

CAMPBELL FOUNDRY PATTERN NO. 2617 (WITH BACKPLATE/CURB PIECE) OR 3405 (NO BACKPLATE/CURB PIECE)
CAST IRON FRAME AND GRATE
(SEE GENERAL NOTE 6 AND VILLAGE STANDARD CATCH BASIN FRAME AND GRATE CONSTRUCTION DETAILS FOR FRAME AND GRATE INFORMATION)

ADJUST TO GRADE WITH PRECAST CONCRETE PAVERS OR CONCRETE ADJUSTMENT RINGS.
(SEE GENERAL NOTE 10)

REFER TO PLANS FOR SURFACE TREATMENT BEHIND CURB BOX (i.e. BACKPLATE)

BITUMINOUS CONCRETE PAVEMENT SECTION
(REFER TO VILLAGE STANDARD CONSTRUCTION DETAIL)

ESTABLISH TURF ON EXISTING TOPSOIL FROM EXCAVATION, WHERE APPLICABLE

APPROVED BACKFILL MATERIAL SHALL INCLUDE NYSDOT ITEM NO. 204.01 "CONTROLLED LOW STRENGTH MATERIAL" (CLSM)

16" ALUM OR REINFORCED PLASTIC MANHOLE STEPS 12" ON CENTER. STEPS SHALL BE NEENAH No. R-1981-0 OR APPROVED EQUAL. STEPS SHALL BE EMBEDDED INTO THE STRUCTURE WALLS A MINIMUM OF 3 INCHES. RUNG SHALL PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE STRUCTURE WALLS MEASURED FROM THE POINT OF EMBEDMENT.

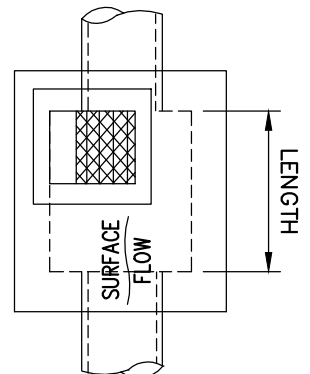
PRECAST CONCRETE DRAINAGE STRUCTURE (4,000 PSI @ 28 DAYS)

12" APPROVED COMPACTED 3/4" CRUSHED STONE FOUNDATION COURSE (NYSDOT ITEM NO. 623.12, SIZE DESIGNATION 2)

EXCAVATION PROTECTION SYSTEM AS REQUIRED (NYSDOT ITEM NO. 552.16)

APPROVED COMPACTED SUBGRADE

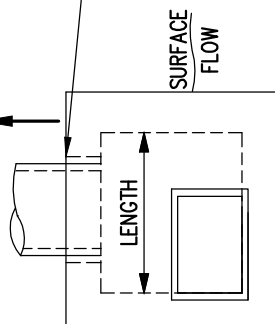
RECTANGULAR NYSDOT TYPE 'F' DRAINAGE STRUCTURE (UNLESS OTHERWISE DIRECTED BY VILLAGE ENGINEER) SHOWN WITH CURB BOX, SUMP, AND A MONOLITHICALLY CAST FLOOR SLAB



