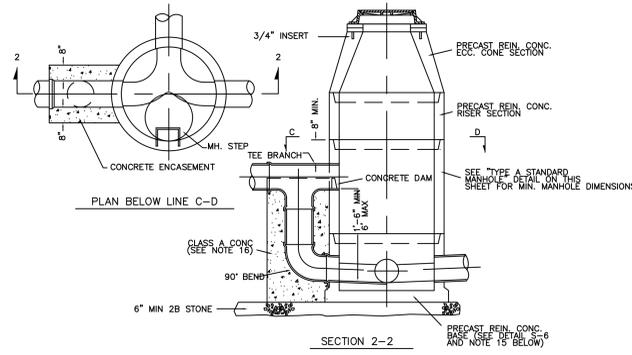


- NOTES:
1. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO 3/4 OF THE DIAMETER OF THE SEWER.
 2. THE SHELFF SHALL SLOPE TOWARD THE INVERT CHANNEL AT A RATE OF 1" PER FOOT.
 3. TYPE "B" MANHOLES (SHALLOW TYPE) TO BE PROVIDED WHERE REQUIRED BY DEPTH CONDITIONS.
 4. FOR MANHOLES HAVING 5" DIAMETER AND 6" DIAMETER BASE, REDUCTION IN DIAMETER TO 4" SHALL START AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL WHERE DEPTH IS SUFFICIENT.
 5. ALL MANHOLE FRAMES SHALL BE BOLTED TO THE CONE SECTION WITH 2 - 3/4" DIAMETER BOLTS WITH WASHERS AND NUTS. BOLTS TO BE AT 180° ON BOLT CIRCLE.
 6. SEE THE SPECIFICATIONS FOR LENGTH OF PIPE CONNECTIONS TO MANHOLE.
 7. ALL CONCRETE SHALL BE 4000 PSI MINIMUM.
 8. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECEIVE TWO COATS OF BITUMINOUS COATING. KOPPERS 300M PENNOXY TAR 32-B-4, OR APPROVED EQUAL.
 9. INSTALL 2 LAYERS OF PLASTIC PREFORMED JOINT SEALANT BETWEEN ALL SECTIONS AND UNDER FRAME.
 10. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASTM C478
 11. STEPS TO BE ALUMINUM ALLOY WITH DEPRESSED TREAD. STEEL REINFORCED POLYPROPYLENE IS OPTIONAL. (SEE DETAIL 5-11)
 12. 4" DIAMETER MANHOLE - 8" TO 15" PIPES
5" DIAMETER MANHOLE - 10" TO 24" PIPES
6" DIAMETER MANHOLE - 10" TO 24" PIPES
 13. WHEN TWO OR MORE GRADE ADJUSTMENT RINGS ARE USED, A WATER-TIGHT PVC CONNECTOR SHALL BE INSTALLED BETWEEN THE FRAME AND THE SLAB. CONNECTOR SHALL BE WATER-LOCK CONNECTOR BFA ANTI-FLOATING BY A-LOK PRODUCTS INC. OR APPROVED EQUAL.

TYPE "A" STANDARD MANHOLE

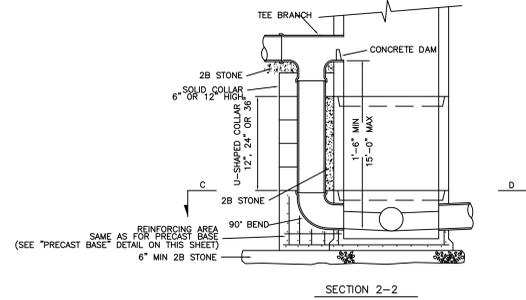
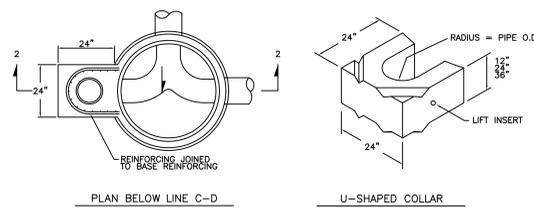
NOT TO SCALE



