NOTES

GENERAL: This drawing shows alternate types of curb that may be used on various types of pavement. The typical section of the project shows the type to be used, also the thickness of the edge of the pavement or the edge of the curb and gutter section.

JOINTS: 1" expansion joints shall extend up to the top of the curb and shall be constructed in the curb and gutter section in such a manner that the joint seal will extend the full width of the gutter and into the curb face a sufficient distance to seal the joint to an elevation of at least 2" above the flow line of the gutter. Dowel bars shall be used in the curb and gutter section of expansion joints and to the surface of the pavement.

Type 3-A 3" rad.

JOINTS: Transverse expansion joint material shall meet the requirements of Item 705.03.  

GUTTER PLATE THICKNESS: Thickness of gutter plate "T" shall be 9" unless otherwise shown on the plans.

TOLERANCES: Dimensional tolerances are as follows:

CURB-BASE TO 2½".  CURB 2½ TO 4½"

PREFORMED JOINT

Material, Item 705.03

Legends

- Expansion joint material and joint sealer are not required for the portion of the curb that is adjacent to a flexible pavement type. Both materials are required, as detailed, for the full height of rigid pavement and concrete bases.
- Butt joints shall be provided between combined curb-and-gutter and new or existing rigid pavements, with tie bars or hook bolts provided at intervals of 5'. See SCD BP-2.1 for details of tie bars and hook bolts.
- If the combined curb-and-gutter adjuts a new rigid base or an existing rigid base or pavement that is to be surfaced with asphalt concrete, a butt joint shall also be provided. However, the tie bars or hook bolts shall be omitted when the vertical overlap "u" in detail below between the curb-and-gutter and rigid pavement is less than 1".

Surface Material

NOTES

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Surface Material
Use curb ramps with flared sides where buffer is wide enough to accommodate ramp slope.

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

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

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 the constraints and all items can be constructed to ADA standards. The contractor may adjust the placement of curb ramps if existing field conditions warrant with the approval of the Engineer.

For all grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the cost of detectable warnings as Item 608 Detachable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

For at-grade crossing locations where only detectable warnings are required in order to achieve ADA compliance, measure and pay for the cost of detectable warnings as Item 608 Detachable Warning, Square Foot. The work to cast the tiles in place will also require removal of existing pavement (Item 202) to the nearest joint, or if no joint exists, a minimum of 4 feet.

PAYMENT: Measure and pay for the ramp area within the shaded limits of this drawing as Curb Ramp, Square Foot. This includes the cost of any curb or curb and gutter, detectable warnings, landing areas and any additional materials, installation, grading, forming, and finishing required within the shaded area.

Work beyond the shaded ramp/landing area is paid for as curb (609) and walk (608). Removal of existing curb, walk or existing curb ramps are paid under Item 202.

Acceptable design on corners with wide turning radius where user is able to maneuver without crosswalk limits so as not to encroach into adjacent traveled lanes.

Acceptable design for retrofit only where utilities prevent using a preferred layout.
The running slope of the curb ramp shall be a 50:1 maximum 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) 50:1 for a max. rise of 6”.
B) 50:1 for a max. rise of 12”.
C) 50:1 for a max. rise of 24”.

To prevent choking the drains indefinitely, the transition from existing sidewalk to the shaded curb ramp area is not required to exceed 6 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 10:1 or flatter.

The bottom edge of the ramp shall change plane 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 50:1 or flatter cross slope and running slope.

**DETECTABLE WARNINGS:** Install detectable warnings on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer’s written instructions.

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

**SURFACE TEXTURE:** Texture concrete surfaces by coarse brooming transverse gutter, and 2) gutter and ramp, are not allowed.

**JOINTS:** Provide expansion joints in the curb ramp as extensions of walk joints, and consistent with Item 608.03 requirements for a new concrete walk. Provide a max. than 100:03 expansion joint (per) around the edge of ramps built in historic areas where a flatter slope is not feasible.

C) 6:1 over a max. run of 2’-0” for A) 10:1 for a max. rise of 6”.

**SLOPES:** May be reduced as follows:

- 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:

- 10:1 for a max. rise of 6”.
- 10:1 for a max. rise of 12”.
- 10:1 for a max. rise of 24”.

- The bottom edge of the ramp shall change plane 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 50:1 or flatter cross slope and running slope.

