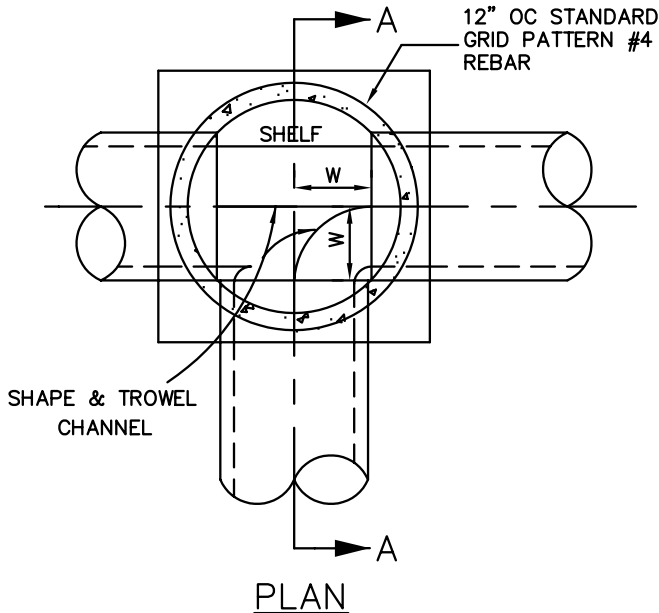




TOWN OF HILLSBOROUGH STANDARD DETAILS

SECTION 3.0 STORM DRAIN DETAILS

TOWN OF HILLSBOROUGH STANDARD DETAILS

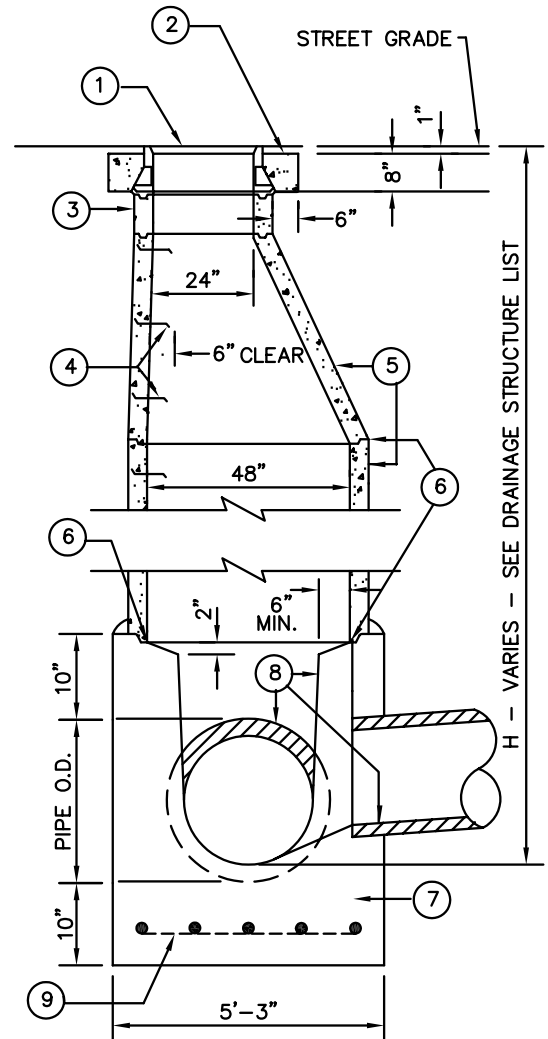


W-VARIES WITH
PIPE SIZE
(SEE TABLE 1)

PIPE SIZE	W
15	22"
18	21"
21	20"
24	19"
≥27	18"