- NOTES:
1. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO 3/4 OF THE DIAMETER OF THE SEWER.
 2. THE SHELFF SHALL SLOPE TOWARD THE INVERT CHANNEL AT A RATE OF 1" PER FOOT.
 3. TYPE "B" MANHOLES (SHALLOW TYPE) TO BE PROVIDED WHERE REQUIRED BY DEPTH CONDITIONS.
 4. FOR MANHOLES HAVING 5" DIAMETER AND 6" DIAMETER BASE, REDUCTION IN DIAMETER TO 4" SHALL START AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL WHERE DEPTH IS SUFFICIENT.
 5. ALL MANHOLE FRAMES SHALL BE BOLTED TO THE CONE SECTION OR CONCRETE SLAB WITH 2 - 3/4" DIAMETER BOLTS WITH WASHERS AND NUTS. BOLTS TO BE AT 180° ON BOLT CIRCLE.
 6. SEE THE SPECIFICATIONS FOR LENGTH OF PIPE CONNECTIONS TO MANHOLE.
 7. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECEIVE TWO COATS OF BITUMINOUS COATING. KOPPERS 300M PENNOXY TAR 32-B-4, OR APPROVED EQUAL.
 8. INSTALL 2 LAYERS OF PLASTIC PREFORMED JOINT SEALANT BETWEEN ALL SECTIONS AND UNDER FRAME.
 9. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASTM C478
 10. STEPS TO BE ALUMINUM ALLOY WITH DEPRESSED TREAD. STEEL REINFORCED POLYPROPYLENE IS OPTIONAL. (SEE DETAIL 5-11)
 11. 4" DIAMETER MANHOLE - 8" TO 15" PIPES
5" DIAMETER MANHOLE - 10" TO 24" PIPES
6" DIAMETER MANHOLE - 10" TO 24" PIPES
 12. FOR INSIDE DROP PIPE TYPE MANHOLES INCREASE DIAMETER BY 1" - 0" OVER THOSE SHOWN ABOVE.
 13. WHEN TWO OR MORE GRADE ADJUSTMENT RINGS ARE USED, A WATER-TIGHT PVC CONNECTOR SHALL BE INSTALLED BETWEEN THE FRAME AND THE SLAB. CONNECTOR SHALL BE WATER-LOCK CONNECTOR BFA ANTI-FLOATING BY A-LOK PRODUCTS INC. OR APPROVED EQUAL.
 14. OUTSIDE DROP CONNECTIONS GREATER THAN 6 FEET IN DEPTH OR LOCATED IN SOFT OR UNSTABLE GROUND SHALL BE CONSTRUCTED WITH A PRECAST CONCRETE BASE AND U-SHAPED COLLARS AS SHOWN IN "DROP MH WITH PRECAST BASE & U-SHAPED COLLARS" DETAIL ON THIS SHEET

TYPE "A" DROP MANHOLE

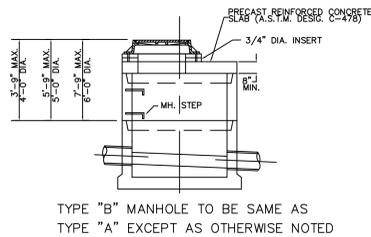
NOT TO SCALE



- NOTES:
1. SAME AS TYPE "A" DROP MANHOLE EXCEPT AS OTHERWISE NOTED.
 2. INTEGRAL DROP BASE AND U-SHAPED COLLARS SHALL BE AS MANUFACTURED BY ATLANTIC CONCRETE PRODUCTS, INC. OR APPROVED EQUAL.
 3. SEE "TYPE A STANDARD MANHOLE" ON THIS SHEET FOR MINIMUM MANHOLE DIMENSIONS.