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- 6:1 over a max. run of 2’-0” for A) 10:1 for a max. rise of 6”.
DETECTABLE WARNINGS NOTES

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

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

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

ALIGNMENT: Truncated domes should be aligned with the primary direction of the ramp as shown on the DETECTABLE WARNING ALIGNMENT Detail. Normally truncated domes are aligned with the primary direction of the ramp or walk. See DETAIL A. In skewed conditions see DETECTABLE WARNING ALIGNMENT Detail. For non-standard layouts, detectable warning materials may have to be mitered and placed segmentally.

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

SECTION A-A
NORMAL DETAIL
See Sheet 2.

SECTION A-A
EXISTING WALK DETAIL
See Sheet 2.

SECTION B-B
See Sheet 2.

SECTION C-C
See Sheet 2.

SECTION D-D
See Sheet 2.

**Where possible, pour ramp area integral with the curb, otherwise use 6" thick walk.**
The bottom may be precast separately and the outlet pipe placed on top of it with the bottom shaped to drain curb & gutter.

Dowel location for offset station and grate elevation, Location of grate, elev., station and offset. Normal pavement slope.

Pavement block out for straight transverse slope.

Location of grate, elev., station and offset! Normal gutter, elevation.
NOTES

DRAFTS: Two required. For details, see SCD CB-2.2.
Provide grate "V" unless the plans specifically require the diagonal grate, if the diagonal grate is specified, place it so that the diagonal bars direct drainage flow toward the curb.

CASTINGS: Provide a design essentially the same and equally as strong as the one shown. Minimum weight:
- Curb Casting . . . . 305 lbs.
- Two grates . . . . 254 lbs.
- Frame . . . . 590 lbs.

Lighter weight frames and grates that meet the requirements of CMS 714.75 may also be provided. Provide grate openings and dimensions as shown here unless otherwise shown in the plans.

Cast the following text into the top of the curb casting:
"DUMP NO WASTE" and "DRAINS TO WATERWAY"
Print text in bold, capital letters at least 3" high. See example on Plan & Section. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

Print text in bold, capital letters at least 3" high. See example on Plan & Section. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logo may vary per manufacturer.

BEARING AREAS: Fit and finish the frame and grate to provide a firm and even seat. No projections are permitted on bearing areas, and the grate must seat in its frame without rocking.

WALLS: Must be made of concrete. Construct brick side walls with 8" nominal thickness.

PRECAST CONSTRUCTION: Permitted, except for the top, must meet CMS 706.3 concrete requirements. Provide precast walls at least 8" thick with sufficient reinforcing to permit shipping and placement without damage. Reduce the wall thickness from the outside.

MINIMUM DEPTH: The minimum depth is per the cover requirements for that pipe type.

OPENINGS: Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 611.

DOWELS: Furnish four 1" x 18" dowels for concrete pavement or gutter blockout. See SCD BP-2.2 for dowel details.

BLOCKOUTS: Pour blockouts with 4000 psi compressive strength concrete in SCD pavement or gutter. Blockouts are paid for as part of the pavement or gutter with no deduction in pavement, curb or gutter quantities because of the castings. Cast a 4000 psi compressive strength concrete apron, the size of the 2'-0" gutter blockout, in places in asphalt pavement (no dowels required) with the cost included in the catch basin bid price. No deduction is made in curb quantities.

PAYMENTS: All materials and labor, including excavation and backfilling, are paid for under Item 611 - Catch Basin, No. 3.
LOCATION OF CURB, ELEV., STATION AND OFFSET

SECTION A-A

Location of grate, elev., station and offset (2" DEPRESSION)
PLAN

SECTION D-D
(See Sht. 1/2)

SECTION C-C
DIAGONAL GRATE
(See Sht. 1/3)

SECTION Y-Y
(See Sht. 1/2)

PLAN
GRATE "V"

PLAN
END VIEW FRAME

FRAME
FRONT VIEW

FRONT VIEW
CURB CASTING

END VIEW
CURB CASTING
NOTES

GRATE AND FRAME: Provide a design essentially the same and equally as strong as the one shown in the plans.

Cost the following text into the top of the grate:

"DUMP NO WASTE" and "DRAINS TO WATERWAY"

Print text in bold, capital letters at least 1" high. "WATERWAY" may be substituted with "STREAM", "RIVER", "LAKE", etc. Actual placement and logos may vary per manufacturer.