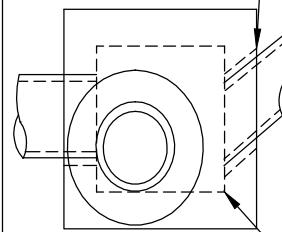
TOP SLAB DIMENSIONS

STRUCTURE TYPE	6" THICK WALLS		8" THICK WALLS		TOP REINFORCEMENT (NOTES 3 AND 4)
	WIDTH	LENGTH	WIDTH	LENGTH	
A	4'-0"	4'-0"	4'-4"	4'-4"	6" X 6" W4 X W4
B	5'-0"	4'-0"	5'-4"	4'-4"	6" X 6" W4 X W4
C	6'-0"	4'-0"	6'-4"	4'-4"	6" X 6" W4 X W4
D	7'-8"	4'-0"	8'-0"	4'-4"	6" X 6" W4 X W4
E	4'-0"	5'-0"	4'-4"	5'-4"	6" X 6" W4 X W4
F	5'-0"	5'-0"	5'-4"	5'-4"	6" X 6" W4 X W4
G	6'-0"	5'-0"	6'-4"	5'-4"	6" X 6" W4 X W4
H	7'-8"	5'-0"	8'-0"	5'-4"	6" X 6" W5 X W5
I	4'-0"	6'-0"	4'-4"	6'-4"	6" X 6" W4 X W4
J	5'-0"	6'-0"	5'-4"	6'-4"	6" X 6" W4 X W4
K	6'-0"	6'-0"	6'-4"	6'-4"	6" X 6" W4 X W4
L	7'-8"	6'-0"	8'-0"	6'-4"	6" X 6" W5 X W5
M	4'-0"	7'-8"	4'-4"	8'-0"	6" X 6" W5 X W5
N	5'-0"	7'-8"	5'-4"	8'-0"	6" X 6" W5 X W5
O	6'-0"	7'-8"	6'-4"	8'-0"	6" X 6" W5 X W5
P	7'-8"	7'-8"	8'-0"	8'-0"	6" X 6" W5 X W5

ALL PIPE ENDS SHALL BE FLUSH WITH THE INSIDE OF THE WALL AND SEALED.
(SEE GENERAL NOTE 8)



PIPE OPENING NEVER THROUGH CORNER
(GENERAL NOTE 7)



INSIDE CORNERS MAY BE CHAMFERED (TYPICAL)

VILLAGE OF MAMARONECK
STANDARD CONSTRUCTION DETAILS

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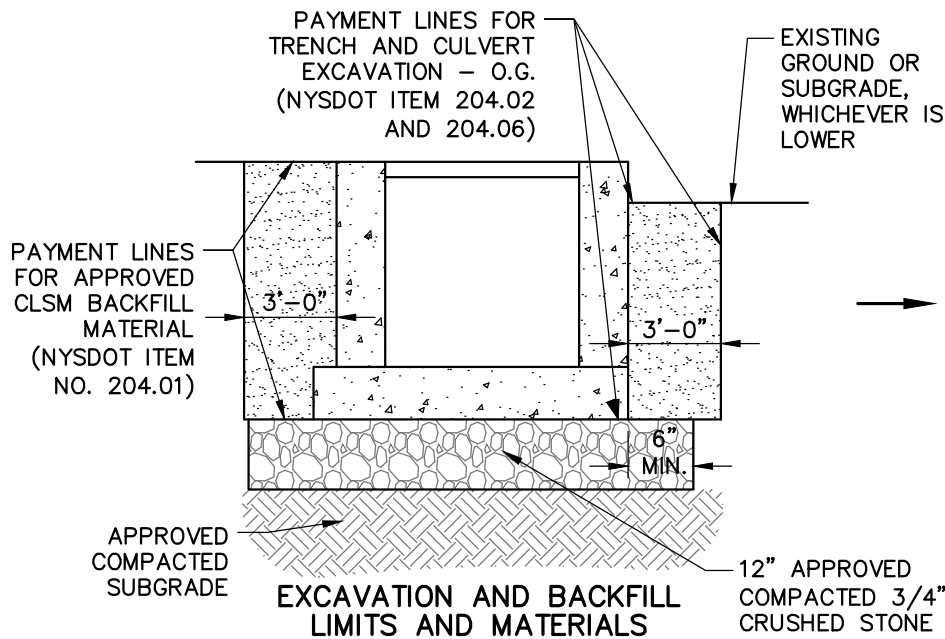
PRECAST CONCRETE CATCH BASIN WITH TOP SLAB (NYSDOT TYPE 'F')