DROP MANHOLE WITH PRECAST BASE & U-SHAPED COLLARS

NOT TO SCALE

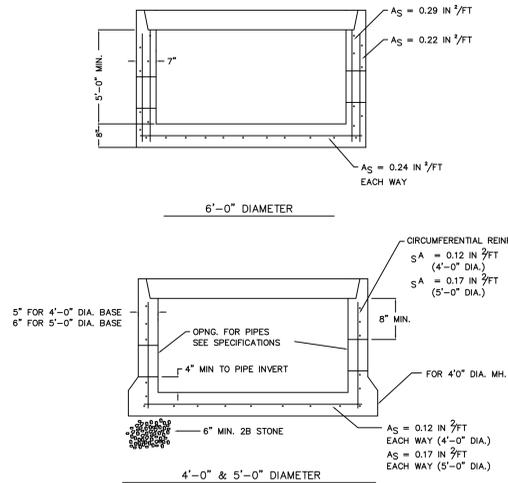


TYPE "B" MANHOLE TO BE SAME AS TYPE "A" EXCEPT AS OTHERWISE NOTED

- NOTES:
1. THE DEPTH OF THE INVERT CHANNEL SHALL BE EQUAL TO 3/4 OF THE DIAMETER OF THE SEWER.
 2. THE SHELFF SHALL SLOPE TOWARD THE INVERT CHANNEL AT A RATE OF 1" PER FOOT.
 3. TYPE "B" MANHOLES (SHALLOW TYPE) TO BE PROVIDED WHERE REQUIRED BY DEPTH CONDITIONS.
 4. FOR MANHOLES HAVING 5" DIAMETER AND 6" DIAMETER BASE, REDUCTION IN DIAMETER TO 4" SHALL START AT THE FIRST JOINT ABOVE THE UPPERMOST PIPE CONNECTION TO WALL WHERE DEPTH IS SUFFICIENT.
 5. ALL MANHOLE FRAMES SHALL BE BOLTED TO THE CONCRETE SLAB WITH 2 - 3/4" DIAMETER BOLTS WITH WASHERS AND NUTS. BOLTS TO BE AT 180° ON BOLT CIRCLE.
 6. SEE THE SPECIFICATIONS FOR LENGTH OF PIPE CONNECTIONS TO MANHOLE.
 7. ALL CONCRETE SHALL BE 4000 PSI MINIMUM.
 8. ENTIRE OUTSIDE SURFACE OF MANHOLE SHALL RECEIVE TWO COATS OF BITUMINOUS COATING. KOPPERS 300M PENNOXY TAR 32-B-4, OR APPROVED EQUAL.
 9. INSTALL 2 LAYERS OF PLASTIC PREFORMED JOINT SEALANT BETWEEN ALL SECTIONS AND UNDER FRAME.
 10. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ASTM C478
 11. STEPS TO BE ALUMINUM ALLOY WITH DEPRESSED TREAD. STEEL REINFORCED POLYPROPYLENE IS OPTIONAL. (SEE DETAIL 5-11)
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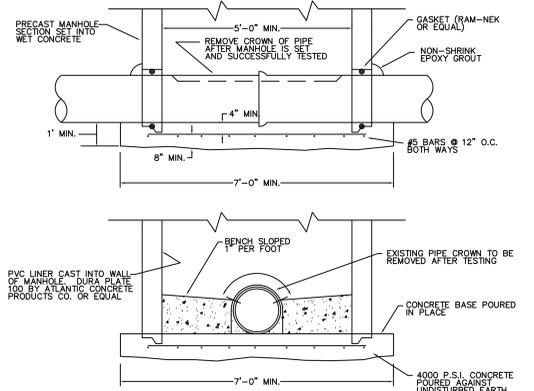
TYPE "B" MANHOLE

NOT TO SCALE



PRECAST MANHOLE BASE

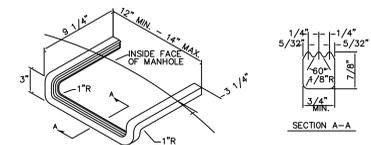
NOT TO SCALE



- NOTES:
1. EXISTING PIPE TO REMAIN UNTIL VACUUM OR EXPULSION TEST ON MANHOLE IS ACCEPTABLE TO THE AUTHORITY. DOGHOUSE MANHOLE CONSTRUCTION SAME AS STANDARD MANHOLE WITH PVC LINER EXCEPT AS NOTED ABOVE.
 2. MANHOLE SHALL HAVE A PRECAST REINFORCED CONCRETE SLAB (A.S.T.M. DESIG. C-478)

DOGHOUSE MANHOLE "CV-1"

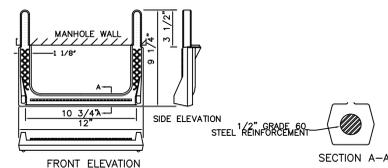
NOT TO SCALE



- NOTES:
1. STEPS TO BE FABRICATED OF ALUMINUM ALLOY 6061-T6
 2. PORTIONS OF STEPS TO BE EMBEDDED IN WALLS OF MANHOLES OR CHAMBERS TO BE DIPPED IN HEAVY BODIED BITUMINOUS PAINT, OR PROVIDE PLASTIC INSERT