BEARING AREAS: Fit and finish frame and grate to provide a firm and even seat for all portions of the grate in the frame. No projections are permitted on the grate or frame. Fit, match and mark frame and grate before delivery to the project.

WALLS: Construct brick or cast-in-place walls with a nominal thickness of 8". Provide precast walls at least 6" thick with sufficient reinforcing to permit shipping and handling without damage.

CONCRETE: Use 4000 psi for cast-in-place concrete. Meet the requirements of CMS 706.13 for precast concrete and mark with the catch basin number.

MINIMUM DEPTH: The minimum depth is the outside diameter of the outlet pipe plus 6".

OPENINGS: Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per CMS 611.

DOWELS: Furnish four 1" dowels for pavement and curb. See SCD BP-3.2 for dowel detail.

BLOCKOUT APRONS: Use 4000 psi compressive strength concrete. Cost of apron is not included in catch basin price when located in PCC pavement, and no deduction in normal pavement quantities. When adjacent paving is in one or both of the catch basins, the cost of concrete apron is included in the catch basin bid price. Cost of curb, if any, is included in CMS 609. For basins without curbs, the grate elevation is 1" below the normal pavement slope measured at the center of the grate.

PAYMENT: All materials and labor, including excavation and backfilling, are paid for under Item 611 - Catch Basin, No. 6.

CONSTRUCTION INFORMATION

Minimum weight of grate, 210 lbs.

Minimum weight of frame, 265 lbs.
SECTION A-A
(See Sht. 1/2.)

CATCH BASIN No. 6

SECTION B-B
(See Sht. 1/2.)

SHOWN WITH BRICK WALLS

CAST-IN-PLACE CONCRETE
REINFORCED PRECAST CONCRETE
GENERAL NOTE:

1. THE STANDARDS SHOWN HEREIN ARE TO BE CONSIDERED THE MINIMUM REQUIREMENTS. MODIFICATIONS TO THESE STANDARDS TO BE ONLY AS DIRECTED BY THE ENGINEER.

2. THE UNDERGROUND REQUIREMENT IS TO BE CONSIDERED THE STANDARDS FOR NEW CONSTRUCTION. HOWEVER, THIS REQUIREMENT MAY BE WAIVED BY THE CITY ENGINEER IF SUFICIENT EVIDENCE IS PROVIDED BY A REGISTERED PROFESSIONAL ENGINEER DOCUMENTING SPECIFIC CONDITIONS THAT WOULD SUPPORT THE ELIMINATION OF THE UNDERGROUND.

NOTES FOR SIDEWALKS, DRIVE APRONS, CURBS & GUTTER:

1. FLEXIBLE FORMS SHALL BE USED ON ALL CURVES HAVING A RADIUS OF 275’ OR LESS UNLESS SUD FORM METHOD IS USED.

2. CONCRETE SHALL BE CURED CLASS “C11”. AN APPROVED CURING AGENT SHALL BE APPLIED IMMEDIATELY AFTER FINISHING.

3. ALL JOINTS SHALL BE VERTICAL AND EITHER PERPENDICULAR OR RACIAL TO THE BACK OF CURB.

4. EMBANKMENT BEHIND THE CURB SHALL BE PLACED BEFORE PAVEMENT WORK IS BEGUN.

5. DOWELS AND EXPANSION JOINT MATERIAL SHALL BE PLACED AT CATCH BASINS AND COLD JOINTS WHERE NEW CURB MEETS EXISTING CURB. DOWEL 1/4” LONG X 1/2” DIAMETER REBAR INSERTED 9” INTO A 3/4” DIAMETER HOLE DRILLED INTO THE EXISTING CURB.

6. WIRE MESH IS NOT PERMITTED IN APRONS OR SIDEWALK WITHIN THE RIGHT OF WAY.

7. FOR NEW DRIVE APRONS WITH EXISTING CURB, SAMPLING OF THE EXISTING BAK OF CURB MAY BE PERMITTED UNDER SPECIFIC RESTRICTIONS WITH PRIOR APPROVAL FROM THE ENGINEER.