DESIGNED BY: ARC, PE CHECKED BY: ARC, PE
DRAWN BY: ARC, PE VOM NYSDOT Catch Basin.dwg

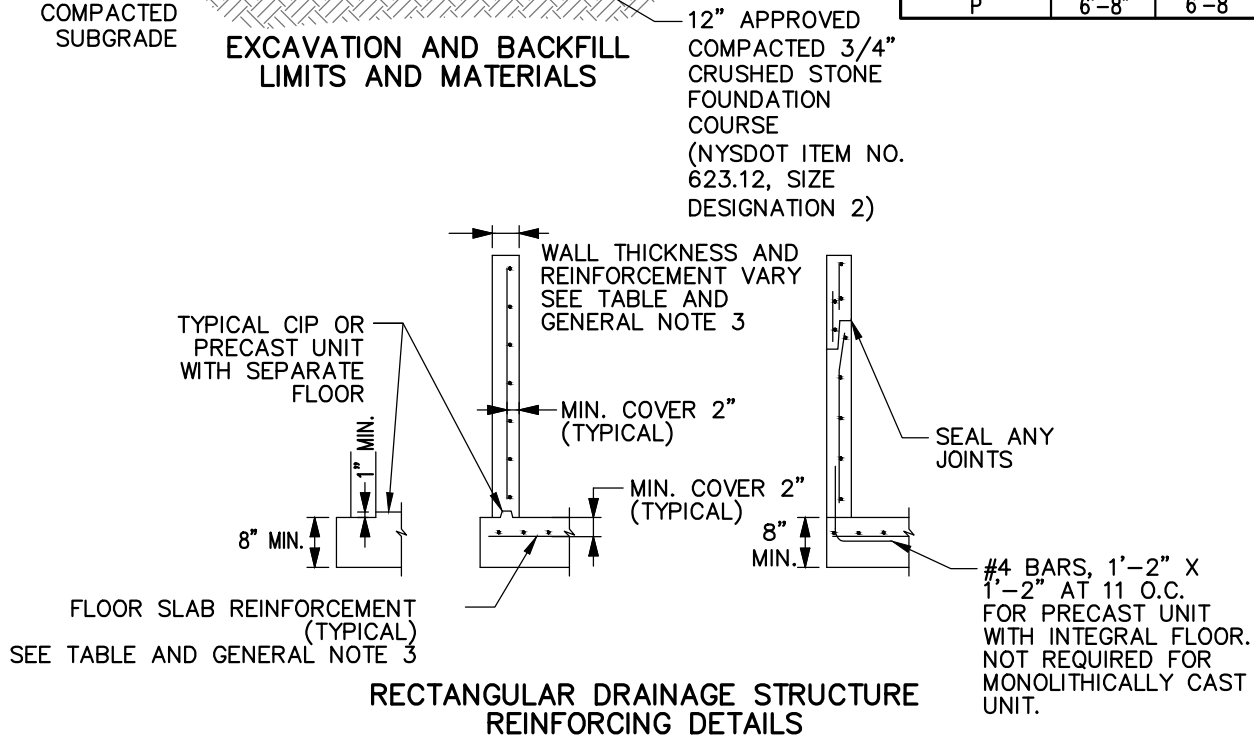


VILLAGE OF MAMARONECK
VILLAGE MUNICIPAL BUILDING
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WESTCHESTER COUNTY
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PROJECT: DETAILS
SCALE: NOT TO SCALE
DATE: 03/13/2014
REV: 11/11/2014
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STRUCTURE SIZES AND PAY CODES			
STRUCTURE TYPE	INSIDE DIMENSIONS		PAY ITEM XX CODE
	WIDTH	LENGTH	
A	3'-0"	3'-0"	01
B	4'-0"	3'-0"	02
C	5'-0"	3'-0"	03
D	6'-8"	3'-0"	04
E	3'-0"	4'-0"	05
F	4'-0"	4'-0"	06
G	5'-0"	4'-0"	07
H	6'-8"	4'-0"	08
I	3'-0"	5'-0"	09
J	4'-0"	5'-0"	10
K	5'-0"	5'-0"	11
L	6'-8"	5'-0"	12
M	3'-0"	6'-8"	13
N	4'-0"	6'-8"	14
O	5'-0"	6'-8"	15
P	6'-8"	6'-8"	16



