANE LINE OR DASHED YELLOW CENTER LINE SHALL BE PLACED BETWEEN AND IN LINE WITH THE DASHES. HOWEVER, DESPITE THESE PROVISIONS, THE MARKERS SHALL ALSO BE PLACED A MINIMUM OF 2 INCHES (50 MM) AWAY FROM A LONGITUDINAL OR TRANSVERSE JOINT.

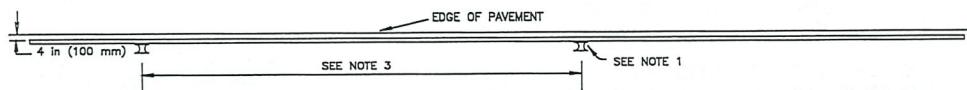
IF APPROVED BY THE ENGINEER, MARKERS MAY BE PLACED ON THE LINES WHERE THE LINES DEVIATE VISIBLY FROM THEIR CORRECT ALIGNMENT OR THE CONSTRUCTION JOINT WILL BE WITHIN 2 INCHES (50 MM) OF THE MARKER.

2. TO FACILITATE THE CUTTING OF THE TWO PARALLEL SLOTS AND INTERVENING CONCAVED SURFACE SIMULTANEOUSLY, IT IS RECOMMENDED THAT AN ARBOR AND SAW BLADE ASSEMBLY BE USED. FOR ADDITIONAL DETAILS AND TOLERANCES OF THE CASTING AND ARBOR-SAW ASSEMBLY CONTACT THE CASTING MANUFACTURER.
3. SEE SHEET P16 FOR SPACING DETAILS.
4. RAISED PAVEMENT MARKERS SHALL NOT BE PLACED WITHIN THE INTERSECTION AREA.
5. WHEN A CHANNELIZING LINE IS LESS THAN 80 FEET (24 M) IN LENGTH, ONE RAISED PAVEMENT MARKER SHALL BE PLACED AT EACH END OF THE LINE, AND ONE SHALL BE PLACED IN THE CENTER OF THE LINE.
6. RAISED PAVEMENT MARKERS SHALL NOT BE PLACED ON EDGE LINES ON A THROUGH APPROACH.
7. ALL APPROACHES AT A SIGNALIZED INTERSECTION SHALL BE TREATED AS SHOWN IN THE STOP APPROACH DETAIL BY ADDING EDGE LINE MARKERS ALONG THE RIGHT EDGE LINE.

### EDGE LINE

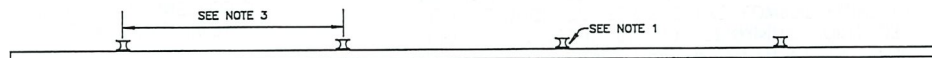
1-WAY (WHITE)  
WITH RIGHT EDGE LINE OR

2-WAY (YELLOW/RED)  
WITH LEFT EDGE LINE ON  
RAMPS, YELLOW SIDE FACING  
TRAFFIC



### CHANNELIZING LINE

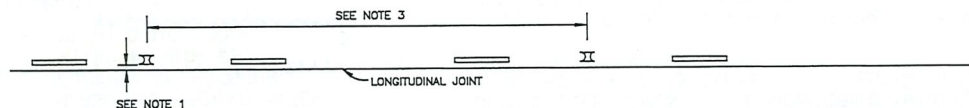
2-WAY (WHITE/RED),  
WHITE SIDE FACING TRAFFIC



### LANE LINE

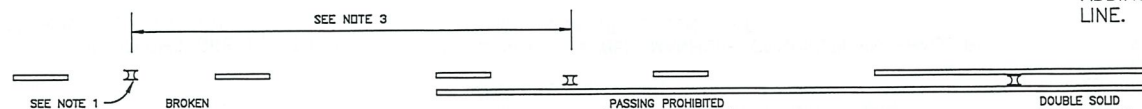
1-WAY (WHITE) OR

2-WAY (WHITE/RED),  
WHITE SIDE FACING TRAFFIC



### CENTER LINE

2-WAY (YELLOW/YELLOW)



#### CITY OF AVON CONSTRUCTION STANDARDS AND SPECIFICATIONS

| RAISED PAVEMENT<br>MARKER PLACEMENT<br>DETAILS | ADOPTION<br>ORDINANCE | DATE    |
|------------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING            | P-19                  | 48-19   |
|                                                |                       | 8/12/19 |



## CONSTRUCTION NOTES & STANDARDS FOR SANITARY SEWER INSTALLATION

1. A.) SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 ASTM D-3034 WITH RING-TITE FACTORY INSTALLED RUBBER SEALING RING (ASTM D-3212) TO DEPTH OF 17 FT.  
  
B.) FOR DEPTHS OF 17 FT. TO 28 FT. SDR 26 ASTM D3034 SHALL BE USED.  
  
C.) THE SANITARY PIPE FOR DEPTHS GREATER THAN 28 FT. SHALL BE APPROVED BY THE CITY ENGINEER.
2. MANHOLE TO MANHOLE DISTANCE SHALL NOT EXCEED 400 FEET.
3. WELL POINTS SHALL BE INSTALLED AT THE DOWN STREAM MANHOLE OF ALL SANITARY MAIN SYSTEMS FOR THE PURPOSE OF MEASURING GROUND WATER, SO AS TO CALCULATE REQUIRED AIR PRESSURE.  
**WELL POINTS MUST BE FILLED IN WITH #57 LIMESTONE OR LSM PRIOR TO COMPLETION / ACCEPTANCE OF PROJECT. SEE SHEET SAN-2 SANITARY LINE AIR TESTING.**
4. SANITARY MANHOLES SHALL MEET ASTM C-478 FOR MATERIAL AND ASTM C-443 FOR JOINTS.
5. FLEXIBLE GASKETS ON ALL SEWER LINE CONNECTIONS AND ALL PRECAST MAHOLE COLLARS SHALL BE ASTM C-923
6. ALL SANITARY MAINLINE RUNS SHALL END WITH A MANHOLE. A MANHOLE SHALL ALSO BE INSTALLED AT ALL PIPE SIZE CHANGES AND DIRECTION CHANGES.
7. ALL MANHOLE CASTINGS ARE TO BE E.J.I.W. 1040 SERIES HEAVY DUTY CASTING. SANITARY MANHOLE LIDS SHALL BE TYPE "A" GASKET SEAL, "WATERTITE" TYPE WITH 'O' RING GASKETTING (ASTM C-443) EXCEPTING THAT HEAVY DUTY BOLT DOWN CASTING AND COVER (E.J.I.W. 1040-WT) SHALL BE USED WHENEVER A SANITARY MANHOLE IS IN AN OFF-SITE EASEMENT, NEAR A WATERWAY OR WITHIN ROADWAY AREAS. THE MANHOLE SHALL CLEARLY BE LABELED "SANITARY" ON THE LID.
8. ALL ADJUSTMENTS TO CASTINGS SHALL BE MADE WITH PRECAST CONCRETE GRADE RINGS.
9. FLOW LINES SHALL BE FORMED SO AS TO MATCH ALL PIPE PENETRATION INVERTS.
10. SANITARY SEWER MAINS AT MANHOLES PROPOSED WITHIN 2 FEET OF EXISTING INVERT ELEVATION SHALL BE REQUIRED TO MATCH THE EXISTING INVERT.
11. SANITARY SEWERS IN EXCESS OF 4 FEET SHALL REQUIRE A PRECAST EXTERIOR DROP MANHOLE. (REFERENCE S-13)
12. SANITARY SEWER MANHOLE CONNECTIONS SHALL BE THE A LOK OR Z LOK TYPE.
13. FOR DROP MANHOLE INSTALLATIONS, SEE SHEET SAN-8 AND SAN-9 FOR DETAILS.
14. A MONITORING MANHOLE SHALL BE REQUIRED FOR ALL COMMERCIAL AND INDUSTRIAL APPLICATIONS DURING DEVELOPMENT. THE MONITORING MANHOLE SHALL BE PLACED AS CLOSE TO THE ESTABLISHED RIGHT OF WAY AS POSSIBLE.
15. SANITARY LINE EASEMENTS SHALL BE PROVIDED WITH CITY ACCESS FOR THE PURPOSE OF MAINTENANCE OF UTILITIES. ACCESS DRIVE SHALL BE PER THE DETAIL ON G-8. SAID EASEMENTS SHALL BE DESIGNATED AS BLOCKS.
16. IN NO CASE SHALL SANITARY OR LATERALS BE DIRECTLY CONNECTED INTO A MANHOLE.
17. ALL LATERALS SHALL HAVE A DEPTH OF (9) NINE FEET AT ITS RIGHT-OF-WAY TERMINUS POINT OR DEEP ENOUGH TO SERVICE THE LOWEST POINT OF THE BUILDING OR A DEPTH IN RELATION TO THE DEPTH OF SANITARY SYSTEM.
18. CLAY DAM IS TO BE PROVIDED 6 FT. FROM THE LATERAL TERMINUS PER G-10.
19. CROSSING AS HEREIN DEFINED SHALL BE EITHER PERPENDICULAR TO ANY PART OF A SKEW OR ANGLE AT THE CROSSING.
20. WHERE MINIMUM CLEARANCES ARE NOT MAINTAINED PER DRAWING G-7 DIP CLASS 52 SHALL BE USED.
21. WHERE THE SANITARY LATERAL IS LESS THAN 3 FT. IN DEPTH D.I.P. CLASS 52 SHALL BE USED.
22. TRANSITIONAL ADAPTERS ARE TO BE USED FROM PVC TO D.I.P. PREFERRED SINGLE UNIT ADAPTER IS SPECIFIED FITTINGS 791056-CDD 6" OR EQUAL. FERNCO FITTINGS WILL NOT BE PERMITTED IN PLACE OF ADAPTERS.
23. PVC SANITARY SEWER REPAIRS SHALL BE MADE USING SOLID SLEEVE COUPLINGS ONLY. FERNCO FITTINGS SHALL NOT BE PERMITTED FOR SANITARY REPAIRS.
24. SHOULD EXCAVATION ENCOUNTER EXISTING DRAINLINES, REPAIR SHALL BE MADE VIA A MINIMUM (6") SIX INCH TEE OR KOR-N-TEE INTO THE STORM SYSTEM. (6") SIX INCH PVC SDR 35 PIPE TO THE RIGHT-OF-WAY LINE, USING A REDUCER AND/OR VARIOUS BENDS TO MAKE THE CONNECTION. FERNCOS MAY BE USED IN THIS APPLICATION. SEE SHEET STM-8 FOR INSTALLATION DETAIL.
25. WHEN A WATER SERVICE AND/OR GAS SERVICE IS DISTURBED OR DISCONNECTED DURING TRENCH OR SHEETING EXCAVATION, SUCH SERVICES SHALL BE PLANKED USING 2"x8" HARDWOOD MINIMUM, 18" INTO VIRGIN SOIL, EACH END.
26. ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| CONSTRUCTION NOTES<br>FOR SANITARY SEWER<br>INSTALLATION     | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-1</b>             | 48-19                 | 8/12/19 |

## 1. SANITARY LINE AIR TESTING

- A) LOW PRESSURE AIR SHALL BE INTRODUCED INTO THE SEALED LINE UNTIL THE INTERNAL PRESSURE REACHES 4.0 PSIG GREATER THAN THE AVERAGE BACK PRESSURE OF ANY GROUND WATER PRESSURE THAT MAY BE OVER THE PIPE. AT LEAST TWO (2) MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE. AFTER THE STABILIZATION PERIOD, THE HOSE FOR INTRODUCING LOW PRESSURE AIR INTO THE SEALED LINE SHALL BE DISCONNECTED FROM THE AIR SOURCE IN SUCH A MANNER AS TO RETAIN THE PRESSURE IN THE SEALED LINE.
- B) NO AIR PRESSURE LOSS SHALL BE ACCEPTED.

| PIPE DIAMETER (INCHES) | MINUTES |
|------------------------|---------|
| 6                      | 4.0     |
| 8                      | 4.0     |
| 10                     | 5.0     |
| 12                     | 5.5     |
| 15                     | 7.5     |
| 18                     | 8.5     |
| 21                     | 10.0    |
| 24                     | 12.5    |
| 27                     | 15.0    |
| 30                     | 18.0    |
| 33                     | 21.0    |

- C) WHERE HIGH GROUND WATER IS KNOWN TO EXIST, THE HEIGHT IN FEET, OF GROUND WATER 2FT. ABOVE THE INVERT OF THE SEWER SHALL BE DIVIDED BY 2.31 TO ESTABLISH THE POUNDS OF PRESSURE THAT WILL BE ADDED TO THE INTERNAL AIR PRESSURE USED FOR THE LINE ACCEPTANCE TEST. MAXIMUM AIR PRESSURE IS NOT TO EXCEED 8 PSIG. DOWN STREAM MANHOLE WELL POINTS SHALL NOT BE PUMPED DOWN FOR THE PURPOSES OF THIS TESTING PROCEDURE.
- D) IF THE INSTALLATION FAILS TO MEET THE REQUIREMENTS OF THIS TEST, THE CONTRACTOR SHALL DETERMINE AT HIS OWN EXPENSE THE SOURCE OF THE LEAKAGE. HE SHALL REPAIR OR REPLACE ALL DEFECTIVE MATERIALS AND/OR WORKMANSHIP AND THEN RE-TEST THE INSTALLATION FOR COMPLIANCE WITH THESE SPECIFICATIONS FOR THE LINE ACCEPTANCE TEST.
- E) AT THE DISCRETION OF THE CITY ENGINEER, SANITARY SEWERS SHALL BE TESTED FOR INFILTRATION AND/OR EXFILTRATION NOT TO EXCEED 100 GAL. OF WATER PER INCH OF PIPE DIAMETER PER MILE PER DAY.

## 2. VACUUM TESTING FOR MANHOLES

- A) VACUUM TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
- B) THIS TEST METHOD IS ONLY APPLICABLE TO PRECAST CONCRETE MANHOLES AND ITEM "M" AS NOTED BELOW.
- C) ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR GROUT.
- D) ALL PIPES, MANHOLE BOOTS, STUBOUTS, AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLY PLUGGED IN SUCH A MANNER AS TO PREVENT DISPLACEMENT OF THE PLUGS WHILE THE VACUUM IS DRAWN.
- E) INSTALLATION AND OPERATION OF VACUUM EQUIPMENT AND INDICATING DEVICES SHALL BE IN ACCORDANCE WITH EQUIPMENT SPECIFICATIONS AND INSTRUCTIONS PROVIDED BY THE MANUFACTURER.
- F) THE TEST HEAD SHALL BE PLACED AT THE INSIDE OF THE TOP OF THE MANHOLE CASTING AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
- G) A MEASURED VACUUM OF 10 INCHES OF MERCURY SHALL BE DRAWN TO THE MANHOLE. THE TIME FOR THE VACUUM TO DROP TO 9 INCHES OF MERCURY SHALL BE RECORDED.
- H) ACCEPTANCE FOR 4 FT. DIAMETER MANHOLES SHALL BE DEFINED AS WHEN THE ELAPSED TIME FOR A NEGATIVE PRESSURE CHANGE FROM 10 IN. TO 9 IN. OF MERCURY MEETS OR EXCEEDS THE FOLLOWING:

| MANHOLE DEPTH    | DIAMETER | TIME TO DROP 1" Hg |
|------------------|----------|--------------------|
| 10 FT. OR LESS   | 4 FT.    | 60 SECONDS         |
| 10 FT. TO 15 FT. | 4 FT.    | 75 SECONDS         |
| 15 FT. TO 25 FT. | 4 FT.    | 90 SECONDS         |

- I) FOR MANHOLES 5 FT. IN DIAMETER, ADD AN ADDITIONAL 15 SECONDS AND FOR MANHOLES 6 FT. IN DIAMETER 30 SECONDS TO THE TIME REQUIREMENTS FOR FOUR FOOT DIAMETER MANHOLES. PRECAST GREASE TRAP TIMING SHALL BE DEPENDENT UPON SIZES OF THE UNIT.
- J) IF THE MANHOLE FAILS THE TEST, NECESSARY REPAIRS SHALL BE MADE BY THE CONTRACTOR AND THE VACUUM TEST REPEATED UNTIL THE MANHOLE PASSES THE TEST. REPAIRS ARE TO BE MADE WITH NON-SHRINK GROUT ONLY.
- K) IF THE MANHOLE JOINT MASTIC IS DISPLACED DURING THE VACUUM TEST, THE MANHOLE SHALL BE DISASSEMBLED, THE SEAL REPLACED, AND THE MANHOLE RETESTED.
- L) VACUUM TESTING WILL BE REQUIRED IN ALL EXISTING TIE-IN MANHOLES, UNLESS OTHERWISE ADVISED BY THE CITY UTILITY DEPARTMENT.
- M) VACUUM TESTING METHOD SHALL ALSO BE USED IN THE CASE OF EXTERIOR PRECAST GREASE TRAP/INTERCEPTOR INSTALLATIONS (REF. SAN-14)

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                    |
|--------------------------------------------------------------|-----------------------|--------------------|
| SANITARY SEWER<br>ACCEPTANCE TESTING                         | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-2</b>             | 48-19<br>28-20        | 8/12/19<br>4/14/20 |
|                                                              |                       | SHEET<br>1 OF 2    |



### 3. DEFLECTION TEST

ALL PLASTIC PIPE SHALL BE TESTED FOR PROPER INSTALLATION BY MEANS OF DEFLECTION ATTAINMENT. IN ADDITION TO MATERIAL TESTS, CONSTRUCTION COMPACTION AND LEAKAGE TESTS REQUIRED ELSEWHERE IN THESE REGULATIONS, THE CONTRACTOR IS REQUIRED TO INSTALL THE PIPE IN SUCH A MANNER THAT THE DIAMETRIC DEFLECTION SHALL NOT EXCEED FIVE PERCENT (5%). TO ATTAIN THIS REQUIREMENT, THE BACKFILL MATERIALS SURROUNDING THE PIPE SHALL BE COMPACTED TO THE REQUIRED STANDARD DENSITIES CALLED OUT IN ASTM D 2321. THE SECTORS REQUIRING COMPACTION SHALL INCLUDE THE BED AND SIDE FILL MATERIAL, AS WELL AS THE MATERIAL PLACED ABOVE THE PIPE FOR A DISTANCE OF EIGHTEEN (18) INCHES.

DEFLECTION TESTS SHALL BE PERFORMED NO SOONER THAN 30 DAYS FOLLOWING COMPLETION OF BACKFILL, AND AGAIN ONE YEAR AFTER ACCEPTANCE. DEFLECTION TESTS SHALL BE PERFORMED BY AN ACCREDITED, INDEPENDENT TESTING LABORATORY THAT SHALL SUBMIT VERIFICATION RECORDS OF RESULTS AND DATES TESTED. MAXIMUM RING DEFLECTION OF THE PIPE UNDER LOAD SHALL BE LIMITED TO 5% OF THE INSIDE DIAMETER.

DEFLECTION LIMITS TABLE  
ASTM D3034

| NOM. PIPE DIA. (IN.) | MANDRELL SIZE |        |
|----------------------|---------------|--------|
|                      | SDR 35        | SDR 26 |
| 6                    | 5.45          | 5.33   |
| 8                    | 7.28          | 7.12   |
| 10                   | 9.08          | 8.87   |
| 12                   | 10.79         | 10.54  |
| 15                   | 13.20         | 12.90  |
| 18                   | 16.13         | 15.76  |
| 21                   | 19.01         | 18.57  |
| 24                   | 21.36         | 20.87  |

ALL PIPE FAILING TO MAINTAIN THE MINIMUM DEFLECTION DIAMETER OR LARGER LISTED FOR THE APPLICABLE TYPE OF PIPE SHALL BE CONSIDERED TO HAVE BEEN IMPROPERLY INSTALLED AND SHALL BE RE-LAID OF REPLACED BY THE CONTRACTOR.

DEFLECTION TESTING SHALL BE ACCOMPLISHED BY USING AN ELECTRONIC DEFLECTOMETER WHICH PRODUCES A CONTINUOUS RECORD OF DIAMETER READINGS OR BY PULLING A SLED TYPE - FULL CIRCLE GAGE THROUGH THE PIPE. SLED TYPE - FULL CIRCLE GAGES SHALL BE A MANDREL TYPE. THE DIAMETER OR MINIMUM DIMENSION OF THE SLED TYPE - FULL CIRCLE GAGE SHALL BE AS LISTED IN THE DEFLECTION LIMITS TABLE FOR THE TYPE AND NOMINAL DIAMETER OF THE PIPE BEING TESTED.

### 4. SEWER PHOTOGRAPHY (CCTV)

ALL SEWERS SHALL BE PRESSURE JET AND VACUUMED BY THE CONTRACTOR BEFORE VIDEO PHOTOGRAPHY. ALL SEWER INTERIORS SHALL BE VIDEO RECORDED BY AN APPROVED TESTING COMPANY AT THE DIRECTION OF THE UTILITY DEPT.

A) ALL VIDEO TAPING SHALL BE FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.

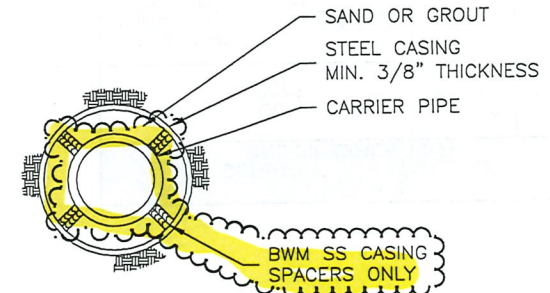
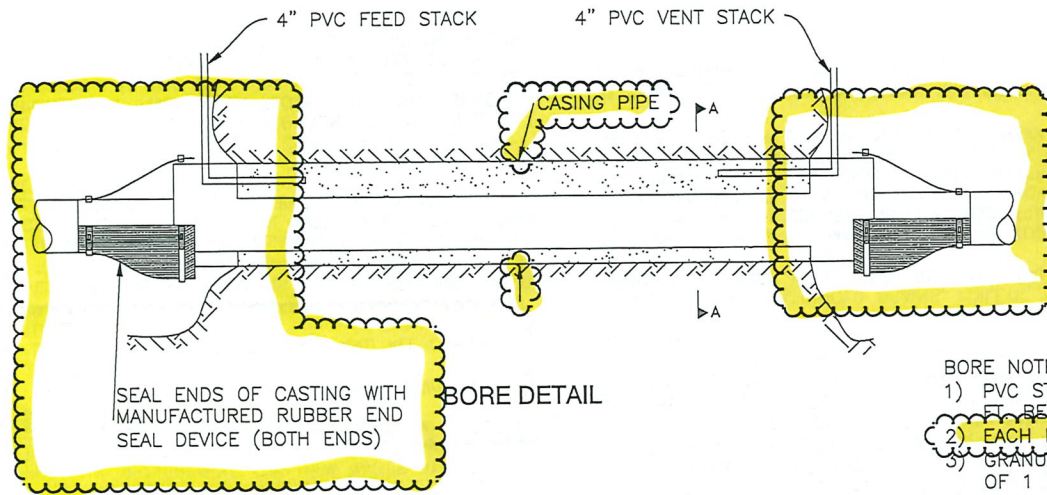
B) VIDEO TAPING SHALL BE MADE UPSTREAM ONLY.

C) VIDEO SHALL BE CONTINUOUS AND CONTAIN VIDEO FOOTAGE OF MAIN AND LATERALS IN ONE CONTINUOUS VIDEO.

D) SEWER VIDEO SHALL BE SUBMITTED TO THE UTILITIES DEPARTMENT ON TWO THUMB DRIVES ALONG WITH THE VIDEO REPORT PRIOR TO ACCEPTANCE.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                    |
|--------------------------------------------------------------|-----------------------|--------------------|
| SANITARY SEWER<br>ACCEPTANCE TESTING                         | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-2</b>             | 48-19<br>28-20        | 8/12/19<br>4/14/20 |
|                                                              |                       | SHEET<br>2 OF 2    |

# WOOD SKID DETAIL



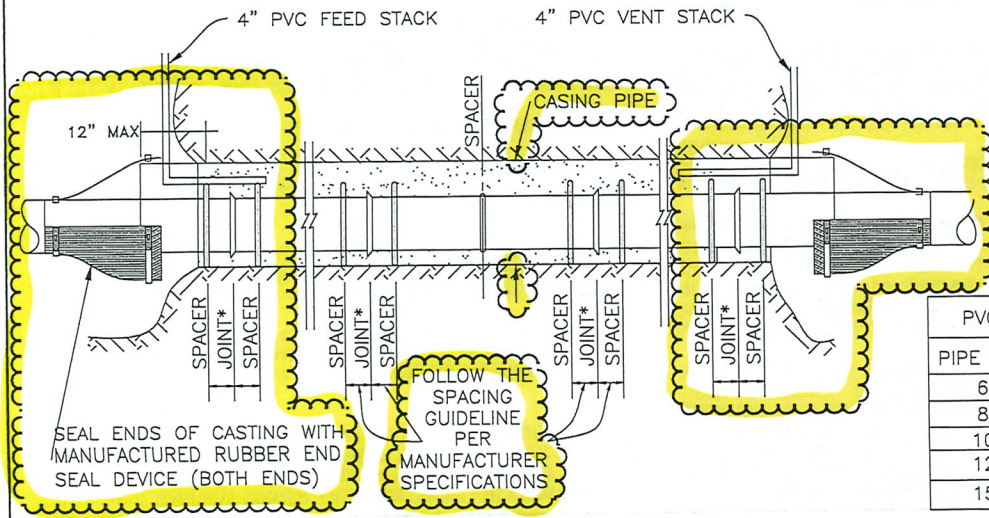
SECTION A-A

SEAL ENDS OF CASTING WITH  
MANUFACTURED RUBBER END  
SEAL DEVICE (BOTH ENDS)

BORE DETAIL

## BORE NOTES:

- 1) PVC STACKS ARE TO BE FILLED TO WITHIN 2 FT. OF GRADE AND CUT AND CAPPED 2 FT. BELOW GRADE.
- 2) EACH END SHALL BE SEALED WITH A MANUFACTURED RUBBER END SEAL DEVICE.
- 3) GRANULAR BEDDING IN BORE PIT AND RECEIVING PIT SHALL BE PLACED TO A MINIMUM OF 1 FOOT ABOVE THE PIPE.
- 4) BONDED SKIDS MAY BE PERMITTED IN LIEU OF RETAINING GLANDS, AS APPROVED BY THE CITY UTILITY DEPARTMENT.
- 5) SANITARY PIPE THROUGH THE CASING SHALL BE PVC SDR-35 ASTM D3034 OR SDR 26 IF 17FT DEEP OR DEEPER.
- 6) ANY TRANSITION OF PIPE FROM DIP TO PVC, SHALL BE DONE WITH A TRANSITIONAL ADAPTER AS DETAILED ON SHEET S-1.
- 7) MINIMUM CASING WALL THICKNESS IS TO BE 3/8"
- 8) CASING SIZE FOR PIPE IN EXCESS OF 16" SHALL BE REVIEWED AND DETERMINED BY THE ENGINEER AT THE TIME OF PLAN REVIEW AND PRIOR TO ANY CONSTRUCTION.
- 9) NO CASING SHALL BE REQUIRED UNDER THE ROAD IF OPEN CUT TRENCHING. THIS SHALL BE AT THE UTILITY DEPARTMENT'S DISCRETIONS.
- 10) CASING TO BE GROUT FILLED BY USING A GROUT PUMP.
- 11) MIXTURE:  
FLOWABLE FILL CEMENT - 50 LBS.  
FLY ASH - 850 LBS.  
FINE AGGREGATE - 2,100 LBS.  
WATER - 625 LBS.



SPACER DETAIL

| PVC CASING SIZE REQUIREMENTS |           |             |
|------------------------------|-----------|-------------|
| PIPE SIZE                    | BELL SIZE | CASING SIZE |
| 6"                           | 7.23"     | 12"         |
| 8"                           | 9.50"     | 16"         |
| 10"                          | 11.86"    | 18"         |
| 12"                          | 14.06"    | 24"         |
| 15"                          | 17.93"    | 24"         |

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| SANITARY<br>PIPE BORE DETAIL                                 | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-3</b>             | 48-19                 | 8/12/19 |



A) ALL SANITARY SEWER LATERALS SHALL BE MINIMUM OF 6" P.V.C. SDR35 (3034) GASKETED PIPE. SHOULD A LATERAL HAVE LESS THAN THREE FEET OF COVER, DUCTILE IRON PIPE SHALL BE REQUIRED USING A TRANSITIONAL ADAPTER.

B) THERE SHALL BE AN INSPECTION/CLEAN OUT TEE AT THE RIGHT OF WAY AND APPROXIMATELY EVERY 100 LINEAR FEET. TEE SHALL BE SANITARY TEE TYPE.

C) THERE SHALL NOT BE ANY CLEAN OUT OR INSPECTION TEES WITHIN ANY DRIVEWAY OR ROADWAY WITHOUT UTILITY DEPARTMENT APPROVAL. INSTALLATION SHALL CONFORM TO SAN-5.

D) THERE SHALL BE A MINIMUM OF 6" OF STONE BEDDING AND A MINIMUM OF 6" OF STONE COVER OVER PIPE.

E) STONE SHALL BE #57 LIMESTONE FOR SANITARY.

F) 45 DEGREE AND 22 DEGREE BEND FITTING SHALL BE USED. THERE SHALL BE NO 90 DEGREE BEND FITTINGS. ALSO, THERE SHALL NOT BE "BACK TO BACK" FITTING USED. MINIMUM OF TWO (2) FEET OF PIPE BETWEEN FITTINGS.

G) SANITARY LATERAL SHALL HAVE A MINIMUM 1% GRADE.

H) SHOULD A NEW LATERAL TO A BUILDING BE INSTALLED TO ENTER THE BUILDING UNDER A FOOTER, AN EARTHEN DAM SHALL BE INSTALLED APPROXIMATELY 10' FROM THE BUILDING.

I) WHEN INSTALLING NEW SANITARY SEWER LATERAL, AND THERE IS A REQUIREMENT FOR NEW WATER AND STORM SERVICE LATERALS, THE SERVICE LATERALS SHALL NOT BE INSTALLED IN COMMON TRENCH. THE MINIMUM HORIZONTAL SEPARATION SHALL BE:

- TEN FEET (10') BETWEEN SANITARY AND WATER SERVICE
- 5 FEET (5') BETWEEN SANITARY AND ALL OTHER UTILITIES

J) ALL SANITARY SEWER MAINS WILL BE REQUIRED TO BE AIR TESTED AT FOUR (4) PSI FOR A MINIMUM OF FOUR (4) MINUTES WITHOUT ANY ALLOWABLE LOSS. IN THE CASE A COMMERCIAL OR INDUSTRIAL INSTALLATION, THE LATERAL WILL BE TESTED TO THE BUILDING IN ACCORDANCE WITH THESE SPECIFICATIONS.

K) THERE SHALL BE A "GLUE CAP" INSTALLED ON THE RISER OF ANY SANITARY SEWER CONNECTION RISING THROUGH THE FOUNDATION FLOOR. WHEN SAID SEWER CONNECTION IS NOT IMMEDIATELY "TIED-INTO" A HOUSE DRAIN, THIS CAP SHALL RISE TO A MINIMUM OF 18 INCHES ABOVE THE PROPOSED FINISH BASEMENT FLOOR GRADE.

L) FOR EXISTING HOMES, THE NEW 6" LATERAL IS TO BE INSTALLED TO AN APPROXIMATE LOCATION AS NEAR TO THE HOUSE AS POSSIBLE. ALL NEW PIPE SHALL BE CONNECTED TO THE EXISTING CAST IRON OR PLASTIC PIPE AT THIS LOCATION. A 4"X6" GASKETED P.V.C. REDUCER IS TO BE USED IF NEEDED. THERE SHALL BE A CLEAN OUT INSTALLED AT THIS POINT.

M) FOR COMMERCIAL/INDUSTRIAL SANITARY LATERALS, THERE SHALL BE INSTALLED A "MONITORING MANHOLE" AT THE RIGHT OF WAY OR EASEMENT LIMITS. THIS MANHOLE SHALL BE A STANDARD 48" DIAMETER BY 6 FOOT DEPTH. COMMERCIAL AND INDUSTRIAL SITES MAY BE REQUIRED TO INSTALL A GAS/OIL INTERCEPTOR.

N) THERE SHALL BE A \$100.00 INCIDENT FINE FOR DISCHARGING STORM OR GROUND WATER TO A SANITARY SEWER.

\* THE CITY WILL REQUIRE A MINIMUM OF 24 HOURS NOTICE FOR ANY AND ALL INSPECTIONS. PLEASE CONTACT THE BUILDING DEPARTMENT AT 937-7818 AND THE UTILITIES DEPARTMENT AT 937-5740.

O) OWNER TO MAINTAIN SEWER TO MAIN LINE FROM RIGHT-OF-WAY CLEANOUT TO HOME.

P) LATERAL INSTALLATION FROM THE RIGHT-OF-WAY LINE TO THE BUILDING SHALL BE AT A SUFFICIENT DEPTH TO SERVE THE LOWEST POINT OF THE BUILDING, TO INCLUDE BASEMENTS, IF ANY. THE RISER SHALL EXTEND TO 3 FEET ABOVE GRADE.

Q) NEW SANITARY LATERAL CONNECTIONS FOR EXISTING HOMES SHALL BE REQUIRED TO HAVE THE EXISTING AERATION OR SEPTIC TANKS PUMPED AND SOLIDS TRUCKED AWAY. THE TANK(S) SHALL BE TOTALLY COLLAPSED WITH THE BOTTOM, SIDES AND TOP DESTROYED. THE TANK(S) SHALL BE FILLED WITH HEAVY FILL I.E. CLAY, STONE, ETC. THE OWNER SHALL SUPPLY THE CITY WITH A "PUMP SLIP". OWNER SHALL OBTAIN AN ABANDONMENT PERMIT FROM THE LORAIN COUNTY HEALTH DEPARTMENT.

R) ALL NORMAL HOUSEHOLD DRAINS, TOILETS, SINKS AND WASHING MACHINES MUST DISCHARGE TO A SANITARY SEWER.

S) SHOULD A WASHING MACHINE, LAUNDRY TUB, SERVICE SINK OR FLOOR DRAIN DISCHARGE INTO A SUMP PUMP, THIS PUMP MUST DISCHARGE INTO A SANITARY SEWER. HOWEVER, SHOULD THIS SUMP PUMP ALSO COLLECT STORM WATER FROM FOOTER TILE OR OTHER SOURCES, THERE SHALL BE A NEED TO SEPARATE THESE FLOWS BY INSTALLING SEPARATE PUMPS.

T) SUMP PUMPS FOR FOOTER TILE ARE PROHIBITED FROM DISCHARGING INTO A SANITARY.

U) PRIOR TO WORK COMMENCING, A REPRESENTATIVE OF THE UTILITIES DEPARTMENT AND BUILDING DEPARTMENT WILL PRE-INSPECT EACH HOME TO CONFIRM PROPER INSTALLATION AND ABANDONMENT OF SYSTEMS.

V) THE UTILITIES DEPARTMENT INSPECTS ALL INSTALLATIONS FROM THE STREET TO WITHIN THREE (3) FEET OF THE OUTSIDE OF THE BUILDING WALL. THE BUILDING DEPARTMENT INSPECTS ALL PLUMBING WITHIN A BUILDING. NOTE: THE BUILDING DEPARTMENT RESERVES THE RIGHT TO CHARGE THEIR OWN INSPECTION FEES. THE BUILDING DEPARTMENT MAY REQUIRE HOUSE DRAINS TO BE SMOKE TESTED.

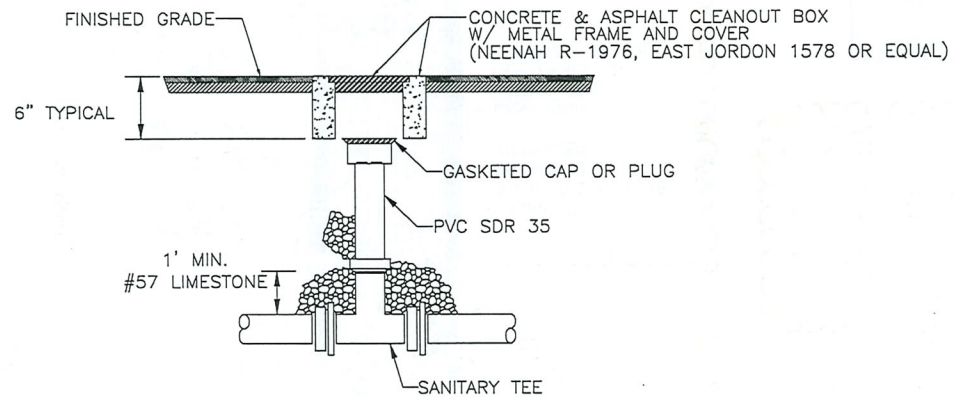
W) SHOULD A RESIDENT ANTICIPATE THE HOUSE LATERAL TO BE INSTALLED UNDER THE FOOTER FOR FUTURE PLUMBING IN THE BASEMENT, ALL PROVISIONS FOR FUTURE WORK SHALL BE COMPLETED AT THIS TIME. AS PER THE BUILDING DEPARTMENT, THIS MEANS ANY PLUMBING WORK UNDER THE EXISTING FLOOR WILL BE REQUIRED TO BE INSTALLED NOW AND TESTED.