TABLE 1

- ① MH FRAME AND COVER SHALL BE PHOENIX P-1001 LETTERED "STORM SEWER".
- ② CONCRETE COLLAR SHALL BE CLASS B.
- ③ ADJUSTING GRADE RINGS AS NEEDED, 12" MAX, GROUTED ON THE INSIDE.
- ④ STEPS, REQUIRED WHEN DEPTH EXCEEDS 2.5 FT., SHALL BE STEEL-REINFORCED POLYPROPYLENE STEP PER ASTM C-478, MA INDUSTRIES PS-2-PFS, OR EQUAL.
- ⑤ PRECAST SHAFT(S) AND ECCENTRIC CONE PER ASTM C478. STRAIGHT SIDE OF CONE SHALL BE POSITIONED OVER SHELF. CONCENTRIC CONE MAY BE USED ONLY WITH WRITTEN APPROVAL OF CITY ENGINEER.
- ⑥ JOINTS SHALL BE SET WITH BUTYL RUBBER SEALANT (RUB'R-NEK).
- ⑦ MH BASE SHALL BE CLASS A CONCRETE, AND REST ON UNDISTURBED MATERIAL. BOTTOM SHAFT SHALL BE WET-SET OR SET IN FORMED GROOVE.
- ⑧ PIPE SHALL BE LAID THROUGH MANHOLE, AND TOP PORTION REMOVED AFTER BASE IS POURED. TROUGH SHALL HAVE STEEL-TROWEL FINISH, VERTICAL SIDES, ROUNDED CORNERS. TOP SURFACE SHALL HAVE 8.33% SLOPE TOWARD TROUGH. ALL INLET INVERTS SHALL BE MIN. 0.1' HIGHER THAN OUTLET INVERTS.
- ⑨ BASE - USE NO. 6 REBAR REINFORCEMENT 12" OC STANDARD GRID PATTERN.



SECTION A-A

STORM DRAIN MANHOLE (FOR MAINS UP TO 42" ID)

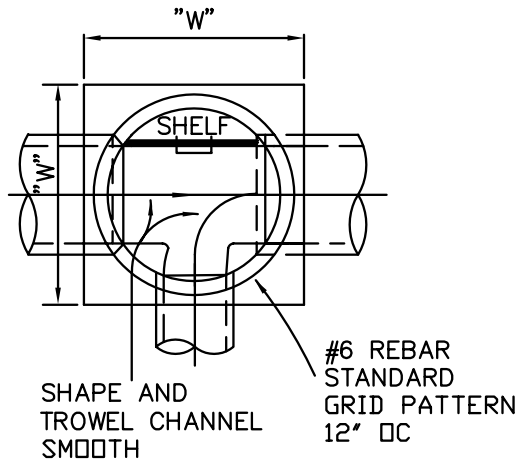
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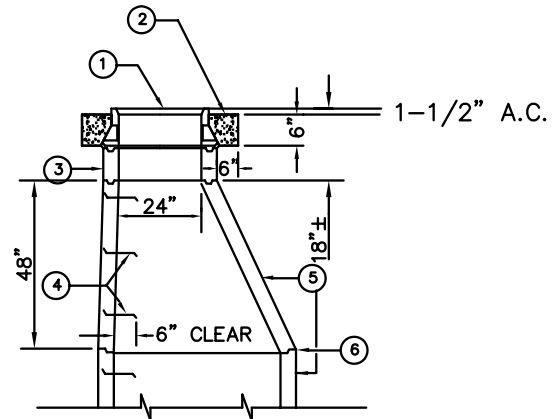
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SD 3.1

