300 - ROADWAYS

500 - GENERAL

600 - STORM DRAINAGE

800 - WATER DISTRIBUTION

900 - SANITARY SEWERS

CITY OF BROOKVILLE

ChoiceOne Engineering

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GENERAL

A. FAILURE TO COMPLY WITH THE CONSTRUCTION STANDARDS AND DRAWINGS AND DESIGN CRITERIA MAY BE CONSIDERED A VIOLATION OF THE CITY'S SUBDIVISION REGULATIONS. PENALTIES MAY BE ASSESSED ACCORDING TO THE SEVERITY OF THE VIOLATION.

B. ALL STREET CONSTRUCTION SHALL BE IN ACCORDANCE WITH ODOT SPECIFICATIONS, LATEST REVISION.

C. NON–PUBLIC CONSTRUCTION IMPROVEMENTS AFFECTING THE EXISTING CONDITION, PERFORMANCE AND LIFECYCLE OF CITY STREETS, ALLEYS, OR RIGHTS–OF–WAY SHALL BE RESTORED TO THE REQUIREMENTS AND SATISFACTION OF THE CITY. ALL CITY INFRASTRUCTURE SHALL BE ADEQUATELY RESTORED ACCORDING TO APPLICABLE STANDARDS AND DETAILS.

D. ALL NEW SUBDIVISIONS AND DEVELOPMENTS SHALL BE PROVIDED WITH PUBLIC SIDEWALKS ON BOTH SIDES OF STREETS IN ACCORDANCE WITH CITY STANDARDS.

E. CURB CUTS FOR ALL NEW AND RECONSTRUCTED DRIVEWAYS SHALL CONFORM TO CITY STANDARDS. ALL NEW DRIVEWAY APPROACHES SHALL BE CONSTRUCTED OF CONCRETE AND SUBJECT TO ALL CITY REQUIREMENTS.

F. NO CITY STREET OR ALLEY SHALL BE CLOSED UNLESS THE CITY IS NOTIFIED A MINIMUM OF 48 HOURS IN ADVANCE OF A NON–EMERGENCY SITUATION. ADVANCED PUBLIC NOTIFICATION AND PUBLISHING SHALL BE A MINIMUM OF 24 HOURS.

PAVEMENT REPLACEMENT

A. IMMEDIATELY AFTER PLACEMENT OF BACKFILL IN EXISTING STREETS, A TEMPORARY PAVEMENT SHALL BE INSTALLED AND THE STREET OPENED. TEMPORARY PAVEMENT SHALL CONSIST OF 8" OF COMPACTED ODOT SPECIFICATION 411 OR 304. THE SURFACE SHALL BE MAINTAINED FLUSH WITH THE EXISTING STREET.

B. PERMANENT PAVEMENT REPLACEMENT SHALL EQUAL OR EXCEED THE EXISTING PAVEMENT. (MINIMUM PAVEMENT COMPOSITION, SEE PAGE 300–3 OR 300–4).

C. ANY SETTLEMENT OF A TRENCH CAUSING A DEPRESSION SHALL BE REFILLED AS REQUIRED BY THE CITY AT THE CONTRACTOR'S EXPENSE. THIS PROVISION APPLIES FOR A ONE–YEAR PERIOD AFTER WORK IS ACCEPTED BY THE CITY.

D. ALL TEMPORARY PAVEMENT AND SIDEWALK SHALL BE MAINTAINED BY THE CONTRACTOR OR DEVELOPER AT HIS OWN EXPENSE IN A SUITABLE AND SAFE CONDITION FOR TRAFFIC UNTIL PERMANENT REPLACEMENT IS MADE OR THE PROJECT IS FINALLY ACCEPTED BY THE CITY.

TRAFFIC CONTROL

A. THE CONTRACTOR SHALL MAINTAIN TRAFFIC CONTROL AT ALL TIMES WITH THE PROPER BARRICADES AS PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVISES. THESE CONTROL DEVICES SHALL BE IN PLACE PRIOR TO ANY WORK COMMENCING. CONTRACTOR WILL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL ITEMS.

B. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE APPROVED BY THE CITY.

CURB STAKING AND ROADWAY

A. LINE AND GRADE EVERY 25' ON A CONVENIENT OFFSET WITH TACKED HUBS.

PAVEMENT (ASPHALT)

A. THE CONTRACTOR SHALL PROVIDE THE CITY WITH A COPY OF THE NORMAL (MEDIUM TRAFFIC) ODOT 441/442 JOB MIX FORMULA FOR EACH PLANT THAT PROVIDES HOT MIXED ASPHALT TO THIS PROJECT. SECTION 401.02 COMPOSITION OF THE CURRENT ODOT SPECIFICATIONS SHALL BE USED FOR ACCEPTANCE BASED ON THE INCREASED BITUMEN. A 448 OR 446 JOB MIX FORMULA WILL NOT BE ACCEPTABLE. RECYCLED ASPHALT SHALL NOT EXCEED 15% OF ANY MIX PRODUCED.

B. THREE–WHEEL STEEL ROLLER SHALL BE USED FOR INITIAL BREAKDOWN ON ALL PROJECTS.

C. ALL WORK SHALL ADHERE TO ODOT'S LATEST REVISIONS AND TO THE CITY'S SPECIFICATIONS WHICHEVER IS MORE STRINGENT SHALL PREVAIL UNLESS OTHERWISE APPROVED.

D. PATCHED AREAS SHALL BE SEALED ON THE PERIMETER OF THE PATCH WITH ASPHALT CEMENT.

E. ALL UTILITY ADJUSTMENTS –– MANHOLE, WATER VALVES, ETC., –– SHALL BE RAISED TO FINISHED GRADE BEFORE THE FINAL ASPHALT COURSE IS LAID.

F. ASPHALT CEMENT SHALL BE USED NEXT TO THE LIP OF GUTTER PRIOR TO THE FINAL ASPHALT LIFT BEING PLACED. (SS–1 TACK OR PG64–22 SEAL.)

G. TACK COAT SHALL BE APPLIED PRIOR TO THE PLACEMENT OF THE FINAL LIFT OF ASPHALT IF THE EXISTING ASPHALT LIFT IS DIRTY OR AFTER TEN DAYS UNLESS OTHERWISE APPROVED. TEMPERATURE MUST BE 50°F OR HIGHER.

H. NO ASPHALT SHALL BE PLACED OVER EXCAVATED TRENCHES UNLESS TRENCHES HAVE BEEN COMPACTED AS PER CITY CONSTRUCTION STANDARDS & DRAWINGS PAGE 600–8. 800–4, 900–5.

I. NO ASPHALT SHALL BE LAID UNLESS THE CITY IS GIVEN PRIOR NOTICE AND THE AMBIENT TEMPERATURE IS ABOVE THOSE SPECIFIED IN ODOT SPECIFICATION 401.

J. FINAL LIFT OF ASPHALT SHALL BE FINISHED TO 1/4" ABOVE THE LIP OF GUTTER.

K. TEMPERATURES FOR BREAKDOWN ROLLING SHALL CONFORM TO ODOT 449.

L. ASPHALT CEMENT SHALL BE USED ON ALL JOINTS AND FEATHERED SURFACES PRIOR TO PLACEMENT OF THE NEXT COURSE OF ASPHALT TO THE ABUTTING JOINT, UNLESS OTHERWISE APPROVED.

M. MAXIMUM ASPHALT TEMPERATURE IS TO CONFORM TO ODOT SPECIFICATIONS.

N. ALL EDGES TO BE TRIMMED BACK AND SAWCUT TO SOLID MATERIAL AND BE STRAIGHT AND NEAT AS PER THE CITY'S INSTRUCTIONS.

CONCRETE FIBERS

A. ALL CURB AND DRIVEWAYS MUST HAVE 3 LBS PER CUBIC YARD OF CONCRETE FIBERS. ALL WALKS AND CURB RAMPS MUST HAVE 1.5 LBS PER CUBIC YARD OF CONCRETE FIBERS. FIBERS SHALL BE EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO SYNTHETIC MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90.

B. THE INSTALLATION CONTRACTOR MUST CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES. FIBER REPRESENTATIVE MUST BE ON SITE FOR THE FIRST POUR.

STREET FUNCTIONAL CLASSIFICATIONS

THE CITY ENGINEER WILL PROVIDE THE CLASSIFICATION OF ALL STREETS PRIOR TO DESIGN AND CONSTRUCTION. THE CLASSIFICATIONS ARE AS FOLLOWS:

A. ARTERIAL

A STREET PRIMARILY FOR THROUGH TRAFFIC, CARRYING HEAVY LOADS AND LARGE VOLUMES OF TRAFFIC, USUALLY ON A CONTINUOUS ROUTE.

B. COLLECTOR/RESIDENTIAL

A STREET DESIGNED TO CONDUCT TRAFFIC FROM LOCAL RESIDENTIAL STREETS TO ARTERIALS OR OTHER COLLECTOR STREETS.

C. INDUSTRIAL/COMMERCIAL

A STREET DESIGNED TO CONDUCT TRAFFIC FOR INDUSTRIAL AND COMMERCIAL USES.

D. LOCAL

A STREET DESIGNED TO PROVIDE ACCESS TO ABUTTING RESIDENTIAL PROPERTY AND DISCOURAGE THROUGH TRAFFIC.

DESIRED MINIMUM STANDARDS

STREET FUNCTIONAL CLASSIFICATION	RIGHT-OF-WAY WIDTH	BACK-TO-BACK CURB
	(L.F.)	(L.F.)
ARTERIAL	80	*
COLLECTOR - RES.	60	37
IND. AND COMM.	60	41
LOCAL	50	31

* SEE DESIGN CRITERIA

CITY OF BROOKVILLE	STREET CLASSIFICATIONS AND RECOMMENDED STANDARD STREET DIMENSIONS	REVISIONS:	DATE APPROVED: OCT. 2023
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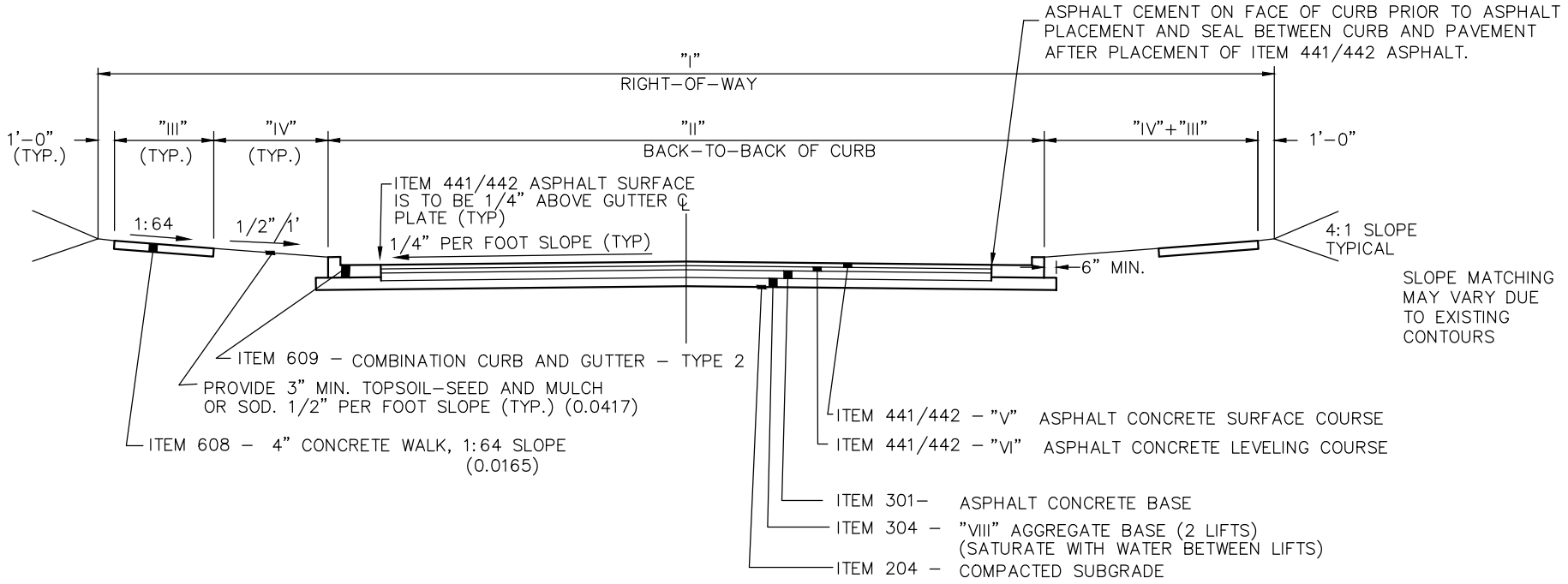

* SEE DESIGN CRITERIA
** ONLY AS REQUIRED

STANDARD DIMENSIONS	MINIMUM STANDARDS					
ITEM	DESCRIPTION	ARTERIAL	COMM.&IND.	COLLECTOR RESIDENTIAL	LOCAL
I	RIGHT-OF-WAY	80'	60'	60'	50'
II	B\B CURB	*	41'	37'	31'
III	SIDEWALK WIDTH	5'	**	5'	5'
IV	CURB LAWN WIDTH	6.5'±	3.5'	5.5'	3.5'
V	ITEM 441/442	1-1/4"	1-1/4"	1-1/4"	1-1/4"
VI	ITEM 441/442	1-3/4"	1-3/4"	2-3/4"	1-3/4"
VII	ITEM 301	3"	3"	—	—
VIII	ITEM 304	2-4" LIFTS	2-4" LIFTS	2-5" LIFTS	2-5" LIFTS

NOTES

A. ALL WORK TO CONFORM TO ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS LATEST REVISION UNLESS OTHERWISE SPECIFIED.

B. ITEM 407 NON-TRACKING TACK COAT, SHALL BE REQUIRED WHEN 10 DAYS HAVE ELAPSED BETWEEN BITUMINOUS PAVEMENT LIFTS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.

C. ALL BUTT JOINTS AND BETWEEN CURB AND PAVEMENT SHALL BE SEALED WITH PG64-22 WITHIN 24 HOURS AFTER PLACEMENT OF ITEM 441/442.

D. NO CONCRETE PAVEMENT WILL BE ACCEPTED

E. ITEM 442 TO BE USED ON THE FOLLOWING MAJOR ROADS ONLY: ALBERT ROAD, ARLINGTON ROAD, BROOKVILLE-SALEM STREET, EAST AND WEST UPPER LEWISBURG-SALEM ROAD, WESTBROOK ROAD, WESTERN AVENUE, WOLF CREEK STREET, CARR DRIVE, E. & W. CAMPUS BOULEVARD, AND COLLECTIVE WAY. ANY NEW ROADS MAY BE INCLUDED AT THE DISCRETION OF THE CITY.

CITY OF BROOKVILLE

ChoiceOne Engineering

TYPICAL SECTIONS AND ASPHALT PAVEMENT COMPOSITION

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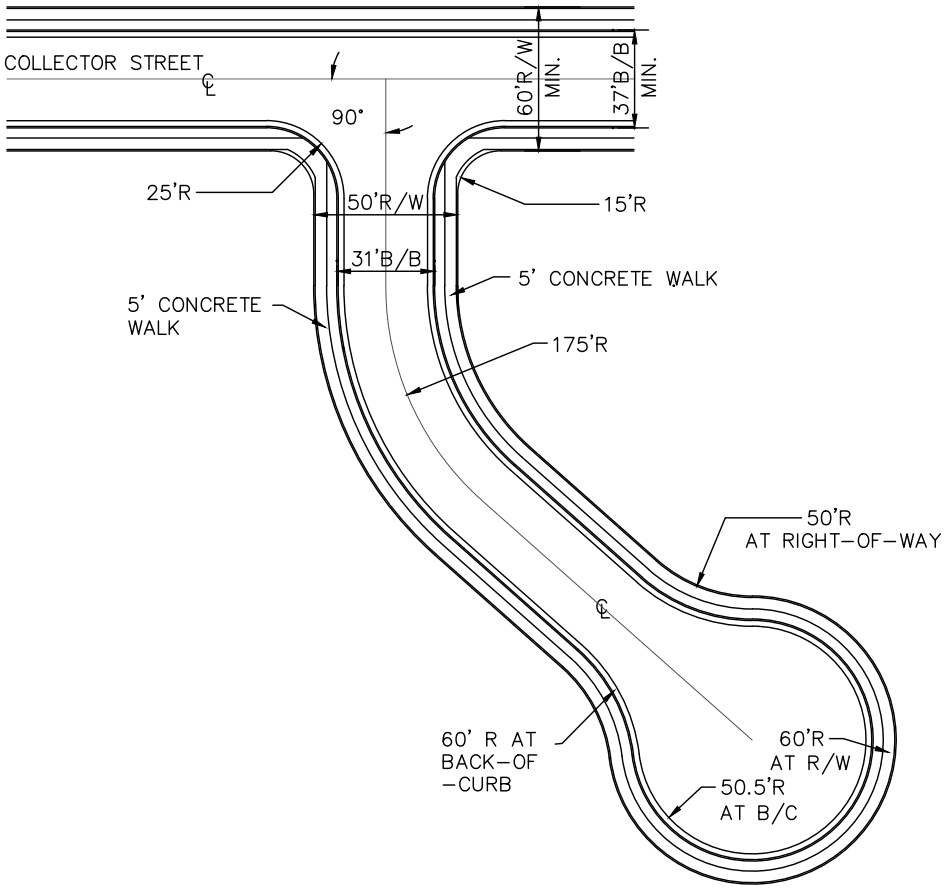
TYPICAL STREET AND CUL-DE-SAC PLAN



STREET DESIGN STANDARDS

	LOCAL (THRU STREETS)	COLLECTOR	ARTERIAL
MINIMUM DESIGN SPEED	25 MPH	35 MPH	45 MPH
MINIMUM CENTERLINE GRADES	0.50%	0.50%	0.50%
MAXIMUM CENTERLINE GRADES	10%	7%	4%
MINIMUM LENGTH OF VERTICAL CURVE (SEE NOTE C).	25FT.	50FT.	100FT.
MINIMUM CENTERLINE RADIUS	250FT.	400FT.	600FT.
MINIMUM LENGTH TANGENT BETWEEN CURVES	50FT.	50FT.	100FT.
MINIMUM BACK-OF-CURB RADIUS	25FT.	25FT.	50FT.
MINIMUM HORIZONTAL VISIBILITY	150FT.	250FT.	400FT.
MINIMUM STOPPING SIGHT DISTANCE (MEASURED FROM 3.5' EYE-LEVEL TO 6" OBJECT HEIGHT)	150FT.	250FT.	400FT.
MAXIMUM CENTERLINE GRADE WITHIN 100' OF AN INTERSECTION	3%	3%	3%
RIGHT-OF-WAY WIDTH	50FT.	60FT.	80FT.

NOTES

A. THESE ARE MINIMUM DESIGN STANDARDS AND MAY BE REQUIRED TO BE INCREASED TO COMPLY WITH THE CITY'S OFFICIAL THOROUGHFARE PLAN.

B. THE MAXIMUM LENGTH FOR CUL-DE-SAC STREET SHALL BE 600' CENTER-OF-STREET TO CENTER OF CUL-DE-SAC UNLESS AUTHORIZED BY CITY PLANNING COMMISSION.

C. MINIMUM LENGTH OF VERTICAL CURVE CAN BE REDUCED OR ELIMINATED TO ALLOW FOR PROPER DRAINAGE, WITH APPROVAL OF THE CITY.

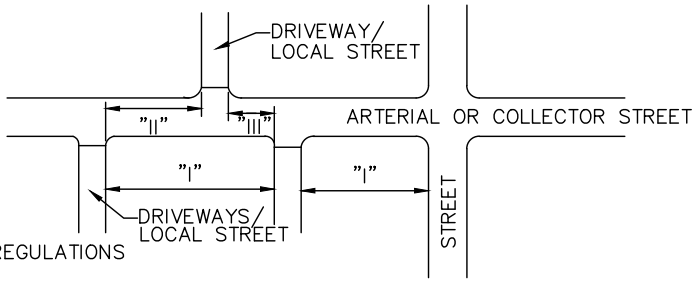
ACCESS CONTROL STANDARDS

INDUSTRIAL AND COMMERCIAL DRIVEWAY AND LOCAL STREETS

A. ACCESS CONTROL AS SHOWN ON THE TABLE BELOW SHALL APPLY TO INDUSTRIAL AND COMMERCIAL DRIVEWAYS OR NEW LOCAL STREETS ON ARTERIAL OR COLLECTOR STREETS WITHIN THE CITY.

MINIMUM SPACING OF ACCESS POINTS.

ITEM	DISTANCE IN FEET
I.	200*
II.	120
III.	50



* LOCAL STREETS, SEE SUBDIVISION REGULATIONS FOR MINIMUM BLOCK LENGTH.

B. THE DISTANCE BETWEEN ACCESS POINTS IS MEASURED TO THE NEAREST CURB OR EDGE LINE.

C. NO MORE THAN ONE (1) ACCESS POINT (UNLESS THERE IS A SEPARATE ENTRANCE AND EXIT ACCESS) PER COMMERCIAL PROPERTY IS PERMITTED WITH THE EXCEPTION THAT AN ACCESS POINT ON EACH ROADWAY OF A CORNER PROPERTY IS PERMITTED AND PROPERTIES WITH FRONTAGES EXCEEDING 300' MAY BE PERMITTED IF THE NEED IS CLEARLY SHOWN FOR MORE THAN ONE DRIVEWAY WITH A MAXIMUM OF TWO.

D. THE DISTANCE BETWEEN INDUSTRIAL AND COMMERCIAL DRIVEWAYS ON LOCAL STREETS MUST BE 100' OR GREATER.

E. THE MINIMUM SPACING BETWEEN A COMMERCIAL DRIVEWAY AND/OR STREET WHICH INTERSECTS AN ARTERIAL OR COLLECTOR STREET SHALL BE 200'. THIS DISTANCE SHALL BE MEASURED FROM THE POINT FORMED BY THE INTERSECTION OF THE EXTENDED CURB LINES OF EACH DRIVEWAY OR STREET.

F. DRIVEWAYS OR LOCAL STREETS SHALL BE DIRECTLY OPPOSITE OR SHALL BE OFFSET BY THE DIMENSIONS SHOWN ON THE TABLE ABOVE UNDER ITEM A.

G. DRIVEWAY OPENING WIDTHS SHALL ADHERE TO THE CITY'S CONSTRUCTION STANDARDS AND DRAWINGS.

H. IN SPECIAL OR UNIQUE SITUATIONS WHERE STRICT APPLICATION OF THESE STANDARDS WOULD CAUSE UNDUE HARDSHIP UPON THE PROPERTY OWNER, THE CITY MAY GRANT A VARIANCE TO SAID STANDARDS.

I. DRIVEWAY OPENINGS SHALL BE AT LEAST 40' FROM INTERSECTION OF LOCAL STREETS.

J. AN ACCESS POINT MUST BE A MINIMUM OF 20' FROM THE ADJACENT PROPERTY LINE, UNLESS A SHARED DRIVEWAY IS UTILIZED.

K. ALL DEFINITIONS SHALL BE AS PER THE OHIO MANUAL OF UNIFORM TRAFFIC DEVICES LATEST REVISIONS.

L. ALL DRIVEWAYS AND LOCAL STREET ACCESS POINTS TO COLLECTOR AND ARTERIAL STREETS MUST BE APPROVED BY THE CITY.

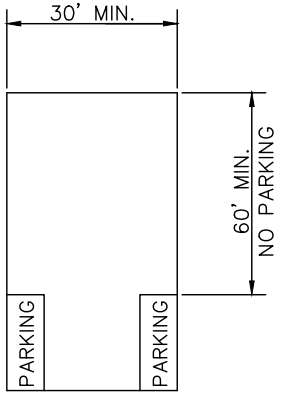
ACCESS CONTROL STANDARDS

RESIDENTIAL DRIVEWAYS

A. THE MINIMUM DISTANCE BETWEEN A RESIDENTIAL DRIVEWAY AND STREET SHALL BE 50'. THIS DISTANCE SHALL BE MEASURED FROM THE POINT FORMED BY THE INTERSECTION OF THE EXTENDED CURB LINE OR EDGE OF PAVEMENT LINE OF THE DRIVEWAY AND STREET.

B. ON STREETS WITHOUT CURB, PROPER SIZE CULVERT AND DRAINAGE MUST BE ADDRESSED

C. ALL DRIVEWAY CONSTRUCTION MUST FOLLOW THE CONSTRUCTION STANDARDS AND DRAWINGS WITHIN.



TEMPORARY DEAD-END STREETS

CITY OF BROOKVILLE	**ACCESS CONTROL STANDARDS TEMPORARY DEAD-END STREETS**	REVISIONS:	DATE APPROVED: OCT. 2023
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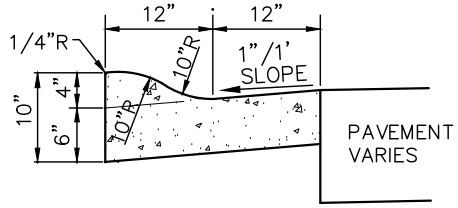
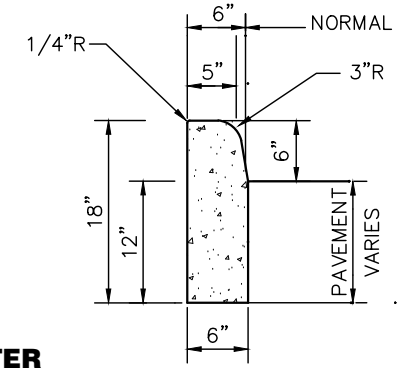
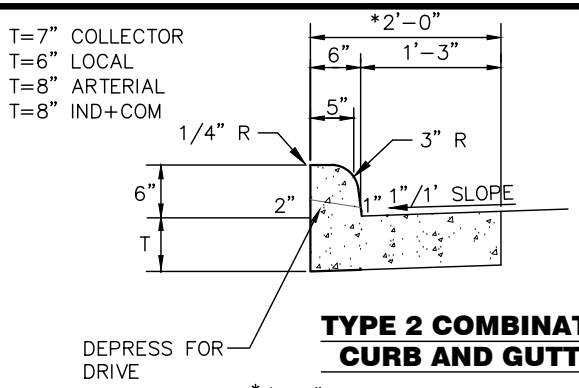


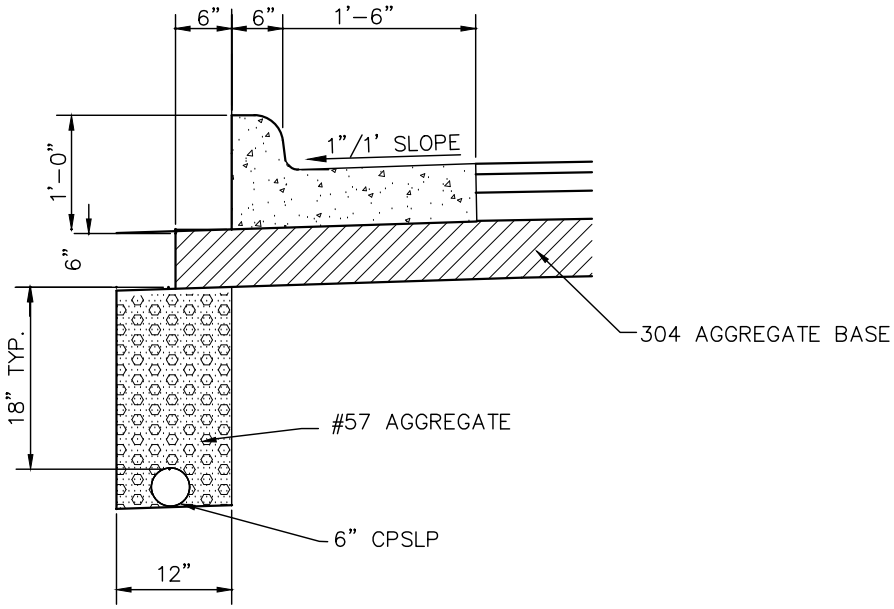
TYPE 1
COMBINATION ROLL CURB AND GUTTER
(REPLACEMENT PURPOSE ONLY)



TYPE 6
BARRIER CURB



TYPE 2 COMBINATION
CURB AND GUTTER
*(1-9" MAY BE USED FOR REPLACEMENT PURPOSE AND WHERE APPROVED BY THE CITY ONLY)



6" SHALLOW PIPE UNDERDRAIN DETAIL
(ONLY AS REQUIRED BY THE CITY)

NOTES

A. CONCRETE AND WORK SHALL MEET THE REQUIREMENTS SET FORTH IN ODOT ITEM 609 CURBING.

B. CURBING SHALL HAVE CONTRACTION JOINTS EVERY 10'.

C. MINIMUM OF 6" OF ODOT 304 SHALL BE PLACED UNDER CURBING.

D. CURBING SHALL BE BACKFILLED IMMEDIATELY AFTER FORMS ARE REMOVED OR AS SOON AS PRACTICAL WHEN SLIP FORMING PRIOR TO OTHER CONSTRUCTION OPERATIONS.

E. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.

F. APPLY WHITE PIGMENTED CURING COMPOUND ON ALL SURFACES INCLUDING BACK IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

G. CONCRETE SHALL BE ODOT CLASS QC-1P (4000 PSI, 600LB/CY CEMENT). PROPORTIONING OPTIONS 1 AND 2 NOT ALLOWED.

H. CONCRETE SHALL CONTAIN 8% ± 2% OF TOTAL AIR.

I. TYPE 6 CURBS ARE FOR USE AROUND MEDIAN SECTION.

J. MINIMUM FLOW LINE SLOPE OF PERFORATED PIPE IS 0.003 FT/FT TO OUTLET.

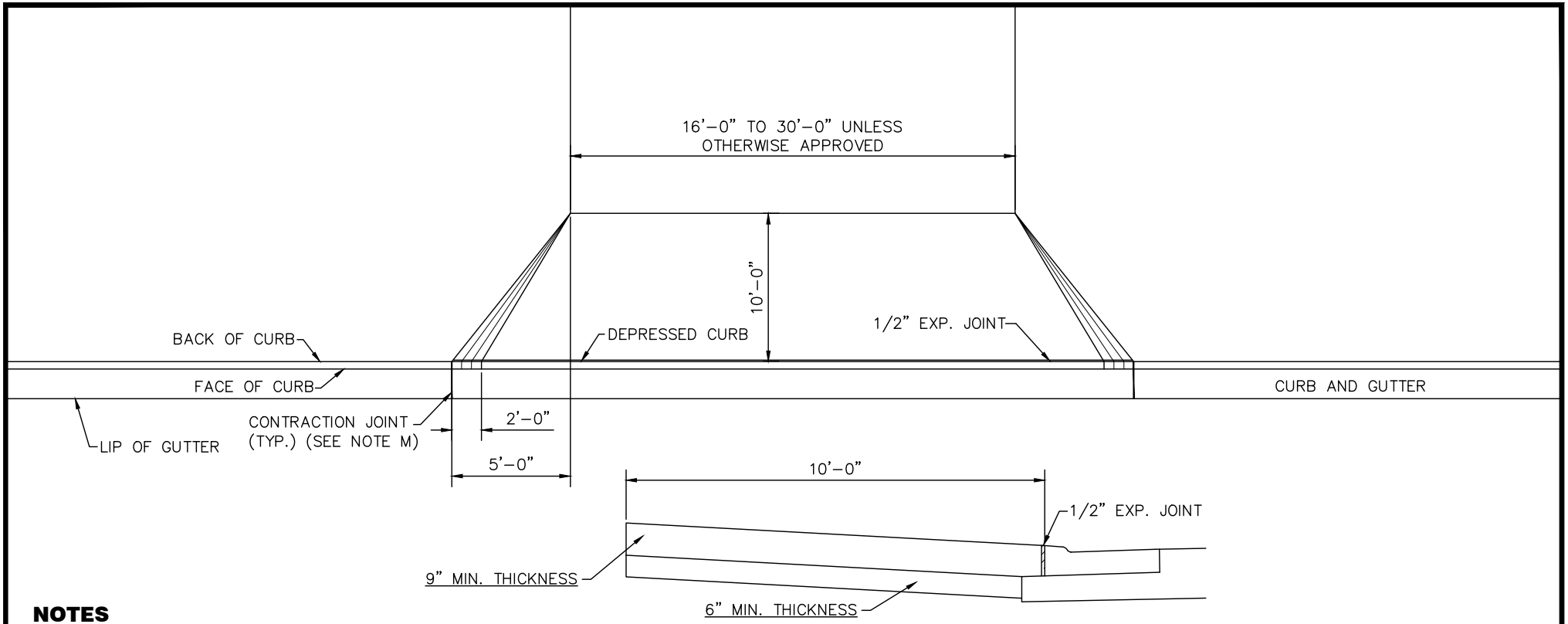
K. CURB SHALL BE BLOCKED OUT A MINIMUM OF 5' ON EACH SIDE OF A NEW CATCH BASIN INSTALLATION.

L. UNDERDRAIN MUST BE INSTALLED PRIOR TO CURB INSTALLATION, IF USED.

M. UNDERDRAIN MAY BE USED FOR SUMP PUMP DRAINS WITH A MANUFACTURED TEE, WHEN NO OTHER STORM OUTLET IS AVAILABLE AS DETERMINED BY THE CITY. IN NO CASE SHALL DOWNSPOUTS BE TIED INTO THE UNDERDRAIN.

N. CONCRETE TO INCLUDE 3LBS/CY OF EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO SYNTHETIC MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES.

CITY OF BROOKVILLE ChoiceOne Engineering	**CONCRETE CURB DETAILS**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 300-6



NOTES

A. DRIVE APPROACHES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 452 AND 499 CAST IN PLACE CONCRETE.

B. DRIVE APPROACHES SHALL NOT BE POURED MONOLITHICLY WITH CURB.

C. MAXIMUM JOINT SPACING SHALL BE 10' LONGITUDINALLY AND TRANSVERSELY WITH JOINTS AT TAPERS.

D. EXPANSION MATERIAL SHALL BE 1/2" PREMOLDED.

E. 6" OF ODOT ITEM 304 OR 411 AGGREGATE BASE, COMPACTED SHALL BE PLACED UNDER THE DRIVES.

F. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.

G. WHERE CURB AND GUTTER HAS NOT BEEN PROPERLY DROPPED AT DRIVE APPROACHES, THE CURB SHALL BE ENTIRELY REMOVED AND REPLACED BY THE CONTRACTOR OR OWNER AS DIRECTED BY THE CITY.

H. JOINTS SHALL BE CLEANED AND EDGED BY A 1/4" RADIUS EDGER. LONGITUDINAL JOINTS SHALL BE AS DIRECTED BY THE CITY. EXPANSION JOINTS SHALL BE OF SUCH DIMENSIONS AS SHOWN ON STANDARD DRAWINGS FOR CONSTRUCTION JOINTS.

I. MINIMUM WIDTH FOR ONE–WAY TRAFFIC IS 16'–0". MINIMUM WIDTH FOR TWO–WAY TRAFFIC IS 25'–0". MAXIMUM WIDTH IS 30'–0" UNLESS OTHERWISE APPROVED BY THE CITY.

J. THIS STANDARD DRAWING IS FOR GUIDELINE PURPOSES. EACH INDIVIDUAL DRIVE WILL NEED TO BE DESIGNED AND SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL.

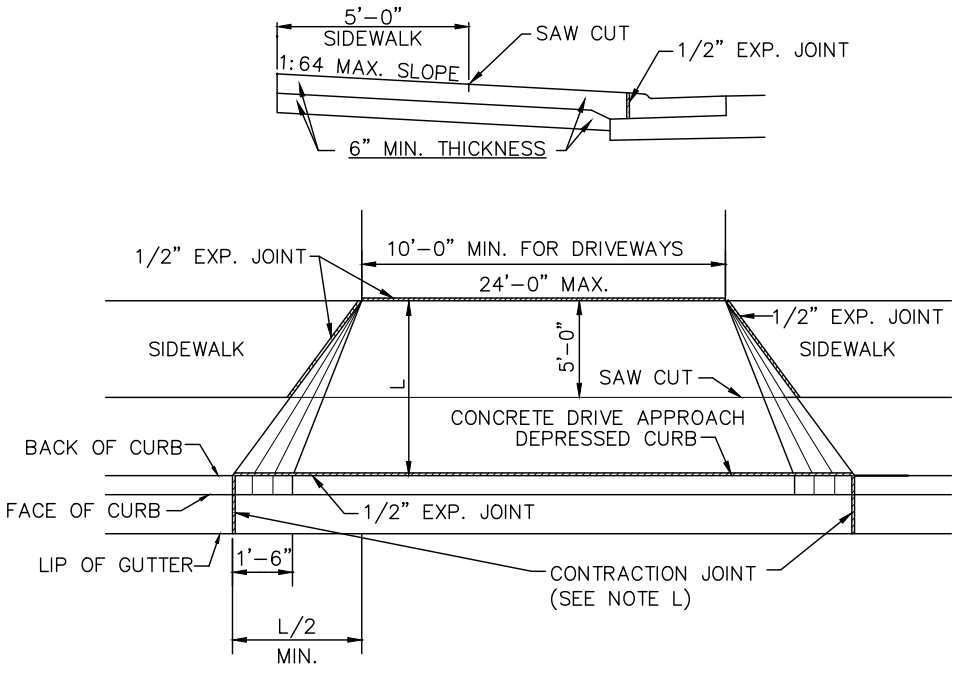
K. CONCRETE SHALL BE ODOT CLASS QC–1P (4000 PSI, 600 LB/CY CEMENT. PROPORTIONING OPTIONS 1 AND 2 NOT ALLOWED.

L. CONCRETE SHALL CONTAIN 8% ± 2% OF THE TOTAL AIR.

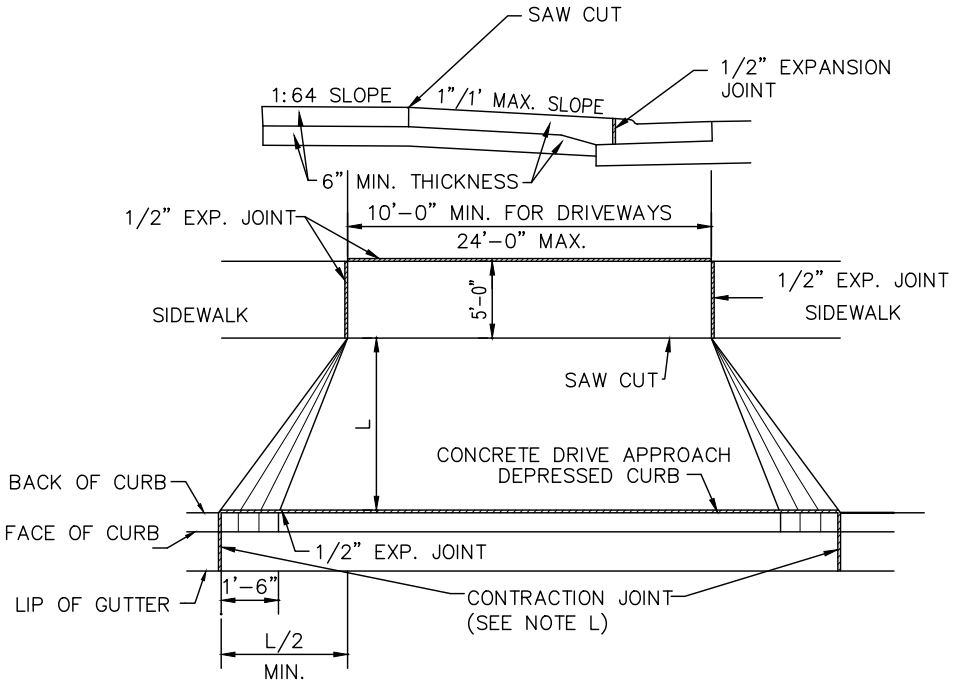
M. IF CURB IS REMOVED AND REPLACED DURING DRIVEWAY CONSTRUCTION, JOINTS BETWEEN EXISTING AND NEW CURB ARE TO BE 1/2" EXPANSION JOINTS.

N. CONCRETE TO INCLUDE 3LBS/CY OF EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO SYNTHETIC MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES

CITY OF BROOKVILLE ChoiceOne Engineering	# COMMERCIAL AND INDUSTRIAL DRIVE APPROACH	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 300–7



FOR CURB LAWNS OF LESS THAN 6'-0"



FOR CURB LAWNS OF 6'-0" OR MORE

NOTES

A. DRIVE APPROACHES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 452 AND 499 CAST–IN–PLACE CONCRETE.

B. DRIVE APPROACHES SHALL NOT BE POURED MONOLITHICLY WITH CURB.

C. MAXIMUM JOINT SPACING SHALL BE 10' LONGITUDINALLY, TRANSVERSELY AND AT TAPERS.

D. EXPANSION MATERIAL SHALL BE 1/2" PREMOLDED.

E. 6" OF ODOT ITEM 304 OR 411 AGGREGATE BASE, COMPACTED SHALL BE PLACED UNDER THE DRIVES.

F. PROVIDE BROOM FINISH AND EDGING TO ALL EXPOSED SURFACES.

G. WHERE CURB AND GUTTER HAS NOT BEEN PROPERLY DROPPED AT DRIVE APPROACHES, THE CURB SHALL BE ENTIRELY REMOVED AND REPLACED BY THE CONTRACTOR OR OWNER AS DIRECTED BY THE CITY.

H. JOINTS SHALL BE CLEANED AND EDGED BY A 1/4" RADIUS EDGER. LONGITUDINAL JOINTS SHALL BE AS DIRECTED BY THE CITY. EXPANSION JOINTS SHALL BE OF SUCH DIMENSIONS AS SHOWN ON STANDARD DRAWINGS FOR CONSTRUCTION JOINTS.

I. WHERE ASPHALTIC CONCRETE PAVEMENT IS DISTURBED, THE ASPHALT SHALL BE REPLACED AS DIRECTED BY THE CITY.

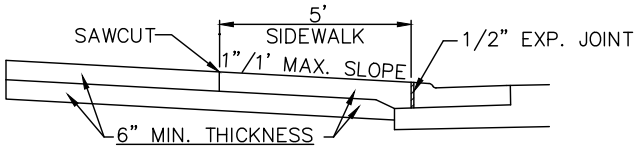
J. CONCRETE SHALL BE ODOT CLASS QC–1P (4000 PSI, 600 LB/CY) CEMENT. PROPORTIONING OPTIONS 1 AND 2 NOT ALLOWED.

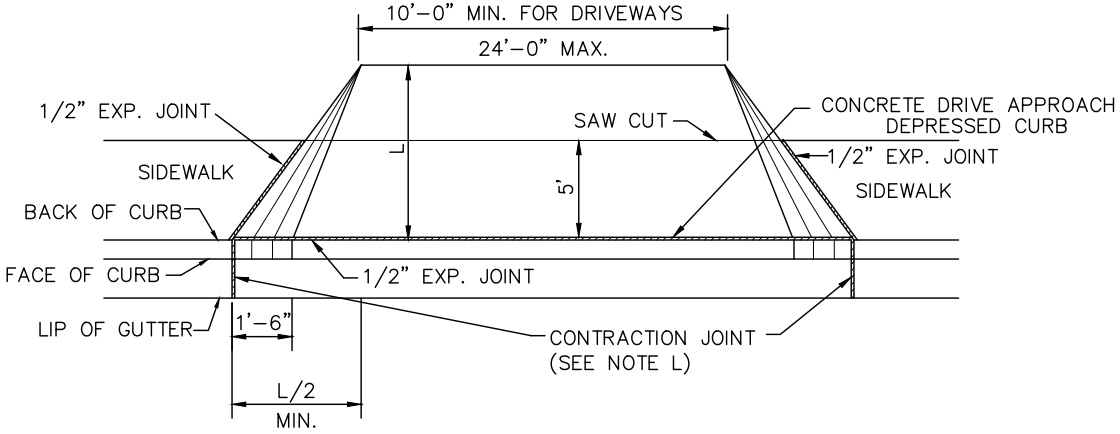
K. CONCRETE SHALL CONTAIN 8% ± 2% OF TOTAL AIR.

L. IF CURB IS REMOVED AND REPLACED DURING DRIVEWAY CONSTRUCTION, JOINTS BETWEEN EXISTING AND NEW CURB ARE TO BE 1/2" EXPANSION JOINTS.

M. CONCRETE TO INCLUDE 3LBS/CY OF EITHER EUCLID CHEMICAL TUFSTRAND SF, FORTA FERRO SYNTHETIC MACROFIBERS OR APPROVED EQUIVALENT MEETING ASTM C 1116 TYPE 3, MINIMUM 2" LENGTH, ASPECT RATIO 50 TO 90. CONTRACTOR SHALL CONTACT THE FIBER MANUFACTURER'S SUPPLIER 48 HOURS PRIOR TO ORDERING THE FIRST BATCH OF CONCRETE FOR APPROPRIATE MIXING AND FINISHING PROCEDURES

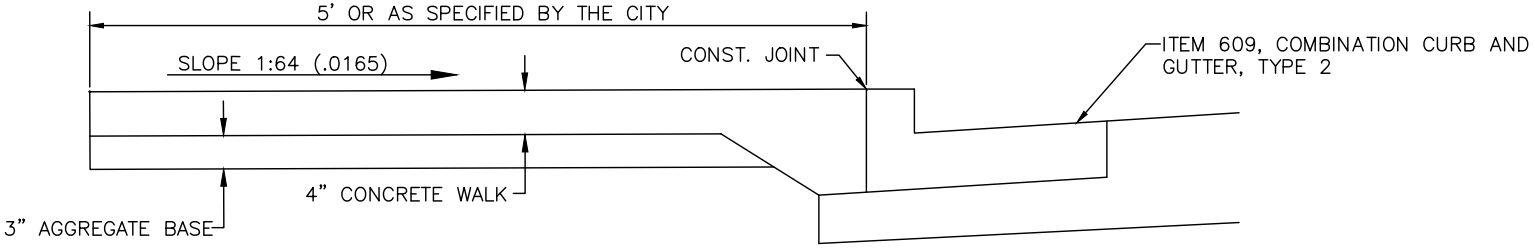
CITY OF BROOKVILLE ChoiceOne Engineering	**RESIDENTIAL DRIVE APPROACH**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 300–8





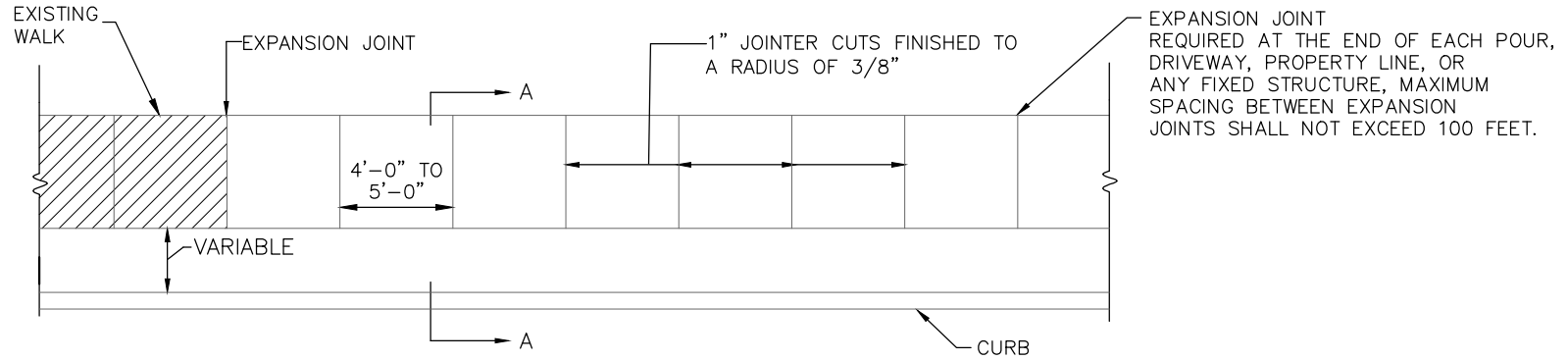
DRIVE APRON WITH NO CURB LAWN

FOR DRIVEWAY NOTES SEE PAGE 300-8

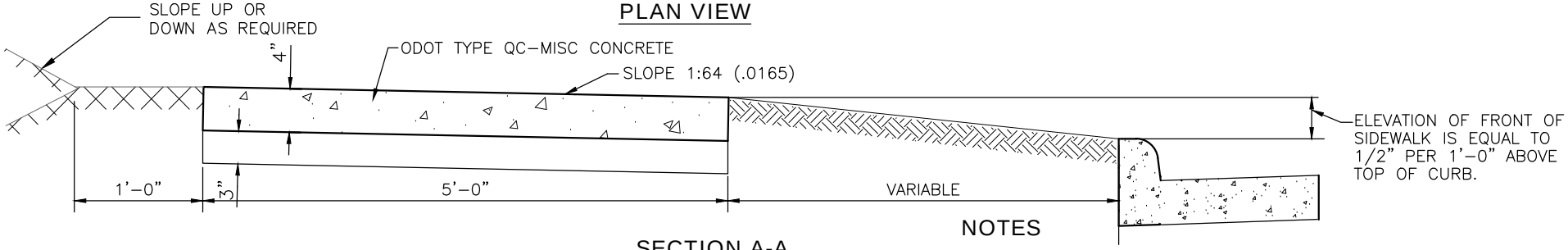


CONCRETE SIDEWALK ABUTTING TYPE 2 CURB DETAIL

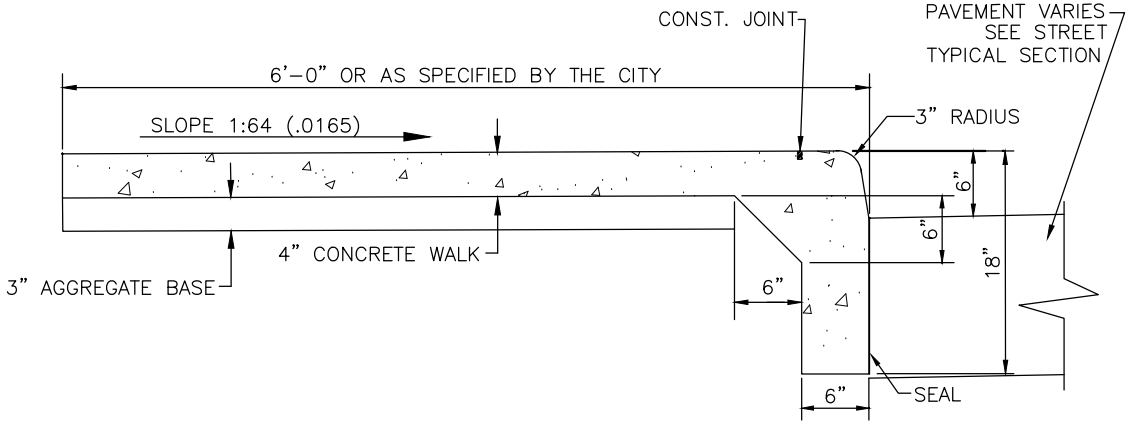
CITY OF BROOKVILLE ChoiceOne Engineering	**RESIDENTIAL DRIVE APPROACH AND CONCRETE SIDEWALK DETAIL WITH NO CURB LAWN**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 300-9



PLAN VIEW



SECTION A-A



COMBINED CURB AND SIDEWALK DETAIL

NOTES

A. WALK TO BE POURED ON 3" STABILIZED CRUSHED AGGREGATE ITEM 411.

B. PROVIDE BROOM FINISH TO ALL EXPOSED SURFACES.

C. CONCRETE SHALL CONFORM TO ODOT ITEM 499 CONCRETE. CONCRETE WORK SHALL CONFORM TO ODOT ITEM 608, UNLESS OTHERWISE SPECIFIED WITHIN.