X) AS PER THE BUILDING DEPARTMENT, ANY MAJOR PLUMBING WORK INSIDE OF THE HOUSE SHALL BE COMPLETED BY A REGISTERED PLUMBER OR HOME OWNER AS PER PLUMBING CODES. THIS WILL BE DETERMINED AT THE TIME OF PRE-INSPECTION.

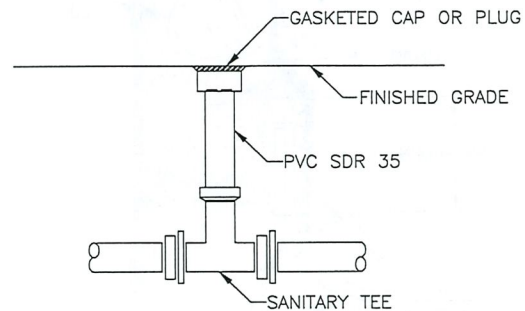
Y) THE BUILDING DEPARTMENT AND UTILITIES DEPARTMENT WILL PERFORM A FINAL INSPECTION AT THE COMPLETION OF EACH INSTALLATION.

Z) THE CITY WILL REQUIRE A MINIMUM OF 24 HOURS NOTICE FOR ANY AND ALL INSPECTIONS. PLEASE CONTACT THE BUILDING DEPARTMENT AT 937-7813 AND THE UTILITIES DEPARTMENT AT 937-5740.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| SANITARY CONNECTION<br>NOTES                                 | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-4</b>             | 48-19                 | 8/12/19 |



TYPICAL SANITARY  
CLEANOUT IN PAVED AREAS



TYPICAL SANITARY CLEANOUT  
IN UNPAVED AREAS

NOTES:

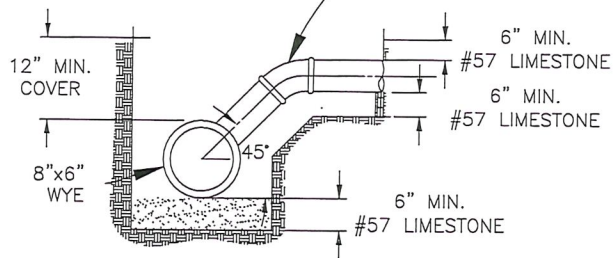
1. ALL CLEANOUT'S & WATER CURB BOXES LOCATED IN DRIVEWAY OR SIDEWALK ARE TO BE PROVIDED WITH A METAL FRAME AND COVER.
2. PS G.C. TO INSTALL CLEANOUTS AT ANY PIPING ANGLE CHANGES.

CITY OF AVON  
CONSTRUCTION STANDARDS  
AND SPECIFICATIONS

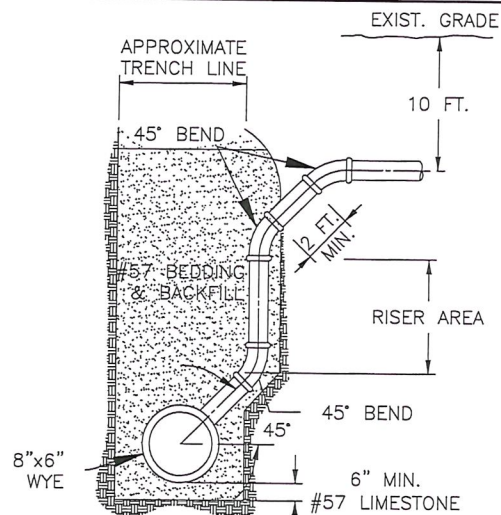
| FOR SANITARY SEWER<br>CLEANOUT DETAILS           | ADOPTION<br>ORDINANCE | DATE    |
|--------------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-5</b> | 48-19                 | 8/12/19 |



45° BEND IS TO BE ROLLED  
SO THAT THE BELL IS IN A  
VERTICAL PLANE PARALLEL TO  
THE CENTERLINE OF THE MAIN.

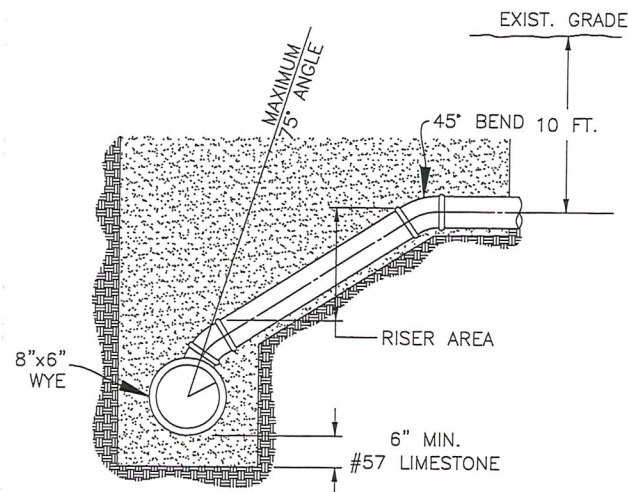


**STANDARD** SANITARY CONNECTION



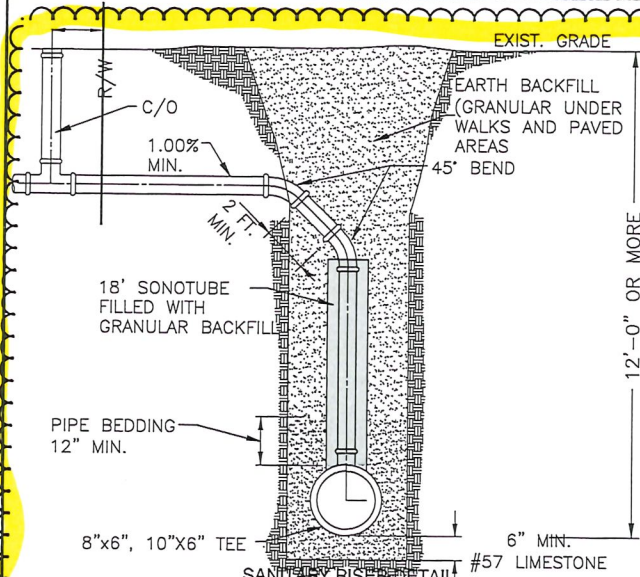
SANITARY RISER DETAIL

OPTION "A"  
(SEE NOTE 3)



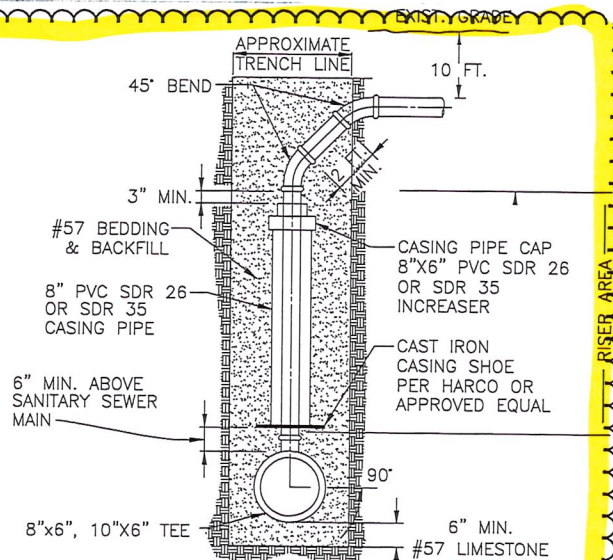
SANITARY RISER DETAIL

OPTION "B"  
(SEE NOTE 3)



SANITARY RISER DETAIL

OPTION "C"  
(SEE NOTE 3)



SANITARY RISER DETAIL

OPTION "D"  
(SEE NOTE 3)

#### RISER NOTES:

1. RISERS SHALL BE USED WHERE DEPTH OF COVER EXCEEDS FIFTEEN FEET (15 FT.) ON THE MAINLINE. RISERS SHALL BE EXTENDED INCLINED AT 10° TO A DEPTH OF (9) FEET FROM EXISTING GRADE.
2. THE MINIMUM HORIZONTAL BARREL TO BARREL SEPARATION SHALL BE:
  - TEN FEET (10') BETWEEN SANITARY AND WATER SERVICE
  - FIVE FEET (5') BETWEEN SANITARY AND ALL OTHER UTILITIES
3. OPTIONS CAN ONLY BE USED WITH THE APPROVAL OF THE UTILITIES DEPARTMENT.

#### CITY OF AVON CONSTRUCTION STANDARDS AND SPECIFICATIONS

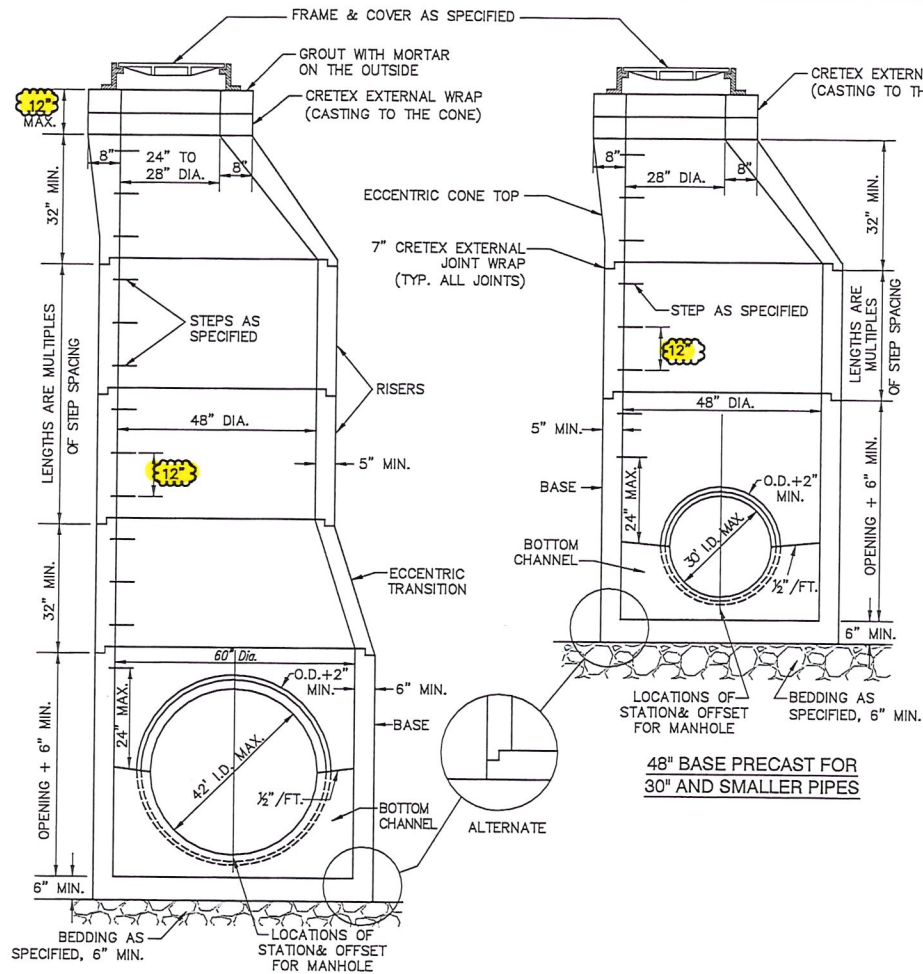
| SANITARY CONNECTION<br>DETAIL                    | ADOPTION<br>ORDINANCE | DATE    |
|--------------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-6</b> | 48-19                 | 8/12/19 |

### CONSTRUCTION NOTES AND STANDARDS FOR PRECAST SANITARY MANHOLES

1. SECTIONS OF THE PRECAST MANHOLE SHALL BE CAST AND ASSEMBLED WITH EITHER ALL TONGUE AND ALL GROOVE ENDS UP. LIFT HOLES MAY BE PROVIDED IN EACH SECTION FOR HANDLING.
2. TOP AND TRANSITION (OR REDUCER) SECTIONS MAY BE EITHER ECCENTRIC CONE, CONCENTRIC CONE OR FLAT SLAB.
3. BASES FOR MANHOLES ARE SHOWN WITH MONOLITHIC FLOOR AND RISER WHICH MAY BE CAST IN ONE OR TWO OPERATIONS. OPENINGS FOR INLET AND OUTLET PIPES SHALL BE PRECAST FOR A NEW MANHOLE TO MEET PROJECT REQUIREMENTS. A FIELD CORE IS PERMISSIBLE ON AN EXISTING STRUCTURE. BOTTOM CHANNELS MAY BE FORMED OF CONCRETE PRECAST IN THE BASE OR BY FIELD CONSTRUCTION. FOR FIELD CONSTRUCTION THE CHANNEL MUST BE FORMED W/PIPE THRU AS THE FORM. SANITARY FLOOR AND BARREL SHALL BE A MONOLITHIC POUR TYPE.
4. FLEXIBLE CONNECTIONS SHALL BE PROVIDED FOR SANITARY SEWERS PER ASTM C-923.
5. JOINT SEAL BETWEEN PRECAST MANHOLE SECTIONS SHALL BE THE COMBINATION OF AN O-RING & ASPHALTIC STRIP. IN ADDITION, THE EXTERIOR JOINT AREA SHALL BE COATED WITH AN ASPHALTIC MASTIC TO A WIDTH OF 1 FT. ALL JOINT SEAL SHALL MEET ASTM C-443.
6. MATERIALS FOR BASES AND OTHER PRECAST SECTIONS, INCLUDING REINFORCEMENT NOT SPECIFIED HEREON, SHALL COMPLY WITH ODOT SPECIFICATIONS, SECTION 706.13.
7. PRECAST MANHOLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C478.
8. SEAL LIFT HOLES WITH APPROVED WATER PLUG AND MORTAR, EXCEPTING WHERE THE LIFT HOLE INSERTS ARE PLASTISIZED.
9. PRECAST REINFORCED CONCRETE GRADE RINGS SHALL BE USED IN ALL CASES. BRICK FOR THIS PURPOSE WILL NOT BE PERMITTED. INTERIOR AND EXTERIOR TO BE SEALED WITH 1" THICK MINIMUM COMBINATION OF 10 LBS. WATER PLUG AND 80 LBS. MORTAR MIX. PROVIDE MINIMUM OF ONE GRADE RING. ASPHALTIC MASTIC STRIPS SHALL BE USED BETWEEN ALL GRADE RINGS AND CASTINGS, IN ADDITION TO THE PORRIDGING OF THE INTERIOR AND EXTERIOR AREAS WITH THE WATER PLUG MIX EXCEPT IN CONCRETE ROADWAYS. **12" MAX HEIGHT OF GRADE RINGS.**
10. ALL MANHOLE CASTINGS ARE TO BE E.J.I.W. 1040 A GS SERIES HEAVY DUTY CASTING OR EQUAL. SANITARY MANHOLE LIDS SHALL BE TYPE "A" GASKET SEAL, "WATERTITE" TYPE WITH 'O' RING GASKETTING, EXCEPTING THAT HEAVY DUTY BOLT DOWN CASTING AND COVER (E.J.I.W. 1040-WT) OR EQUAL SHALL BE USED WHENEVER A SANITARY OR STORM MANHOLE IS IN AN OFF-SITE EASEMENT OR NEAR A WATERWAY OR WITHIN ROADWAY AREAS. THE LID SHALL CLEARLY BE LABELED "SANITARY".
11. CASTING & GRADE RINGS SHALL BE SET WITH AN ASPHALTIC STRIP BETWEEN CONE, GRADE RING, AND CASTING IN HYDROCRETE.
12. STEPS SHALL BE CO-POLYMER POLYPROPYLENE ASTM D-4101-82. THE RISER HOLE SHALL BE ALIGNED WITH THE STEPS.
13. BEDDING SHALL BE 6" MIN. #57 LIMESTONE. BACKFILL SHALL CONFORM TO PIPE TRENCH DETAIL.
14. MANHOLES SHALL NOT BE INSTALLED IN SIDEWALKS OR ROADWAY AREAS WHENEVER POSSIBLE. WHEN THEY ARE THEY MUST BE INSPECTED BY THE UTILITIES DEPARTMENT PRIOR TO PAVEMENT RESTORATION.
15. THE NEWLY INSTALLED SANITARY SYSTEM SHALL REMAIN INDEPENDENT FROM THE EXISTING SYSTEM AND PLUGGED BY THE CONTRACTOR UNTIL SUCH TIME AS THE CITY OF AVON HAS ACCEPTED THE SYSTEM. ALSO A FINE OF \$100 PER DAY WILL BE IMPOSED FOR INFLOW AND INFILTRATION.
16. "DOGHOUSE" TYPE INSTALLATION SHALL NOT BE PERMITTED IN SANITARY SYSTEMS.
17. FOR 60" MANHOLES, E.J.I.W. #2075 52" RING WITH 36" OPENING IS REQUIRED

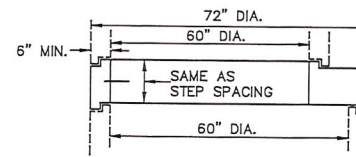
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS      |                       |                    |
|-------------------------------------------------------------------|-----------------------|--------------------|
| CONSTRUCTION NOTES &<br>STANDARDS FOR PRECAST<br>SANITARY MANHOLE | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-7</b>                  | 48-19<br>28-20        | 8/12/19<br>4/14/20 |



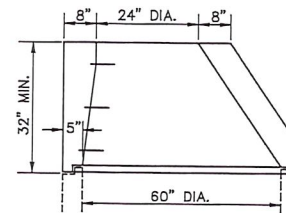


**60" BASE PRECAST FOR  
42" AND SMALLER PIPES**

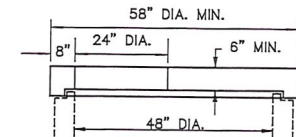
**48" BASE PRECAST FOR  
30" AND SMALLER PIPES**



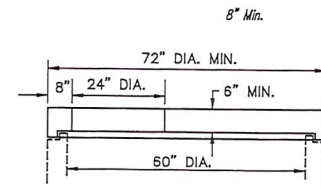
**FLAT SLAB TOP**



**ALTERNATE ECCENTRIC CONE TOP**

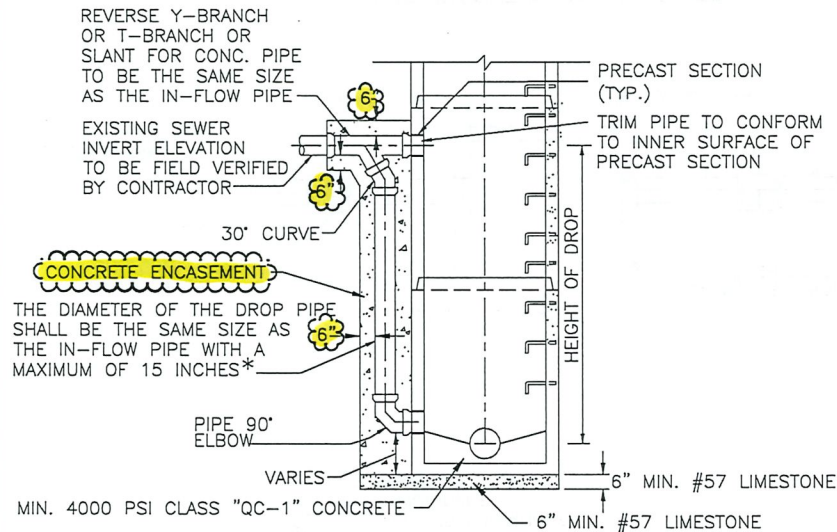


**FLAT SLAB TOP**

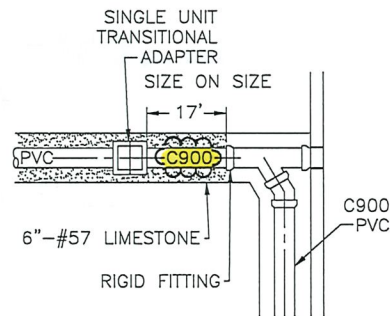


**FLAT SLAB TOP**

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| PRECAST SANITARY<br>MANHOLE                                  | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-8</b>             | 48-19                 | 8/12/19 |



\* THE MANUFACTURER IS TO BE CONSULTED FOR DROP PIPE SIZES LARGER THAN 15 INCHES.

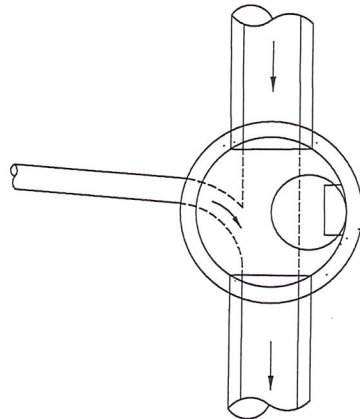


PRECAST DROP MANHOLE  
TRANSITIONAL ADAPTER

- 1) ANY DROP IN EXCESS OF 4 FT. SHALL BE MANUFACTURED PRECAST CONCRETE TYPE.
- 2) IN CASE OF TIE-IN M.H.'S WHERE THE DROP EXCEEDS 2 FT., THE EXISTING GRADE SHALL BE CONTINUED AND A NEW PRECAST CONCRETE DROP M.H. INSTALLED.
- 3) IN THE CASE OF EXTERIOR DROP CONNECTIONS OF 2FT TO 4FT EXISTING MANHOLES FIELD FABRICATION MAY BE PERMITTED ONLY WITH THE AUTHORIZATION OF THE CITY OF AVON UTILITY DEPARTMENT
- 4) THE FIRST LENGTH OF PIPE OUT OF THE TOP OF THE DROP MANHOLE SHALL BE C900. A TRANSITIONAL ADAPTER IS TO BE USED BETWEEN THE D.I.P. & PVC. ADAPTER SHALL BE A SINGLE UNIT SPECIFIED FITTINGS 581056 SWR. GXGDR18CDDSWR OR EQUAL. THE DROP PIPE SHALL BE C900 PVC.
- 5) THE ENTIRE EXCAVATION FOR THE DROP MANHOLE SHALL BE BACKFILLED TO GRADE WITH #57 LESTONE.
- 6) THE BOTTOM 90° BEND SHALL BE AN ELBOW TYPE.
- 7) PIPE OPENINGS FOR PRECAST MANHOLE SHALL BE THE ALOK OR ZLOK TYPE PER ASTM C-923.
- 8) PIPE OPENINGS FOR FIELD FABRICATED CONNECTIONS TO EXISTING MANHOLES SHALL BE KOR-N-SEAL BOOT PER ASTM C-923.
- 9) REFER TO SANITARY MANHOLE DETAIL FOR ADDITIONAL REQUIREMENTS.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| SANITARY DROP<br>MANHOLE DETAIL                              | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-9</b>             | 48-19                 | 8/12/19 |



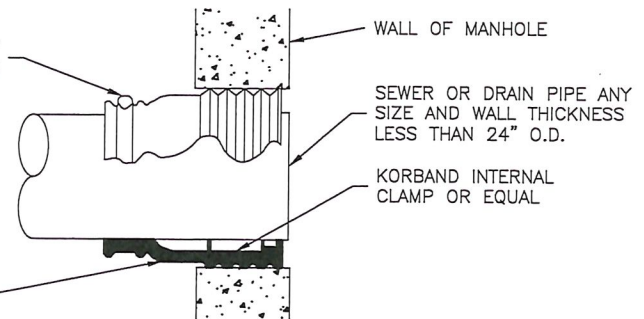


CORE/CONNECTOR DETAIL

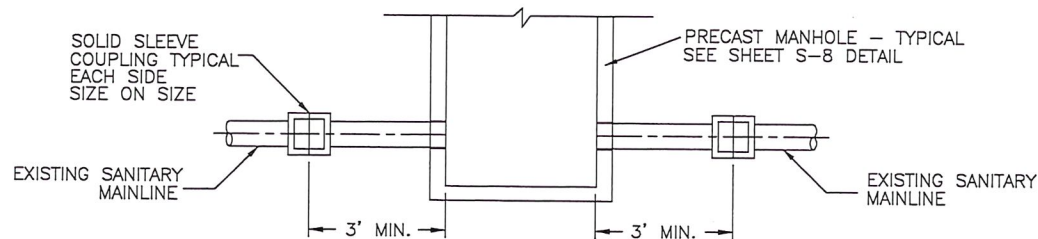
NOTE:  
APPLIES TO ANY SIZE MANHOLE  
FOR CUT-IN MANHOLES  
AND FIELD FABRICATED DROPS

EXTERNAL CLAMP TIGHTENED BY  
SCREWDRIVER, SEALS BOOT TO PIPE

NEOPRENE COMPOUND  
PER A.S.T.M. C-923

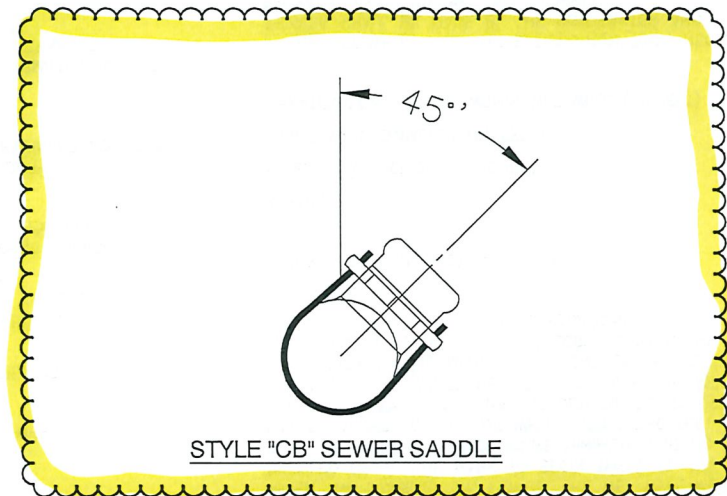


SANITARY MANHOLE  
KOR-N-SEAL BOOT



SANITARY CUT-IN MANHOLE DETAIL

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| SANITARY MANHOLE<br>FIELD FABRICATION<br>DETAIL              | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-10</b>            | 48-19                 | 8/12/19 |



STYLE "CB" SEWER SADDLE

# SANITARY SEWER TAPS

## TAP NOTES:

1) SANITARY MAIN SHALL BE CORED PRIOR TO SETTING THE TAPS IN PLACE.

2) TAPS ARE TO BE PLACED AT AN ANGLE OF 45° TO THE MAINLINE.

3) "CB" SEWER TAPS OR AN APPROVED EQUIVALENT MAY BE USED ONLY AT THE DISCRETION OF THE CITY UTILITY DEPARTMENT.

4) SANITARY LATERAL CONNECTIONS TO A SANITARY SEWER MAIN SHALL BE COMPLETED WITH A ROMAC INDUSTRIES, INC. STYLE "CB" SEWER SADDLE OR AN APPROVED EQUIVALENT. INSTALLATIONS SHALL BE COMPLETED PER MANUFACTURE DETAILING AND SPECIFICATION.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |               |
|--------------------------------------------------------------|-----------------------|---------------|
| SANITARY<br>CONNECTION<br>DETAIL                             | ADOPTION<br>ORDINANCE | DATE          |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | <b>SAN-11</b>         | 48-19 8/12/19 |



# PRIVATE PUMP STATIONS

1. CONTRACTOR SHALL FURNISH AND INSTALL A PUMP STATION SYSTEM IN ACCORDANCE WITH THE MOST CURRENT VERSION OF THE OHIO EPA GREENBOOK AND TEN STATE STANDARDS.
2. CONTACTOR SHALL FURNISH OHIO ENVIRONMENTAL PROTECTION AGENCY PERMIT-TO-INSTALL PRIOR TO CONSTRUCTION.
3. IF THE PUMP STATION IS LOCATED IN A NON-PAVED AREA AN ACCESS DRIVE SHALL BE PROVIDED FOR MAINTENANCE PER AVON STANDARD DRAWING G-8.
4. BOTH AUDIO AND VISUAL ALARM SHALL BE PROVIDED.
5. THE FOLLOWING MATERIALS ARE ACCEPTABLE FOR WET WELL CONSTRUCTION: 4000 PSI CONCRETE AT 28 DAYS OR FIBERGLASS REINFORCED POLYESTER (FRP). FRP WET WELLS SHALL BE MANUFACTURED FROM COMMERCIAL GRADE UNSATURATED POLYESTER RESIN OR VINYL ESTER RESIN WITH FIBERGLASS REINFORCEMENTS. ALTERNATE MATERIALS MAY BE USED WITH UTILITY DEPARTMENT APPROVAL.
6. DESIGNER SHALL SUBMIT CALCULATIONS SIGNED, SEALED, AND DATED BY A PROFESSIONAL ENGINEER FOR CITY REVIEW. INCLUDE THE FOLLOWING:

- A. FLOW CALCULATIONS AND ASSUMPTIONS
- B. TOTAL DYNAMIC HEAD
- C. SYSTEM CURVE/PUMP CURVE ANALYSIS
- D. PUMP STATION CYCLE AND PUMP RUN TIMES
- E. PUMP STATION FLOTATION
- F. AVAILABLE EMERGENCY STORAGE CAPACITIES AT AVERAGE AND PEAK WASTEWATER FLOWS
- G. MINIMUM FORCE MAIN VELOCITY AND PRESSURE CALCULATIONS. MINIMUM FORCEMAIN SIZE SHALL BE 2". MATERIAL TO BE APPROVED BY THE CITY
- H. ANALYSIS OF DOWNSTREAM SEWER VERIFYING CAPACITY USING PEAK PROPOSED FLOWS AND PEAK EXISTING FLOWS.

5. DESIGNER SHALL SUBMIT SIGNED, SEALED, AND DATED CONSTRUCTION DRAWINGS BY A PROFESSIONAL ENGINEER FOR CITY REVIEW.
6. OPERATION AND MAINTENANCE PLAN SHALL BE SUBMITTED TO THE CITY FOR REVIEW. PLAN SHALL INCLUDE HOW MAINTENANCE VEHICLES WILL APPROACH THE PUMP STATION SITE, SPECIFICATIONS ON A NOTIFICATION SYSTEM (IE. AUTO DIALER/SCADA ALARM SYSTEM), EMERGENCY PUMPING AVAILABLE, AND EMERGENCY CONTACT INFORMATION OF RESPONSIBLE PARTY THAT WILL BE CONTACTED IN AN EMERGENCY.

8. WET WELL DETENTION TIME MAY BE REQUIRED AT THE UTILITY DEPARTMENT'S DISCRETION.

9. NOISE CONTROL MAY BE REQUIRED AT THE UTILITY DEPARTMENT'S DISCRETION.

10. CONCRETE WET WELL ACCEPTANCE TESTING SHALL CONFORM TO AVON STANDARD DRAWING SAN-2.

11. FIBERGLASS WET WELL ACCEPTANCE TESTING SHALL CONFORM TO THE FOLLOWING:

AN EXFILTRATION TEST MUST BE PERFORMED AFTER THE WET WELL HAS BEEN BACKFILLED AND COMPACTED. EXFILTRATION SHALL NOT EXCEED 0.0142 GAL/HR PER FOOT DIAMETER PER FOOT DEPTH. THE TEST MUST BE DONE BY PLUGGING THE GRAVITY INVERT AND FILLING UP THE WET WELL WITH WATER TO EITHER 1-FOOT BELOW THE WET WELL TOP SLAB, OR UP TO THE MANHOLE LID WITH THE LOWEST ELEVATION BELOW TOP SLAB. THIS LEVEL MUST BE CLEARLY TEMPORARILY MARKED IN THE WE WELL INTERNAL WALL. ONCE THE WET WELL IS FILLED, IT MUST BE LEFT FOR STABILIZATION FOR 48 HOURS MINIMUM PRIOR TO BEGINNING THE EXFILTRATION TEST. AFTER THE STABILIZATION PERIOD, THE WET WELL MUST BE REFILLED UP TO THE MARK TO BEGIN THE TEST. THE TEST SHALL BE DONE FOR TWO HOURS MINIMUM, AND NO WATER MAY BE ADDED TO THE WET WELL DURING THE TEST PERIOD. THE EXFILTRATION TEST MUST BE DETERMINED BY MEASURING THE AMOUNT OF WATER REQUIRED TO RAISE THE WET WELL LEVEL BACK TO THE MARK AT THE END OF THE TEST PERIOD. THE MAXIMUM ALLOWABLE WATER LOSS TO PASS THE TEST IS DETERMINED BY THE FOLLOWING EQUATION:

$$\text{WATER LOSS (GALLONS)} = 0.0142tDH$$

WHERE:

t=TEST TIME PERIOD (2 HOURS)

D=WET WELL DIAMETER (IN FEET)

h=WATER LEVEL DEPTH WITHIN WET WELL (IN FEET)

IF THE WET WELL FAILS THE EXFILTRATION TEST, NECESSARY REPAIRS SHALL BE MADE BY THE CONTRACTOR AND THE TEST REPEATED UNTIL THE WET WELL PASSES.

12. WET WELL FOUNDATION SHALL BE #57 LIMESTONE AT A MINIMUM DEPTH OF 6". BACKFILL SHALL BE PER AVON STANDARD DRAWING G-6.

13. A SIGN SHALL BE POSTED ON OR ADJACENT TO THE LIFT STATION. THE SIGN SIZE SHALL BE 24"X30", WHITE BACKGROUND WITH RED LETTERS. THE SIGN SHALL STATE THE FOLLOWING:

- A. PRIVATE SANITARY SEWER LIFT STATION
- B. IN CASE OF EMERGENCY CALL.....
- C. OWNER OR BUSINESS NAME AND PHONE NUMBER
- D. CONTRACTOR'S NAME AND PHONE NUMBER

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| PRIVATE<br>PUMP STATION<br>NOTES                             | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-12</b>            | 48-19                 | 8/12/19 |



NOTE:

A) TRAFFIC BEARING GREASE TRAP IS REQUIRED. MATERIAL SHALL BE APPROVED BY THE UTILITY DEPARTMENT.

B) INDIVIDUAL PRECAST DIMENSIONS MAY VARY.

C) PROVIDE SHOP DRAWINGS FOR APPROVAL.

D) THE OHIO PLUMBING CODE SHALL BE FOLLOWED TO DETERMINE SIZING AND PROPER CAPACITY FOR GREASE RETENTION OF THE INTERCEPTOR.

E) STRUCTURES SHALL BE VACUUM TESTED PRIOR TO BEING PUT INTO USE. TESTING REQUIREMENTS SHALL BE THE SAME AS FOR MANHOLE VACUUM TESTING (REF. SAN-2)

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| EXTERIOR PRECAST GREASE<br>TRAP / INTERCEPTOR<br>DETAIL      | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | SAN-13                | 8/12/19         |
|                                                              |                       | SHEET<br>1 OF 2 |

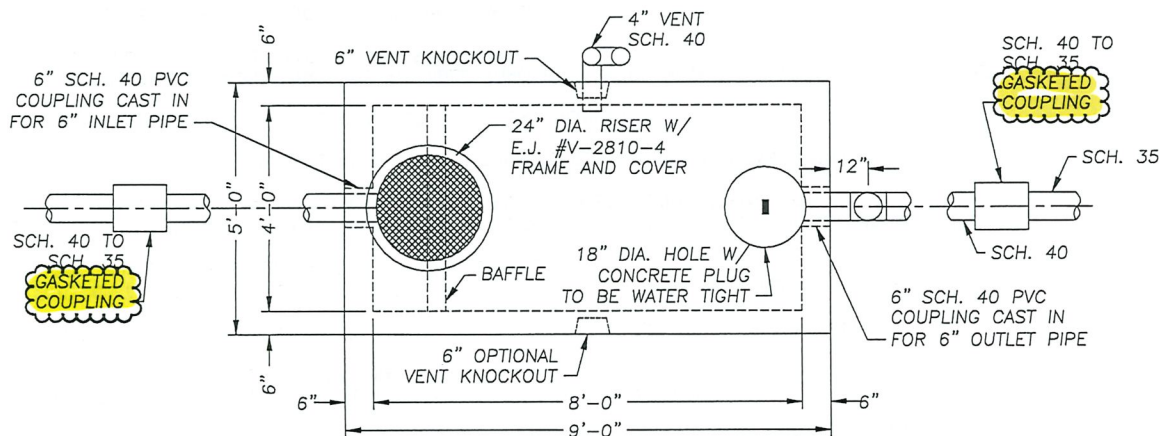


## NOTES

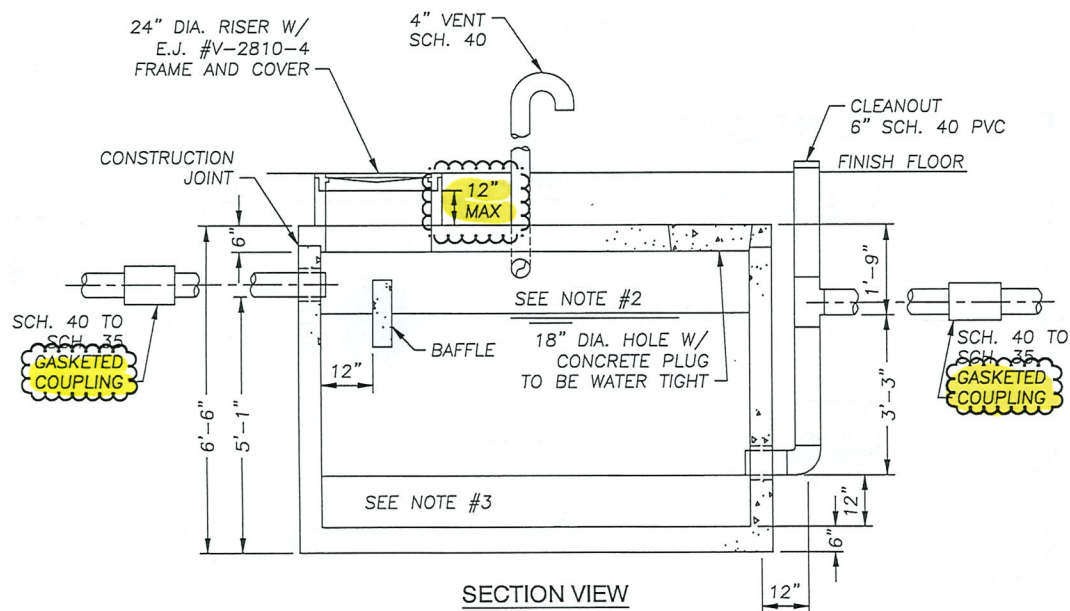
- 1) **TRAFFIC BEARING GREASE TRAP** DESIGNED TO TRAP NON-BIODEGRADABLE MATERIALS, SUCH AS GREASE AND SEDIMENTS EMANATING PRIMARILY FROM KITCHENS AND FOOD SERVICE OPERATIONS, SHALL BE PROVIDED.
- 2) THE CAPACITY AND DIMENSIONS FOR THE GREASE TRAP SHOWN ARE FOR USE AS A GUIDE ONLY. DETAILED SHOP DRAWINGS AND INSTALLATION PLANS SHALL BE SUBMITTED TO THE CITY FOR APPROVAL.
- 3) THE NUMBER OF INLET PIPES SHALL BE VERIFIED, AS ARE THE SIZES OF THE INLET AND OUTLET PIPES.
- 4) 6 INCH CLEAN OUTS SHALL BE PROVIDED FOR BOTH THE INLET AND OUTLET PIPE.
- 5) A SAMPLING PORT MANHOLE MAY BE REQUIRED BY THE CITY DOWNSTREAM OF THE INTERCEPTOR BEFORE CONNECTION TO THE SANITARY MAIN, FOR SAMPLING PURPOSES.
- 6) INSTALL STRUCTURE ON A BED OF 6 INCH COMPACTED #57 LIMESTONE AGGREGATE.
- 7) OUTLET IS TO BE AT  $\frac{1}{2}$  LIQUID DEPTH FROM BOTTOM OR A MINIMUM OF 1 FOOT WHICHEVER IS GREATER.
- 8) **INTERCEPTOR IS TO BE CONSTRUCTED AS A TRAFFIC BEARING UNIT. ALTERNATE DESIGNS SHALL BE CONSIDERED ON A CASE-BY-CASE BASIS. ALTERNATES SHALL BE SUBMITTED TO THE UTILITY DEPARTMENT FOR REVIEW AND APPROVAL.**
- 9) UTILIZE CONTINUOUS BITUMINOUS SEALANT AT ALL JOINTS. ALL PENETRATIONS, LIFT POINTS, ETC. ARE TO BE MADE WATERTIGHT PRIOR TO BACKFILLING STRUCTURE EXTERIOR OF INTERCEPTOR IS TO BE ASPHALT COATED.