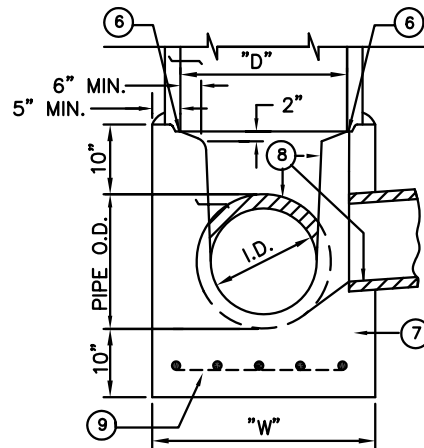
TOWN OF HILLSBOROUGH STANDARD DETAILS



PLAN



- ① MH FRAME AND COVER SHALL BE PHOENIX P-1001 LETTERED "STORM SEWER".
- ② CONCRETE COLLAR SHALL BE CLASS B.
- ③ ADJUSTING GRADE RINGS AS NEEDED, 12" MAX, GROUTED ON THE INSIDE.
- ④ STEPS, REQUIRED WHEN DEPTH EXCEEDS 2.5 FT., SHALL BE STEEL-REINFORCED POLYPROPYLENE STEP PER ASTM C-478, MA INDUSTRIES PS-2-PFS, OR EQUAL.
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- ⑥ JOINTS SHALL BE SET WITH BUTYL RUBBER SEALANT (RUB'R-NEK).