D. PROVIDE EDGING AROUND ALL EXPOSED SURFACES.

E. USE WHITE PIGMENTED CURING COMPOUND IMMEDIATELY AFTER FINISHING SURFACES. ANY OTHER METHOD OR TYPE OF CURING COMPOUND MUST BE PREAPPROVED.

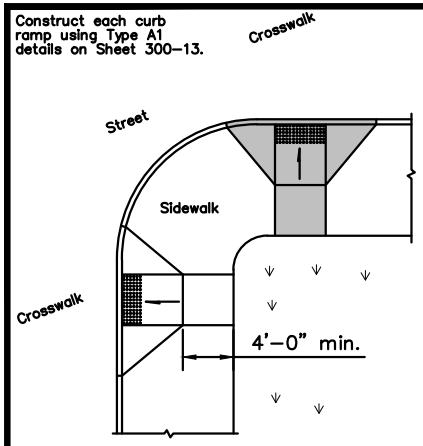
F. ANY STANDALONE SIDEWALK REPLACEMENTS SHALL BE REPLACED TO MATCH THE EXISTING WIDTH. WHEN RECONSTRUCTING EXISTING STREETS, THE SIDEWALKS SHALL BE REPLACED TO CONFORM WITH THE CITY CONSTRUCTION STANDARDS AND DRAWINGS.

G. CONCRETE SHALL BE ODOT CLASS QC-MISC. (CEMENT ONLY-NO POZZOLAN MATERIAL) REINFORCED WITH CONCRETE FIBERS PER 300-1.

H. CONCRETE SHALL CONTAIN 8% ± 2% OF TOTAL AIR.

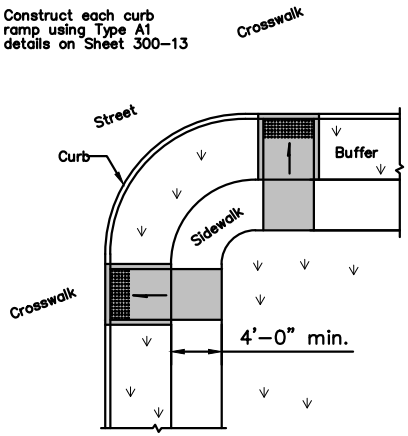
CITY OF BROOKVILLE	CONCRETE SIDEWALK DETAIL	REVISIONS: NOV. 2023	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 300-10

Construct each curb ramp using Type A1 details on Sheet 300–13.



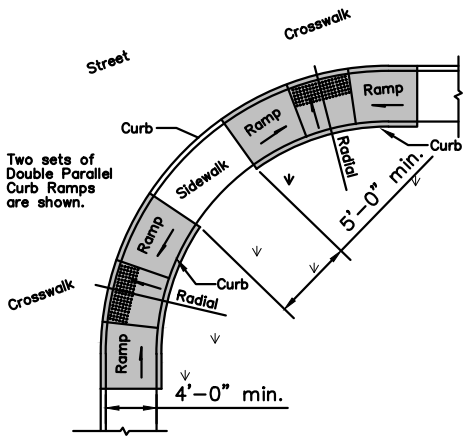
Use curb ramps with flared sides at locations with wide sidewalks.

Construct each curb ramp using Type A1 details on Sheet 300–13



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

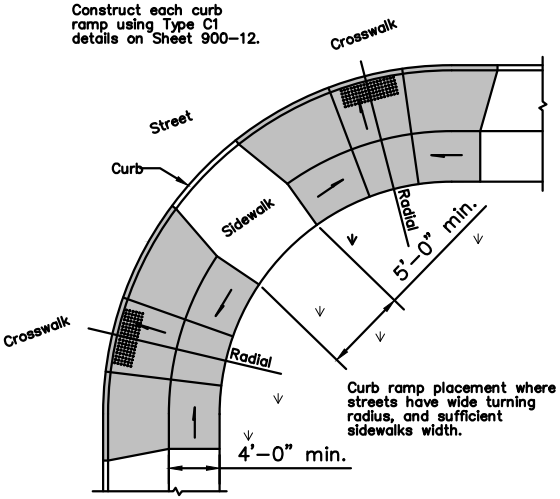
PERPENDICULAR CURB RAMPS



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

PARALLEL CURB RAMPS

Construct each curb ramp using Type C1 details on Sheet 900–12.

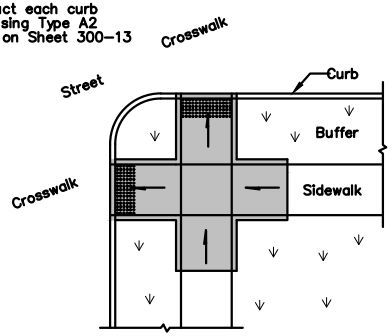


Curb ramp placement where streets have wide turning radius, and sufficient sidewalks width.

COMBINATION CURB RAMPS

PREFERRED CONSTRUCTION PLACEMENT

Construct each curb ramp using Type A2 details on Sheet 300–13

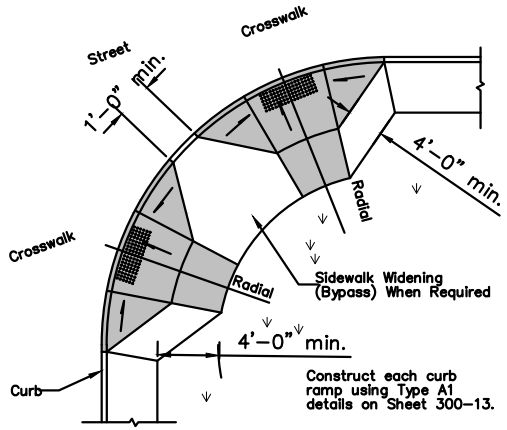


NOTES

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

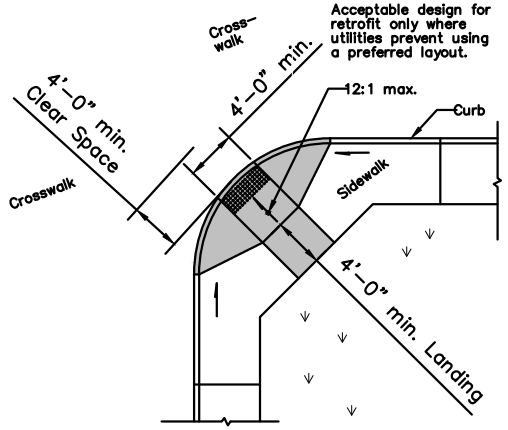
Curb ramp types are shown on 300–13 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans.

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 City Engineer.



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



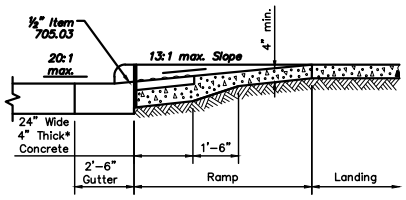
Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'–0" .

DIAGONAL RAMP (Type D)

ACCEPTABLE CONSTRUCTION PLACEMENT

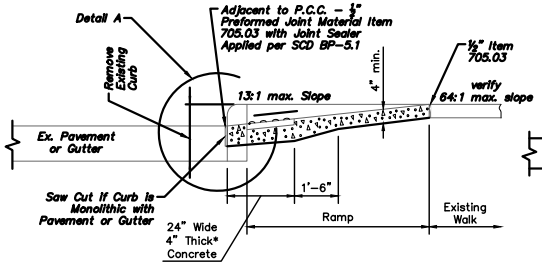
ODOT RP–7.1 DATED 01–21–22

CITY OF BROOKVILLE	# CURB RAMPS 1	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 300–11

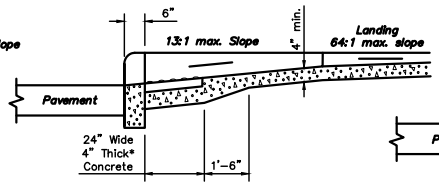


New gutter shown.

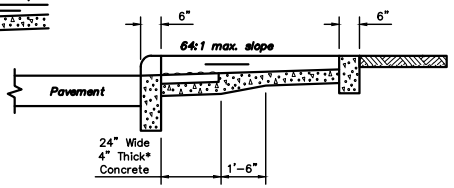
SECTION A-A
NORMAL DETAIL
(SEE SHEET 300-13)



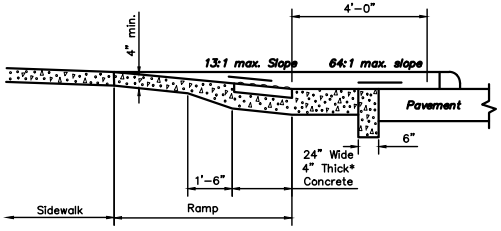
SECTION A-A
EXISTING WALK DETAIL
(SEE SHEET 300-13)



SECTION B-B
(SEE SHEET 300-13)

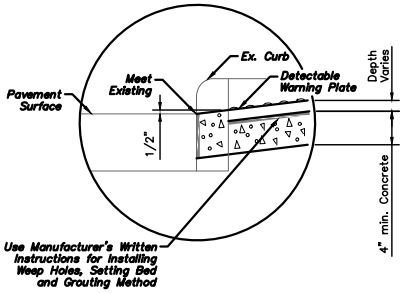


SECTION C-C
(SEE SHEET 300-13)

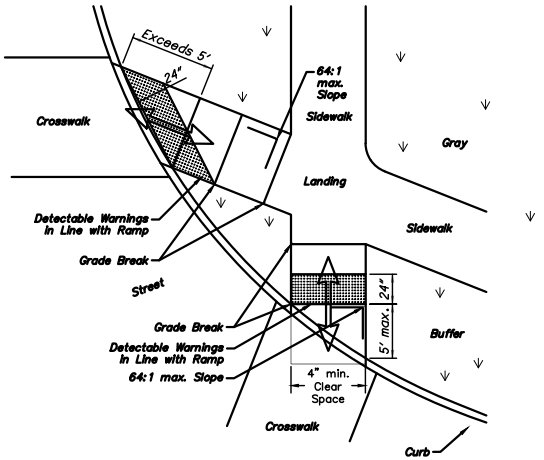


SECTION D-D
(SEE SHEET 300-13)

**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

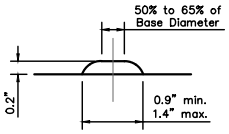
PLACEMENT: DETECTABLE WARNINGS ARE TO BE INSTALLED AT ANY LOCATION WHERE PEDESTRIANS MIGHT CROSS PATHS WITH VEHICULAR TRAFFIC LANES, SUCH AS THE BASE OF CURB RAMPS OR AT BLENDED CURBS. A 24" STRIP OF DOMES IS TO BE INSTALLED FOR THE FULL WIDTH OF THE RAMP OR WALK. TYPICAL STREET CORNER PLACEMENT LOCATIONS ARE SHOWN ON SHEET 300-11.

SOME DETECTABLE WARNING PRODUCTS REQUIRE A CONCRETE BORDER FOR PROPER INSTALLATION. THE CONCRETE BORDER SHOULD NOT EXCEED 2". WHERE THE BACK OF CURB EDGE IS TOOLED TO PROVIDE A RADIUS, THE BORDER DIMENSION SHOULD BE MEASURED FROM THE END OF THE RADIUS.

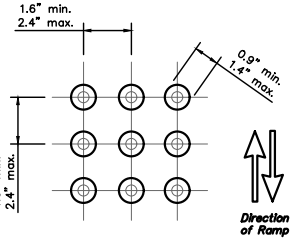
THE DEPTH OF CONCRETE UNDERNEATH DETECTABLE WARNING PRODUCTS SHALL BE A MINIMUM OF 4". SEE DETAIL A.

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 DETAIL MATERIALS MAY HAVE TO BE MITERED AND PLACED SEGMENTALLY.

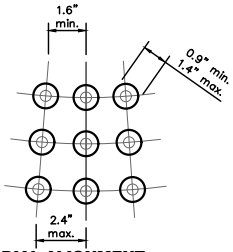
PRODUCTS & COLORS: COLOR OF THE DETECTABLE WARNINGS SHOULD CONTRAST WITH SURROUNDING CONCRETE WALK AND RAMP. BLACK IS NOT AN ACCEPTABLE COLOR.



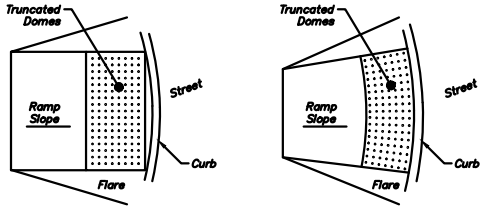
HEIGHT AND DIAMETER



SQUARE PATTERN
PARALLEL ALIGNMENT



RADIAL ALIGNMENT



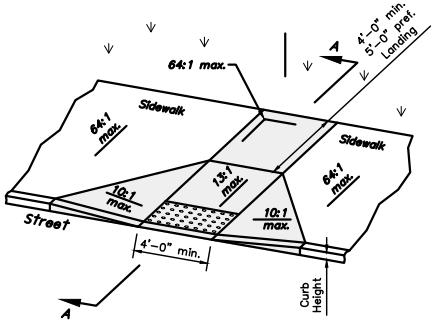
DOME ALIGNMENT ON RADIUS CURB

TRUNCATED DOMES DETAIL

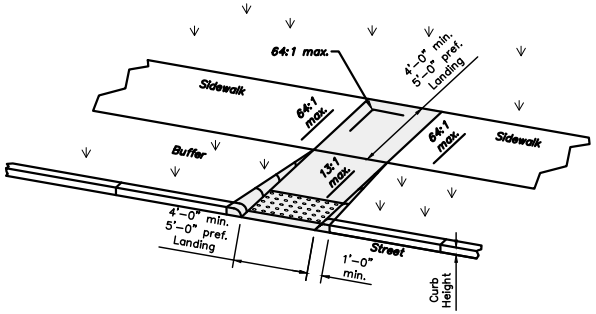
NTS

ODOT BP-7.1 DATED 01-21-22.

CITY OF BROOKVILLE	**CURB RAMPS 2**	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 300-12



TYPE A1 (PERPENDICULAR WITH FLARED SIDES)



TYPE A2 (PERPENDICULAR WITH RETURNED CURB)

PERPENDICULAR CURB RAMP DETAILS

NTS

The running slope of the ramp is preferred to be 13:1 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 limits) 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 indefinately, the transition from exisiting sidewalk to the shaded 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 cross walk 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 ot 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.

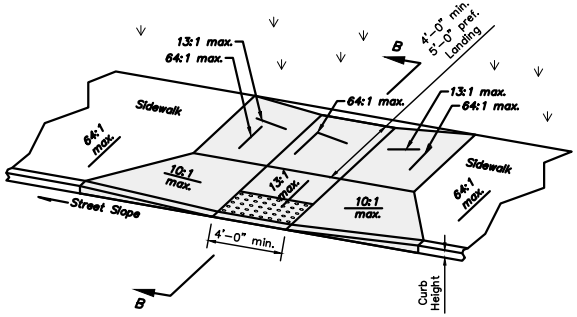
Ramp landings shall be 4' min. x 4' min. with a 64:1 or flatter cross slope and running slope.

DETECTABLE WARNINGS: Install Detectable Warnings on each curb ramp with approved materials, as shown on 300–12. Install these proprietary products as per manufacturer's written instructions.

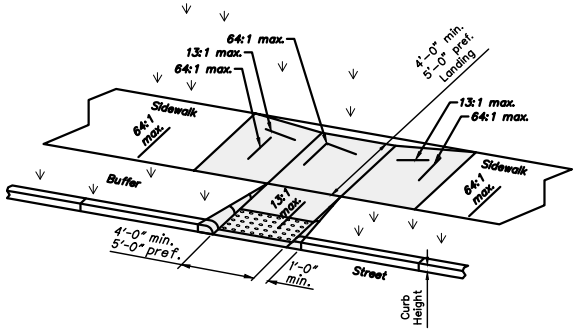
DRAINAGE: Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 1/8" between the 1) pavement and gutter, and 2) gutter and ramp, are not allowed.

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 300–10.

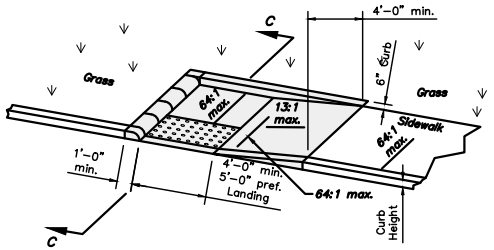


TYPE C1 (COMBINED WITH FLARED SIDES)

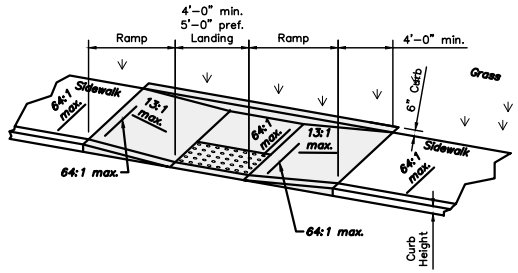


TYPE C2 (COMBINED WITH RETURNED CURB)

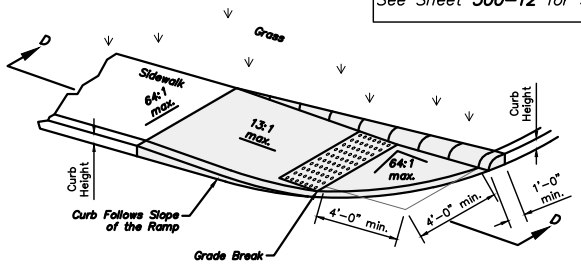
See Sheet 300–12 for Sections.



TYPE B1 (SINGLE SIDED PARALLEL)



TYPE B2 (DOUBLE SIDED PARALLEL)



TYPE B3 (SINGLE SIDED PARALLEL)

PARLLEL CURB RAMP DETAILS

NTS

ODOT BP–7.1 DATED 01–21–22.

CITY OF BROOKVILLE

ChoiceOne Engineering

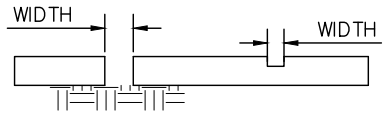
CURB RAMPS 3

REVISIONS:

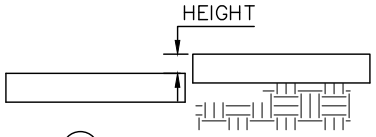
DATE APPROVED: OCT. 2023

PAGE No. 300–13

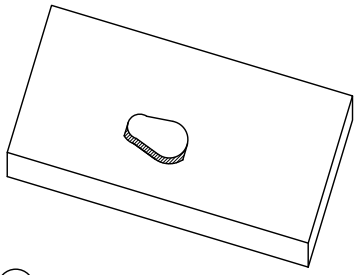
TYPES OF SIDEWALK DEFICIENCIES



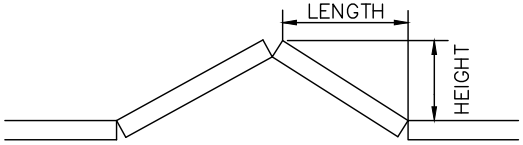
A. OPENING
– MAXIMUM WIDTH



B. STEP HUMP
–HEIGHT

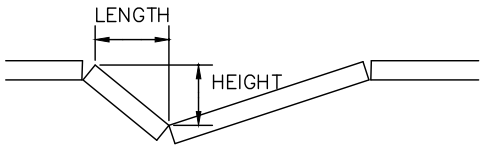


C. DEPRESSIONS
– 2 S.F. PER BLOCK



E. HUMP – MAXIMUM SLOPE

SLOPE= $\frac{\text{HEIGHT}}{\text{LENGTH}}$



E. SUNKEN SECTION – MAXIMUM SLOPE

SIDEWALK DEFICIENCIES

A. ANY BLOCK HAVING A CRACK OR CRACKS IN IT MORE THAN 1/4" WIDE OR IN EXCESS OF 5 L.F. IN ONE BLOCK.

B. ADJOINING BLOCKS OR PORTIONS THEREOF WHOSE EDGES DIFFER VERTICALLY BY MORE THAN 1 1/2".

C. BLOCKS HAVING DEPRESSIONS, REVERSE CROSS–SLOPE (SLOPING AWAY FROM THE STREET) OR BELOW CURB GRADE SO AS TO IMPOUND MUD OR WATER.

D. BLOCKS HAVING A CROSS–SLOPE IN EXCESS OF 3/4" VERTICAL PER 1' HORIZONTAL EXCLUDING DRIVEWAYS.

E. BLOCKS THAT CAUSE AN ABRUPT CHANGE IN EXCESS OF 1" PER FOOT IN THE LONGITUDINAL GRADE OF THE SIDEWALK.

F. CELLAR DOORS OR OTHER COVERS THAT ARE NOT FLUSH WITH THE SIDEWALK, HAVE A SMOOTH SURFACE, OR ARE STRUCTURALLY UNSAFE.

G. GRATING THAT HAS OPENINGS MEASURING MORE THAN 3/4", PROJECT ABOVE THE SIDEWALK, OR ARE STRUCTURALLY UNSAFE.

H. BLOCKS HAVING EXCESSIVE SPAULING CONSISTING OF OVER 30% OF A PARTICULAR BLOCK.

GENERAL

A. NO PERSON SHALL TEAR UP OR DIG INTO ANY PUBLIC RIGHT–OF–WAY OR STREET FOR THE PURPOSE OF CONSTRUCTING OR REPAIRING THE SIDEWALK, CURBING, OR GUTTERS THEREON OR FOR ANY OTHER PURPOSE, WITHOUT HAVING FIRST NOTIFYING THE CITY TO DO SO.

B. THE CONTRACTOR MUST CALL THE CITY FOR AN INSPECTION AT LEAST TWENTY–FOUR HOURS BEFORE HE PLANS TO POUR THE CONCRETE. THE CONTRACTOR OR HIS FOREMAN MUST BE ON THE JOB WHEN THE INSPECTOR ARRIVES. IF, BECAUSE OF WEATHER CONDITIONS OR FOR SOME OTHER REASON, IT WILL NOT BE POSSIBLE TO HAVE A MAN ON THE JOB, THE CONTRACTOR IS REQUIRED TO CALL AND CANCEL THE INSPECTION.

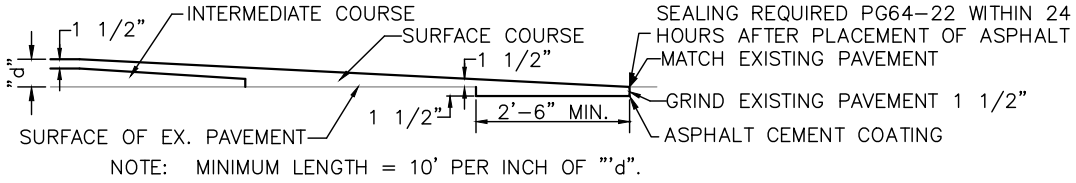
C. THE CONTRACTOR IS CAUTIONED AGAINST ORDERING CONCRETE BEFORE THE INSPECTION IS MADE DUE TO POSSIBLE CORRECTION OF FORMS OR GRADE.

D. THE CONTRACTOR SHALL PROVIDE PROTECTION AND TRAFFIC CONTROL BARRICADES, LIGHTS, SIGNS, AND OTHER DEVICES AS HEREIN SPECIFIED TO PROVIDE WARNING AND PROTECTION FOR VEHICULAR TRAFFIC, PEDESTRIANS, AND THE WORK DURING THE REMOVAL, CONSTRUCTION, AND CURING OF SIDEWALK, CURB AND GUTTER, AND DRIVEWAY APRONS.

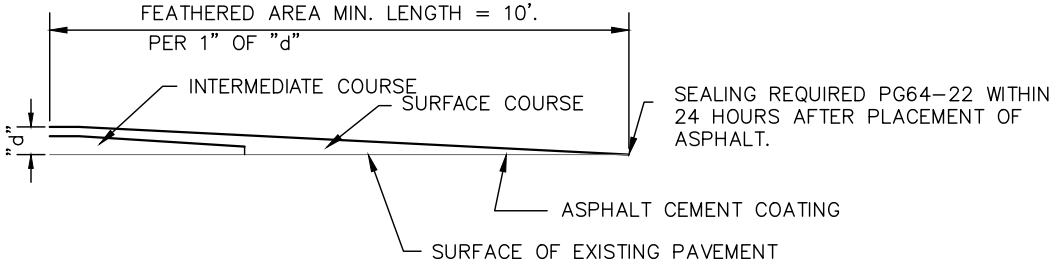
E. THE CONTRACTOR WILL BE RESPONSIBLE FOR AN IMMEDIATE REMOVAL AND CLEAN UP OF ALL EXCAVATED MATERIAL. NO EXCAVATED MATERIAL SHALL BE STORED ON THE PAVEMENT.

F. ALL SIDEWALK SHALL BE REPLACED ON STREET RECONSTRUCTION PROJECTS TO MEET THESE CONSTRUCTION STANDARDS AND DRAWINGS.

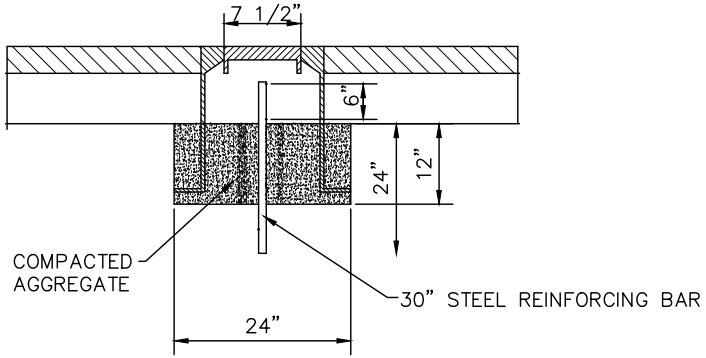
CITY OF BROOKVILLE ChoiceOne Engineering	GUIDELINES FOR REPLACEMENT OF SIDEWALKS, CURB AND GUTTER, AND DRIVEWAYS	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 300–14



BUTT JOINT DETAIL

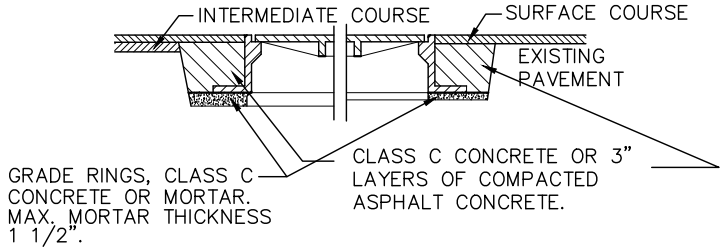


FEATHERING DETAIL



SURVEY MONUMENT DETAIL

MANHOLES ADJUSTED TO GRADE FOR OVERLAYS



USING CONCRETE OR MORTAR

NOTES

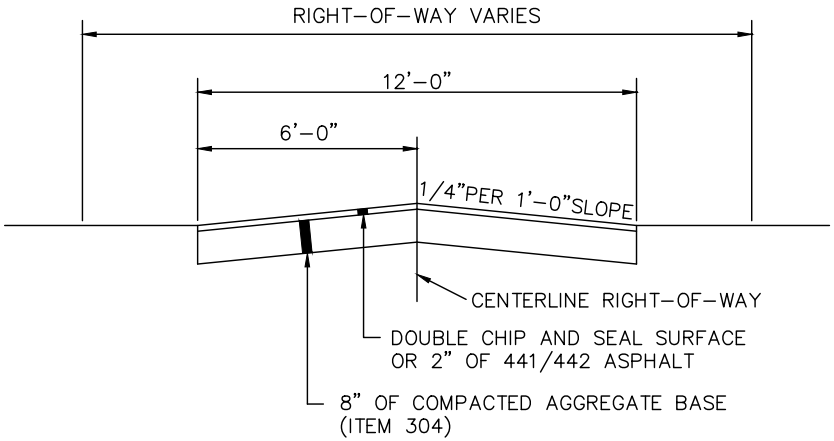
A. MONUMENT BOXES SHALL BE SET AT ALL STREET INTERSECTIONS AND P.I.'S OF TANGENT LINES OF ALL CURVES. IF A MONUMENT BOX CANNOT BE SET FOR A P.I. IN THE PAVEMENT AREA, BOXES MUST THEN BE SET ON THE P.C. AND P.T. OF A CURVE.

B. MONUMENT BOXES SHALL BE SET PRIOR TO THE LAYING OF ODOT ITEM 441/442 ASPHALT UNLESS OTHERWISE PREAPPROVED.

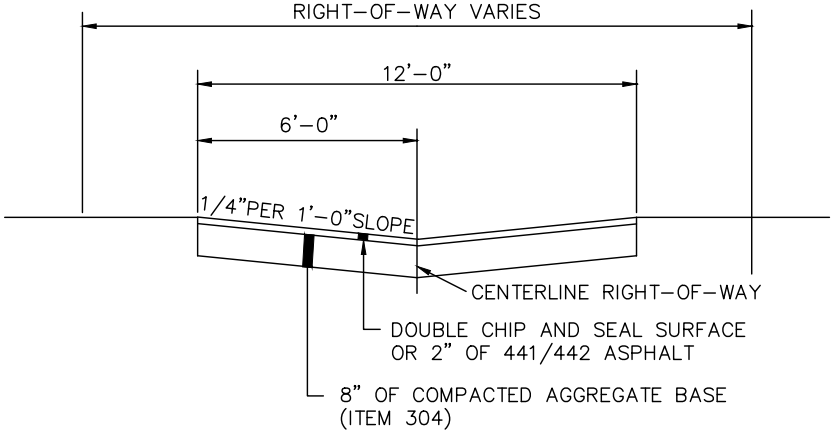
C. MONUMENT ASSEMBLIES SHALL BE NEENAH R-1978-A2 OR EAST JORDAN 8375.

D. MONUMENT BOXES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 623 UNLESS OTHERWISE SPECIFIED WITHIN.

CITY OF BROOKVILLE ChoiceOne Engineering	# ASPHALT OVERLAY AND MONUMENT	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 300-15



TYPICAL CROWN



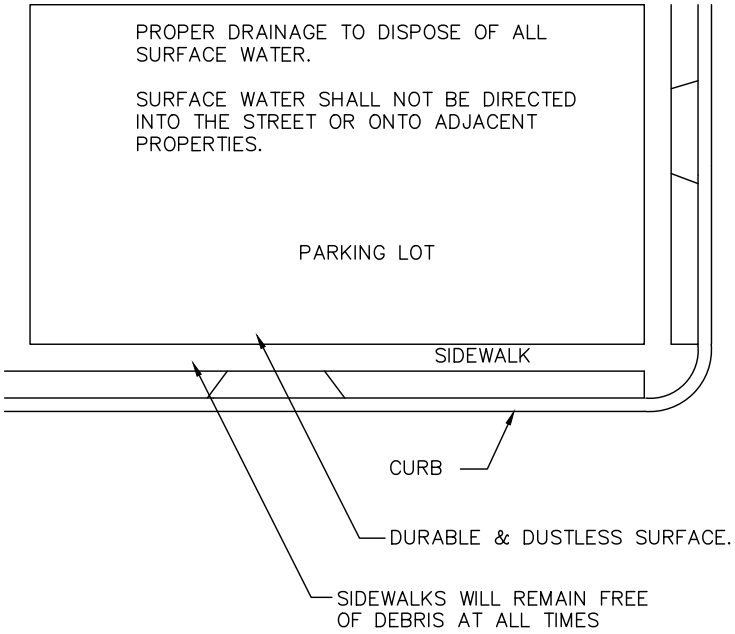
INVERTED CROWN

TYPICAL ALLEY CONSTRUCTION

A. MINIMUM STANDARD (UNLESS OTHERWISE APPROVED.)

B. FOR RENOVATION OF EXISTING ALLEYS ONLY. NO NEW ALLEY'S WILL BE APPROVED WITHIN THE CITY.

ADJACENT PARKING AREAS SHALL BE CONNECTED TO LIMIT THE NUMBER OF ACCESS DRIVES TO THE STREET.



PARKING LOT DETAIL

THE FOLLOWING ARE ACCEPTED LOT SURFACES (UNLESS OTHERWISE APPROVED).

A. DOUBLE CHIP AND SEAL, WITH APPROVAL.

B. ASPHALT CONCRETE ITEM 441/442.

C. CONCRETE

CITY OF BROOKVILLE	# ALLEY AND PARKING LOT DETAIL	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 300–16

NOTES

A. THE CITY MUST BE NOTIFIED BEFORE ANYONE CAN PERFORM ANY WORK ON OR WITHIN A PUBLIC RIGHT-OF-WAY. (STREET, ALLEY, ETC.). NOTIFICATION IS REQUIRED FOR ANY TUNNEL, SIDEWALK, OPENING OR EXCAVATION UNDER OR IN THE RIGHT-OF-WAY PUBLIC GROUNDS. CONTACT CITY MANAGER FOR RIGHT-OF-WAY PERMIT APPLICATION.

B. THE NOTIFICATION WILL BE COMPLETED BY THE PERSON OR FIRM PLANNING THE WORK WITHIN THE RIGHT-OF-WAY. ALL APPROVALS MUST BE OBTAINED BEFORE ANY WORK IS STARTED. 72 WORKING HOUR LEAD TIME IS RECOMMENDED.

C. THE APPLICANT SHALL HAVE SUFFICIENT BARRICADES, WARNING SIGNS, AND LIGHTS DURING THE ENTIRE PERIOD THAT THE WORK IS BEING PERFORMED AND SHALL ADHERE TO APPLICABLE SECTION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

D. ALL UTILITIES ARE REQUIRED TO OBTAIN APPROVAL AND RIGHT-OF-WAY PERMIT.

E. THE EXISTING PAVEMENT SHALL BE NEATLY CUT PRIOR TO EXCAVATION. ALL EXCAVATED MATERIAL SHALL BE REMOVED FROM THE JOB SITE. THE APPLICANT IS RESPONSIBLE FOR ALL PAVEMENT DAMAGED OUTSIDE THE TRENCH AREA.

F. BACKFILLING SHALL BE IN ACCORDANCE WITH CITY SPECIFICATIONS.

G. ALL EXCAVATIONS OR TRENCH EDGES UNDER OR WITHIN 5' OF PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, STONE AREAS OR WALKS SHALL EITHER BE BACKFILLED WITH LOW STRENGTH MORTAR BACKFILL ODOT ITEM 613, TYPE 1 ONLY OR BACKFILLED WITH ODOT 703.11, TYPE 3 (#53 OR #67) COMPACTED WASHED GRAVEL, COMPACTED IN 6" LAYERS. A DENSITY TEST OF 98% OF ASTM D698 STANDARD PROCTOR CURVE MAY BE REQUIRED TO BE PERFORMED BY A COMMERCIAL TESTING LAB SATISFACTORY TO THE CITY.

H. ALL EXCAVATION OR TRENCH EDGES NOT UNDER OR WITHIN 5' OF PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, STONE AREAS OR WALKS CAN BE COMPACTED EXISTING NATIVE MATERIAL IN 12" MAXIMUM LIFTS OR AS APPROVED BY THE CITY.

I. ALL DISTURBED AREAS MUST BE RETURNED TO AS GOOD OR BETTER CONDITION. ALL REPAIRS MUST MEET CITY SPECIFICATIONS. THE CITY MUST INSPECT AND APPROVE ALL REPAIRS.

J. COLD PATCH SHALL BE PLACED TO 1 1/2"+ THICKNESS OVER BACKFILLED TRENCH WITHIN ONE WORKING DAY AFTER THE BACKFILL HAS BEEN COMPACTED, IF THE ASPHALT PAVEMENT ISN'T PLACED IMMEDIATELY.

K. EFFORTS SHALL BE MADE TO MINIMIZE ANY DISTURBANCE TO TREES OR THIN ROOTS. EXTENSIVE EXCAVATION CAUSING DAMAGE TO TREES WILL RESULT IN THE REMOVAL AND REPLACEMENT OF, BY THE CONTRACTOR. THE REPLACEMENT SHALL BE AS PER THE CITY.

L. FOR CLOSURE OF ARTERIALS OR BUSY COLLECTORS THE CITY RESERVES THE OPPORTUNITY TO DIRECT CONTRACTOR TO CLOSE STREET DURING OFF-PEAK TRAFFIC HOURS. CLOSURE MAY OCCUR AT NIGHT OR ON WEEKENDS. CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL ASSOCIATED WITH ROAD CLOSURE.

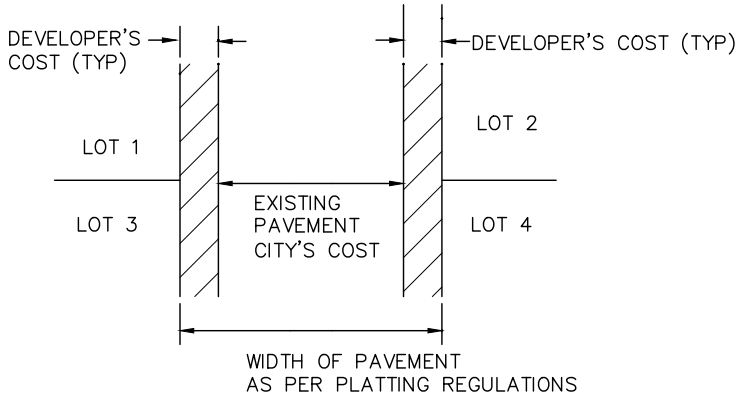
M. AN ASPHALT EMULSION, OR CRACK SEALANT, WITH ASPHALT GRADE SS-1 OR CSS-1 SHALL BE APPLIED TO THE PERIMETER OF ALL PAVEMENT CUTS AFTER RESTORATION IS COMPLETED.

N. PAVEMENT THICKNESS TO BE RESTORED SHALL BE ACCORDING TO CITY STANDARDS OR EQUAL TO THE EXISTING THICKNESS, WHICHEVER IS GREATER.

O. IN THE EVENT THAT AFTER NOTIFICATION FROM THE CITY, THE CONTRACTOR FAILS TO CORRECT PROBLEMS ASSOCIATED WITH POOR TRENCH MAINTENANCE, THE CITY RESERVES EXCLUSIVE RIGHT TO CORRECT TRENCH PROBLEMS AND BILL THE ASSOCIATED COSTS.

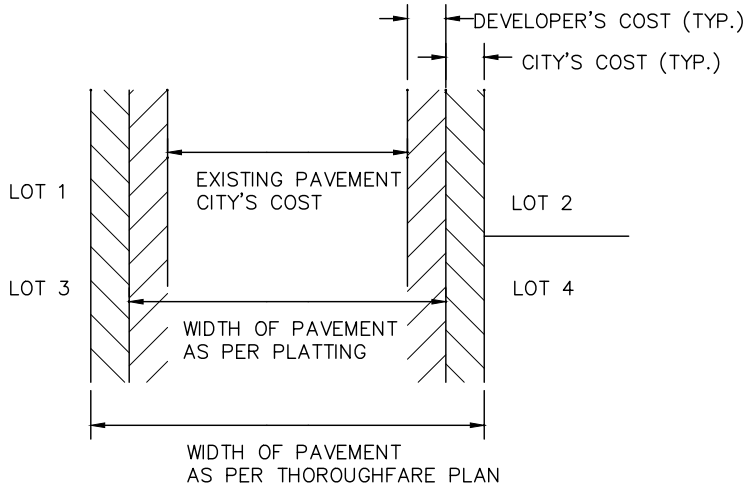
CITY OF BROOKVILLE ChoiceOne Engineering	**PUBLIC RIGHT-OF-WAY OPENING AND EXCAVATION**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 300-17

EXAMPLE "A"



STREET IMPROVEMENTS FROM EXISTING STREET WIDTH TO PLATTING REGULATION WIDTH

EXAMPLE "B"



STREET IMPROVEMENTS FROM EXISTING STREET WIDTH TO THOROUGHFARE PLAN WIDTH

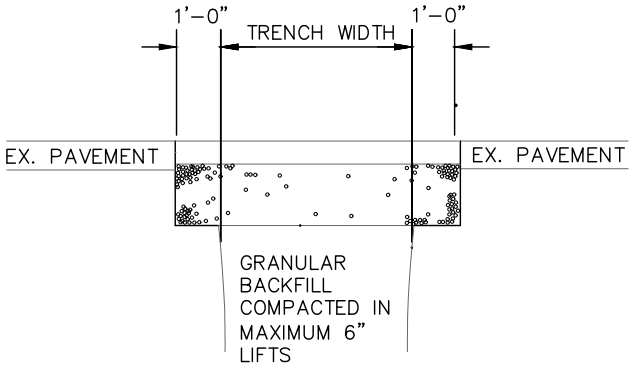
NOTES

A. IF BOTH SIDES OF A STREET ARE INCLUDED IN THE SUBDIVISION, THE DEVELOPER PAYS THE TOTAL COST FOR ADDITIONAL WIDTH OF EXCAVATION, PAVEMENT, CURB AND SIDEWALK INCLUDING COST TO BRING THE STORM SEWER SYSTEM UP TO STANDARDS.

B. IF ONE SIDE OF THE SUBDIVISION ABUTS AN EXISTING STREET, THE DEVELOPER SHALL PAY FOR THE TOTAL COST OF ONE SIDE FOR ADDITIONAL WIDTH OF EXCAVATION, PAVEMENT, CURB AND SIDEWALK INCLUDING COST TO BRING THE STORM SEWER SYSTEM UP TO STANDARDS.

C. THE CITY PAYS CONSTRUCTION COST ON EXISTING STREET WIDTH AND ANY OVERSIZING TO MEET THOROUGHFARE PLAN.

CITY OF BROOKVILLE ChoiceOne Engineering	**STREET IMPROVEMENT CONDITIONS**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 300–18



TYPICAL PAVEMENT RESTORATION DETAIL

TYPICAL PAVEMENT RESTORATION NOTES

MINIMUM GRAVEL PAVEMENT REPLACEMENT
2" OF ODOT #67 ON
12" OF ODOT ITEM 304, IN LIFTS OF 3" MAXIMUM

MINIMUM ASPHALT PAVEMENT REPLACEMENT
PERMANENT PAVEMENT REPLACEMENT SHALL EQUAL OR EXCEED THE EXISTING PAVEMENT COMPOSITION. (MINIMUM PAVEMENT COMPOSITION SEE PAGE 300-3 UTILIZING APPROPRIATE STREET CLASSIFICATION).

SOIL BORINGS SHALL BE CAPPED WITH A MINIMUM OF 9" OF ODOT CLASS QC-19 CONCRETE.

UTILITIES AGENTS

CITY OF BROOKVILLE-
STREET, STORM, AND SANITARY
301 SYCAMORE ST.
P.O. BOX 10
BROOKVILLE, OH 45309
(937) 883-2135

AES OHIO
1900 DRYDEN ROAD
MORAINE, OH 45439
(937) 331-4521

OHIO UTILITIES PROTECTION SERVICE
3 WORKING DAYS
BEFORE YOU DIG TOLL
FREE 800-362-2764

MIAMI VALLEY LIGHTING
1065 WOODMAN DRIVE
DAYTON, OH 45432
(937)-259-7191

CHARTER COMMUNICATION - CABLE TV SERVICE
3691 TURNER ROAD
DAYTON, OH 45415
(937)-425-8850

CENTERPOINT GAS
2345 E. MAIN STREET
DANVILLE, IN 46122
(317)-718-3639

FRONTIER COMMUNICATIONS
10 MULBERRY STREET
BROOKVILLE, OH 45309
(541)-390-3910

METRONET
100 HARRISBURG DRIVE
ENGLEWOOD, OH 45322
(812)-213-1318

SEEDING

A. ALL AREAS DESIGNATED FOR SEEDING SHALL HAVE A MINIMUM OF 6" OF TOPSOIL OVER THE ENTIRE AREAS. THE AREA SHALL BE HAND RAKED, AND DRESSED READY FOR SEEDING. NO STONE OVER 1" IN SIZE PERMITTED.

B. THE FOLLOWING SEED MIXTURE OR APPROVED EQUIVALENT SHALL BE USED:
30% KENTUCKY BLUE(VNS)
23% PALMER II PERENNIAL RYE
22% YORKTOWN III PERENNIAL RYE
15% CREEPING RED FESCUE
10% BARON KENTUCKY BLUEGRASS

C. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THE GRASS IS ESTABLISHED TO THE SATISFACTION OF THE CITY.

DRAINS

A. ALL FIELD OR STORM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE REPAIRED AND PROVIDED WITH UNOBSTRUCTED OUTLETS AS APPROVED AND DIRECTED BY THE CITY AND MARKED ON THE RECORD DRAWINGS.

CONNECTIONS TO EXISTING PIPE

A. WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING SEWER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

UTILITY SEPARATION

A. ANY UNDERGROUND UTILITIES SUCH AS GAS, ELECTRIC, CABLE TV, TELEPHONE, ETC., SHALL HAVE 10' SEPARATION FROM ANY CITY UTILITY UNLESS OTHERWISE APPROVED.

UTILITIES

A. THE MAXIMUM LENGTH OF ANY UTILITY TRENCH TO BE OPEN AT ANY TIME SHALL BE 25' UNLESS OTHERWISE APPROVED.

COMPACTION METHODS

A. FLOODING SHALL NOT BE PERMITTED.

B. MECHANICAL DEVICES, HAND DEVICES, VIBRATING PLATES OR OTHER EQUIPMENT APPROVED BY THE CITY IS ACCEPTABLE 1' ABOVE PIPE IN UNIFORM LIFTS OF 12" (LOOSE DEPTH) OF EXISTING NATIVE MATERIAL AND 6" OF GRANULAR BACKFILL. THE HEIGHT OF LIFTS WILL DEPEND UPON THE TYPE OF MECHANICAL EQUIPMENT BEING USED. THE HEIGHT WILL BE 6" FOR HAND OPERATED TOOLS AND UP TO 12" ON EQUIPMENT MOUNTED TOOLS. THE COMPACTION EQUIPMENT SHALL BE CAPABLE OF COMPACTING THE MATERIAL UNDER THE HAUNCH OF THE PIPE.

C. JETTING IS NOT PERMITTED

D. DENSITY FOR THE ABOVE METHODS SHALL BE NO LESS THAN THAT OF THE SURROUNDING GROUND UNLESS OTHERWISE SPECIFIED.

DISPOSAL OF SURPLUS MATERIAL

A. THE CITY MAY AT THEIR DISCRETION REQUIRE THAT SURPLUS MATERIAL BE DEPOSITED AT A LOCATION DESIGNATED WITHIN A THREE-MILE RADIUS OF THE WORK SITE.