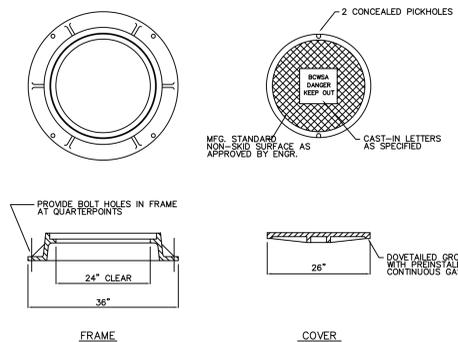
ALUMINUM MANHOLE STEP

NOT TO SCALE



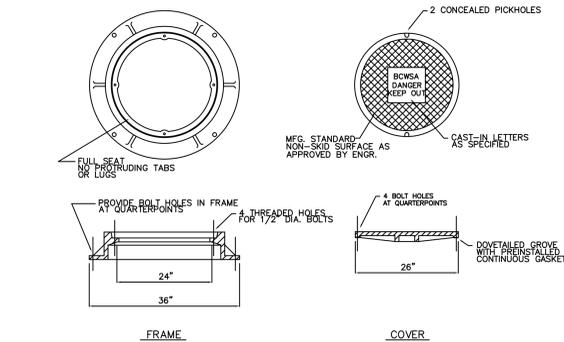
POLYPROPYLENE MANHOLE STEP

NOT TO SCALE



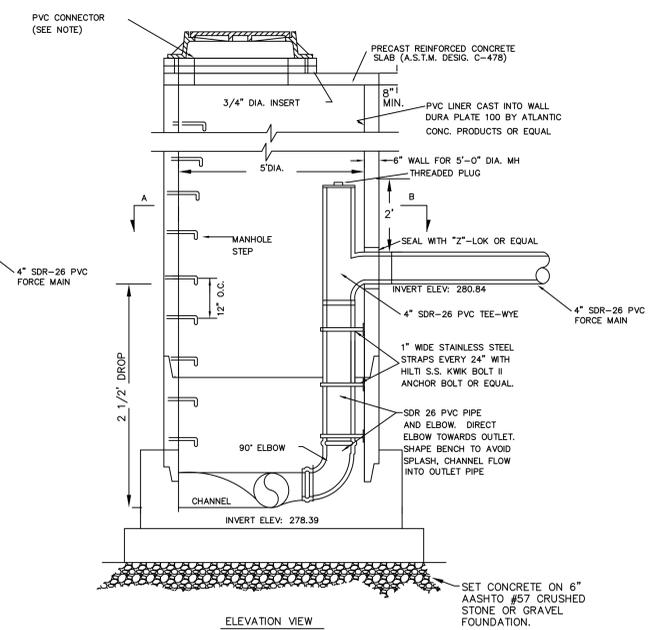
STANDARD MANHOLE FRAME AND COVER

NOT TO SCALE



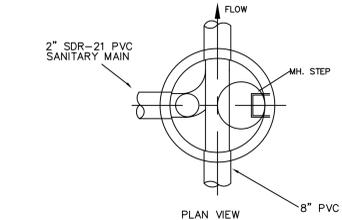
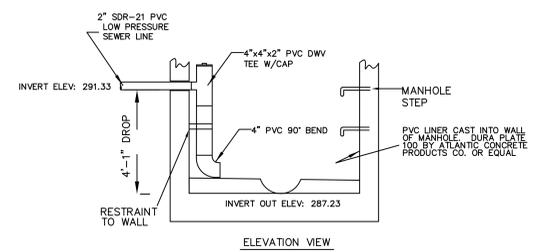
WATERTIGHT MANHOLE FRAME AND COVER

NOT TO SCALE



MANHOLE "CV-31" WITH PVC LINER

NOT TO SCALE



- NOTES:
1. ALL HARDWARE USED TO SECURE 4" PVC PIPE TO MANHOLE SHALL BE STAINLESS STEEL.
 2. MANHOLE SHALL HAVE A PRECAST REINFORCED CONCRETE SLAB (A.S.T.M. DESIG. C-478)
 3. REFER TO "MANHOLE 31 WITH PVC LINER" DETAIL ON THIS SHEET FOR SEAL AND PIPE RESTRAINTS/INFORMATION.

DROP CONNECTION - LPSS IN MANHOLE "CV-64"

NOT TO SCALE

2	ISSUED FOR CONSTRUCTION	8-3-18	JM
REV.	DESCRIPTION	DATE	BY
TAX MAP PARCEL NO. XX	TOTAL AREA: XX	TOTAL LOTS: XX	
MUNICIPAL FILE NO. XX	DATE: 1-15-15	SCALE: N.T.S.	
CONSTRUCTION DETAILS			
PEBBLE RIDGE / WOODRIDGE AREA			
SANITARY SEWERS			
DOYLESTOWN TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA			
GILMORE & ASSOCIATES, INC.			
ENGINEERING & CONSULTING SERVICES			
65 EAST BUTLER AVENUE, SUITE 100, NEW BRITAIN, PA 19115-1108 • (215) 365-4200 • www.gilmore-assoc.com			
JOB NO. 2013-05071			
SHEET NO. 30 OF 32			
DESIGNED BY: BMB/TJF/HDS/JM	DRAWN BY: CB/BMB/TJF	CHECKED BY: SLR	

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