- ⑦ MH BASE SHALL BE CLASS A CONCRETE, AND REST ON UNDISTURBED MATERIAL. BOTTOM SHAFT SHALL BE WET-SET OR SET IN FORMED GROOVE.
- ⑧ PIPE SHALL BE LAID THROUGH MANHOLE, AND TOP PORTION REMOVED AFTER BASE IS POURED. TROUGH SHALL HAVE STEEL-TROWEL FINISH, VERTICAL SIDES, ROUNDED CORNERS. TOP SURFACE SHALL HAVE 8.33% SLOPE TOWARD TROUGH. ALL INLET INVERTS SHALL BE MIN. 0.1' HIGHER THAN OUTLET INVERTS.
- ⑨ BASE NO. 6 REBAR REINFORCEMENT 12" OC STANDARD GRID PATTERN.



D = 60"
W = 78"

SECTION

STORM DRAIN MANHOLE (FOR PIPES I.D. 45" TO 60"ID)

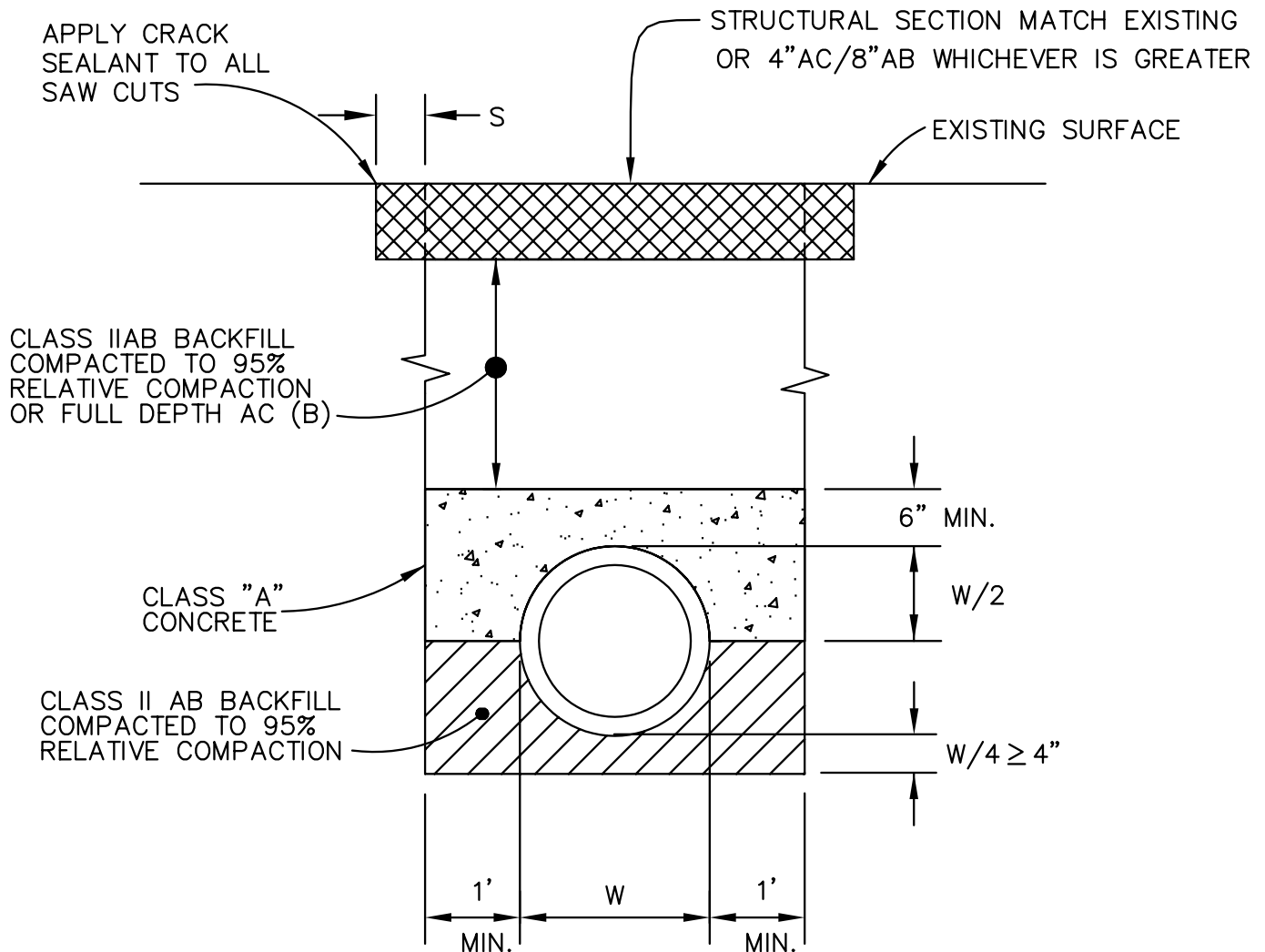
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SD 3.2