TYPICAL NOTES - ALL SUBDIVISION CONSTRUCTION DRAWINGS

A. ALL CONSTRUCTION METHODS AND MATERIALS SHALL COMPLY WITH THE CITY ENGINEERING STANDARDS OR ODOT WHICHEVER IS MORE RESTRICTIVE.

B. ALL COMPACTION SHALL MEET THE CITY REQUIREMENTS. IF TESTING OF COMPACTED AREAS IS REQUESTED BY THE CITY, SAID TESTING SHALL BE PERFORMED AT THE EXPENSE OF THE DEVELOPER.

C. THE CITY WILL LOCATE AREAS IN NEED OF UNDERCUTTING UNLESS THE DEVELOPER CHOOSES TO HAVE AT HIS EXPENSE AN INDEPENDENT APPROVED TESTING COMPANY TO DETERMINE UNSUITABLE MATERIAL AREAS THAT NEED UNDERCUTTING.

D. ALL EMBANKMENT AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF ASTM D698 STANDARD PROCTOR CURVE AND TESTED TO REPRESENT A DEPTH OF 12" UNLESS OTHERWISE SPECIFIED BY THE CITY.

E. ALL UNPAVED AREAS WITHIN THE STREET RIGHT-OF-WAY SHALL BE SEEDED WITHIN 48 HOURS AFTER THE CURB IS BACKFILLED. STAKED STRAW BALES MAY BE REQUIRED IN ADDITION TO SEEDING TO CONTROL EROSION IF REQUESTED BY THE CITY.

F. STORM WATER POLLUTION PREVENTION SHOULD BE A HIGH PRIORITY ON ALL CONSTRUCTION PROJECTS. ON ALL PROJECTS WHICH DISTURB AT LEAST 1 ACRE OF SOIL, A NPDES PERMIT IS REQUIRED FROM OEPA AND A COPY OF THE PERMIT MUST BE ON FILE AT THE CITY OFFICE BEFORE CONSTRUCTION BEGINS.

TRAFFIC CONTROL DEVICE NOTES

A. ALL TRAFFIC CONTROL DEVICES SHALL BE PER THE LATEST REVISION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND APPROVED BY THE CITY BEFORE INSTALLATION.

B. ALL SIGN POST SHALL BE STANDARD U–CHANNEL OR ROUND STEEL POST UPON APPROVAL BY THE CITY.

C. ALL STREET NAME SIGNS SHALL BE WHITE IN COLOR WITH BLUE LETTERING UNLESS OTHERWISE APPROVED BY THE CITY.

D. ALL STREET NAMES, SIGNS, TRAFFIC CONTROL SIGNS, POST, AND HARDWARE ALONG WITH THEIR PROPOSED LOCATION, MUST BE APPROVED BY THE CITY PRIOR TO INSTALLATION.

CITY OF BROOKVILLE ChoiceOne Engineering	TRAFFIC CONTROL DEVICES	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 500–2

LOW STRENGTH MORTAR BACKFILL

A. IN SITUATIONS WHERE UTILITIES CROSS HEAVILY TRAVELED STREETS OR IT MAY BE DIFFICULT TO GET ADEQUATE COMPACTION ON GRANULAR MATERIAL, LOW STRENGTH MORTAR BACKFILL WILL BE REQUIRED PER ODOT ITEM 613 TYPE 1 ONLY. THE CITY MAY REQUIRE THIS TYPE OF BACKFILL AT THEIR DISCRETION WITH THE COST BEING BORE BY THE CONTRACTOR. CITY WILL REQUIRE MATERIAL CERTIFICATION.

BORING/JACKING

A. MATERIALS.

CASING PIPE SHALL BE WELDED STEEL PIPE CONFORMING TO AWWA C–202.

B. INSTALLATION (CASING PIPE).

1. FURNISH PROCEDURE METHODS TO THE CITY FOR APPROVAL.

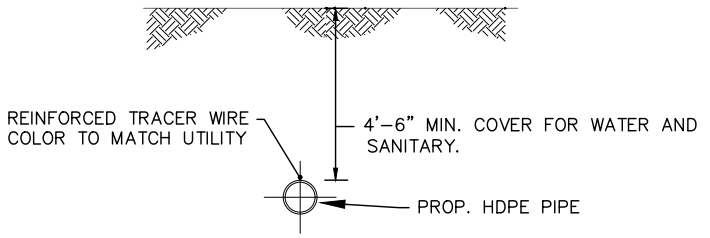
2. ALL METHODS AND PROCEDURES SHALL BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.

3. ADEQUATELY SUPPORT ALL TRENCHES AND BORING/JACKING PITS.

C. INSTALLATION (CARRIER PIPE).

1. PLACE CONDUITS IN CASING PIPE TO SAME RELATIVE POSITIONS AS ADJACENT DUCT BY USE OF SPACERS.

2. FILL THE SPACE BETWEEN CONDUITS INSIDE THE CASING PIPE WITH CLEAN SAND OR OTHER APPROVED MATERIALS AS APPROVED BY THE CITY.



HORIZONTAL DIRECTIONAL BORING DETAIL

NOTES

A. THE HORIZONTAL DIRECTIONAL DRILLING (HDD) SHALL BE IN ACCORDANCE WITH ASTM F–1962. THE FORCEMAIN SHALL BE HDPE PIPE OR APPROVED EQUAL THAT MEETS ASTM F–714 AND SHALL BE MANUFACTURED WITH A COLOR STRIPE. PIPE–FUSING SHALL BE IN ACCORDANCE WITH ASTM F–2620.

TRACER WIRE

A. DIRECTIONAL DRILL CONSTRUCTION: TRACER WIRE SHALL BE COPPERHEAD SOLOSHOT EHS REINFORCED TRACER WIRE MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC. OR COUNTY APPROVED EQUIVALENT.

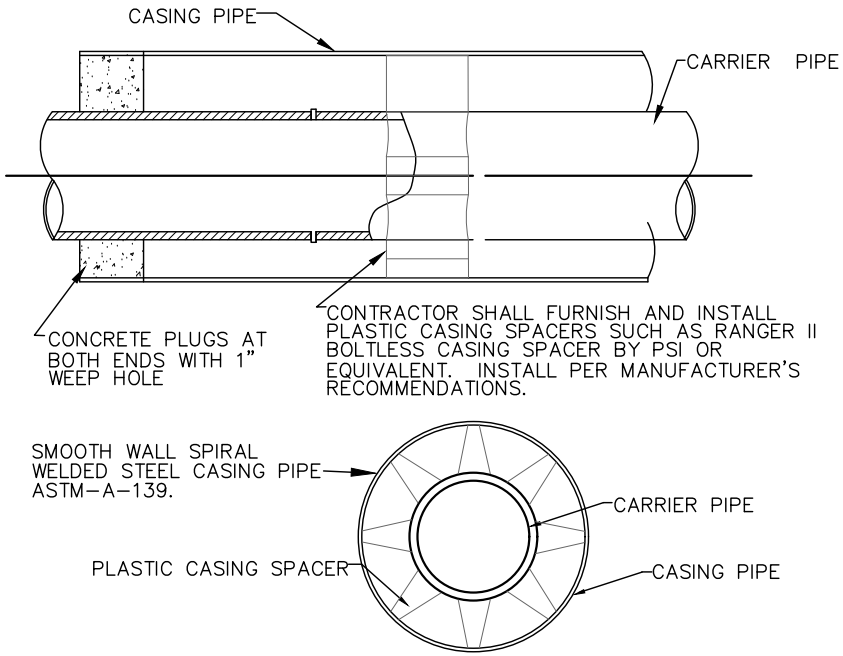
B. TRACER WIRE MUST BE RUN ON TOP OF THE PIPE CONTINUOUSLY FOR THE FULL LENGTH OF THE PIPE.

C. TRACER WIRE WILL COME TO THE SURFACE AT EVERY TRACER WIRE STATION, MANHOLE, OR VALVE AND TIE TO THE TERMINALS PER MANUFACTURER'S RECOMMENDATIONS.

D. TRACER WIRE THAT MUST BE SPLICED SHALL USE SNAKEBITE TRACER WIRE CONNECTORS MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC OR APPROVED EQUIVALENT.

E. TRACER WIRE SHALL BE TAPED TO THE PIPE USING 1 1/2" POLYETHYLENE TAPE WRAPPED TWICE AROUND THE PIPE.

CITY OF BROOKVILLE ChoiceOne Engineering	**LOW STRENGTH MORTAR BACKFILL AND BORING/JACKING**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 500–3

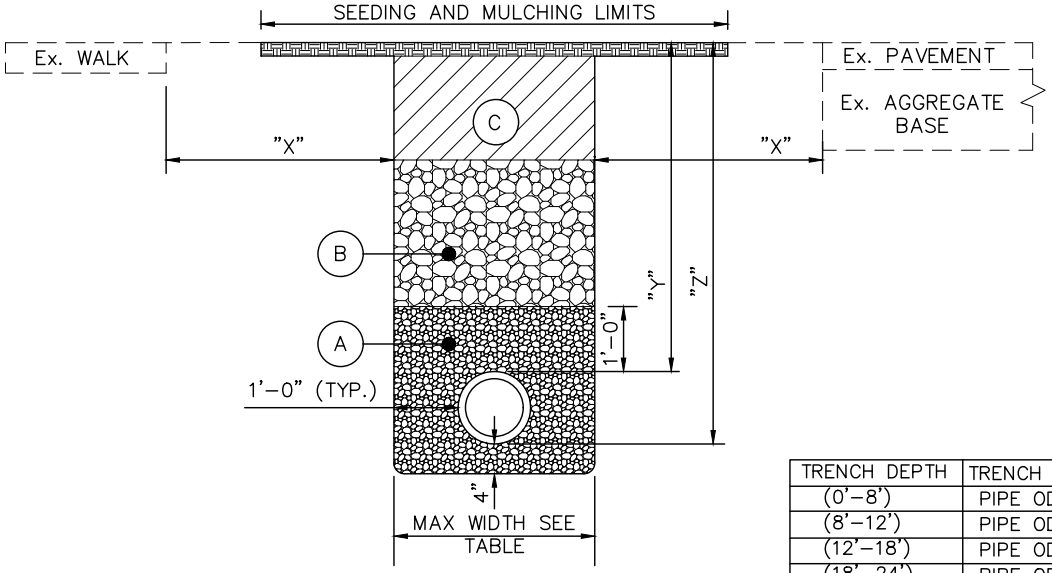


STEEL CASING PIPE

A. STEEL PIPE SHALL HAVE A MINIMUM YIELD STRENGTH OF 35,000 PSI.

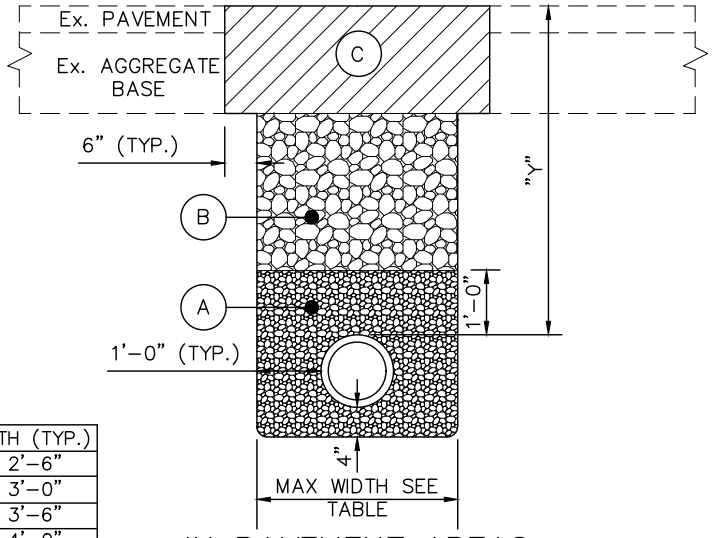
B. JOINTS BETWEEN THE SECTIONS OF PIPE SHALL BE FULLY WELDED AROUND THE COMPLTE CIRCUMFERENCE OF THE PIPE.

CASING PIPE ø	CASING PIPE THICKNESS
10 & UNDER	0.188
12 & 14	0.250
16	0.281
18	0.312
20 & 22	0.344
24	0.375
26	0.406
28	0.438
30	0.469
32	0.500
34 & 36	0.532
38	0.562
40	0.594
42	0.625
44 & 46	0.657
48	0.688
50	0.719
52	0.750
54	0.781
56 & 58	0.812
60	0.844
62	0.875
64	0.906
66 & 68	0.938
70	0.969
72	1.000



OUTSIDE PAVEMENT AREAS

TRENCH DEPTH	TRENCH WIDTH (TYP.)
(0'-8')	PIPE OD + 2'-6"
(8'-12')	PIPE OD + 3'-0"
(12'-18')	PIPE OD + 3'-6"
(18'-24')	PIPE OD + 4'-0"



IN PAVEMENT AREAS

NOTES

(A.) BEDDING SHALL BE PER ODOT 703.11 "STRUCTURAL BACKFILL FOR 611 BEDDING AND BACKFILL" TYPE 3 (#57 OR #67 AGGREGATE), OR OTHER APPROVED EQUIVALENT BY THE CITY. THERE SHALL BE 4" MIN. BEDDING BELOW THE PIPE. THE FOLLOWING BEDDING MATERIAL SHALL BE USED PER PROPOSED CONDUIT:

- WATER MAIN, WATER SERVICES, FIRE HYDRANTS AND APPURTENANCES – SHALL BE NATURAL CRUSHED STONE OR NATURAL GRAVEL.
- STORM AND SANITARY SEWERS – SHALL BE CRUSHED LIMESTONE OR NATURAL CRUSHED STONE.

(B.) STRUCTURAL BACKFILL – DENSITY TEST TO 95% OF ASTM D698 STANDARD PROCTOR CURVE MAY BE REQUIRED BY THE CITY TO BE COMPLETED BY A CERTIFIED COMMERCIAL TESTING LABORATORY.

FOR "OUTSIDE PAVEMENT AREAS":
ALL TRENCHES WHERE "X" IS GREATER THAN "Z", THE BACKFILL MATERIAL SHALL BE COMPACTED NATIVE MATERIAL IN 12" MAXIMUM LIFTS OR AS APPROVED BY THE CITY. NO MATERIAL SHALL BE USED FOR BACKFILLING THAT CONTAINS STONE, ROCKS, ETC., GREATER THAN 3" DIAMETER.

ALL TRENCHES WHERE "Z" IS GREATER THAN "X", THE BACKFILL MATERIAL SHALL BE ODOT ITEM 703.11, TYPE 1 (#304 AGGREGATE). THE AGGREGATE SHALL BE COMPACTED IN 12" MAXIMUM LIFTS AND BE USED UNTIL THE BACKFILL HEIGHT RESULTS IN "X" BEING GREATER THAN "Z" AT WHICH TIME NATIVE BACKFILL CAN BE USED.

FOR "IN PAVEMENT AREAS":
ALL TRENCHES SHALL HAVE ODOT ITEM 703.11, TYPE 1 (#304 AGGREGATE) BACKFILL PLACED FROM THE TOP OF THE BEDDING TO THE BOTTOM OF THE ROADWAY BASE.

(C.) ALL "OUTSIDE PAVEMENT AREAS" SHALL RECEIVE A MIN. OF 6" OF TOPSOIL OVER THE COMPACTED MATERIAL AND THEN SEEDED PER ODOT 659. ALL "IN PAVEMENT AREAS" SHALL FOLLOW TYPICAL PAVEMENT RESTORATION DETAILS FOUND IN 300-19.

(D.) THE OPEN ENDS OF ALL PIPES SHALL BE PLUGGED TO THE APPROVAL OF THE CITY BEFORE LEAVING THE WORK FOR THE NIGHT.

"X"= DISTANCE FROM EDGE OF TRENCH TO EDGE OF CLOSEST PROPOSED OR EXISTING PAVEMENT, CURB, DRIVEWAYS, ALLEYS, STONE AREA OR WALKS.

"Z"= DISTANCE FROM TOP OF BEDDING TO FINISH SURFACE.

"Y"= DEPTH OF COVER FOR PROPOSED CONDUIT
WATER MAINS.....4'-6" MIN.
STORM SEWERS.....2'-0" MIN.
SANITARY SEWERS.....4'-0" MIN.

CITY OF BROOKVILLE

ChoiceOne Engineering

TYPICAL TRENCH DETAILS

REVISIONS:

DATE APPROVED: OCT. 2023

PAGE No. 500-5

NOTES

A. ALL STORM SEWER CONSTRUCTION SHALL ADHERE TO ODOT SPECIFICATIONS LATEST REVISION OR WITH THE CITY STORM SEWER SPECIFICATIONS, WHICHEVER IS APPLICABLE AND MORE RESTRICTIVE.

B. PIPE MASTIC IS REQUIRED ON ALL NON O–RING STORM SEWER AND MANHOLES, UNLESS OTHERWISE APPROVED.

C. WHEN A CASTING IS ABANDONED IT REMAINS CITY PROPERTY.

D. ANY DETAILS OR NOTES NOT DIRECTLY ADDRESSED IN THESE ENGINEERING STANDARDS WILL BE REFERRED TO ODOT STANDARD DRAWINGS AND SPECIFICATIONS.

E. ALL STORM SEWER SHALL BE INSTALLED USING A LASER FOR GRADE AND ALIGNMENT.

UTILITY STAKING

A. OFFSET AND GRADE AT EACH MANHOLE, CATCH BASIN, AND OTHER STRUCTURES. OFFSET AND GRADE 50' AND 100' OUT FROM EACH MANHOLE UNLESS OTHERWISE APPROVED.

STORM SEWER PIPE

A. ALL STORM SEWER PIPE SHALL HAVE A MINIMUM DIAMETER OF 12", UNLESS OTHERWISE APPROVED.

B. ALL PIPE MATERIALS SHALL BE INSTALLED PER THE MANUFACTURES RECOMMENDATIONS FOR DEPTH AND COVER.

C. TYPES OF PIPE PERMITTED

PIPE MATERIAL, GREATER THAN 2 FEET OF COVER	ODOT CMS NUMBER
REINFORCED CONCRETE PIPE	706.02
REINFORCED CONCRETE ELLIPTICAL PIPE	706.04
CORRUGATED POLYETHYLENE SMOOTH–LINED PIPE (N–12)	707.33
POLYVINYL CHLORIDE PLASTIC PIPE (NON–PERFORATED)	707.41
POLYPROPYLENE (HP–ADS) DOUBLE WALL 12"–30"	707.65
POLYPROPYLENE (HP–ADS) TRIPPLE WALL 36"–60"	707.69

PIPE MATERIAL, LESS THAN 2 FEET OF COVER	ODOT CMS NUMBER
REINFORCED CONCRETE PIPE	706.02
REINFORCED CONCRETE ELLIPTICAL PIPE	706.04

D. THE CITY RESERVES THE RIGHT TO REJECT THE TYPE OF PIPE MATERIAL SUBMITTED IF THEY SO CHOOSE.

EXISTING TILE HOOKUPS

A. THE DRAINAGE TILE CURRENTLY CONNECTED TO THE EXISTING STORM SEWER SHALL BE CONNECTED TO THE PROPOSED STORM SEWER. ANY DRAINAGE TILE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. ALL THE REMOVED, REPLACED, AND/OR CONNECTED TO THE STORM SEWER SHALL BE NOTED ON THE AS–BUILT DRAWINGS AND SHALL BE INSPECTED BY THE INSPECTOR BEFORE THEY ARE COVERED.

B. ALL FIELD OR STORM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS OR PLUGGED AS APPROVED AND DIRECTED BY THE CITY.

STORM SEWER LATERALS

A. IN ALL NEW CONSTRUCTION IMPROVEMENT PROJECTS FOR DEVELOPMENTS, STORM SEWER LATERALS MUST BE PROVIDED TO 5' BEYOND THE RIGHT–OF–WAY OR EASEMENT LINE, WHICH EVER IS FURTHER, FOR ALL LOTS.

B. STORM SEWER LATERALS MUST BE AT A DEPTH TO ALLOW FOR CONNECTION OF DOWN SPOUTS, SUMP PUMPS AND OTHER ON–SITE DRAINAGE NEEDS.

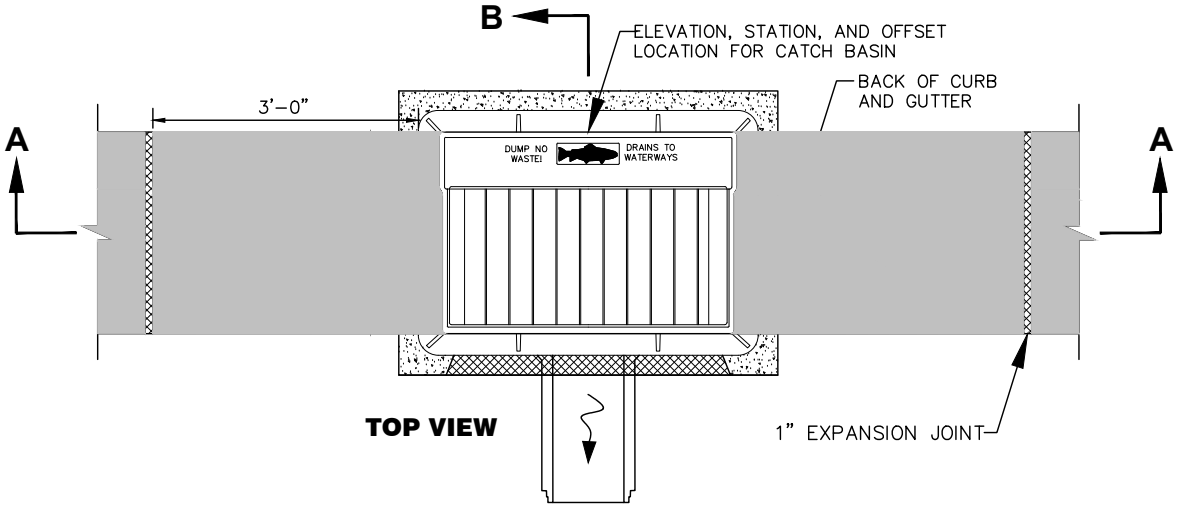
SUMP PUMP CONNECTIONS

A. ALL SUMP PUMPS MUST BE CONNECTED TO THE NEAREST AVAILABLE STORM SEWER, LATERAL, CATCH BASIN OR MANHOLE.

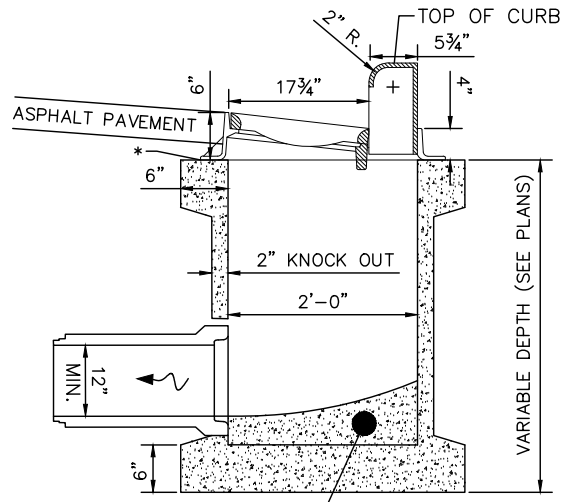
B. SUMP PUMP OUTLETS WILL NOT BE ALLOWED TO DRAIN OVER OR THROUGH THE CURB.

DOWNSPOUTS

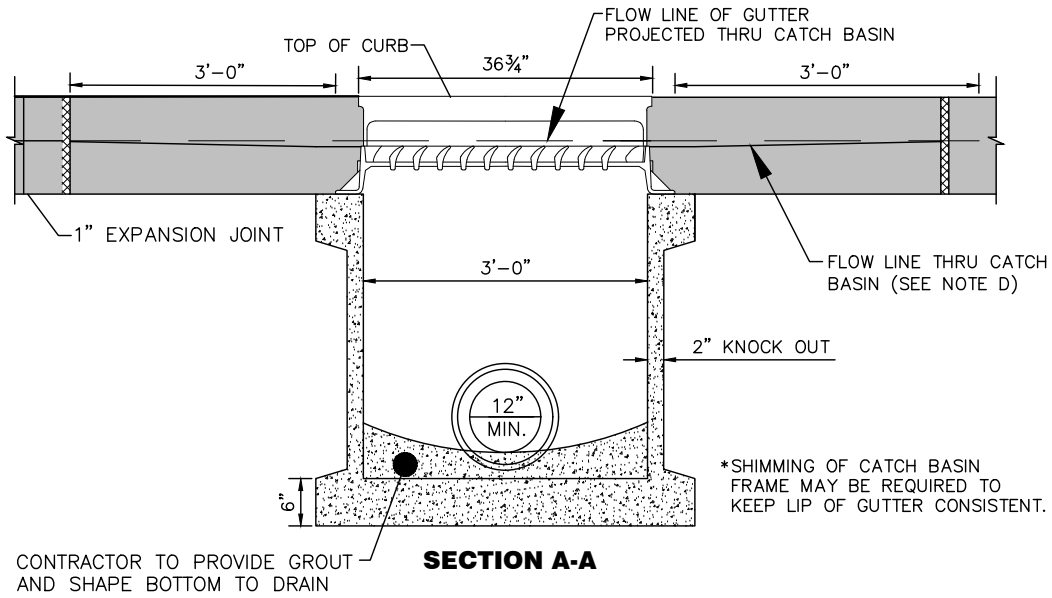
A. ALL DOWNSPOUTS MUST BE CONNECTED TO NEAREST STORM SEWER OR LATERAL. OUTLETING ABOVE GROUND WILL NOT BE PERMITTED.



TOP VIEW



SECTION B-B



SECTION A-A

CATCH BASIN NOTES

A. COMBINED INLET FRAME, CURB BOX SHALL BE NEENAH R-3067-L. GRATE SHALL BE NEENAH R-3067-V. CASTING AND GRATE TO MATCH CURB CONTOUR.

B. CONCRETE, CAST-IN-PLACE, TO BE ODOT QC MISC. (CEMENT ONLY - NO POZZOLAN MATERIAL). PRECAST CONSTRUCTION PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13. KNOCKOUTS ARE REQUIRED IN PRECAST CONSTRUCTION. PRECAST WALLS SHALL HAVE A SUFFICIENT AMOUNT OF REINFORCEMENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.

C. COMPACTED ODOT #57 STRUCTURAL BACKFILL MATERIAL, COMPACTED IN 12" LIFTS, WHEN WITHIN THE STREET R/W COMPACTION TO BE ACCOMPLISHED WITH APPROVED MECHANICAL COMPACTION DEVICE. FLOODING AND/OR JETTING PROHIBITED UNLESS PRE-APPROVED BY THE CITY'S INSPECTOR.

D. DROP FLOW LINE 1/2" WITHIN BLOCK OUT OF COMBINED CURB AND GUTTER WHILE KEEPING LIP OF GUTTER CONSISTENT WITH TOP OF CURB.

E. ALL GRATES SHALL BE BICYCLE SAFE.

F. CAST TOP OF FRAME WITH (2 FISH) AND THE WORDING "DUMP NO WASTE DRAINS TO RIVER"

CITY OF BROOKVILLE	# TYPE 1 CATCH BASIN	REVISIONS:	DATE APPROVED: OCT. 2023
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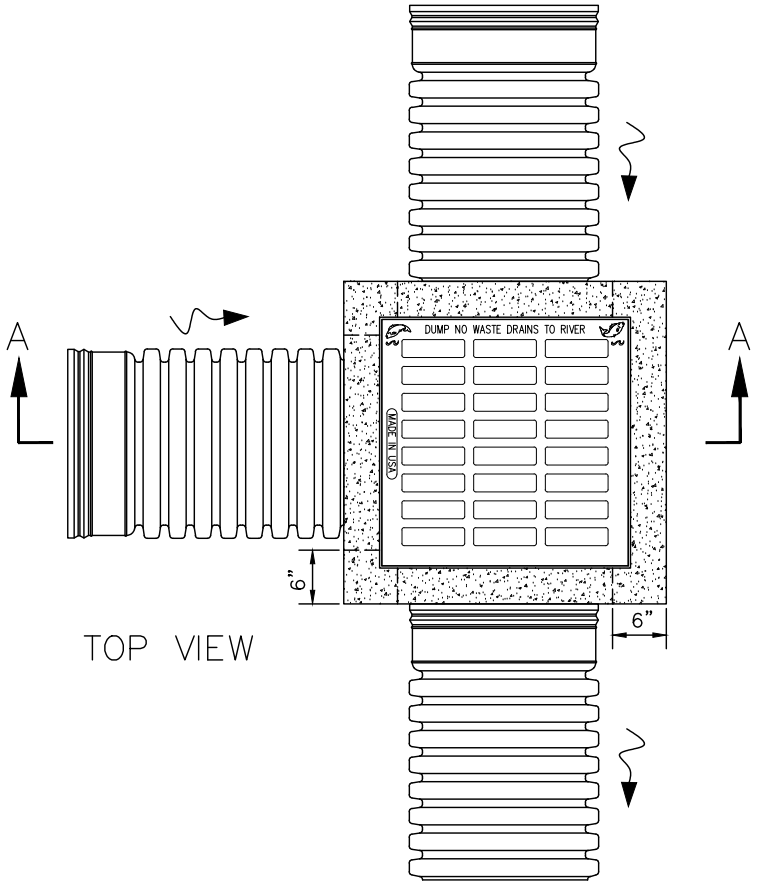
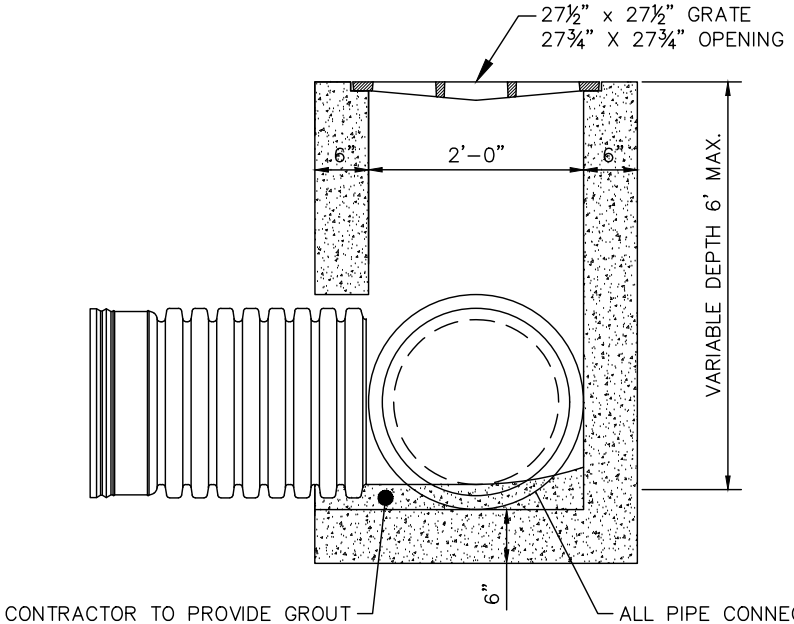


TOP VIEW



SECTION A–A

NOTES

A. LOCATION AND ELEVATIONS WHEN GIVEN ON THE PLANS IS TOP CENTER OF THE GRATE. WHEN SIDE OPENINGS ARE PROVIDED, ELEVATION SHALL BE THE FLOW LINE OF THE SIDE INLET.

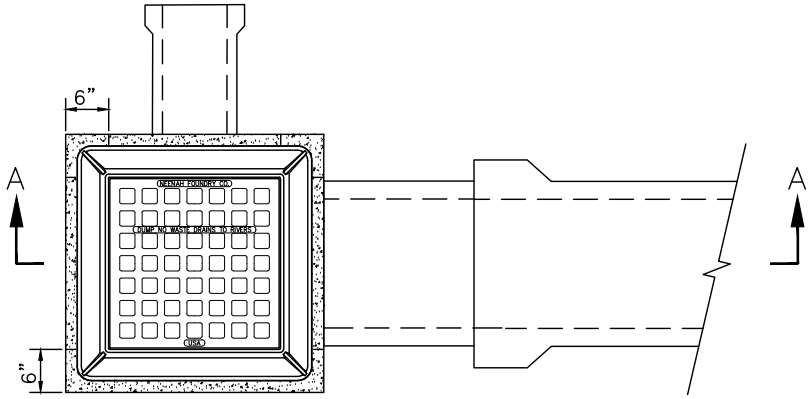
B. CATCH BASINS INSTALLED IN NON–PAVED AREAS SHALL BE PROVIDED WITH A RECESSED GRATE MANUFACTURED BY NEENAH CATALOG NO. R–4859–C (TYPE A) OR EAST JORDAN IRON WORKS 5110 (TYPE M3) OR EQUIVALENT.

C. CONCRETE, CAST–IN–PLACE, TO BE ODOT QC–1. PRECAST CONSTRUCTION IS PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13.

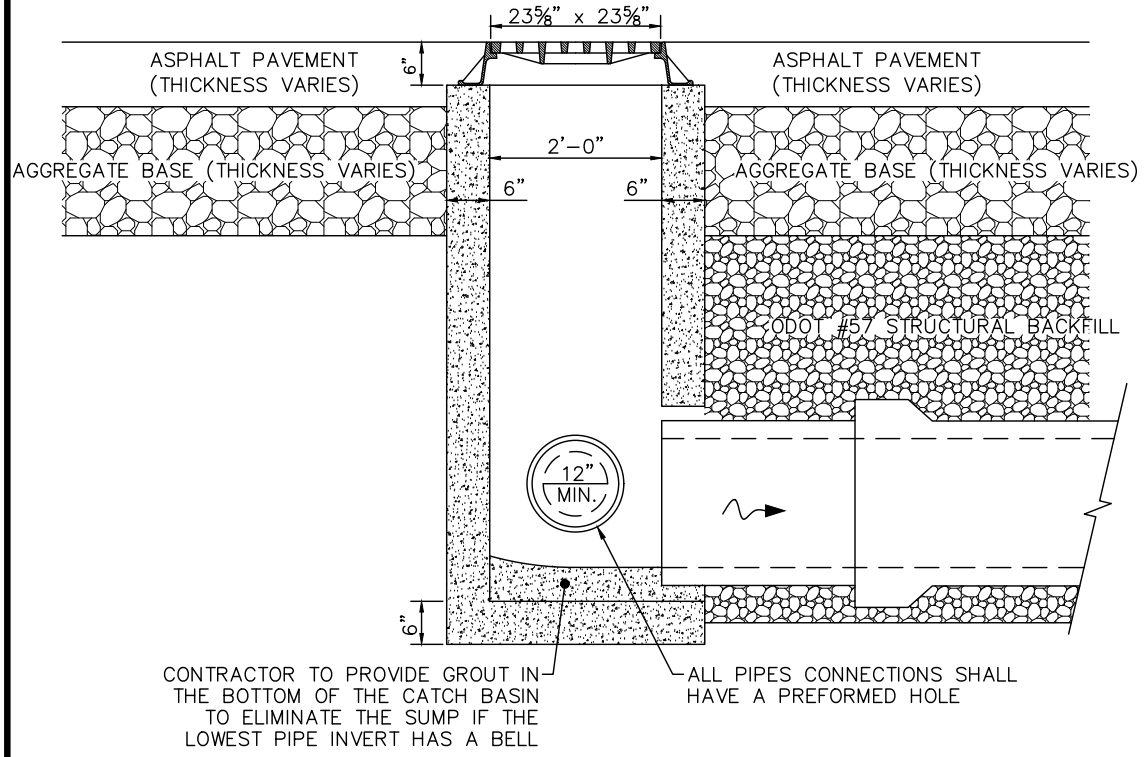
D. CATCH BASIN SHALL ACCOMMODATE AN 18" OR SMALLER PIPE.

E. PIPE TO INTRUDE INTO CATCH BASIN 1" MAXIMUM AND PIPE MUST BE CUT PARALLEL TO CATCH BASIN. CONTRACTOR TO USE NON–SHRINK GROUT COMPLETELY SEAL AROUND THE PIPE AND CATCH BASIN.

CITY OF BROOKVILLE ChoiceOne Engineering	**2-2B CATCH BASIN**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 600–3



PLAN VIEW



NOTES

A. LOCATION AND ELEVATIONS WHEN GIVEN ON THE PLANS IS TOP CENTER OF THE GRATE. WHEN SIDE OPENINGS ARE PROVIDED, ELEVATION SHALL BE THE FLOW LINE OF THE SIDE INLET.

B. CATCH BASINS INSTALLED IN PAVED AREAS SHALL BE PROVIDED WITH A FRAME AND GRATE MANUFACTURED BY NEENAH R-3405 PR EAST JORDAN IRON WORKS (FRAME 5250Z) AND GRATE (5250M).

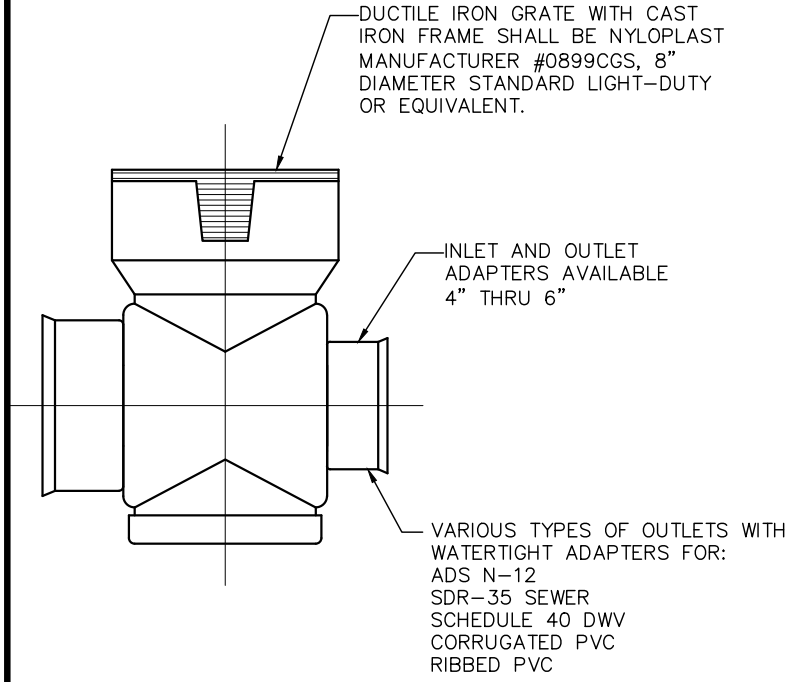
C. CONCRETE, CAST-IN-PLACE, TO BE ODOT QC-1. PRECAST CONSTRUCTION IS PERMITTED AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13.

D. CATCH BASIN SHALL ACCOMMODATE AN 18" OR SMALLER PIPE.

E. PIPE TO INTRUDE INTO CATCH BASIN 1" MAXIMUM AND PIPE MUST BE CUT PARALLEL TO CATCH BASIN. CONTRACTOR TO USE NON-SHRINK GROUT COMPLETELY SEAL AROUND THE PIPE AND CATCH BASIN.

F. THE CONTRACTOR SHALL ENSURE THE FRAME IS SECURELY BOLTED/FASTENED TO THE CATCH BASIN DURING INSTALLATION IN ALL PAVED AREAS (GRAVEL, ASPHALT AND CONCRETE).

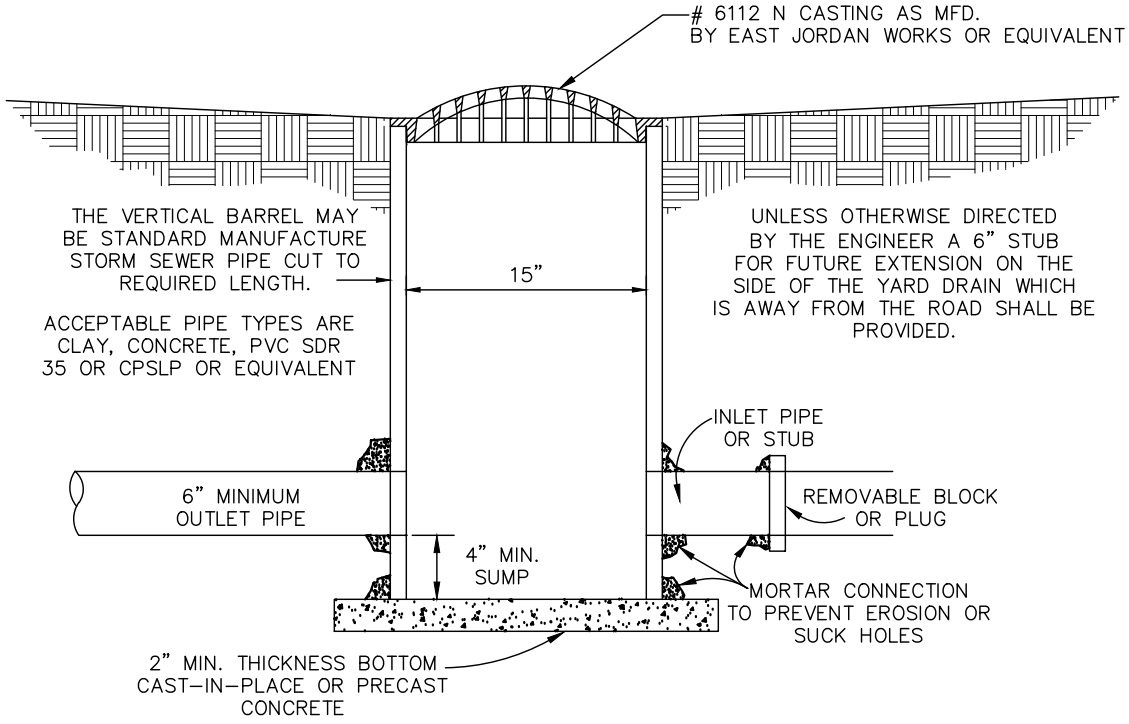
CITY OF BROOKVILLE ChoiceOne Engineering	2-2C CATCH BASIN	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 600-4



TYPE 2 YARD DRAIN

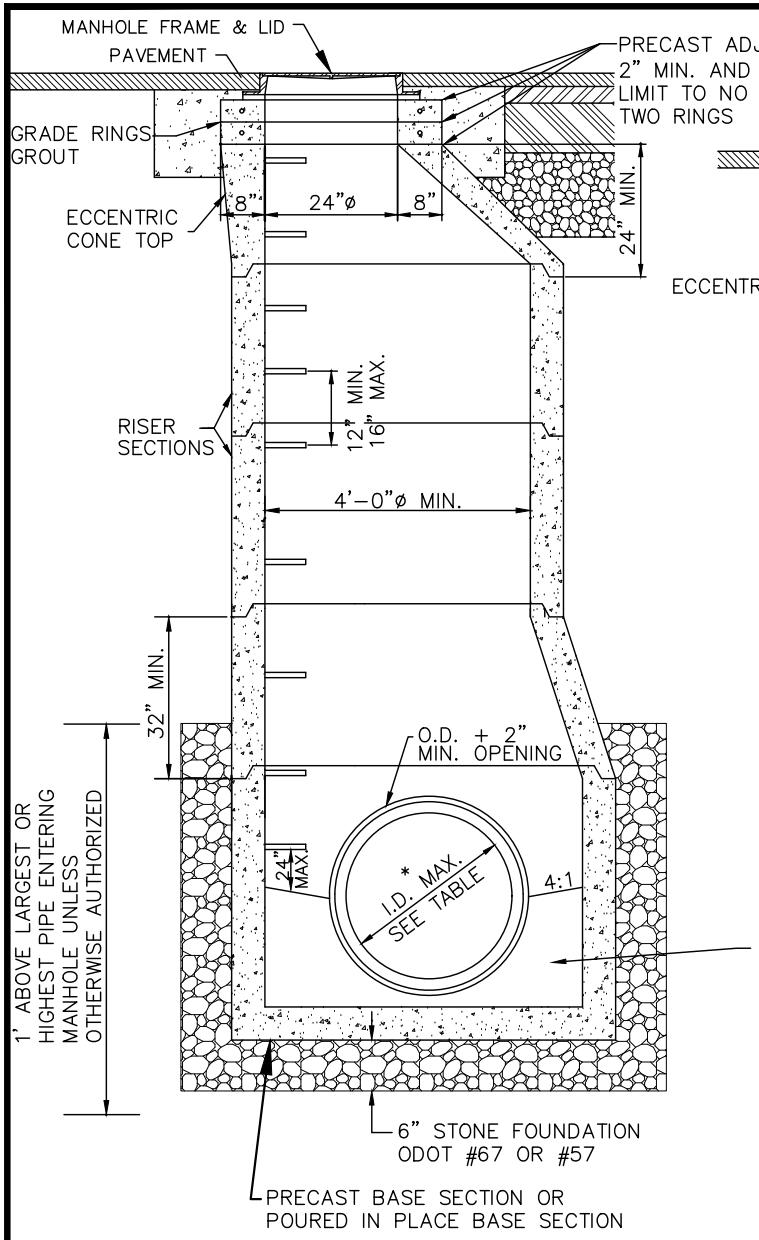
-STANDARD OR CUSTOM DRAIN BASIN FOR VARIABLE INLET HEIGHT SHALL BE NYLOPLAST MANUFACTURER #2808AG OR EQUAL.

-CONTRACTOR TO INSTALL PER MANUFACTURER'S RECOMMENDATIONS.



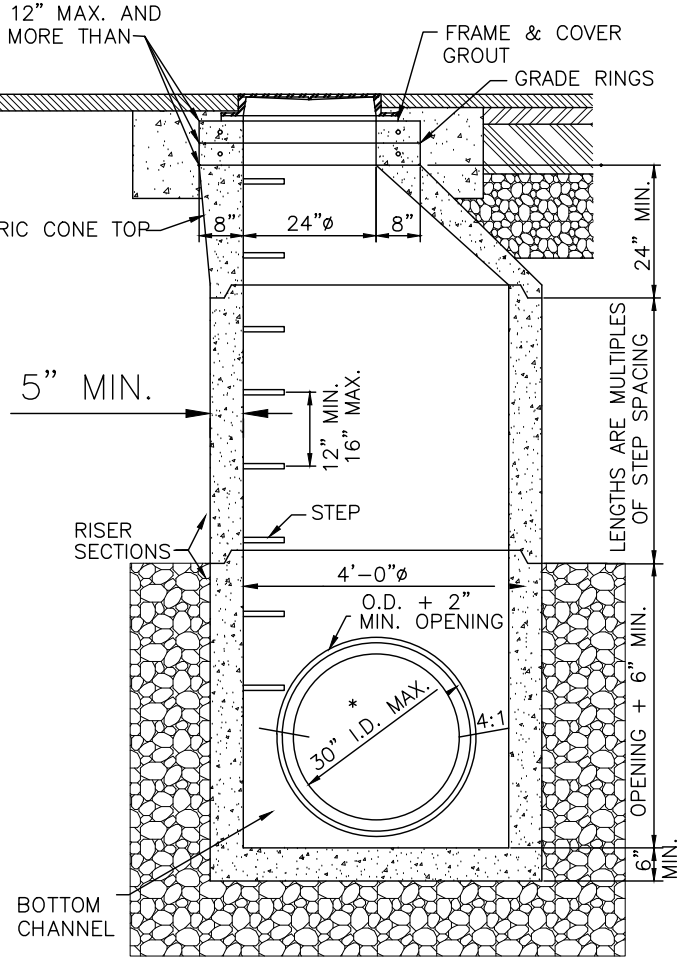
TYPE 3 YARD DRAIN

CITY OF BROOKVILLE	YARD DRAINS	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 600-5



60" TO 96" PRECAST BASE

SEE TABLE FOR MAXIMUM PIPE SIZES



48" PRECAST BASE

FOR 30" & SMALLER PIPE

"*" BASE I.D.	MIN "t"	MAX. PIPE SIZE
48"	5"	30"
60"	5"	36"
72"	6"	48"
84"	7"	54"
90"	7½"	60"
96"	8"	60"

*DUE TO PIPE ORIENTATION, LARGER DIAMETER BASE THAN WHAT IS SPECIFIED TO ACCEPT PIPE MAY BE REQUIRED.

STORM MANHOLE NOTES

A. STORM MANHOLE FRAME AND APPROVED VENTED LID SHALL BE EQUAL OF NEENAH NO. R-1668 OR EAST JORDAN IRON WORKS NO. 1590 WITH "STORM SEWER" STAMPED ON LID. CHIMNEY SEALS AND VACUUM TESTING IS NOT REQUIRED ON STORM MANHOLES.

B. MATERIALS FOR BASES AND OTHER PRECAST SECTIONS, INCLUDING REINFORCEMENT NOT SPECIFIED HEREIN, SHALL COMPLY WITH ODOT REQUIREMENT OF 706.13 (ASTM C-478). JOINTS BETWEEN SECTIONS TO BE EITHER MORTAR OR BITUMINOUS PIPE JOINT FILLER (ODOT 706.10) SECTIONS OF THE PRECAST MANHOLE SHALL BE CAST AND ASSEMBLED WITH EITHER ALL TONGUE OR ALL GROOVE ENDS UP. LIFT HOLES MAY BE PROVIDED IN EACH SECTION FOR HANDLING.