RECTANGULAR DRAINAGE STRUCTURE REINFORCING DETAILS

DRAINAGE STRUCTURE REINFORCEMENT		
HEIGHT "A"	WALL THICKNESS	RISER REINFORCEMENT (SEE NOTE 3 AND 14)
UP TO 7'-0"	6"	6"x6" - W6 X W6 OR #3 BARS AT 10" BOTH HORIZ. AND VERT.
	8"	UNREINFORCED
7'-0" TO 14'-0"	8"	6"x6" - W8.5 X W8.5 OR #3 BARS AT 8" BOTH HORIZ. AND VERT.
14'-0" TO 21'-0"	8"	4"x4" - W8.5 X W8.5 OR #3 BARS AT 5" BOTH HORIZ. AND VERT.
		FLOOR SLAB REINFORCEMENT (SEE NOTE 3)
UP TO 7'-0"		6"x6" - W11 X W11 OR #3 BARS AT 6" IN BOTH DIRECTIONS
7'-0" TO 14'-0"		4"x4" - W11 X W11 OR #3 BARS AT 4" IN BOTH DIRECTIONS
14'-0" TO 21'-0"		4"x4" - W14 X W14 OR #3 BARS AT 3" IN BOTH DIRECTIONS

*T MAY BE 6" OR 8" FOR THE FIRST 7'-0". EXCEPTIONS ARE SIZE S, T, AND U WITH CURB, RECTANGULAR STRUCTURES WITH ROUND MANHOLE OPENING, OR IF THERE IS LESS THAN 2" ON EITHER SIDE OF A CORNER. (NOTE 7) WHICH MUST HAVE 8" THICK WALLS.

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PRECAST CONCRETE CATCH BASIN WITH TOP SLAB (NYSDOT TYPE 'F')