- 11) LOCATE INTERCEPTOR IMMEDIATELY OUTSIDE BUILDING WHERE THERE IS EASY ACCESS FOR CLEANING.
- 12) IT IS RECOMMENDED TO FILL INTERCEPTOR WITH WATER BEFORE ACTUAL SANITARY USE.
- 13) UTILIZE SCH. 40 PVC OR SCH. 80 PVC INSIDE STRUCTURE, UTILIZE SDR 26 OR SDR 35 PIPE OUTSIDE INTERCEPTOR, AS APPROVED BY THE CITY.
- 14) UTILIZE NON-CORROSIVE MATERIALS AND FASTENERS TO SUPPORT PIPE ON BAFFLE.
- 15) THE INTERCEPTOR SHALL BE CLEANED BY AN APPROVED SEWAGE DISPOSAL CONTRACTOR WHENEVER 25% OF THE OPERATING DEPTH OF THE GREASE INTERCEPTOR IS OCCUPIED BY FATS, OILS, GREASES AND SETTLED SOLIDS OR A MINIMUM OF ONCE EVERY FOUR (4) MONTHS WHICHEVER IS MORE FREQUENT. WRITTEN CLEANING RECORDS ARE TO BE MAINTAINED.
- 16) DO NOT CONNECT DISHWATER DISCHARGE TO A GREASE INTERCEPTOR.
- 17) FLOOR DRAINS AND HAND WASHING FACILITIES IN FOOD PREPARATION AND MEAT PREPARATION AREAS SHALL NOT DISCHARGE INTO GREASE TRAPS.
- 18) INVERT OF OUTLET SHALL BE INSTALLED A MINIMUM OF 3 INCHES BELOW INVERT OF INLET.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| EXTERIOR PRECAST GREASE<br>TRAP / INTERCEPTOR<br>NOTES       | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-13</b>            | 48-19                 | 8/12/19         |
|                                                              |                       | SHEET<br>2 OF 2 |



TOP VIEW



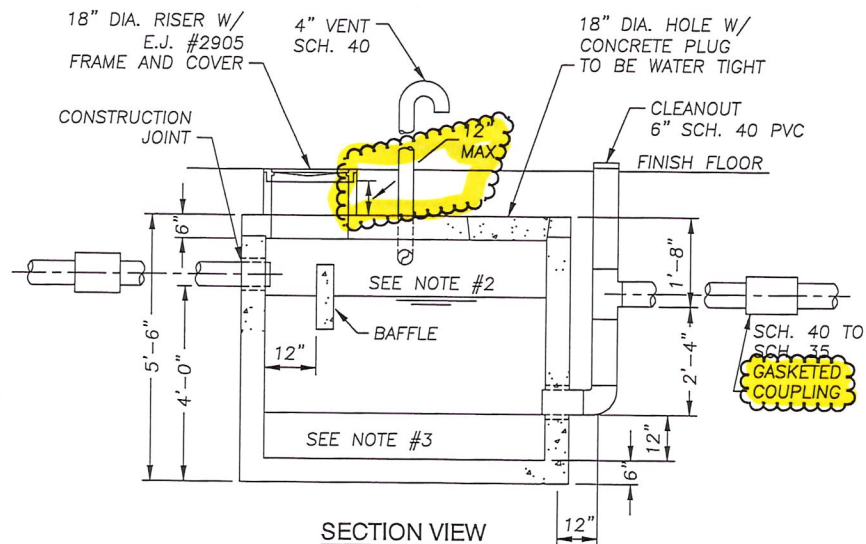
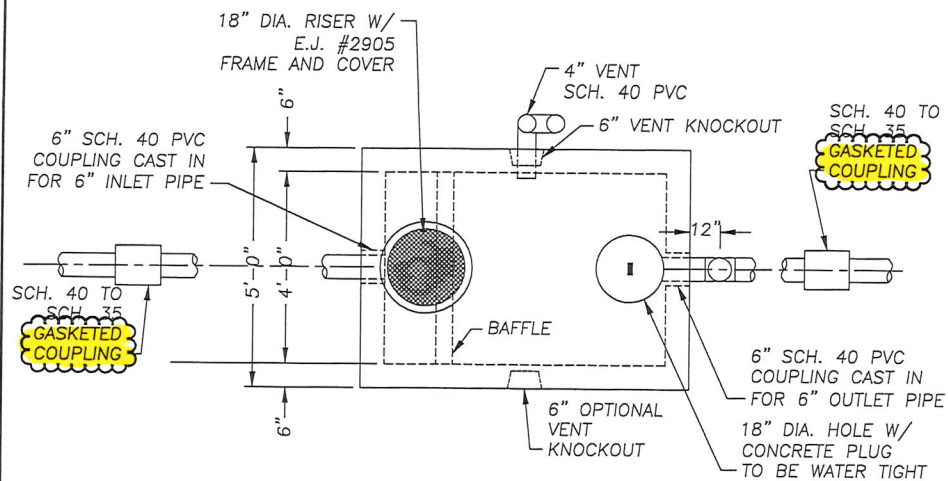
SECTION VIEW

NOTES:

- 1) REINFORCED PRECAST CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
- 2) VENTILATED AIRSPACE.
- 3) SPACE TO COLLECT SETTLING SOLIDS.
- 4) VENT PIPE TO BE 4" PVC SCH. 40 TYPE WITH HYDRAULIC CEMENT AT THE KNOCKOUT INSET.
- 5) THE VENT OUTLET SHALL BE PLACED IN A NON-TRAFFIC BEARING AREA.  
i.e.: LAWN AREA OR NEXT TO THE WALL OF A BUILDING.
- 6) VENT RUNS SHALL RUN SO AS TO HAVE A SLIGHT POSITIVE PITCH BACK TO THE PRECAST TANK.
- 7) THE INLET PIPE MAY BE SCH. 35 PVC. HOWEVER, AN ADAPTER SHALL BE PROVIDED AND A SCH. 40 PVC COUPLING SHALL BE CAST IN FOR THE 6" INLET PIPE.
- 8) CLEANOUT INSTALLATION TO BE IN ACCORDANCE WITH DETAIL SHEET SAN-5 IN PAVED AREAS FOR COMMERCIAL/INDUSTRIAL AND UNPAVED AREAS FOR COMMERCIAL/INDUSTRIAL AREAS.
- 9) CONSTRUCTION JOINT TO BE SEALED WITH 1" CONSEAL CS-440 OIL RESISTANT SEALANT.
- 10) 24" DIAMETER RISER AVAILABLE IN 12" + 24" HEIGHTS.
- 11) ACCESS FOR CLEANING SHALL BE PROVIDED THROUGH A BOLT DOWN CAST IRON, GAS TIGHT COVER LOCATED AT THE INLET END OF THE STRUCTURE.
- 12) SHALL BE TRAFFIC BEARING IF WITHIN PAVED AREA.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| OIL & SAND SEPARATOR<br>104 CUBIC FEET EFFECTIVE CAPACITY    | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | SAN-14                | 8/12/19         |
|                                                              |                       | SHEET<br>1 OF 3 |





#### NOTES:

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- 8) CLEANOUT INSTALLATION TO BE IN ACCORDANCE WITH DETAIL SHEET SAN-5 IN PAVED AREAS FOR COMMERCIAL/INDUSTRIAL AND UNPAVED AREAS FOR COMMERCIAL/INDUSTRIAL AREAS.
- 9) CONSTRUCTION JOINT TO BE SEALED WITH 1" CONSEAL CS-440 OIL RESISTANT SEALANT.
- 10) 24" DIAMETER RISER AVAILABLE IN 12", 15" + 24" HEIGHTS.
- 11) ACCESS FOR CLEANING SHALL BE PROVIDED THROUGH A BOLT DOWN CAST IRON, GAS TIGHT COVER LOCATED AT THE INLET END OF THE STRUCTURE.
- 12) SHALL BE TRAFFIC BEARING IF WITHIN PAVED AREA.

WHERE AN OIL SEPARATOR ONLY IS REQUIRED AND ALL PLUMBING CODES ARE MET, A 50 CU. FT. PRECAST OIL SEPARATOR MAY BE PERMITTED BY THE CITY.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| OIL & SAND SEPARATOR<br>50 CUBIC FEET EFFECTIVE CAPACITY     | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | <b>SAN-14</b>         | 8/12/19         |
|                                                              |                       | SHEET<br>2 OF 3 |

VACUUM TESTING FOR PRECAST OIL AND SAND, OIL SEPARATORS

- A) VACUUM TESTING SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
- B) THIS TEST METHOD IS ONLY APPLICABLE TO PRECAST CONCRETE OIL AND SAND, OIL SEPARATORS.
- C) ALL LIFTING HOLES AND EXTERIOR JOINTS SHALL BE FILLED WITH APPROVED HYDRAULIC CEMENT.
- D) ALL PIPES, STUBOUTS, AND OTHER OPENINGS INTO THE SEPARATOR SHALL BE SUITABLY PLUGGED IN SUCH A MANNER AS TO PREVENT DISPLACEMENT OF THE PLUGS WHILE THE VACUUM IS DRAWN.
- E) INSTALLATION AND OPERATION OF VACUUM EQUIPMENT AND INDICATING DEVICES SHALL BE IN ACCORDANCE WITH EQUIPMENT SPECIFICATIONS AND INSTRUCTIONS PROVIDED BY THE MANUFACTURER.
- F) THE TEST HEAD SHALL BE PLACED AT THE INSIDE OF THE TOP OF THE SEPARATOR CASTING AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
- G) A MEASURED VACUUM OF 5 INCHES OF MERCURY SHALL BE DRAWN TO THE SEPARATOR.
- H) ACCEPTANCE FOR THE OIL AND SAND, OIL SEPARATOR SHALL BE DEFINED AS WHEN THE ELAPSED TIME FOR A NEGATIVE PRESSURE HAS NO LOSS:

| <u>SEPARATOR</u> | <u>CAPACITY</u> | <u>TEST TIME</u> |
|------------------|-----------------|------------------|
| OIL AND SAND     | 104 CUBIC FEET  | 120 SECONDS      |
| OIL              | 50 CUBIC FEET   | 120 SECONDS      |

- I) IF THE SEPARATOR FAILS THE TEST, NECESSARY REPAIRS SHALL BE MADE BY THE CONTRACTOR AND THE VACUUM TEST REPEATED UNTIL THE SEPARATOR PASSES THE TEST. REPAIRS ARE TO BE MADE WITH NON-SHRINK GROUT OR HYDRAULIC CEMENT ONLY.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| OIL AND SAND SEPARATOR<br>TEST PROCEDURES                    | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>SAN-14</b>            | 48-19                 | 8/12/19         |
|                                                              |                       | SHEET<br>3 OF 3 |



**CONSTRUCTION NOTES & STANDARDS  
FOR STORM SEWER INSTALLATION**

1. STORM SEWER INSTALLED WITHIN THE CITY RIGHT-OF-WAY OR WHICH THE CITY IS TO MAINTAIN SHALL BE COMPRISED OF THE FOLLOWING KINDS OF PIPES:
  - a. CIRCULAR REINFORCED CONCRETE PIPE – ASTM C76 WITH PREMIUM JOINT PER ASTM C443.
  - b. ELLIPTICAL REINFORCED CONCRETE PIPE – ASTM C507 WITH PREMIUM JOINT PER ASTM C443.
  - c. PVC PIPE – ASTM D3034 (SDR 35 MINIMUM OR AS RECOMMENDED BY THE CITY ENGINEER), TWENTY-FOUR INCH DIAMETER MAXIMUM WITH PREMIUM JOINT PER ASTM D3212.
  - d. CORRUGATED SMOOTH INTERIOR HDPE PIPE WITH APPROVED COVER AND BEDDING PER STM-3.
2. STORM SEWER LOCATED OUTSIDE THE CITY RIGHT-OF-WAY OR WHICH THE CITY WILL NOT MAINTAIN THE FOLLOWING PIPES MAY BE USED WITH THE APPROVAL OF THE CITY ENGINEER IN ADDITION TO THOSE PREVIOUSLY STATED IN ITEM 1:
  - a. ALUMINIZED TYPE-2 METAL PIPE WITH SMOOTH INTERIOR.
  - b. ADS N-12 CORRUGATED SMOOTH BORE PIPE.
3. RCP FOR 12" AND 15" SHALL BE A CLASS IV TYPE. CLASS III FOR 18" AND LARGER PIPE SHALL BE CLASS III WITH LOAD BEARING QUALIFICATION APPROVED BY THE CITY ENGINEER. CLASS IV PIPE SHALL BE USED IN CASES OF DEEP SEWERS OR HEAVY LOADS.
4. THE CITY MAY CONSIDER THE ON SITE USE OF CORRUGATED SMOOTH INTERIOR HDPE PIPE FOR STORM SEWERS AS SPECIFIED ON SHEET STM-3.
5. MANHOLE TO MANHOLE DISTANCE SHALL NOT EXCEED 400 FEET.
6. FLEXIBLE GASKETS ON ALL SEWER LINE CONNECTIONS AND ALL PRECAST MANHOLE COLLARS SHALL BE ASTM C-923
7. A MANHOLE SHALL ALSO BE INSTALLED AT ALL PIPE SIZE CHANGES AND DIRECTION CHANGES.
8. ALL ADJUSTMENTS TO CASTINGS SHALL BE MADE WITH PRECAST CONCRETE GRADE RINGS.
9. ALL PAVEMENT BASINS (i.e. CATCH & INLET) SHALL BE BROUGHT TO GRADE WITH PRECAST CITY WILL CONSIDER EQUAL TO PRECAST ONLY IN WRITING. BRICK WILL NOT BE ALLOWED.
10. FLOW LINES SHALL BE FORMED SO AS TO MATCH ALL PIPE PENETRATION INVERTS.
11. STORM SEWER MANHOLE CONNECTIONS SHALL BE THE ALOK OR ZLOK TYPE.
12. STORM LINE EASEMENTS SHALL BE PROVIDED WITH CITY ACCESS FOR THE PURPOSE OF MAINTENANCE OF UTILITIES. ACCESS DRIVE SHALL BE PER THE DETAIL ON G-8. OTHER MATERIALS MAY BE APPROVED BY THE CITY. SAID EASEMENTS SHALL BE DESIGNATED AS BLOCKS.
13. CLAY DAM IS TO BE PROVIDED 6 FT. FROM THE LATERAL TERMINUS PER G-10
14. CROSSING AS HEREIN DEFINED SHALL BE EITHER PERPENDICULAR TO ANY PART OF A SKEW OR ANGLE AT THE CROSSING.
15. WHERE MINIMUM CLEARANCES ARE NOT MAINTAINED PER DRAWING G-7 DIP CLASS 52 SHALL BE USED.
16. SHOULD EXCAVATION ENCOUNTER EXISTING DRAINLINES, REPAIR SHALL BE MADE VIA A MINIMUM (6") SIX INCH TEE OR KOR-N-TEE BOOT INTO THE STORM SYSTEM. (6") SIX INCH PVC SDR 35 PIPE TO RIGHT-OF-WAY LINE, USING A REDUCER AND/OR VARIOUS BENDS TO MAKE THE CONNECTION. FERNCOS MAY BE USED IN THIS APPLICATION. SEE SHEET STM-8 FOR INSTALLATION DETAIL.
17. WHEN A WATER SERVICE AND/OR GAS SERVICE IS DISTURBED OR DISCONNECTED DURING TRENCH OR SHEETING EXCAVATION, SUCH SERVICE SHALL BE PLANKED USING 2"x8" HARDWOOD MINIMUM, 18" INTO VIRGIN SOIL, EACH END.
18. UPON REVIEW OF THE CITY ENGINEER, IF AN ATTRACTIVE NUISANCE OR ANY OTHER SAFETY HAZARD IS DEEMED TO EXIST, THE USE OF A STEEL SAFETY RACK OR "CHILD PROOF BARS" WILL BE REQUIRED. SUBMIT SPECIFICATIONS FOR CITY APPROVAL.
19. WHERE A STORM SYSTEM IS PROPOSED ALONG AN EXISTING ROADWAY, AREA DRAINS SHALL BE PROVIDED FOR EACH PROPERTY. LOCATION, SIZE AND MANNER OF CONNECTION TO THE STORM SYSTEM SHALL BE DETERMINED AT THE PLAN REVIEW STAGE.
20. EACH SUBLOT IS TO BE PROVIDED WITH ITS OWN STORM CONNECTIONS TO BE USED BY THAT SUBLOT ONLY. STORM CONNECTIONS SHALL NOT BE PERMITTED TO BE SHARED BY ADJACENT PROPERTIES.
21. STORM SEWER PVC PIPE CONNECTIONS INTO RCP STORM SHALL BE THE KOR-N-TEE TYPE.
22. RCP STORM SEWER CONNECTIONS INTO RCP STORM SHALL BE WITH AN INSTALLED TEE OR SOLID CONCRETE BRICK AND MORTAR.
23. WHERE THE STORM LATERAL IS LESS THAN 3 FT. IN DEPTH D.I.P. CLASS 52 SHALL BE USED.
24. PVC STORM SEWER REPAIRS SHALL BE MADE USING SOLID SLEEVE COUPLINGS OR FERNCO FITTINGS.
25. DUAL BARREL CULVERTS SHALL NOT BE ALLOWED.
26. RECYCLED STONE IS NOT ALLOWABLE IN THE CITY OF AVON.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                    |
|--------------------------------------------------------------|-----------------------|--------------------|
| CONSTRUCTION NOTES<br>FOR STORM SEWER<br>INSTALLATION        | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-1</b>             | 48-19<br>28-20        | 8/12/19<br>4/14/20 |

## DEFLECTION TEST

ALL PLASTIC PIPE SHALL BE TESTED FOR PROPER INSTALLATION BY MEANS OF DEFLECTION ATTAINMENT. IN ADDITION TO MATERIAL TESTS, CONSTRUCTION COMPACTION AND LEAKAGE TESTS REQUIRED ELSEWHERE IN THESE REGULATIONS, THE CONTRACTOR IS REQUIRED TO INSTALL THE PIPE IN SUCH A MANNER THAT THE DIAMETRIC DEFLECTION SHALL NOT EXCEED FIVE PERCENT (5%). TO ATTAIN THIS REQUIREMENT, THE BACKFILL MATERIALS SURROUNDING THE PIPE SHALL BE COMPACTED TO THE REQUIRED STANDARD DENSITIES CALLED OUT IN ASTM D 2321. THE SECTORS REQUIRING COMPACTION SHALL INCLUDE THE BED AND SIDE FILL MATERIAL, AS WELL AS THE MATERIAL PLACED ABOVE THE PIPE FOR A DISTANCE OF EIGHTEEN (18) INCHES.

DEFLECTION TESTS SHALL BE PERFORMED NO SOONER THAN 30 DAYS FOLLOWING COMPLETION OF BACKFILL, AND AGAIN ONE YEAR AFTER ACCEPTANCE. DEFLECTION TESTS SHALL BE PERFORMED BY AN ACCREDITED, INDEPENDENT TESTING LABORATORY THAT SHALL SUBMIT VERIFICATION RECORDS OF RESULTS AND DATES TESTED. MAXIMUM RING DEFLECTION OF THE PIPE UNDER LOAD SHALL BE LIMITED TO 5% OF THE INSIDE DIAMETER.

DEFLECTION LIMITS TABLE  
ASTM D3034

| NOM. PIPE DIA. (IN.) | MANDRELL SIZE |        |
|----------------------|---------------|--------|
|                      | SDR 35        | SDR 26 |
| 6                    | 5.45          | 5.33   |
| 8                    | 7.28          | 7.12   |
| 10                   | 9.08          | 8.87   |
| 12                   | 10.79         | 10.54  |
| 15                   | 13.20         | 12.90  |
| 18                   | 16.13         | 15.76  |
| 21                   | 19.01         | 18.57  |
| 24                   | 21.36         | 20.87  |

ALL PIPE FAILING TO MAINTAIN THE MINIMUM DEFLECTION DIAMETER OR LARGER LISTED FOR THE APPLICABLE TYPE OF PIPE SHALL BE CONSIDERED TO HAVE BEEN IMPROPERLY INSTALLED AND SHALL BE RE-LAID OR REPLACED BY THE CONTRACTOR.

DEFLECTION TESTING SHALL BE ACCOMPLISHED BY USING AN ELECTRONIC DEFLECTOMETER WHICH PRODUCES A CONTINUOUS RECORD OF DIAMETER READINGS OR BY PULLING A SLED TYPE - FULL CIRCLE GAGE THROUGH THE PIPE. SLED TYPE - FULL CIRCLE GAGES SHALL BE A MANDREL TYPE. THE DIAMETER OR MINIMUM DIMENSION OF THE SLED TYPE - FULL CIRCLE GAGE SHALL BE AS LISTED IN THE DEFLECTION LIMITS TABLE FOR THE TYPE AND NOMINAL DIAMETER OF THE PIPE BEING TESTED.

## SEWER PHOTOGRAPHY (CCTC)

ALL SEWERS SHALL BE PRESSURE JET AND VACUUMED BY THE CONTRACTOR BEFORE VIDEO PHOTOGRAPHY. ALL SEWER INTERIORS SHALL BE VIDEOTAPE BY AN APPROVED TESTING COMPANY AT THE DIRECTION OF THE UTILITY DEPT. AND TWO COPIES OF DVD AND THE ACCOMPANYING REPORT SHALL BE DELIVERED TO THE UTILITY DEPT. PRIOR TO ACCEPTANCE OF THE SEWER.

- A) ALL VIDEO TAPING SHALL BE FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
- B) VIDEO TAPING SHALL BE MADE UPSTREAM ONLY.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| STORM SEWER<br>ACCEPTANCE TESTING                            | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-2</b>             | 48-19                 | 8/12/19 |



# CORRUGATED SMOOTH INTERIOR HDPE STORM PIPE SPECIFICATIONS

1. THE CITY OF AVON SHALL CONSIDER THE USE OF HDPE IN AREAS OF DEDICATED RIGHT-OF-WAY ON A CASE-BY-CASE BASIS. ONLY PIPE DIAMETERS OF 12" OR GREATER SHALL BE CONSIDERED.
2. PIPE TYPE IS TO BE THE HANCOR SURE-LOK OR ADS N-12 WT TYPE OR EQUAL (AASHTO M294, TYPE S OR ASTM F2306) WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. PIPE SHALL BE BELL AND SPIGOT TYPE WITH WATERTIGHT GASKET JOINING SYSTEM ACCORDING TO ASTM D3212.
3. FITTINGS SHALL BE PREFABRICATED AND CONFORM TO AASHTO M252, AASHTO M294, OR ASTM F2306.
4. TRANSITIONS FROM ONE TYPE OF PIPE TO ANOTHER OR FROM ONE SIZE TO ANOTHER SHALL BE DONE WITH PREFABRICATED FITTINGS OR FERNCOS. CONCRETE COLLARS SHALL ONLY BE USED WITH THE APPROVAL OF THE CITY ENGINEER.
5. STORM LATERAL CONNECTIONS SHALL BE MADE USING A FACTORY TEE WITH A 6" ADAPT WITH SDR 35 BELL AND 6" N-12 GASKET (NYLOPLAST ADS N-12 X SWR SDR35 BXB ADAPTER). STORM LATERAL CONNECTIONS MAY ALSO BE MADE USING AN INSERT TEE MANUFACTURED SPECIFICALLY FOR HDPE TYPE PIPE, AS MAY BE APPROVED BY THE CITY ENGINEER, PRIOR TO ANY CONSTRUCTION.
6. INSTALLATION SHALL REQUIRE THE FOLLOWING MINIMUM PIPE COVER:

| NOMINAL DIAMETER (IN) | MINIMUM COVER (IN) |
|-----------------------|--------------------|
| 12                    | 12                 |
| 15                    | 12                 |
| 18                    | 13                 |
| 24                    | 17                 |
| 30                    | 22                 |
| 36                    | 25                 |
| 42                    | 29                 |
| 48                    | 33                 |
| 60                    | 40                 |

TOTAL MINIMUM COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

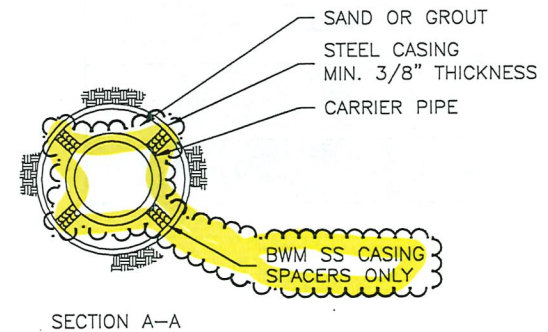
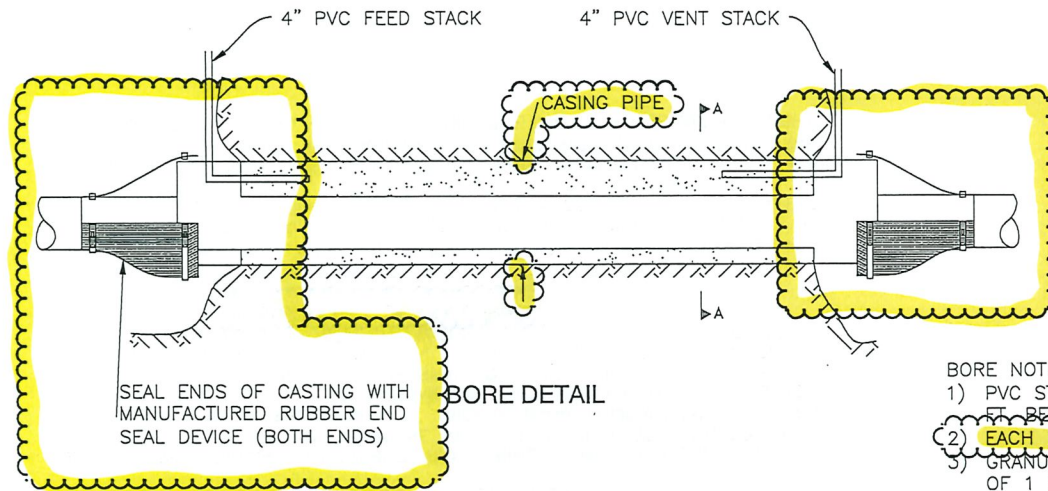
7. IF THE DESIGN ENGINEER CAN PROVIDE CALCULATIONS THAT PROVE FLOTATION WILL NOT BE A FACTOR THE FOLLOWING MINIMUM PIPE COVER MAY BE ACCEPTABLE:
  - A.) INSTALLATION IN TRAFFICKED AREAS SHALL REQUIRE A MINIMUM OF ONE (1) FOOT OF COVER FOR PIPE UP TO AND INCLUDING 48" DIAMETER. 54" AND 60" DIAMETER PIPE SHALL REQUIRE A MINIMUM OF TWO (2) FEET OF COVER.
  - B.) INSTALLATION IN GREEN SPACE AREAS SHALL REQUIRE A MINIMUM OF ONE (1) FOOT OF COVER FOR ALL DIAMETERS.
  - C.) WHEN NO PAVEMENT WILL BE INSTALLED, BUT VEHICLE TRAFFIC IS EXPECTED (GRAVEL DRIVEWAY) A TOTAL MINIMUM COVER OF 18 INCHES FOR PIPE SIZES UP TO AND INCLUDING 48" DIAMETER IS REQUIRED. 54" AND 60" DIAMETER PIPE SHALL REQUIRE A MINIMUM 30 INCHES OF COVER TO MINIMIZE RUTTING.
8. TEMPORARY MINIMUM PIPE COVER REQUIREMENTS FOR CONSTRUCTION EQUIPMENT LOADING SHALL BE PER THE MANUFACTURER'S RECOMMENDATION.
9. TRENCH DETAIL SHALL CONFORM TO DRAWING G-6 WITH THE FOLLOWING EXCEPTIONS:

| NOMINAL PIPE DIAMETER (IN) | MINIMUM TRENCH WIDTH (IN) |
|----------------------------|---------------------------|
| 48                         | 80                        |
| 54                         | 88                        |
| 60                         | 96                        |

PIPE COVER FOR HDPE PIPE SHALL BE AS DISCUSSED ABOVE AND APPROVED BY THE CITY.

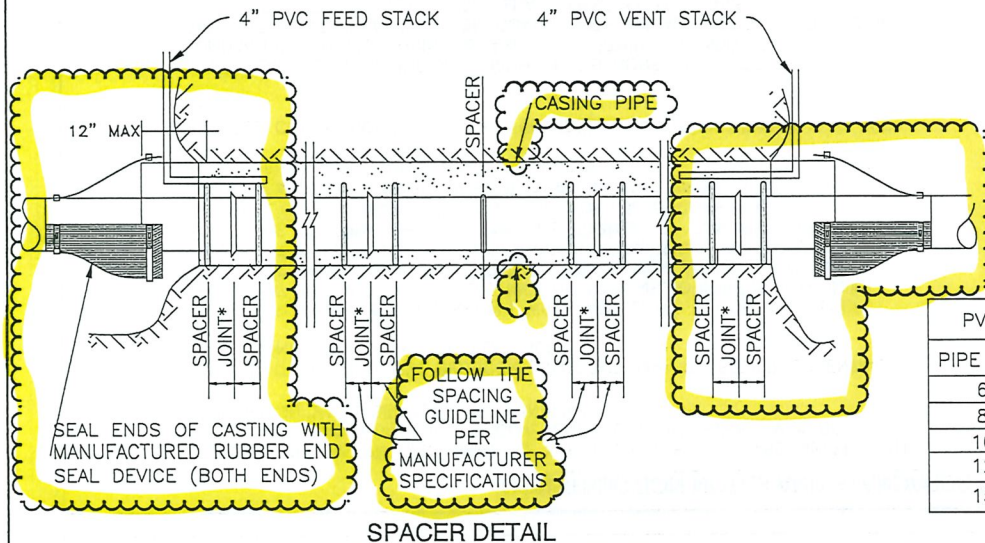
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| HDPE NOTES                                                   | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-3</b>             | 48-19                 | 8/12/19 |

# WOOD SKID DETAIL



## BORE NOTES:

- 1) PVC STACKS ARE TO BE FILLED TO WITHIN 2 FT. OF GRADE AND CUT AND CAPPED 2 FT. BELOW GRADE.
- 2) EACH END SHALL BE SEALED WITH A MANUFACTURED RUBBER END SEAL DEVICE.
- 3) GRANULAR BEDDING IN BORE PIT AND RECEIVING PIT SHALL BE PLACED TO A MINIMUM OF 1 FOOT ABOVE THE PIPE.
- 4) BONDED SKIDS MAY BE PERMITTED IN LIEU OF RETAINING GLANDS, AS APPROVED BY THE CITY UTILITY DEPARTMENT.
- 5) SANITARY PIPE THROUGH THE CASING SHALL BE PVC SDR-35 ASTM D3034 OR SDR 26 IF 17FT DEEP OR DEEPER.
- 6) ANY TRANSITION OF PIPE FROM DIP TO PVC, SHALL BE DONE WITH A TRANSITIONAL ADAPTER AS DETAILED ON SHEET S-1.
- 7) MINIMUM CASING WALL THICKNESS IS TO BE 3/8"
- 8) CASING SIZE FOR PIPE IN EXCESS OF 16" SHALL BE REVIEWED AND DETERMINED BY THE ENGINEER AT THE TIME OF PLAN REVIEW AND PRIOR TO ANY CONSTRUCTION.
- 9) NO CASING SHALL BE REQUIRED UNDER THE ROAD IF OPEN CUT TRENCHING. THIS SHALL BE AT THE UTILITY DEPARTMENT'S DISCRETION.
- 10) CASING TO BE GROUT FILLED BY USING A GROUT PUMP.
- 11) MIXTURE:  
FLOWABLE FILL CEMENT - 50 LBS.  
FLY ASH - 850 LBS.  
FINE AGGREGATE - 2,100 LBS.  
WATER - 625 LBS.



| PVC CASING SIZE REQUIREMENTS |           |             |
|------------------------------|-----------|-------------|
| PIPE SIZE                    | BELL SIZE | CASING SIZE |
| 6"                           | 7.23"     | 12"         |
| 8"                           | 9.50"     | 16"         |
| 10"                          | 11.86"    | 18"         |
| 12"                          | 14.06"    | 24"         |
| 15"                          | 17.93"    | 24"         |

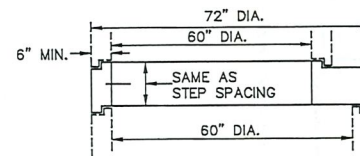
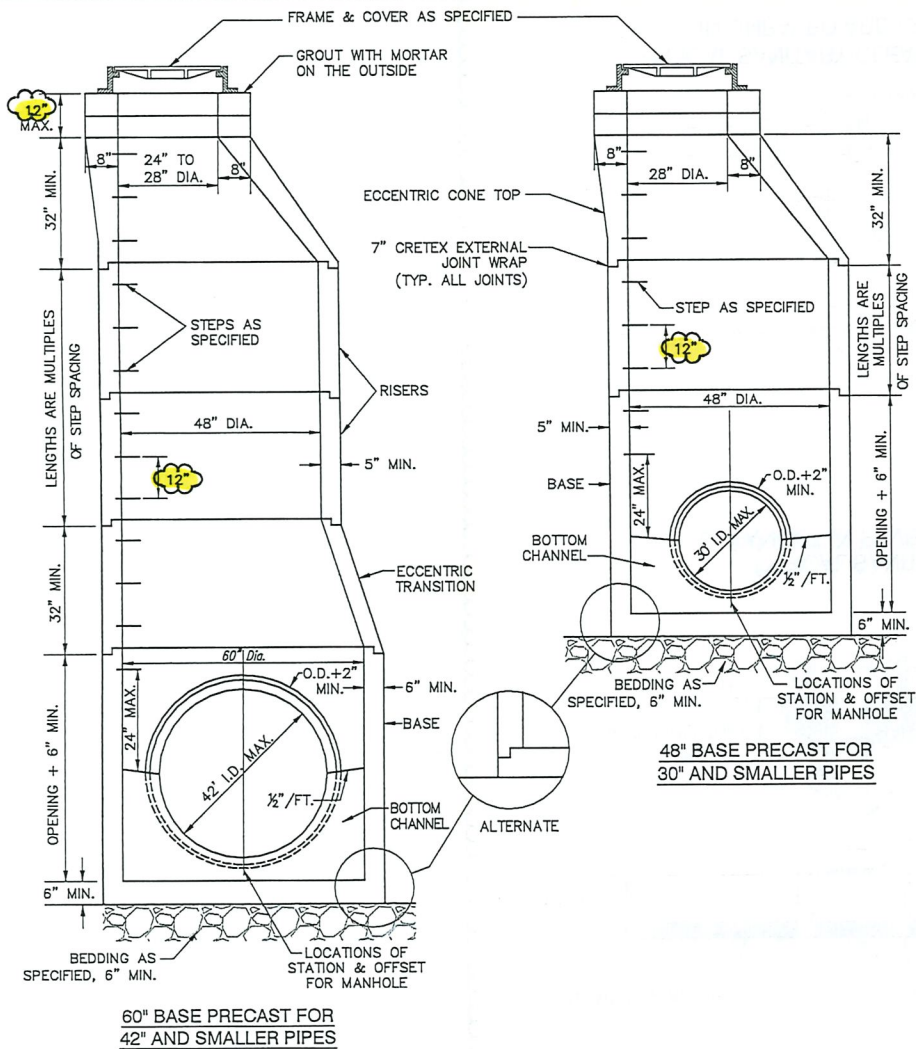
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |               |
|--------------------------------------------------------------|-----------------------|---------------|
| STORM PIPE BORE DETAIL                                       | ADOPTION<br>ORDINANCE | DATE          |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | STM-4                 | 48-19 8/12/19 |