C. TOP AND TRANSITION (OR REDUCER) SECTIONS MAY BE EITHER ECCENTRIC CONE OR FLAT SLAB.

D. OPENINGS IN RISER SECTIONS FOR 18" AND SMALLER INLET PIPES MAY BE PREFABRICATED OR CUT IN THE FIELD PROVIDED THE SIDES OF THE PIPE AT THE SPRING LINE DO NOT PROJECT INTO THE MANHOLE.

E. STORM PIPE TO MANHOLE CONNECTIONS SHALL BE COMPLETED WITH NON-SHRINK GROUT, HAND PLACED, SMOOTHED AND BRUSHED ON BOTH SIDES OF THE CONNECTION. A RUBBER SEAL OR MASTIC SEAL BETWEEN THE MANHOLE FRAME AND TOP SECTION OF ADJUSTING RINGS IS REQUIRED.

F. MANHOLES SHALL BE PLACED AT THE GRADES, ELEVATIONS, AND LOCATIONS SHOWN IN THE PLANS WITH THE CENTERLINE OF THE MANHOLE LID OVER THE CENTERLINE OF THE MAIN SEWER WHENEVER POSSIBLE.

G. NO LATERALS MAY PROTRUDE INTO THE INTERNAL MANHOLE.

H. WHEN CONNECTING TO AN EXISTING STORM MANHOLE CARE SHALL BE TAKEN TO KEEP OPENING AS MINIMAL AS POSSIBLE. IF POSSIBLE, SAW CUT OR USE ROTARY HAMMER FOR OPENING TO MINIMIZE DAMAGE TO STORM MANHOLE AND PIPE MUST BE CUT PARALLEL TO STORM MANHOLE. USE NONSHRINK GROUT AROUND PIPE TO SEAL BETWEEN PIPE AND STORM MANHOLE.

I. COMPACTED #67 STRUCTURAL MATERIAL, COMPACTED IN 12" LIFTS, WHEN WITHIN THE STREET R/W COMPACTION TO BE ACCOMPLISHED WITH APPROVED MECHANICAL COMPACTION DEVICE. FLOODING AND/OR JETTING PROHIBITED UNLESS PREAPPROVED BY THE CITY'S PROJECT INSPECTOR.

CITY OF BROOKVILLE

ChoiceOne Engineering

TYPE 3 STORM MANHOLE

REVISIONS:

DATE APPROVED: OCT. 2023

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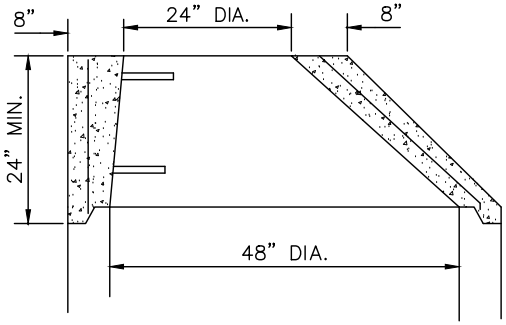
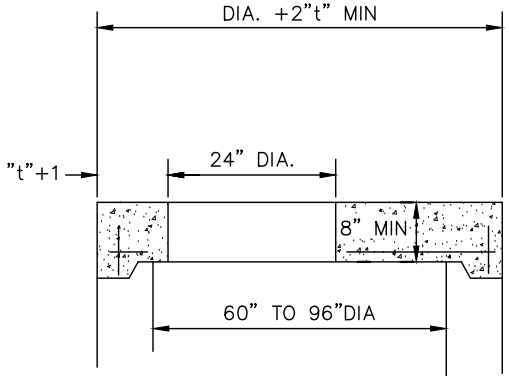
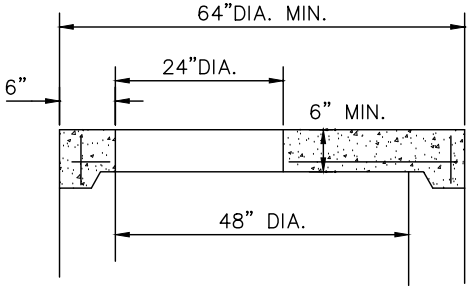


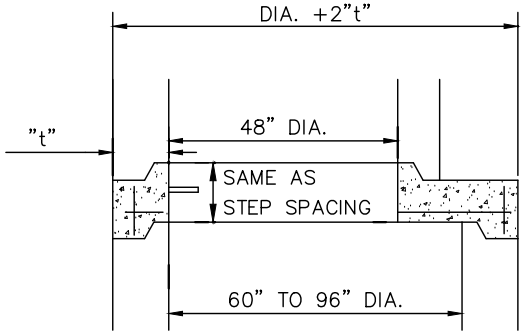
ECCENTRIC CONE TOP



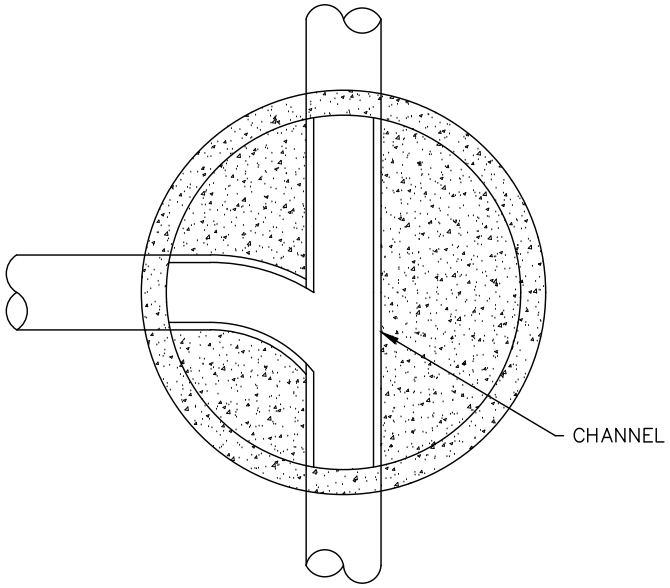
FLAT SLAB TOP



FLAT SLAB TOP



FLAT SLAB TRANSITION



SECTIONAL PLAN

NOTE

ALL INVERTS TO BE CHANNELED FOR OPTIMUM FLOW.

CITY OF BROOKVILLE	TYPE 3 STORM MANHOLE DETAILS	REVISIONS: FEB 2021	DATE APPROVED: OCT. 2023
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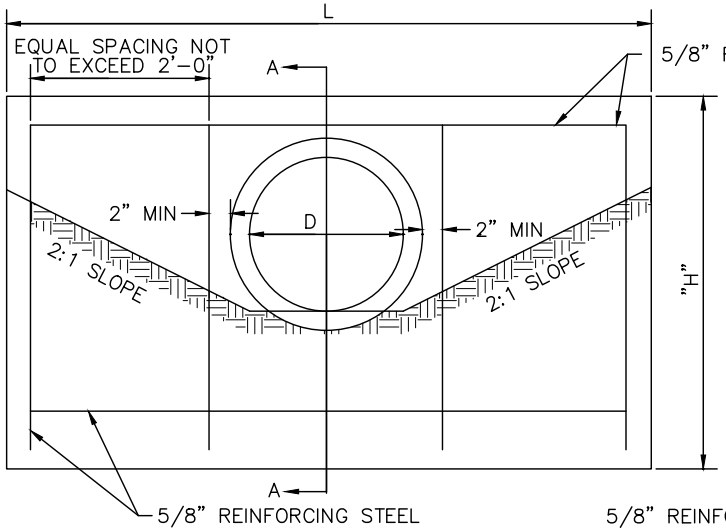
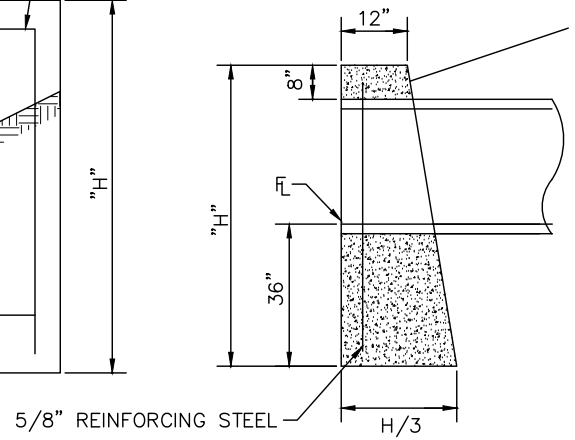


ELEVATION



SECTION A-A

NOTES

A. THESE FULL HEIGHT HEADWALLS ARE FOR NONSKEWED CULVERTS HAVING A DIAMETER OR RISE OF 36" OR LESS.

B. CONCRETE SHALL BE ODOT CLASS QC. REINFORCED STEEL BARS SHALL BE 5/8" ROUND.

C. DIMENSIONS AND QUANTITIES ARE SHOWN FOR CIRCULAR SECTIONS ONLY. IT WILL BE NECESSARY TO DETERMINE DIMENSIONS FOR THE HW-1 HEADWALL REQUIRED FOR REINFORCED ELLIPTICAL CONCRETE PIPE OR CORRUGATED METAL PIPE ARCHES IN ACCORDANCE WITH THE EQUATIONS LISTED ON THIS DRAWING.

D. CHAMFER ALL EXPOSED CORNERS 3/4".

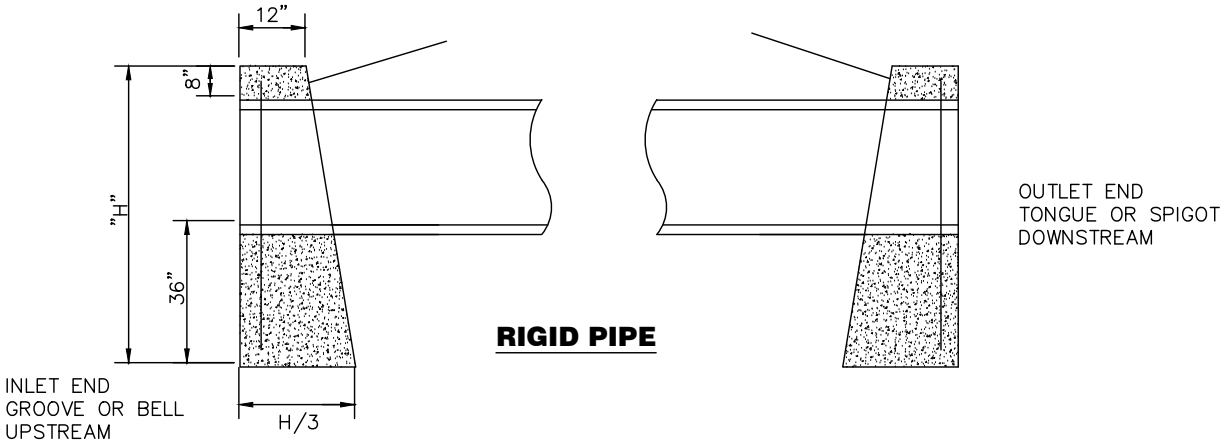
E. WHERE THE SOIL BORINGS INDICATE A BEARING CAPACITY OF LESS THAN 2600 LBS. PER SQUARE FOOT, IT WILL BE NECESSARY TO INCREASE THE WIDTH OF THE BASE.

F. MINIMUM COVER FOR REINFORCING STEEL SHALL BE 2".

G. FOR PIPES HAVING A DIAMETER OR RISE OVER 36", REFERENCE ODOT HW-1.1 HEADWALLS FOR FULL HEIGHT HEADWALL.

H. FOR SKEWED CULVERTS HAVING A DIAMETER OR RISE OF 36" OR LESS, REFERENCE ODOT HW-2.1 & HW-2.2 HEADWALLS.

I. HEADWALLS MAY BE PRECAST CONCRETE CONSTRUCTED TO THE ABOVE REQUIREMENTS. GROUT AROUND PIPE AFTER INSTALLATION.



RIGID PIPE

DIMENSIONS			QUANTITIES ONE HEADWALL	
DIAMETER	HEIGHT	LENGTH	CONCRETE C.Y.	REINFORCING STEEL LBS.
15"	5'-2"	7'-0"	1.7	41
18"	5'-5"	8'-4"	2.2	57
21"	5'-8"	9'-8"	2.8	62
24"	5'-11"	11'-0"	3.3	69
30"	6'-5"	13'-8"	4.7	92
36"	7'-0"	16'-4"	6.5	105

L CIRCULAR SECTIONS = 5D + 4T
L ELLIPTICAL OR PIPE-ARCH = 4R + 4T + S
H CIRCULAR SECTIONS = D + T + 44"
H ELLIPTICAL OR PIPE-ARCH = R + T + 44"

D = DIAMETER OF PIPE
R = RISE OF PIPE
S = SPAN OF PIPE
T = THICKNESS OF BARREL
L = LENGTH OF HEADWALL
H = HEIGHT OF HEADWALL

CITY OF BROOKVILLE

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FULL-HEIGHT HEADWALL

REVISIONS:

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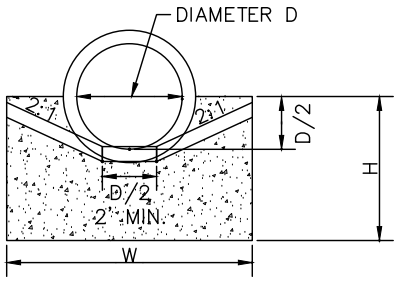
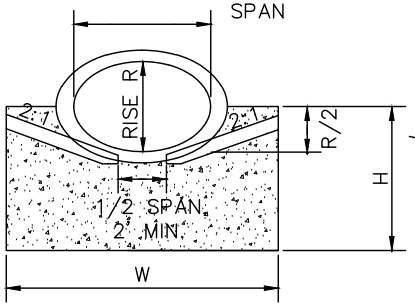
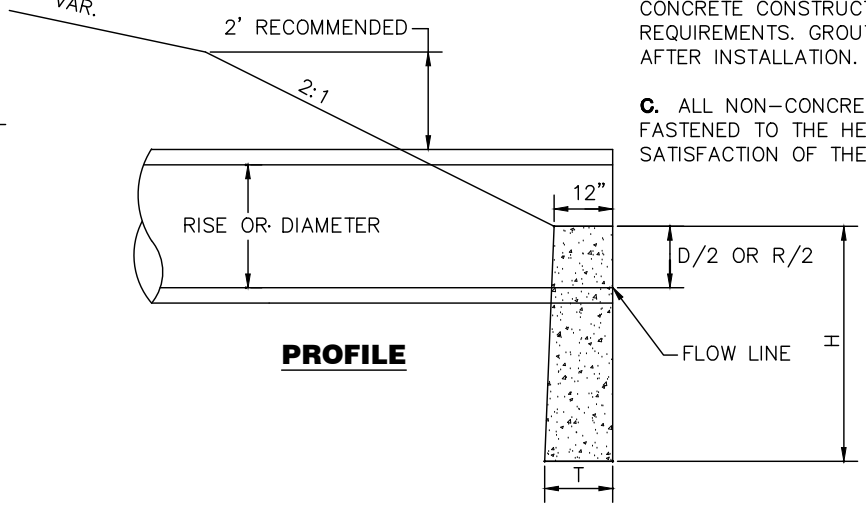


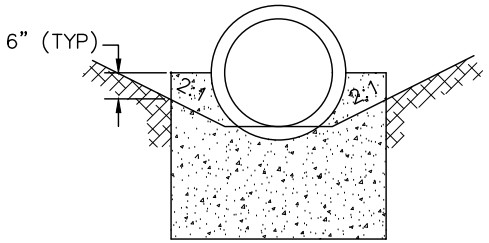
CIRCULAR



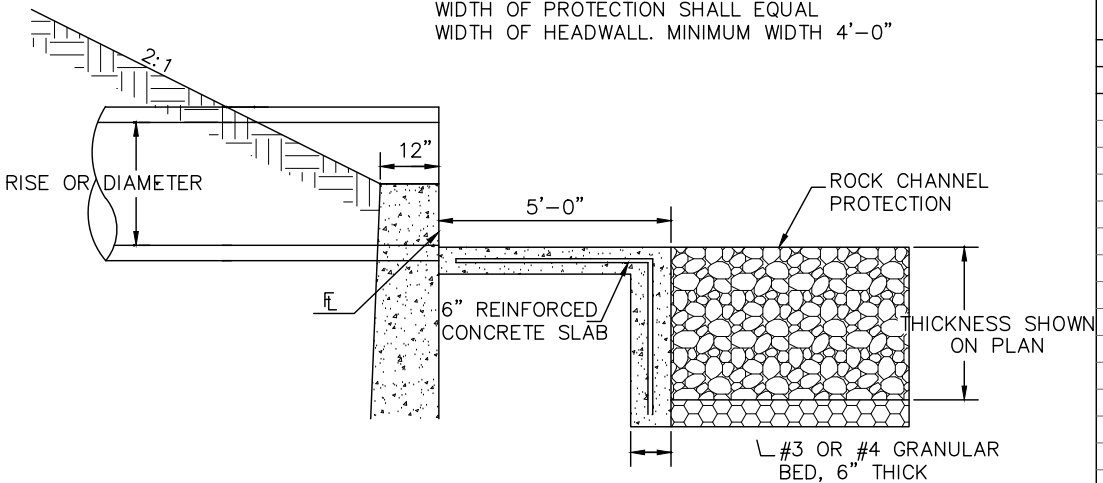
ELLIPTICAL



PROFILE



WIDTH OF PROTECTION SHALL EQUAL
WIDTH OF HEADWALL. MINIMUM WIDTH 4'–0"



OUTLET CHANNEL PROTECTION DETAIL

(CUTOFF WALL DEPTH 2'–6" MINIMUM IS VARIABLE TO MATCH REQUIRED THICKNESS OF ROCK.)

NOTES

A. CONCRETE FOR HEADWALLS SHALL BE ODOT CLASS C. CONCRETE QUANTITIES ARE BASED ON HEADWALLS ONLY.

B. HEADWALLS MAY BE PRECAST CONCRETE CONSTRUCTED TO THE ABOVE REQUIREMENTS. GROUT AROUND PIPE AFTER INSTALLATION.

C. ALL NON–CONCRETE PIPES MUST BE FASTENED TO THE HEADWALL TO THE SATISFACTION OF THE CITY.

HEADWALL FOR CONCRETE PIPE

CIRCULAR				CONC.	ELLIPTICAL					CONC.
D	W	H	T	C.Y.	SPAN	RISE	W	H	T	C.Y.
12"	2'–0"	3'–0"	12"	.20	23"	14"	3'–0"	3'–2"	12"	.29
15"	2'–6"	3'–2"	12"	.25	30"	19"	3'–7"	3'–4"	12"	.35
18"	3'–0"	3'–3"	12"	.31	34"	22"	3'–11"	3'–5"	12"	.38
21"	3'–6"	3'–4"	12"	.37	38"	24"	4'–6"	3'–6"	12"	.44
24"	4'–0"	3'–6"	12"	.43	42"	27"	4'–8"	3'–7"	12"	.45
27"	4'–6"	3'–8"	12"	.49	45"	29"	5'–2"	3'–8"	12"	.49
30"	5'–0"	3'–9"	12"	.56	49"	32"	5'–5"	3'–10"	12"	.52
33"	5'–6"	3'–10"	12"	.62	53"	34"	5'–11"	4'–0"	14"	.66
36"	6'–0"	4'–0"	12"	.69	60"	38"	6'–10"	4'–2"	14"	.82
39"	6'–6"	4'–2"	12"	.77	68"	43"	8'–0"	4'–4"	16"	1.01
42"	7'–0"	4'–3"	12"	.84	76"	48"	9'–2"	5'–0"	16"	1.34
48"	8'–0"	4'–6"	14"	1.09	83"	53"	10'–4"	5'–2"	18"	1.65
54"	9'–3"	4'–9"	14"	1.32	91"	58"	11'–6"	5'–5"	18"	1.97
60"	10'–6"	5'–6"	16"	1.93	98"	63"	12'–7"	5'–7"	20"	2.38
66"	11'–9"	5'–9"	18"	2.42	106"	68"	13'–9"	5'–10"	20"	2.69
72"	13'–0"	6'–0"	18"	2.77	113"	72"	14'–9"	6'–0"	22"	3.14
78"	14'–3"	6'–3"	20"	3.37	121"	77"	15'–11"	6'–3"	22"	3.49
84"	15'–6"	6'–6"	22"	4.05	128"	82"	17'–0"	6'–5"	24"	4.04

CITY OF BROOKVILLE

ChoiceOne Engineering

HALF-HEIGHT HEADWALL

REVISIONS:

DATE APPROVED: OCT. 2023

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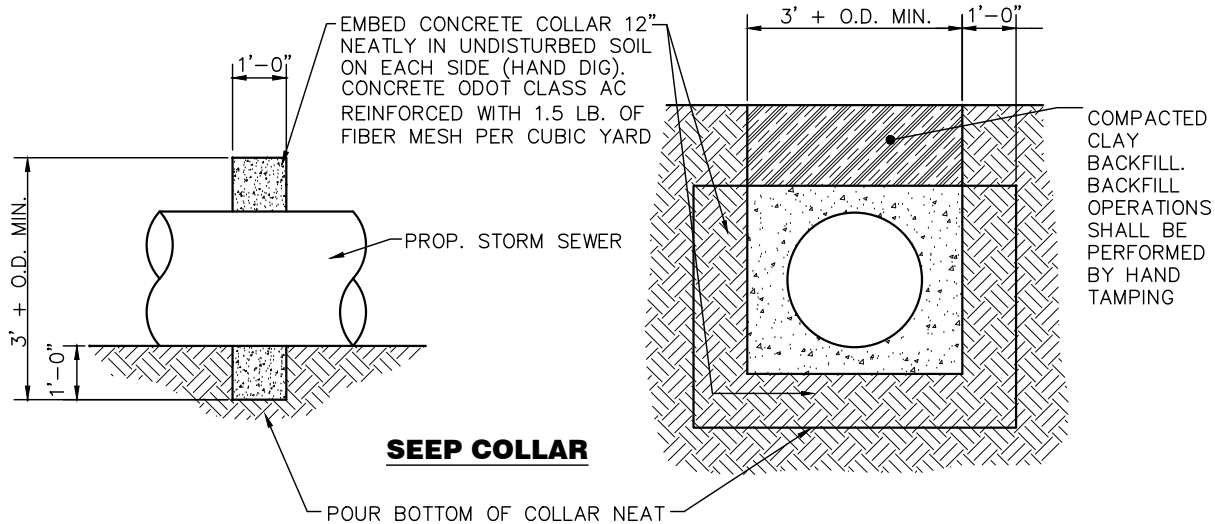
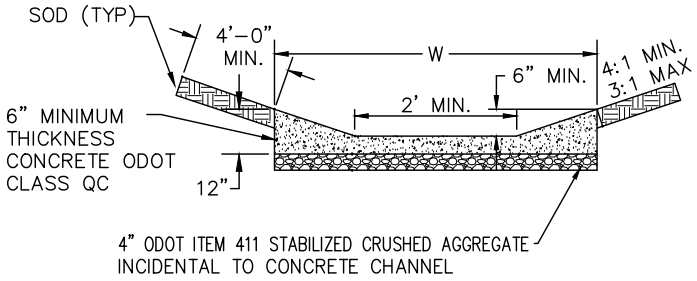


SEEP COLLAR



PAVED CONCRETE CHANNEL DETAIL

NOTES

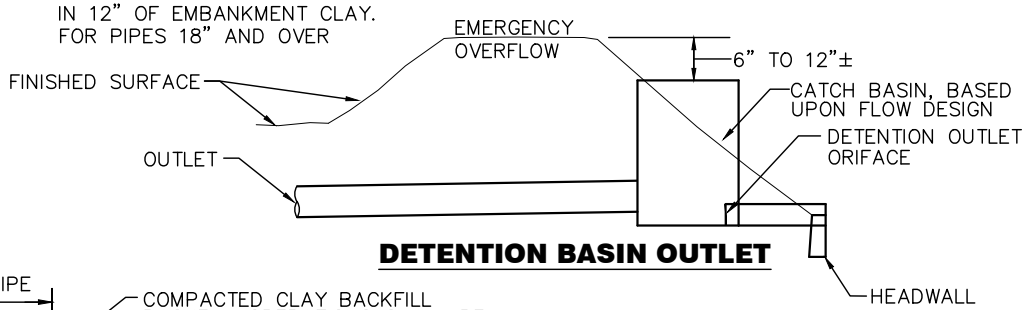
A. ALL DETENTION BASINS WITH SLOPES LESS THAN 1% REQUIRE CONCRETE CHANNEL.

B. "W" SHALL BE DESIGNED FOR A 25 YEAR STORM AND CHECKED FOR A 100 YEAR STORM.

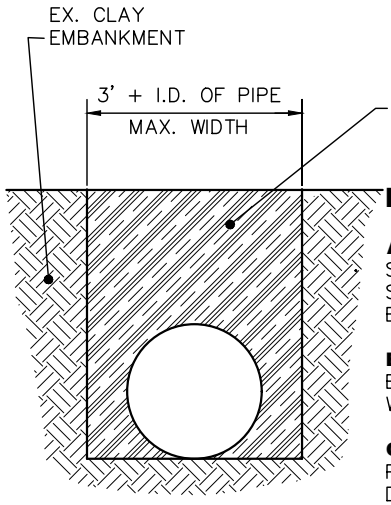
C. TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED AT 10', CUT TO A DEPTH OF 1 INCH. EXPANSION JOINTS EVERY 100'.

D. BOTTOM OF DRAINAGE DITCH SHALL BE FORMED BEFORE PLACING CONCRETE. ALL FORMS SHALL BE SET TO GRADE AND ALIGNMENT AND BE INSPECTED AND APPROVED BY THE CITY BEFORE POURING CONCRETE.

E. RIP RAP SHALL BE USED ON EMERGENCY OVERFLOWS WHEN THE VELOCITY OF WATER WILL SCOURE THE SOIL, OR AS REQUIRED BY ENGINEER.



DETENTION BASIN OUTLET



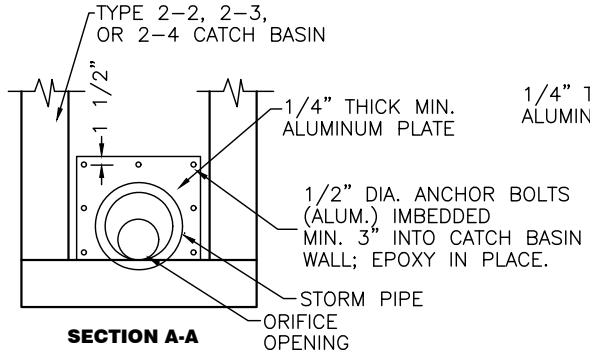
NOTES

A. EXTRA COMPACTION AND CARE SHALL BE TAKEN TO ENSURE WATER SEALING OF DIKE AND PROPER CLAY BEDDING OF PIPE.

B. COMPACTION REQUIREMENTS SHALL BE 95% STANDARD MAXIMUM DRY WEIGHT DENSITY.

C. THIS SHALL BE REQUIRED AT ALL PIPES ENTERING OR EXITING THE DETENTION BASIN.

CLAY TRENCH DETAIL THROUGH DETENTION BASIN



DETENTION/RETENTION OUTLET ORIFICE

CITY OF BROOKVILLE	# DETENTION BASIN DETAILS	REVISIONS:	DATE APPROVED: OCT. 2023
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NOTES

A. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED FOR ALL CONSTRUCTION PROJECTS HAVING SIGNIFICANT GRADING. THE CONTROLS ARE PROVIDED DURING CONSTRUCTION TO PREVENT SOIL ERODED FROM THE CONSTRUCTION AREA FROM ENTERING ADJACENT WATER COURSES.

B. CONSTRUCTION ITEMS INCLUDE SEDIMENT BASINS, SEDIMENT DAMS, DIVERSION DIKES AND/OR DITCHES AND STRAW BALES OR OTHER FILTER DIKES SHOWN ON ODOT STANDARD DRAWING MC–11. OTHER MISCELLANEOUS EROSION CONTROL MEASURES INCLUDE REPAIR SEEDING AND MULCHING, COMMERCIAL FERTILIZER, WATER AND MOWING AND ROCK CHANNEL PROTECTION, COVERED IN ODOT SPECIFICATION ITEMS 659 AND 601.

C. THE SIZE OF THE ENTIRE DRAINAGE AREA CONTRIBUTING FLOW IS USED TO DETERMINE THE MOST EFFECTIVE EROSION CONTROL METHOD. IN MANY CASES, THE MAJOR PORTION OF THE CONTRIBUTING AREA WILL BE BEYOND THE PROJECT LIMITS, AND FOR THOSE CASES IT WILL BE NECESSARY TO CONTROL THE FLOW FROM OUTSIDE BEFORE IT REACHES THE AREA DISTURBED BY PROJECT CONSTRUCTION. FLOW FROM THE AREA DISTURBED BY CONSTRUCTION SHALL BE TREATED PRIOR TO COMBINING IT WITH OFF–PAVEMENT DRAINAGE.

D. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROVIDED FOR ALL SUBDIVISIONS AND INDIVIDUAL SITES UNLESS OTHERWISE APPROVED. THE CONTROL MEASURES ARE TO BE PROVIDED DURING CONSTRUCTION TO PREVENT EROSION FROM ENTERING ADJACENT WATERWAYS AND PROPERTIES.

E. THERE SHALL BE ONLY ONE CONSTRUCTION ENTRANCE OFF THE SITE, ENTRANCE TO BE CONSTRUCTED OF 8" OF #2 STONE, 75' LONG BY 20' WIDE. CONTRACTOR TO KEEP MUD OFF EXISTING STREETS, NO EQUIPMENT TO BE PARKED ON EXISTING STREETS. MORE THAN ONE ENTRANCE MUST BE APPROVED BY THE CITY.

PLAN SUBMITTAL

A. ALL APPLICABLE SITE PLANS SHALL INCLUDE APPROPRIATE EROSION AND SEDIMENT CONTROL DEVICES AND SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY WORK UNLESS OTHERWISE APPROVED. ALL PROJECTS WHICH DISTURB 1 ACRES OR MORE MUST HAVE OEPA EROSION CONTROL APPROVALS.

CONSTRUCTION

A. ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSPECTED AND APPROVED BY THE CITY UNLESS OTHERWISE APPROVED.

STORM WATER PERMITS

A. STORM WATER POLLUTION PREVENTION SHOUDL BE A HIGH PRIORITY ON ALL CONSTRUCTION PROJECTS. ALL PROJECTS WHICH DISTURB AT LEAST 1 ACRE OF SOIL, A NPDES PERMIT IS REQUIRED FROM OEPA AND A COPY OF THE PERMIT MUST BE ON FILE AT THE CITY BEFORE CONSTRUCTION BEGINS.

B. EROSION CONTROL SUBMITTALS SHALL BE AS PER THE CURRENT STORM WATER MANAGEMENT ORDINANCE.

CONTROL MEASURES

A. DISTURB ONLY THE AREAS NEEDED FOR CONSTRUCTION.

B. REMOVE ONLY THOSE TREES, SHRUBS, AND GRASSES THAT MUST BE REMOVED FOR CONSTRUCTION; PROTECT THE REST TO PRESERVE THEIR ESTHETIC AND EROSION–CONTROL VALUES. TREES SHALL BE REPLACED AFTER CONSTRUCTION IS COMPLETE AT THE DEVELOPER'S COST.

C. INSTALL SEDIMENT BASINS AND DIVERSION DIKES BEFORE DISTURBING THE LAND THAT DRAINS INTO THEM.

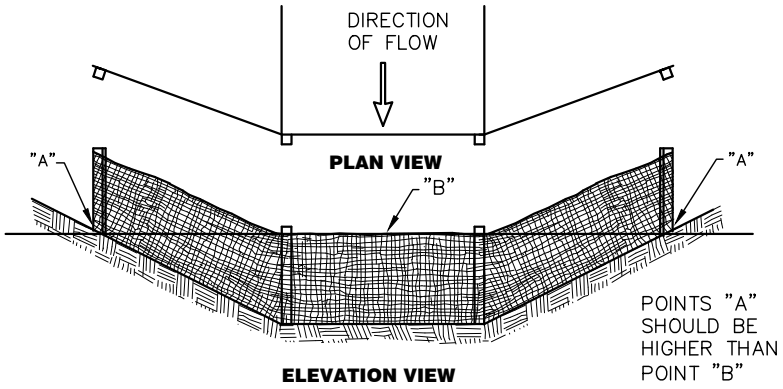
D. INSTALL EROSION AND SEDIMENT CONTROL PRACTICES AS INDICATED IN THE PLAN. THE PRACTICES ARE TO BE MAINTAINED IN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND UNTIL THE DRAINAGE AREAS HAVE BEEN PERMANENTLY STABILIZED.

E. TEMPORARILY STABILIZE EACH SEGMENT, GRADED OR OTHERWISE DISTURBED LAND, INCLUDING THE SEDIMENT–CONTROL DEVISES NOT OTHERWISE STABILIZED, BY SEEDING AND MULCHING OR BY MULCHING ALONE. AS CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZE EACH SEGMENT WITH PERENNIAL VEGETATION AND STRUCTURAL MEASURES.

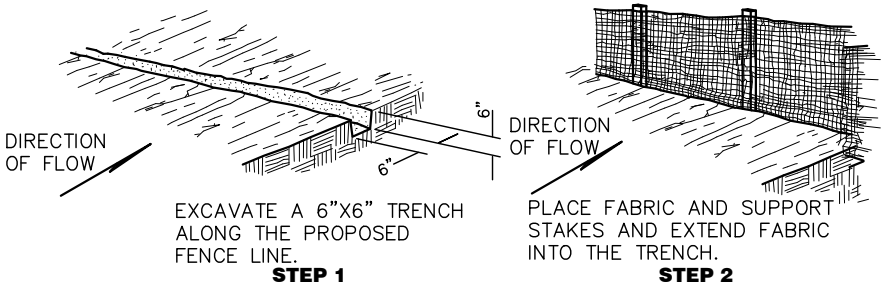
F. LEVEL DIVERSION DIKES, SEDIMENT BASINS, AND SILT TRAPS AFTER AREAS THAT DRAIN INTO THEM ARE STABILIZED. ESTABLISH PERMANENT VEGETATION ON THESE AREAS. SEDIMENT BASINS THAT ARE TO BE RETAINED FOR STORM WATER DETENTION MAY BE SEEDED TO PERMANENT VEGETATION AFTER THEY ARE BUILT.

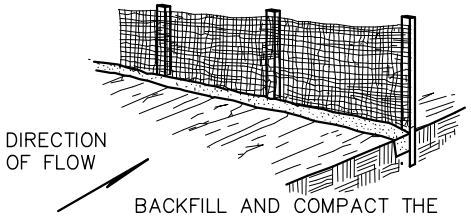
G. DISCHARGE WATER FROM OUTLET STRUCTURES AT NON–EROSIVE VELOCITIES.

CITY OF BROOKVILLE ChoiceOne Engineering	**EROSION CONTROL NOTES**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 600–11



PLACEMENT AND CONSTRUCTION OF DITCH CHECK FILTER FABRIC FENCE





STEP 3

PLACEMENT AND CONSTRUCTION OF PERIMETER FILTER FABRIC FENCE

CONSTRUCTION OF A FILTER BARRIER (SILT FENCE)

A. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.

B. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.

C. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.

D. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.

E. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.

F. THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

G. THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.

H. THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 INCHES OF CLOTH IS BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.

I. SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.

J. MAINTENANCE – SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. ALL THE GAPS AND TEARS IN THE FENCE MUST BE ELIMINATED AND REPAIRED. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED.

CRITERIA FOR SILT FENCE MATERIAL

A. FENCE POSTS – THE LENGTH SHALL BE A MINIMUM OF 32 INCHES LONG. WOOD POSTS WILL BE 2"x2" HARDWOOD OF SOUND QUALITY. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FEET.

B. SILT FENCE FABRIC SHALL BE ODOT TYPE C GEOTEXTILE FABRIC OR AS DESCRIBED BY THE CHART BELOW:

FABRIC PROPERTIES	
MINIMUM TENSILE STRENGTH	120 LBS.
MAXIMUM ELONGATION AT 60 LBS	50%
MINIMUM PUNCTURE STRENGTH	50 LBS.
MINIMUM TEAR STRENGTH	40 LBS.
MINIMUM BURST STRENGTH	200 PSI
APPARENT OPENING SIZE	≤ 0.84mm
MINIMUM PERMITTIVITY	$1X10^{-2}$ $sec.^{-1}$
ULTRAVIOLET EXPOSURE STRENGTH RETENTION	70%

CITY OF BROOKVILLE

ChoiceOne Engineering

TEMPORARY EROSION CONTROL 1

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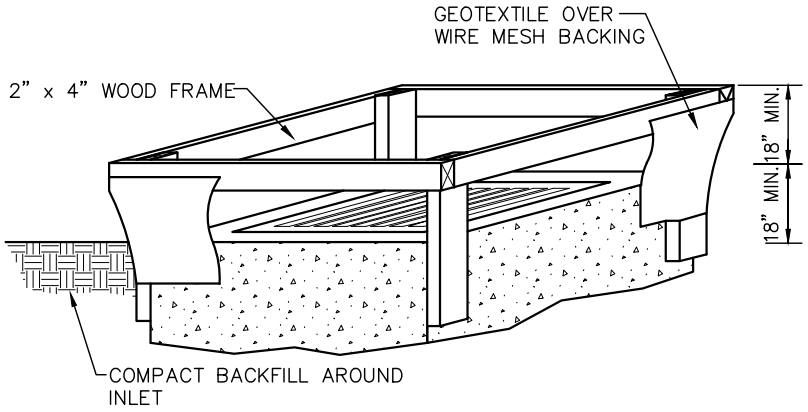


INLET PROTECTION IN SWALES, DITCH LINES OR YARD INLETS

A. INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.

B. THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH A LEAST 18 INCHES.

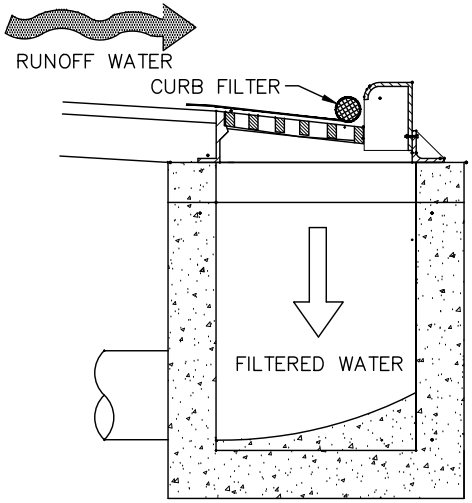
C. THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2 INCH BY 4 INCH CONSTRUCTION GRADE LUMBER. THE 2' X 4' POST SHALL BE DRIVEN 1' INTO THE GROUND AT FOUR CORNERS OF THE INLET AND AND THE TOP PORTION OF 2" X 4" FRAME ASSEMBLED USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6" BELOW ADJACENT ROAD, IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.

D. WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.

E. GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20–40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18" BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAY ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.

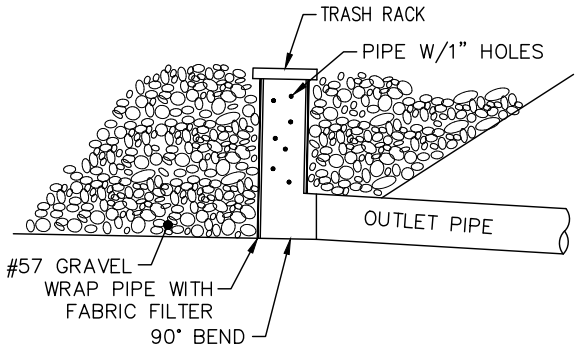
F. BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.

G. A COMPACTED EARTH DIKE OR A CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION, AND IF RUNOFF BY PASSING THE INLET WILL NOT FLOW TO A SETTING POND, THE TOP OF EARTH DIKES SHALL BE AT LEAST 6" HIGHER THAN THE TOP OF THE FRAME.



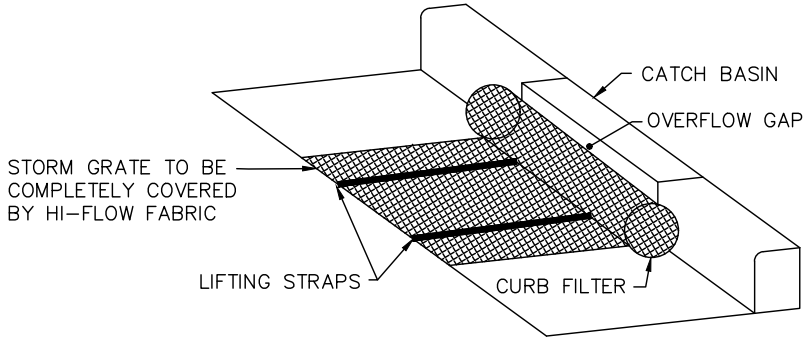
CURB INLET SEDIMENT FILTER

(AS REQUIRED BY THE CITY)



SEDIMENT BASIN OUTLET

TEMPORARILY LOCATED AT BASIN NOT TO BE REMOVED UNTIL SITE HAS BEEN STABILIZED



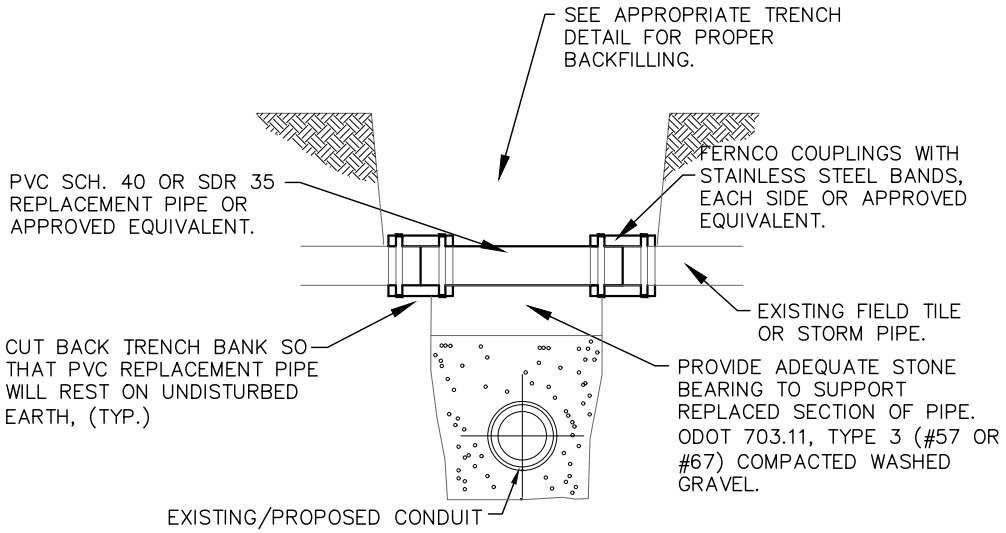
CURB INLET SEDIMENT FILTER NOTES

A. DANDY CURB BAG, SEDIGUARDS, OR EQUIVALENT MAY BE USED.

B. REMOVE SEDIMENT FROM CURB INLET PROTECTION BEFORE IT HINDERS THE FILTERING CAPACITY.

– DANDY CURB BAG: LIFT GRATE AND REMOVE DANDY BAG, CLEAN ACCUMULATED SEDIMENT AND REPLACE BAG AS REQUIRED BY MANUFACTURER.
– SEDIGUARD: CLEAN SEDIGUARD ONCE IT IS DRY WITH A STIFF BROOM AFTER EVERY RAIN.

C. INLET PROTECTION SHOULD NEVER INTERFERE WITH SAFETY OF ACTIVE TRAFFIC.



REPAIR OF EXISTING FIELD TILE OR STORM PIPE DETAIL

NOTES

A. CONCRETE REPAIRS OR PATCHES ARE UNACCEPTABLE.

B. ANY DRAINAGE TILE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. ANYTHING REMOVED, REPLACED, AND/OR CONNECTED TO THE STORM SEWER SHALL BE NOTED ON THE AS-BUILT DRAWINGS AND SHALL BE INSPECTED BY THE INSPECTOR BEFORE THEY ARE COVERED.

C. ALL FIELD OR STORM DRAINS WHICH ARE ENCOUNTERED DURING CONSTRUCTION SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS OR PLUGGED AS APPROVED AND DIRECTED BY THE CITY.

NOTES

A. NO WORK SHALL START UNTIL CITY OF DAYTON PERMITS HAVE BEEN ISSUED AS REQUIRED. ADDITIONALLY NO WORK SHALL BE APPROVED OR ACCEPTED BY THE CITY UNLESS 2 WORKING DAYS NOTICE OF COMMENCING WORK IS GIVEN TO THE CITY.

B. ALL TEMPORARY PAVEMENT AND SIDEWALK SHALL BE MAINTAINED BY THE CONTRACTOR OR THE DEVELOPER AT HIS OWN EXPENSE IN A SUITABLE AND SAFE CONDITION FOR TRAFFIC UNTIL PERMANENT REPLACEMENT IS MADE OR THE PROJECT IS FINALLY ACCEPTED BY THE CITY.

C. THE MINIMUM LENGTH OF PIPE NIPPLES SHALL BE 18".

D. ALL CUSTOMERS SHALL MEET BACKFLOW PREVENTION REQUIREMENTS AS PER STATE OF OHIO AND EPA REGULATIONS AND CITY ORDINANCE.

E. ALL WATERLINE CONSTRUCTION SHALL FOLLOW THE CITY OF DAYTON STANDARDS, OHIO DEPARTMENT OF TRANSPORTATION ITEM 638, AND AWWA STANDARDS WHICHEVER IS MORE RESTRICTIVE AS DETERMINE BY THE CITY.

F. OPERATION OF CITY FIRE HYDRANTS, VALVES, METERS, SERVICES, STOPS, AND ALL OTHER MECHANICAL INFRASTRUCTURE ITEMS IS STRICTLY PROHIBITED.

G. ALL WATERMAINS SHALL HAVE A MINIMUM DEPTH OF 4'-6" AND A MAXIMUM DEPTH OF 6'-0" FROM TOP OF PIPE TO SURFACE UNLESS APPROVED BY CITY.

H. ALL TAPS TO PROPOSED WATERMAINS WILL BE MADE BY CITY OF DAYTON AT CONTRACTORS EXPENSE. CONTACT CITY OF DAYTON FOR COST ESTIMATE TO COMPLETE THIS WORK.

I. TRACER WIRE IS REQUIRED OVER ALL PIPE REGARDLESS OF PIPE TYPE. SEE TRACER WIRE DETAIL ON PAGE NO. 800-22.

PIPE

A. ALL PIPE FITTINGS SHALL BE DUCTILE IRON.

B.

WATER MAIN MINIMUM SIZE UNLESS OTHERWISE APPROVED	
RESIDENTIAL	8"
COMMERCIAL	10"
INDUSTRIAL	12"
BASED ON A WATERMAIN DESIGN THE CITY MAY APPROVE A 6" MINIMUM FOR RESIDENTIAL.	

C. DEADENDS NOT PERMITTED UNLESS THEY ARE DEEMED NECESSARY BY THE CITY ENGINEER AFTER A REVIEW OF A WATERMAIN DESIGN, WHEN APPROVED THEY SHALL BE TERMINATED WITH A FIRE HYDRANT AT THE END.

EXCAVATION AND PIPE LAYING

A. THE OPEN ENDS OF ALL PIPES SHALL BE PLUGGED OR OTHERWISE CLOSED WITH A WATERTIGHT PLUG TO THE APPROVAL OF THE CITY BEFORE LEAVING THE WORK FOR THE NIGHT AND AT OTHER TIMES OF INTERRUPTION OF THE WORK.

FITTINGS, VALVES AND HYDRANTS

A. FITTINGS OR SPECIALS IN SIZES 2" THROUGH 48" SHALL CONFORM TO ALL REQUIREMENTS OF ANSI A-21.10 (AWWA C-153). FITTINGS AND SPECIALS 12" AND SMALLER SHALL BE CLASS 250. LARGER FITTINGS AND SPECIALS SHALL BE CLASS 150. FITTINGS AND SPECIALS SHALL HAVE MECHANICAL JOINTS AND SHALL BE DUCTILE IRON.

B.

MAXIMUM SPACING UNLESS OTHERWISE APPROVED	HYDRANTS	VALVES
SINGLE & TWO FAMILY RESIDENTIAL	500'	800'
INDUSTRIAL, COMMERCIAL & MULTI-FAMILY	300'	500'

C. ALL TEE'S AND CROSSES SHALL BE VALVED IN EACH DIRECTION UNLESS OTHERWISE APPROVED.

D. NO VALVE SHALL BE OPERATED BY PERSONNEL OTHER THAN A REPRESENTATIVE EMPLOYED BY THE CITY.

UTILITY STAKING

A. OFFSETS EVERY 25' ON CURVES. OFFSETS EVERY 100' ON STRAIGHT SECTIONS. FLOW LINE OF WATER MAIN (CUT) MARKED EVERY 100' AND OFFSETS SHALL BE CLEARLY MARKED.