1 2 3 4 5

PERMANENT REPAIR

1. ITEM 441 – 1.25” ASPHALT CONCRETE SURFACE COURSE, TYPE I, (448), PG 64-22 (MATCH EXISTING SCAFFOLD COURSE OR MINIMUM 4.5” THICKNESS)

2. ITEM 301 – ASPHALT CONCRETE BASE, PG 64-22

3. ITEM 304 – 4” AGGREGATE BASE

4. COLD PATCH – 4” THICKNESS (SEE NOTE BELOW)

5. ITEM 304 – 10” AGGREGATE BASE

NOTE: WHEN CONDITIONS PROHIBIT PROPER PLACEMENT OF HOT MIX MATERIAL, COLD PATCH SHALL BE USED AND MAINTAINED AS DIRECTED BY THE ENGINEER UNTIL PERMANENT REPAIR CAN BE MADE. ALL PERMANENT REPAIRS SHALL BE MADE PRIOR TO THE FOLLOWING JUNE 1ST.

PAVEMENT PATCH DETAIL

- FINISHED GRADE SHALL BE 1/4” ABOVE THE GUTTER PLATE.

- SEAL CUTTER PER SQ. FT. ITEM 401.15 (NOT APPLIED Joint Sealer, 4” UNIFORM WIDTH)

- ODOT TYPE 3 CURB

- ITEM 441 – 1.25” ASPHALT CONCRETE SURFACE COURSE, TYPE I, (448), PG 64-22

- ITEM 407 – TACK COAT (APPLICATION RATE OF 0.05 TO 0.10 GALLONS/SQUARE YARD)

- ITEM 441 – 1.75” ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)

- ITEM 301 – 5” ASPHALT CONCRETE BASE

- ITEM 304 – 4” AGGREGATE BASE

- ITEM 605 – 4” SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP

LOCAL STREET PAVEMENT SECTION

- ITEM 441 – 1.5” ASPHALT CONCRETE SURFACE COURSE, TYPE I, (448), PG 64-22

- ITEM 407 – TACK COAT (APPLICATION RATE OF 0.05 TO 0.10 GALLONS/SQUARE YARD)

- ITEM 441 – 2.5” ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)

- ITEM 301 – 6” ASPHALT CONCRETE BASE

- ITEM 304 – 4” AGGREGATE BASE

- ITEM 605 – 4” SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP

ARTERIAL/COLLECTOR STREET PAVEMENT SECTION

- ITEM 441 – 1.5” ASPHALT CONCRETE SURFACE COURSE, TYPE I, (448), PG 64-22

- ITEM 407 – TACK COAT (APPLICATION RATE OF 0.05 TO 0.10 GALLONS/SQUARE YARD)

- ITEM 441 – 2.5” ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)

- ITEM 301 – 6” ASPHALT CONCRETE BASE

- ITEM 304 – 4” AGGREGATE BASE

- ITEM 605 – 4” SHALLOW PIPE UNDERDRAINS WITH FABRIC WRAP
SECTION A-A
INSERT/RETROFIT TYPE B2
RAMP PER ODOT SCD BP-7.1

SECTION B-B
INSERT/RETROFIT TYPE C1
RAMP PER ODOT SCD BP-7.1

SECTION C-C
INSERT/RETROFIT TYPE C2
RAMP PER ODOT SCD BP-7.1

EXISTING CURB AND GUTTER REMOVED AND REPLACED
EXISTING GUTTER FILLED WITH ASPHALT CONCRETE AND REPLACED
EXISTING BARRIER CURB REMOVED AND REPLACED

LEGEND:
1. ITEM 44 - 9" ASPHALT CONCRETE SURFACE COURSE, TYPE I (648H), PG 66-22
2. ITEM 44A - 1" ASPHALT CONCRETE SURFACE COURSE, TYPE I (648H), PG 84-22
3. ITEM 42 - BASE COURSE, NON-PACKING
4. ITEM 304 - 6" ASPHALT CONCRETE BASE, PG64-22
5. ITEM 304A - 4" AGGREGATE BASE
6. ITEM 202 - CURB AND GUTTER REMOVED AND REPLACED, AS PER PLAN
7. ITEM 202A - CURB REMOVED AND REPLACED, AS PER PLAN
8. ITEM 205 - FULL DEPTH PAVEMENT REMOVAL AND REPLACEMENT, CLASS G0, EXP. 350-
9. ITEM 304 - VARIABLE THICKNESS AGGREGATE BASE