TOWN OF HILLSBOROUGH STANDARD DETAILS



NOTE: IF TRENCH WIDTH (TW) IS <2' S=6" OR IF TW IS ≥2' S=12",

CONCRETE CAP

(FOR SHALLOW STORM DRAINS
WITH LESS THAN 2' OF COVER)

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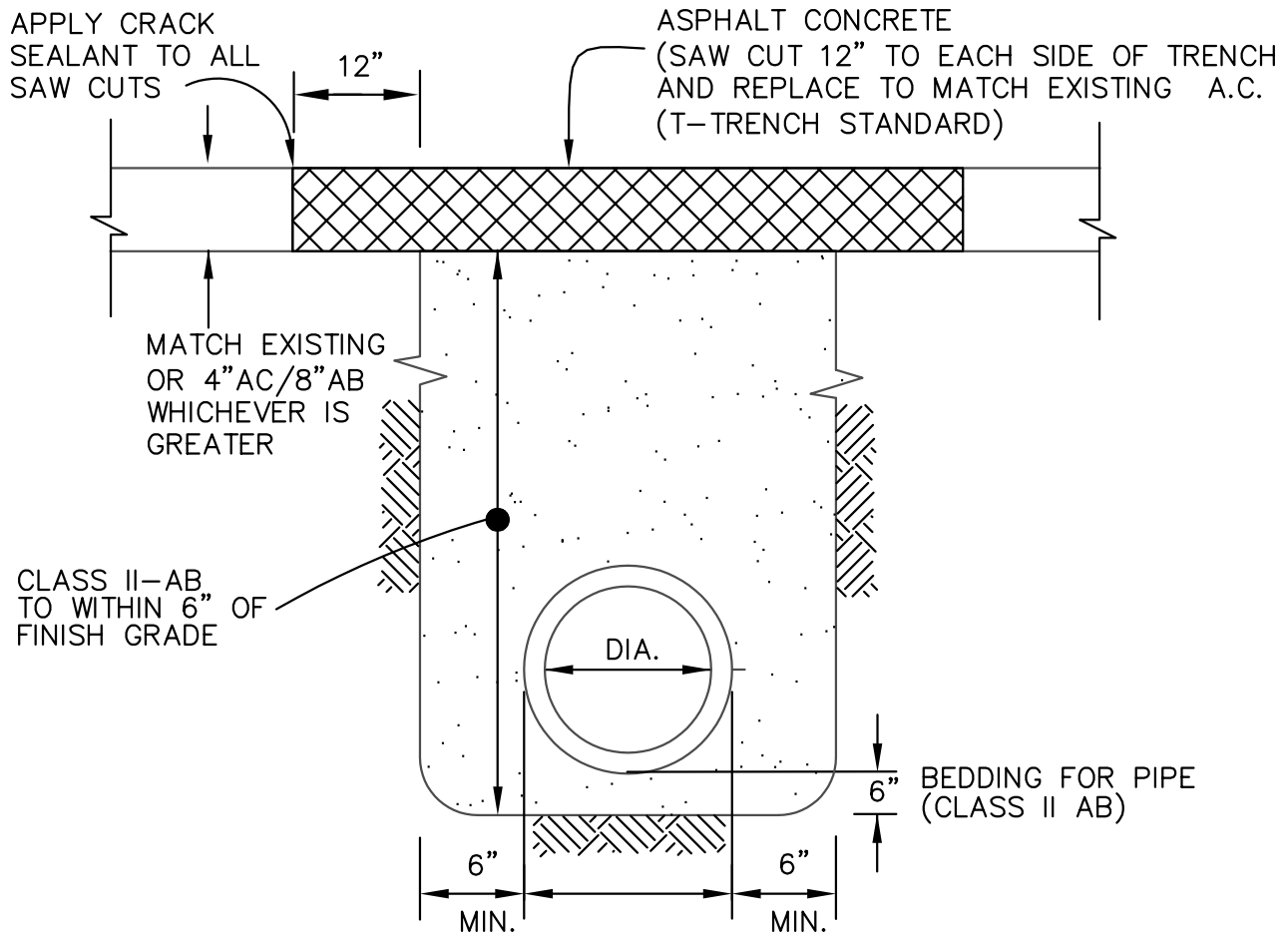
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SD 3.3