TESTING

A. TESTING OF FIRE SUPPRESSION LINES AND SYSTEMS SHALL ADHERE TO THE REQUIREMENTS OF THE CITY'S DIVISION OF FIRE AND ALL APPLICABLE STATE CODE.

CITY OF DAYTON WATER NOTES

A. ALL SERVICE TAPS TO THE EXISTING OR PROPOSED WATER MAINS WILL BE MADE BY THE CITY OF DAYTON, AT THE CONTRACTOR'S EXPENSE. THIS WORK WILL INCLUDE MAKING THE TAP AND PROVIDING THE CORPORATION STOPS, SADDLES, TAPPING SLEEVES AND VALVES. THE CONTRACTOR SHALL PROVIDE THE TAPPING SLEEVE AND VALVES FOR SIZES 4" AND GREATER FOR THE CITY OF DAYTON TO INSTALL. 4" AND GREATER VALVES SHALL OPEN LEFT OR COUNTER-CLOCKWISE. A VALVE PROVIDED BY THE CONTRACTOR FOR INSTALLATION BY THE CITY OF DAYTON SHALL BE COMPATIBLE WITH DAYTON'S TAPPING MACHINE. NO TAPS OR SERVICES ON MONDAY OR FRIDAY.

B. ALL OTHER WORK INCLUDING EXCAVATION, BACKFILL, AND RESTORATION OVER THE TAPPED MAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE SHORING AS REQUIRED BY WATER DISTRIBUTION TO ENTER THE HOLE TO MAKE THE TAP.

C. TAPS WILL ONLY BE MADE AFTER A CITY OF DAYTON TAP PERMIT HAS BEEN OBTAINED BY THE CONTRACTOR'S PLUMBER, WHO SHALL BE LICENSED AND BONDED WITH THE CITY OF DAYTON. THE PLUMBER SHALL FIRST OBTAIN AND REMIT PAYMENT FOR ALL REQUIRED PERMITS FROM THE CITY OF BROOKVILLE, IF APPLICABLE. CONTACT CHRIS HOLMES AT 937-333-3725 OR CHRIS.HOLMES@DAYTONOHIO.GOV FOR THE TAPS QUOTE. PERMITS ARE OBTAINED AT THE CITY OF DAYTON'S ONE-STOP CENTER (371 W. SECOND STREET). THE MECHANICAL PERMIT APPLICATION CAN ALSO BE FOUND ONLINE AT DAYTONOHIO.GOV AND FAXED IN. FOR PERMIT QUESTIONS CALL 937-333-6804.

MATERIAL SPECIFICATIONS

A. WATER MAIN SHALL BE AWWA C-151 DUCTILE IRON PIPE CLASS 51 MIN., SLIP-ON JOINTS WITH RUBBER GASKETS

B. BELL JOINT RESTRAINTS – FOR PVC, USE EBAA IRON SERIES 1500 OR EQUIVALENT. FOR DIP, USE FIELD LOCK BY US PIPE OR APPROVED EQUIVALENT.

C. MECHANICAL JOINT RESTRAINTS – EBAA IRON MEGALUG SERIES 2100 RETAINER GLAND OR EQUIVALENT (DUCTILE).

D. ALL WATER MAIN AND FITTINGS SHALL BE POLY-WRAPPED WITH V-B10 ENHANCED POLYETHYLENE ENCASEMENT. COST OF POLY-WRAP SHALL BE INCIDENTAL TO WATER MAIN

E. FIRE HYDRANTS – SEE 800-3

F. GATE VALVES – AWWA C-509 OR C-515, RESILIENT WEDGE, NON-RISING STEM, MECHANICAL JOINT, 350 PSI WORKING PRESSURE, CCW TO OPEN, WITH ARROW INDICATING OPEN DIRECTION.

G. VALVE BOXES – 3-PIECE CAST IRON 6" DIAMETER NOMINAL, ADJUSTABLE SCREW TYPE, COVER MARKED "WATER", DOMESTIC MADE ONLY.

H. DISINFECTION OR STERILIZATION OF NEW MAINS AND SERVICES, AS REQUIRED BY THE OEPA AND AWWA, SHALL BE COORDINATED THROUGH AND SUPERVISED BY THE SUPERINTENDENT OF THE SERVICE DEPARTMENT OR HIS DESIGNEE. THE SUPERINTENDENT RESERVES THE RIGHT TO REQUIRE STRICTER CHLORINE RESIDUAL REQUIREMENTS ON A CASE-BY-CASE BASIS.

HYDROSTATIC TEST

A. AFTER THE PIPE HAS BEEN LAID AND BACKFILLED, ALL NEWLY LAID PIPE OR VALVED SECTION, SHALL BE SUBJECTED TO HYDROSTATIC PRESSURE AND LEAKAGE TEST. ALL WATER MAINS MUST BE HYDROSTATICALLY TESTED (AWWA C-600). THE TESTS MUST BE PERFORMED IN THE PRESENCE OF A REPRESENTATIVE OF THE CITY OF BROOKVILLE. THE LEAKAGE TEST PRESSURE SHALL BE NOT LESS THAN 150 PSI. THE DURATION OF THE LEAKAGE TEST SHALL NOT BE LESS THAN 2 HOURS. HYDROSTATIC PRESSURE SHALL BE APPLIED BY MEANS OF A PUMP TAKING WATER FROM AN AUXILIARY SUPPLY. ALL PIPING MUST BE PROPERLY FILLED AND FLUSHED TO DISPEL ALL AIR BEFORE THE TEST IS MADE USING POTABLE WATER. TESTING REQUIREMENTS FOR FIRE SUPPRESSION SYSTEMS SHALL BE IN ACCORDANCE TO THE REQUIREMENT OF THE CITY'S DIVISION OF FIRE.

B. LEAKAGE IS DEFINED AS THE QUANTITY OF WATER TO BE SUPPLIED INTO THE NEWLY LAID PIPE, OR ANY VALVED SECTION THEREOF, NECESSARY TO MAINTAIN THE SPECIFIED LEAKAGE TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR EXPELLED.

C. NO PIPE INSTALLATION WILL BE ACCEPTED IF THE LEAKAGE EXCEEDS THE LEAKAGE DETERMINED BY THE FOLLOWING FORMULA: $L = \frac{n \quad D \quad \sqrt{P}}{7400}$

WHERE: n = NUMBER OF PIPE JOINTS
D = PIPE DIAMETER
P = TEST PRESSURE
L = ALLOWABLE LEAKAGE PER HOUR

THE FOLLOWING TABLE REPRESENTS THE ALLOWABLE LEAKAGE IN GALLONS PER HOUR.

D. DURING THE HYDROSTATIC TEST, A THOROUGH EXAMINATION OF ALL PIPING, FITTINGS, VALVES, HYDRANTS, ETC. SHALL BE PERFORMED. LEAKING JOINTS SHALL BE TIGHTENED AND CRACKED OR OTHERWISE DEFECTIVE MATERIAL SHALL BE REMOVED AND REPLACED AND THE TEST SHALL BE REPEATED UNTIL SATISFACTORY RESULTS ARE OBTAINED.

DISINFECTION

A. AFTER SATISFACTORY HYDROSTATIC TESTING, THE COMPLETED WATER WORK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C-651.

B. DISINFECTION OR STERILIZATION OF NEW MAINS AND SERVICES, AS REQUIRED BY THE OEPA, SHALL BE COORDINATED THROUGH AND SUPERVISED BY THE SUPERINTENDENT OF THE SERVICE DEPARTMENT OR HIS DESIGNEE. THE SUPERINTENDENT RESERVES THE RIGHT TO REQUIRE STRICTER CHLORINE RESIDUAL REQUIREMENTS ON A CASE-BY-CASE BASIS.

C. MAINTAIN PIPES FREE OF DIRT AND FOREIGN MATTER DURING CONSTRUCTION BY DEWATERING TRENCH AND SEALING OPEN PIPE BARRELS. SWAB EACH LENGTH OF PIPE AS IT IS INSTALLED. UPON COMPLETION OF MAIN, ISOLATE MAIN SEGMENTS AND FLUSH PIPE AT 2 FPS VELOCITY.

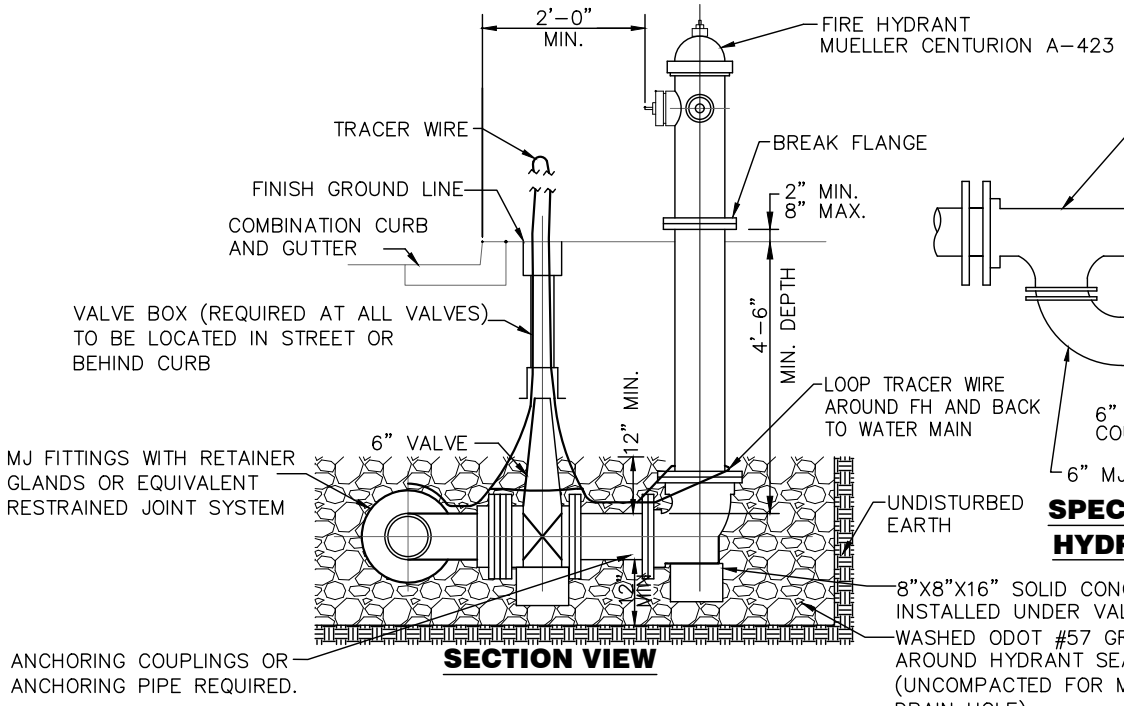
D. STERILIZE MAIN IN ACCORDANCE WITH AWWA C-651. INJECT 3% TO 5% HYPOCHLORITE SOLUTION TO PROVIDE 50 TO 60 MG PER LITER CONCENTRATION IN MAIN. CHLORINE MAY BE PLACED IN EACH SECTION OF PIPE AT THE TIME OF INSTALLATION. SAMPLE WATER AT EACH HYDRANT OR IF NO HYDRANT IS AVAILABLE, AT A TAP IN THE PROPOSED LINE. ANALYZE SAMPLE USING DPD REAGENT TO VERIFY FREE CHLORINE CONCENTRATION. MAINTAIN CONCENTRATION IN MAIN FOR 48 HOURS. SAMPLE HYDRANTS AT COMPLETION OF STERILIZATION VERIFYING MINIMUM CHLORINE RESIDUAL OF 20 MG PER LITER.

E. FLUSH CHLORINE SOLUTION TO WASTE INTO SANITARY SEWER AT A CONTROLLED RATE, NOT TO EXCEED 25 GPM. IF CHLORINE RESIDUAL DROPS IN 10 MG PER LITER, FLUSH MAIN AT 2 FPS AND REPEAT STERILIZATION PROCEDURE.

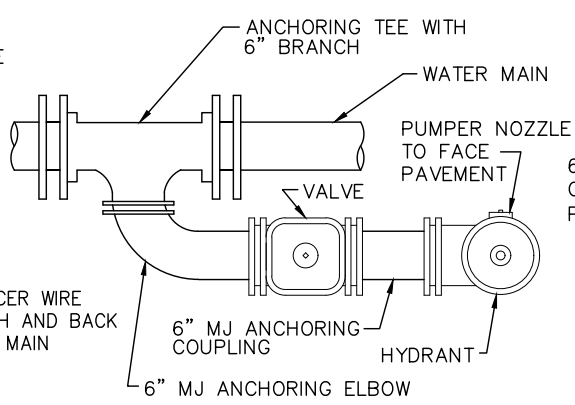
F. WATER SAMPLES – PERFORM BACTERIOLOGICAL TEST PER AWWA C-651 WILL BE DRAWN AND PROCESSED BY THE CITY. IN THE EVENT OF DETECTION OF COLIFORM ORGANISM, REPEAT FLUSHINGS, STERILIZATION, AND SAMPLING OF MAINS UNTIL ACCEPTABLE TEST RESULTS ARE ACHIEVED. THIS IS TO BE PERFORMED PRIOR TO TRANSFER OF SERVICE.

ALLOWABLE LEAKAGE PER 1000 FT. (305M) OF PIPELINE (GPH+)

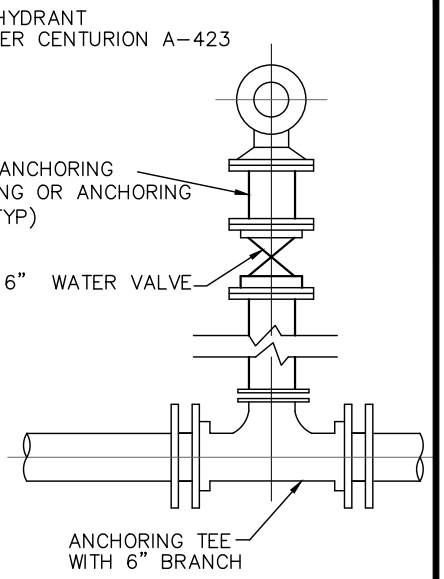
AVG. TEST PRESSURE (PSI) BAR	NOMINAL PIPE DIAMETER– INCHES							
	3	4	6	8	10	12	14	16
450(31)	0.43	0.57	0.86	1.15	1.43	1.72	2.01	2.29
400(28)	0.41	0.54	0.81	1.08	1.35	1.62	1.89	2.16
350(24)	0.38	0.51	0.76	1.01	1.26	1.52	1.77	2.02
300(21)	0.35	0.47	0.70	0.94	1.17	1.40	1.64	1.87
275(19)	0.34	0.45	0.67	0.90	1.12	1.34	1.57	1.79
250(17)	0.32	0.43	0.64	0.85	1.07	1.28	1.50	1.71
225(16)	0.30	0.41	0.61	0.81	1.01	1.22	1.42	1.62
200(14)	0.29	0.38	0.57	0.76	0.96	1.15	1.34	1.53
175(12)	0.27	0.36	0.54	0.72	0.89	1.07	1.25	1.43
150(10)	0.25	0.33	0.50	0.66	0.83	0.99	1.16	1.32



SECTION VIEW



SPECIAL MECHANICAL JOINT HYDRANT TEE DETAIL PLAN

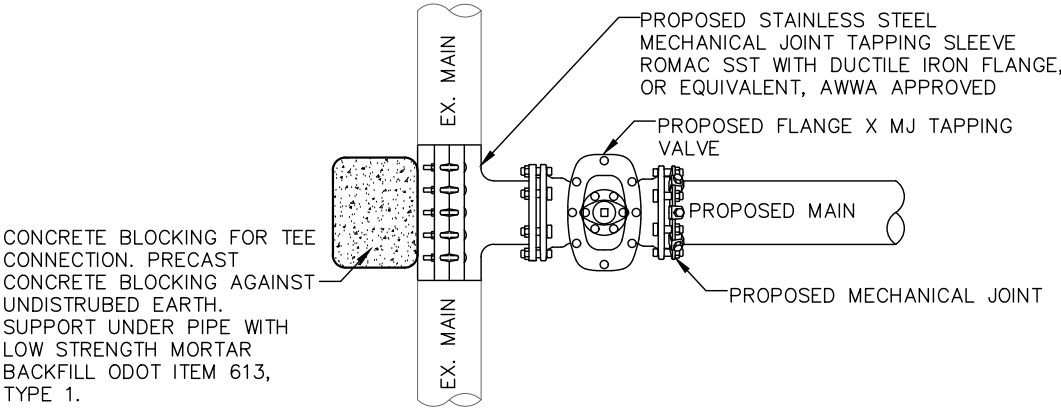


BASIC TEE DETAIL PLAN

NOTES

A. ALL FIRE HYDRANTS SHALL COMPLY WITH A.W.W.A. SPECIFICATIONS C-502 AND THE FOLLOWING SPECIFICATIONS.
B. FIRE HYDRANTS SHALL BE OF THE COMPRESSION TYPE, CLOSING WITH THE LINE PRESSURE WITH A 5 1/4" VALVE OPENING.
C. THE DEPTH OF BURY SHALL BE THE SAME AS SPECIFIED FOR THE PIPE.
D. HYDRANT SHALL BE FURNISHED WITH A SEALED OIL RESERVOIR, LOCATED IN THE BONNET, SO THAT ALL THREADED AND BEARING SURFACES ARE LUBRICATED EACH TIME THE HYDRANT IS OPERATED. HYDRANTS THAT USE A GREASE RESERVOIR WILL NOT BE ACCEPTABLE. ALL HYDRANT BONNETS SHALL BE FURNISHED WITH A WEATHER CAP TO PROTECT THE OPERATING NUT FROM DIRT AND WATER.
E. THE HYDRANT SHOE SHALL HAVE AT LEAST TWO ALL BRONZE DRAIN OUTLETS. THE COMPLETE INTERIOR OF THE SHOE SHALL BE EPOXY COATED TO PREVENT RUST AND CORROSION. THE HYDRANT SHALL BE CONSTRUCTED SO THAT THE SHOE CAN BE REPLACED OR CHANGED, WITHOUT DISASSEMBLING ANY OTHER PART OF THE HYDRANT.
F. HYDRANTS SHALL BE FURNISHED WITH BREAKABLE FEATURES THAT WILL BREAK CLEANLY UPON IMPACT. THIS SHALL CONSIST OF TWO PART BREAKABLE SAFETY FLANGE WITH A BREAKABLE STEM COUPLING. BREAKABLE BOLTS WILL NOT BE ACCEPTED. THIS SAFETY FLANGE SHALL ALSO PERMIT FULL 360 DEGREE ROTATION OF THE UPPER BARREL TO POSITION NOZZLES IN ANY DESIRED POSITION.
G. PROVISIONS SHALL BE MADE FOR LENGTHENING AND REPAIRING THE HYDRANT WITHOUT THE NECESSITY OF DIGGING
H. DRAIN VALVES SHALL BE PROVIDED FOR DRAINING THE HYDRANT BARREL WITH THE MAIN VALVE IN A CLOSED POSITION. THE DRAIN VALVES SHALL WORK AUTOMATICALLY WITH THE MAIN VALVE AND SHALL BE AN INTEGRAL PART OF THE MAIN VALVE. DRAIN VALVES THAT ARE OPERATED BY TOGGLES, SPRINGS, OR ADJUSTABLE MECHANISMS WILL NOT BE ACCEPTED. ALL PARTS OF THIS MECHANISM MUST BE BRONZE.
I. THE LOWER BARREL SHALL BE REMOVABLE FROM THE SHOE WHILE THE HYDRANT IS UNDER PRESSURE.
J. ALL HYDRANTS SHALL HAVE A BRONZE SEAT RING THREADED INTO A BRONZE DRAIN WAY TO GIVE A BRONZE TO BRONZE CONNECTION. THIS BRONZE TO BRONZE CONNECTION SHALL BE BOLTED BETWEEN THE LOWER BARREL AND SHOE. THOSE BRONZE TO BRONZE CONNECTIONS THAT ARE "PRESS FIT" BETWEEN THE LOWER BARREL AND SHOE, OR THOSE THAT THREAD INTO THE SHOE AREA ITSELF, WILL NOT BE ACCEPTED. ALL CONNECTIONS MUST BE HELD IN PLACE BY BOLTS.
K. ALL HYDRANT STOP MECHANISMS SHALL BE LOCATED IN THE SHOE. MECHANISMS WHICH ARE LOCATED ON THE UPPER VALVE PLATE OR ON THE OPERATING NUT AS A "TRAVEL STOP-NUT" SHALL NOT BE ACCEPTED.
L. HYDRANT SHALL HAVE TWO 2 1/2" NOZZLES AND ONE 4 1/2" PUMPER NOZZLE. HYDRANTS SHALL HAVE A 5 1/4" VALVE OPENING AND A 6" SHOE CONNECTION. HYDRANT SHALL BE THE TRAFFIC MODEL CENTURION A-423 AS MANUFACTURED BY MUELLER CO. OR EQUAL
M. THREAD SPECIFICATIONS: TWO HOSE NOZZLES, DAYTON STANDARD THREADS (3.234X6 THREAD); ONE PUMPER NOZZLE, 4" STORZ CONNECTION WITH CAP AND STAINLESS CABLE.
N. OTHER SPECIFICATIONS: 1" SQUARE OPERATING NUT AND NOZZLE CAPS; OPEN LEFT; PAINTED RED; 6" MJ SHOE WITH ACCESSORIES
O. ALTERATION TO THESE SPECIFICATIONS MUST BE APPROVED IN WRITING.
P. THE MANUFACTURER SHALL SUBMIT A NOTARIZED LETTER OF CERTIFICATION, THAT THEIR PRODUCT MEETS OR EXCEEDS THE ABOVE SPECIFICATIONS.

CITY OF BROOKVILLE ChoiceOne Engineering	**FIRE HYDRANT**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800-3



TAPPING SLEEVE AND VALVE DETAIL

NOTES

A. BELL JOINT RESTRAINTS – USE FIELD LOCK BY U.S. PIPE OR APPROVED EQUIVALENT.

B. MECHANICAL JOINT RESTRAINTS – EBAA IRON MEGALUG RETAINER GLAND OR EQUIVALENT.

C. CONTRACTOR TO USE RESTRAINED JOINTS UNLESS THRUST BLOCKING IS PREAPPROVED FOR SPECIAL CONDITIONS BY THE CITY PRIOR TO THE BEGINNING OF CONSTRUCTION.

D. ALL MECHANICAL BENDS, TEES, ETC., SHALL BE RESTRAINED USING MECHANICAL RESTRAINING JOINTS.

E. TEST SLEEVE TO 150 PSI PRIOR TO CUTTING IN COVING PIPE. SLEEVE AND VALVE ARE TO BE TESTED TO 150 PSI FOR 15 MINUTES FOLLOWING TAP.

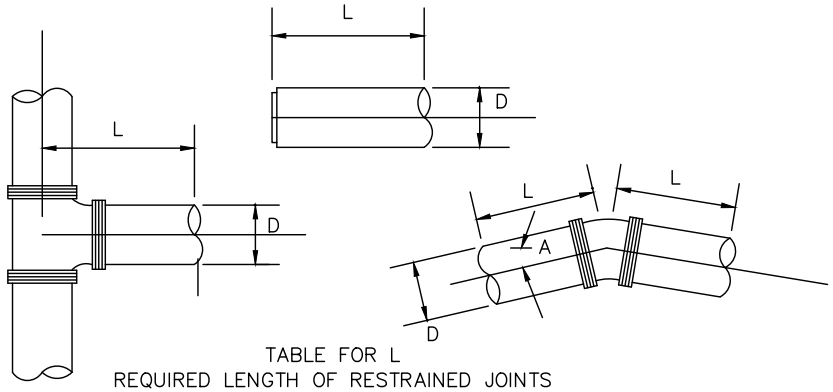
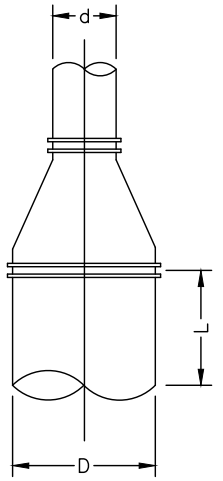


TABLE FOR L
REQUIRED LENGTH OF RESTRAINED JOINTS
D–DIAMETER OF PIPE

A ~ DEGREE OF BEND/FITTING TYPE	4"	6"	8"	10"	12"	16"	20"	24"
11 1/4°	4	5	6	7	9	11	13	15
22 1/2°	7	9	12	14	17	22	26	31
45°	13	19	24	29	34	44	54	63
90°	28	40	52	63	74	96	116	136
TEE/END	28	40	52	63	74	96	116	136
VALVE	28	40	52	63	74	96	116	136

*THE FITTING OR VALVE MUST BE RESTRAINED, AT MINIMUM, IN ALL CASES.

DIAMETER OF LARGER PIPE ("D")	REQUIRED LENGTH OF RESTRAINED JOINTS FOR REDUCERS("L") DIAMETER OF SMALLER PIPE ("d") 4"	6"	8"	10"	12"	16"	20"	24"
6"	21'							
8"	38'	22'						
10"	51'	39'	21'					
12"	64'	54'	39'	22'				
16"	88'	81'	70'	57'	41'			
20"	111'	105'	96'	86'	73'	41'		
24"	132'	127'	120'	111'	101'	75'	41'	



RESTRAINED JOINT REQUIREMENTS CALCULATED BASED ON THE FOLLOWING PARAMETERS:
- –SOIL TYPE: GRANULAR BACKFILL/BEDDING
- –SAFETY FACTOR: 1.5
- –TRENCH TYPE: 4
- –DEPTH OF BURY: 4'–6"
- –TEST PRESSURE: 150 PSI

*ALL RESTRAINT CALCULATIONS FOR BENDS ARE BASED ON VERTICAL BENDS DOWNWARD.

REQUIRED LENGTH OF RESTRAINED JOINTS FOR WATER MAINS

CITY OF BROOKVILLE	RESTRAINING JOINTS AND TAPPING SLEEVE FOR WATER MAINS	REVISIONS:	DATE APPROVED: OCT. 2023
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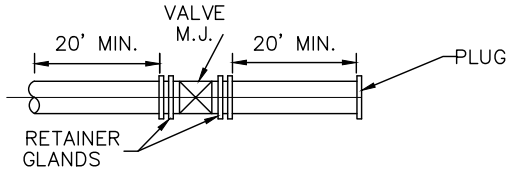
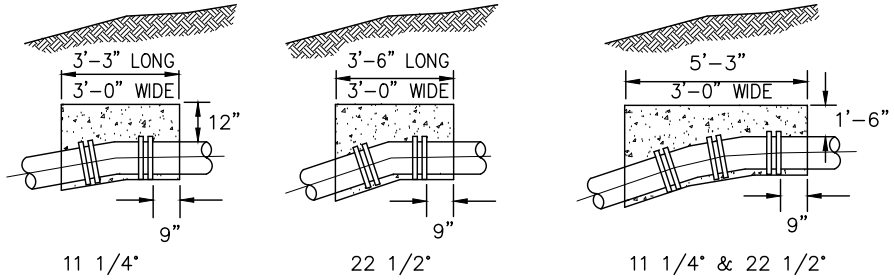
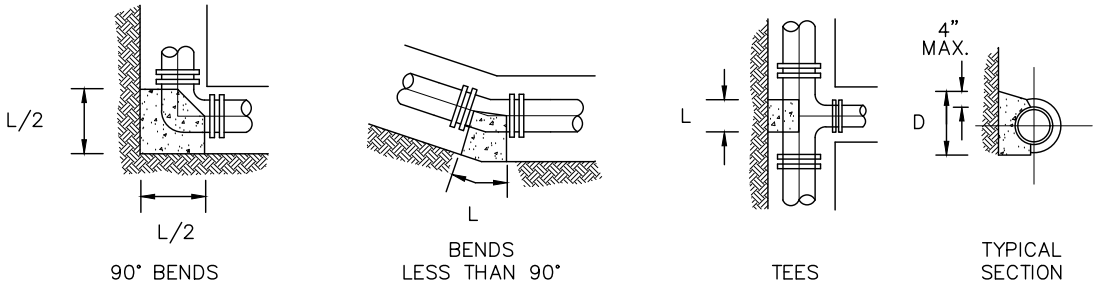


DETAIL - END OF WATER LINE



CONCRETE BLOCKING FOR VERTICAL BENDS



CONCRETE BLOCKING FOR HORIZONTAL BENDS

THRUST BLOCKING AREA (LxD) REQUIRED					
SIZE OF PIPE	11 1/4°	22 1/2°	45°	90°	TEE OR PLUG
4"	1	1	1	1.3	1
6"	1	1	1.6	3	2.1
8"	1	1.5	2.9	5	4
10"	1.2	2.3	5	8	6
12"	1.7	3	7	12	9
16"	3	6	12	21	15

BENDS								
SIZE OF OPENING	DEGREE OF BEND							
	11 1/4°		22 1/2°		45°		90°	
	L	D	L	D	L	D	L	D
3", 4", 6"	8"	6"	10"	6"	20"	6"	36"	6"
8"	9"	8"	14"	8"	24"	9"	50"	8"
12"	14"	12"	22"	12"	30"	16"	60"	15"
16"	18"	16"	24"	18"	33"	36"	70"	22"

TEES								
RUN	BRANCH							
	3",4",6"		22 1/2°		45°		90°	
	L	D	L	D	L	D	L	D
3", 4", 6"	16"	6"						
8"	14"	8"	18"	12"				
12"	9"	12"	18"	12"	24"	18"		
16"	8"	16"	14"	16"	28"	16"	30"	26"

NOTES

A. CONCRETE BLOCKING MUST BE PLACED AGAINST UNDISTURBED EARTH.

B. CARE SHALL BE TAKEN TO KEEP CONCRETE AWAY FROM MECHANICAL JOINTS BY PLACING VISQUEEN OR OTHER APPROVED MATERIAL OVER PIPE BEFORE PLACING OF CONCRETE.

C. CONCRETE FOR BLOCKING VALVES AND FITTINGS SHALL CONFORM TO SECTION ODOT 499 CLASS C.

D. CONTRACTOR SHALL USE THE THRUST BLOCKS AS SHOWN ONLY IF PREAPPROVED FOR SPECIAL CONDITION BY THE CITY PRIOR TO BEGINNING CONSTRUCTION.

CITY OF BROOKVILLE	# CONCRETE BLOCKING FOR WATER MAINS	REVISIONS:	DATE APPROVED: OCT. 2023
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NOTES

A. 20" I.D. TILE FOR FORD NO. W3PR–BR WABASH COVER OR EQUIVALENT (5/8" AND 3/4" METERS).

B. 24" I.D. TILE FOR FORD NO. W3PR–BR COVER AND EXT–2 EXTENSION RING OR EQUIVALENT (1" METER).

C. CURB STOP TO BE MUELLER ORISEAL OR BALL VALVE TYPE (TEFLON COATED) ROUNDWAY (NO CHECK) OR EQUIVALENT.

D. CURB BOX SHALL BE BINGHAM AND TAYLOR BUFFALO STYLE 95E, OR APPROVED EQUAL.

E. FORD YOKE OR APPROVED EQUAL WITH LOCK STOP ON STREET SIDE PIPE AND GROUND KEY STOP ON HOUSE SIDE PIPE.

F. TILE (MADE OF CONCRETE OR VITRIFIED CLAY) ALTERNATE HIGH DENSITY POLYETHYLENE METER BOXES, SUCH AS MS 20X50 AND MS 24X30 AS MANUFACTURED BY MID–STATES PLASTICS OR APPROVED EQUAL, MAY BE USED FOR INSTALLATIONS NOT SUBJECT TO TRAFFIC LOADS.

G. UNSATISFACTORY INSTALLATION WILL RESULT IN WATER NOT BEING TURNED ON. METER WILL NOT BE SET UNTIL PIT LID IS AT FINAL GRADE.

H. METER PIT LID MUST BE FLUSH OR 1" BELOW FINISHED GRADE. IF FRAME OF METER LID IS SHOWING, POSSIBILITY OF FREEZING OF METERS AND SERVICE LINES IS INCREASED AND CITY POLICY IS THE CITY'S RESPONSIBILITY STOPS AT THE FIRST SHUT–OFF VALVE.

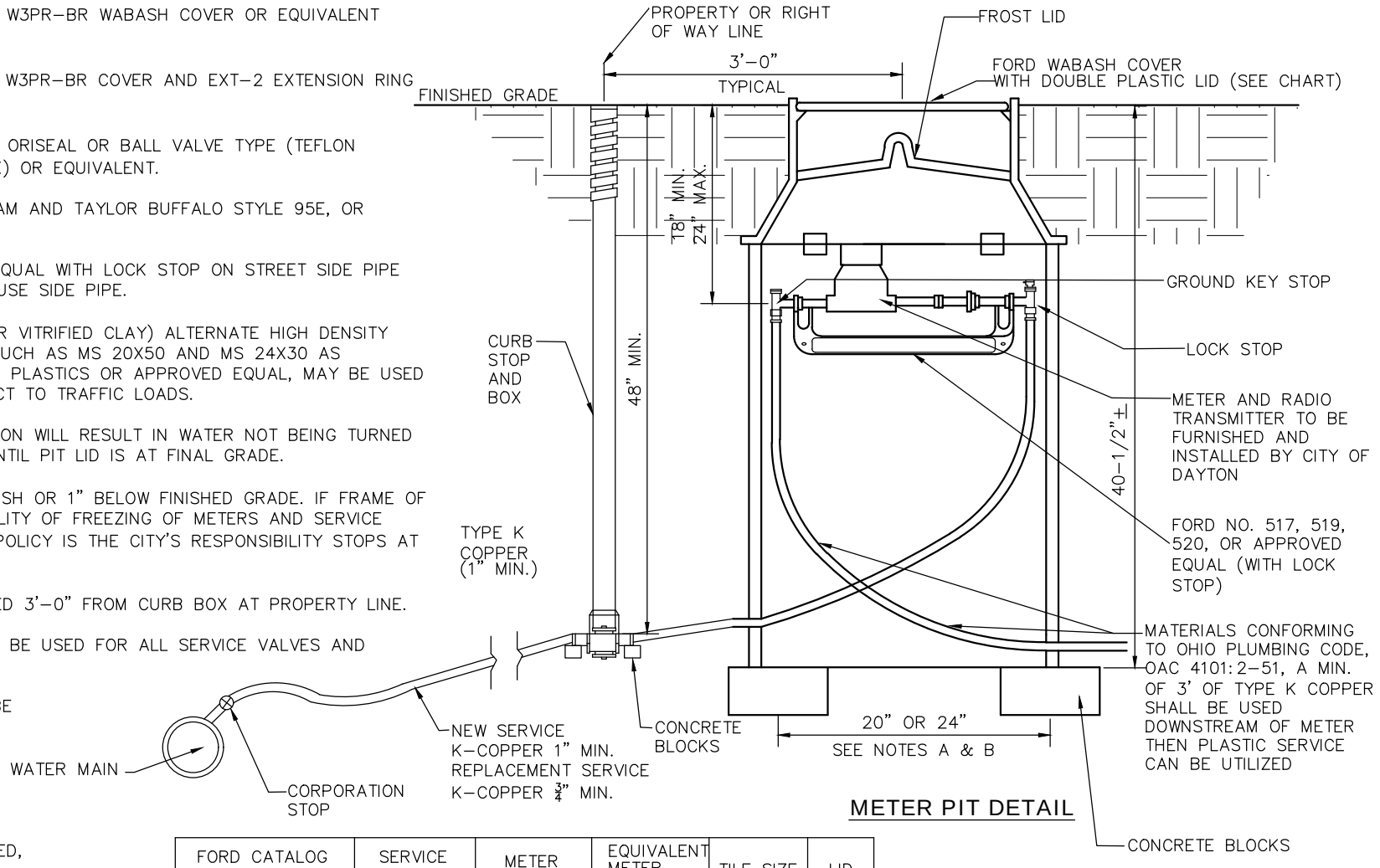
I. FORD BOX NORMALLY LOCATED 3'–0" FROM CURB BOX AT PROPERTY LINE.

J. FLARED CONNECTIONS SHALL BE USED FOR ALL SERVICE VALVES AND FITTINGS.

K. ALTERNATE DESIGNS MUST BE SUBMITTED FOR APPROVAL.

L. METER PITS SHALL BE LOCATED OUTSIDE SIDEWALKS AND DRIVEWAYS.

M. IF A 1–1/2" SERVICE IS USED, THE 1–1/2" TO 1" REDUCTION MUST BE MADE AT THE YOKE.



METER PIT DETAIL

FORD CATALOG YOKE NO.	SERVICE PIPE SIZE	METER SIZE	EQUIVALENT METER SPREAD	TILE SIZE	LID
517 (501 BAR)	1"	5/8"	7–1/2"	20" DIA.	W3–T
517 (501 BAR)	1"	5/8" x 2	11–1/2"	24" DIA.	W3–TT
519 (503 BAR)	1"	3/4"	13–1/2"	20" DIA.	W3–T
520 (504 BAR)	1" OR 1–1/2"	1"	15–1/2"	24" DIA.	W3–T

*SUBSTITUTE DESIRED HEIGHT IN INCHES FOR "H"

CITY OF BROOKVILLE

ChoiceOne Engineering

5/8", 3/4", 1" METER PIT INSTALLATION

REVISIONS: DEC. 2023

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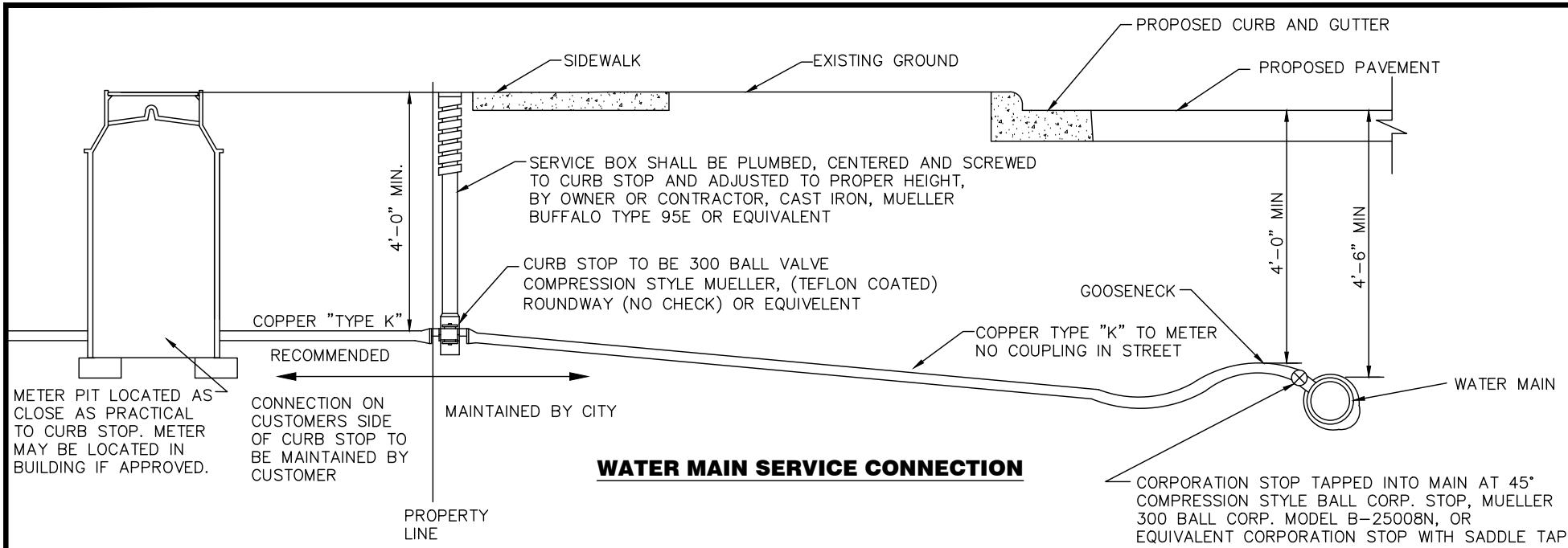

WATER MAIN SERVICE CONNECTION

NOTES

A. WATER SERVICE SHALL BE SEAMLESS COPPER, TYPE K. 1" SERVICE (100' BETWEEN JOINTS), 1 1/2" SERVICE (60' BETWEEN JOINTS).

B. WATER SERVICE SHALL BE A MINIMUM OF 10' MEASURED HORIZONTALLY FROM THE SEWER SERVICE AND SHALL BE A MINIMUM OF 18" ABOVE THE CROWN OF THE SANITARY SEWER MAIN WHERE THE WATER SERVICE CROSSES THE SEWER MAIN. WATER SERVICE MAY BE LAID ON BENCH IN THE SEWER LATERAL TRENCH IF CROWN IS A LEAST 18" BELOW INVERT OF WATER SERVICE, AND THE MINIMUM DISTANCE BETWEEN THE WATER SERVICE AND THE SEWER LATERAL IS 5'-0".

C. METER FURNISHED BY CITY OF DAYTON UNDER METER SET FEE.

D. CORPORATION STOP AND CURB STOP ARE TO BE COMPRESSION STYLE FULL-PORT BALL VALVES, MUELLER OR EQUIVALENT.

E. ANY APPURTENANCE RELATED TO WATER SERVICE MUST BE SUPPLIED BY CONTRACTOR AND APPROVED BY THE CITY OF DAYTON. FLARED FITTINGS ONLY. FLARED FITTINGS ONLY

G. STOP VALVE REQUIRED IMMEDIATELY AFTER SERVICE ENTERS BUILDING

H. PICKUP OF 3/4" SERVICE IS PERMITTED ONLY IF K-COPPER AND EXISTING STUB-IN WERE INSTALLED AS PART OF A MAIN EXTENSION

I. METER PIT TYPICALLY 3' FROM CURB STOP. MAY BE MOVED TO MEET FIELD CONDITIONS SUBJECT TO APPROVAL.

J. WATER SERVICES SHALL BE BEDDED IN NATURAL SAND, IN ACCORDANCE WITH ODOT 703.05-A.

CITY OF BROOKVILLE	# 1"-1 1/2" WATER MAIN SERVICE CONNECTIONS FOR METERS UP TO 1"	REVISIONS:	DATE APPROVED: OCT. 2023
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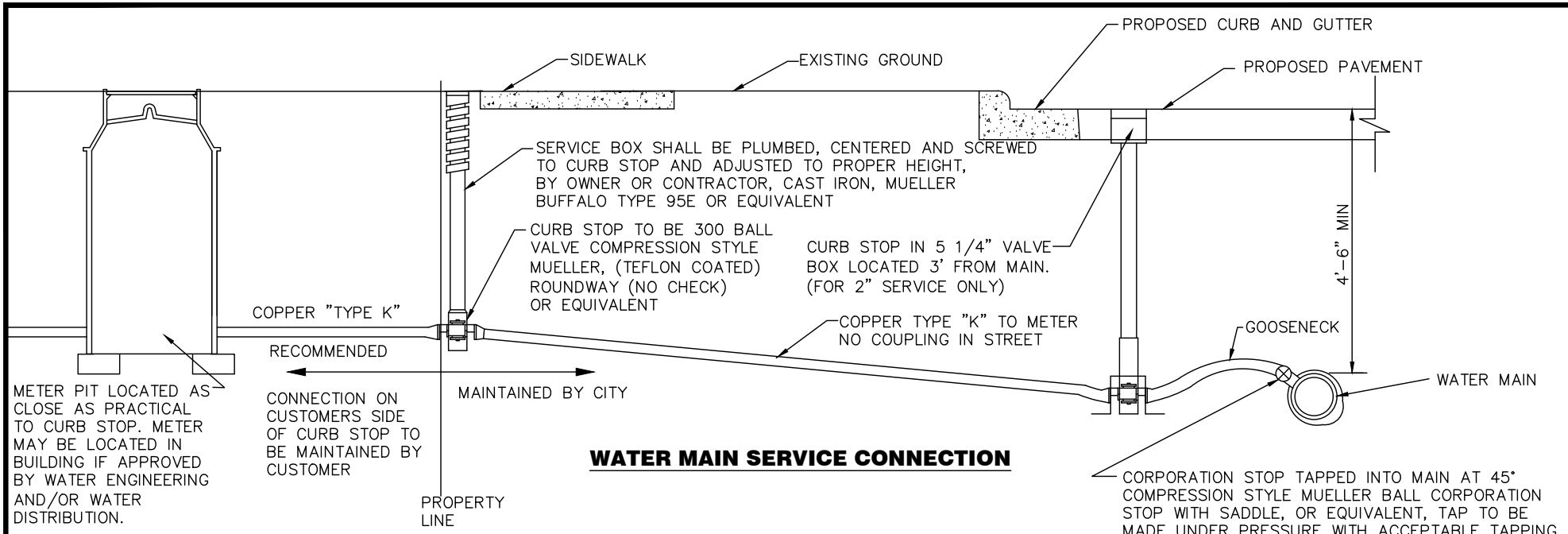


WATER MAIN SERVICE CONNECTION

NOTES

A. WATER SERVICE SHALL BE SEAMLESS COPPER, TYPE K [40' BETWEEN JOINTS]).

B. WATER SERVICE SHALL BE A MINIMUM OF 10' MEASURED HORIZONTALLY FROM THE SEWER SERVICE AND SHALL BE A MINIMUM OF 18" ABOVE THE CROWN OF THE SANITARY SEWER MAIN WHERE THE WATER SERVICE CROSSES THE SEWER MAIN. WATER SERVICE MAY BE LAID ON BENCH IN THE SEWER LATERAL TRENCH IF CROWN IS A LEAST 18" BELOW INVERT OF WATER SERVICE, AND THE MINIMUM DISTANCE BETWEEN THE WATER SERVICE AND THE SEWER LATERAL IS 5'–0".

C. METER FURNISHED BY CITY OF DAYTON UNDER METER SET FEE.

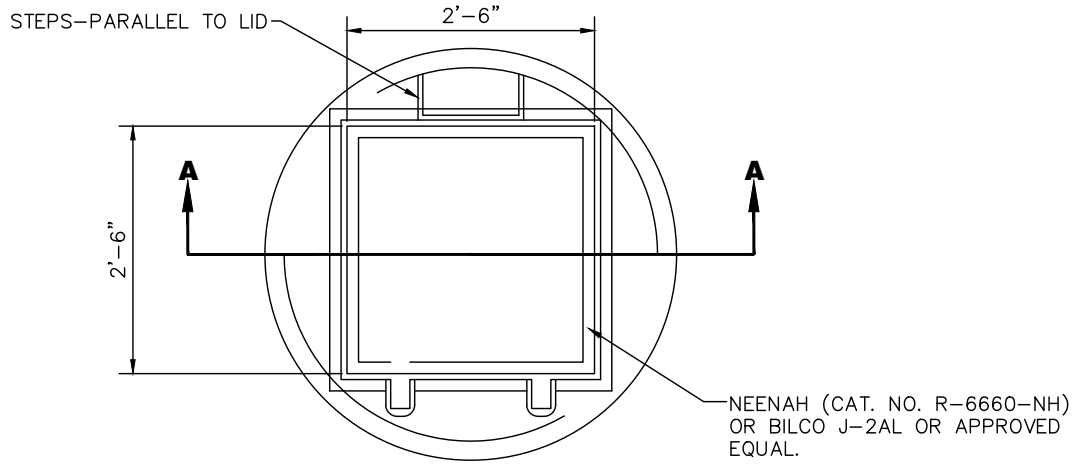
D. CORPORATION STOP AND CURB STOP ARE TO BE COMPRESSION STYLE FULL PORT MULLER BALL VALVES OR EQUIVALENT.

E. FLARED FITTINGS SHOULD BE USED FROM CORPORATION STOP TO 3 FEET OUT OF PIT

F. STOP VALVE REQUIRED IMMEDIATELY AFTER SERVICE ENTERS BUILDING

G. 1" SERVICE SHALL BE INSTALLED WHERE BUILDINGS ARE MORE THAN 120' FROM WATERMAIN OR WHERE REQUIRED BY PLANS.

CITY OF BROOKVILLE ChoiceOne Engineering	**1 1/2"-2" WATER MAIN SERVICE CONNECTIONS FOR 1 1/2" OR 2" METERS**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800–8



NOTES

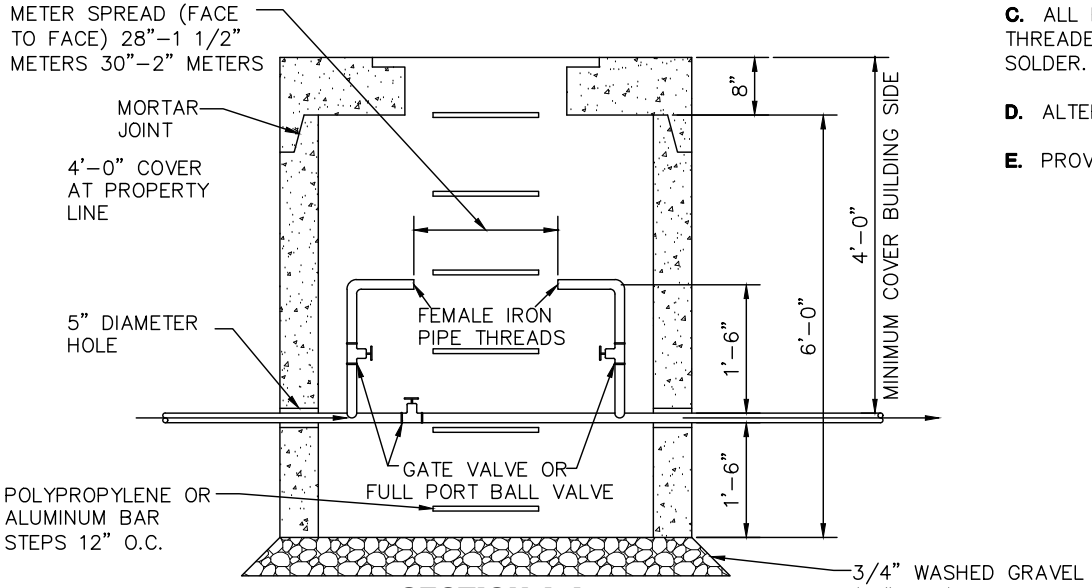
A. ONE METER PER PIT UNLESS WAIVED BY CITY.