B. CURB AND GUTTER
C. BARRIER CURB
D. 9" CONCRETE BASE
E. FULL DEPTH ASPHALT PAVEMENT

SAND AND SEAL
SAND AND SEAL

INSERT/RETROFIT ROLLED CURB AND GUTTER
NOTES FOR OUTSIDE DROP MANHOLE

1. DROP TO BE INSTALLED IN SANITARY SEWERS WHERE THE DIFFERENCE IN ELEVATION BETWEEN THE PIPE INFEET EXCEEDS 2 FEET.

2. THE SERVICE DROP SHALL BE CONSTRUCTED IN ONE OF THE FOLLOWING MANNERS:
   a) FORMED CLASS "C" CONCRETE
   b) APPROVED PRECAST AND CAST IN PLACE SECTIONS AND BASE

3. THE CONCRETE BASE FLOURED IN PLACE SHALL EXTEND A MINIMUM OF 4 FEET BEYOND THE EXTREMITIES OF THE DROP SECTION.

4. HOLE FOR CLEANOUT PIPE ENTRANCE SHALL BE MADE WITH A CORE TYPE DRILL.

PIEVE CONNECTION DETAILS

ALTERNATE #1

OVERHEAD HOLE TO ALLOW FOR ADJUSTMENT IN PIPE ANGLE AS REQUIRED.

3/8" THICK ASTM C-443 REINFORCEMENT BANDING FOR WATERPROOF SEAL.

PENDANT PIPE TO GIVE PIPE FLUSH WITH MANHOLE FACE.

PLAN VIEW

SECTION E-E

SEWER DROP OUTSIDE MANHOLE

SEWER DROP INSIDE MANHOLE

GENERAL NOTES FOR ALL MANHOLES

1. PROVIDE逅HOLES PER CODE STANDARD CONSTRUCTION DRAWINGS.

2. MANHOLE BASES THAT ARE PLACED IN PLACE SHALL BE CONSTRUCTED OF CONCRETE AND SHALL EXTEND 4 FEET BEYOND THE MANHOLE WALLS. THE MANHOLE BASE IS TO BE REINFORCED IF MANHOLE DEPTH EXCEEDS 14 FEET.

3. MANHOLE FRAME TO BE SET IN BED OF Mortar.

4. SLAB TOP MANHOLE TO BE USED WHEN THE DISTANCE FROM THE TOP OF THE OUTLET PIPE TO FINISHED GRADE IS LESS THAN 4 FEET.

5. THE DEPTH OF A MANHOLE IS MEASURED FROM THE TOP OF CASTING TO THE FLOW LINE OF THE SEWER.

6. SANITARY SEWER MANHOLES TO BE PRECAST CONCRETE ONLY.

7. ALL PARTS OF PRECAST CONCRETE MANHOLES, I.E. BASE SECTION, BARREL SECTION, CONE, AND SLAB TOPS) SHALL MEET THE REQUIREMENTS OF ASTM C-443.

8. SANITARY SEWER MANHOLE JOINTS FOR PRECAST CONCRETE SECTIONS SHALL BE O-RING TYPE GASKETS MEETING THE SPECIFICATIONS OF ASTM C-443.

9. ALL MASONRY CONSTRUCTION OF MANHOLES SHALL HAVE 1 1/2" CEMENT MORTAR PLASTER ON EXTERIOR WALLS.

10. REDUX R-1767 FRAME AND LID OR APPROVED EQUAL. LETTERING ON LID TO BE SIMILAR TO THAT SHOWN ON REDUX R-1764 A LID, WITH WORDS "SEWER," "WATER," OR "STRAIN.

11. THE FLOW CHANNELLED STRAIGHT THROUGH A MANHOLE SHOULD BE MADE TO CONFORM AS CLOSELY AS POSSIBLE IN SHAPE AND SLOPE TO THAT OF THE CONNECTING SEWERS. THE CHANEL WALLS SHOULD BE FORMED OR SHAPED TO THE FULL HEIGHT OF THE CROWN OF THE OUTLET SEWER IN SUCH A MANNER AS TO NOT OBSTRUCT MAINTENANCE, INSPECTION, OR FLOW IN THE SEWERS. WHEN CURVED FLOW CHANNELS ARE SPECIFIED IN MANHOLES, INCLUDING BRANCH INLETS, THE MINIMUM SLOPES SHOULD BE INCREASED TO MAINTAIN ACCEPTABLE VELOCITIES.