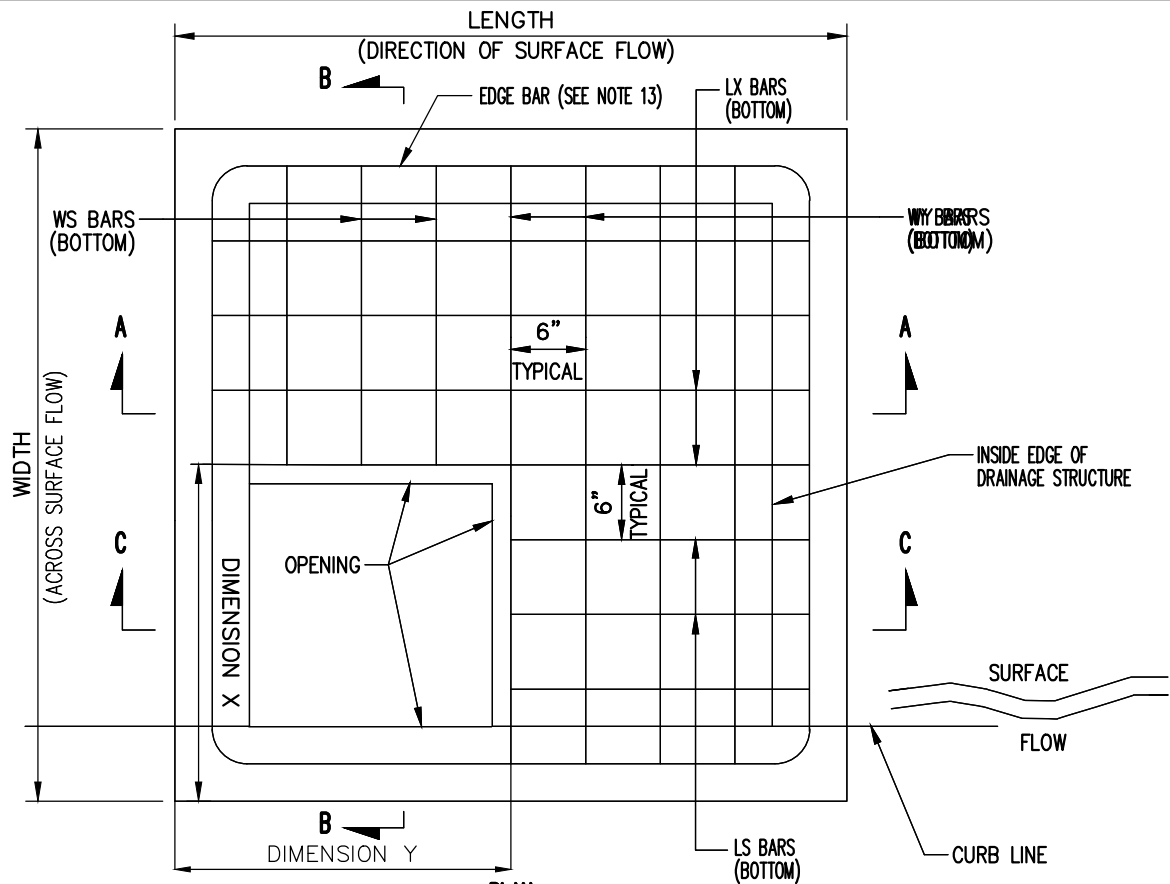
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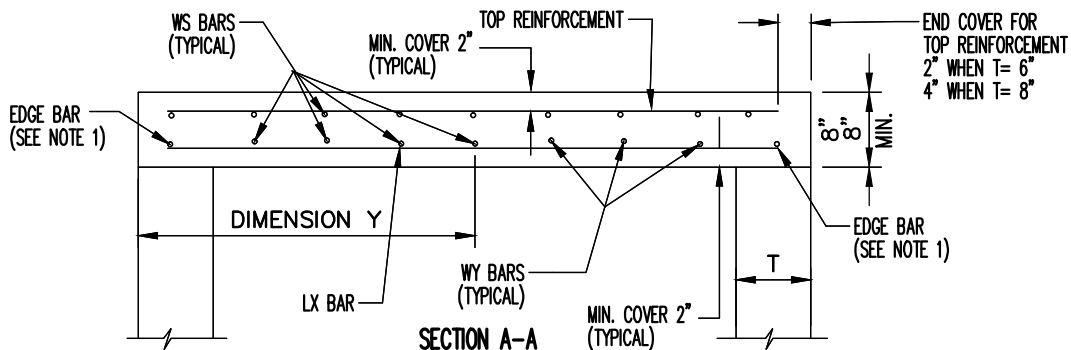
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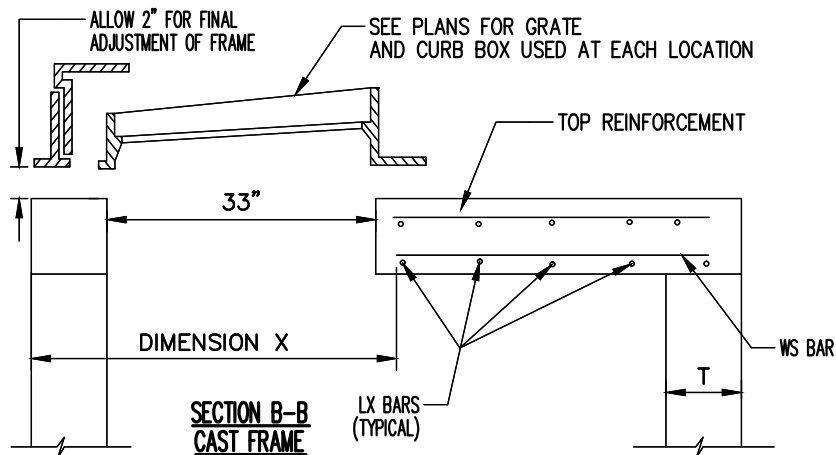
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**PLAN
TOP SLAB BAR LAYOUT
FOR WELDED, PARALLEL BAR AND CAST FRAMES**