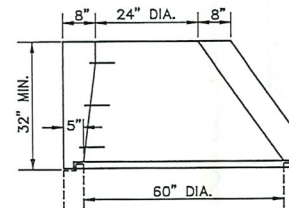
### CONSTRUCTION NOTES AND STANDARDS FOR PRECAST STORM MANHOLES

1. SECTIONS OF THE PRECAST MANHOLE SHALL BE CAST AND ASSEMBLED WITH EITHER ALL TONGUE AND ALL GROOVE ENDS UP. LIFT HOLES MAY BE PROVIDED IN EACH SECTION FOR HANDLING.
2. TOP AND TRANSITION (OR REDUCER) SECTIONS MAY BE EITHER ECCENTRIC CONE, CONCENTRIC CONE OR FLAT SLAB.
3. BASES FOR MANHOLES ARE SHOWN WITH MONOLITHIC FLOOR AND RISER WHICH MAY BE CAST IN ONE OR TWO OPERATIONS. OPENINGS FOR INLET AND OUTLET PIPES SHALL BE PRECAST FOR A NEW MANHOLE TO MEET PROJECT REQUIREMENTS. A FIELD CORE IS PERMISSIBLE ON AN EXISTING STRUCTURE. BOTTOM CHANNELS MAY BE FORMED OF CONCRETE PRECAST IN THE BASE OR BY FIELD CONSTRUCTION. FOR FIELD CONSTRUCTION THE CHANNEL MUST BE FORMED W/PIPE THRU AS THE FORM. FLOOR AND BARREL SHALL BE A MONOLITHIC POUR TYPE.
4. FLEXIBLE CONNECTIONS SHALL BE PROVIDED FOR STORM SEWERS PER ASTM C-923.
5. JOINT SEAL BETWEEN PRECAST MANHOLE SECTIONS SHALL BE THE COMBINATION OF AN O-RING & ASPHALTIC STRIP. IN ADDITION, THE EXTERIOR JOINT AREA SHALL BE COATED WITH AN ASPHALTIC MASTIC TO A WIDTH OF 1 FT. ALL JOINT SEAL SHALL MEET ASTM C-443.
6. MATERIALS FOR BASES AND OTHER PRECAST SECTIONS, INCLUDING REINFORCEMENT NOT SPECIFIED HEREON, SHALL COMPLY WITH ODOT SPECIFICATIONS, SECTION 706.13.
7. PRECAST MANHOLE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C478.
8. SEAL LIFT HOLES WITH APPROVED WATER PLUG AND MORTAR, EXCEPTING WHERE THE LIFT HOLE INSERTS ARE PLASTISIZED.
9. PRECAST REINFORCED CONCRETE GRADE RINGS SHALL BE USED IN ALL CASES. BRICK FOR THIS PURPOSE WILL NOT BE PERMITTED. INTERIOR AND EXTERIOR TO BE SEALED WITH 1" THICK MINIMUM COMBINATION OF 10 LBS. WATER PLUG AND 80 LBS. MORTAR MIX. PROVIDE MINIMUM OF ONE GRADE RING. ASPHALTIC MASTIC STRIPS SHALL BE USED BETWEEN ALL GRADE RINGS AND CASTINGS, IN ADDITION TO THE PORRIDGING OF THE INTERIOR AND EXTERIOR AREAS WITH THE WATER PLUG MIX EXCEPT IN CONCRETE ROADWAYS. **12" MAX HEIGHT OF GRADE RINGS.**
10. ALL MANHOLE CASTINGS ARE TO BE E.J.I.W. 1040 SERIES HEAVY DUTY CASTING OR EQUAL. HEAVY DUTY BOLT DOWN CASTING AND COVER (E.J.I.W. 1040-WT) OR EQUAL SHALL BE USED WHENEVER A STORM MANHOLE IS IN AN OFF-SITE EASEMENT OR NEAR A WATERWAY OR WITHIN ROADWAY AREAS.
11. CASTING & GRADE RINGS SHALL BE SET WITH AN ASPHALTIC STRIP BETWEEN CONE, GRADE RING, AND CASTING IN A HYDROCRETE OR REINFORCED FRAME CASTING IN A 5' SQ. X 6" THICK CONCRETE PAD IN PAVED ASPHALT AREAS.
12. STEPS SHALL BE CO-POLYMER POLYPROPYLENE ASTM D-4101-82. THE RISER HOLE SHALL BE ALIGNED WITH THE STEPS.
13. BEDDING SHALL BE 6" MIN. #57 LIMESTONE. BACKFILL SHALL CONFORM TO PIPE TRENCH DETAIL.
14. MANHOLES SHALL NOT BE INSTALLED IN SIDEWALKS OR ROADWAY AREAS WHENEVER POSSIBLE.
15. FOR 60" MANHOLES, E.J.I.W. #2075 52" RING WITH 36" OPENING IS REQUIRED

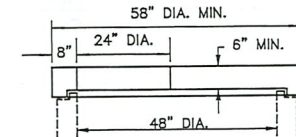
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS   |                       |         |
|----------------------------------------------------------------|-----------------------|---------|
| CONSTRUCTION NOTES &<br>STANDARD FOR PRECAST<br>STORM MANHOLES | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-5</b>               | 48-19                 | 8/12/19 |



FLAT SLAB TRANSITION

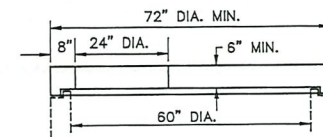


ALTERNATE ECCENTRIC CONE TOP



FLAT SLAB TOP

8" Min.

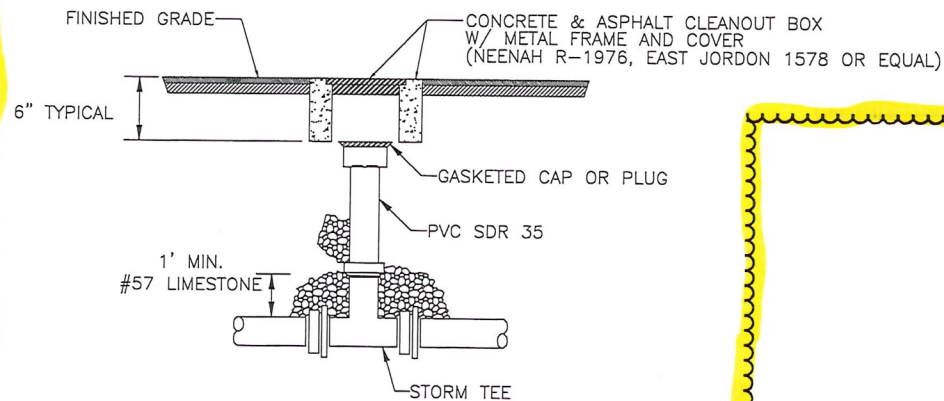


FLAT SLAB TOP

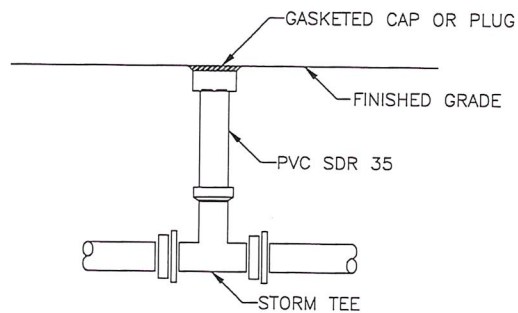
CITY OF AVON  
CONSTRUCTION STANDARDS  
AND SPECIFICATIONS

| PRECAST STORM MANHOLE                      | ADOPTION ORDINANCE | DATE    |
|--------------------------------------------|--------------------|---------|
| STANDARD CONSTRUCTION DRAWING <b>STM-6</b> | 48-19              | 8/12/19 |





TYPICAL SANITARY  
CLEANOUT IN PAVED AREAS



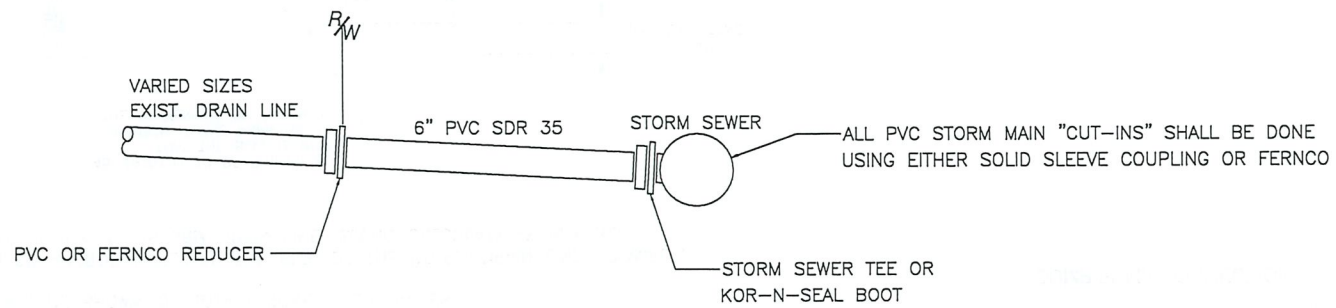
TYPICAL SANITARY CLEANOUT  
IN UNPAVED AREAS

NOTES:

1. ALL CLEANOUT'S & WATER CURB BOXES LOCATED IN DRIVEWAY OR SIDEWALK ARE TO BE PROVIDED WITH A METAL FRAME AND COVER.
2. A TEE OR WYE IS ACCEPTABLE FOR STORM CLEANOUTS.
3. G.C. TO INSTALL CLEANOUTS AT ANY PIPING ANGLE CHANGES AND EVERY 100' C.O. TO BE INSTALLED ON ALL ROOF DRAINS.

CITY OF AVON  
CONSTRUCTION STANDARDS  
AND SPECIFICATIONS

| STORM SEWER<br>CLEANOUT DETAILS                  | ADOPTION<br>ORDINANCE | DATE    |
|--------------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-7</b> | 48-19                 | 8/12/19 |



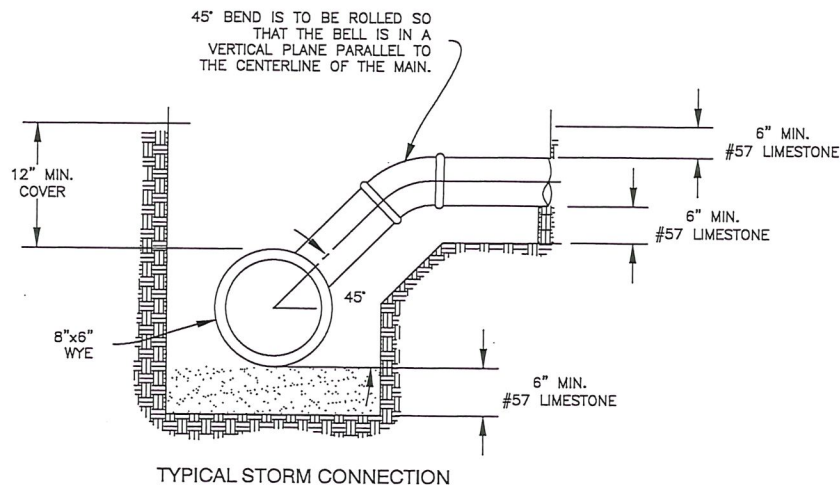
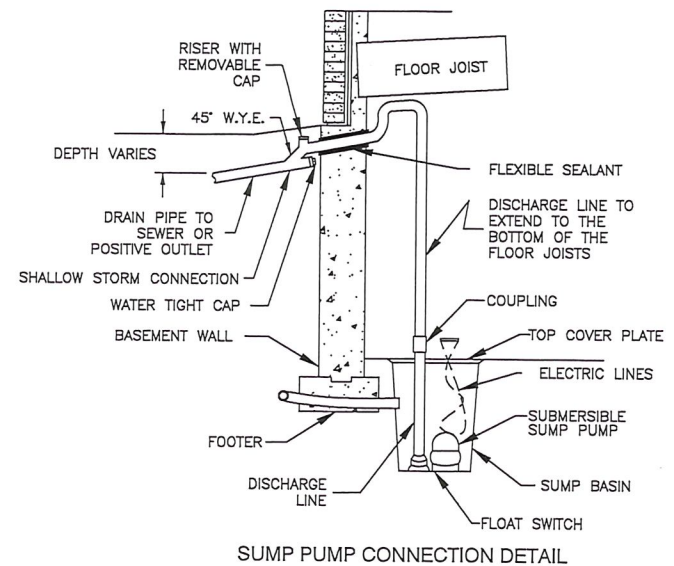
NOTE: VARIED BENDS ARE TO BE USED AS  
NEEDED TO ESTABLISH ACCEPTABLE GRADE.

### STORM SEWER EXIST. DRAIN LINE REPAIR

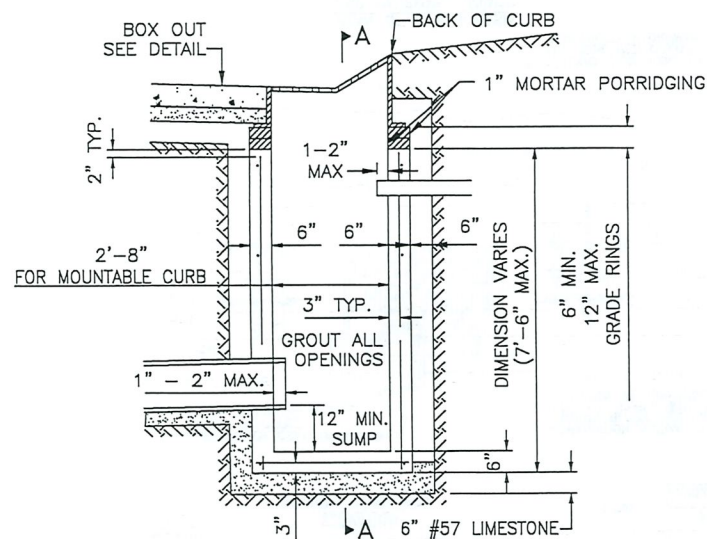
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| STORM SEWER<br>DRAIN LINE REPAIR                             | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-8</b>             | 48-19                 | 8/12/19 |



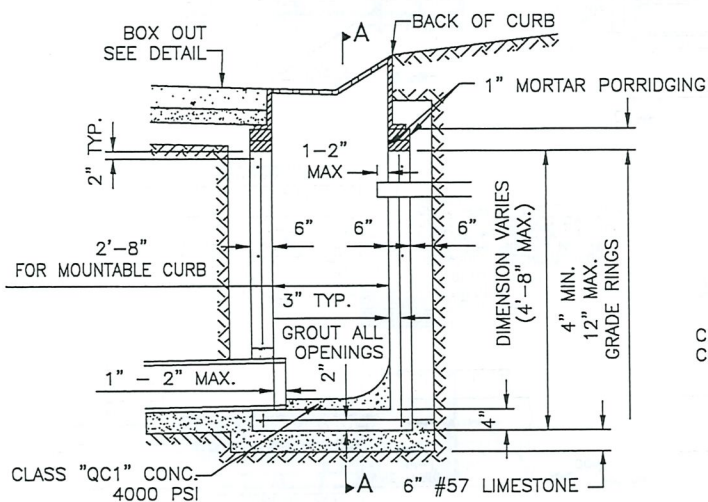
- A) STORM SEWERS MUST STOP A MINIMUM OF FIVE FEET (5') FROM THE BUILDING WALL AND ALSO BE A MINIMUM OF TWO (2') FEET ABOVE A FOOTER. THERE SHALL NOT BE A DIRECT CONNECTION OF THE STORM SEWER TO FOOTER TILE. SEE DETAIL.
- B) IF WHEN INSTALLING A NEW STORM SEWER LATERAL, A REAR YARD DRAIN IS NECESSARY, THIS CONNECTION WILL BE MADE IMMEDIATELY AT THE STREET CONNECTION. AN INDIVIDUAL INSPECTION TEE SHALL BE INSTALLED AND A COMPLETELY SEPARATE SIX INCH (6") LATERAL SHALL BE INSTALLED FOR THE REAR YARD DRAIN. ALSO, THERE SHALL NOT BE DOWN SPOUT OR SUMP PUMP DRAINS CONNECTED TO REAR YARD DRAINS.
- C) STORM SEWER LATERAL SHALL BE A MINIMUM SIZE OF 6" P.V.C. GASKETED PIPE (SDR35 - 3034).
- D) BACKFILL AND BEDDING SHALL BE A MINIMUM 4" UNDER AND 6" OVER ALL PIPE. STONE SHALL BE #8 OR #57 LIMESTONE.
- E) INSPECTION AND CLEAN OUT TEES SHALL BE PER AVON STORM STANDARD STM-7. TEES SHALL BE LOCATED EVERY 100 LINEAR FEET AND AT THE STREET RIGHT OF WAY.
- F) THERE SHALL NOT BE ANY INSPECTOR OR CLEAN OUT TEES WITHIN DRIVEWAYS OR ROADWAY. SHOULD THIS APPEAR, TEES SHALL BE RELOCATED OUT OF THESE AREAS.
- G) THE FOLLOWING MINIMUM BARREL TO BARREL CLEARANCE SHALL BE MAINTAINED BETWEEN LATERALS:  
 SANITARY AND WATER = 10FT  
 STORM AND WATER = 10FT  
 SANITARY AND STORM = 5FT
- H) ALL PIPE REQUIREMENTS SHALL BE SHOWN ON STORM SEWER PLAN NOTES.
- I) YARD DRAINS ARE TO BE SIZED APPROPRIATELY TO THE SIZE OF THE STORM DRAIN LINE. EXAMPLE: 18" YARD DRAIN TO BE USED WITH A 12" STORM DRAIN LINE. SIZING CALCULATIONS MAY BE REQUIRED.



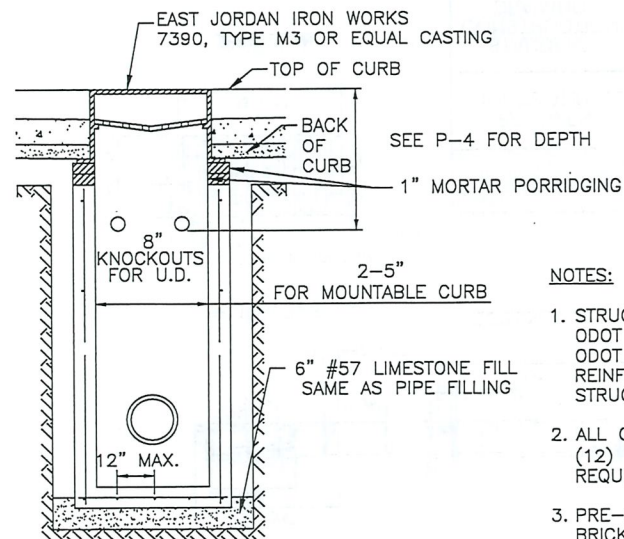
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| STORM SEWER<br>LATERAL DETAILS<br>& SPECIFICATIONS           | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-9</b>             | 48-19                 | 8/12/19 |



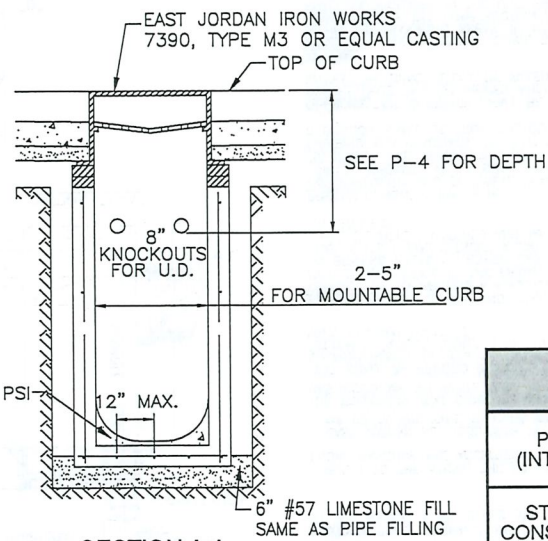
CATCH BASIN - TYPE "A" (PREFERRED)



CATCH BASIN - TYPE "B"



SECTION A-A



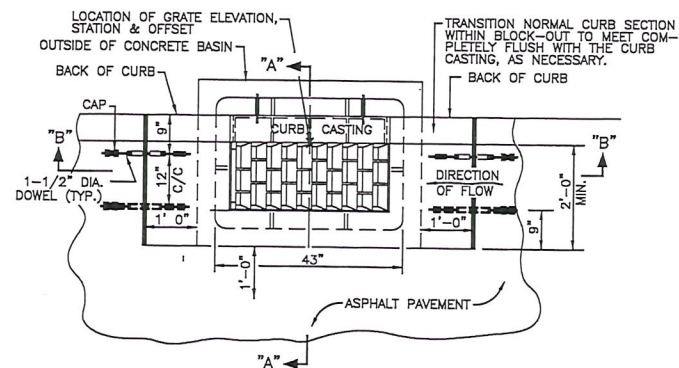
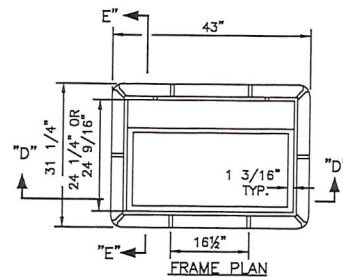
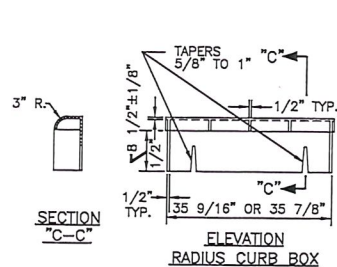
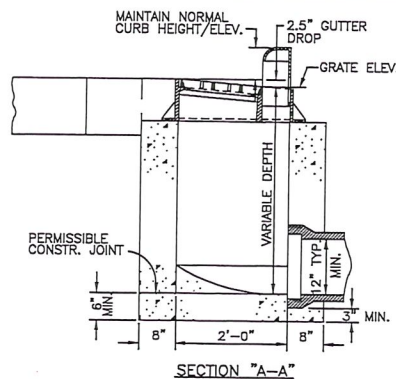
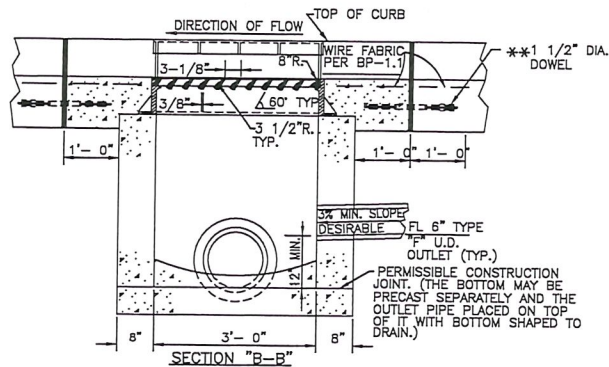
SECTION A-A

**NOTES:**

1. STRUCTURES SHALL BE PRECAST PER ODOT CMS 706.13. CONCRETE SHALL BE ODOT CLASS QC1 4000 PSI IN 28 DAYS. REINFORCING SHALL BE PER CMS 706.13. STRUCTURE SHALL BE TRAFFIC BEARING.
2. ALL CATCH BASIN INVERTS LESS THAN (12) TWELVE INCHES IN DEPTH SHALL REQUIRE THE INVERT TO BE POURED.
3. PRE-CAST RINGS ARE PREFERRED. BRICK SHALL NOT BE PERMITTED IN ANY CIRCUMSTANCE. CAST-IN-PLACE CONCRETE IS ALLOWABLE.
4. ALL CB/IB INSTALLATIONS WILL REQUIRE THE USE OF A 12" SUMP.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| PAVEMENT CATCH BASIN<br>(INTEGRAL CONCRETE CURB)             | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-10</b>            | 48-19                 | 8/12/19 |





\* 1" EXPANSION JOINT MATERIAL 705.03 AND SEAL PER O.D.T. STANDARD CONSTRUCTION DRAWING BP-2.2.

#### NOTES

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 604-711.12, A.S.T.M. A 48, CLASS 35B GRAY IRON.

SUBJECT TO THE ABOVE, THE FOLLOWING OR APPROVED EQUAL CASTINGS ARE ACCEPTED:

EAST JORDAN No. 7035 WITH TYPE M6 GRATE AND TYPE T6 CURB CASTING.

THE FOLLOWING TEXT SHALL BE CAST INTO THE TOP OF THE CURB CASTING: "DUMP NO WASTE" AND "DRAIN TO WATERWAY"

TEXT SHALL BE PRINTED IN BOLD, CAPITAL LETTERS WITH A MINIMUM HEIGHT OF 3/4". "WATERWAY" MAY BE SUBSTITUTED WITH "STREAM", "RIVER", "LAKE", ETC. ACTUAL PLACEMENT AND LOGO MAY VARY PER MANUFACTURER.

BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE GRATE IN THE FRAME. NO PROJECTIONS SHALL EXIST ON BEARING AREAS OF EITHER CASTING AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING. EACH FRAME AND GRATE SHALL BE FITTED, MATCHED AND MARKED BEFORE DELIVERY TO THE PROJECT.

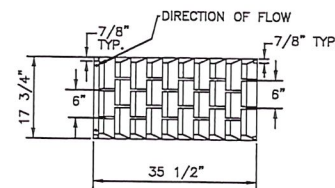
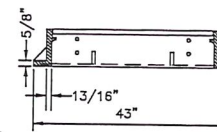
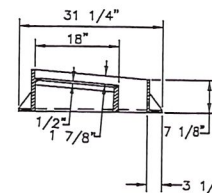
PRECAST CONSTRUCTION IS PERMITTED, (EXCEPT FOR THE BLOCK-OUT PAVEMENT) AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF SIX (6) INCHES AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE. THE WALL THICKNESS REDUCTION SHALL BE FROM THE OUTSIDE.

OPENINGS: PIPE OPENINGS SHALL BE THE O.D. OF PIPE BEING CONNECTED PLUS TWO (2) INCHES WHEN FABRICATED OR FIELD CUT. THE INTERSTITIAL SPACE SHALL BE FILLED WITH GROUT PER CMS 705.20.

#### ANY/ALL

CONSTRUCT THE PAVEMENT, CURB, SUBBASE, SUBGRADE AND BACKFILL WITHIN THE BLOCK-OUT AREAS, IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL BE INCLUDED IN THE UNIT PRICE BID, PER EACH, FOR THE ITEM 2x3' CATCH BASIN.

THIS CATCH BASIN IS NOT INTENDED FOR USE WITH MOUNTABLE TYPE CURBS NOR SHOULD IT BE LOCATED WITHIN A DRIVE APRON.



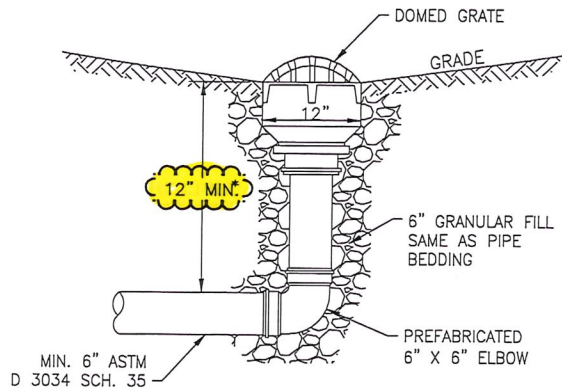
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |               |
|--------------------------------------------------------------|-----------------------|---------------|
| PAVEMENT CATCH BASIN<br>(CURB AND GUTTER, TYPE 2)            | ADOPTION<br>ORDINANCE | DATE          |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | STM-11                | 48-19 8/12/19 |

### STORM SEWER DITCH ENCLOSURE STANDARDS

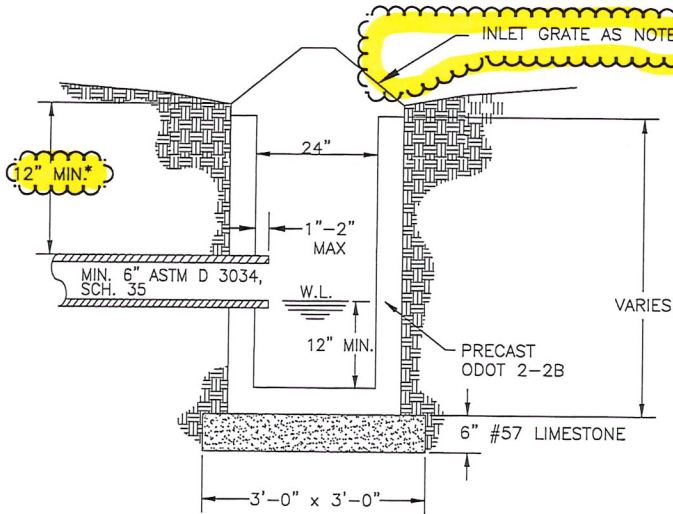
1. DITCH AREAS WITHIN RIGHT-OF-WAYS ALONG EXISTING ROADWAYS SHALL BE ENCLOSED AS DIRECTED BY THE CITY.
2. ALL PROPOSED DEVELOPMENT AREAS ABUTTING AN EXISTING DITCH ALONG EXISTING ROADWAYS SHALL BE ENCLOSED AS DIRECTED BY THE CITY.
3. MINIMUM PIPE SIZE FOR DITCH ENCLOSURES SHALL BE 12".
4. PIPE TYPE PERMITTED INCLUDES PVC SDR. 35 ASTM 3034, RCP CLASS 3, AND HDPE.
5. PIPE TYPE UNDER EXISTING AND/OR PROPOSED DRIVE APRONS SHALL BE RCP CLASS 3, PVC SDR35 OR HDPE WITH APPROVED COVER AND BEDDING.
6. A TRANSITION OF RCP TO PVC AT MID POINT SHALL NOT BE PERMITTED. APPROVED PIPE MATERIAL UNDER DRIVE APRONS SHALL EXTEND FROM STRUCTURE TO STRUCTURE, SUCH AS MANHOLE TO MANHOLE OR BASIN TO BASIN.
7. STORM SEWER MANHOLES SHALL ADHERE TO SHEET STM-6, EXCEPTING THAT A GRATE TYPE LID MAY BE REQUIRED BY THE CITY UNDER CERTAIN CONDITIONS.
8. STORM SEWER MANHOLES SHALL BE SPACED NO FURTHER THAN 400 FEET APART.
9. STORM SEWER BASINS SHALL BE SPACED NO FURTHER THAN 150 FEET APART, EXCEPTING AS PERMITTED BY THE CITY. (SEE SHEET STM-13, OPTION "B" FOR DETAIL)
10. AREA DRAINS SHALL BE SPACED NO FURTHER THAN 100 FEET APART, EXCEPTING THAT SPACING MAY VARY, AS PERMITTED BY THE CITY, TO DRAIN ADJACENT PROPERTY LOW AREAS.
11. AREA DRAIN CONNECTIONS TO THE STORM SYSTEM SHALL BE MADE VIA KOR-N-BOOT IN THE CASE OF RCP AND TEE OR INSERTA TEE IN THE CASE OF PVC AND HDPE STORM SYSTEMS.
12. THE GRADING AT THE ENCLOSED DITCH SHALL HAVE A MODERATE SWALE AREA WITH A MAXIMUM GRADE OF 1.00%± FROM STRUCTURE TO STRUCTURE.
13. AREA DRAINS MAY BE INSTALLED WITH OR WITHOUT A SUMP, AS PERMITTED BY THE CITY.
14. ENCLOSED DITCH AREAS SHALL BE FINE GRADED, SEEDED AND MULCHED.
15. ALL STORM TYPE DRAIN LINES ENCOUNTERED ALONG THE DITCH ENCLOSURE ACTIVITIES SHALL BE CONNECTED TO THE STORM SYSTEM BEING INSTALLED IN ACCORDANCE WITH STM-8.
16. STRUCTURES SHALL BE TRAFFIC BEARING IF REQUIRED BY THE CITY ENGINEER.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| DITCH ENCLOSURE<br>STANDARDS                                 | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>STM-12</b>            | 48-19                 | 8/12/19 |





OPTION "A"

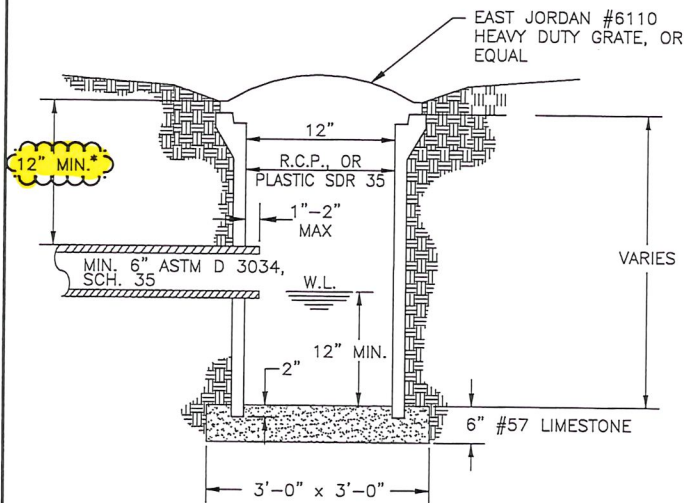


OPTION "B"

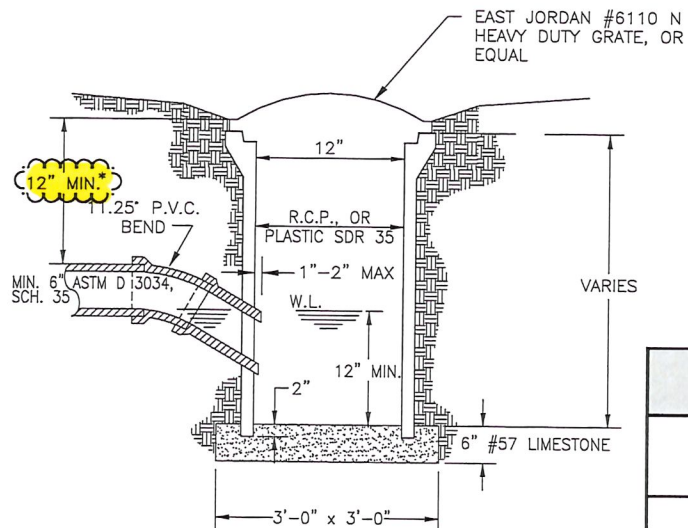
**INLET GRATE**

1. EAST JORDAN #6500 BEEHIVE DITCH GRATE, HEAVY DUTY OR APPROVED EQUAL
2. EAST JORDAN #5110, TYPE M3 SINUSOIDAL GRATE, HEAVY DUTY OR APPROVED EQUAL

GRATE OPTION SHALL BE APPROVED BY THE CITY OF AVON.



OPTION "C"



OPTION "D"

\*UNLESS OTHERWISE APPROVED BY THE CITY OF AVON ENGINEER.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| AREA DRAIN DETAILS                                           | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | STM-13                | 48-19   |
|                                                              |                       | 8/12/19 |

## CONSTRUCTION NOTES AND STANDARDS FOR WATER MAIN INSTALLATIONS

1. ALL WATER MAIN PIPE AND APPURTENANCES SHALL BE AMERICAN MADE.
2. ALL PIPE, UNLESS OTHERWISE CALLED FOR, SHALL BE AWWA C-909 (DR-14, PRESSURE CLASS 235 PSI). C909 PIPE SHALL REQUIRE BRONZE OR STAINLESS STEEL TAP SADDLES FOR RESIDENTIAL SERVICES.  
  
MINIMUM CLASS 52 DUCTILE IRON CEMENT LINED WILL ALSO BE ALLOWED FOR WATER MAINS WITH THE APPROVAL OF THE AVON UTILITY DEPARTMENT. MUST HAVE SOCKET BY PLAIN END RUBBER GASKET PUSH-ON JOINTS WITH RADIALLY COMPRESSED LOCKED IN PLACE RUBBER RING GASKET.  
  