B. BYPASS ON METER MANDATORY FOR COMMERCIAL ACCOUNTS BYPASS VALVE TO BE LOCKABLE.

C. ALL PIPE K–COPPER OR BRASS TO METER JOINTS IN PIT TO BE THREADED, FLARED, SILVER, SOLDERED OR SOLDERED WITH LEAD FREE SOLDER.

D. ALTERNATE DESIGNS MAY BE SUBMITTED FOR APPROVAL.

E. PROVIDE SPREADER FOR PROPER ALIGNMENT OF SPREAD.



SECTION A-A

CITY OF BROOKVILLE	# 1 1/2" AND 2" WATER METER PIT (FOR OFF ROAD USE ONLY)	REVISIONS:	DATE APPROVED: OCT. 2023
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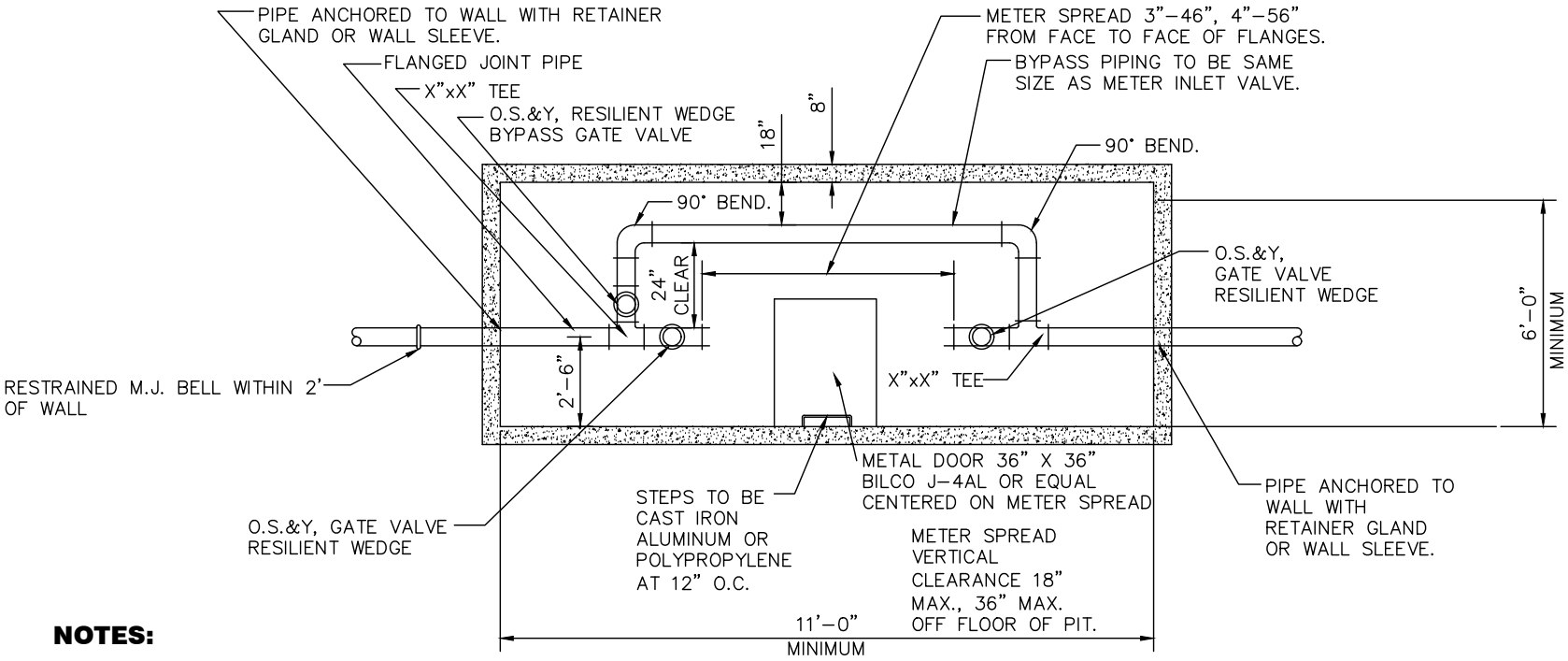


NOTES:

A. DIMENSIONS SHOWN ARE INSIDE MEASUREMENTS OF PIT.

B. ALL PIPE SHALL BE CL53 DUCTILE WITH FLANGED ENDS.
(COPPER & BRASS MAY BE ACCEPTABLE. SUBMIT FOR APPROVAL)

C. ALL VALVES SHALL BE FLANGED END, HANDWHEEL OPERATED, AND OS&Y GATE VALVES, RESILIENT WEDGE.

D. PIT SHALL HAVE AN INSIDE HEIGHT OF 6' MINIMUM, FROM TOP OF GRAVEL.

E. WALLS TO BE CONCRETE BLOCK CONSTRUCTION OR FORMED CONCRETE.

F. TOP SLAB TO BE DESIGNED BY REGISTERED ENGINEER OR ARCHITECT AND APPROVED BY WATER ENGINEERING.

G. 12" MINIMUM 3/4" WASHED GRAVEL IN BOTTOM OF PIT OR CONCRETE SLAB WITH SUMP HOLE.

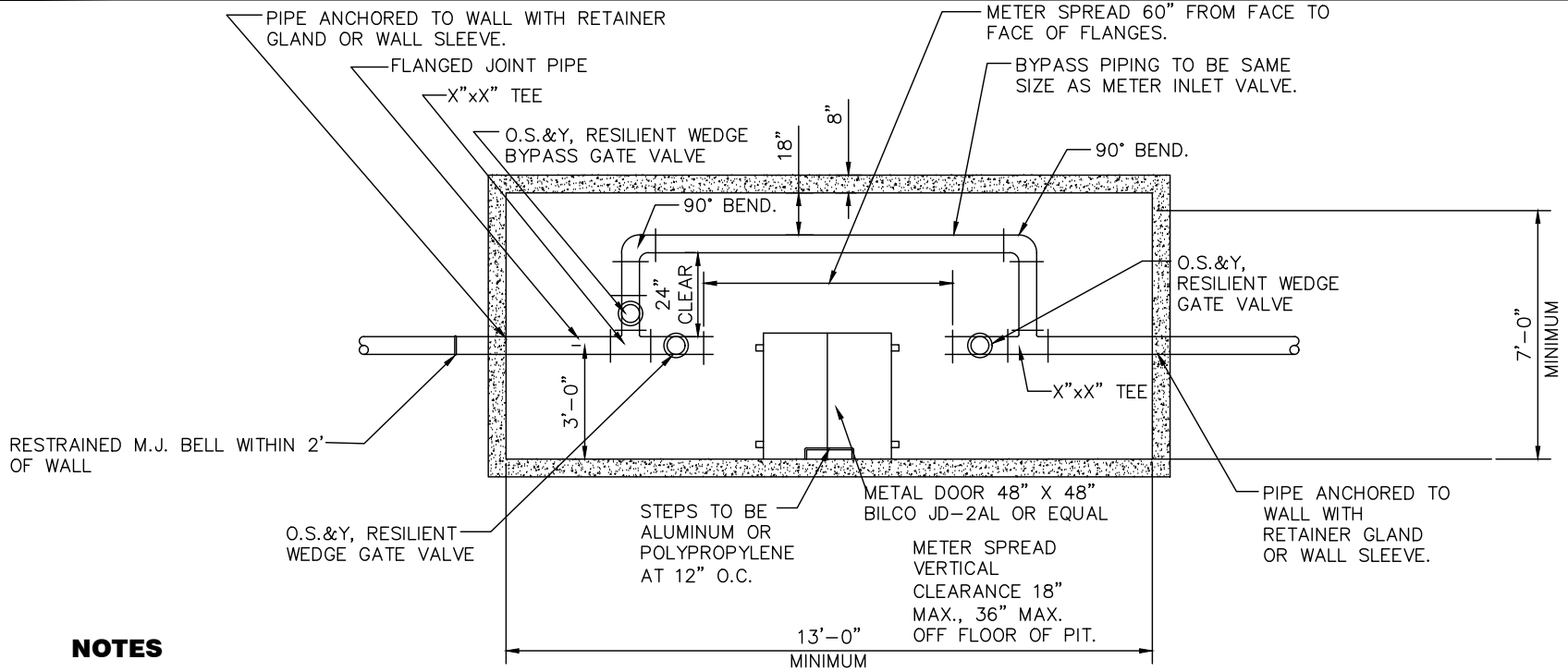
H. PIPING AND METER SHALL BE SUPPORTED

I. ALL FITTINGS AND JOINTS IN PIT SHALL BE FLANGED, FOR DUCTILE IRON PIPE.

J. BACKFLOW PREVENTER SHALL BE SUPPLIED IN ABOVE–GROUND ENCLOSURE IF REQUIRED BY THE CITY.

K. METER TO BE PROVIDED BY THE CITY OF DAYTON.

CITY OF BROOKVILLE ChoiceOne Engineering	**3" AND 4" METER PIT INSTALLATIONS (FOR OFF ROAD USE ONLY)**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800–10



NOTES

A. DIMENSIONS SHOWN ARE INSIDE MEASUREMENTS OF PIT.

B. ALL PIPE SHALL BE CLASS 53 DUCTILE WITH FLANGED ENDS.

C. ALL VALVES SHALL BE FLANGED END, HANDWHEEL OPERATED OS&Y GATE VALVES.

D. PIT SHALL HAVE AN INSIDE HEIGHT OF 6' MINIMUM, FROM TOP OF GRAVEL.

E. WALLS TO BE CONCRETE BLOCK CONSTRUCTION OR FORMED CONCRETE.

F. TOP SLAB TO BE DESIGNED BY REGISTERED ENGINEER OR ARCHITECT AND APPROVED BY CITY OF DAYTON WATER ENGINEERING.

G. 12" MINIMUM 3/4" WASHED GRAVEL IN BOTTOM OF PIT OR CONCRETE SLAB WITH SUMP HOLE.

H. PIPING AND METER SHALL BE SUPPORTED AS APPROVED BY THE ENGINEER, AND WATER DISTRIBUTION.

I. ALTERNATE DESIGN MAY BE SUBMITTED FOR APPROVAL SUBMIT COMBINATION PIT INSTALLATIONS FOR APPROVAL CLEARANCES.

J. BACKFLOW PREVENTER SHALL BE SUPPLIED IN ABOVE-GROUND ENCLOSURE IF REQUIRED BY THE CITY.

CITY OF BROOKVILLE ChoiceOne Engineering	**6" AND LARGER METER PIT INSTALLATION (FOR OFF ROAD USE ONLY)**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800-11

NOTES

A. FOR 4" AND GREATER SERVICES

B. PIPING SHALL BE D.I.P. CLASS 53 TO RIGID FLANGE. FROM RIGID FLANGE THROUGH METER VALVES AND BYPASS TO BE DUCTILE IRON OR COPPER.

C. FOR 1 1/2" AND 2" SERVICES: WATER DEPARTMENT RECOMMENDS THE USE OF COPPER PIPING

D. FULL PORT BALL VALVES IN LIEU OF OS&Y VALVES MAY BE INSTALLED FOR 1 1/2" AND 2" METERS MUST BE LOCKABLE.

E. BYPASS MANDATORY FOR ALL METERS. BYPASS VALVE TO BE LOCKABLE.

F. DUAL INSTALLATION FOR BACKFLOW PREVENTION DEVICES IS OPTIONAL FOR 1 1/2" –2" METERS.

G. ALTERNATE DESIGNS MAY BE SUBMITTED TO CITY FOR APPROVAL.

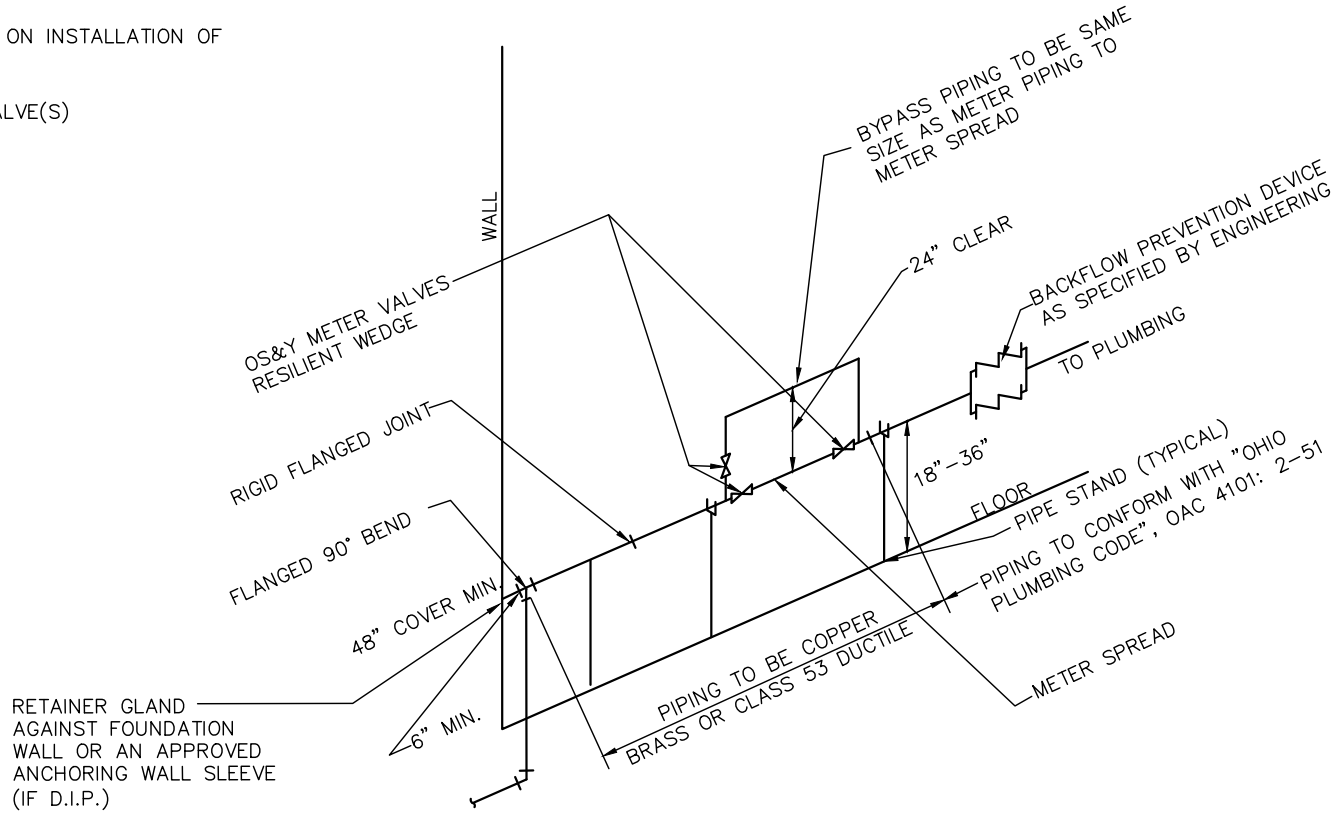
H. PROVIDE SPREADER DEVICE FOR PROPER ALIGNMENT ON INSTALLATION OF METER SPREAD.

I. NO FLANGE ADAPTERS BEFORE INITIAL SHUT–OFF VALVE(S)

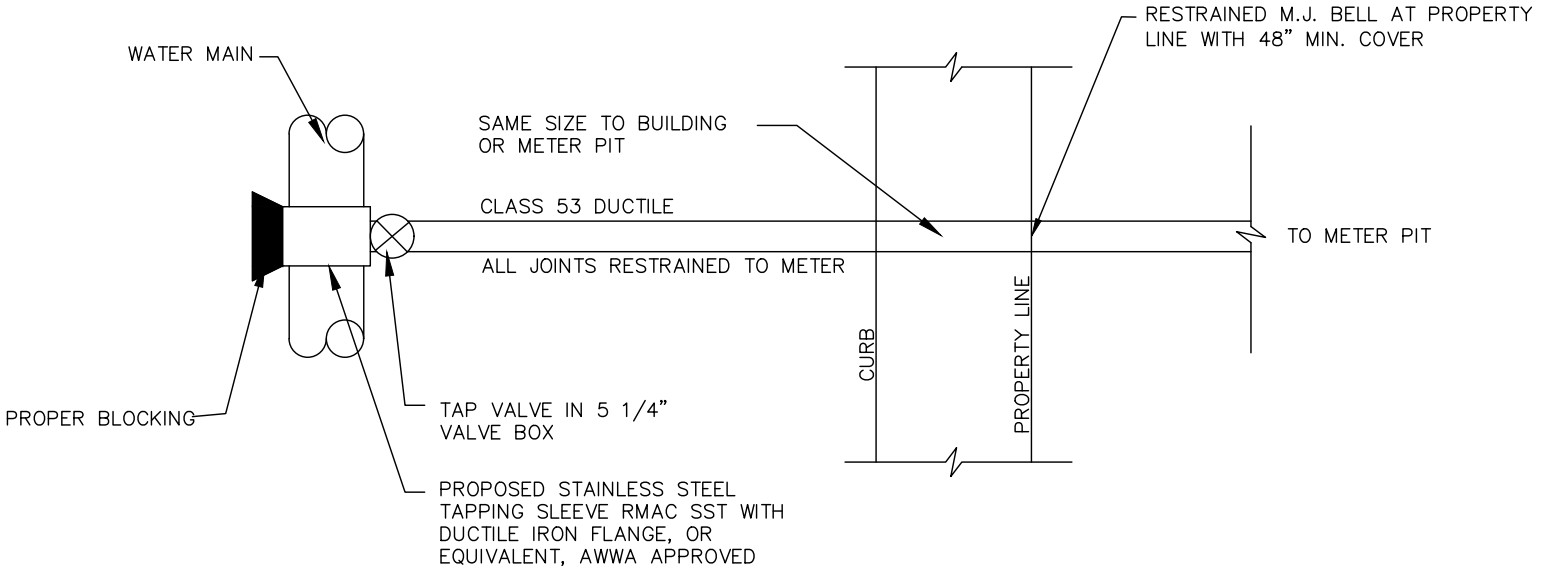
METER SPREAD (FACE TO FACE)

1 1/2"	28"	F.I.P.
2"	30"	F.I.P.
3"	46"	FLANGED
4"	56"	FLANGED
5"	60"	FLANGED

8" AND LARGER TO BE REVIEWED BY CITY
(F.I.P.– FEMALE IRON PIPE THREAD)



CITY OF BROOKVILLE	**TYPICAL LARGE METER LAYOUT IN BUILDING**	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 800–12



SERVICE TEES ARE PERMITTED IF:

A. SHOWN ON AN APPROVED SET OF CONSTRUCTION PLANS

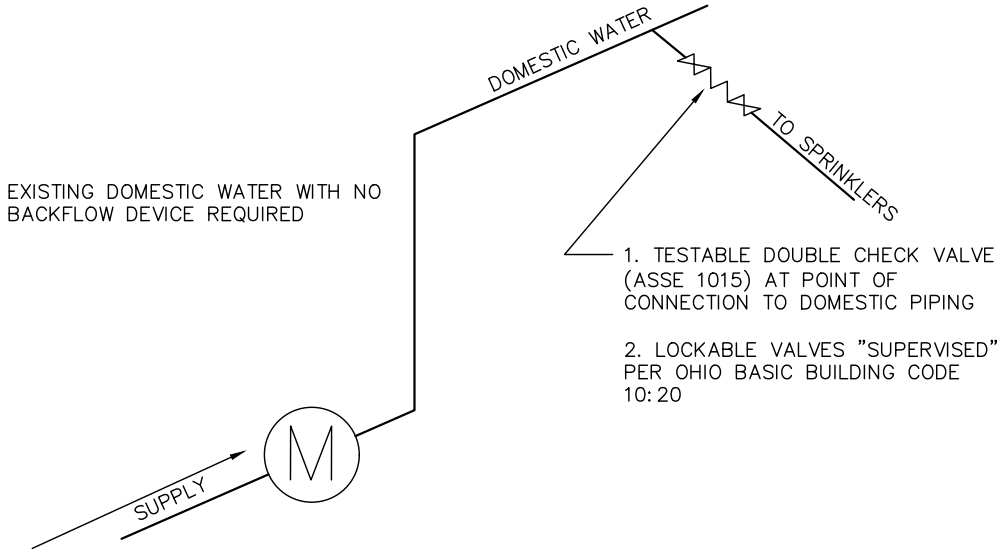
B. 4" MINIMUM BRANCH AND SERVICE LINE WITH GATE VALVE WITHIN 3' OF MAIN.

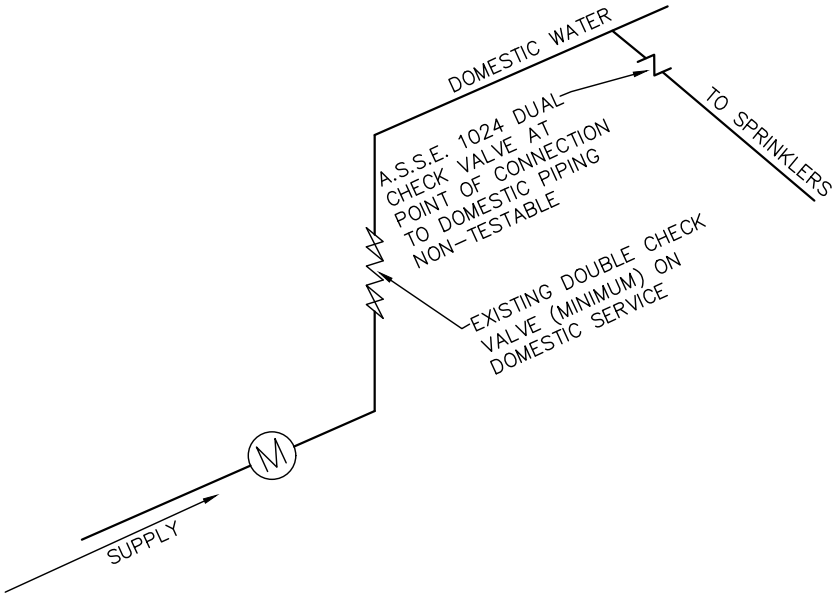
C. STUB IN PERMITS MUST BE OBTAINED FOR EACH SERVICE STUBBED INTO PROPERTY LINE OR EASEMENT LINE.

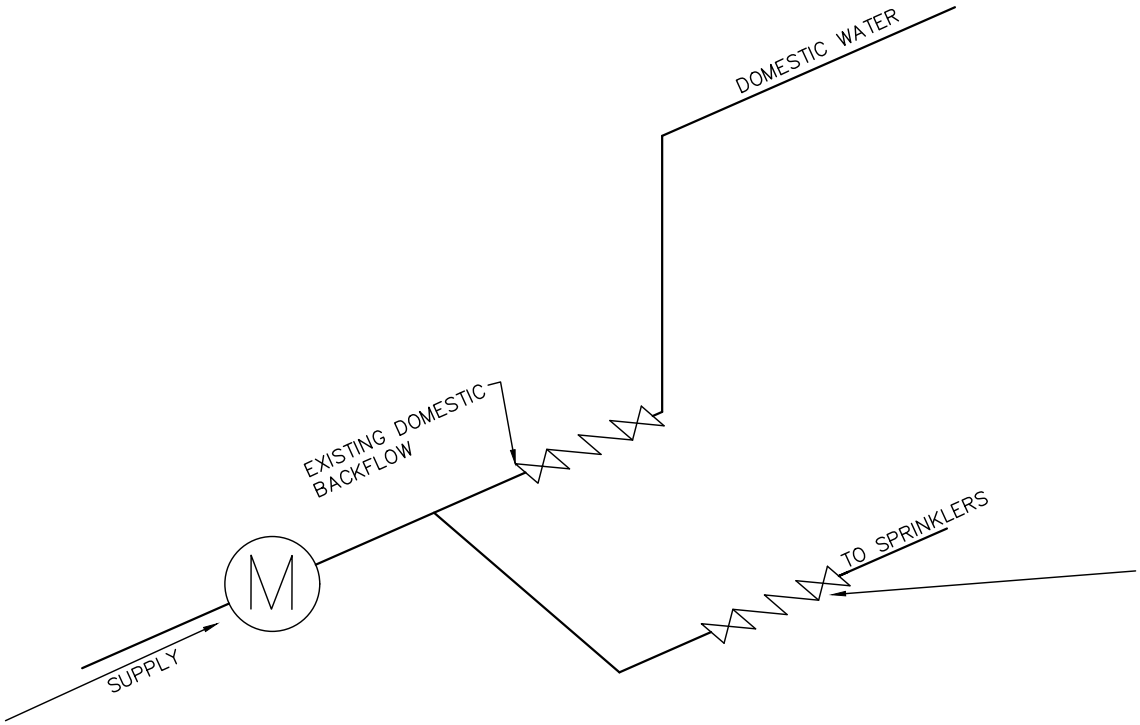
NOTE:

A. IF NO CLEARANCE BETWEEN BUILDING AND PROPERTY LINE, METER MAY BE LOCATED IN BUILDING IF APPROVED BY CITY.

CITY OF BROOKVILLE ChoiceOne Engineering	4" AND LARGER WATER MAIN SERVICE CONNECTION (DOMESTIC)	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800–13



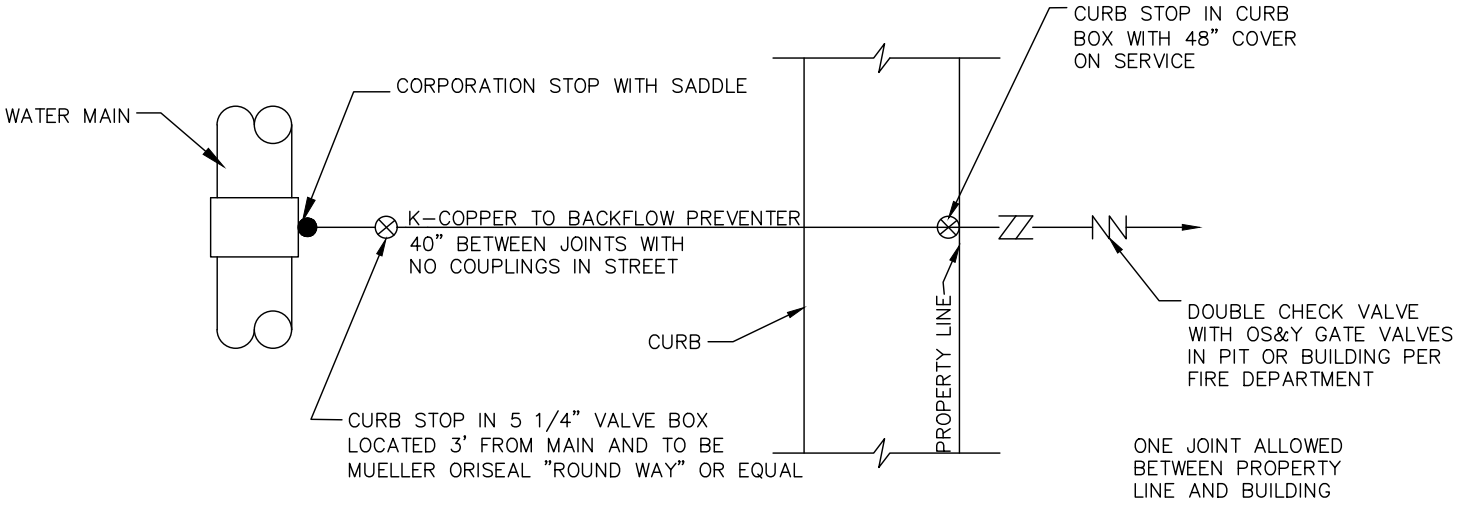




NOTE:

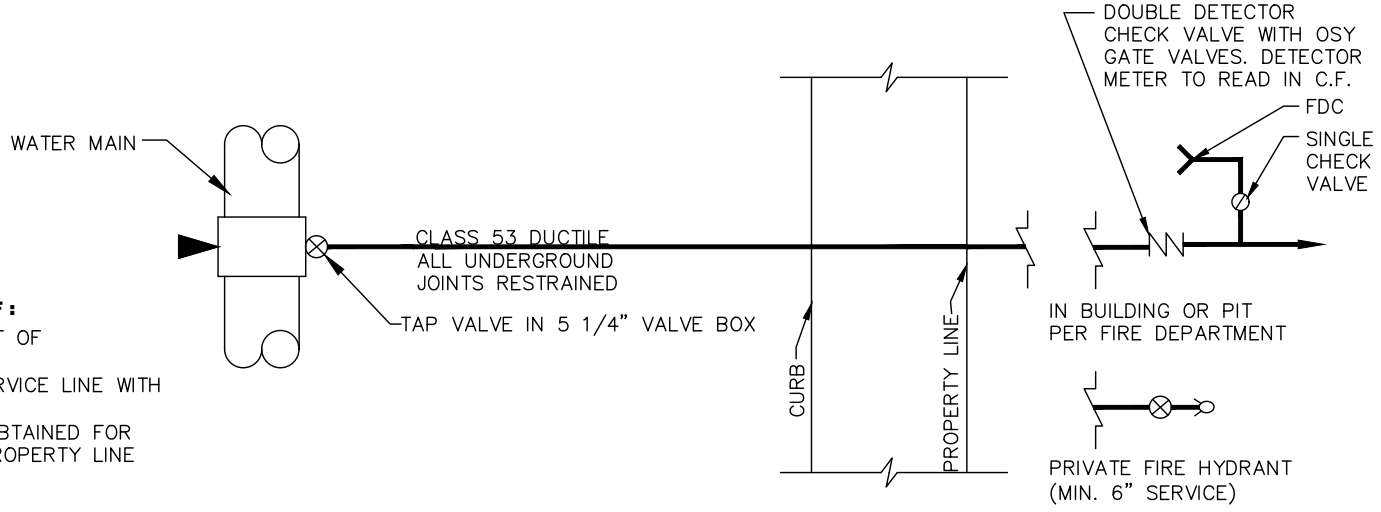
A. ADDITION OF BACKFLOW DEVICE ONTO EXISTING FIRE SUPPRESSION SYSTEM WILL AFFECT ORIGINAL FLOW CALCULATION

CITY OF BROOKVILLE ChoiceOne Engineering	**LIMITED AREA SPRINKLER SYSTEM DETAIL**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800–14



2" FIRE LINE SERVICE

(METER NOT NOT REQUIRED)



SERVICE TEES ARE PERMITTED IF :

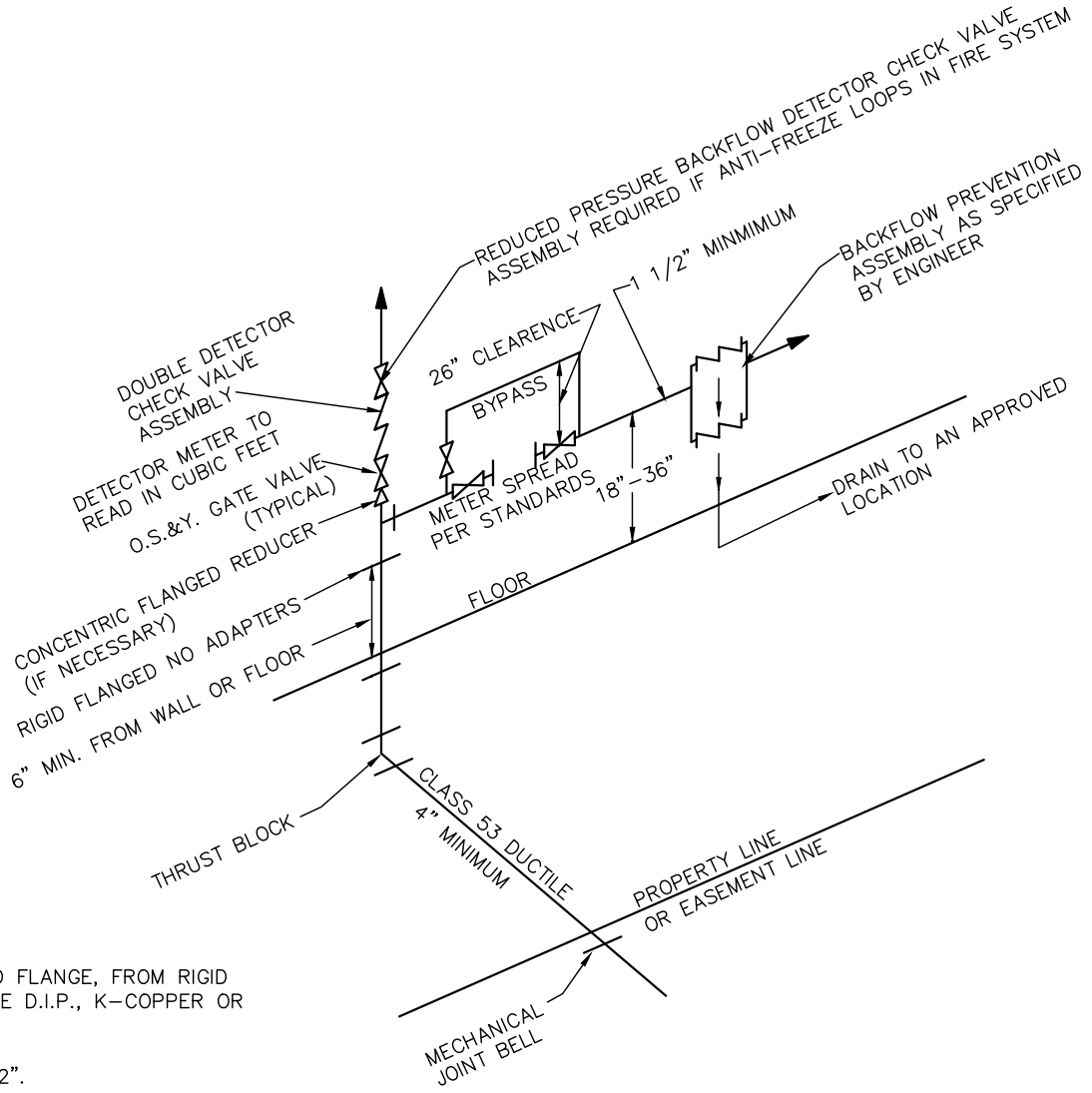
1. SHOWN ON AN APPROVED SET OF CONSTRUCTION DRAWINGS.
2. 4" MINIMUM BRANCH AND SERVICE LINE WITH GATE VALVE WITHIN 3' OF MAIN.
3. STUB IN PERMITS MUST BE OBTAINED FOR EACH SERVICE STUBBED IN TO PROPERTY LINE OR EASEMENT LINE.

4" AND LARGER FIRE LINE SERVICE

(METER NOT NOT REQUIRED)

WALL/POST INDICATOR VALVES MAY BE ADDED ON PREMISES AT FIRE DEPARTMENT REQUEST

CITY OF BROOKVILLE	2" FIRE LINE AND 4" AND LARGER FIRE LINE	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 800–15



NOTES

A. ALL UNDERGROUND JOINTS MUST BE RESTRAINED.

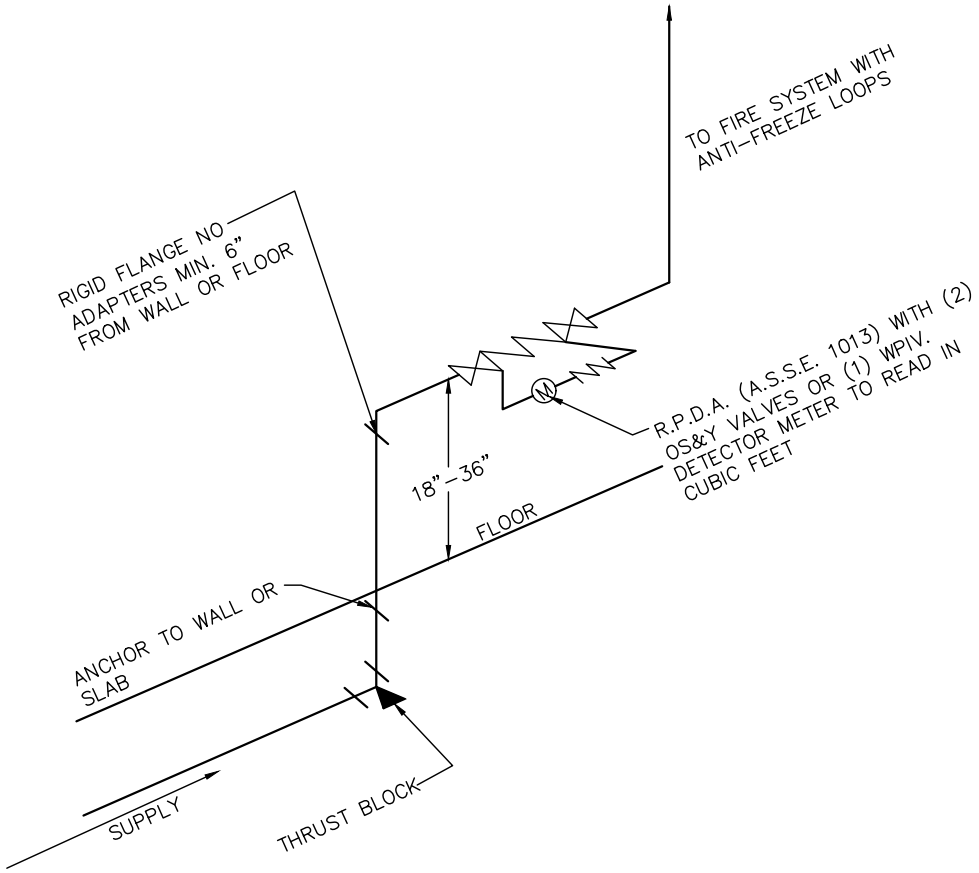
B. INSIDE PIPING SHALL BE D.I.P. CLASS 53 TO RIGID FLANGE, FROM RIGID FLANGE THROUGH METER VALVES AND BYPASS, TO BE D.I.P., K-COPPER OR BRASS.

C. THE MINIMUM WATER METER SIZE SHALL BE 1-1/2".

D. ALTERNATE DESIGN MAY BE SUBMITTED TO WATER ENGINEERING FOR APPROVAL.

E. COMBINATION SERVICE IS NOT PERMITTED INSIDE BUILDING IF THE DOMESTIC METER IS MORE THAT 75 FEET FROM THE PROPERTY/EASEMENT LINE.

CITY OF BROOKVILLE ChoiceOne Engineering	**COMBINATION FIRE AND DOMESTIC IN BUILDING**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800-16



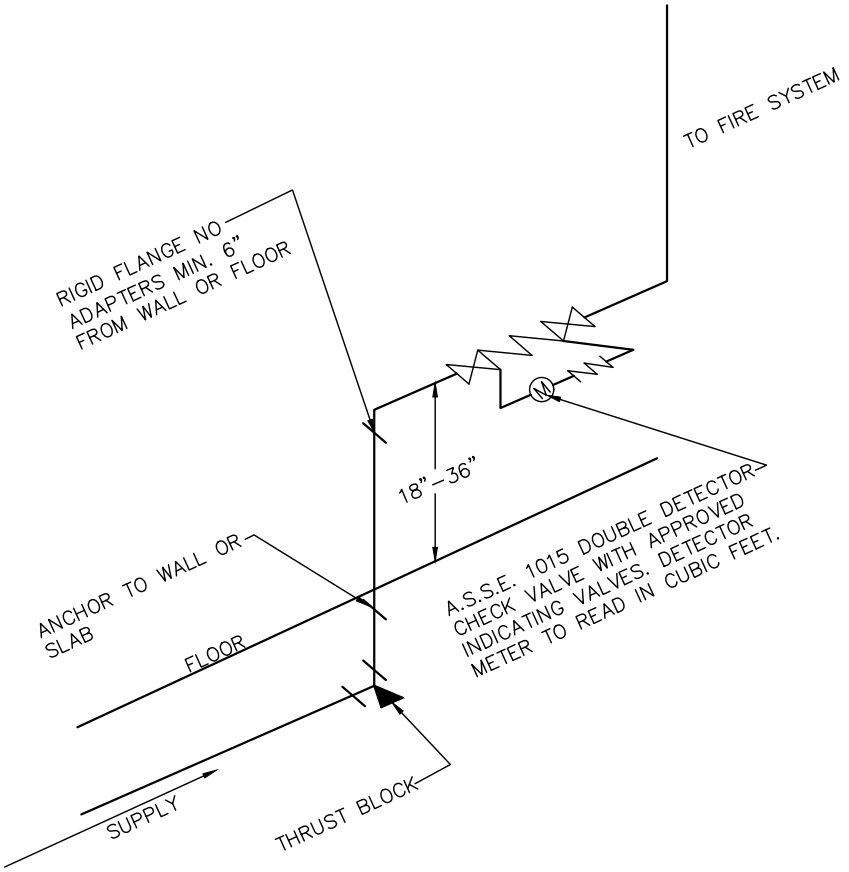
NOTE:

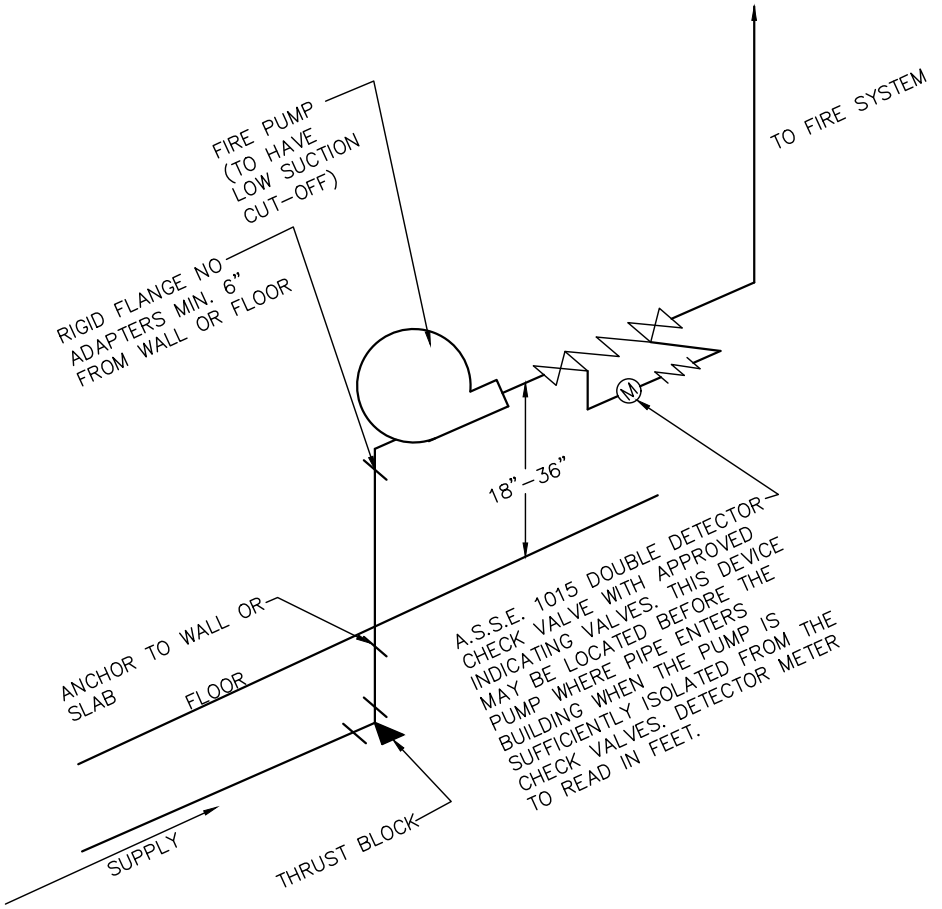
A. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE DELIVERED FOR INSTALLATION COMPLETELY ASSEMBLED BY THE ORIGINAL MANUFACTURER WITH ALL COMPONENTS AS APPROVED

B. ADDITION OF BACKFLOW DEVICE ONTO EXISTING FIRE SUPPRESSION SYSTEMS WILL AFFECT ORIGINAL FLOW CALCULATIONS

C. PIPE TO BE CLASS 53 DUCTILE IRON TO VALVE. ALL JOINTS SHALL BE RESTRAINED

CITY OF BROOKVILLE ChoiceOne Engineering	**REDUCED PRESSURE DETECTOR ASSEMBLY**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800-17





NOTE:
A. ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE DELIVERED FOR INSTALLATION COMPLETELY ASSEMBLED BY THE ORIGINAL MANUFACTURER WITH ALL COMPONENTS AS APPROVED
B. CLASS 53 DUCTILE IRON TO VALVE. ALL JOINTS RESTRAINED

CITY OF BROOKVILLE	DOUBLE DETECTOR CHECK VALVE ASSEMBLY DETAIL	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 800–18

NOTES

A. SEE "STANDARDS FOR TAPS, SERVICES AND METERS" FOR TYPICAL NOTES

B. BACKFLOW PREVENTION DEVICE REQUIRED–CONTACT CITY FOR APPROVED DEVICE.

C. PROVIDE APPROVED DRAIN FOR IRRIGATION SYSTEM

D. ABSOLUTELY NO "DEDUCT" METER INSTALLATION.

E. ALTERNATE DESIGNS MUST BE SUBMITTED FOR APPROVAL.

F. TOP OF PIT LID TO BE INSTALLED AT FINISHED GRADE.

G. THE FORD BOX MUST BE BROUGHT UP TO FINISH GRADE

H. NO OUTLETS ARE ALLOWED BETWEEN METER AND THE BACKFLOW PREVENTER OR HOSE BIBB VACUUM BREAKER WITH THE EXCEPTION OF ONE SCREW PLUG–IN TAR WINTERIZING/DRAINAGE PURPOSES.

I. THE UNDERGROUND WATER SERVICE SHALL BE K–COPPER UP TO THE BACKFLOW PREVENTER OR HOSE BIBB VACUUM BREAKER. ALL JOINTS FLARED TYPE JOINTS.

J. IN CASE OF ADD–ON CONSTRUCTION (WITH AN EXISTING DOMESTIC METER AND SERVICE) LEAD FREE SOLDERED JOINTS WILL BE ACCEPTED AT THE TAKE–OFF TEE ONLY

K. THE INSTALLATION IS SUBJECT TO INSPECTION BY BOTH PLUMBING INSPECTION AND WATER DEPARTMENT PERSONNEL

INSTRUCTIONS FOR THE INSTALLATION OF IRRIGATION METERS AND BACKFLOW PREVENTERS FOR IRRIGATION

1. MAKE DRAWING OF THE PROPOSED IRRIGATION SYSTEM. THIS DRAWING MUST BE APPROVED BY THE BACKFLOW PREVENTION SECTION OF THE CITY OF BROOKVILLE WATER ENGINEERING DEPARTMENT PRIOR TO CONSTRUCTION. FOR COUNTY INSTALLATIONS, COUNTY BOARD OF HEALTH, PLUMBING INSPECTION MUST BE APPROVED FIRST.

2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF BROOKVILLE "STANDARDS FOR TAPS, SERVICES AND METERS".