**SECTION A-A
TYPICAL FOR ALL TYPES OF FRAME**



**SECTION B-B
CAST FRAME**

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**PRECAST CONCRETE
CATCH BASIN WITH TOP SLAB
(NYS DOT TYPE 'F')**

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GENERAL NOTES:

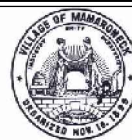
1. DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE UNITS. ROUND DRAINAGE STRUCTURES SHALL BE PRECAST CONCRETE ONLY. THE CONTRACTORS SHALL SUBMIT WORKING DRAWINGS FOR REVIEW AND APPROVAL OF ANY CHANGES TO THE STRUCTURES SHOWN ON THE STANDARD SHEETS OR CONTACT PLANS, OTHER THAN MINOR CHANGES APPROVED BY THE ENGINEER. USE OF FLAT SLAB TOPS ON ROUND PRECAST UNITS SHALL REQUIRE SUBMISSION OF WORKING DRAWINGS.
2. SEE PLANS FOR ELEVATIONS, DRAINAGE STRUCTURE LOCATIONS, TYPE OF GRATE UTILIZED, LOCATION OF SCOOPS, FORMED INVERTS, SUMPS AND DRAINS.
3. REINFORCEMENT FOR RECTANGULAR DRAINAGE UNITS (CAST IN PLACE OR PRECAST) BAR REINFORCEMENT INDICATED FOR RECTANGULAR TOP SLABS, RISERS AND BASES SHALL BE GRADE 60. WIRE FABRIC FOR CONCRETE REINFORCEMENT SHALL MEET THE REQUIREMENTS OF §709-02. RISER REINFORCEMENT SHALL BE PLACED SO IT WILL HAVE A MINIMUM COVER OF 2" BUT NO MORE THAN 4" FROM THE INSIDE FACE. THE REINFORCEMENT SHALL EXTEND COMPLETELY AROUND THE DRAINAGE STRUCTURE RISER AND SHALL BE LAPPED AND TIED. BASE REINFORCEMENT SHALL BE PLACED ABOVE THE MIDPOINT OF SLAB AND SHALL HAVE A MINIMUM CONCRETE COVER OF 2".
4. ROUND ALTERNATIVE:
WHEN SPECIFIED BY PAYMENT ITEM, THE CONTRACTOR MAY SUBSTITUTE ROUND, PRECAST DRAINAGE STRUCTURES IN PLACE OF RECTANGULAR STRUCTURES USING SIZES INDICATED IN THE "SELECTION TABLE FOR ALTERNATE ROUND DRAINAGE STRUCTURES" ON NYSDOT "DRAINAGE STRUCTURE DETAILS" STANDARD SHEET 4 OF 4. THE RISER, TOP SLAB, AND BOTTOM SLAB FOR THE ROUND ALTERNATE SHALL BE MANUFACTURED IN ACCORDANCE WITH THE PROVISIONS OF §706-04 OF THE STANDARD SPECIFICATIONS. WORKING DRAWINGS FOR THE ROUND ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL, UNLESS THE ROUND ALTERNATE PROPOSED HAS BEEN PREVIOUSLY APPROVED. FOR PREVIOUSLY APPROVED ROUND UNITS THE CONTRACTOR SHALL SUBMIT A COPY OF THE APPROVED DRAWINGS TO THE ENGINEER.
5. FORMED INVERTS:
FORMED INVERTS, SCOOP AND SUMPS SHALL BE PROVIDED AND INCLUDED IN THE PRICES BID FOR DRAINAGE STRUCTURES CALLED FOR IN THE CONTRACT DOCUMENTS. WHEN NON-CIRCULAR PIPES ARE USED, THE FORMED INVERT AND SUMP DETAILS SHALL BE MODIFIED TO FIT THE INVERTS.