PIPE MATERIALS USED WILL BE IN ACCORDANCE WITH AWWA/NSF STANDARDS. PVC IS PREFERRED.
3. PIPE AND FITTINGS HAVING APPROVED BOLTEST RESTRAINED SLIP-ON JOINTS SHALL BE FURNISHED TO THE LIMITS INDICATED.
4. ALL FITTINGS SHALL BE DUCTILE IRON CLASS 350 CEMENT LINED PER C-110/A21.10 OR COMPACT PER C-153/A21.53. ALL FITTINGS SHALL HAVE BELL OR PLAIN END JOINTS OF THE MECHANICAL BOLTED STUFFING-BOX TYPE WITH PIPE OR FITTING PLAIN END SEALING GASKET AND BOLTED FOLLOWER GLAND.
5. ALL JOINTS ON BENDS, TEES, CROSSES, VALVES, SPECIAL FITTINGS, AND PIPE BETWEEN OFFSETS OR BENDS SHALL HAVE "RETAINED" MECHANICAL JOINTS. ALL VALVES AND TEES SHALL HAVE BELL JOINTS OF THE MECHANICAL BOLTED STUFFING-BOX TYPE. ALL JOINTS ON HYDRANT BRANCHES, INCLUDING TEE OUTLETS, HYDRANT ELBOWS, AND BRANCH VALVES SHALL HAVE "RETAINED" MECHANICAL JOINTS. RETAINED MECHANICAL JOINTS SHALL BE MEGA-LUG OR EQUAL SECURED WITH STAINLESS STEEL BOLTS.
6. THREE INCH (3") AND LARGER VALVES SHALL BE IRON BODY WITH BRONZE MOUNTED RSV VALVES W/ 2" NUTS OPENING LEFT WITH A NON-RISING STEM. ALL VALVES SHALL BE MECHANICAL JOINT. PREFERRED MANUFACTURER AND MODEL NUMBER IS MUELLER # A2360-20. ALL VALVE BODY BOLTS ARE TO BE STAINLESS STEEL.
7. HYDRANTS SHALL BE MUELLER CENTURION MODEL A421, COUNTERCLOCKWISE OPENING; 6" "O" RING CONNECTION; 5' BURY; 4.5" SEAT OPENING WITH TWO (2) 2 1/2" HOSE CONNECTIONS AND ONE (1) 4 1/2" PUMPER CONNECTION TO A 5" HARRINGTON INTEGRAL HYDRANT. ~~STORY. THE THREADS SHALL HAVE AN O.D. OF 3.07" AND 5.76" RESPECTFULLY, AND SHALL CONFORM TO NATIONAL STANDARD DIMENSIONS. THE TOP OR BONNET IS TO BE PRIMED W/ REFLECTIVE SILVER-WHITE PAINT. REMAINDER OF HYDRANT TO BE PAINTED FIRE HYDRANT RED.~~ HEAD AND HOSE CONNECTIONS SHALL BE CONSTRUCTED TO BE ROTATED. WRENCH CONNECTION SHALL BE A 1 1/8" PENTAGON. THE STUFFING BOX SHALL HAVE TWO "O" RING SEALS. PROVIDE ONE HYDRANT WRENCH FOR EVERY PROJECT OR SUBDIVISION/PHASE. HYDRANTS SHALL BE REPAINTED AT THE DIRECTION OF THE CITY, WHEN NEEDED.
8. ALL HYDRANT ASSEMBLIES INCLUDING VALVE, BRANCH TEE OUTLET, PIPE, ANY NECESSARY OFFSETS AND APPROVED HYDRANT SHALL BE NOMINAL SIX (6) INCH SIZE WITH MECHANICAL JOINTS. HYDRANTS ARE TO BE A MINIMUM OF 3 FT. FROM ALL CONCRETE WORK - PAVEMENT & DRIVEWAYS.
9. MECHANICALLY RESTRAIN ALL OFFSETS AND DEFLECTIONS THREE JOINTS PRIOR, THREE JOINTS AFTER, AND THROUGH THE OFFSET. ~~MECHANICALLY RESTRAIN ALL END OF LINE MAINS. THREE JOINTS PRIOR. ALL RESTRAINT HARDWARE TO BE STAINLESS STEEL.~~
10. MINIMUM DEPTH OF WATER MAIN COVER SHALL BE FOUR (4) FEET BELOW FINISH GRADE. MAXIMUM COVER DEPTH SHALL BE NO GREATER THAN 7 (SEVEN) FEET. UTILITY DEPARTMENT MUST APPROVE IF MORE THAN 4 FEET OF COVER. OFFSETS SHALL BE MADE TO ENSURE MINIMUM COVER. WITH THE APPROVAL OF THE CITY ENGINEER THE WATER MAIN MAY BE PERMITTED AT A DEPTH OF LESS THAN (4) FEET BELOW GRADE. A (1) FOOT FROST PROOFING INSULATION ENVELOPE SHALL BE REQUIRED. INSULATION SHALL BE COMPACTED 'WITCOLITE' OR 'GILSULATE 500 XL' OR EQUAL. IN NO CASE SHALL THE MAIN BE LAID LESS THAN (3) FEET BELOW GRADE. THIS SAME REQUIREMENT SHALL APPLY IN INSTANCES WHERE A WATER MAIN CROSSES OVER AN OPEN END CULVERT OR BRIDGE.
11. ALL WATER MAIN TRENCHES AND EXCAVATIONS UNDER EXISTING OR FUTURE PAVEMENT OR SIDEWALKS OR DRIVES SHALL BE BACKFILLED WITH COMPACTED 304 LIMESTONE AGGREGATE. WATER LINE BEDDING & COVER SHALL BE WASHED #8 OR #9 LIMESTONE.
12. THE CONTRACTOR WILL BE RESPONSIBLE FOR HYDROSTATIC PRESSURE TESTING PER AWWA C600 STANDARD OF THE WATER MAIN(S), BEGINNING AT THE TIE-IN LOCATION TO AN EXISTING MAIN, IN ACCORDANCE TO THE CITY OF AVON'S STANDARDS. FAILURE OF TEST OR ANY DAMAGE TO EXISTING WATER MAIN FACILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ALL VALVES ARE TO BE BACK CHECKED WITHIN THE TEST AREA.
13. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE PROVISIONS RELATED TO PUBLIC IMPROVEMENTS IN SECTION 163.64 OF THE OHIO REVISED CODE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING OHIO UTILITIES PROTECTION SERVICE (O.U.P.S.) AT 1-800-362-2764 AND THOSE OWNERS OF UNDERGROUND UTILITIES IN THE VICINITY OF ANY WORK TO BE PERFORMED.
14. THE CONTRACTOR SHALL PROVIDE TAPS FOR DISINFECTION BY CHLORINATION PER AWWA C651. THE CITY OF AVON'S UTILITY DIRECTOR SHALL DETERMINE THE LOCATION AND NUMBER OF TAPS.
15. SIZE ON SIZE TAPPING SLEEVES WILL NOT BE PERMITTED.
16. TAPPING VALVE SHALL BE FLANGED OR MJ X MJ.
17. PROPOSED FACILITIES MUST MAINTAIN A MINIMUM PRESSURE OF 35 PSI DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                    |
|--------------------------------------------------------------|-----------------------|--------------------|
| WATER MAIN<br>CONSTRUCTION NOTES<br>& STANDARD               | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING W-1                      | 48-19<br>28-20        | 8/12/19<br>4/14/20 |
|                                                              |                       | SHEET<br>1 OF 2    |



## CONSTRUCTION NOTES AND STANDARDS FOR WATER MAIN INSTALLATIONS (CONT.)

18. ALL WATER SERVICE CONNECTIONS SHALL BE LAID NOT LESS THAN FOUR (4) FEET BELOW ESTABLISHED STREET GRADE, NOT LESS THAN FOUR (4) FEET BELOW GROUND SURFACE. THE MINIMUM HORIZONTAL SEPARATION SHALL BE:
  - TEN FEET (10') BETWEEN WATER SERVICE AND SANITARY.
  - FIVE FEET (5') BETWEEN WATER SERVICE AND ALL OTHER UTILITIES.
19. THE CONTRACTOR IS RESPONSIBLE TO FACE ALL HYDRANT STEAMER STORZ TOWARD THE PAVEMENT, PRIOR TO TESTING AND CHLORINATION OF WATER MAINS.
20. THE CITY OF AVON SHALL REQUIRE A QUALIFIED REPRESENTATIVE TO TAKE FIELD MEASUREMENTS OF THE MAIN DURING INSTALLATION AND SHALL FURNISH THE CITY WITH RECORD PRINTS OF SAME. THE CITY OF AVON WILL REQUIRE THE SUBMISSION OF THE "AS-BUILT" PRINTS TO THE CITY UTILITY DEPARTMENT BEFORE ACCEPTANCE OF THE PROJECT, IN ACCORDANCE WITH SHEET G-7.
21. AS PER THE CITY OF AVON, IT IS STIPULATED THAT OPERATION OF ANY VALVE OR ALTERATION OF ANY PART OF THE SYSTEM BY CONTRACTORS OR THEIR EMPLOYEES IS PROHIBITED. CALL THE CITY OF AVON UTILITIES DEPARTMENT (440) 937-5740 TO HAVE VALVES ACTUATED.
22. ALL WATER SERVICE CURB STOP BOXES, METER VAULTS, ETC. WILL BE INSTALLED IN GRASS AREAS. THE WATER SERVICE SHALL BE A MINIMUM 1" DIAM. FROM THE CORPORATION AND THE CURB BOX SHALL BE LOCATED BETWEEN THE CURB AND SIDEWALK (ONE FOOT INSIDE THE RIGHT-OF-WAY LINE). THIS SHALL BE DONE IN ALL CASES WHERE POSSIBLE. CITY APPROVAL WILL BE REQUIRED FOR ALL OTHER PROPOSED LOCATIONS.
23. IN THOSE AREAS WHERE IT IS REQUIRED TO LOWER THE WATER MAIN TO CLEAR AN OBSTACLE AND THE DEFLECTION WILL BE GREATER THAN 18", THE USE OF BENDS WILL BE REQUIRED TO CLEAR THE OBSTACLE AND BRING THE WATER MAIN UP TO THE STANDARD FOUR (4) FEET OF COVER. CLASS 52 DUCTILE IRON PIPE SHALL BE USED. FIELD LOCK GASKETS ARE REQUIRED.

24. WHEN A WATER SERVICE CONNECTION AND/OR GAS SERVICE CONNECTION IS DISTURBED OR DISCONNECTED DURING TRENCH OR SHEETING EXCAVATION, THE CONTRACTOR WILL REPLACE THE WATER CONNECTION WITH ALL NEW MATERIAL FROM THE CORPORATION SHUT-OFF TO THE CURB SHUTOFF VALVE AT THE UTILITY DEPARTMENTS DISCRETION. SUCH SERVICES SHALL BE PLANKED USING 2"x8" HARDWOOD MINIMUM, 18" INTO VIRGIN SOIL, EACH END.
25. BACKFILL MATERIAL SHALL BE PER THE TRENCH DETAIL ON W-2.
26. ALL WATER WORK REQUIRED WILL BE AT THE EXPENSE OF THE PROJECT AND SHALL CONFORM TO THE CITY OF AVON CONSTRUCTION DETAILS.
27. PREMIXED BAGMIX 4,000 PSI CONCRETE THRUST BLOCKS (CONCRETE PIERS) MAY BE USED BEHIND ALL TEES AND HORIZONTAL BENDS. HOWEVER, HARD WOOD BLOCKING IS PREFERRED. THE CONTRACTOR SHALL INSTALL A CONCRETE THRUST BLOCK BEHIND ALL BRANCH SLEEVES IN WHICH THE NOMINAL SIZE IS ONE-HALF OR GREATER THAN THE NOMINAL DIAMETER OF THE PIPE TO BE TAPPED. THE CONCRETE PIER SHALL BE IN PLACE AND CURED PRIOR TO THE HYDROSTATIC TESTING OF THE CONNECTING MAINS. THRUST BLOCKING SHALL ADHERE TO SHEET W-8.
28. IN THE CASE OF VALVE BOXES IN EXISTING ROADWAYS, THE CITY MAY PERMIT THE USE OF CAST RISERS FOR ELEVATIONAL ADJUSTMENT OF CASTINGS. IN SUCH CASES, A (3) THREE POINT WELD SHALL BE REQUIRED FOR ROUND CASTINGS AND A (4) FOUR POINT WELD FOR SQUARE CASTINGS.
29. THE CONTRACTOR IS REQUIRED TO CONTACT THE CITY OF AVON UTILITIES DEPARTMENT PRIOR TO STARTING THE PROJECT.

30. WATERLINE BLOCKS SHALL BE PROVIDED FOR CITY ACCESS FOR THE PURPOSE OF MAINTENANCE. SUCH EASEMENTS SHALL HAVE A UTILITY ACCESS DRIVE PER G-8. ALTERNATIVE MATERIALS MAY BE ACCEPTABLE AT THE UTILITY DEPARTMENT'S DISCRETION.

31. THE MINIMUM HORIZONTAL SEPARATION FOR EXISTING AND PROPOSED WATER TO SANITARY OR STORM SEWERS SHALL BE:
  - TEN FEET (10') BETWEEN WATER AND SANITARY.
  - FIVE FEET (5') BETWEEN WATER AND ALL OTHER UTILITIES.

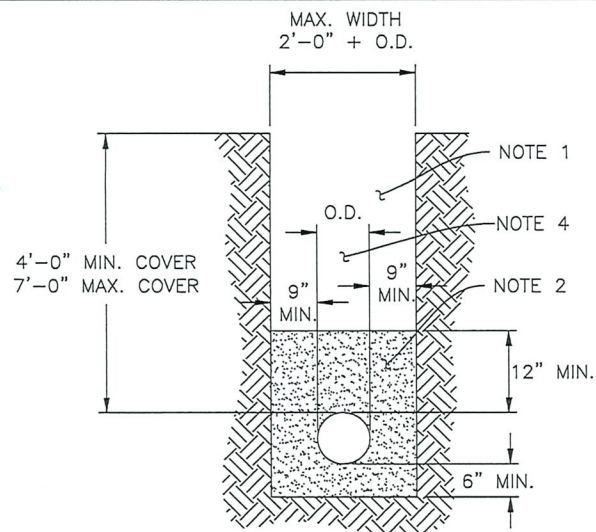
32. A MINIMUM 18" VERTICAL DISTANCE SHALL BE MAINTAINED FROM EXISTING AND PROPOSED WATER AND SANITARY OR STORM SEWER.
33. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.
34. CLAY DAM IS TO BE PROVIDED 6 FT. FROM THE LATERAL TERMINUS PER G-10.

### TESTING IS TO BE AS FOLLOWS:

AWWA STANDARDS APPLY @ 150% OF NORMAL OPERATING PRESSURE MIN. TEST PRESSURE 150 PSIDURATION 2 HRS.

ANY TEST (150 & 200 PSI) THAT LOSES 5 PSI WILL BE AN AUTOMATIC FAIL REGARDLESS OF WATER LOST.

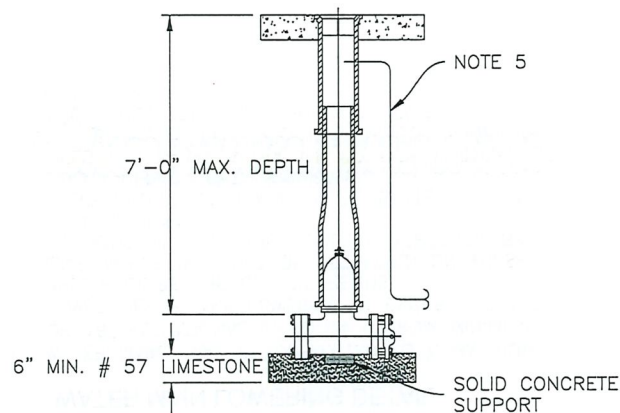
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                    |
|--------------------------------------------------------------|-----------------------|--------------------|
| WATER MAIN<br>CONSTRUCTION NOTES<br>& STANDARD               | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING W-1                      | 48-19<br>28-20        | 8/12/19<br>4/14/20 |
|                                                              |                       | SHEET<br>2 OF 2    |



**WATER MAIN TRENCH DETAIL**

**TRENCH NOTES:**

1. BACKFILL SHALL BE PER G-6.
2. BEDDING AND PIPE COVER TO BE AGGREGATE **NO. 8 OR 9** WASHED LIMESTONE.
3. ANY WATER MAIN RELATED BORES REQUIRED SHALL CONFORM TO SHEET W-9, "PIPE BORE DETAIL".
4. DETECTABLE TRACER TAPE AND 2 TRACER WIRES OF DIFFERING COLORS SHALL BE INSTALLED OVER AND ON CENTER OF PVC WATERMAINS FOR ITS ENTIRE LENGTH.
  1. DETECTOR TAPE (MATERIAL TO BE APPROVED BY CITY OF AVON UTILITIES DEPARTMENT)
    - \* SHALL READ "BURIED WATERLINE BELOW"
    - \* SHALL BE BURIED 18" DEEP FROM SURFACE OF GROUND
  2. TRACER WIRE (MATERIAL TO BE APPROVED BY CITY OF AVON UTILITIES DEPARTMENT)
    - A. OPEN TRENCH INSTALLATION METHOD
      - \* EACH COPPER WIRE 1-W/RED COLORED INSULATION 1-W/BLUE COLORED INSULATION
      - \* #12 AWG THHN/THWN
    - B. DIRECTIONALLY DRILLED/BORED INSTALLATION METHOD
      - \* WIRE SIZE SHALL BE #6 AWG THHN/THWN (2-WIRES)
      - \* INSTALLED ALONG TOP OF AND CONTINUOUSLY ALONG PIPE.
      - \* SHALL BE TERMINATED IN A SEPARATE BOX ADJACENT TO ALL VALVE BOXES.



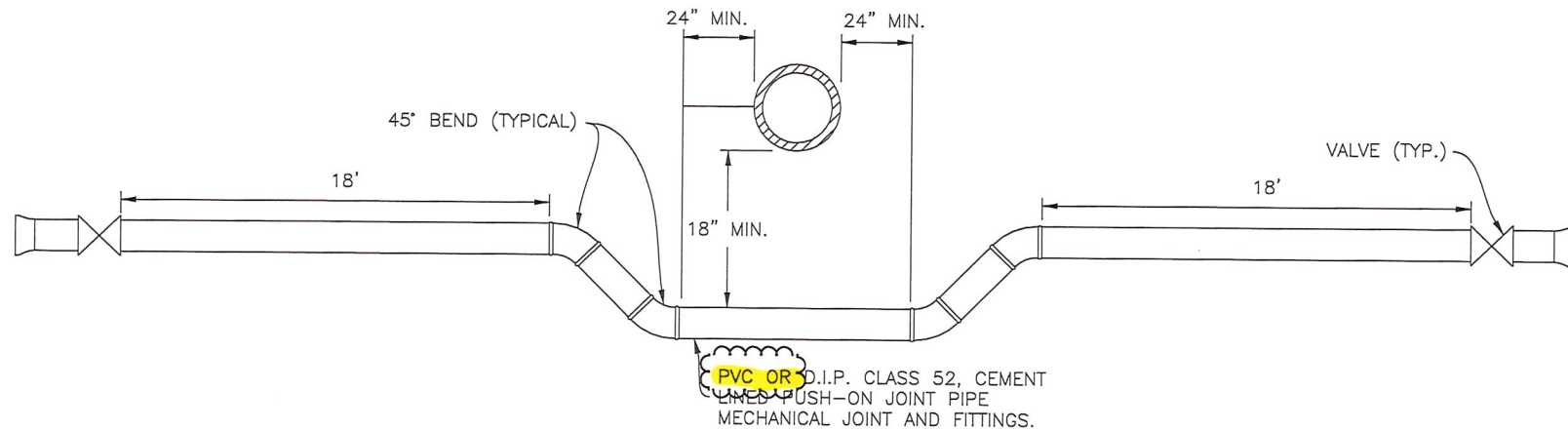
**LINE VALVE DETAIL**

**LINE VALVE NOTES:**

1. LINE VALVES SHALL HAVE STANDARD M.J. X M.J. ENDS.
2. VALVE PREFERRED MANUFACTURE MUELLER RESILIENT WEDGE A-2362 M.J. X M.J.
3. ALL VALVE BODY BOLTS ARE TO BE STAINLESS STEEL.
4. VALVE BOXES SHALL BE TWO PIECE CAST IRON WITH 5-1/4" SHAFT, CENTURY FOUNDRY NO. 22 OR EQUAL. -THREADED TYPE.
5. TRACER WIRE SHALL BE INSTALLED THROUGH A SLOT IN THE VALVE BOX WHEN REQUIRED.
6. FIELD LOCK GASKETS SHALL BE PLACED 3 JOINTS PRIOR TO THE VALVE AND 3 JOINTS AFTER.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| WATER MAIN DETAILS                                           | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-2</b>               | 48-19                 | 8/12/19         |
|                                                              |                       | SHEET<br>1 OF 2 |





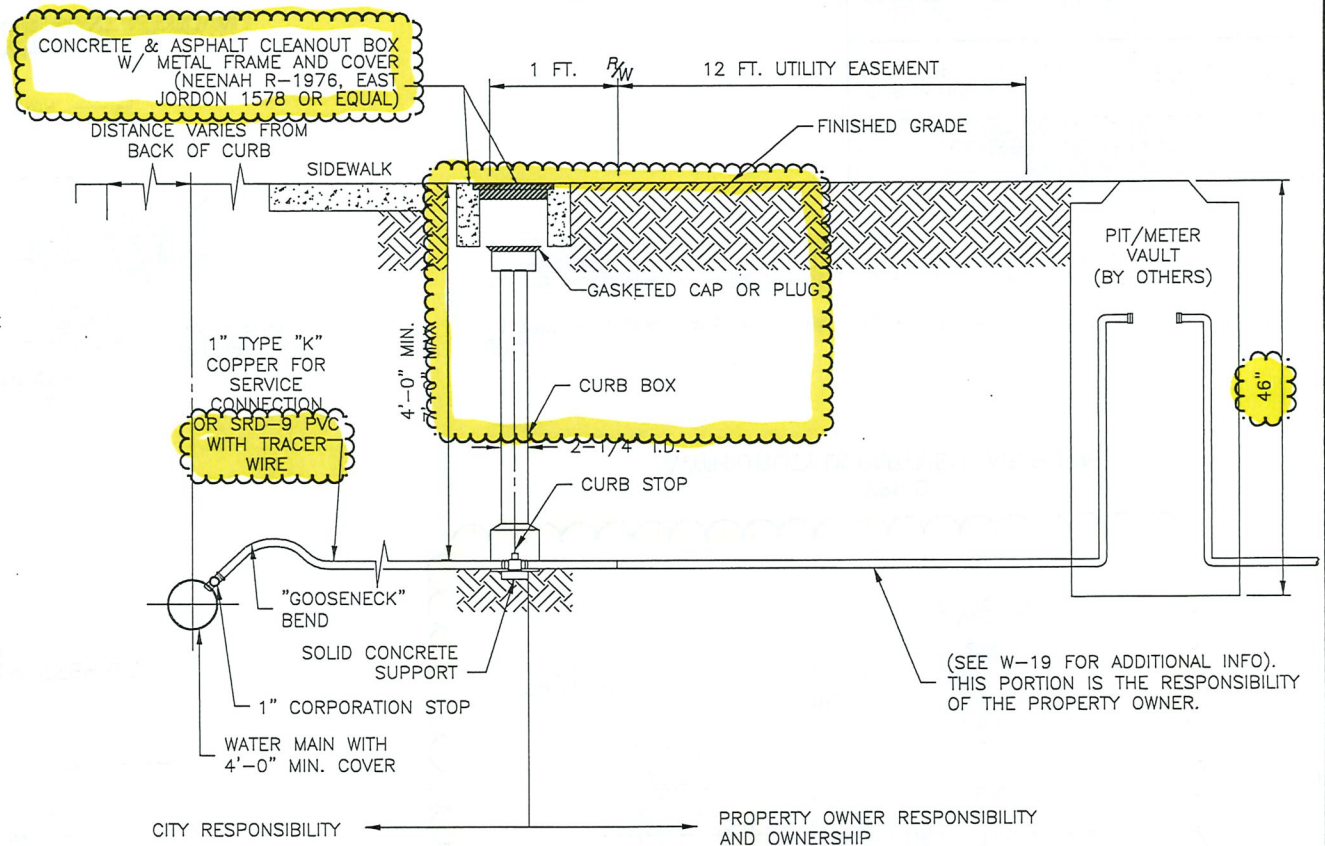
#### WATER MAIN LOWERING DETAIL

1. WATER MAINS MAY BE DEFLECTED TO A MAXIMUM OF 18" ELEVATIONAL DIFFERENCE FROM MINIMUM COVER DEPTH. ANY LOWERING IN EXCESS OF 18" WILL REQUIRE THE USE OF BENDS.
2. LINE VALVES WILL NOT BE PERMITTED ON THESE SECTIONS OF LOWERINGS UNLESS APPROVED BY AVON UTILITIES.
3. VALVE REQUIREMENT MAY BE ELIMINATED AT THE UTILITY DEPARTMENT DISCRETION.
4. FIELD LOK GASKETS DUCTILE OR PIPE RESTRAINTS PVC SHALL BE REQUIRED THROUGHOUT LOWERING AND THREE JOINTS BEFORE AND AFTER THE LOWERING.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| WATER MAIN DETAILS                                           | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-2<br>48-19          | 8/12/19         |
|                                                              |                       | SHEET<br>2 OF 2 |

## NOTES

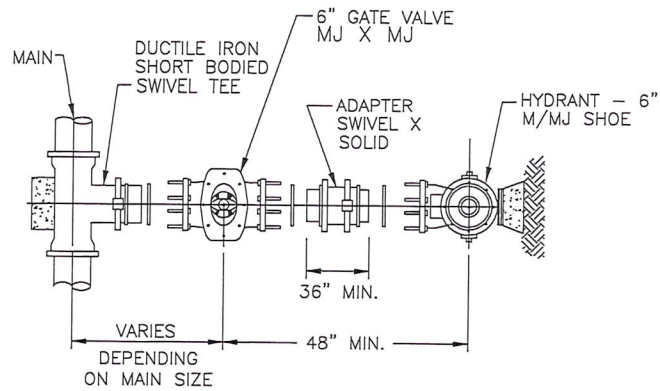
1. CURB STOP: MUELLER #15200  
CURB BOX & COVER: DOMESTIC SCREW TYPE OR EQUAL  
CORPORATION STOP: MUELLER #H-1500 OR EQUAL
2. SHOULD A UNION BE USED TO JOIN TWO OR MORE PIECES OF COPPER OR PLASTIC TOGETHER TO MAKE A SERVICE LINE, SUCH UNIONS SHALL BE FLARE OR COMPRESSION TYPE MANUFACTURED BY MUELLER. AN ISOLATION VALVE SHALL BE INSTALLED.
3. WHERE POSSIBLE, DO NOT INSTALL CURB BOX IN PAVEMENT, SIDEWALKS, DRIVEWAYS, OR APRONS.
4. CURB STOP & BOX ARE TO BE LOCATED ONE FOOT INSIDE THE RIGHT-OF-WAY BETWEEN THE SIDEWALK AND THE RIGHT-OF-WAY. THIS SHALL BE DONE IN ALL CASES WHERE POSSIBLE. CITY APPROVAL WILL BE REQUIRED FOR ALL OTHER PROPOSED LOCATIONS.
5. ANY WATER TAPS 1-1/2" TO 2" ARE TO BE SADDLE TAPS AS APPROVED BY THE CITY UTILITY DEPT. BRONZE OR STAINLESS STEEL SERVICE SADDLES SHALL BE REQUIRED WHEN TAPPING ANY DI WATER MAIN. MUELLER SADDLES H-13000 SERIES WILL BE REQUIRED WHEN TAPPING C909.
6. THE TAP SHALL BE THE SAME SIZE AS THE CONNECTION, WATER METER, & BACK FLOW DEVICE.
7. CURB BOXES FOR THE 2" CURB STOPS SHALL BE R-144 OR EQUAL, WITH A 3-1/2" I.D.
  - A. METER PITS MAYBE REQUIRED AT THE CITY OF AVON UTILITIES SUPERINTENDENTS' DISCRETION.
  - B. METER PITS SHALL BE PLACED JUST OUTSIDE THE UTILITY EASEMENT ON THE PROPERTY SIDE AS CLOSE TO THE RIGHT-OF-WAY AS POSSIBLE. PLACEMENT SHALL BE BY THE PROPERTY OWNER.
  - C. METER PITS & LIDS SHALL BE INSTALLED SO AS TO BE FLUSH WITH FINISHED GRADE. (BY PROPERTY OWNERS)
  - D. ALL METER PITS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY UTILITY DEPARTMENT REQUIREMENTS. (BY PROPERTY OWNERS)
  - E. IT IS THE BUILDER'S RESPONSIBILITY TO PROTECT THE METER PIT. HOWEVER, IN THE CASE OF DAMAGE, ANY COST INCURRED BY THE CITY SHALL BE PASSED ON TO THE BUILDER.
8. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.
9. SERVICE CONNECTION SHALL BE ONE CONTINUOUS PIECE OF 1" PIPE FROM THE CURB STOP TO THE MAIN SHUT-OFF VALVE AT THE HOUSE. CONTRACTOR SHALL SLEEVE THE UTILITY EASEMENT WITH MINIMUM 2" PVC PIPE.



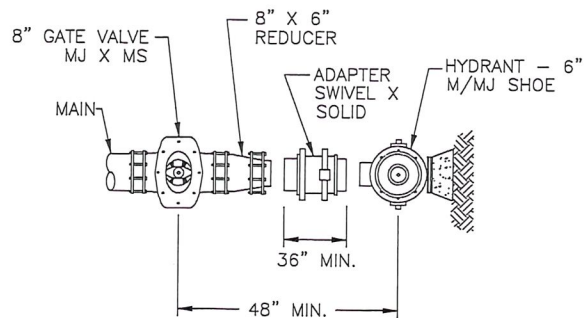
SERVICE CONNECTION DETAIL

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| CURB BOX &<br>METER PIT DETAIL                               | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-3 48-19             | 8/12/19 |

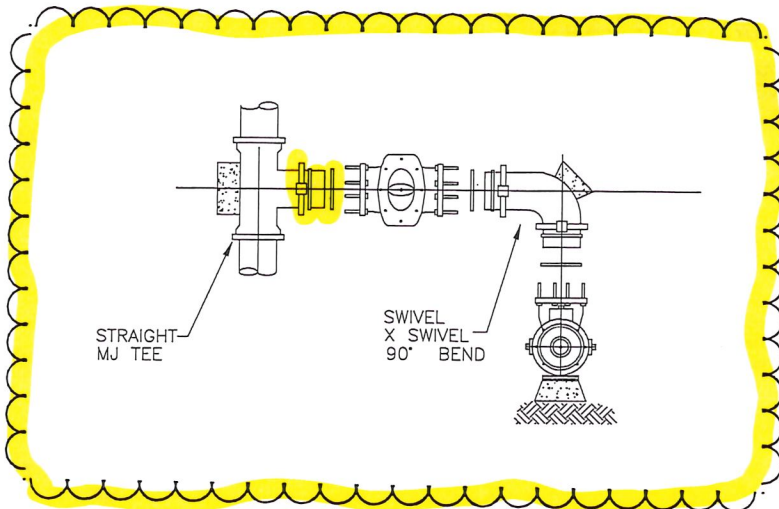




TYPE A PREFERRED



TYPE C  
(WITH UTILITY DEPARTMENT APPROVAL)

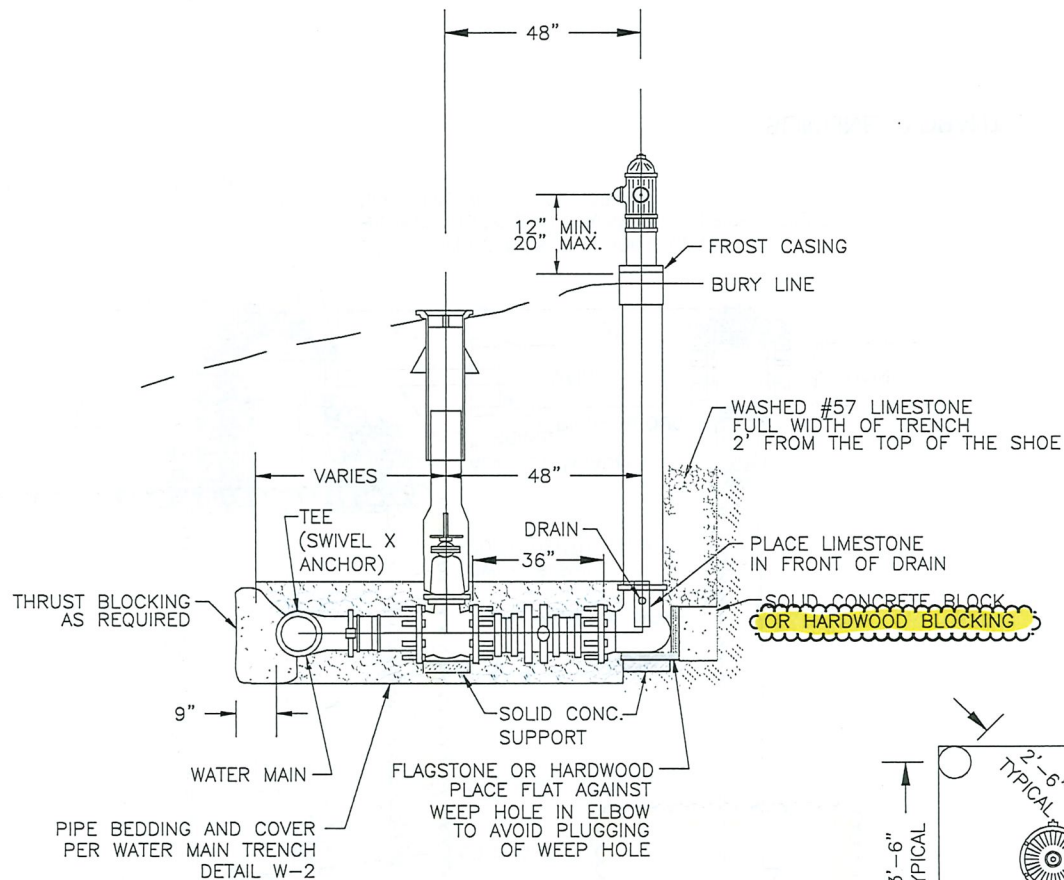


TYPE B  
(WITH UTILITY DEPARTMENT APPROVAL)

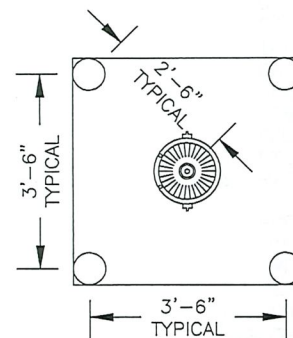
NOTE:

- 1.) TYPE B HYDRANT ASSEMBLY SHALL BE PLACED WITH THE DIRECTION OF TRAFFIC.
- 2.) THE PLACEMENT OF FIRE HYDRANTS SHALL BE AT 300 FEET INTERVALS, HOWEVER, IN NO CASE SHALL THEY BE SPACED GREATER THAN 350 FEET MEASURED IN A STRAIGHT LINE DISTANCE.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| FURNISHINGS & SETTINGS<br>FOR 6" HYDRANT                     | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-4</b>               | 48-19                 | 8/12/19 |



TYPE "A" SHOWN FOR REFERENCE ONLY



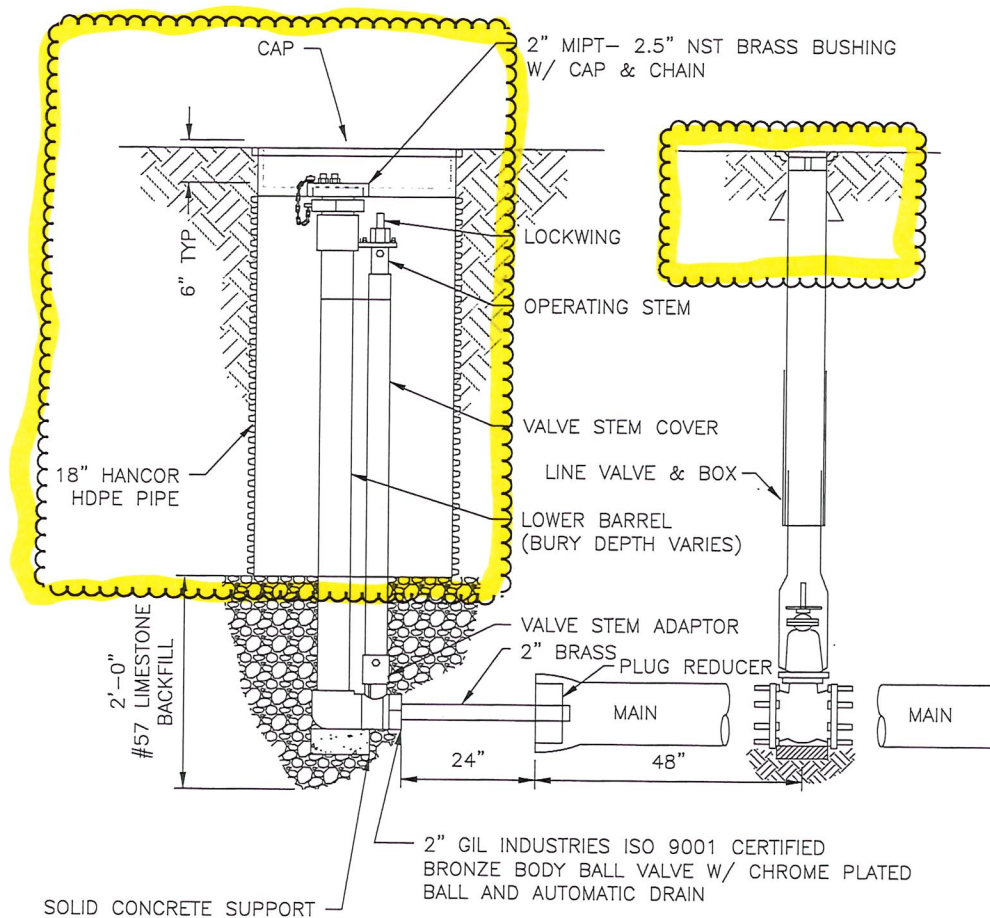
HYDRANT BOLLARD PROTECTION

## CONSTRUCTION NOTES AND STANDARDS FOR FIRE HYDRANT INSTALLATIONS

- ALL MECHANICAL JOINT FITTINGS SHALL BE MEGA LUG TYPE.
- ALL BOLTS AND NUTS FURNISHED WITH MECHANICAL JOINTS OR RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE STAINLESS STEEL.
- WHERE HYDRANTS ARE PROVIDED IN A COMMERCIAL OR INDUSTRIAL PARKING FACILITY, A BOLLARD SURROUND SHALL BE PROVIDED TO PROTECT THE HYDRANT ASSEMBLY.
  - FOUR (4) BOLLARDS LOCATED 2'-6" C.C. FROM THE HYDRANT TO THE BOLLARD
  - BOLLARDS SHALL BE A MINIMUM 6" STEEL PIPE, FIVE (5) FEET IN HEIGHT WITH A 2'-6" BURY, CONCRETE FILLED, TOP DOMED AND PAINTED YELLOW.
  - THE HYDRANT VALVE SHALL BE LOCATED IN A MANNER SO AS NOT TO CONFLICT WITH THE OPERATION OF THE VALVE.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| TYPICAL HYDRANT &<br>HYDRANT PROTECTION<br>DETAILS           | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-5</b>               | 48-19                 | 8/12/19 |





SLIMLINE HYDRANT

# NOTES

1. FLUSHING HYDRANT SHALL BE AUTOMATIC FREEZE-PROOF DESIGN WITH WEEP HOLE INSTALLED WITHIN A 2" BALL VALVE. VALVE WILL BE 600 LBS. WOG BRONZE BODY WITH CHROME PLATED BRASS BALL AND TEFLON SEALS. BALL VALVE TO BE ISO 9001 CERTIFIED.
2. HYDRANT BARREL MUST BE OF BLACK IRON PIPE. EXTERIOR SHALL RECEIVE 4 MIL THICKNESS OF ELECTROSTATICALLY APPLIED SHERWIN-WILLIAMS FAST DRY ACRYLIC ENAMEL, CATALYZED WITH POLANE FOR DURABILITY. ALL HYDRANTS TO BE PAINTED BLUE. OVERALL LENGTH OF HYDRANT WILL VARY, ACCORDING TO THE DEPTHS OF WATER SYSTEMS. A BRASS HOSE CONNECTION, 2-1/2" NSFT WITH ATTACHED CAP & CHAIN, SHALL BE PROVIDED FOR CONVENIENCE IN FLUSHING.
3. OPERATING DEVICE TO BE OF KEY TYPE DESIGN, WITH PERMANENT ATTACHMENT TO THE VALVE STEM. VALVE STEM MUST BE FULL LENGTH OF THE HYDRANT BARREL WITH PERMANENT ATTACHMENT TO THE VALVE. HYDRANT MUST HAVE A PROVISION FOR LOCK UP TO PREVENT TAMPERING.
4. FLUSHING HYDRANT TO BE SLIMLINE HYDRANT AS MANUFACTURED BY GIL INDUSTRIES, INC., PENSACOLA, FLORIDA, OR APPROVED EQUAL.
5. BACKFILL SHALL BE #57 LIMESTONE FOR A DEPTH OF 2 FEET FROM BASE THROUGH TO THE BARREL.
6. REGARDLESS OF LENGTH / DIAMETER, 3 JOINTS FROM END SHALL BE "FIELD-LOCK GASKETS" FOR DI PIPE. PVC SHALL HAVE RESTRAINED MECHANICAL JOINTS.