12. A BENCH SHALL BE PROVIDED ON EACH SIDE OF ANY MANHOLE CHANNEL WHERE THE PIPE DIAMETERS ARE LESS THAN THE MANHOLE DIAMETER. THE BENCH SHOULD BE SLOPED NO LESS THAN 1 INCH PER FOOT (4 PERCENT). NO LATERAL, SEWER, SERVICE CONNCTION, OR DROP MANHOLE PIPE SHALL DISCHARGE INTO THE SURFACE OF THE BENCH.

SEWER DRAFT OUTSIDE MANHOLE

SEWER DRAFT INSIDE MANHOLE

PRECAST CONCRETE MANHOLE
GENERAL NOTES FOR STORM SEWERS:

1. BOTTOM OF CATCH BASIN TO HAVE A 6" MINIMUM THICKNESS AND TO BE CONSTRUCTED OF ODOT CLASS "C" CONCRETE.

2. BRICK, CONCRETE BLOCK, OR CAST-IN-PLACE WALLS SHALL HAVE A MINIMUM THICKNESS OF 6 INCHES. PRE-CAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCEMENTS SHALL BE SUFFICIENT TO PREVENT SHIFTING AND PLACEMENT WITHOUT DAMAGE.

3. BORE FOUNDATION IN STABLE SOIL SHALL CONSIST OF A CONCRETE BRICK SET TO GRADE UNDER EACH CORNER, FILLED IN SOIL SUFFICIENT TO SUPPORT THE GRADE OF THE BRICKS UNDER THE ENTIRE BORE FLOOR.

4. BORE FOUNDATION IN UNSOLUBLE SOIL SHALL CONSIST OF A 6 INCH THICK ODOT CLASS "C" CONCRETE SLAB, SET TO GRADE, EXTENDING 4" BEYOND ALL OUTER WALLS.

5. NON-REINFORCED SLAB TOPS ARE PERMITTED ON TYPE "S"-SPECIAL CATCH BASINS WITH CONDUIT UP TO 24 INCH DIAMETER (SEE NOTES FOR REPAIR PLACEMENT IN LARGER TOPS). ALL SLAB TOPS TO BE CONSTRUCTED OF ODOT CLASS "C" CONCRETE WITH A MINIMUM THICKNESS OF 8 INCHES.

6. SPECIFY NEEDED TYPE: B-3463B-80(5) OR B-3463B-80(6), OR APPROVED EQUAL PLATE AND GRATE.

7. PRINTS SHALL BE PROVIDED WHICH SHOW IN THE STANDARD MANHOLE DEPTH WHEN THE CATCH BASIN DEPTH EXCEEDS 40".

8. MAXIMUM CATCH BASIN DEPTH IS 64 INCHES.

9. THE FOLLOWING NOTE SHALL BE ON EACH CATCH BASIN GRATE:

"NO DUMPING — DRAINS TO RIVER"

THE PLACE OF DRAINAGE SHALL BE SPECIFIED IN THE PLANS BY THE ENGINEER.

AS OF JUNE 2008, THIS DRAWING TO BE USED FOR INFORMATIONAL USE OR RETROFIT PROJECTS ONLY. ODOT STANDARD BASINS TO BE SPECIFIED FOR NEW CONSTRUCTION AND RETROFITS WHERE FEASIBLE.
GENERAL NOTES FOR WATER MAINS

DURCITE IRON WATER MAINS

1. DURCITE IRON PIPE SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI/ASME C150/C261.2010 FOR A MINIMUM 200 PSI TYPICAL LAYER CONDITION AND A DEPTH OF COVER OF 4 FEET.

2. DURCITE IRON PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI/ASME C511/ASME 51.51.

3. PIPE SHALL HAVE STANDARD ASPHALT COATING ON THE EXTERIOR. PIPE SHALL ALSO HAVE A CEMENT MORTAR LINING ON THE INTERIOR IN ACCORDANCE WITH ANSI/ASMA C110/A21.4, OF LATEST REVISION.