3. GET THE NECESSARY PERMITS.

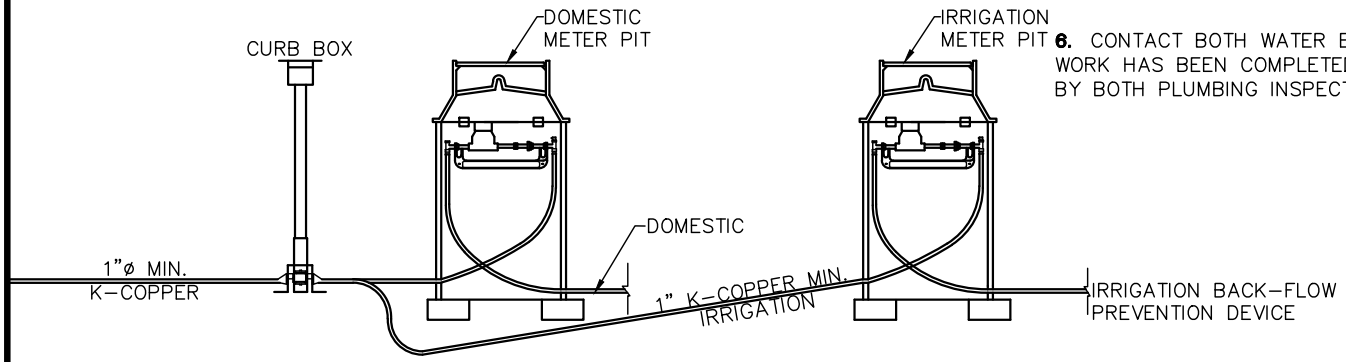
A) WATER SERVICE PERMIT	DAYTON
B) METER SET FEE	BROOKVILLE
C) PLUMBING PERMIT	COUNTY

4. GET FORMS AT PLUMBING INSPECTION FOR EACH BACKFLOW PREVENTER TO BE INSTALLED, PRIOR TO DOING THE WORK.

5. AFTER THE BACKFLOW PREVENTERS HAVE BEEN INSTALLED PLEASE FILL OUT THE FORMS COMPLETELY WITH THE OWNER/LESSE'S NAME, ADDRESS (WHERE THE BACKFLOW PREVENTER WAS INSTALLED), LOCATION OF THE BACKFLOW PREVENTER, SIZE, MAKE, MODEL, AND SERIAL NUMBER OF THE BACKFLOW PREVENTER. PLEASE RETURN THE COMPLETED FORMS TO:

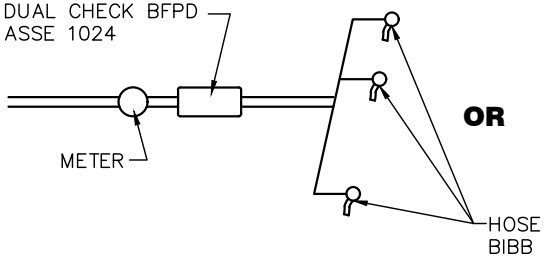
CITY OF BROOKVILLE
301 SYCAMORE STREET
PO BOX 10
BROOKVILLE OH 45309–0010

6. CONTACT BOTH WATER ENGINEER AND PLUMBING INSPECTION AFTER THE WORK HAS BEEN COMPLETED. BACKFLOW PREVENTERS HAVE TO BE INSPECTED BY BOTH PLUMBING INSPECTION AND WATER ENGINEER.



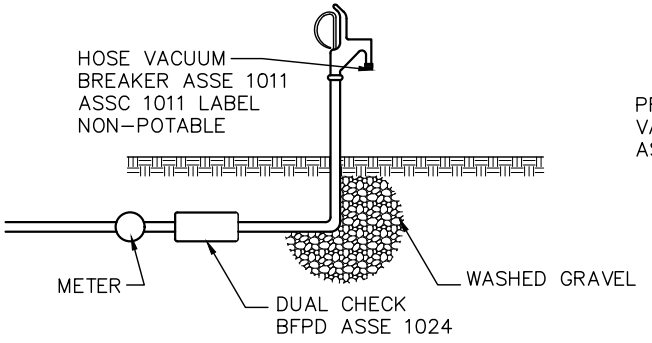
CITY OF BROOKVILLE ChoiceOne Engineering	**STANDARD INSTALLATION FOR IRRIGATION METERS AND BACKFLOW PREVENTER**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800–19

HOSE BIBB

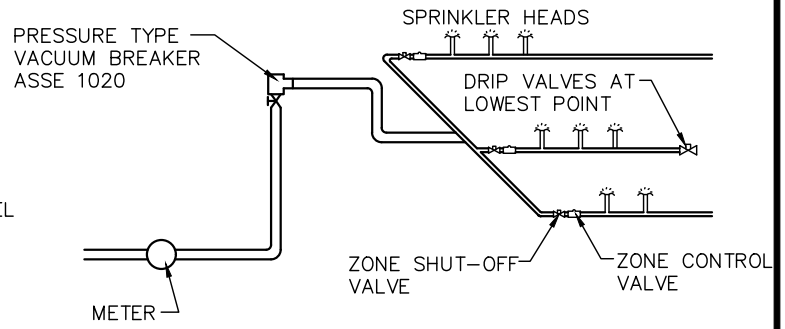


NON–RECERTIFIABLE BFPDS
(ASSE 1001, ASSE 1011) ON
HOSE BIBBS

YARD HYDRANT



SPRINKLER SYSTEM

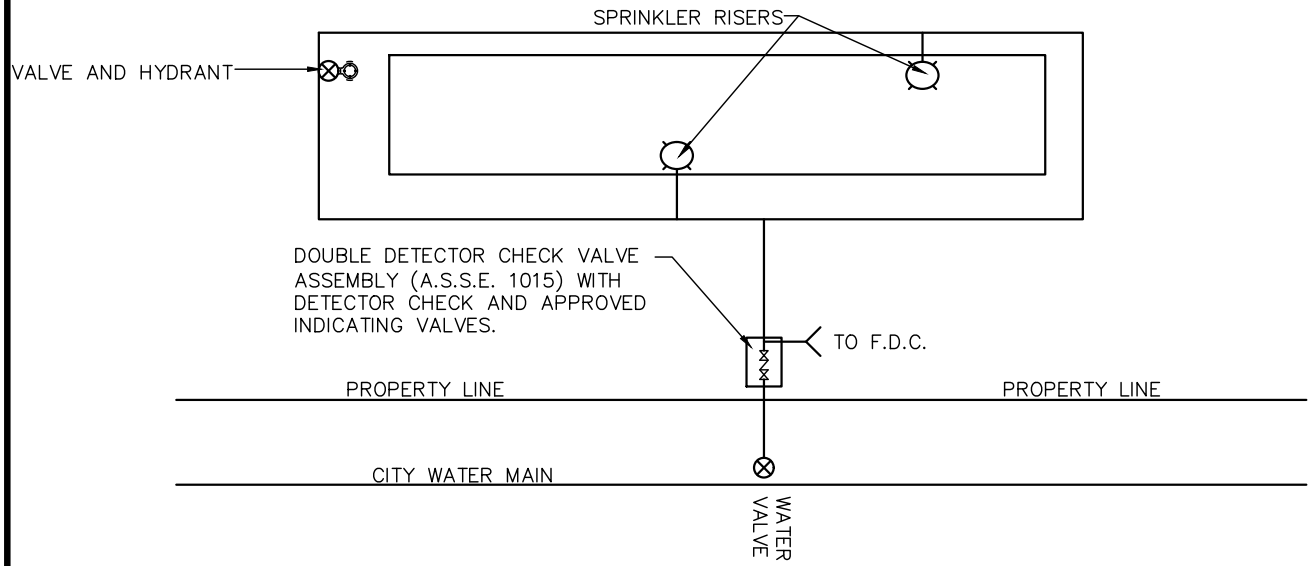


CONDITIONS

A. SHUT–OFF VALVES ARE ALLOWED DOWNSTREAM OF THE BFPD

B. THE PRESSURE TYPE VACUUM BREAKER MUST BE A MINIMUM OF 12" ABOVE THE HIGHEST SPRINKLER HEAD.

YARD MAIN SYSTEM ARRANGEMENT



NOTES

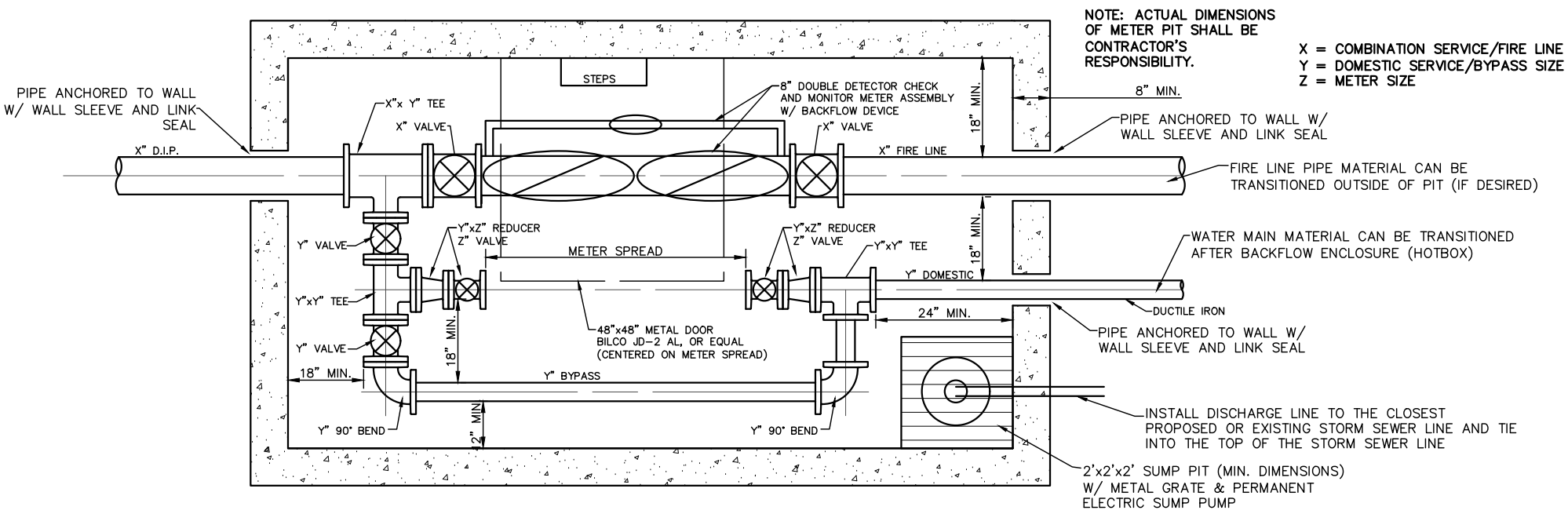
A. A DRAWING OF EACH PROPOSED IRRIGATION SYSTEM MUST BE APPROVED BY THE BACKFLOW PREVENTION SECTION OF CITY OF BROOKVILLE PRIOR TO CONSTRUCTION.

B. IF IRRIGATION SYSTEM IS NONE OF THE ABOVE, USE A REDUCED PRESSURE BACKFLOW PREVENTER, (ASSE 1013), AFTER THE WATER METER.

LEGEND

FDC	FIRE DEPARTMENT CONNECTION
BFPD	BACKFLOW PREVENTION DEVICE

CITY OF BROOKVILLE	**IRRIGATION DETAILS**	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 800–20



A. THE PIT SHALL BE MASONRY: EITHER PRE-CAST OR CAST-IN-PLACE, SHALL HAVE CONCRETE/MASONRY FLOOR AND TOP, AND HAVE A MINIUMUM 6' WORKING HEIGHT.

B. AN AUTOMATIC SUMP PUMP WITH A MINIMUM DISCHARGE OF UP TO 500 GPH IS REQUIRED. FLOOR SHALL SLOPE TO SUMP PIT AT ⅛" PER/FT MINIMUM SLOPE.

C. THE DOOR SHALL BE CENTERED ON THE METER SPREAD. THE DOOR SHALL HAVE A 1/2" HOLE FOR HAZARDOUS GAS TESTING. PROVIDE A 1-7/8" DIA. HOLE IN THE DOOR FOR INSTALLATION OF REMOTE READ PAD FOR EACH METER IN PIT

D. STEPS SHALL BE PLASTIC, 12" C.C. AS MANUFACTURED BY MA INDUSTRIES (PS1-PF OR EQUAL).

E. ALL PIPE SHALL HAVE A MIN. 48" COVER AND BE A MIN. 18" FROM THE FLOOR

F. NO FIELD SOLDERED JOINTS ARE PERMITTED IN THE PIT.

G. ALL FIRE LINE PIPE SHALL BE D.I. CLASS 51 WITH FLANGED ENDS TO OUTLET VALVE OF DOUBLE DETECTOR CHECK ASSEMBLY.

H. ALL FIRE LINE VALVES SHALL BE FLANGED END, HAND WHEEL OPERATED, NON-RISING STEM, AND OPEN IN THE SAME DIRECTION.

I. AN APPROVED DOUBLE DETECTOR CHECK VALVE ASSEMBLY SHALL BE FITTED WITH NECESSARY TYPE "K" COPPER OR BRASS PLUMBING, MANUFACTURER APPROVED MONITOR METER (SEE #14), AND APPROVED BACKFLOW ASSEMBLY.

J. ALL DOMESTIC PIPING WITHIN THE PIT SHALL BE D.I. CL-51, WITH 4" DIAMETER PIPING BY-PASS REQUIRED. BY-PASS PIPING SHALL BE D.I. CL-51.

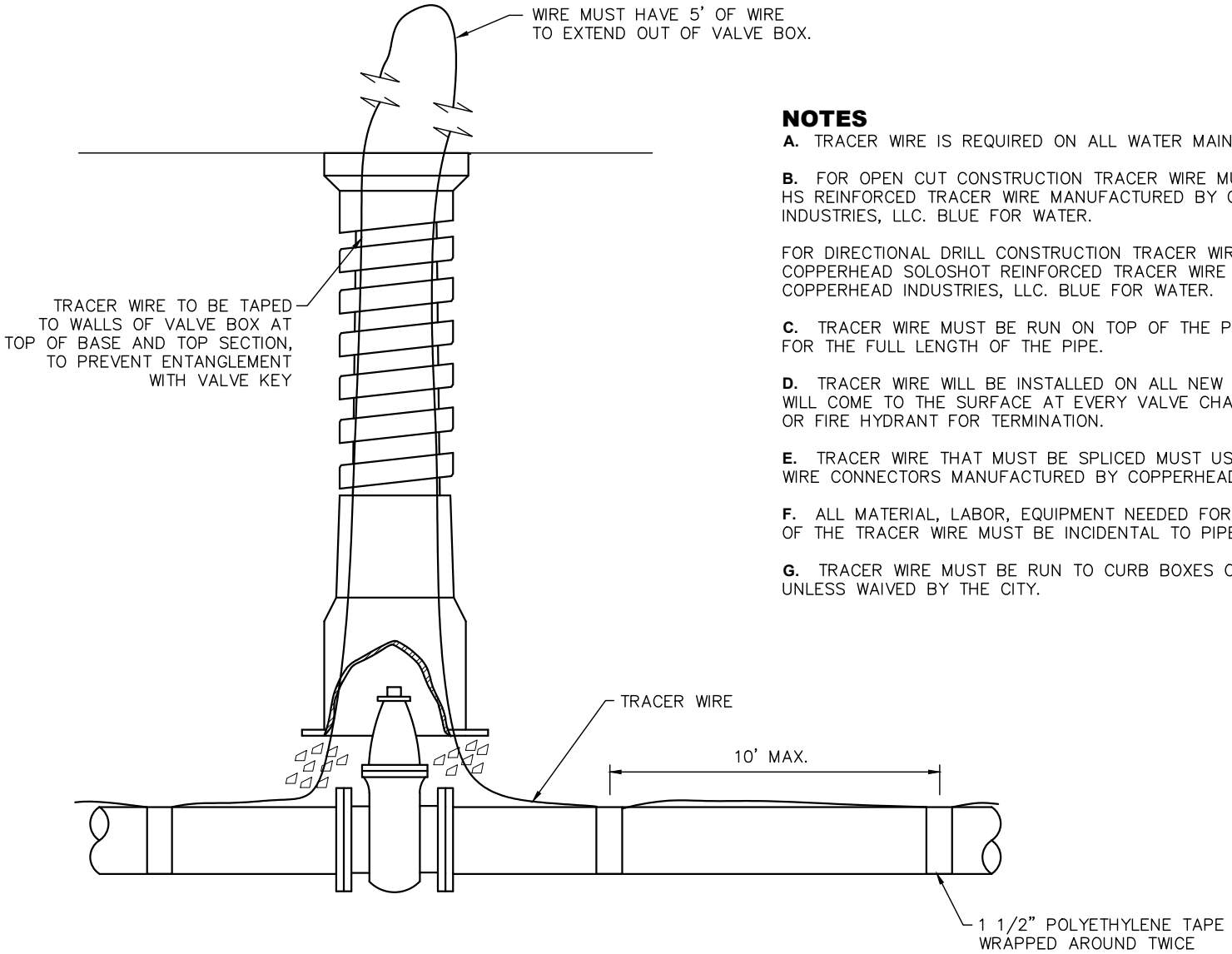
K. METER FLANGED END MUST BE UNI-FLANGED.

L. ALL DOMESTIC VALVES SHALL BE FLANGED END, HAND WHEEL OPERATED, NON-RISING STEM RESILIENT WEDGE GATE TYPE, AND OPEN IN THE SAME DIRECTION.

M. DOMESTIC METER SHALL BE SUPPLIED BY CITY OF DAYTON TO CONTRACTOR TO BE INSTALLED WITH OTHER PIPING FOR PROPER ALIGNMENT. THE METER IS TO BE INSTALLED IN THE CENTER OF THE METER SPREAD.

N. THE MONITOR METER MUST BE APPROVED BY, IF NOT SUPPLIED BY CITY OF BROOKVILLE. THE METER MUST READ IN CUBIC FEET AND HAVE REMOTE READ REGISTER.

CITY OF BROOKVILLE	# COMBINATION FIRE LINE/DOMESTIC WATER METER PIT DETAIL IN BUILDING	REVISIONS:	DATE APPROVED: OCT. 2023
ChoiceOne Engineering			PAGE No. 800-21



NOTES

A. TRACER WIRE IS REQUIRED ON ALL WATER MAIN.

B. FOR OPEN CUT CONSTRUCTION TRACER WIRE MUST BE COPPERHEAD HS REINFORCED TRACER WIRE MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC. BLUE FOR WATER.

FOR DIRECTIONAL DRILL CONSTRUCTION TRACER WIRE MUST BE COPPERHEAD SOLOSHOT REINFORCED TRACER WIRE MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC. BLUE FOR WATER.

C. TRACER WIRE MUST BE RUN ON TOP OF THE PIPE CONTINUOUSLY FOR THE FULL LENGTH OF THE PIPE.

D. TRACER WIRE WILL BE INSTALLED ON ALL NEW INSTALLATION AND WILL COME TO THE SURFACE AT EVERY VALVE CHAMBER, VALVE BOX, OR FIRE HYDRANT FOR TERMINATION.

E. TRACER WIRE THAT MUST BE SPLICED MUST USE SNAKEBITE TRACER WIRE CONNECTORS MANUFACTURED BY COPPERHEAD INDUSTRIES, LLC.

F. ALL MATERIAL, LABOR, EQUIPMENT NEEDED FOR THE INSTALLATION OF THE TRACER WIRE MUST BE INCIDENTAL TO PIPE INSTALLATION.

G. TRACER WIRE MUST BE RUN TO CURB BOXES OR FIRE HYDRANTS UNLESS WAIVED BY THE CITY.

CITY OF BROOKVILLE ChoiceOne Engineering	**TRACER WIRE DETAIL**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 800–22

NOTES

A. NO WORK SHALL BE APPROVED OR ACCEPTED BY THE CITY UNLESS 2 WORKING DAY'S NOTICE OF COMMENCING WORK IS GIVEN TO THE CITY.

B. ALL TEMPORARY PAVEMENT AND SIDEWALK SHALL BE MAINTAINED BY THE CONTRACTOR OR DEVELOPER AT HIS OWN EXPENSE IN A SUITABLE AND SAFE CONDITION FOR TRAFFIC UNTIL PERMANENT REPLACEMENT IS MADE OR THE PROJECT IS FINALLY ACCEPTED BY THE CITY.

C. ROOF DRAINS, FOUNDATION DRAINS, SUMP PUMPS, AND OTHER CLEAR WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.

D. WHEN SEWER CONSTRUCTION BEGINS, THE SEWER AT THE EXISTING MANHOLE SHALL BE PLUGGED BY AN APPROVED METHOD. NO PLUGS SHALL BE REMOVED UNTIL CONSTRUCTION IS COMPLETED AND THEN ONLY AS DIRECTED BY THE CITY.

E. RECONSTRUCTION OF SANITARY SEWERS SHALL INCLUDE THE CITY DYE TESTING AS DETERMINED BY THE CITY OF ALL PIPES TO BE CONNECTED TO THE NEW SEWER PRIOR TO BACKFILLING. TO DETERMINED IF ALL EXISTING SERVICES ARE CONNECTED AND ALL STORM WATER CONNECTIONS ARE ELIMINATED.

F. WHEN A CASTING OR OTHER PUBLIC PROPERTY IS ABANDONED IT REMAINS CITY PROPERTY.

G. NEW SEWERS OR ANY SEWER THAT IS RELOCATED/RESIZED MUST HAVE EPA PLAN APPROVAL PRIOR TO CONSTRUCTING.

EXCAVATION AND PIPE LAYING

A. THE LAYING OF THE PIPE SHALL COMMENCE AT THE LOWEST POINT, WITH THE BELL END LAID UPGRADE. THE PIPE SHALL BE CENTERED IN THE TRENCH AND ALL PIPE SHALL BE LAID WITH ENDS ABUTTING AND TRUE TO LINE AND GRADE.

B. LASER SHALL BE USED UNLESS OTHERWISE APPROVED.

UTILITY STAKING

A. LASER METHOD – OFFSET AND GRADE AT EACH MANHOLE. OFFSET AND GRADE 50' AND 100' OUT FROM EACH MANHOLE UNLESS OTHERWISE APPROVED.

TESTING-ON PHASES PERFORMED BY CONTRACTOR OR DEVELOPER

A. BEFORE ANY SEWER LINE IS PLACED INTO SERVICE OR ACCEPTED BY THE CITY, IT SHALL BE SUBJECTED TO AND PASS LOW PRESSURE AIR TEST. EACH RUN BETWEEN MANHOLES, WITH ALL SERVICE LATERALS STUBBED INTO PROPERTY LINES, SHALL BE TESTED BEFORE BEING ACCEPTED. THE CONTRACTOR OR DEVELOPER SHALL FURNISH ALL EQUIPMENT AND MATERIAL NECESSARY TO CONDUCT ALL SANITARY SEWER TESTING. THE TRENCH SHALL BE COMPLETELY BACKFILLED BEFORE TESTING.

B. SEE SANITARY TESTING NOTES.

C. BEFORE FINAL ACCEPTANCE BY THE CITY AND BEFORE ANY SERVICE LINE IS PUT INTO USE, ALL SANITARY SEWERS AND MANHOLES SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER BY USE OF A SEWER–JET, OR EQUAL, TYPE OF EQUIPMENT BY THE CONTRACTOR.

HOUSE CONNECTIONS

A. NO SERVICE LINE SHALL BE ALLOWED TO CONNECT DIRECTLY INTO A MANHOLE, SUBJECT TO APPROVAL BY THE CITY IN SPECIFIC CASES.

B. THE ENDS OF ALL SERVICE LINES OR TEES SHALL BE ACCURATELY STAKED, LOCATED, MAPPED, AND GIVEN TO THE CITY WITHIN 15 DAYS AFTER INSTALLATION.

C. BEFORE MAKING A CONNECTION TO AN EXISTING SEWER TAP OR SEWER LATERAL, THE CONTRACTOR SHALL CHECK THE EXISTING PIPE BY UTILIZING A SEWER EEL, STRAP, OR SEWER CAMERA TO SEE THAT THE EXISTING PIPE IS CONNECTED TO THE MAIN SEWER. IF NECESSARY, THE CITY WILL PROVIDE, AT THE CONTRACTOR'S EXPENSE, A HYDRAULIC SEWER CLEANER WHICH WILL PRODUCE LARGE VOLUMES OF WATER TO CHECK THE LATERAL.

D. LATERALS FROM THE MAIN TO THE PROPERTY LINE SHALL BE 4" MINIMUM WITH CLEANOUT AT THE PROPERTY LINE.

E. A PERMIT TO OPEN INTO, ALTER, OR DISTURB ANY PUBLIC SEWER MUST BE OBTAINED.

F. ALL ABANDONED SEWER LATERALS SHALL BE CAPPED AT THE OWNER'S EXPENSE. AN INSPECTION SHALL BE MADE AND THE CAPS STAKED.

PIPE

A. ALL PIPE AND SPECIALS SHALL BE PVC SDR–35 UNLESS OTHERWISE APPROVED BY THE CITY. MINIMUM DIAMETER OF PIPE SHALL BE 8".

B. DUCTILE IRON PIPE WILL BE USED IN STREAM CROSSINGS AND WHERE MINIMUM SEPARATION CAN NOT BE MAINTAINED.

C. ALL JOINTS SHALL BE OF THE BELL AND SPIGOT TYPE, THE BELLS BEING FORMED INTEGRALLY WITH THE PIPE. THE BELL SHALL CONTAIN A FACTORY INSTALLED ELASTOMETRIC GASKET WHICH IS POSITIVELY RETAINED. NO SOLVENT CEMENT JOINTS WILL BE PERMITTED IN FIELD CONSTRUCTION EXCEPT AS SPECIFICALLY AUTHORIZED BY THE CITY.

D. LOCATOR WIRE MUST BE REQUIRED TO BE INSTALLED ON ALL SANITARY SEWERS MAINS, LATERALS, AND FORCEMAINS.

FLEXIBLE PIPES	MATERIAL SPECIFICATIONS	JOINT SPECIFICATIONS
POLYVINYL CHLORIDE	ASTM D–3034 (SDR–35) PIPE STIFFNESS = 46PSI	ELASTOMERIC GASKET ASTM D–3212
DUCTILE IRON	ANSI A–21.51 & AWWA C–151	ANSI A–21.11 & AWWA C–111

1. SDR = OUTSIDE DIAMETER DIVIDED BY WALL THICKNESS.

2. THE SPECIFICATIONS ABOVE SHALL BE THOSE MOST RECENTLY ADOPTED BY THE APPROPRIATE STANDARDS SETTING ORGANIZATIONS.

CITY OF BROOKVILLE	MISCELLANEOUS SANITARY SEWER NOTES	REVISIONS:	DATE APPROVED: OCT. 2023
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DEFLECTION TEST

A. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE PIPE OTHER THAN SERVICE LATERALS. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL–PIPE SYSTEM.

B. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. IF DEFLECTION EXCEEDS 5%, REPLACEMENT OR CORRECTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF APPROVING AGENCY.

C. THE RIGID BALL OR MANDREL USED FOR THE DEFLECTION TEST SHALL HAVE A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE DEPENDING ON WHICH IS MANUFACTURED. THE PIPE SHALL BE MEASURED IN COMPLIANCE WITH ASTM D–2122 STANDARD TEST METHOD OF DETERMINING DIMENSIONS OF THERMOPLASTIC PIPE AND FITTINGS. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.

SEWER TELEVISING PROCEDURES FOR NEW SEWER CONSTRUCTION

A. THE SANITARY SEWER MUST BE COMPLETELY CLEAN AND FREE OF DEBRIS USING A HIGH PRESSURE JET RODDER CAPABLE OF SCOURING THE PIPE WALLS.

B. ALL DEBRIS MUST BE VACUMED OUT OF THE SEWER MAIN.

C. ONCE CLEANING HAS BEEN COMPLETED, THE CONTRACTOR MUST RUN CLEAR WATER IN THE NEW SEWER MAIN TO FILL ANY POTENTIAL BELLIES IN THE LINE THE CONTRACTOR MUST CALCULATE THE VOLUME GALLON CAPACITY OF THE SEWER MAIN AND MUST USE THAT MUCH WATER TO FILL POTENTIAL BELLIES/DIPS.

D. THE CONTRACTOR MAY RENT A WATER HYDRANT METER FROM THE CITY OF DAYTON TO PERFORM THIS TASK.

E. THE CONTRACTOR MUST MAKE SURE THAT THERE IS NO FLOW EMANATING UPSTREAM. IF SO, THE CONTRACTOR MUST STOP THIS FLOW DURING THE TELEVISING.

F. THE CONTRACTOR MUST TELEVISE THE SEWER FOLLOWING THE TELEVISING STANDARDS.

LOW PRESSURE AIR TEST

A. AFTER BACKFILLING, THE AIR TEST SHALL BE CONDUCTED BETWEEN TWO CONSECUTIVE MANHOLES. ALL PIPE OUTLETS MUST BE PLUGGED IN THE SECTION BEING TESTED WITH SUITABLE TEST PLUGS. ONE OF THE PLUGS USED AT A MANHOLE MUST BE TAPPED AND EQUIPPED FOR AN AIR INLET CONNECTION FOR FILLING THE LINE FROM THE AIR COMPRESSOR. AIR SHALL BE SUPPLIED SLOWLY TO THE TEST SECTION UNTIL THE INTERNAL PRESSURE REACHES APPROXIMATELY 4 PSI. IF THE PIPE IS BELOW EXISTING GROUNDWATER LEVEL, THE INTERNAL PRESSURE SHALL BE INCREASED BY THE AVERAGE BACK PRESSURE OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE, BUT IN NO CASE SHOULD THE INTERNAL PRESSURE EVER EXCEED 5 PSI.

B. AT LEAST 2 MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE. WHEN THE PRESSURE HAS STABILIZED AND IS AT OR ABOVE 3.5 PSI, THE AIR SUPPLY SHALL BE DISCONNECTED AND TIMING SHALL BEGIN WITH A STOP WATCH. THE STOP WATCH SHALL BE ALLOWED TO RUN UNTIL THE PRESSURE HAS DROPPED 1.0 PSI. IF THE TIME SHOWN ON THE STOP WATCH IS GREATER THAN THE SPECIFIED MINIMUM TIME, THE SECTION SHALL BE CONSIDERED TO HAVE PASSED THE TEST. TIME MAY BE INTERPOLATED FROM THE FIGURES LISTED BELOW.

PIPE DIA. (IN.)	Time for Longer Length (sec)	Specified Minimum for Length (L) Shown (min:sec)						
		100 FT.	150 FT.	200 FT.	250 FT.	300 FT.	350 FT.	400 FT.
4	0.380L	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	0.854L	5:40	5:40	5:40	5:40	5:40	5:40	5:42
8	1.520L	7:34	7:34	7:34	7:34	7:36	8:52	10:08
10	2.374L	9:26	9:26	9:26	9:53	11:52	13:51	15:49
12	3.418L	11:20	11:20	11:24	14:15	17:05	19:56	22:47
15	5.342L	14:10	14:10	17:48	22:15	26:42	31:09	35:36
18	7.692L	17:00	19:13	25:38	32:03	38:27	44:52	51:16
21	10.470L	19:50	26:10	34:54	43:37	52:21	61:00	69:48
24	13.674L	22:47	34:11	45:34	56:58	68:22	79:46	91:10

SPECIFICATION TIME FOR LENGTH (L) SHOWN (MIN:SEC)

ALL SANITARY SEWER TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR.

MANHOLE VACUUM TEST

ALL SANITARY SEWER MANHOLES SHALL BE VACUUM TESTED USING THE FOLLOWING PROCEDURES FROM ASTM C–1244.

A. PREPARATION OF THE MANHOLE

1. ALL LIFT HOLES SHALL BE PLUGGED.
2. ALL PIPES ENTERING THE MANHOLE SHALL BE TEMPORARILY PLUGGED TAKING CARE TO SECURELY BRACE THE PIPES AND PLUGS TO PREVENT THEM FROM BEING DRAWN INTO THE MANHOLE.

B. PROCEDURE

1. THE FIRST HEAD SHALL BE PLACED AT THE TOP OF THE MANHOLE IN THE CASTING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. A VACUUM OF 10" OF MERCURY (4.9 PSI) SHALL BE DRAWN ON THE MANHOLE, THE VALVE ON THE VACUUM LINE OF THE TEST HEAD CLOSED, AND THE VACUUM PUMP SHUT OFF. THE TIME SHALL BE MEASURED FOR THE VACUUM TO DROP TO 9" OF MERCURY (4.4 PSI).
3. THE MANHOLE SHALL PASS IF THE TIME FOR THE VACUUM READING TO DROP FROM 10" OF MERCURY (4.9 PSI) TO 9" OF MERCURY (4.4 PSI) MEETS OR EXCEEDS THE VALUES INDICATED ON THE TABLE.
4. IF THE MANHOLE FAILS THE INITIAL TEST, NECESSARY REPAIRS SHALL BE MADE BY AN APPROVED METHOD. THE MANHOLE SHALL THEN BE RETESTED UNTIL A SATISFACTORY TEST IS OBTAINED.

DEPTH (FT.)	DIAMETER, INCHES 48 TIME, SECONDS	60	72
8 OR LESS	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

MINIMUM TEST TIMES FOR VARIOUS MANHOLE DIAMETERS

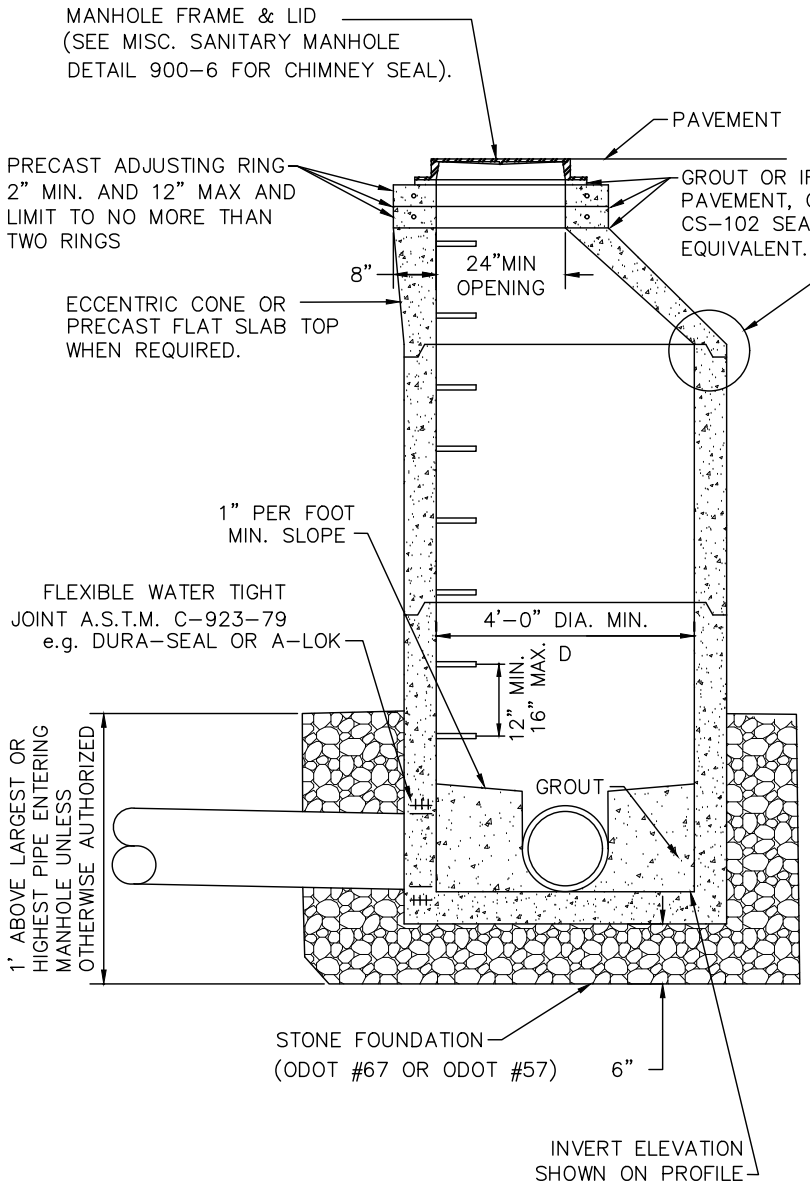
CITY OF BROOKVILLE

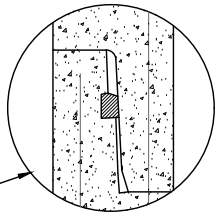
ChoiceOne Engineering

SANITARY SEWER TESTING NOTES

REVISIONS:

DATE APPROVED: OCT. 2023





O-RING JOINT DETAIL

(MEETING ASTM SPEC. 443)

JOINTS MUST BE KEPT TO A MINIMUM

NOTES

A. SANITARY MANHOLE FRAMES AND COVERS SHALL BE EQUAL OF NEENAH NO. R-1767 OR EAST JORDAN IRON WORKS NO. 1600. WATERTIGHT MANHOLES SHALL BE THE EQUAL TO NEENAH NO. R-1916-D OR EAST JORDAN IRON WORKS NO. 1600-PT. NO LATERALS SHALL PROTRUDE INTO THE INTERIOR MANHOLE.

B. TO CONNECT INTO EXISTING MANHOLE, THE MANHOLE SHALL BE CORED AND AN A-LOK XP SERIES FLEXIBLE CONNECTOR OR EQUIVALENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. NON-SHRINK GROUT ALTERNATIVE MAY BE USED IN SPECIAL CIRCUMSTANCES WHEN PREVIOUSLY APPROVED BY CITY.

C. MATERIALS FOR BASES, RISERS, AND OTHER PRECAST SECTIONS, INCLUDING REINFORCEMENTS SHALL COMPLY WITH ASTM C-478.

D. MAXIMUM SANITARY MANHOLE SPACING SHALL BE 400'.

E. LOCATE THE CENTERLINE OF MANHOLE COVERS OVER THE CENTERLINE OF THE MAIN SEWER WHENEVER POSSIBLE.

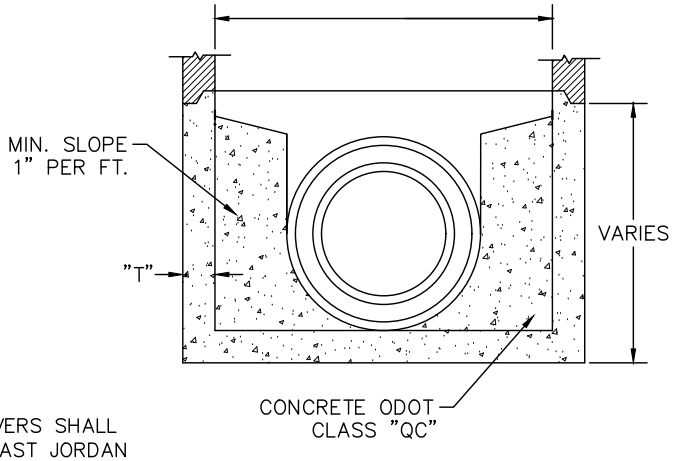
F. CONSEAL CS-102 FLEXIBLE BUTYL RESIN SEALANT OR EQUIVALENT SHALL BE 3/8" X 1" MINIMUM STRIPS UNDER GRADE RINGS AND CASTING.

G. CUT PIPE SHALL NOT EXCEED BEYOND THE INSIDE FACE OF THE MANHOLE WALL.

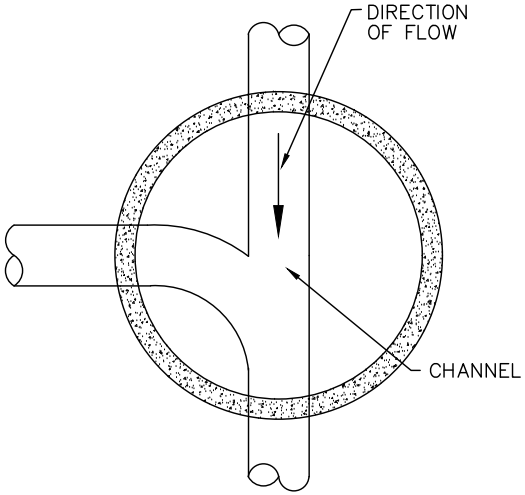
H. CONCRETE PLACED INSIDE THE MANHOLE SHALL NOT BE PLACED BETWEEN THE PIPE AND THE OPENING SO AS TO INTERFERE IN ANY WAY WITH THE FLEXIBILITY OF THE JOINT.

I. "SANITARY" SHALL BE STAMPED ON SANITARY MANHOLE LIDS.

PIPE SIZE	T	D
24" & UNDER	5"	48"
27" & ABOVE	6"	60"



PRECAST BASE SECTION



STANDARD INVERT CHANNEL

ALL INVERTS TO BE CHANNELED FOR OPTIMUM FLOW.

NOTE:

A. A MIN. OF 0.10' DROP SHALL BE PROVIDED ACROSS ALL MANHOLES FROM UPSTREAM TO DOWNSTREAM INVERT(S)

CITY OF BROOKVILLE

ChoiceOne Engineering

TYPE 3 SANITARY MANHOLE

REVISIONS:

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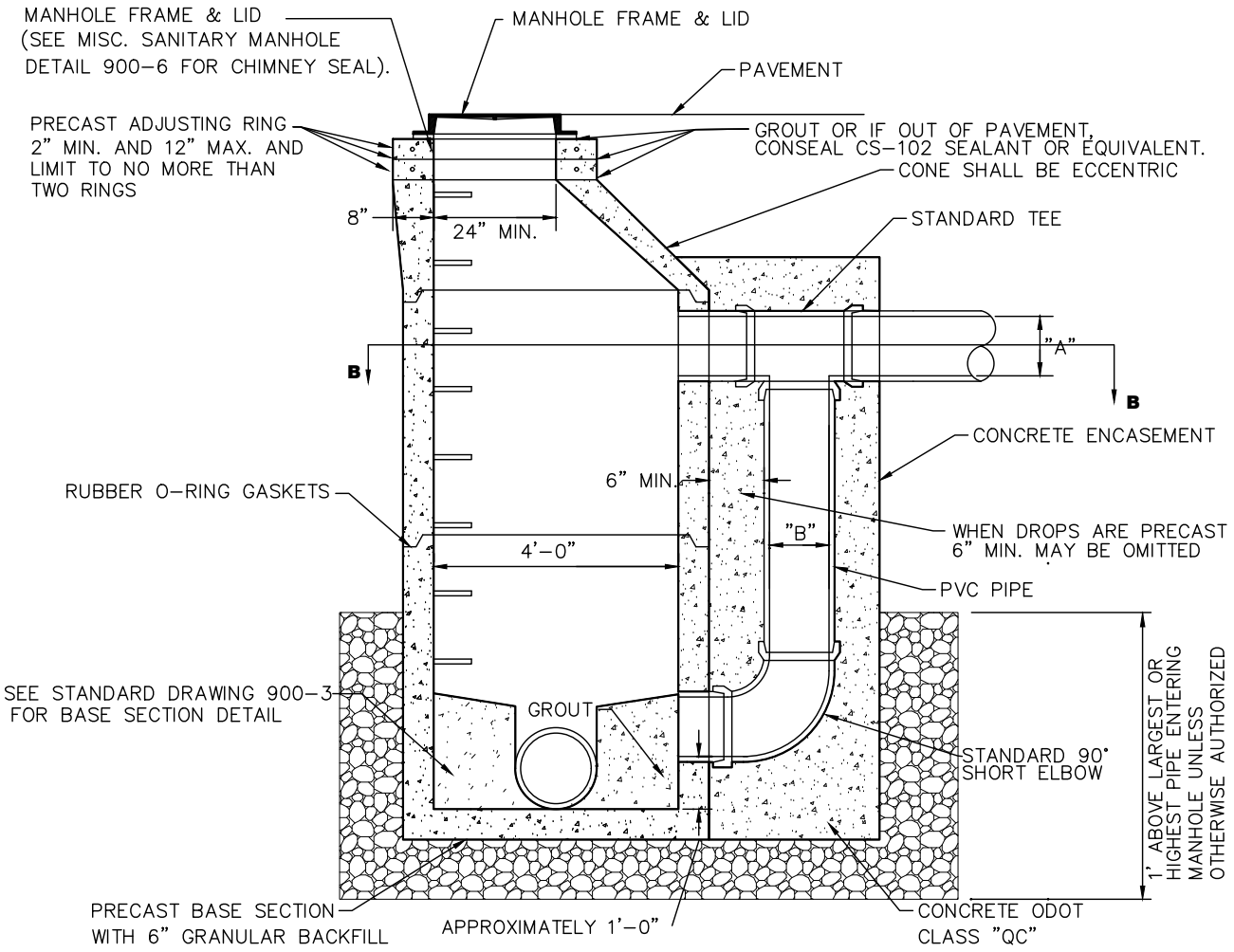
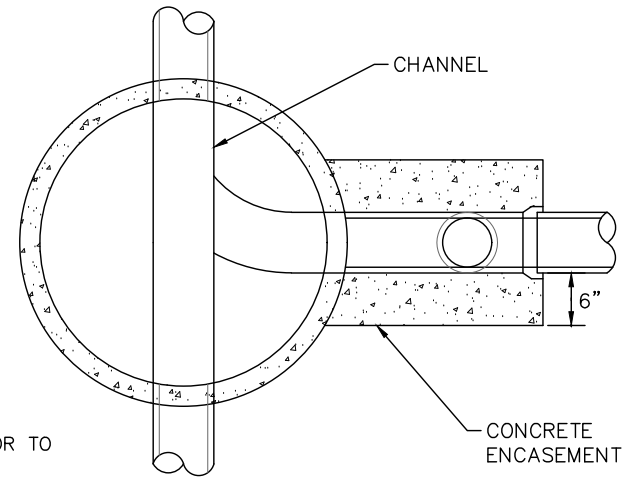


"A"	"B"
8", 10", & 12"	8"
15" & 18"	10"
21" & 24"	12"

DROP CONNECTION MANHOLE



SECTIONAL PLAN B-B

NOTES

A. IF A DROP STRUCTURE IS NECESSARY THE CONTRACTOR MUST NOTIFY THE CITY PRIOR TO ORDERING ANY MATERIALS.

B. LOCATE THE CENTERLINE OF MANHOLE CONES OVER THE CENTERLINE OF THE MAIN SEWER WHENEVER POSSIBLE.

C. TYPE D MANHOLE SHALL BE USED WHERE THE DIFFERENCE IN INVERT ELEVATIONS IS GREATER THAN 2'0".

D. ALL NOTES AND ASTM REFERENCES ON THE TYPE 3 SANITARY MANHOLE APPLY ON THE TYPE D SANITARY DROP MANHOLE.

CITY OF BROOKVILLE	TYPE D SANITARY DROP MANHOLE	REVISIONS:	DATE APPROVED: OCT. 2023
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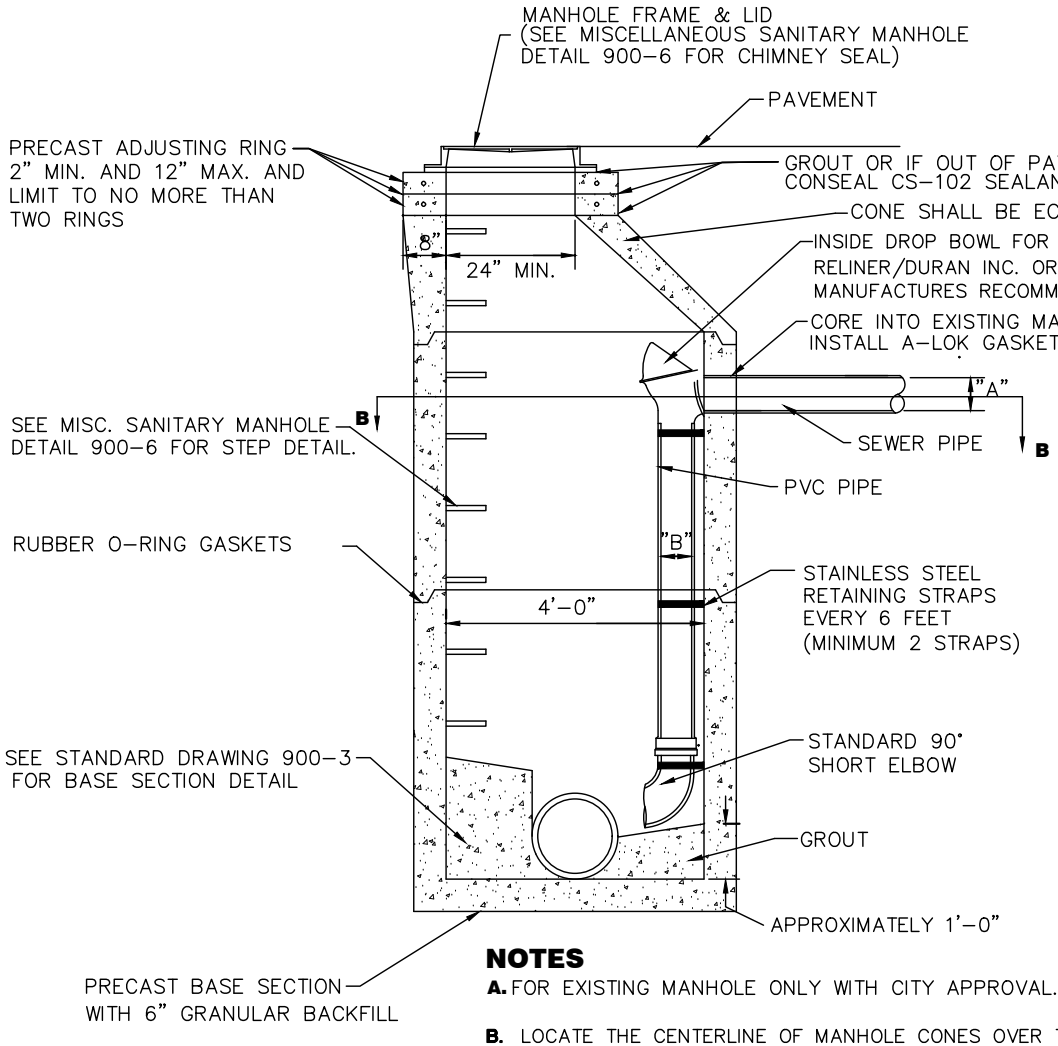
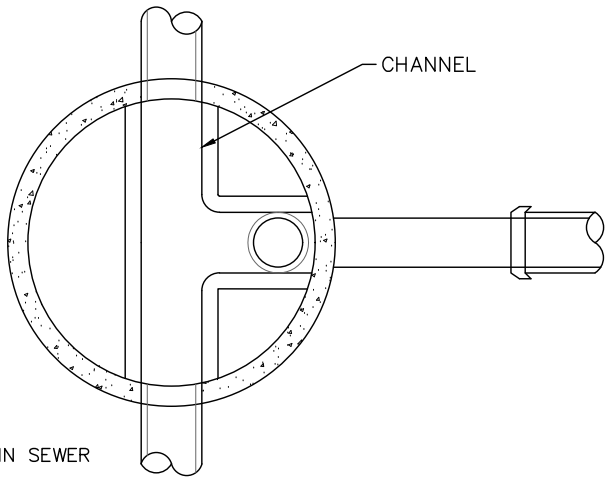


"A"	"B"
8", 10", & 12"	8"
15" & 18"	10"
21" & 24"	12"

DROP CONNECTION MANHOLE



SECTIONAL PLAN B-B

NOTES

A. FOR EXISTING MANHOLE ONLY WITH CITY APPROVAL.

B. LOCATE THE CENTERLINE OF MANHOLE CONES OVER THE CENTERLINE OF THE MAIN SEWER WHENEVER POSSIBLE.

C. INSIDE DROP MANHOLE SHALL BE USED WHERE THE DIFFERENCE IN INVERT ELEVATIONS IS GREATER THAN 2'0" AND ONLY IN SPECIAL CIRCUMSTANCES WHEN PRE–APPROVED BY THE CITY.