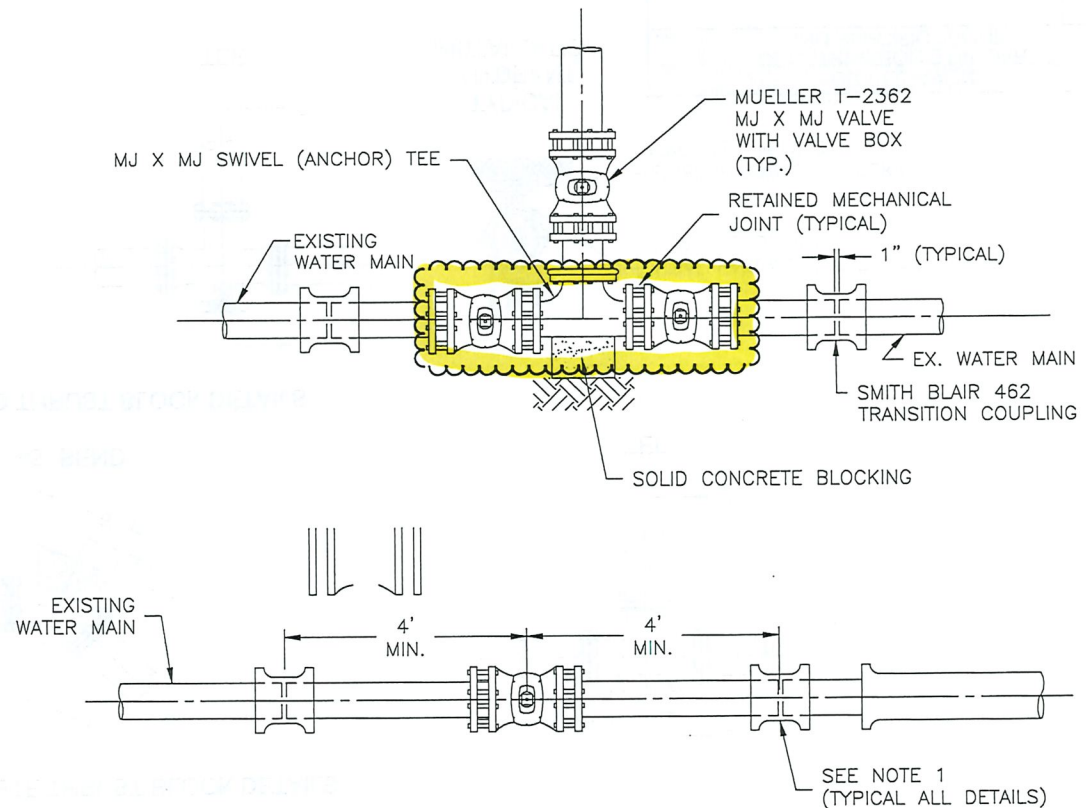
7. VERTICAL PORTION OF ASSEMBLY SHOWN SHALL BE PLACED INSIDE OF AN 18" HANCOR HDPE PIPE WITH A CAP.

## CITY OF AVON CONSTRUCTION STANDARDS AND SPECIFICATIONS

| STANDARD<br>CONSTRUCTION<br>DRAWING | W-6 | ADOPTION<br>ORDINANCE | DATE |
|-------------------------------------|-----|-----------------------|------|
|                                     |     |                       |      |

# NOTES:

1. CONNECTION SHALL BE MADE WITH RETAINED JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR COMPRESSION COUPLINGS.
2. COMPRESSION COUPLINGS SHALL BE OF A GASKETED SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS, TWO (2) FOLLOWER GLANDS, TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS, AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/A194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.
3. MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).
4. THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE NO.S 38, 138, OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 462 STRAIGHT AND TRANSITION COUPLINGS.
5. ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL BE STAINLESS STEEL.
6. SOME MAIN LINE REPAIRS MAY BE DONE USING A REPAIR CLAMP, TYPE SMITH BLAIR 265 OR EQUAL, PROVIDED THIS METHOD IS APPROVED BY THE CITY OF AVON UTILITY DEPARTMENT.
7. ALL TAPPING SLEEVES SHALL BE SMITH BLAIR TYPE 663 (ALL STAINLESS).
8. SIZE ON SIZE TAPPING SLEEVES WILL NOT BE PERMITTED UNLESS SPECIFICALLY SPECIFIED BY THE UTILITY DEPARTMENT.
9. EACH LEG OF THE TEE SHALL HAVE A VALVE UNLESS APPROVED OTHERWISE NY THE UTILITY DEPARTMENT.



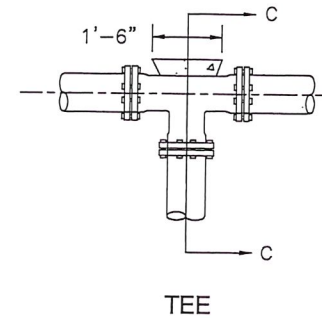
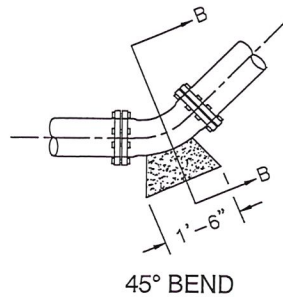
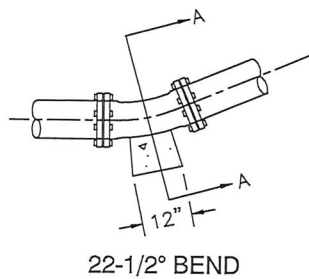
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                    |
|--------------------------------------------------------------|-----------------------|--------------------|
| CUT-IN TEE &<br>SLEEVE-IN<br>DETAIL                          | ADOPTION<br>ORDINANCE | DATE               |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-7</b>               | 48-19<br>28-20        | 8/12/19<br>4/14/20 |



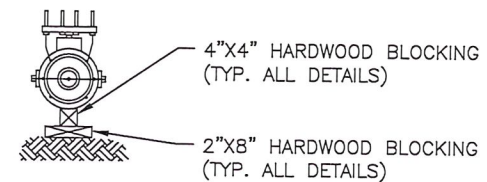
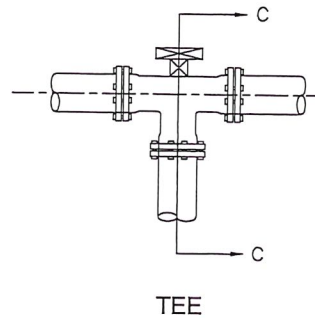
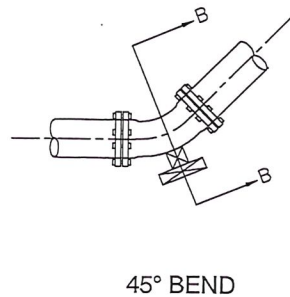
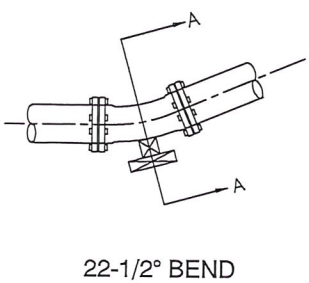
THRUST BLOCK NOTES:

- 1) D = PIPE DIAMETER.
- 2) ALL DIMENSIONS SHOWN ARE MINIMUM. THRUST BLOCKS SHALL BE POURED TO UNDISTURBED EARTH.
- 3) ALL CONCRETE FOR THRUST BLOCKS SHALL BE ODOT CLASS QC-1 HAVING A 4,000 PSI 28 DAY COMPRESSIVE STRENGTH. BAG MIX CONFORMING TO ODOT CLASS QC-1 MAY BE PERMITTED. HOWEVER, THE PLACEMENT OF DRY-MIX BAGS WITHOUT PRE-MIXING WILL NOT BE PERMITTED.
- 4) TAPPING SLEEVE ASSEMBLIES SHALL REQUIRE HARDWOOD BLOCKING ONLY.
- 5) DO NOT COVER BOLTS WITH CONCRETE.
- 6) USE FORMS WHEN POURING CONCRETE TO MAINTAIN SHAPE AND DIMENSIONS OF THRUST BLOCKS.
- 7) CONCRETE THRUST BLOCKS SHALL ONLY BE PERMITTED WITH THE APPROVAL OF THE UTILITIES DEPARTMENT.

CONCRETE THRUST BLOCK DETAILS

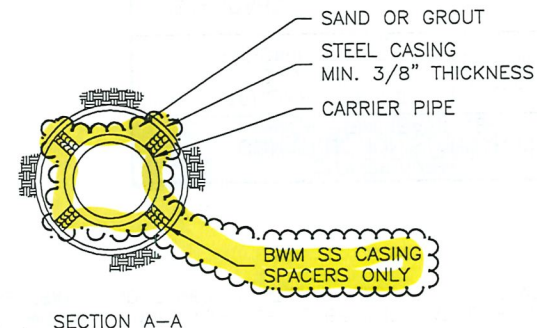
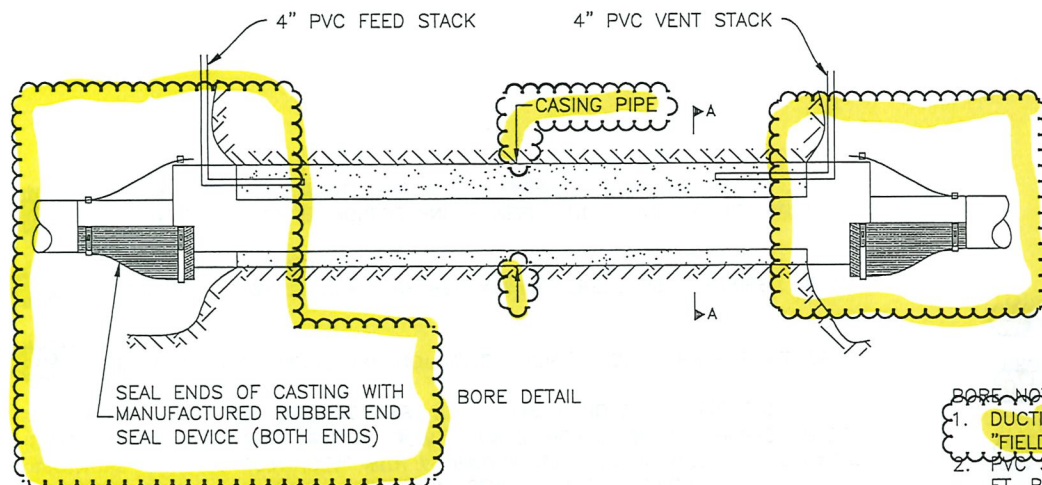


WOOD THRUST BLOCK DETAILS



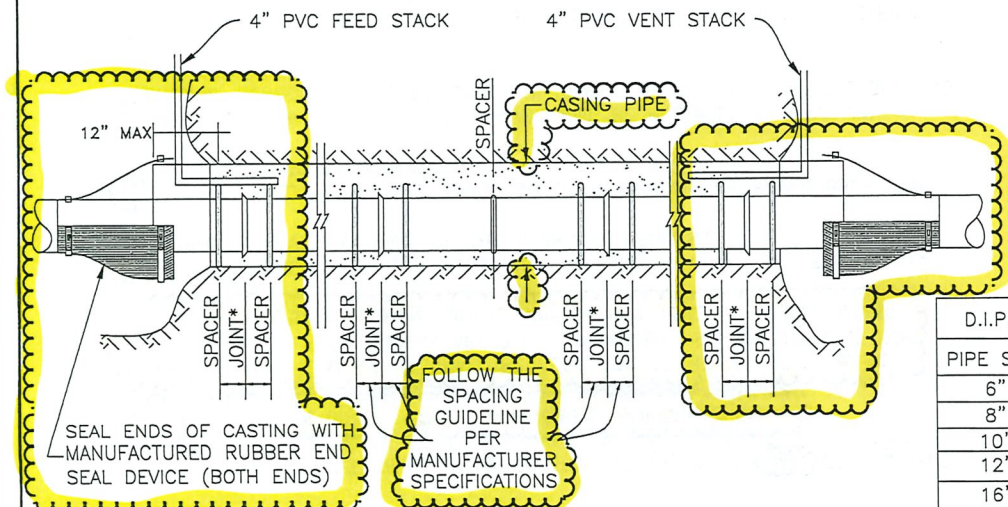
TYPICAL  
HYDRANT  
INSTALLATION

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| THRUST BLOCK DETAILS                                         | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-8                   | 48-19   |
|                                                              |                       | 8/12/19 |



#### BORE NOTES:

1. DUCTILE IRON PIPE SHALL BE THE CLASS 52 TYPE (ALL PIPE JOINTS ARE TO HAVE "FIELD LOK" GASKETS), C-909 PVC, OR CERTA-LOK RESTRAINED JOINT PVC PIPE.
2. PVC STACKS ARE TO BE FILLED TO WITHIN 2 FT. OF GRADE AND CUT AND CAPPED 2 FT. BELOW GRADE.
3. EACH END SHALL BE SEALED WITH A MANUFACTURED RUBBER END SEAL DEVICE.
4. GRANULAR BEDDING IN BORE PIT AND RECEIVING PIT SHALL BE PLACED TO A MINIMUM OF 1 FOOT ABOVE THE PIPE.
5. BONDED SKIDS MAY BE PERMITTED IN LIEU OF RETAINING GLANDS, AS APPROVED BY THE CITY UTILITY DEPARTMENT.
6. MINIMUM CASING WALL THICKNESS IS TO BE 3/8"
7. FREE BORE MAY BE PERMITTED ONLY AT THE DISCRETION BY THE CITY UTILITY DEPARTMENT. IN SUCH CASES THE BORE SHALL BE NO LARGER THAN THE BELL OF THE PIPE BEING USED. SHOULD THE BORE BE LARGER THAN THE PIPE BELL, ENGINEERED GROUT SHALL BE REQUIRED TO FILL THE VOID.
8. CASING SIZE FOR PIPE IN EXCESS OF 16" SHALL BE REVIEWED AND DETERMINED BY THE CITY UTILITY DEPARTMENT AT THE TIME OF PLAN REVIEW AND PRIOR TO ANY CONSTRUCTION.
9. A VALVE SHALL BE REQUIRED ON EACH SIDE OF THE BORE.
10. A CASING IS REQUIRED ON ALL ROAD CROSSINGS, COMPLETE WITH CASING END SEAL, BWM PO OR WR OR EQUIVALENT.
11. BLOWN IN SAND SHALL BE REQUIRED.



| D.I.P. CASING SIZE REQUIREMENTS |           |             |
|---------------------------------|-----------|-------------|
| PIPE SIZE                       | BELL SIZE | CASING SIZE |
| 6"                              | 8.75"     | 12"         |
| 8"                              | 10.98"    | 16"         |
| 10"                             | 12.94"    | 18"         |
| 12"                             | 15.24"    | 24"         |
| 16"                             | 19.98"    | 24"         |

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |               |
|--------------------------------------------------------------|-----------------------|---------------|
| WATERLINE<br>PIPE BORE DETAIL                                | ADOPTION<br>ORDINANCE | DATE          |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-9                   | 48-19 8/12/19 |



A) ALL "PRIVATE" WATER MAINS IN EXCESS OF TWO (2) INCHES MAY BE REQUIRED TO INSTALL A FIRE LINE METER AT THE RIGHT OF WAY LIMITS OF SAID PROPERTY AT THE DISCRETION OF THE UTILITY DEPARTMENT SUPERINTENDENT.

B) BADGER TYPE FSAA METER SHALL BE USED FOR 2", 4", 6", 8" 10" & 12" METERED. BADGER TYPE METERS ARE TO BE PROVIDED WITH AN ENDPOINT FOR AMR W/ POSITIVE DISPLACEMENT MODEL 170 OR FIRE RATED E-SERIES METER.

C) EACH DOMESTIC LINE INSTALLATION AND APPLICATION SHALL BE REVIEWED ON AN INDIVIDUAL BASIS AS PART OF THE APPROVAL PROCESS.

D) ALL FIRE LINE OR "PRIVATE" MAINS SHALL REQUIRE AN APPROVED BACKFLOW DEVICE BY THE UTILITY DEPARTMENT.

E) ALL COMMERCIAL AND INDUSTRIAL SITES WILL BE REQUIRED TO HAVE AN ADDITIONAL REDUCED PRESSURE BACKFLOW DEVICE INSTALLED WITHIN THE BUILDING AT ALL SERVICE POINTS.

F) A METER BYPASS ASSEMBLY SHALL BE REQUIRED IN ALL CASES. THE BYPASS LINE SHALL BE THE SAME SIZE AS THE FIRELINE.

G) BOTH METER AND BACKFLOW DEVICE SHALL BE REQUIRED TO BE INSTALLED IN A WATERPROOF VAULT OF SUFFICIENT SIZE TO ACCOMMODATE TWO SERVICE TECHNICIANS TO ENTER VAULT. METER VAULTS MAY BE PRECAST IN TWO SECTIONS, THE BOTTOM SECTION OF WHICH SHALL BE 50% OR GREATER OF THE OVERALL HEIGHT REQUIRED. THE JOINT SEAL BETWEEN PRECAST SECTIONS SHALL BE AN ASPHALTIC STRIP, WITH WATER PLUG JOINT SEAL ON THE INTERIOR AND AN ASPHALTIC EXTERIOR JOINT SEAL WITH A MINIMUM OF 1 FT. IN WIDTH. THE VAULT SHALL BE SET TO 1 INCH AND NO MORE THAN 2 INCHES ABOVE FINISHED GRADE WITH NO SURROUNDING OBSTRUCTIONS. (I.E.: PLANTER BOXES, WALLS, ETC...)

H) IN THE EVENT THAT VAULTS ARE NOT WATER TIGHT, A SUMP HOLE SHALL BE INSTALLED.

I) BACKFLOW DEVICE VAULTS SHALL BE PRECAST CONCRETE, AS DESCRIBED ABOVE & SHALL MEET THE STANDARDS.

J) THERE SHALL BE PROPER INGRESS AND EGRESS. STEPS AND LID TO MATCH METER VAULTS. THE METER SHALL EASILY BE READABLE FROM THE HATCH.

#### K) ACCESS FRAMES AND COVERS

THE ALUMINUM ACCESS FRAMES AND COVERS SHALL HAVE A 3 FT. BY 3 FT. OPENING AND BE MANUFACTURED WITH 1/4" THICK, ONE PIECE ALUMINUM EXTRUDED FRAME, WITH A CONTINUOUS CONCRETE ANCHOR AS PART OF THE ONE PIECE EXTRUSION. THE DOOR PANELS SHALL BE 1/4" THICK ALUMINUM DIAMOND PLATE, TO WITHSTAND A LIVE LOAD OF 300 LBS. PER SQUARE FOOT, WITH SAFETY FACTOR OF TIMES 3. THE DOORS SHALL BE PROVIDED WITH STAINLESS STEEL HINGES WITH TAMPERPROOF FASTENERS. ALL HARDWARE SHALL BE STAINLESS STEEL. THE DOORS SHALL OPEN TO 90° AND LOCK AUTOMATICALLY IN THAT POSITION WITH A STAINLESS STEEL RELEASE HANDLE. DOORS SHALL BE PROVIDED WITH A STAINLESS STEEL LIFTING HANDLE, STAINLESS STEEL LOCKING BAR, OR STAINLESS STEEL SNAP-LOCK WITH REMOVABLE KEY HANDLE. THE DOORS SHALL CLOSE FLUSH WITH THE TOP OF THE FRAME, RESTING ON 1/2" WIDE LIP AROUND THE ENTIRE INSIDE OF THE FRAME FOR ADDED SUPPORT. THE INTERIOR DOOR PANELS SHALL BE FITTED WITH HORIZONTAL ALUMINUM EXTRUSIONS TO ACT AS HAND HOLDS TO FACILITATE INGRESS AND EGRESS.

\* EXAMPLE. THE CITY WILL PERMIT THE NON-TRAFFIC BEARING TYPE OF BILCO J4AL, U.S. FABRICATION TYPE OR EQUAL.

L) BACK FLOW DEVICES MUST BE TESTED UPON INSTALLATION AND EVERY 12 MONTHS THEREAFTER AND TEST RESULTS SUBMITTED TO THE CITY OF AVON UTILITIES DEPARTMENT. THE TESTER MUST BE STATE CERTIFIED AND BE REGISTERED WITH THE CITY OF AVON. FAILURE TO HAVE BACK FLOW DEVICES TESTED EVERY 12 MONTHS WILL RESULT IN TERMINATION OF WATER SERVICE AS REQUIRED BY THE OHIO REVISED CODE.

M) METERS SHALL NOT BE LOCATED IN THE BUILDING. METERS SHALL BE LOCATED IN A VAULT (SEE SHEET W-11) VAULTS SHALL BE LOCATED AT (1) ONE FOOT OUTSIDE THE RIGHT-OF-WAY LINE.

N) THE DOUBLE CHECK ASSEMBLY ASSE 1015 SHALL BE A CAST IRON BODY TYPE. (SEE CONFIGURATION ON SHEET W-11)

O) THE CITY MAY PERMIT A SINGLE VAULT SO LONG AS DIMENSIONAL REQUIREMENTS ARE MET.

P) ANY VAULT LOCATED WITHIN A PAVED AREA SHALL BE THE TRAFFIC BEARING TYPE WITH THE ACCESS FRAME AND COVER LOCATED OUTSIDE OF THE PAVEMENT.

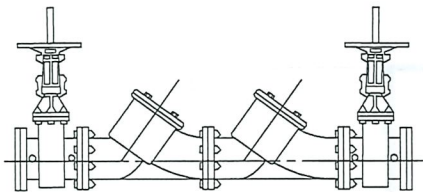
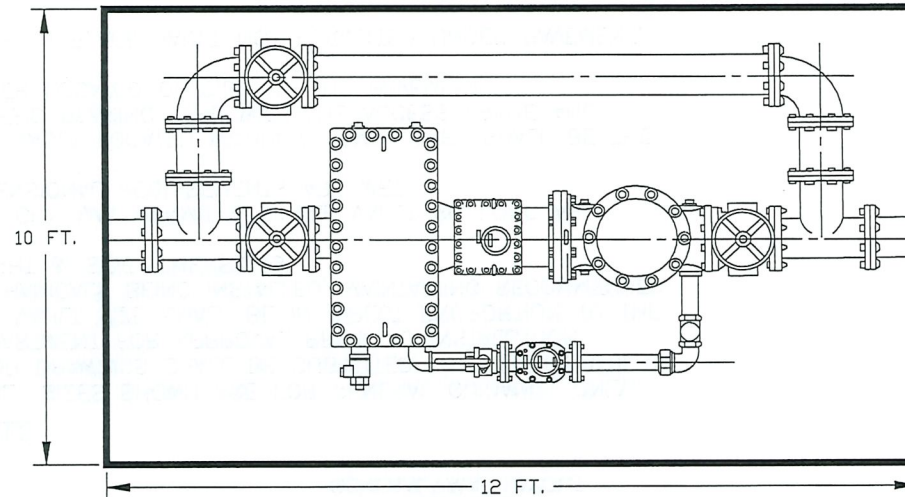
#### CITY OF AVON CONSTRUCTION STANDARDS AND SPECIFICATIONS

| WATERLINE, FIRELINE<br>& VAULT<br>SPECIFICATIONS | ADOPTION<br>ORDINANCE | DATE    |
|--------------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING W-10         | 48-19                 | 8/12/19 |

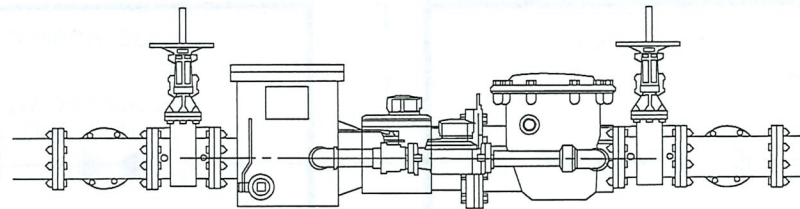
PREFERRED BADGER METER  
MODEL FSA-01 WITH VALVES

6'-12"

WITH OS&Y VALVES



REQUIRED DOUBLE CHECK  
DETECTOR CHECK  
ASSEMBLY 1048



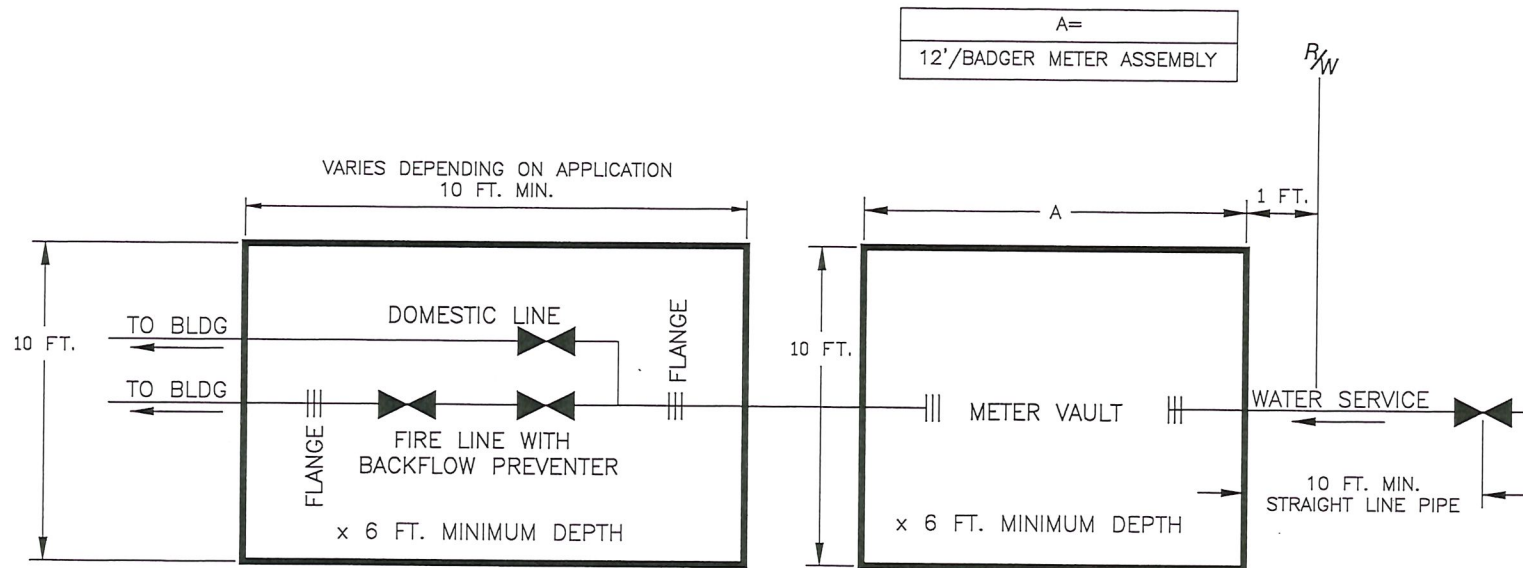
NOTE:

- 1) VAULT SIZES SHOWN ARE FOR GENERAL GUIDANCE ONLY. SHOP DRAWINGS SHALL BE SUBMITTED TO THE CITY UTILITY DEPARTMENT FOR APPROVAL PRIOR TO INSTALLATION. THE VAULT SIZE SHALL BE IN DIRECT PROPORTION TO THE MECHANICALS BEING INSTALLED, MAINTAINING RECOMMENDED HEIGHT & SIDE DIMENSIONS.
- 2) SAME VAULT FOR BOTH METERS AS STANDARD.
- 3) THE LOW FLOW METER SHALL BE SIZED TO THE DOMESTIC WATERLINE, HOWEVER, RATED FOR FIRE USE.
- 4) IN THE EVENT THE VAULTS ARE NOT WATER TIGHT, A SUMP HOLE SHALL BE INSTALLED.
- 5) METERS IN VAULTS MUST BE ABLE TO BE READ FROM ABOVE WITHOUT ENTRY. IF NO CLEAR LINE OF SITE TO THE METER CAN BE ACHIEVED BY PLACEMENT OF ACCESS MANHOLE A 12" DIAMETER VIEWING PORT MUST BE PROVIDED THAT IS CENTERED OVER THE METER FOR READING PURPOSES IN ADDITION TO THE ACCESS MANHOLE. THE VAULT SHALL MAINTAIN ITS STRUCTURAL INTEGRITY.

CITY OF AVON  
CONSTRUCTION STANDARDS  
AND SPECIFICATIONS

| METER PIT DETAIL                    | ADOPTION<br>ORDINANCE | DATE    |
|-------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING | W-11                  | 48-19   |
|                                     |                       | 8/12/19 |



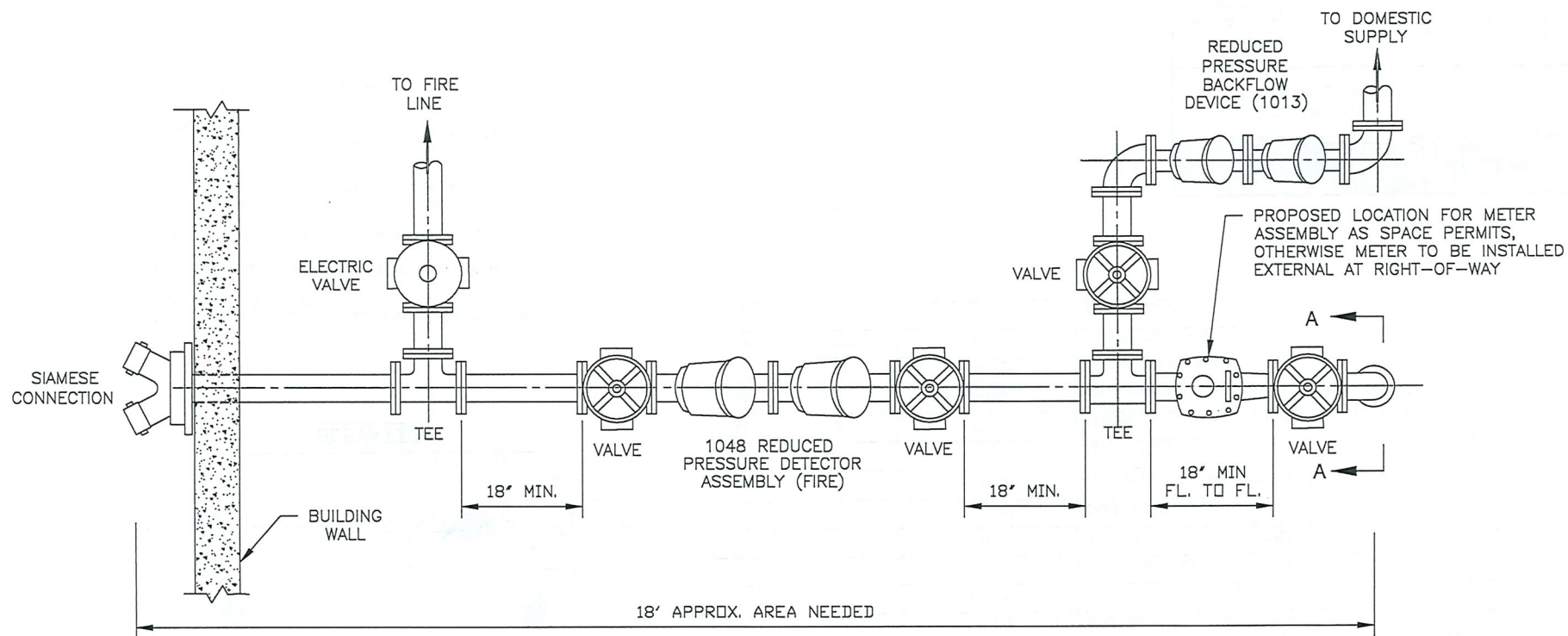


SCHEMATIC  
GENERAL VAULT LAYOUT

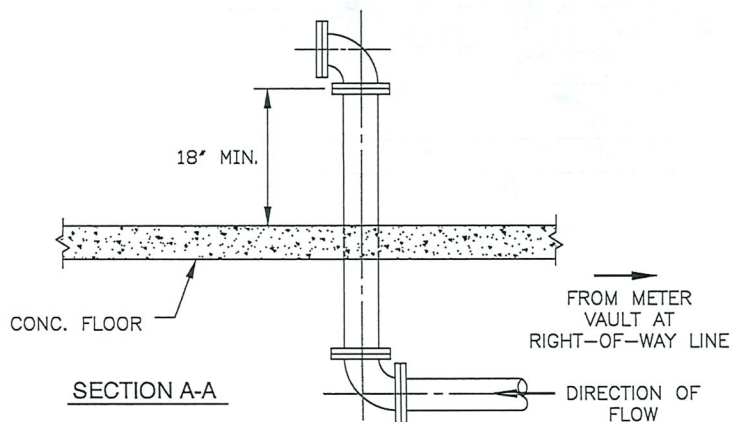
NOTES:

1. VAULT SIZES SHOWN ARE FOR GENERAL GUIDANCE ONLY. SHOP DRAWINGS SHALL BE SUBMITTED TO THE CITY UTILITY DEPARTMENT FOR APPROVAL PRIOR TO INSTALLATION. THE VAULT SIZE SHALL BE IN DIRECT PROPORTION TO THE MECHANICALS BEING INSTALLED, MAINTAINING RECOMMENDED HEIGHT & SIDE DIMENSIONS.
2. THE CITY MAY PERMIT A SINGLE VAULT SO LONG AS DIMENSIONAL REQUIREMENTS ARE MET.
3. ANY VAULT LOCATED WITHIN A PAVED AREA SHALL BE THE TRAFFIC BEARING TYPE WITH THE ACCESS FRAME AND COVER LOCATED OUTSIDE OF THE PAVEMENT.
4. POUR IN PLACE VAULT NOT PERMITTED UNDER PAVEMENT.
5. THIS CONFIGURATION SHALL ONLY BE USED WITH THE APPROVAL OF THE UTILITY DEPARTMENT.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| GENERAL VAULT<br>LAYOUT COMMERCIAL<br>& INDUSTRIAL           | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING W-12                     | 48-19                 | 8/12/19 |



PLAN  
INTERNAL FIRELINE INSTALLATION



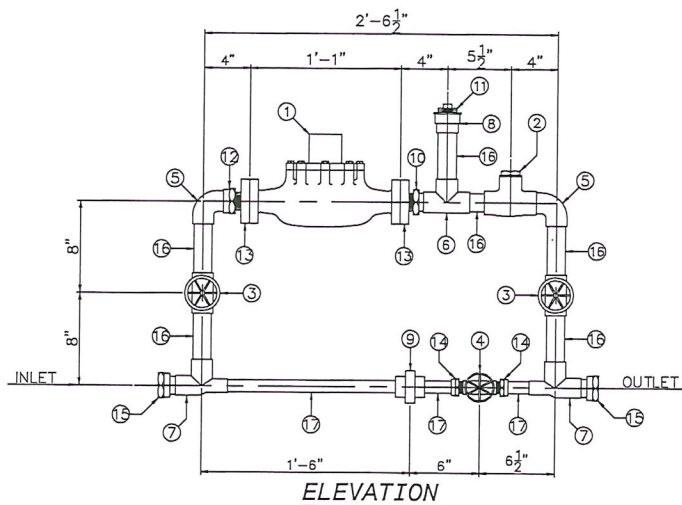
NOTE:

- 1.) THIS IS NOT THE PREFERRED METHOD. INSTALLATION TO BE APPROVED BY THE CITY FIRE DEPARTMENT AND CITY UTILITY DEPARTMENT.
- 2.) INSTALL UNDERGROUND PIPE AND RISER IN BUILDING.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| INTERNAL<br>FIRELINE INSTALLATION<br>COMMERCIAL & INDUSTRIAL | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-13</b>              | 48-19                 | 8/12/19 |



METERS BY  
AVON UTILITIES



NOTES:

- 1.) CONTACT AVON UTILITY DEPARTMENT FOR CORRECT METER (SUPPLIED BY CONTRACTOR)
- 2.) VERIFY METER LENGTH WITH AVON UTILITIES DEPARTMENT
- 3.) ITEM (4) TO BE SET AT AN ANGLE WITH LOCK AND CABLE.
- 4.) MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
- 5.) ADJUSTMENTS TO THE BYPASS (ITEM 17) WILL BE MADE BY AVON UTILITIES AS NEEDED.
- 6.) ALL BOLTS AND GASKETS BY SUPPLIER.