4. THE PRESSURE CLASS OR NomINAL THICKNESS, net weight without lining, and casting weight shall be clearly marked on each length of pipe. ADDITIONALLY, THE MANUFACTURER'S NAME, YEAR IN WHICH THE PIPE WAS PRODUCED, AND THE LETTERS "DI" OR "DURCITE IRON" SHALL BE CAST OR STAMPED ON THE PIPE.

5. ALL PIPE SHALL BE FURNISHED WITH PUSH-ON TYPE JOINTS, SUCH AS "NITON" OR "FAITRE.", JOINTS SHALL BE IN ACCORDANCE WITH ANSI/ASME C111/A21.11, OF LATEST REVISION, AND BE FURNISHED COMPLETE WITH ALL NECESSARY ACCESSORIES. FITTINGS SHALL BE EITHER DURCITE IRON OR GRAY IRON. DURCITE IRON FITTINGS SHALL CONFORM TO THE LATEST EDITIONS OF ANSI/ASME C110/A21.10 OR ANSI/ASME C153/A21.53. GRAY IRON FITTINGS SHALL CONFORM TO THE LATEST EDITIONS OF ANSI/ASME C111/A21.11, OF LATEST REVISION. FITTINGS SHALL HAVE A STANDARD ASPHALT COATING ON THE EXTERIOR. FITTINGS SHALL ALSO HAVE A CEMENT MORTAR LINING ON THE INTERIOR IN ACCORDANCE WITH ANSI/ASME C110/A21.4, OF LATEST REVISION. FITTINGS AND ACCESSORIES SHALL BE FURNISHED WITH EITHER MECHANICAL OR PUSH-ON TYPE JOINTS IN ACCORDANCE WITH ANSI/ASME C111/A21.11, OF LATEST REVISION.

8. COST OF ALL RESTRAINED JOINTS, INCLUDING THE COST OF RESTRAINING RESTRAINED JOINTS, ON EXISTING MAIN AS NECESSARY FOR NEW JENOS, VALVES, ETC., AND THE COST OF ALL THRUST BREDENTIALS, IS TO BE INCLUDED IN THE UNIT PRICE OF THE WATER MAIN.

HYDRAULIC TESTING

ALL WORK, INCLUDING INSTALLATION OF ALL TAPS AND PURITY TEST STATIONS, MUST BE COMPLETED PRIOR TO HYDRAULIC TESTING. THE WATER MAIN SHALL BE TESTED FOR A MINIMUM OF ONE HOUR, AND ALL VALVES SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI/ASME C600. AS NEWLY INSTALLED DURCITE IRON AND PLASTIC WATER MAIN SHALL BE DISINFECTED IN ACCORDANCE WITH THE CITY OF MIDDLETOWN WATER AND SEWER RULES AND REGULATIONS.

MAXIMUM PIPE DEFLECTIONS

MAXIMUM PIPE DEFLECTIONS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.

Curb Stop

Curb stops shall be cast brass or bronze fitted to receive copper tubing. They shall be of the inverted key type with the following features:

1. GALVANIZED WELDABLE FLANGE
2. ROUND END
3. CIRCULAR KEY SETS FOR QUARTER TURN TO CLOSE FULL OPENING.

Curb Stops Shall Be Mueller Type M-1500, Mueller-Wark II Valve, Or Approved Equal For Sizes Ranging From 3/4'' To 2''.

WATER SERVICE BOX

1. WATER SERVICE BOXES SHALL BE OF THE BEST QUALITY GRAY CEMENT CAST IRON, BONNOM COATED, AND IN THE BUFFALO PATTERN WITH 1-1/2" DIAMETER SHIPS, ADJUSTABLE FROM 3" TO 6" COWS. THE LIQUEFIED MATERIALS SHALL BE MARKED "WATER" AND SECURED TO THE WALL WITH A BRASS OR BRONZE BOLT. THE FOOTPLATE SHALL FIT OVER THE CURB STOP. WATER SERVICE BOXES OF THE TYPE SHALL BE MUELLER TYPE M-1500, SIZE 6" OR APPROVED EQUAL.