TOWN OF HILLSBOROUGH

STANDARD DETAILS



NOTES:

1. EXISTING A.C. SHALL BE CUT AND REMOVED IN SUCH A MANNER SO AS TO NOT TEAR, BULGE OR DISPLACE ADJACENT PAVEMENT. EDGES SHALL BE CLEAN AND VERTICAL. ALL CUTS SHALL BE PARALLEL OR PERPENDICULAR TO STREET CENTERLINE, WHEN PRACTICAL.
2. MATCH EXISTING PAVEMENT SECTION OR MIN. OF 4"AC/8"AB WHICHEVER IS GREATER.
3. A PRIME COAT SHALL BE APPLIED TO AGGREGATE BASE PRIOR TO PERMANENT PAVING.
4. A TACK COAT OF ASPHALTIC EMULSION OR PAVING ASPHALT SHALL BE APPLIED TO EXISTING A.C. AT ALL CONTACT SURFACES PRIOR TO PERMANENT PAVING.
5. PRIOR TO STARTING ANY WORK IN THE PUBLIC RIGHT-OF-WAY, AN ENCROACHMENT PERMIT SHALL BE OBTAINED FROM THE TOWN.

STORM DRAIN TRENCH BACKFILL AND BEDDING

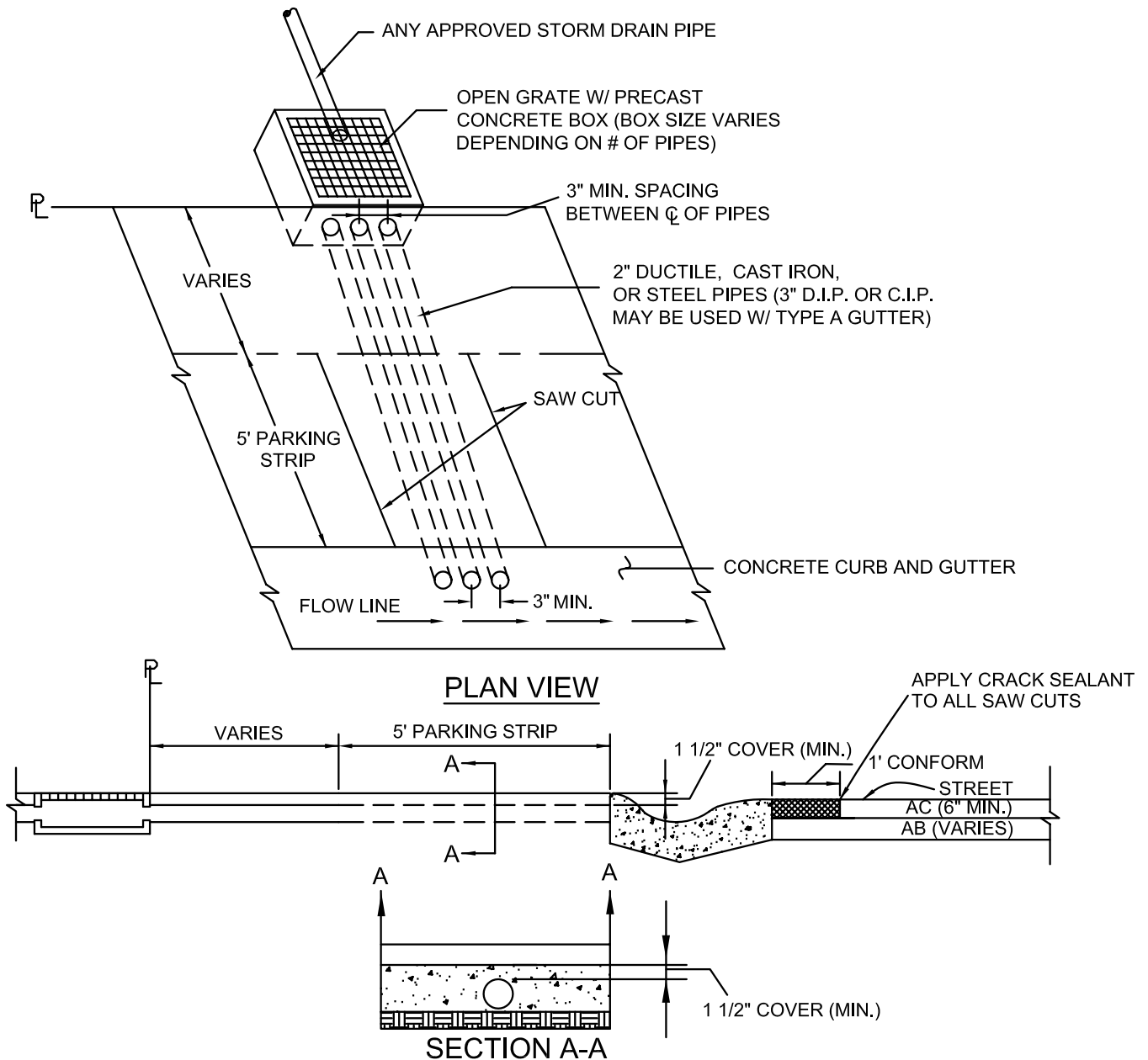
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SCALE: N.T.S.

SD 3.4

TOWN OF HILLSBOROUGH STANDARD DETAILS



NOTES:

1. INSTALLATION OF CURB DRAINS REQUIRE COMPLETE REMOVAL OF CURB AND GUTTER TO NEAREST COLD/EXPANSION JOINT EACH WAY.
2. INSTALLATION ALSO REQUIRES A MINIMUM OF A ONE-FOOT AC CONFORM SECTION
3. USE # 4 STEEL BAR DOWELS 12" INTO EXISTING ROLLED GUTTER WHEN PLACING NEW SECTION SET WEIGHT EPOXY.
4. PRIOR TO BEGINNING ANY WORK IN THE PUBLIC RIGHT-OF-WAY, AN ENCROACHMENT PERMIT SHALL BE OBTAINED FROM THE TOWN.
5. AN INSPECTION BY THE PUBLIC WORKS INSPECTOR IS REQUIRED AFTER FORMS ARE IN PLACE AND PRIOR TO PLACING ANY NEW MATERIAL.