MATERIALS REQUIRED FOR INSTALLATION  
STANDARD 1-1/2" METER SETTING WITH 1-1/2" METER

METER SETTING PROVIDED BY AVON UTILITIES, CUSTOMER CHARGED WITH TAP FEES

| ITEM | REQ'D | SIZE                | DESCRIPTION                                    |
|------|-------|---------------------|------------------------------------------------|
| 1    | 1     | 1-1/2"              | METER BY AVON UTILITIES                        |
| 2    | 1     | 1-1/2"              | STREAMLINE SWING CHECK VALVE, COPPER TO COPPER |
| 3    | 2     | 1-1/2"              | STREAMLINE HAND WHEEL GATE VALVE               |
| 4    | 1     | 1"                  | STREAMLINE HAND WHEEL GATE VALVE               |
| 5    | 2     | 1-1/2"              | STREAMLINE STREET ELBOW, COPPER TO COPPER      |
| 6    | 1     | 1-1/2"              | STREAMLINE TEE, COPPER TO COPPER               |
| 7    | 2     | 1-1/2" X 1 X 1-1/2" | STREAMLINE TEE, COPPER TO IRON, FEMALE         |
| 8    | 1     | 1-1/2"              | STREAMLINE COUPLING, COPPER TO IRON, FEMALE    |
| 9    | 1     | 1"                  | STREAMLINE UNION, COPPER TO COPPER             |
| 10   | 1     | 1-1/2"              | STREAMLINE COUPLING, COPPER TO IRON, MALE      |
| 11   | 1     | 1-1/2"              | BRASS SCREW PLUG                               |
| 12   | 1     | 1-1/2"              | STREAMLINE COUPLING, COPPER TO IRON, FEMALE    |
| 13   | 2     | 1-1/2"              | OVAL FLANGES, FEMALE                           |
| 14   | 2     | 1"                  | STREAMLINE COUPLING, COPPER TO IRON, FEMALE    |
| 15   | 2     | 1-1/2"              | STREAMLINE COUPLING, COPPER TO IRON, FEMALE    |
| 16   | 37"   | 1-1/2"              | COPPER TUBING-HARD                             |
| 17   | 30"   | 1"                  | COPPER TUBING-HARD                             |
| 18   | 1lb.  |                     | SPECIAL SOLDER                                 |

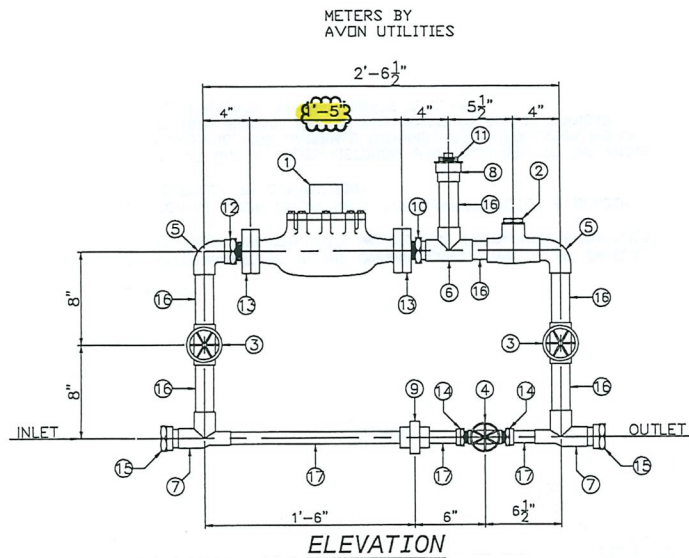
CITY OF AVON  
CONSTRUCTION STANDARDS  
AND SPECIFICATIONS

| STANDARD 1-1/2"<br>METER SETTING         | ADOPTION<br>ORDINANCE | DATE    |
|------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING W-14 | 48-19                 | 8/12/19 |

## STANDARD 2" METER SETTING WITH 2" METER

### MATERIALS REQUIRED FOR INSTALLATION

**METER SETTING PROVIDED BY AVON UTILITIES AND BILLED WITH TAP FEES.**



#### NOTES:

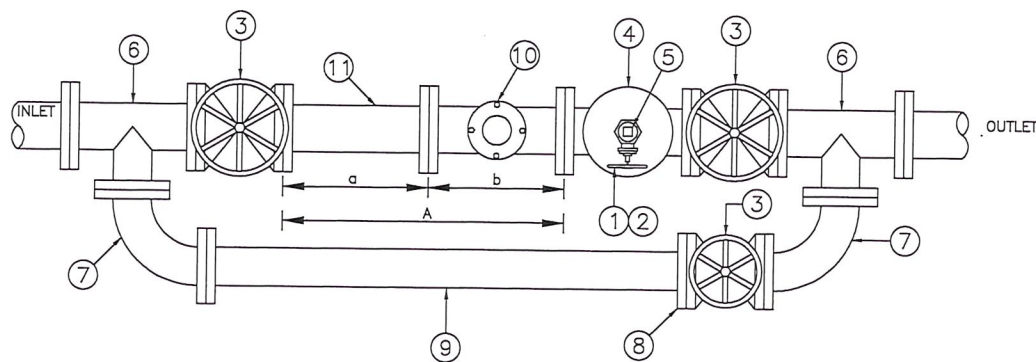
- 1.) VERIFY METER LENGTH WITH AVON UTILITIES DEPARTMENT
- 2.) ITEM (4) TO BE SET AT AN ANGLE WITH LOCK AND CABLE.
- 3.) MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S, VALVES, AND CHECK VALVES SUPPLIED.
- 4.) ALL BOLTS AND GASKETS BY SUPPLIERS.
- 5.) THE CONTRACTOR SHALL PURCHASE 1-1/2" AND 2" METERS SUPPLIED BY AVON UTILITIES.

| ITEM | REQ'D | SIZE            | DESCRIPTION                                    |
|------|-------|-----------------|------------------------------------------------|
| 1    | 1     | 2"              | METER BY AVON UTILITIES                        |
| 2    | 1     | 2"              | STREAMLINE SWING CHECK VALVE, COPPER TO COPPER |
| 3    | 2     | 2"              | STREAMLINE HAND WHEEL GATE VALVE               |
| 4    | 1     | 1-1/2"          | STREAMLINE HAND WHEEL GATE VALVE               |
| 5    | 2     | 2"              | STREAMLINE STREET ELBOW, COPPER TO COPPER      |
| 6    | 1     | 2"              | STREAMLINE TEE, COPPER TO COPPER               |
| 7    | 2     | 2 X 1-1/2" X 2" | STREAMLINE TEE, COPPER TO IRON, FEMALE         |
| 8    | 1     | 2"              | STREAMLINE COUPLING, COPPER TO IRON, FEMALE    |
| 9    | 1     | 1-1/2"          | STREAMLINE UNION, COPPER TO COPPER             |
| 10   | 1     | 2"              | STREAMLINE COUPLING, COPPER TO IRON, MALE      |
| 11   | 1     | 2"              | BRASS SCREW PLUG                               |
| 12   | 1     | 2"              | STREAMLINE COUPLING, COPPER TO IRON, FEMALE    |
| 13   | 2     | 2"              | OVAL FLANGES, FEMALE                           |
| 14   | 2     | 1-1/2"          | STREAMLINE COUPLING, COPPER TO IRON, FEMALE    |
| 15   | 2     | 2"              | STREAMLINE COUPLING, COPPER TO IRON, FEMALE    |
| 16   | 37'   | 2"              | COPPER TUBING-HARD                             |
| 17   | 30'   | 1-1/2"          | COPPER TUBING-HARD                             |
| 18   | 1lb.  |                 | SPECIAL SOLDER                                 |

#### CITY OF AVON CONSTRUCTION STANDARDS AND SPECIFICATIONS

| STANDARD 2"<br>METER SETTING                    | ADOPTION<br>ORDINANCE | DATE    |
|-------------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-15</b> | 48-19                 | 8/12/19 |





PLAN

NOTE:  
ALL BOLTS AND GASKETS BY SUPPLIER.

NOTES:

- 1.) MINOR VARIATIONS IN THE OVERALL LENGTH ARE TO BE EXPECTED DEPENDING ON THE TEE'S VALVES, AND CHECK VALVES SUPPLIED.
- 2.) CONTACT AVON UTILITY DEPT. FOR CORRECT METER & SPACER. (SUPPLIED BY CONTRACTOR)
- 3.) 3", 4", AND 6" METER SETTINGS SHALL CONFORM TO THE ABOVE SCHEMATIC. FOR MATERIALS REQUIRED FOR INSTALLATION REFER TO DUAL SERVICE SETTING WITH BACKFLOW DEVICE STANDARD CONSTRUCTION DRAWING SHEETS 2, 3, AND 4.

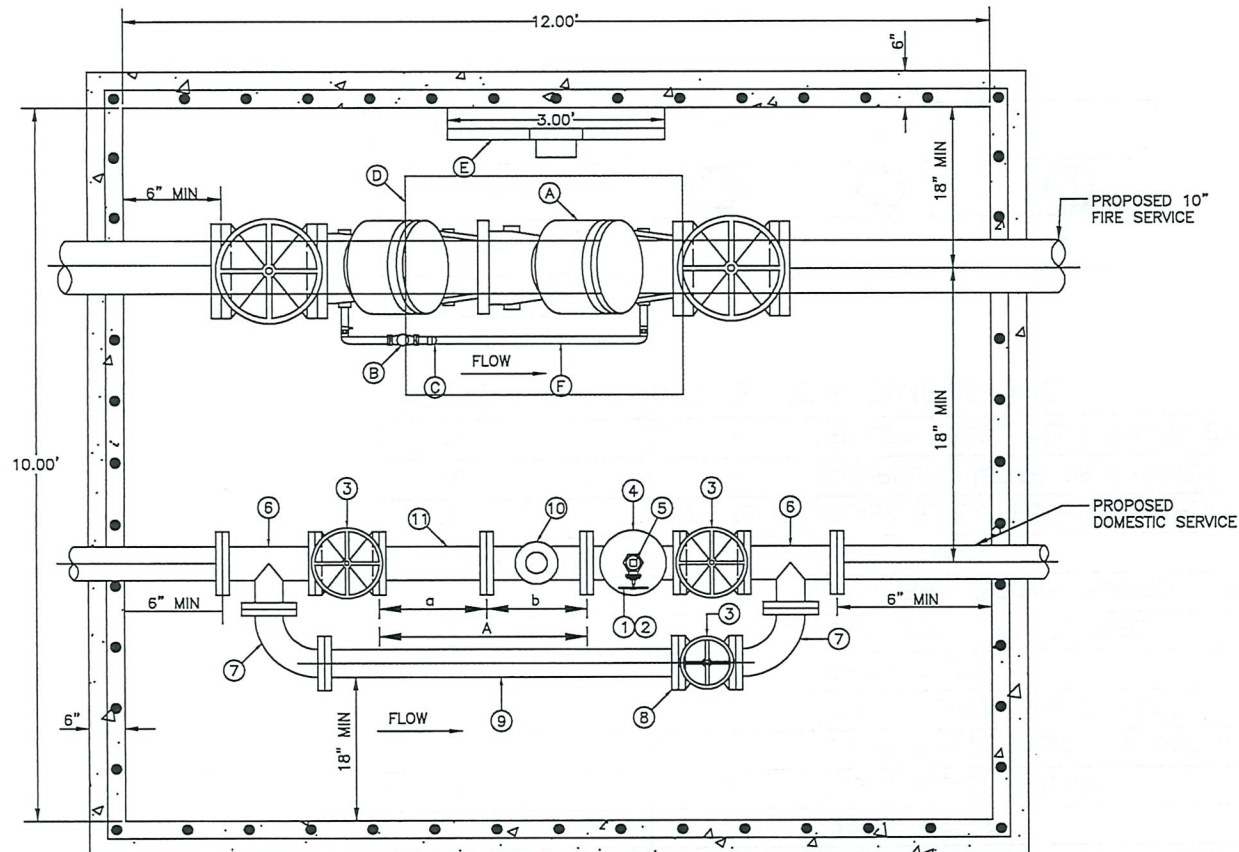
STANDARD 4" METER SETTING WITH 4" METER  
MATERIALS REQUIRED FOR INSTALLATION

CHART A

| ITEM | REQ'D | SIZE         | DESCRIPTION                                                 |
|------|-------|--------------|-------------------------------------------------------------|
| 1    | 1     | 2"           | HAND WHEEL GATE VALVE, SCREWED                              |
| 2    | 1     | 2" X 10"     | BRASS NIPPLE                                                |
| 3    | 3     | 4"           | O.S.Y. VALVE, FLANGED                                       |
| 4    | 1     | 4"           | SWING CHECK VALVE, FLANGED W/2" TAP<br>ON CHECK VALVE PLATE |
| 5    | 1     | 2"           | BRASS PLUG                                                  |
| 6    | 2     | 4" X 4" X 4" | CAST IRON TEES, FLANGED                                     |
| 7    | 2     | 4"           | CAST IRON ELBOWS, FLANGED LONG RADIUS                       |
| 8    | 1     | 4"           | MEGA FLANGE                                                 |
| 9    |       | SIZE TO FIT  | CLASS 53 DIP FLANGED BY PLAIN END                           |
| 10   | 1     | *            | TURBINE METER OR COMPOUND METER                             |
| 11   | 1     | *            | SPACER SPOOL PIECE FLANGE BY FLANGE                         |

\*REFER TO CHART B FOR DIMENSIONS

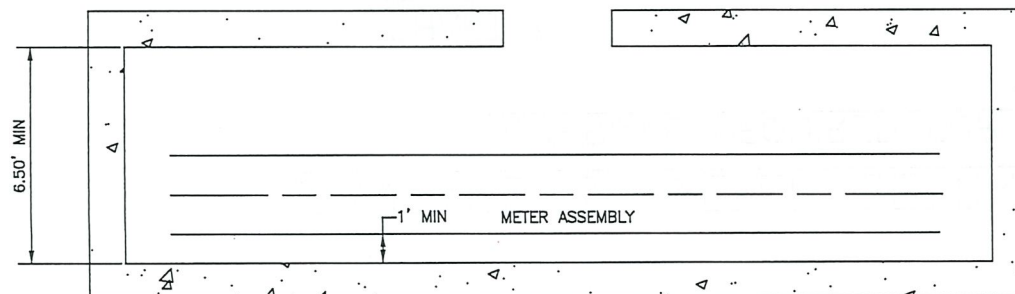
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| STANDARD 4"<br>METER SETTING                                 | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-16</b>              | 48-19                 | 8/12/19 |



- (A) FIRE SERVICE BACKFLOW PREVENTION DEVICE:  
WATTS #709-DCDA, AMES #3000 DCDA, OR EQUAL
- (B) BY-PASS METER (3/4" OR 1")  
NOTE: BY-PASS LIEN REQUIRES A BACKFLOW DEVICE  
SIMILAR TO THE WATTS #709.
- (C) 3" AND LARGER DOMESTIC METERS SHALL BE INSTALLED WITH  
FLANGED CLASS 53 DUCTILE IRON PIPE. 2" AND LESS SHALL  
BE "K" COPPER.
- (D) LID: BILCO MODEL #J-4AL, OR HALLIDAY MODEL #W1S3636,  
OR APPROVED EQUAL.
- (E) ALUMINUM LADDER: OSHA APPROVED HALLIDAY SERIES L-1B  
WITH SERIES L-1E SAFETY POST, OR APPROVED EQUAL.
- (F) CONTRACTOR/PLUMBER TO VERIFY LAYING LENGTH OF  
BACKFLOW DEVICE, VALVES, METERS, ETC.

**NOTES:**

- 1.) VAULT SIZE SHOWN IS FOR GENERAL GUIDANCE ONLY. SHOP  
DRAWINGS SHALL BE SUBMITTED TO THE CITY UTILITY  
DEPARTMENT FOR APPROVAL PRIOR TO INSTALLATION. THE  
VAULT SIZE SHALL BE IN DIRECT PROPORTION TO THE  
MECHANICALS BEING INSTALLED, MAINTAINING RECOMMENDED  
HEIGHT & SIDE DIMENSIONS.
- 2.) SAME VAULT FOR BOTH METERS AS STANDARD.
- 3.) 8" AND LARGER SHALL CONFORM TO THE SAME SETTING  
SPECIFICATIONS. CONTACT AVON UTILITY DEPARTMENT FOR  
METER AND SPOOL PIECE DIMENSIONS.



| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| DUAL SERVICE SETTING<br>WITH BACKFLOW DEVICE                 | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-17</b>              | 48-19                 | 8/12/19         |
|                                                              |                       | SHEET<br>1 OF 4 |



# STANDARD 3" METER SETTING WITH 3" METER

## MATERIALS REQUIRED FOR INSTALLATION

CHART A

| ITEM | REQ'D | SIZE         | DESCRIPTION                           |
|------|-------|--------------|---------------------------------------|
| 1    | 1     | 2"           | HAND WHEEL GATE VALVE, SCREWED        |
| 2    | 1     | 2" X 10"     | BRASS NIPPLE                          |
| 3    | 3     | 3"           | O.S.Y. VALVE, FLANGED                 |
| 4    | 1     | 3"           | SWING CHECK VALVE, FLANGED W/ 2"      |
|      |       |              | TAP ON CHECK VALVE PLATE              |
| 5    | 1     | 2"           | BRASS PLUG                            |
| 6    | 2     | 3" X 3" X 3" | CAST IRON TEES, FLANGED               |
| 7    | 2     | 3"           | CAST IRON ELBOWS, FLANGED LONG RADIUS |
| 8    | 1     | 3"           | MEGA FLANGE                           |
| 9    |       | SIZE TO FIT  | CLASS 53 DIP FLANGED BY PLAIN END     |
| 10   | 1     | *            | COMPOUND METER OR E-METER             |
| 11   | 1     | *            | SPACER SPOOL PIECE FLANGE BY FLANGE   |

\*REFER TO CHART B FOR DIMENSIONS

CHART B

| METER TYPE | A                                                                                   | a                                                                                     | b                                                                                     |
|------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| E-METER    |  |  |  |
| COMPOUND   | 24"                                                                                 | 7"                                                                                    | 17"                                                                                   |

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| DUAL SERVICE SETTING<br>WITH BACKFLOW DEVICE                 | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-17                  | 48-19           |
|                                                              |                       | 8/12/19         |
|                                                              |                       | SHEET<br>2 OF 4 |

# STANDARD 4" METER SETTING WITH 4" METER MATERIALS REQUIRED FOR INSTALLATION

CHART A

| ITEM | REQ'D | SIZE         | DESCRIPTION                           |
|------|-------|--------------|---------------------------------------|
| 1    | 1     | 2"           | HAND WHEEL GATE VALVE, SCREWED        |
| 2    | 1     | 2" X 10"     | BRASS NIPPLE                          |
| 3    | 3     | 4"           | O.S.Y. VALVE, FLANGED                 |
| 4    | 1     | 4"           | SWING CHECK VALVE, FLANGED W/ 2"      |
|      |       |              | TAP ON CHECK VALVE PLATE              |
| 5    | 1     | 2"           | BRASS PLUG                            |
| 6    | 2     | 4" X 4" X 4" | CAST IRON TEES, FLANGED               |
| 7    | 2     | 4"           | CAST IRON ELBOWS, FLANGED LONG RADIUS |
| 8    | 1     | 4"           | MEGA FLANGE                           |
| 9    |       | SIZE TO FIT  | CLASS 53 DIP FLANGED BY PLAIN END     |
| 10   | 1     | *            | COMPOUND METER OR E-METER             |
| 11   | 1     | *            | SPACER SPOOL PIECE FLANGE BY FLANGE   |

\*REFER TO CHART B FOR DIMENSIONS

CHART B

| METER TYPE | A                                                                                   | a                                                                                     | b                                                                                     |
|------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| E-METER    |  |  |  |
| COMPOUND   | 29"                                                                                 | 9"                                                                                    | 20"                                                                                   |

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| DUAL SERVICE SETTING<br>WITH BACKFLOW DEVICE                 | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-17                  | 8/12/19         |
|                                                              |                       | SHEET<br>3 OF 4 |



# STANDARD 6" METER SETTING WITH 6" METER MATERIALS REQUIRED FOR INSTALLATION

CHART A

| ITEM | REQ'D | SIZE         | DESCRIPTION                           |
|------|-------|--------------|---------------------------------------|
| 1    | 1     | 2"           | HAND WHEEL GATE VALVE, SCREWED        |
| 2    | 1     | 2" X 10"     | BRASS NIPPLE                          |
| 3    | 3     | 6"           | O.S.Y. VALVE, FLANGED                 |
| 4    | 1     | 6"           | SWING CHECK VALVE, FLANGED W/ 2"      |
|      |       |              | TAP ON CHECK VALVE PLATE              |
| 5    | 1     | 2"           | BRASS PLUG                            |
| 6    | 2     | 6" X 6" X 6" | CAST IRON TEES, FLANGED               |
| 7    | 2     | 6"           | CAST IRON ELBOWS, FLANGED LONG RADIUS |
| 8    | 1     | 6"           | MEGA FLANGE                           |
| 9    |       | SIZE TO FIT  | CLASS 53 DIP FLANGED BY PLAIN END     |
| 10   | 1     | *            | TURBINE METER OR COMPOUND METER       |
| 11   | 1     | *            | SPACER SPOOL PIECE FLANGE BY FLANGE   |

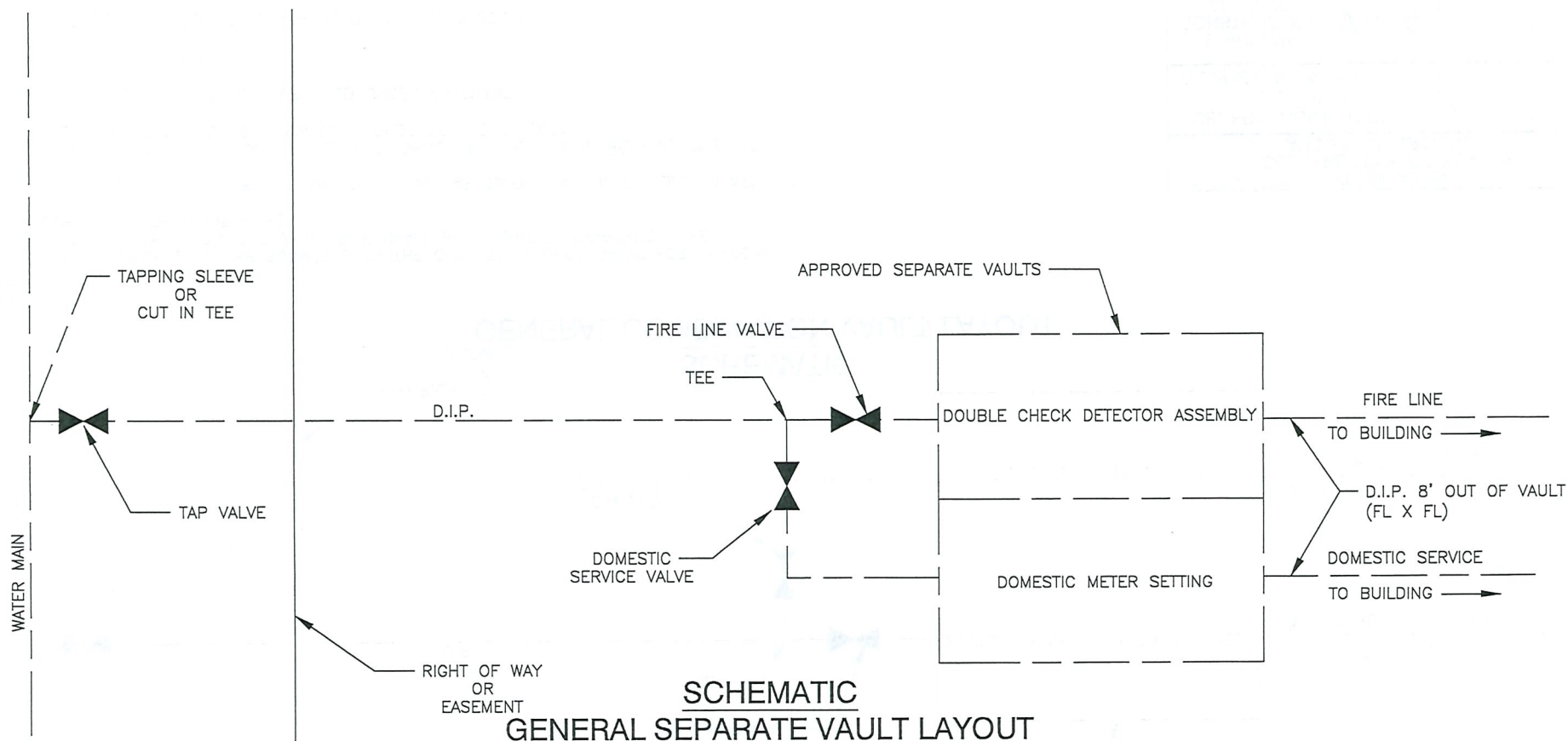
\*REFER TO CHART B FOR DIMENSIONS

CHART B

| METER TYPE                                                                          | A                                                                                   | a                                                                                     | b                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| TURBINE                                                                             | 37"                                                                                 | 10"                                                                                   | 27"                                                                                   |
| COMPOUND                                                                            | 37"                                                                                 | 13"                                                                                   | 24"                                                                                   |

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| DUAL SERVICE SETTING<br>WITH BACKFLOW DEVICE                 | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | 48-19                 | 8/12/19         |
|                                                              |                       | SHEET<br>4 OF 4 |

W-17



## SCHEMATIC

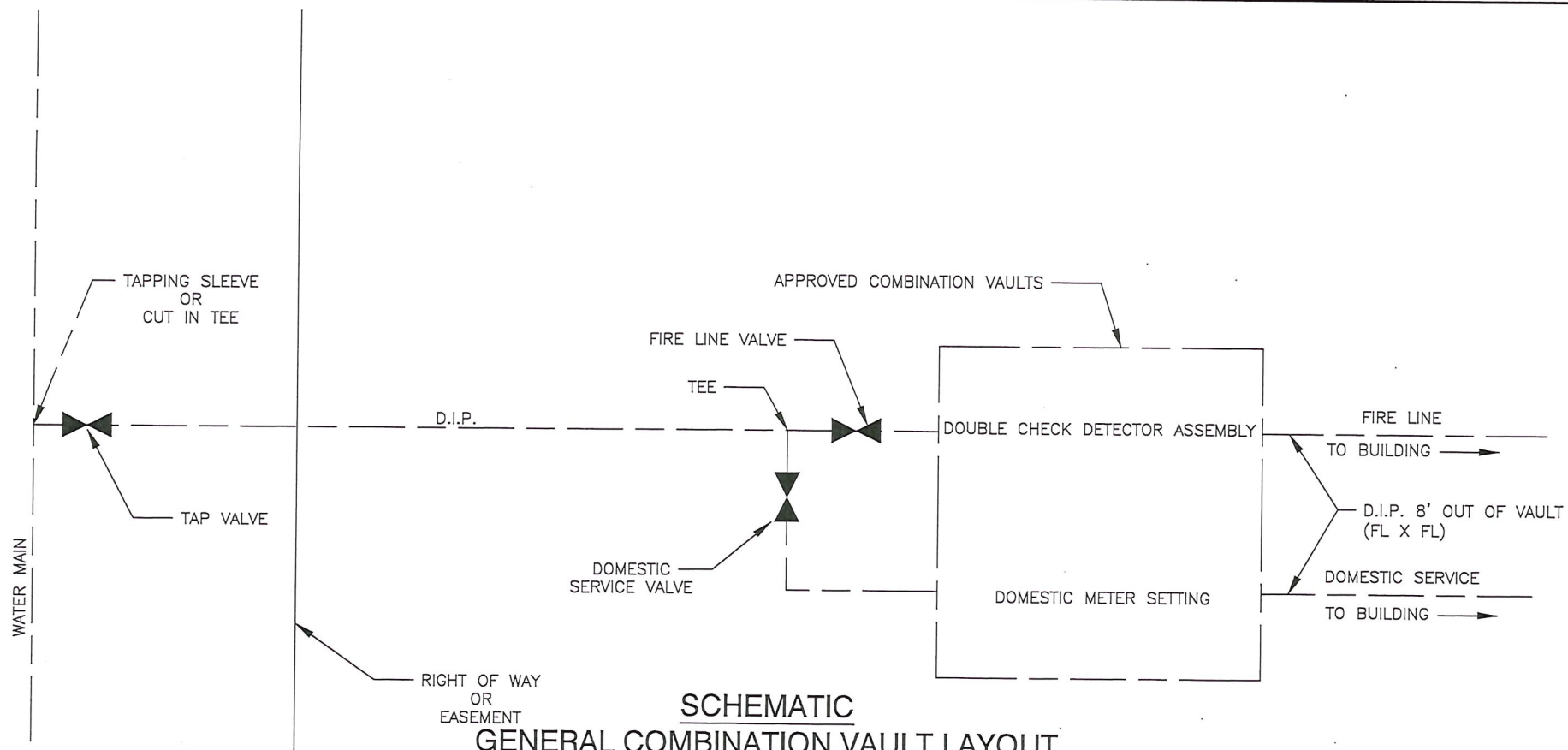
## GENERAL SEPARATE VAULT LAYOUT

### NOTES:

1. SHOP DRAWINGS SHALL BE SUBMITTED TO THE CITY UTILITY DEPARTMENT FOR APPROVAL PRIOR TO INSTALLATION. THE VAULT SIZE SHALL BE IN DIRECT PROPORTION THE MECHANICALS BEING INSTALLED.
2. THE CITY MAY PERMIT A SINGLE VAULT SO LONG AS DIMENSIONAL REQUIREMENTS ARE MET
3. ANY VAULT LOCATED WITHIN A PAVED AREA SHALL BE THE TRAFFIC BEARING TYPE WITH THE ACCESS FRAME AND COVER LOCATED OUTSIDE OF THE PAVEMENT.
4. POUR IN PLACE VAULT NOT PERMITTED UNDER PAVEMENT.
5. 6 FT. MINIMUM DEPTH.
6. LID SHALL BE BILCO MODEL #J-4AL OR APPROVED EQUAL.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| GENERAL SEPARATE<br>VAULT LAYOUT<br>COMMERCIAL & INDUSTRIAL  | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-18</b>              | 48-19                 | 8/12/19 |





**SCHEMATIC**  
**GENERAL COMBINATION VAULT LAYOUT**

**NOTES:**

1. SHOP DRAWINGS SHALL BE SUBMITTED TO THE CITY UTILITY DEPARTMENT FOR APPROVAL PRIOR TO INSTALLATION. THE VAULT SIZE SHALL BE IN DIRECT PROPORTION THE MECHANICALS BEING INSTALLED.
2. THE CITY MAY PERMIT A SINGLE VAULT SO LONG AS DIMENSIONAL REQUIREMENTS ARE MET
3. ANY VAULT LOCATED WITHIN A PAVED AREA SHALL BE THE TRAFFIC BEARING TYPE WITH THE ACCESS FRAME AND COVER LOCATED OUTSIDE OF THE PAVEMENT.
4. POUR IN PLACE VAULT NOT PERMITTED UNDER PAVEMENT.
5. 6 FT. MINIMUM DEPTH.
6. LID SHALL BE BILCO MODEL #J-4AL OR APPROVED EQUAL.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS   |                       |         |
|----------------------------------------------------------------|-----------------------|---------|
| GENERAL COMBINATION<br>VAULT LAYOUT<br>COMMERCIAL & INDUSTRIAL | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-19</b>                | 48-19                 | 8/12/19 |

- 1) SERVICES FROM THE CURB STOP TO THE WATER METER SHALL BE ONE OF THE FOLLOWING MATERIALS:
  - A) SOFT COPPER, TYPE "K"
  - B) CROSSLINKED POLYETHYLENE(PEX<sub>a</sub>) MEETING THE FOLLOWING STANDARDS: ASTM F 876, ASTM F 2657, ASTM F 2080, ASTM F 2023 AND AWWA C904 AND AWWA C800 (FITTINGS) AS MANUFACTURED BY REHAU "MUNICIPLEX" OR APPROVED EQUAL. SDR-9, PC200@73°F. SHALL BE USED AT THE APPROVAL OF THE AVON UTILITY DEPARTMENT.
  - C) HDPE PE3408, C-3, SDR-9 PC200@73°F, ASTM D2737-05 AWWA C-901. SHALL BE USED AT THE APPROVAL OF THE AVON UTILITY DEPARTMENT.

ALL PIPE OVER 2" SHALL BE (DUCTILE IRON CLASS 52) OR C909. (METER PITS MAY BE REQUIRED AT THE CITY OF AVON UTILITIES SUPERINTENDENT'S DISCRETION. SDR-9 PIPING SHALL BE BACK FILLED PER W-3. PLASTIC WATER SERVICES SHALL INCLUDE STAINLESS STEEL INSERT STIFFENERS THAT ARE CAPABLE OF A WORKING PRESSURE OF 150 PSI AND A BURST PRESSURE OF 450 PSI.

- 2) ALL SERVICES SHALL BE A MINIMUM OF ONE (1") INCH FOR ALL NEW CONSTRUCTION.
- 3) WHERE CURRENT 3/4" SERVICES ARE INSTALLED AT RIGHT OF WAY IN PREVIOUSLY APPROVED SUBDIVISIONS ADDITIONAL 3/4" SERVICE WILL BE ALLOWED, ONE INCH FROM STREET TO HOUSE PREFERRED.
- 4) METER SIZE SHALL MATCH THE SERVICE LINE SIZE.
- 5) WHEN METERS SHALL BE MOUNTED IN PITS/VAULTS AS CLOSE TO THE CURB BOX AS POSSIBLE. METER PIT LIDS SHALL BE SET TO FINISH GRADE.
- 6) SERVICE LINES SHALL BE A MINIMUM DEPTH OF 48" THE SERVICE LATERALS SHALL NOT BE INSTALLED IN COMMON TRENCH. THE MINIMUM HORIZONTAL SEPARATION SHALL BE:
  - TEN FEET (10') BETWEEN THE WATER SERVICE AND SANITARY
  - FIVE FEET (5') BETWEEN WATER SERVICE AND ALL OTHER UTILITIES
- 7) SERVICE LINE INSTALLATION MAY NOT BE ACCOMPLISHED BY SHELVEING TRENCH WITH STORM OR SANITARY.
- 8) ALL SERVICE LINE BEDDING AND COVER SHALL BE WASHED #8 LIMESTONE.
- 9) SERVICE LINE MAY ENTER BUILDING UNDER FOOTER PROVIDED PROPER CLEARANCE AND SEPARATION IS MET. OTHERWISE, SERVICES TO BE STUBBED THROUGH WALL. WALL SLEEVES SHALL BE PROVIDED AS PER BUILDING DEPARTMENT REQUIREMENTS. SERVICES THAT ENTER THROUGH BASEMENT FLOOR OR SLAB SHALL BE PROTECTED WITH A NON-KINK MATERIAL SUCH AS ARMAFLEX OR APPROVED EQUAL.
- 10) IT IS PREFERRED THAT WATER SHUT OFF BOX ARE NOT INSTALLED WITHIN THE DRIVEWAY AREA.
  - \* WATER SHUT OFF BOXED THAT ARE PLACED WITHIN DRIVEWAYS SHALL BE ADJUSTED TO GRADE AND APPROVED BY THE AVON CITY UTILITY DEPARTMENT PRIOR TO PLACEMENT OF CONCRETE. SEE DETAIL W-3.
  - \* ALL CLEANOUTS & WATER BOXES LOCATED INSIDE OF CONCRETE AREAS THAT CANNOT BE RELOCATED, SHALL FOLLOW DETAIL SAN-5 OR W-3.
- 11) PLASTIC SERVICE LINES SHALL HAVE A TRACER WIRE SYSTEM AS PER REHAU SPECIFICATION OR APPROVED EQUAL INCLUDING 10 GAUGE(AWG) SINGLE STRANDED INSULATED COPPER WIRE. 1 TRACER WIRE OF DIFFERENT COLORS WITH NO SPLICES ARE REQUIRED.
  - \* 2 TRACER WIRES ON WATER MAINS
  - \* 1 TRACER WIRE ON WATER SERVICES.