ROADWAY VALVE BOX

ROADWAY VALVE BOXES SHALL BE OF THE BEST QUALITY GRAY CEMENT CAST IRON, BONNOM COATED AND FURNISHED WITH A 5-1/4" DIAMETER SHIP, ADJUSTABLE FROM 3" TO 6". THE COVER SHALL BE OF THE DROP TYPE WITH THE WORD "WATER" CAST INTO THE TOP. ROADWAY VALVE BOXES SHALL BE OF THE TYPE F-2495 OR APPROVED EQUAL, WITH THE BASE SECTIONS AS FOLLOWS:

- 6" AND 8" VALVES: CLOW TYPE F-2495
- 10" AND 12" VALVES: CLOW TYPE F-2494
- 4" AND SMALLER VALVES: CLOW TYPE F-2480

CORPORATION STOP

CORPORATION STOPS SHALL BE CAST BRASS OR BRONZE MUELLER THREAD INSERTED INTO THE WATER MAIN. THE OUTLET SHALL BE FITTED TO RECEIVE COPPER TUBING. CORPORATION STOPS SHALL BE MUELLER TYPE M-1500 OR APPROVED EQUAL FOR SIZES RANGING FROM 3/4" TO 2".

WATER METER BOX (REPLACEMENT OF EXISTING)

WATER METER BOXES SHALL BE OF THE BEST QUALITY GRAY CEMENT CAST IRON, BONNOM COATED, AND PROVIDED WITH A DOUBLE UNION TO PROTECT AGAINST FREEZING. METER BOXES SHALL BE MUELLER MODEL H-1501.3 OR APPROVED EQUAL.

METER SETTING VOKES (REPLACEMENT OF EXISTING)

METER SETTING VOKES SHALL BE COPPER WITH VERTICAL NUT AND BOLT CONNECTIONS SUCH AS MUELLER MODEL H-14402 OR APPROVED EQUAL.

TEMPORARY FIRE HYDRANT

A TEMPORARY FIRE HYDRANT WILL BE REQUIRED AT THE END OF ANY WATER MAIN TO BE EXTENDED IN THE FUTURE.

PIPE SADDLE

PIPE SADDLES SHALL BE CLOW F-1280 OR APPROVED EQUAL. SERVICE TAP STOPS GREATER THAN 2'' SHALL REQUIRE TAPPING SADDLE AND VALE, CLOW F-5093 OR APPROVED EQUAL.

PIPE HYDRANT

ALL FIRE HYDRANTS SHALL BE NATIONAL STANDARD.

WATER MAINS AND APPURTENANCES STANDARDS

WATER MAIN SERVICE BOX IN SIDEWALK

WATER SERVICE INSTALLATION DETAIL

WATER MAINS AND APPURTENANCES STANDARDS

WATER MAIN SERVICE BOX IN SIDEWALK

WATER SERVICE INSTALLATION DETAIL

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PURITY TESTING

AIR RELEASE VALVE STRUCTURE

AIR RELEASE VALVE STRUCTURE

AIR RELEASE VALVE STRUCTURE

AIR RELEASE VALVE STRUCTURE

PRECAST CONCRETE STRUCTURE COAT M-1 NO. 1

DATE:

EX. GRADE:

TOP ELEVATION AT GRADE

WATER MAIN

1' COPPER LINE

DRAINAGE PIPE

5"-12" MIN.

6'" MIN.

6" MIN.

1' CORPORATION STEPL

SADDLE AT 45 TO HORIZONTAL

PROVIDE A 1' CORPORATION STEPL 1 COPPER LINE, AND A 1" VALVE OR CUBE AT LOCATIONS SHOWN ON THE CONSTRUCTION DRAWING, OR AS SPECIFIED IN THE ENGINEERING TESTING PLANS. THE COPPER LINE SADDLE SHALL BE FROM THE CORPORATION STOP TO A VALVE TO THE BAY. PROVIDE LEAD TO A PORT AT AN ELEVATION HIGH ENOUGH TO ALLOW THE VALVE OR CUBE STOP TO BE ON THE SADDLE. THE DRAINAGE PIPE OF THE SUB. THERE SHALL BE A SHORT SECTION OF COPPER PIPE 6" MIN - 12" MAX. ON THE OUTLET END OF THE VALVE OR CUBE STOP. THE END OF THE COPPER PIPE SHALL BE A MINIMUM OF 2 FEET ABOVE EXISTING GROUND. PROVIDE SHAPE FROM THE NEW INSTALLATION AT THE INSTALLATION AT THE INSTALLATION.