D. ALL NOTES AND ASTM REFERENCES ON THE TYPE 3 SANITARY MANHOLE APPLY ON THE INSIDE DROP SANITARY MANHOLE.

CITY OF BROOKVILLE	INSIDE SANITARY DROP MANHOLE	REVISIONS:	DATE APPROVED: OCT. 2023
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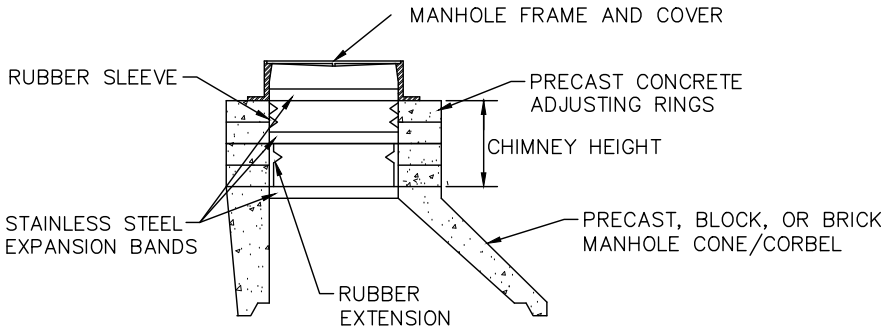
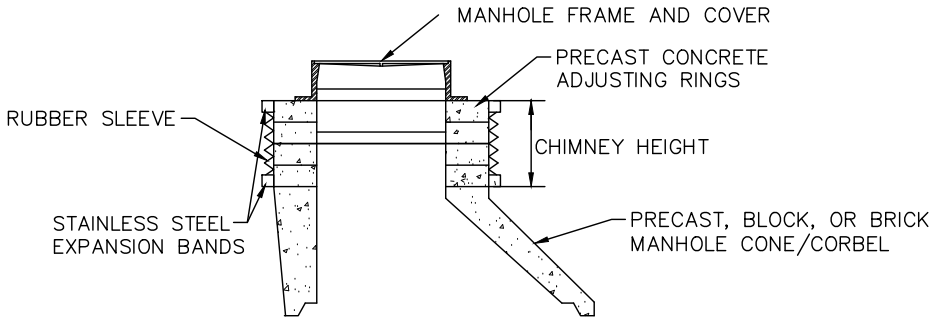


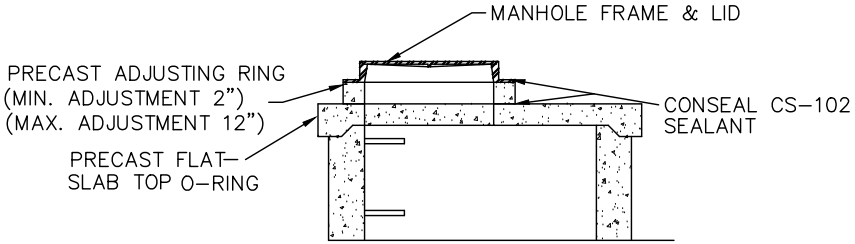
INTERNAL MANHOLE CHIMNEY SEAL (IN PAVEMENT)

(ONLY WHEN REQUIRED BY CITY)

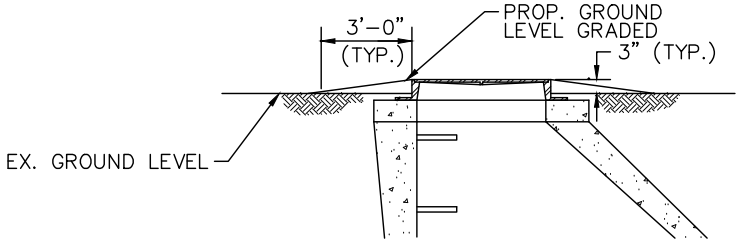


EXTERNAL MANHOLE CHIMNEY SEAL (OUT OF PAVEMENT)

(ONLY WHEN REQUIRED BY CITY)



FLAT TOP SLAB



TYPICAL MANHOLE GRADING

NOTES

A. MANHOLE STEPS SHALL BE SECURLY INSTALLED INTO EACH MANHOLE SECTION, BY THE MANUFACTURER, PRIOR TO DELEVERY TO THE JOB SITE

B. MANHOLE STEPS SHALL BE PF-1 STEP BY M.A. INDUSTRIES OR EQUVILENT

CITY OF BROOKVILLE	MISCELLANEOUS SANITARY MANHOLE DETAILS	REVISIONS:	DATE APPROVED: OCT. 2023
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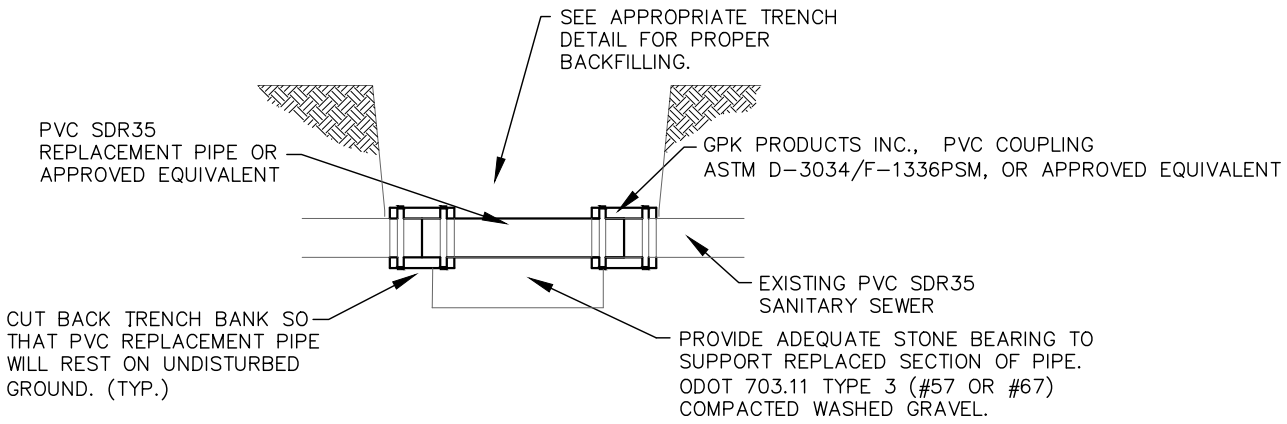
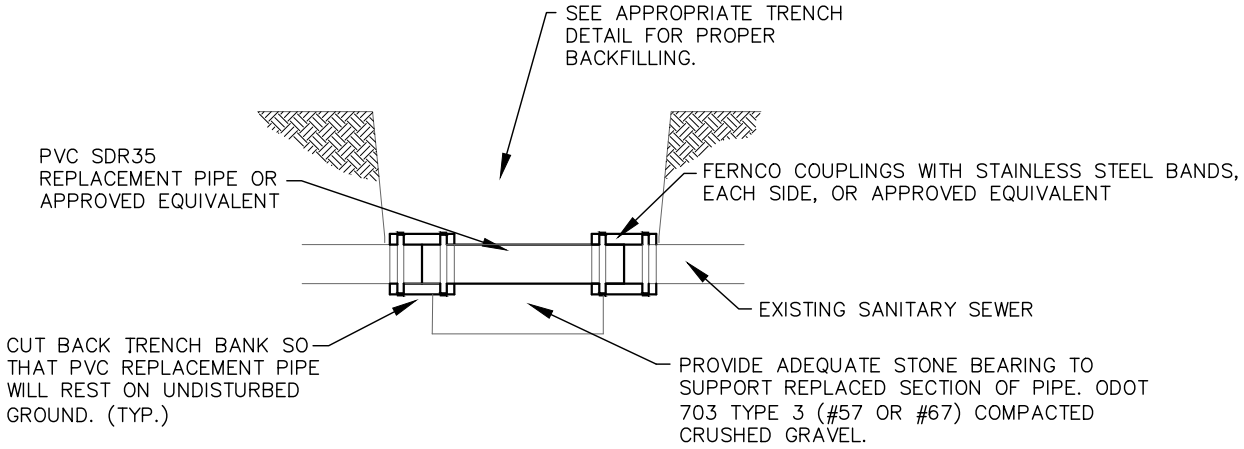


REPAIR OF EXISTING PVC SDR35 SANITARY SEWER



REPAIR OF EXISTING SANITARY SEWER OTHER THAN PVC

NOTES

1. CONCRETE REPAIRS OF PATCHES ARE UNACCEPTABLE.

2. ANY SANITARY SEWER DAMAGED BY THE CONTRACTOR MUST BE REPLACED BY THE CONTRACTOR TO A CONDITION EQUAL TO OR BETTER THAN ITS ORIGINAL CONDITION. ALL REPAIRS MUST BE NOTED ON THE AS-BUILT DRAWINGS AND MUST BE INSPECTED BY THE CITY.

CITY OF BROOKVILLE ChoiceOne Engineering	REPAIR OF EXISTING SANITARY SEWER PIPE DETAIL	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 900-7

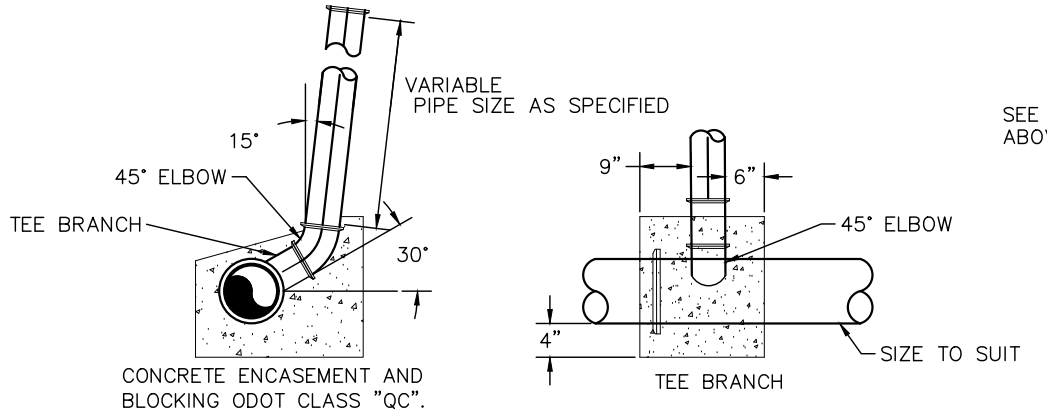
NOTES

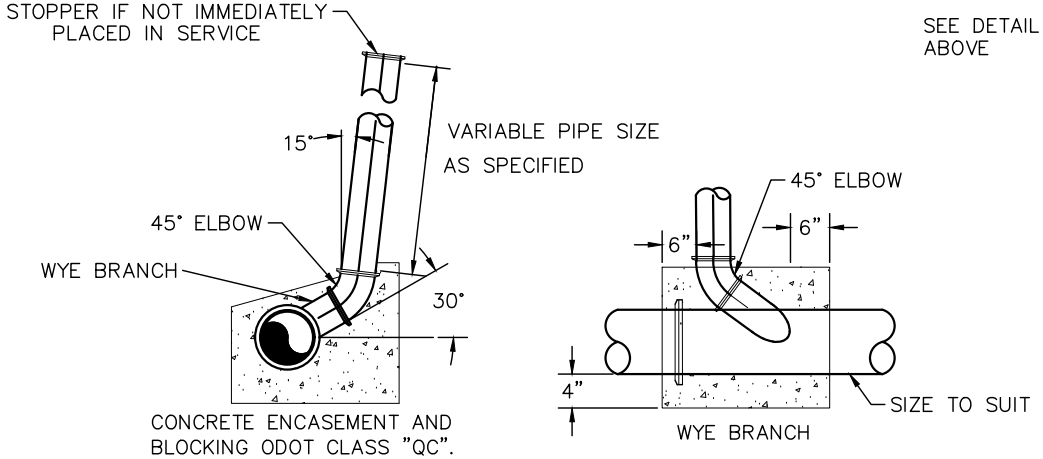
A. RISER PIPE TO BE BEDDED SOLIDLY AGAINST UNDISTURBED GROUND. ALSO, TEE MAY BE SUBSTITUTED FOR WYE BRANCH IF SPECIFIED.

B. RISER PIPE TO BE INSTALLED SO THAT CONNECTING SERVICE SHALL HAVE A MINIMUM DEPTH OF 7' AT THE PROPERTY LINE UNLESS A GREATER DEPTH IS DIRECTED.

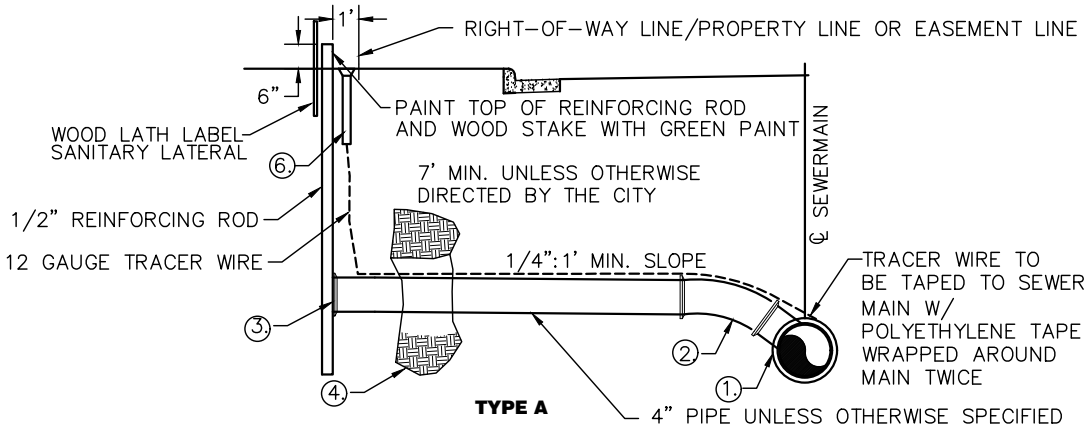
C. CONCRETE ENCASEMENT AND BLOCKING REQUIRED IF DEPTH OF CONNECTION IS 12' OR GREATER.

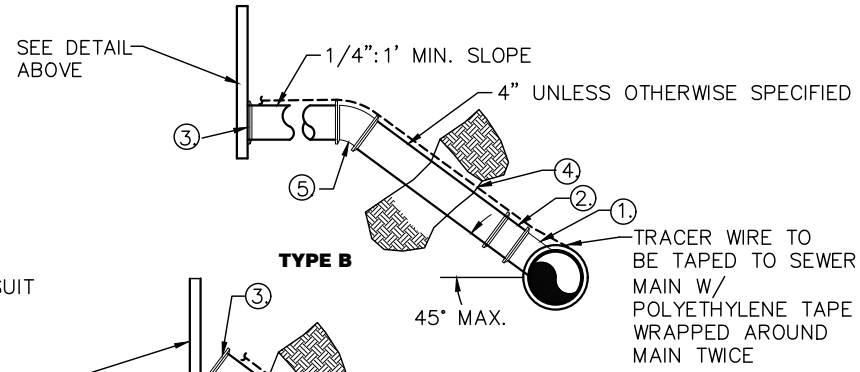
D. EACH SANITARY LATERAL MUST BE IN SEPARATE TRENCHES FROM STORM, WATER, OR OTHER CONDITIONS.

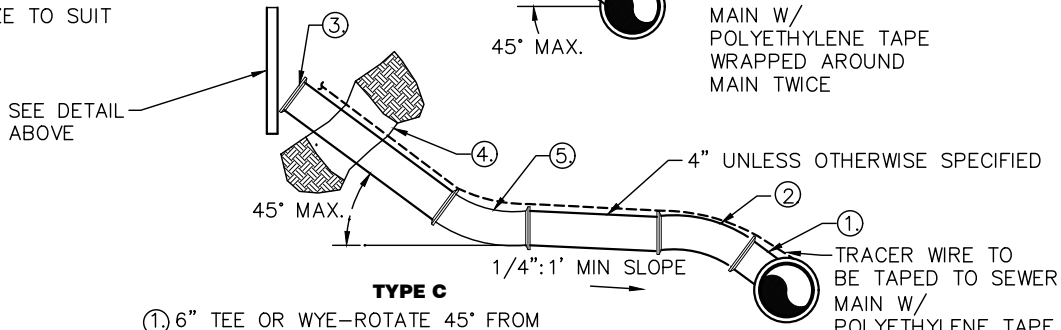




SERVICE RISER







1. 6" TEE OR WYE–ROTATE 45° FROM HORIZONTAL UNLESS OTHERWISE SPECIFIED.
2. 6" 1/8 BEND OR 1/16 BEND AS NEEDED.
3. CAP UNLESS JOINING EXISTING SERVICE LATERAL.
4. BED PIPE WITH 8" GRANULAR MATERIAL AND BACKFILL WITH GRANULAR MATERIAL TO 8" ABOVE PIPE. ODOT 703.11 TYPE 3 #57 OR #67.
5. EXACT RECORD OF BEND LOCATIONS MUST BE MADE, AS TO DEPTH FROM SURFACE AND DISTANCE FROM CENTERLINE OF SEWER, BEFORE BACKFILL IS PLACED.
6. SNAKE–PIT LITE DUTY AT–GRADE TRACER WIRE ACCESS POINT, W/ TWO–TERMINAL SWITCHABLE LID (APPLIES TO ALL TYPES)

SERVICE LATERAL

CITY OF BROOKVILLE	SERVICE RISER AND SERVICE LATERAL	REVISIONS:	DATE APPROVED: OCT. 2023
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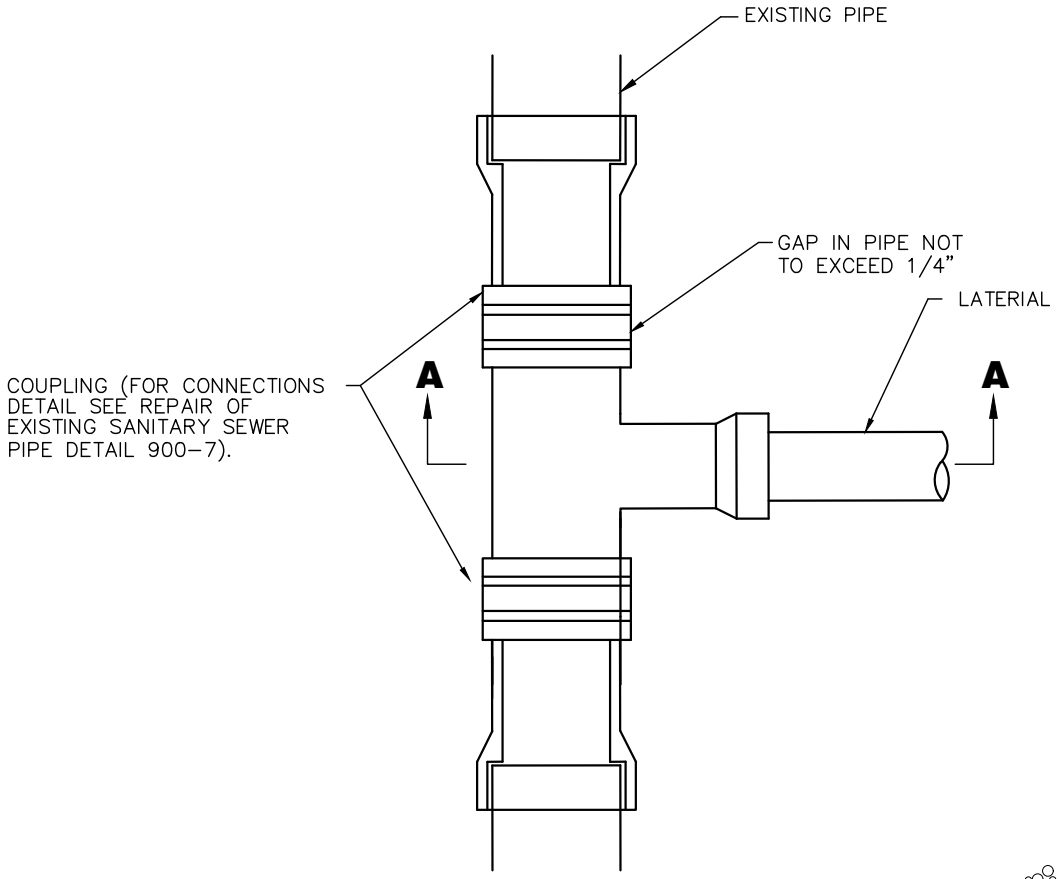
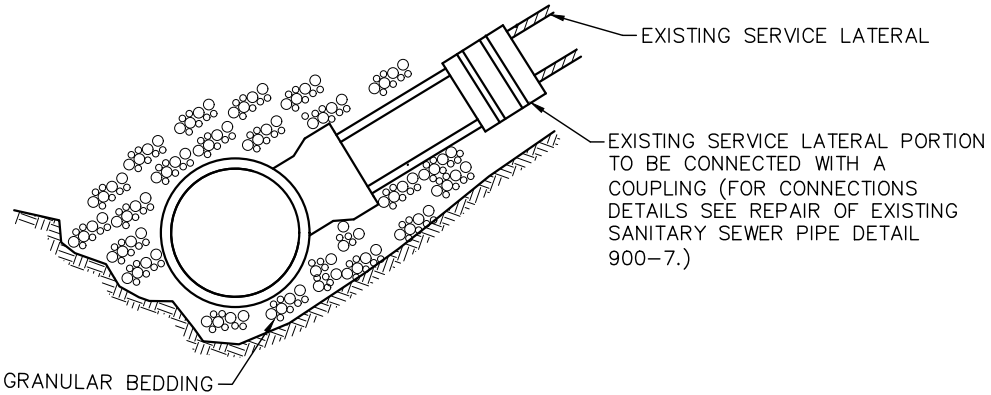


SERVICE LATERAL



SECTION A-A

CONNECTION DETAIL

NOTES

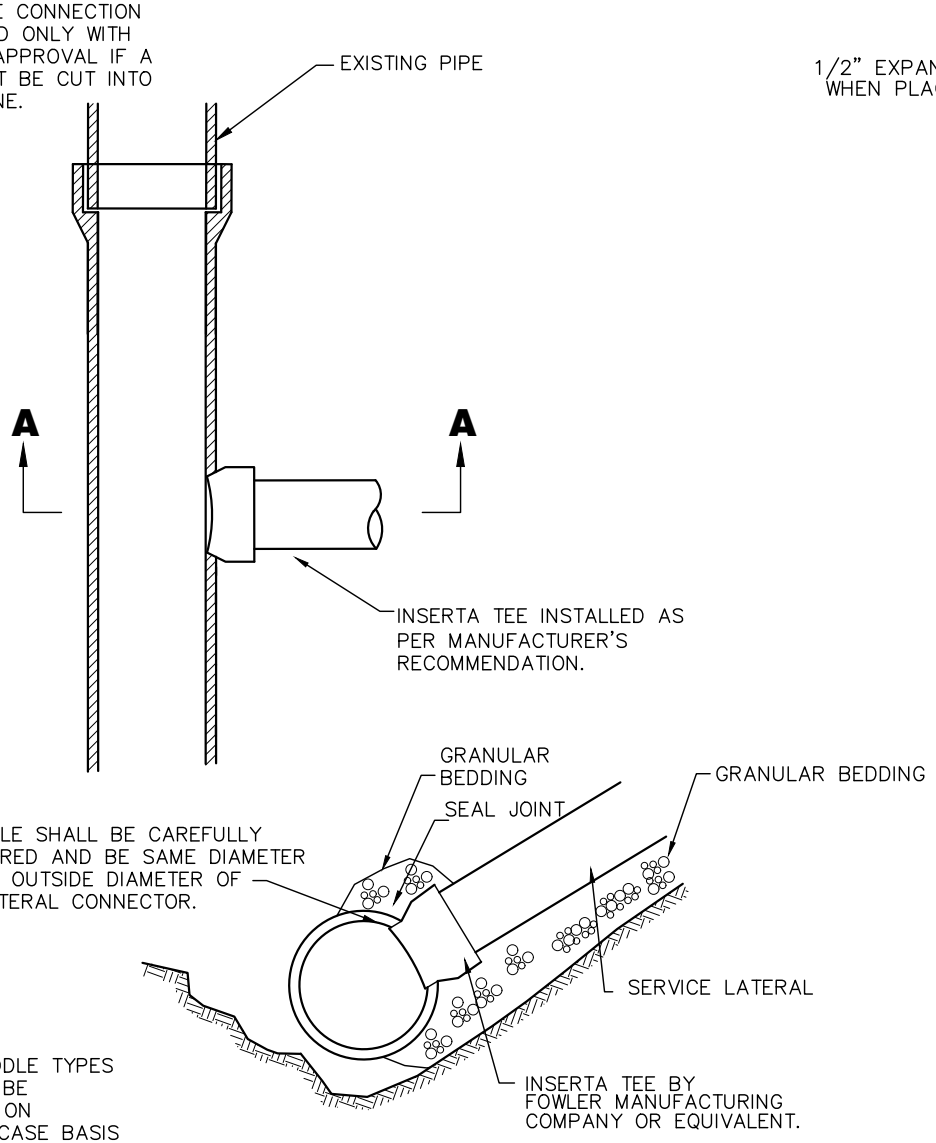
1. A TEE MAY BE CUT IN ONLY IF AN EXISTING LATERAL IS NOT PROVIDED. THIS METHOD IS PREFERRED OVER A SADDLE TYPE CONNECTION.

2. ALL TAPS MUST BE INSPECTED AND APPROVED BY THE CITY PRIOR TO BACKFILLING.

3.. TRACER WIRE IS TO BE PROVIDED ON NEW SERVICE LATERAL AND TERMINATED AS REQUESTED BY THE CITY.

CITY OF BROOKVILLE ChoiceOne Engineering	SANITARY SEWER CONNECTION DETAILS	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 900–9

SADDLE TYPE CONNECTION MAY BE USED ONLY WITH PRIOR CITY APPROVAL IF A TEE CAN NOT BE CUT INTO THE MAIN LINE.

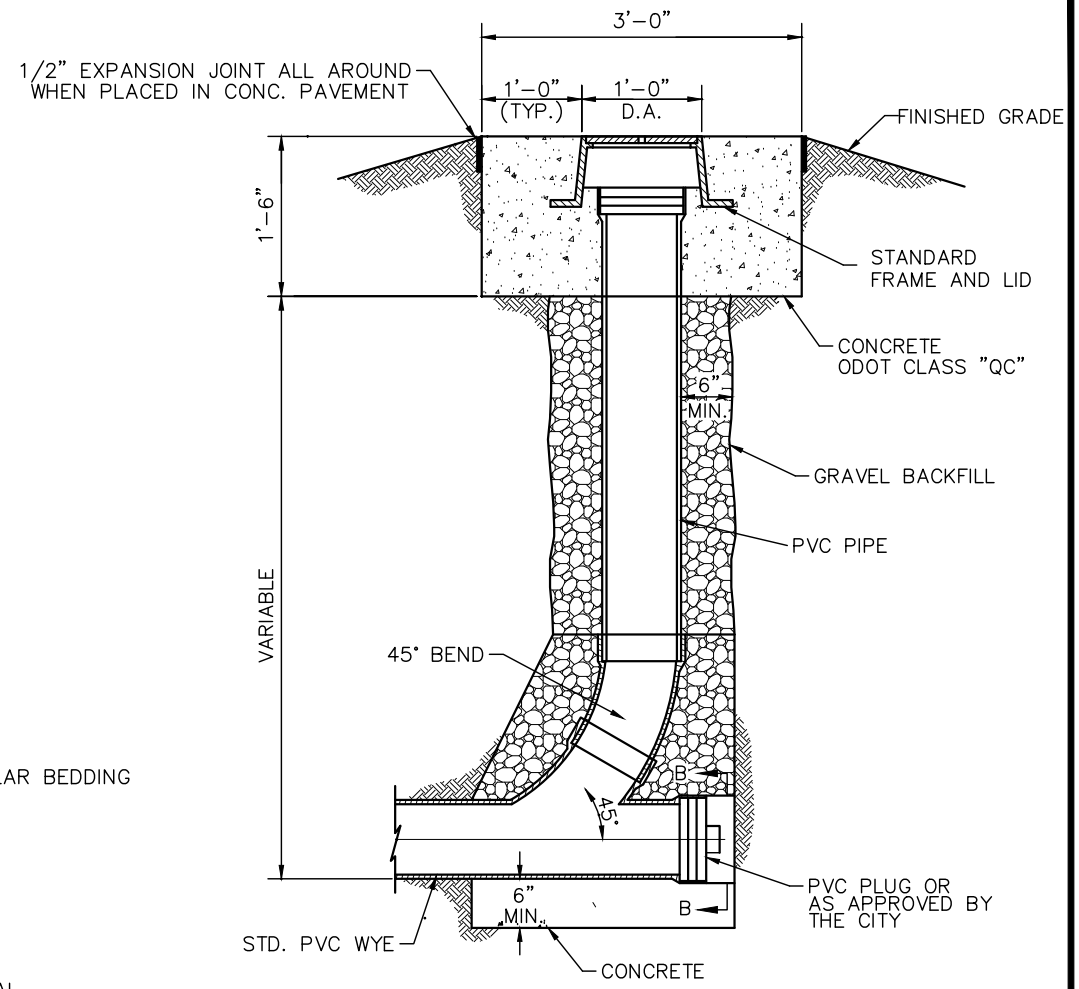


OTHER SADDLE TYPES THAT MAY BE APPROVED ON CASE-BY-CASE BASIS DEPENDING ON SITUATIONS ARE ROMAC STYLE "CB" SEWER SADDLE AND DFW/HPI FLEXIBLE SADDLE.

SECTION A-A

INSERTA TEE DETAIL

NOT TO SCALE

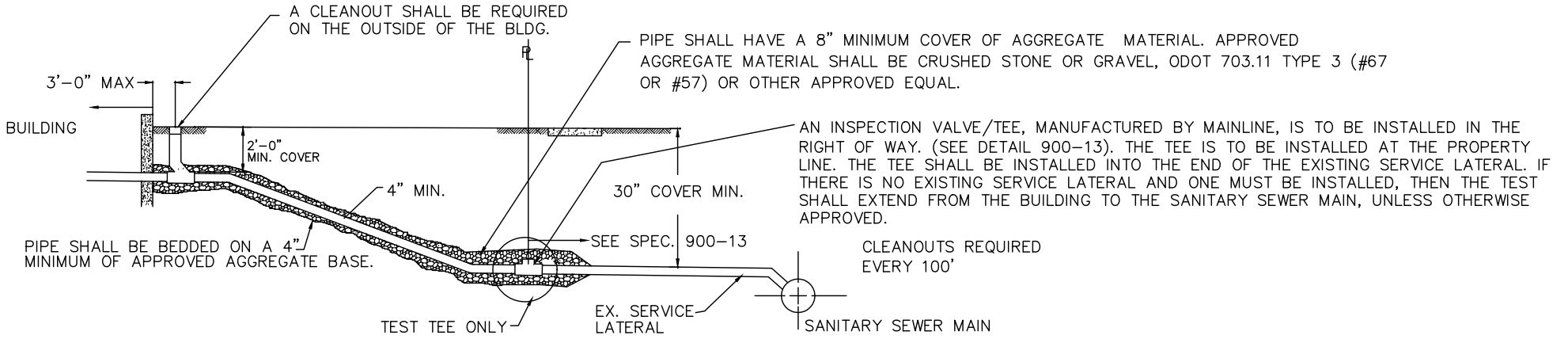


NOTE:
CLEANOUT FRAMES AND LIDS SHALL BE EQUAL OF NEENAH CATALOG No. R-1976 OR EAST JORDAN IRON WORKS 1578PT FRAME/1578A LID

CLEANOUT DETAIL

NOT TO SCALE

CITY OF BROOKVILLE ChoiceOne Engineering	**SANITARY SEWER CLEANOUT AND INSERTA TEE DETAILS**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 900-10



NOTES

A. SEPTIC TANKS, WHEN ABANDONED, SHALL BE DEWATERED AND PROPERLY FILLED WITH GRANULAR MATERIAL WITH ALL TILES BEING PLUGGED WITH CONCRETE.
B. ROOF DOWNSPOUTS, EXTERIOR FOUNDATION DRAINS, AREAWAY DRAINS OR OTHER SURFACE RUNOFF OR GROUNDWATER SHALL NOT BE CONNECTED TO THE SANITARY SEWER MAIN. BASEMENTS MUST HAVE A FLOOR DRAIN AND BE CONNECTED TO THE STORM SEWER (SUMP PUMP).
C. BEFORE BEGINNING WORK, A SEWER TAP PERMIT MUST BE OBTAINED.
D. WHEN THE BUILDING CONNECTION MUST ENTER INTO A PAVED PORTION OF THE STREET OR ALLEY, NOTIFICATION MUST BE DONE BEFORE BEGINNING WORK.
E. WATER SERVICES SHALL BE A MINIMUM OF 10' MEASURED HORIZONTALLY FROM THE SEWER SERVICE AND SHALL BE A MINIMUM OF 18" VERTICAL SEPARATION WHERE THE WATER SERVICE CROSSES THE SEWER MAIN.

PIPE

A. THE PIPE MATERIAL SHALL BE PVC SDR 35, SCHEDULE 40, UTILIZING PURPLE PRIMER, OR AN APPROVED EQUIVALENT.
B. PIPE SIZES FOR BUILDING CONNECTIONS SHALL BE 4" MINIMUM FOR SINGLE AND TWO-FAMILY RESIDENCE AND 6" MINIMUM FOR ALL OTHER USES. THE LATERALS SHALL BE RAN TO WITHIN 3' OF THE OUTSIDE OF THE BUILDING.

INSPECTION

A. A TAP INSPECTION SHALL BE REQUIRED ON ALL NEW BUILDING CONNECTIONS AND ALSO ON THE REPLACEMENT OF EXISTING BUILDING CONNECTIONS.
B. WHEN THE BUILDING SEWER IS READY FOR INSPECTION, THE CITY SHALL BE GIVEN 24 HOURS ADVANCE NOTICE. THE PIPE SHALL BE LEFT UNCOVERED UNTIL AN INSPECTION HAS BEEN MADE AND APPROVED.
C. ALL NEW LATERALS SHALL BE INSTALLED WITH AN INSPECTION VALVE/TEE, MANUFACTURED BY MAINLINE, LOCATED AT THE PROPERTY LINE. ANY NEW BUILDING CONNECTION INSTALLED WITHOUT AN INSPECTION SHALL RESULT IN NO ISSUANCE OF A WATER METER FOR THE BUILDING. IF THIS OCCURS, THE ENTIRE LATERAL SHALL BE UNCOVERED SO THAT A PROPER INSPECTION CAN BE MADE.
D. NO TAP FEE IS REQUIRED IF AN OLD BUILDING SEWER IS TO BE REUSED. AN INSPECTION WILL BE REQUIRED. THE PUBLIC UTILITY DEPT. SHALL INSPECT THE ENTIRE BUILDING CONNECTION FROM THE CLEANOUT TO THE PROPERTY LINE CONNECTION OR TO THE MAIN SEWER, WHICHEVER IS APPLICABLE.
E. WHEN A SADDLE IS TO BE INSTALLED, THE INSPECTOR SHALL BE PRESENT WHILE THE SANITARY SEWER MAIN IS BEING CUT INTO. A SADDLE MAY BE USED WHERE A TEE OR WYE IS NOT PRESENT FOR LATERAL CONNECTION AND WHERE FLOW IS TO GREAT TO ALLOW THE MAIN TO BE CUT. ALWAYS COMPLETELY ENCASE CONNECTIONS AT ANY DEPTH 12' AND OVER AS APPROVED BY THE CITY.

TESTING

A. THE OUTSIDE PLUMBER SHALL BE RESPONSIBLE FOR THE TESTING FROM THE CONNECTION TO THE EXISTING SERVICE LATERAL TO THE CLEANOUT.
B. ALL NEW BUILDING CONNECTIONS SHALL BE BY AIR WITH 4 PSI PRESSURE.
C. THE SEWER TEST SHALL BE FROM THE CLEANOUT TO THE PROPERTY LINE CONNECTION OR TO THE MAIN SEWER, WHICHEVER IS APPLICABLE.
D. WHEN A SUBSTANTIAL AMOUNT OF AN EXISTING LATERAL IS REPLACED, THE NEW PORTION OF THE LATERAL SHALL REQUIRE A TEST UNLESS OTHERWISE APPROVED.

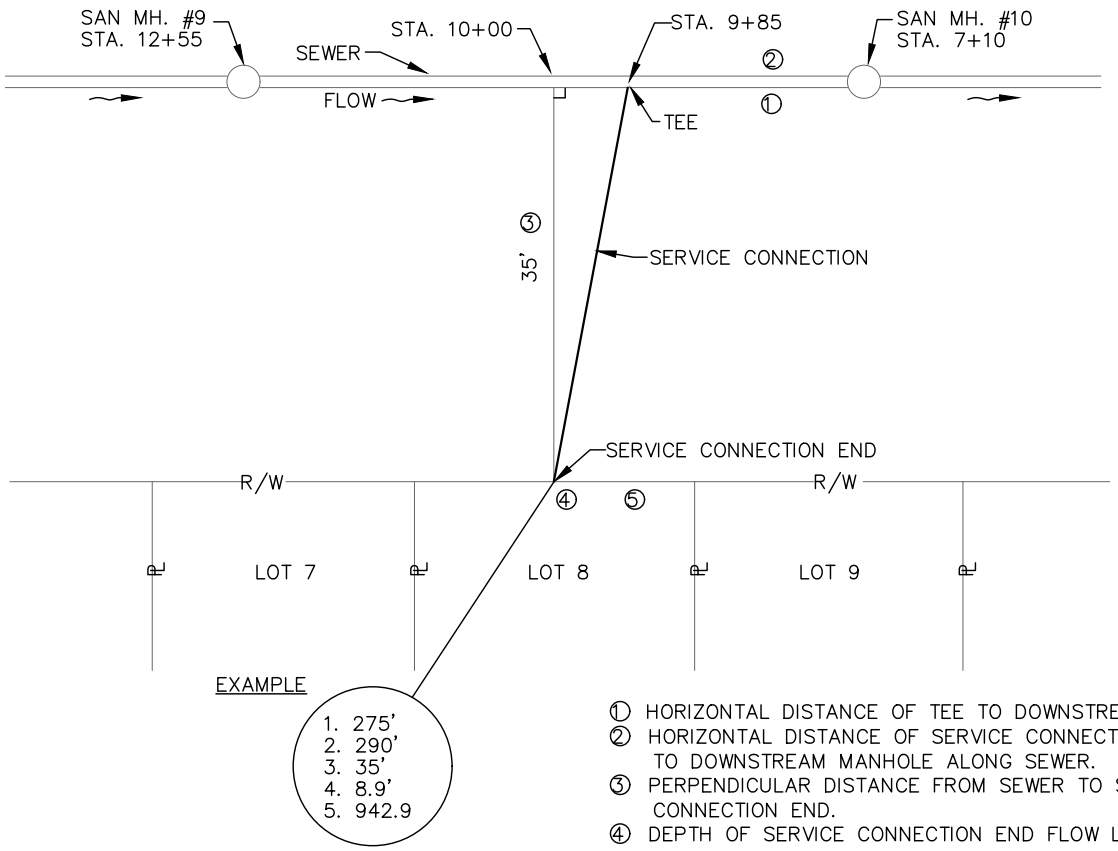
MISC.

A. STREET EXCAVATION REQUIRES NOTIFICATION.
B. BASEMENTS MUST HAVE A FLOOR DRAIN AND BE CONNECTED TO THE STORM SEWER (SUMP PUMP).

PIPE LAYING

A. THE OPEN ENDS OF ALL PIPES SHALL BE PLUGGED OR OTHERWISE CLOSED WITH A WATERTIGHT PLUG TO THE APPROVAL OF THE CITY BEFORE LEAVING THE WORK SITE FOR THE NIGHT.
B. THE JOINING OF PIPE WITH CONCRETE SHALL NOT BE ACCEPTED.
C. BEFORE MAKING A CONNECTION TO AN EXISTING SEWER OR SERVICE LATERAL, THE CONTRACTOR SHALL CHECK THE EXISTING PIPE BY UTILIZING A SEWER EEL, STRAP, DYE TESTING, TV CAMERA, OR SEWER ROD TO SEE THAT THE EXISTING PIPE IS CONNECTED TO THE SANITARY SEWER MAIN.
D. IN THE CASE WHERE A 90° CORNER IS REQUIRED IN THE BUILDING CONNECTION LINE, 2 45° BENDS SHALL BE USED IN LIEU OF A 90° BEND.
E. THE BUILDING CONNECTION LINE SHALL BE LAID IN AS STRAIGHT A LINE, FROM THE BUILDING TO THE EXISTING LATERAL, AS POSSIBLE.
F. ANY TWO-FAMILY RESIDENCE THAT HAS AN EXISTING 4" LATERAL AVAILABLE TO THE LOT SHALL BE REQUIRED TO SEPARATE THE 4" COMMON LATERAL INTO INDIVIDUAL LATERALS, WITH CLEANOUTS, ON THE OUTSIDE OF THE BUILDING UNLESS OTHERWISE APPROVED.
G. ALL NEW CONSTRUCTION SHALL HAVE SANITARY LATERALS INSTALLED.

CITY OF BROOKVILLE ChoiceOne Engineering	# BUILDING CONNECTION DETAIL	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 900-11

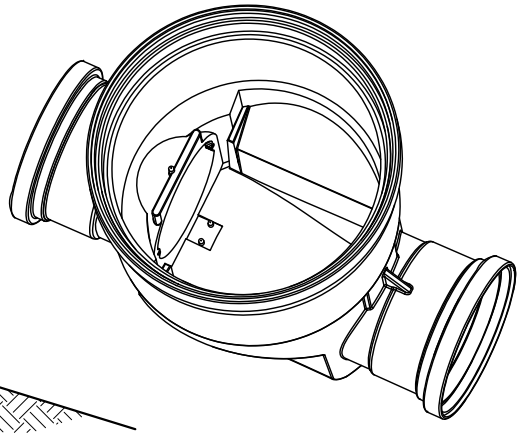


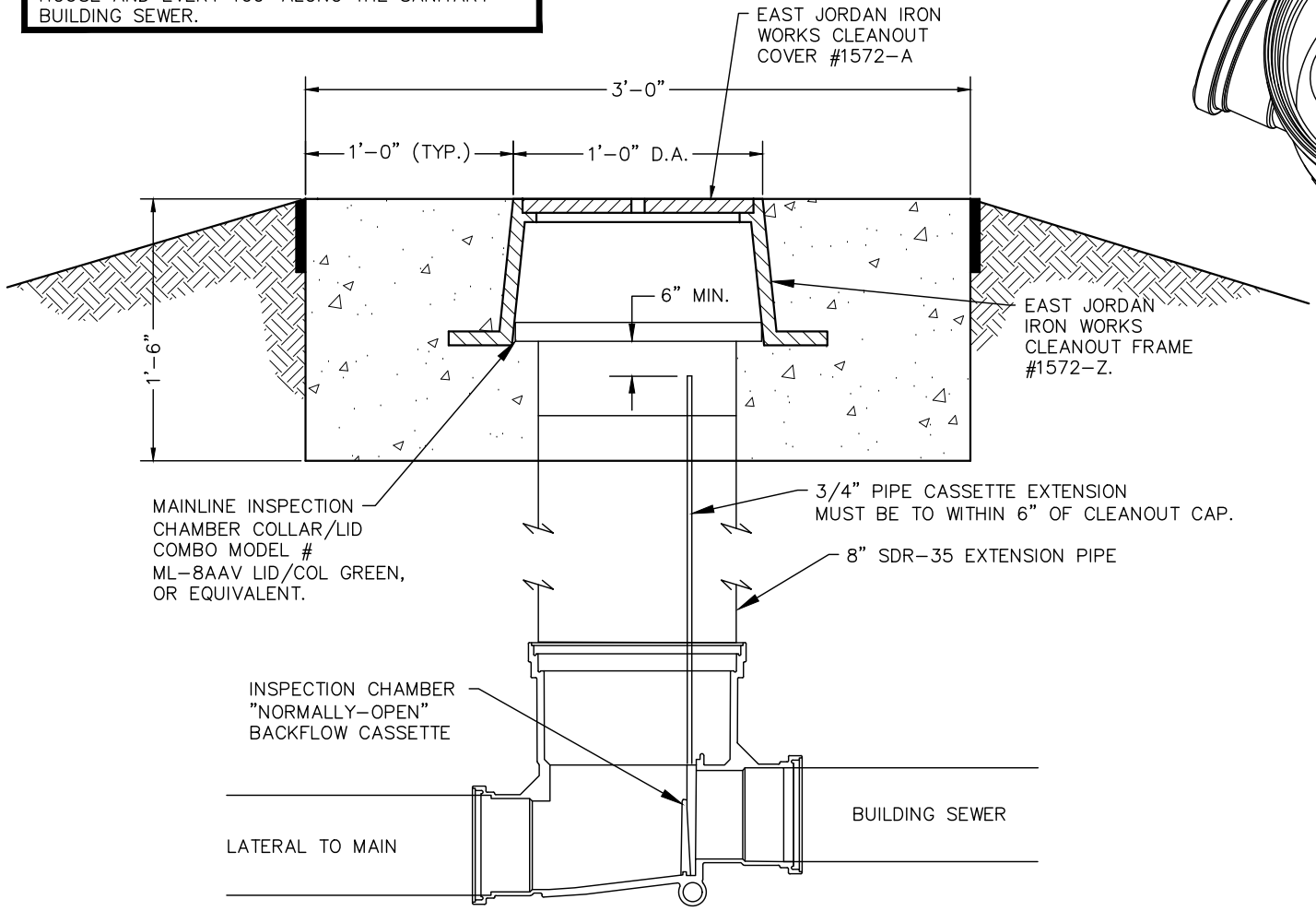
① HORIZONTAL DISTANCE OF TEE TO DOWNSTREAM MANHOLE.
② HORIZONTAL DISTANCE OF SERVICE CONNECTION END TO DOWNSTREAM MANHOLE ALONG SEWER.
③ PERPENDICULAR DISTANCE FROM SEWER TO SERVICE CONNECTION END.
④ DEPTH OF SERVICE CONNECTION END FLOW LINE TO ORIGINAL GROUND.
⑤ ELEVATION OF SERVICE CONNECTION END FLOW LINE.

CITY OF BROOKVILLE ChoiceOne Engineering	**SERVICE CONNECTION LOCATION REFERENCE**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 900–12

CAST IRON CLEANOUT COVER SHALL BE USED IN ALL APPLICATIONS WHERE CLEANOUT WILL BE SUBJECT TO VEHICULAR TRAFFIC.

THIS CLEANOUT IS TO BE USED OUTSIDE THE HOUSE AND EVERY 100' ALONG THE SANITARY BUILDING SEWER.





INSPECTION VALVE/TEE DETAIL

INSPECTION VALVE/TEE SHALL BE MANUFACTURED BY MAINLINE OR AN APPROVED EQUIVALENT. INSPECTION VALVE/TEE PLACED IN RIGHT-OF-WAY INLINE WITH WATER METER PREFERRED.

CITY OF BROOKVILLE ChoiceOne Engineering	**PUBLIC SANITARY SEWER CLEANOUT DETAIL**	REVISIONS:	DATE APPROVED: OCT. 2023 PAGE No. 900-13