- 12) WATER SERVICE LINES BETWEEN THE CURB STOP AND THE WATER METER SHALL CONFORM TO THE FOLLOWING:
  - A) SERVICE LINES WILL BE THE SAME SIZE AS THE METER SUCH AS 3/4", 1", 2".
  - B) UNDER NO CIRCUMSTANCES WILL A SWEAT CONNECTION BE PERMITTED IN A SERVICE LINE. (ANY LINE PRIOR TO MASTER METER)
- 13) INSIDE METER SET REQUIREMENTS SHALL CONFORM TO THE FOLLOWING:
  - A) ALL SERVICE LINES WILL RUN FROM THE CURB STOP TO NO MORE THAN ONE (1) FT. INSIDE THE BUILDING WHERE THE METER IS TO BE SET. ALL SERVICE LINES MUST BE LAID AT A DEPTH OF (48) INCHES. THIS LINE MUST BE INSPECTED BY THE WATER DEPARTMENT BEFORE IT IS COVERED.
  - B) NO SUPPLEMENTAL FITTINGS WILL BE ALLOWED BETWEEN THE CURB STOP AND THE METER SETTING.
  - C) UPON ISSUANCE OF A WATER TAP, THE PROPERTY OWNER GIVES THE WATER DEPARTMENT THE RIGHT TO INSTALL A METERING DEVICE IN THE BUILDING TO BE SERVICED, AND TO INSTALL A REGISTERING DEVICE AND CONNECTING WIRES. THE METERING DEVICE SHALL BE MOUNTED ON AN ENDPOINT FLOOR JOIST AND REMAIN ACCESSIBLE. IF COVERED THERE MUST BE A MINIMUM OF AN 18" X 18" ACCESS PANEL FOR MAINTENANCE PURPOSES.
- 14) WATER SERVICE LINE INSTALLATION SHALL CONFORM TO THE FOLLOWING OHIO EPA CONSTRUCTION NOTES:
  - A) MINIMUM OF 35 PSI SHALL BE MAINTAINED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.
  - B) BOOSTER PUMPS ARE NOT PERMITTED ON RESIDENTIAL SERVICE CONNECTIONS.
  - C) A MINIMUM HORIZONTAL SEPARATION (MEASURED OUT-TO-OUT CLEAR) SHALL BE:
    - TEN FEET (10') BETWEEN WATER LINES AND SANITARY SEWERS
    - FIVE FEET (5') BETWEEN WATER LINES AND STORM SEWERS
  - D) A MINIMUM 18-INCH VERTICAL CLEARANCE (MEASURED OUT-TO-OUT CLEAR) BETWEEN WATER LINES AND STORM SEWERS WILL BE MAINTAINED AND BETWEEN WATERLINES AND SANITARY SEWERS.

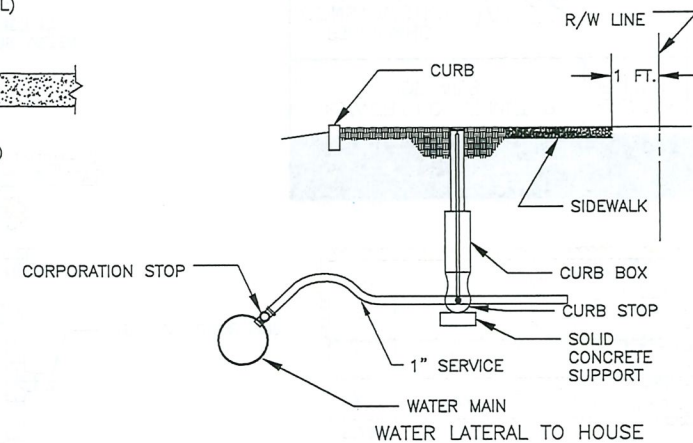
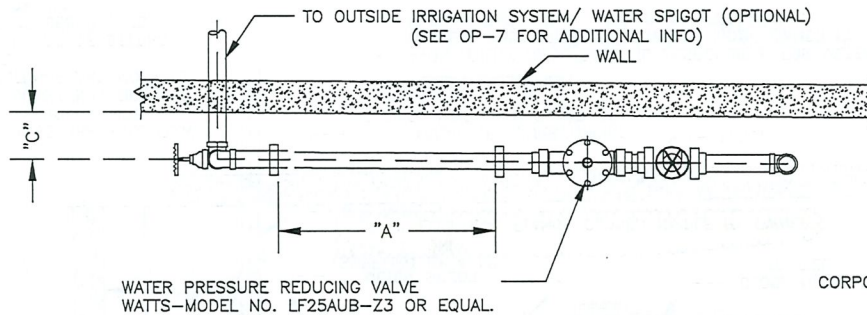
| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| WATER SERVICE LINE<br>SPECIFICATIONS                         | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | 48-19                 | 8/12/19         |
| W-20                                                         |                       | SHEET<br>1 OF 2 |



- 14) NO PERSON SHALL TAKE WATER FROM ANY FIRE HYDRANT EXCEPT FOR FIRE PURPOSES, UNLESS A PERMIT IS FIRST OBTAINED AND ARRANGEMENTS MADE FOR METERING OF THE WATER.
- 15) IN ALL CASES WHERE SERVICE IS CONNECTED DIRECT TO BOILERS OR OTHER HOT WATER FIXTURES THAT ARE LIKELY TO CAUSE A BACK WATER PRESSURE, A CHECK VALVE MUST BE INSTALLED AT THE EXPENSE OF THE CUSTOMER, ON THE SERVICE PIPE TO PREVENT DAMAGE TO METERS. ALL DAMAGES CAUSED TO METERS BY BACKWATER PRESSURE SHALL BE PAID FOR BY THE CONSUMER WHERE SUCH DAMAGES OCCUR.
- 16) ALL PERSONS ARE FORBIDDEN TO COVER UP OR INTERFERE WITH ANY METER-BOX, VALVE-BOX, HYDRANT OR OTHER WATER INFRASTRUCTURE APPURTENANCE.
- 17) IN NO CASE WILL SERVICE PIPES BE ALLOWED TO RUN ACROSS LOTS, FROM ONE LOT TO ANOTHER, UNLESS APPROVED BY THE AVON UTILITY DEPARTMENT WITH APPROPRIATE EASEMENTS IN PLACE.
- 18) NO TWO (2) SEPARATE PREMISES SHALL BE SUPPLIED FROM ONE (1) SERVICE, EXCEPTING IN THE UTILITY EASEMENT AREA. A SEPARATE SERVICE SHALL BE INSTALLED FOR EACH SUCH SEPARATE PREMISE; WITH THE EXCEPTION OF APARTMENT HOUSES, DUPLEX FLATS AND DOUBLE HOUSES.
- 19) ALL **DOMESTIC** SERVICES SHALL BE METERED.
- 20) ALL CHANGES IN SERVICE PIPES AND FIXTURES THAT MAY BE NECESSARY TO SET THE METER PROPERLY TO AVOID FREEZING AND TO MAKE ALL WATER USED ON ANY PREMISES PASS THROUGH THE METER SHALL BE MADE AT THE EXPENSE OF THE PROPERTY OWNER AND CONSUMER, AND THE COST THEREOF SHALL BE PAID BEFORE THE WATER IS TURNED ON. ANY DAMAGE TO SERVICE PIPE ON THE PERSONAL PROPERTY OF THE CUSTOMER, FROM FREEZING OR OTHER CAUSES, SHALL BE REPAIRED AT THE EXPENSE OF THE CUSTOMER.
- 21) PROPERTY OWNER IS ULTIMATELY RESPONSIBLE FOR PAYING WATER BILLS.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| WATER SERVICE LINE<br>SPECIFICATIONS                         | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-20</b>              | 48-19                 | 8/12/19         |
|                                                              |                       | SHEET<br>2 OF 2 |

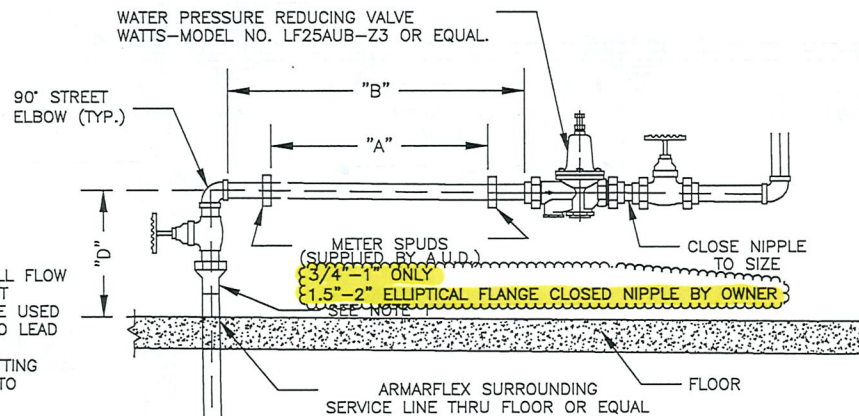




CURB STOP: MUELLER #15200 OR EQUAL  
CURB BOX AND COVER: HAYES #5800 OR #5803 OR EQUAL  
CORP. STOP: MUELLER #H-1500 OR EQUAL

#### NOTES:

CITY APPROVAL SHALL BE REQUIRED FOR ALL  
PROPOSED CURB STOP LOCATIONS,  
OTHER THAN AS SHOWN ABOVE.



- ALL VALVES ARE FULL FLOW  
IRON TO IRON F-NPT
- BALL VALVES MAY BE USED
- ALL FITTINGS ARE NO LEAD  
BRASS.
- OUTLET SIDE OF SETTING  
MUST BE SECURED TO  
WALL OR FLOOR.

#### MAINTENANCE NOTES:

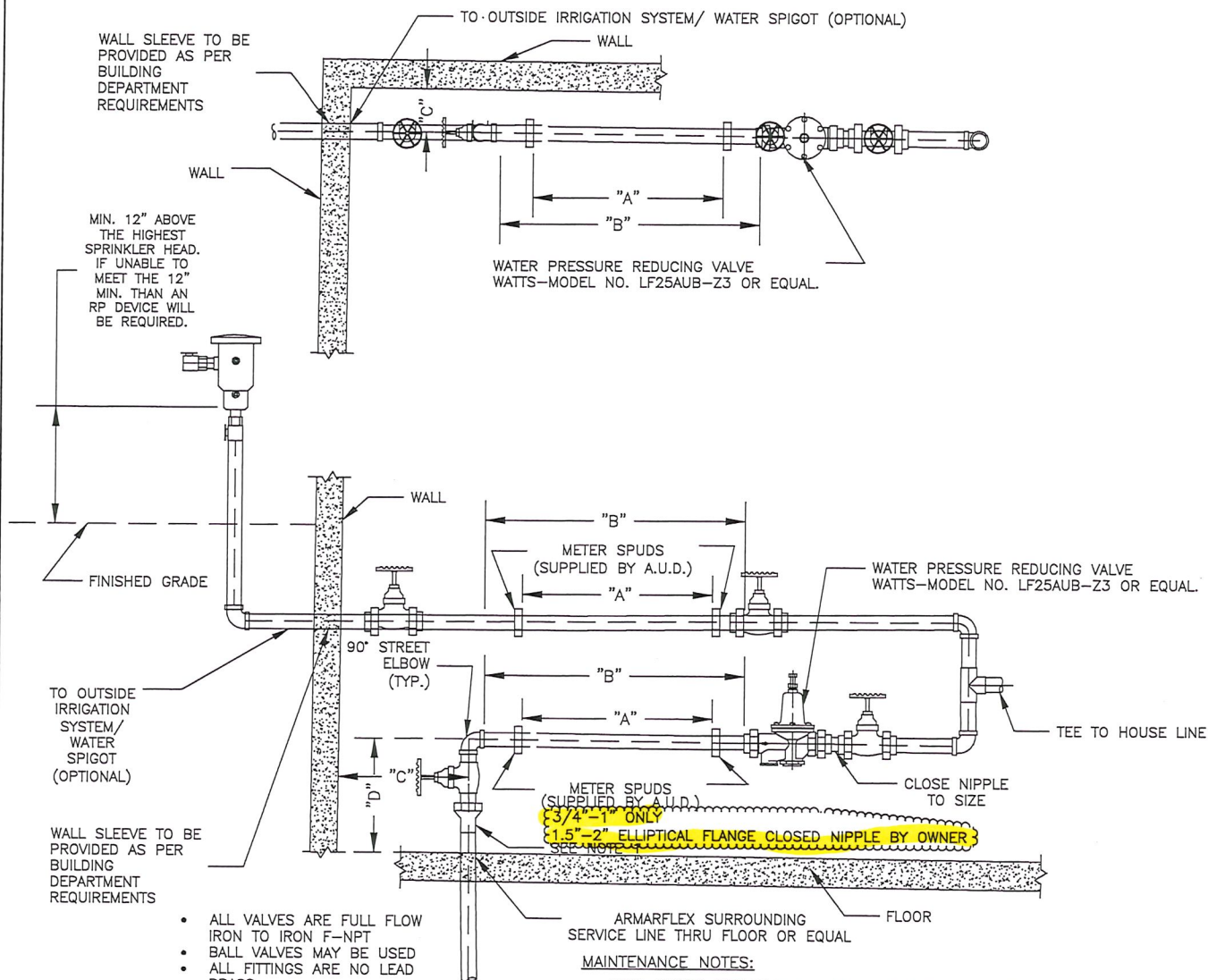
- AVON UTILITY DEPARTMENT IS RESPONSIBLE FOR METER GASKETS AND METER  
MAINTENANCE; HOME OWNER IS RESPONSIBLE FOR ALL OTHER APPURTENANCES.

#### NOTES:

- FOR COPPER SERVICE:  
USE COPPER TO IRON FLARE TO M-NPT OR BRASS  
COMPRESSION TO M-NPT
- FOR PLASTIC SERVICE:  
FOLLOW MANUFACTURERS GUIDE TO TRANSITION  
FROM PLASTIC WITH A BRASS COMPRESSION  
FITTING (F2080) WITH STAINLESS STEEL INSERT.
- ALL INSTALLATIONS MUST COMPLY WITH PUBLISHED  
RULES AND REGULATIONS
- INSIDE METER ASSEMBLY TO BE ACCESSIBLE AT  
ALL TIMES
- NO SEWER CHARGE FOR SECOND METER; WATER  
CHARGE ONLY.

| METER<br>SIZE | A       | B       | C                 | D                 |
|---------------|---------|---------|-------------------|-------------------|
| 3/4"          | 7-3/4"  | 12-1/2" | 6" MIN<br>12" MAX | 6" MIN<br>18" MAX |
| 1"            | 10-3/4" | 16"     | 6" MIN<br>12" MAX | 6" MIN<br>18" MAX |
| 1.5"          | 13"     | 18"±    | 6" MIN<br>12" MAX | 6" MIN<br>18" MAX |
| 2"            | 17"     | 23"±    | 6" MIN<br>12" MAX | 6" MIN<br>18" MAX |

| RESIDENTIAL<br>INSIDE METER<br>INSTALLATION | ADOPTION<br>ORDINANCE | DATE    |
|---------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING W-21    | 48-19                 | 8/12/19 |



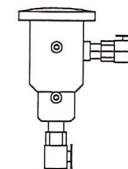
- ALL VALVES ARE FULL FLOW IRON TO IRON F-NPT
- BALL VALVES MAY BE USED
- ALL FITTINGS ARE NO LEAD BRASS.
- OUTLET SIDE OF SETTING MUST BE SECURED TO WALL OR FLOOR.

#### MAINTENANCE NOTES:

- AVON UTILITY DEPARTMENT IS RESPONSIBLE FOR METER GASKETS AND METER MAINTENANCE; HOME OWNER IS RESPONSIBLE FOR ALL OTHER APPURTENANCES.

#### NOTES:

1. FOR COPPER SERVICE:  
USE COPPER TO IRON FLARE TO M-NPT OR BRASS COMPRESSION TO M-NPT.  
FOR PLASTIC SERVICE:  
FOLLOW MANUFACTURES GUIDE TO TRANSITION FROM PLASTIC WITH A BRASS COMPRESSION FITTING (F2080) WITH STAINLESS STEEL INSERT.
2. ALL INSTALLATIONS MUST COMPLY WITH PUBLISHED RULES AND REGULATIONS
3. INSIDE METER ASSEMBLY TO BE ACCESSIBLE AT ALL TIMES
4. NO SEWER CHARGE FOR SECOND METER; WATER CHARGE ONLY.



THE PRESSURE VACUUM BREAKER IS DESIGNED TO PREVENT BACK SIPHONAGE INTO THE POTABLE WATER SUPPLY. CONTAINS A SPRING LOADED CHECK VALVE TO PREVENT A BACKFLOW OF NON-POTABLE WATER AND FLOAT VALVE WHICH OPENS TO ADMIT AIR WHEN BACK SIPHONAGE CONDITIONS EXIST. IT IS INTENDED FOR CONTINUOUS LINE PRESSURE APPLICATIONS WHICH MAY INCORPORATE DOWNSTREAM SHUT-OFF VALVES, BUT SHOULD NOT BE INSTALLED WHERE IT WOULD BE SUBJECT TO BACKPRESSURE. THE CORROSION RESISTANT CAST BRONZE BODY PLUS STAINLESS STEEL SPRINGS, SCREWS, AND PATENTED SILICONE RUBBER UPPER DISC, ASSURES CONTINUED PERFORMANCE UNDER PRESSURE.

WILKINS MODEL 720A OR EQUAL TO BE USED. ASSE #1020 (OUTSIDE)

| METER SIZE | A       | B       | C                 | D                 |
|------------|---------|---------|-------------------|-------------------|
| 3/4"       | 7-3/4"  | 12-1/2" | 6" MIN<br>12" MAX | 6" MIN<br>18" MAX |
| 1"         | 10-3/4" | 16"     | 6" MIN<br>12" MAX | 6" MIN<br>18" MAX |
| 1.5"       | 13"     | 18"±    | 6" MIN<br>12" MAX | 6" MIN<br>18" MAX |
| 2"         | 17"     | 23"±    | 6" MIN<br>12" MAX | 6" MIN<br>18" MAX |

| SEWER DEDUCT METER DETAILS         | ADOPTION ORDINANCE | DATE    |
|------------------------------------|--------------------|---------|
| STANDARD CONSTRUCTION DRAWING W-22 | 48-19              | 8/12/19 |



1) SEWER DEDUCT METERS CAN BE INSTALLED IN CONJUNCTION WITH THE INSTALLATION OF IRRIGATION SYSTEMS AND/OR OUTSIDE SPIGOTS. THIS METER INSTALLATION SHALL BE INSTALLED AT THE TIME OF BUILDING PLUMBING (NEW) OR RETRO FIT AS APPROVED PER THE FOLLOWING REQUIREMENTS:

- A) A PRESSURE VACUUM BREAKER DEVICE WILKINS MODEL 720A OR APPROVED EQUAL AS PER SPECIFICATION ASSE #1020 IS REQUIRED ON OUTSIDE SPRINKLER SYSTEMS.

THE DEVICE MUST BE TESTED UPON INSTALLATION AND EVERY 12 MONTHS THEREAFTER. THE TEST FOR RESIDENTIAL IRRIGATION SYSTEMS MUST BE COMPLETED EVERY YEAR BEFORE MAY 31ST DEADLINE REGARDLESS OF WHEN THE DEVICE WAS INSTALLED. DEVICE TESTING IS A REQUIREMENT OF THE OHIO REVISED CODE AND MUST BE COMPLETED REGARDLESS OF WHETHER THE SYSTEM IS USED. ALL TEST RESULTS MUST BE SUBMITTED TO THE CITY OF AVON UTILITIES DEPARTMENT.

- B) THERE SHALL BE PAID A PERMIT FEE TO BOTH THE UTILITIES AND BUILDING DEPARTMENTS FOR SUCH APPLICATION.

- C) ALL SECONDARY METERS SHALL BE PROVIDED AT 2ND ROUGH PLUMBING INSPECTION. THE METER (FURNISHED BY THE WATER DEPARTMENT) WILL THEN BE INSTALLED BY THE WATER DEPT.

- D) METERS WILL NOT BE INSTALLED UNDER SINKS, IN CLOSETS, IN CEILING SET FOR INDIVIDUAL LINES TO FAUCETS. SECONDARY METERS MUST BE INSTALLED AT THE MASTER METER LOCATION OR AS PREVIOUSLY NOTED. ALL METERS, VALVES AND APPURTENANCES SHALL BE ACCESSIBLE. IF A CHASEWAY OR ENCLOSED PANEL IS CONSTRUCTED, THE PANELS SHALL HAVE REMOVABLE PANELS. REMOTE METER DEVICES SHALL BE LOCATED ON A FLOOR JOIST AND REMAIN ACCESSIBLE VIA 18" WIDE X 18" DEEP REMOVABLE PANEL.

- 2) SANITARY SEWER DEDUCT METERS SHALL BE INSTALLED FOR USE WITH IRRIGATION SYSTEMS AND OUTSIDE SPIGOTS.

- 3) SUCH COMMON AREAS SHALL HAVE INDIVIDUAL IRRIGATION TAPS/SYSTEMS SEPARATE FROM HOMES.

- 4) ALL RESIDENTIAL DEDUCT METERS SHALL BE SIZED ACCORDING TO THE SERVICE AND INSTALLED AS PER CITY OF AVON STANDARDS.

- 5) THE PREFERRED METHOD FOR NEW HOME CONSTRUCTION IS WITH INSIDE METERING. EXTERIOR METER PITS SHALL BE ALLOWED ON A CASE BY CASE BASIS IF THE SERVICE LINE IS GREATER THAN 100 FT.

- 6) IRRIGATION SYSTEMS THAT ARE TO BE INSTALLED ON HOMES/PROPERTIES THAT ARE OF A SLAB TYPE CONSTRUCTION SHALL BE REQUIRED TO INSTALL AN INDIVIDUAL/SEPARATE LINE FROM THE "MASTER METER" TO A POINT AT WHICH THE IRRIGATION SYSTEM EXITS THE HOME COORDINATED WITH AVON UTILITIES DEPARTMENT WHEN THE STANDARD CAN NOT BE MET. THE SANITARY SEWER DEDUCT METER AND BACKFLOW DEVICE SHALL BE INSTALLED AT THE POINT TO WHICH THE NEW SERVICE EXITS THE BUILDING. CROSS CONNECTIONS BETWEEN DOMESTIC USE AND SECONDARY METER USE ARE PROHIBITED.

- 7) THE CITY OF AVON UTILITIES DEPARTMENT SHALL RESERVE THE RIGHT TO DENY ANY AND ALL DEDUCT METER INSTALLATIONS DUE TO IMPROPER INSTALLATION.

- 8) ANY AND ALL COST SHALL BE AT THE EXPENSE OF THE HOMEOWNER AND/OR THEIR AGENTS.

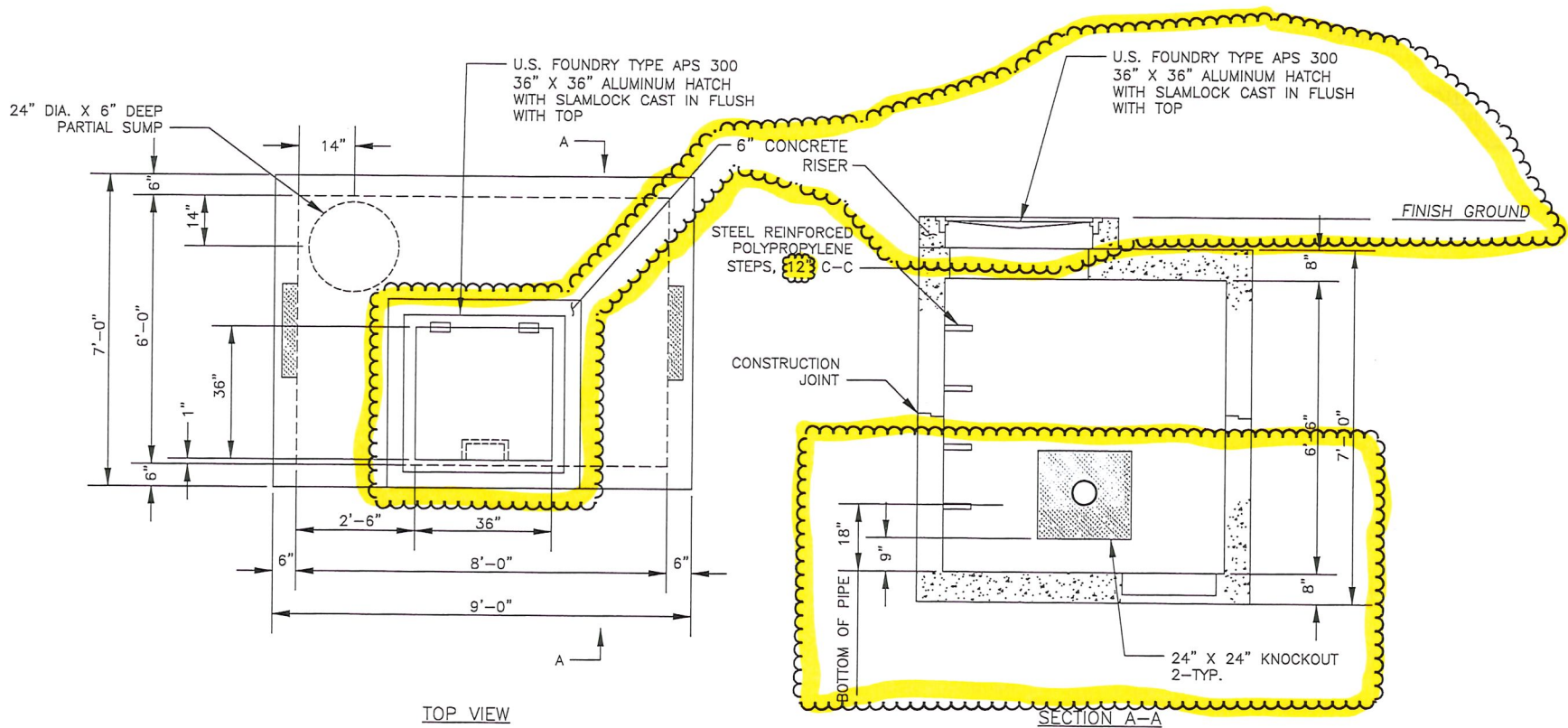
- 9) IT SHALL BE THE RESPONSIBILITY OF THE HOMEOWNER TO CONTACT THE CITY FOR INSPECTIONS AND METER INSTALLS FOURTY-EIGHT (48) HOURS IN ADVANCE.

- 10) COMMERCIAL/INDUSTRIAL/SLAB HOMES IRRIGATION SYSTEMS SHALL BE REVIEWED AND APPROVED ON AN INDIVIDUAL BASIS.

CITY OF AVON  
CONSTRUCTION STANDARDS  
AND SPECIFICATIONS

| SEWER DEDUCT METER<br>SPECIFICATIONS            | ADOPTION<br>ORDINANCE | DATE    |
|-------------------------------------------------|-----------------------|---------|
| STANDARD<br>CONSTRUCTION<br>DRAWING <b>W-23</b> | 48-19                 | 8/12/19 |

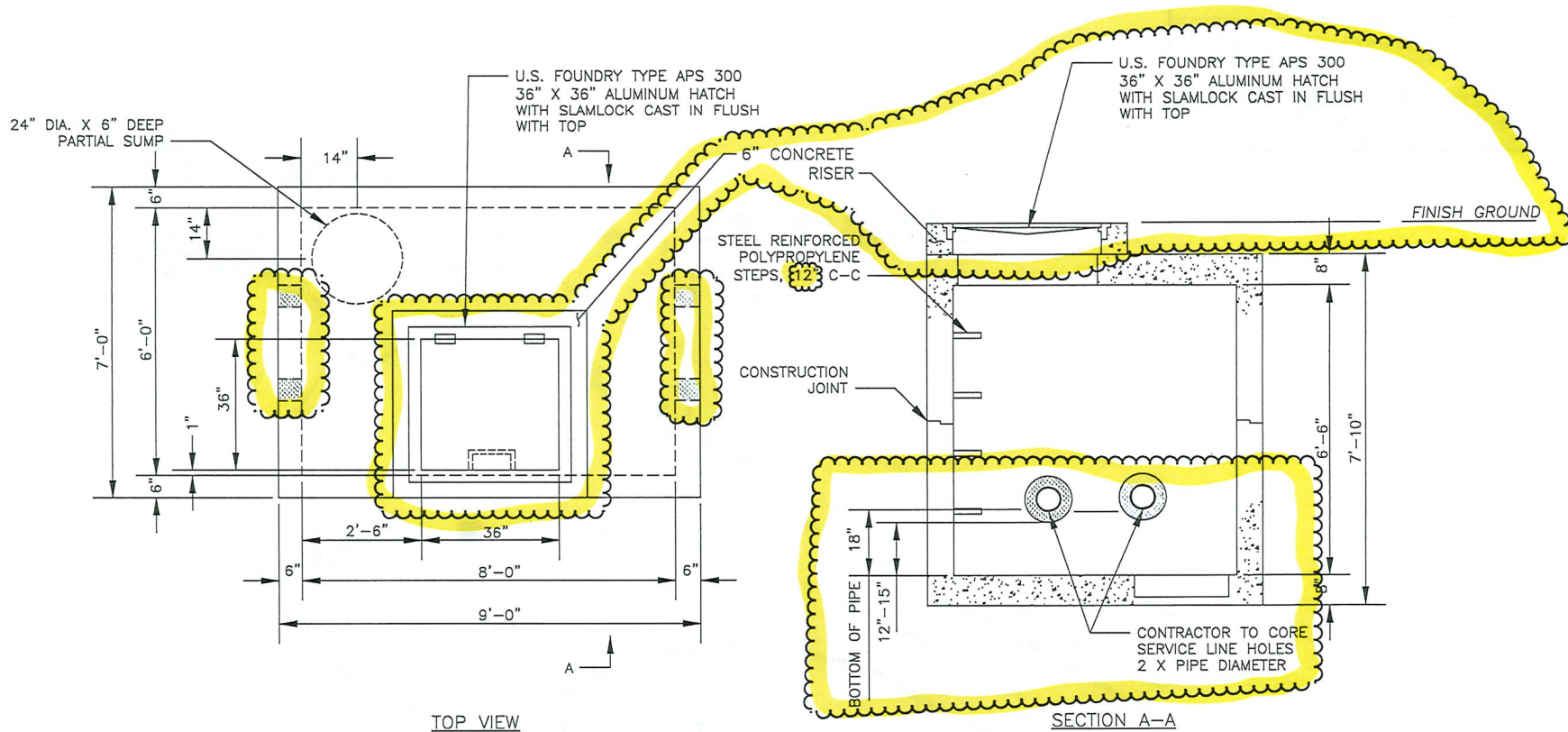




**NOTES:**

1. REINFORCED PRECAST CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
2. VAULT TO BE NON-TRAFFIC BEARING OR TRAFFIC BEARING PER LOCATION.
3. CONSTRUCTION JOINT TO BE SEALED WITH CONSEAL CS-102 MASTIC SEALANT.
4. ALL PIPING BY OTHERS.
5. HEAVIEST LIFT = 13,500 LBS.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                            |
|--------------------------------------------------------------|-----------------------|----------------------------|
| 6' X 8' CITY OF AVON<br>SINGLE SERVICE<br>METER VAULT        | ADOPTION<br>ORDINANCE | DATE                       |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-24<br>48-19         | 8/12/19<br>SHEET<br>1 OF 2 |

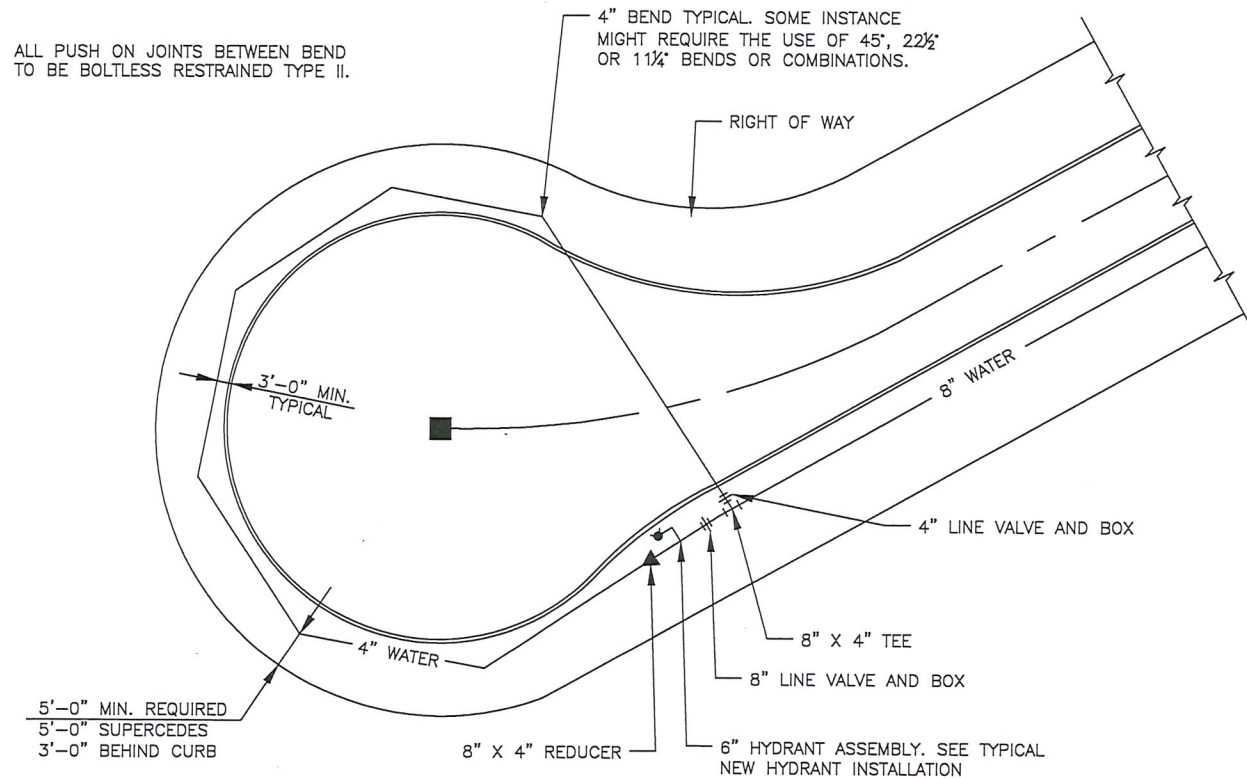


**NOTES:**

1. REINFORCED PRECAST CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
2. VAULT TO BE NON-TRAFFIC BEARING OR TRAFFIC BEARING PER LOCATION.
3. CONSTRUCTION JOINT TO BE SEALED WITH CONSEAL CS-102 MASTIC SEALANT.
4. ALL PIPING BY OTHERS.
5. HEAVIEST LIFT = 13,500 LBS.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |                 |
|--------------------------------------------------------------|-----------------------|-----------------|
| 6' X 8' CITY OF AVON<br>DUAL SERVICE<br>METER VAULT          | ADOPTION<br>ORDINANCE | DATE            |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-24                  | 8/12/19         |
|                                                              |                       | SHEET<br>2 OF 2 |

ALL PUSH ON JOINTS BETWEEN BEND  
TO BE BOLTLESS RESTRAINED TYPE II.



NOTE: LINE VALVE AND HYDRANT TO BE  
AS CLOSE TO TEE AS POSSIBLE.  
HYDRANT TEE TO BE WITHIN  
18'-0" OF 8" X 4" TEE.

| CITY OF AVON<br>CONSTRUCTION STANDARDS<br>AND SPECIFICATIONS |                       |         |
|--------------------------------------------------------------|-----------------------|---------|
| STANDARD CUL-DE-SAC<br>HYDRANT/LOOP SCHEMATIC                | ADOPTION<br>ORDINANCE | DATE    |
| STANDARD<br>CONSTRUCTION<br>DRAWING                          | W-25<br>48-19         | 8/12/19 |