6. GRATES:
CAST FRAMES SHALL HAVE BICYCLE SAFE GRATES. GRATES SHALL BE INSTALLED SO THAT THE LENGTH OF THE GRATE IS PARALLEL TO THE SURFACE FLOW.
7. WALL OPENINGS:
RECTANGULAR DRAINAGE STRUCTURES SHOWN ON THE NYSDOT "DRAINAGE STRUCTURE DETAILS" STANDARD SHEETS SHOULD NEVER HAVE CORNER PIPE ENTRIES. IF PIPE ALIGNMENT WOULD REQUIRE A CORNER ENTRY, USE AROUND DRAINAGE STRUCTURE OR USE A SPECIAL DRAINAGE STRUCTURE. ALL WALL OPENINGS SHALL BE FORMED COMPLETELY THROUGH THE WALL SECTION. CIRCULAR WALL OPENINGS SHALL BE FORMED FOR EACH CIRCULAR PIPE ENTERING PERPENDICULAR TO THE WALL. WHEN NON-CIRCULAR PIPES ARE SPECIFIED, OR ROUND PIPE ENTRIES ARE SKEWED, RECTANGULAR OPENINGS MAY BE USED. THE CLEARANCE BETWEEN THE OUTSIDE OF THE PIPE AND THE OPENING SHALL BE AT LEAST 2" BUT NO MORE THAN 3". THIS CLEARANCE SHALL BE MEASURED BETWEEN THE OUTSIDE OF THE PIPE AND NEAREST POINT ON THE RECTANGULAR OPENING. IF A CORNER HAS PIPE ENTRIES ON BOTH SIDES, AND THERE IS LESS THAN 2" BETWEEN EITHER OPENING AND THE CORNER. THEN THAT SECTION OF THE DRAINAGE STRUCTURE MUST HAVE 8" THICK WALLS.
8. MONOLITHIC AND INTEGRAL BASES MAY HAVE A MAXIMUM VERTICAL DRAFT OF $\frac{1}{2}$ " ON ALL INTERIOR DIMENSIONS, TO FACILITATE FORM REMOVAL. FOR WALL OPENINGS THAT EXTEND THE FULL WIDTH OR LENGTH OF THE STRUCTURE, THE MINIMUM CLEARANCE BETWEEN THE OUTSIDE OF THE PIPE AND THE WALL OPENING SHALL BE $\frac{1}{2}$ ".
9. FINISHING PIPE ENTRIES:
THE BELLS OF CONCRETE PIPE SHALL BE CUT OFF AT EVERY PIPE ENTRY WHERE THE BELL ENTERS A STRUCTURE. CONNECTIONS BETWEEN THE STRUCTURE AND PIPE SHALL BE MADE BY EITHER USING A RESILIENT CONNECTOR MEETING THE REQUIREMENTS OF ASTM C1478M OR BY COMPLETELY FILLING THE SPACE AROUND EACH PIPE WITH MORTAR FOR CONCRETE MASONRY, CONCRETE GROUTING MATERIAL, OR CONCRETE REPAIR MATERIAL. THE CONTRACTOR MAY USE ALTERNATE METHODS FOR SEALING THE SPACE AROUND THE PIPE, CONTINGENT UPON SATISFACTORY RESULTS BEING OBTAINED.
10. TOP SLAB AND OR FRAME AND GRATE ADJUSTMENT:
A MINIMUM OF $\frac{1}{2}$ " OF BEDDING SHALL BE PLACED BETWEEN RISER AND PRECAST TOP SLABS. GRADE ADJUSTMENT FOR TOP SLABS AND/OR FRAME AND GRATE OF UP TO $2\frac{1}{2}$ " SHALL BE MADE WITH BEDDING MATERIAL MEETING THE REQUIREMENTS OF MORTAR FOR CONCRETE MASONRY, CONCRETE GROUTING MATERIALS OR CONCRETE REPAIR MATERIAL. GRADE ADJUSTMENT FOR TOP SLABS AND/OR FRAME AND GRATES OF UP TO 6" SHALL BE MADE WITH COMBINATION OF PRECAST CONCRETE PAVERS AND BEDDING MATERIALS. GRADE ADJUSTMENT FOR TOP SLABS AND/OR FRAME AND GRATES OF UP TO 1'-0" SHALL BE MADE WITH CAST-IN-PLACE CONCRETE OR A COMBINATION OF PRECAST CONCRETE ADJUSTMENT ELEMENTS AND BEDDING MATERIALS. ALTERNATELY, GRADE ADJUSTMENTS FOR FRAMES AND GRATES OF UP TO 2" MAY BE MADE WITH RECYCLED RUBBER ELEMENTS OR UP TO 3" WITH HDPE ELEMENTS. RECYCLED RUBBER AND HDPE ELEMENTS SHALL BE PRODUCTS APPROVED BY THE MATERIALS BUREAU AND SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS. THE CONTRACTOR MAY USE ALTERNATE METHODS OF GRADE ADJUSTMENT, CONTINGENT UPON SATISFACTORY RESULTS BEING OBTAINED.
11. MANHOLE STEPS SHALL BE REQUIRED IN ALL DRAINAGE STRUCTURES DEEPER THAN 4'-0".
12. CORBELED OR CONICAL RISER SECTIONS AND FLAT SLAB REDUCERS.
ROUND PRECAST DRAINAGE STRUCTURES OR MANHOLES (WHEN ALLOWED OR SPECIFIED) MAY BE FITTED WITH CONCENTRIC OR ECCENTRIC CONICAL SECTIONS TO REDUCE THEIR DIAMETERS. PROVIDED THE USE OF SUCH DEVICES IS COMPATIBLE WITH THE DRAINAGE SYSTEM DESIGN. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS FOR REVIEW AND APPROVAL OF FLAT SLAB REDUCERS FOR ROUND OR RECTANGULAR STRUCTURES. A WALL SECTION WITH A HEIGHT LESS THAN 6" BETWEEN THE TOP OF THE HIGHEST PIPE ENTRY AND THE BOTTOM OF A CONICAL SECTION OR FLAT SLAB REDUCER SHALL NOT BE PERMITTED.
13. WHEN PIPE LOCATIONS PROVIDE FOR LESS THAN 8" BETWEEN THE TOP OF THE UPPERMOST PIPE AND THE TOP OF THE RISER AND THE STRUCTURE MAY BE SUBJECTED TO HIGHWAY LOADS, CONTACT STRUCTURES DIVISION FOR A SPECIAL DESIGN.
14. WHEN SITE CONDITIONS REQUIRE A DRAINAGE STRUCTURE TO BE INSTALLED TO A DEPTH GREATER THAN THAT SHOWN IN THE CONTRACT DOCUMENTS, AN INSTALLATION TOLERANCE OF 8" IS PERMITTED WITHOUT REQUIRING AN INCREASE IN WALL THICKNESS OR REINFORCING STEEL AS REQUIRED BY THE DRAINAGE STRUCTURE REINFORCEMENT TABLE.
15. THE PAY ITEMS FOR DRAINAGE STRUCTURES SPECIFY THE STRUCTURE AND FRAME. DRAINAGE STRUCTURE ITEM NUMBERS:
RECTANGULAR DRAINAGE STRUCTURE WITH CONCRETE CAP ITEM 604.32XXYY
SEE TABLES BELOW FOR XX AND YY CODES. EXAMPLE: 604.0672 - RECTANGULAR STRUCTURE TYPE F WITH VILLAGE STANDARD CAST FRAME.

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