CURB DRAIN

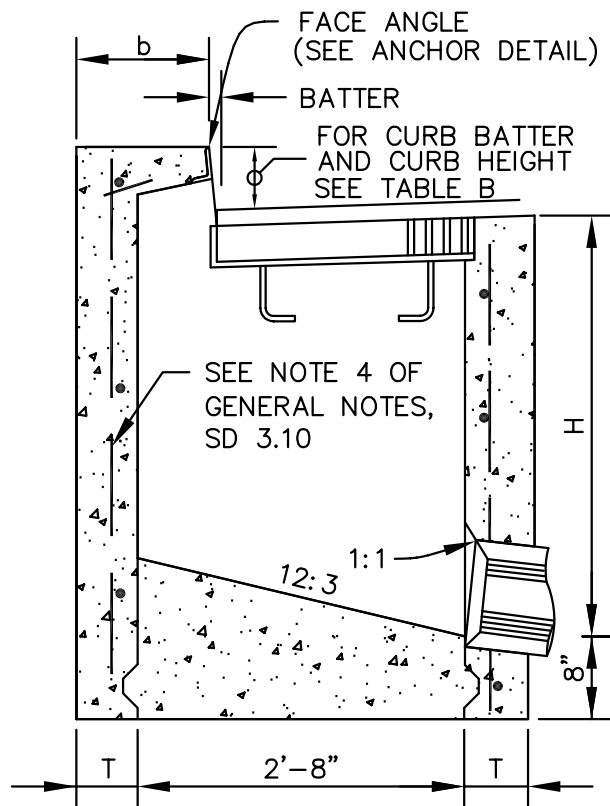
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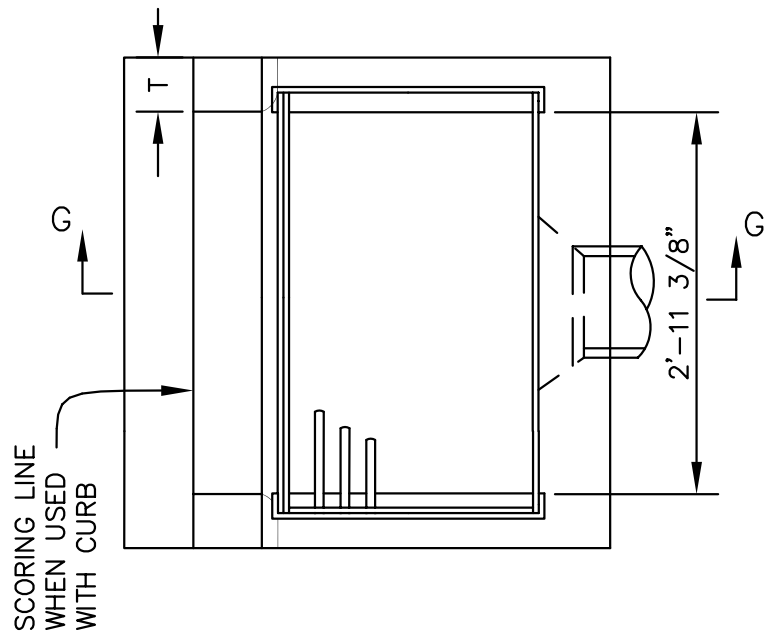
SCALE: N.T.S.

SD 3.5

TOWN OF HILLSBOROUGH STANDARD DETAILS



SECTION G-G



PLAN

TABLE B

Curb Type	Normal Curb Height	Curb Batter	b
A	8"	2"	12
B	6"	1 1/2"	12 1/2"

NOTES:

1. IF H=3'-0" TO 8'-0" THEN T=6" AND IF H=8'-1" TO 20'-0" THEN T=6"
2. BASED ON 8" FLOOR SLAB

TYPE GO INLET

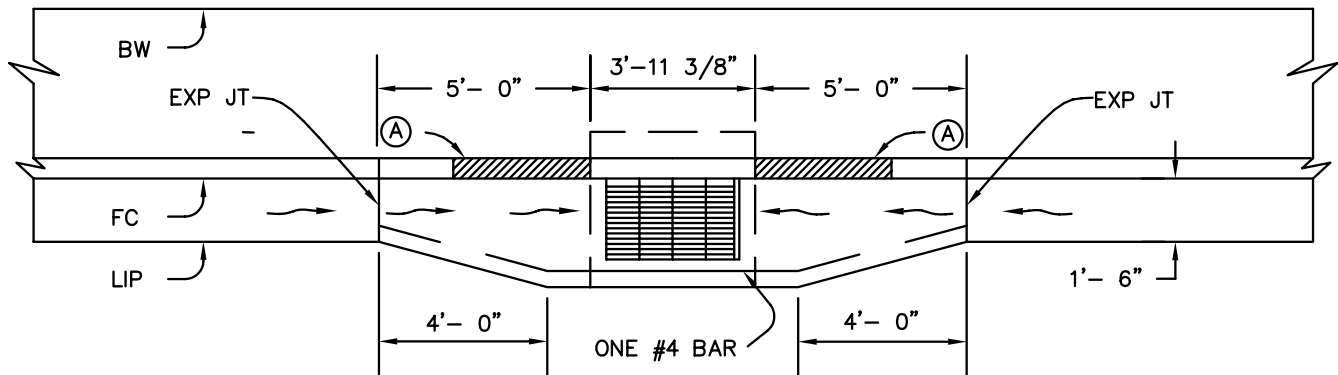
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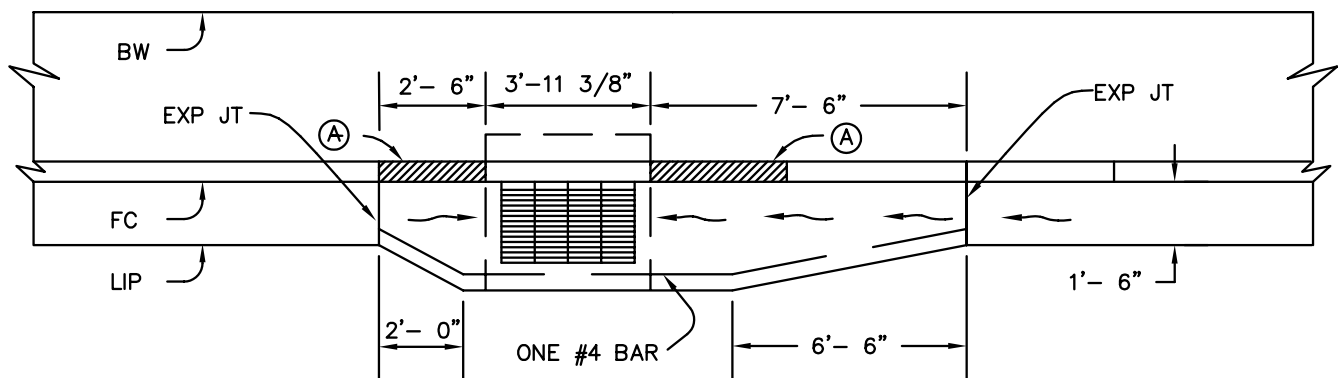
SD 3.6

TOWN OF HILLSBOROUGH STANDARD DETAILS



(A) TRANSITION FROM CURB & GUTTER TO ROLLED CURB WITH A MINIMUM OF 30"

TYPE GO INLET AT SAG



(A) TRANSITION FROM CURB & GUTTER TO ROLLED CURB WITHIN A MINIMUM OF 30"

TYPE GO INLET AT GRADE

TYPE GO APRON

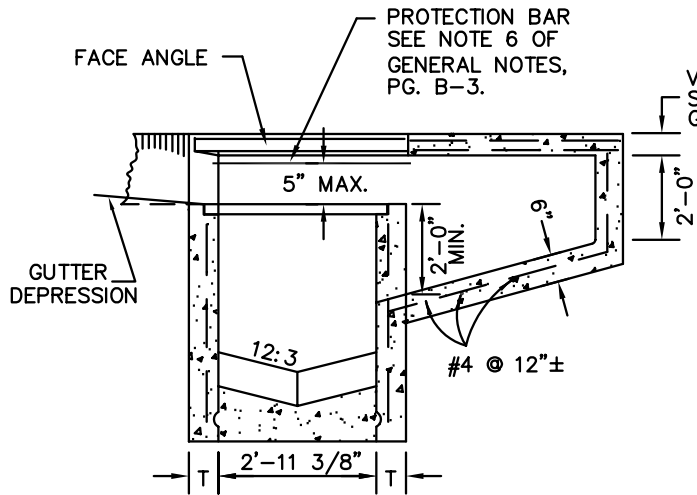
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DATE: 06/13/04

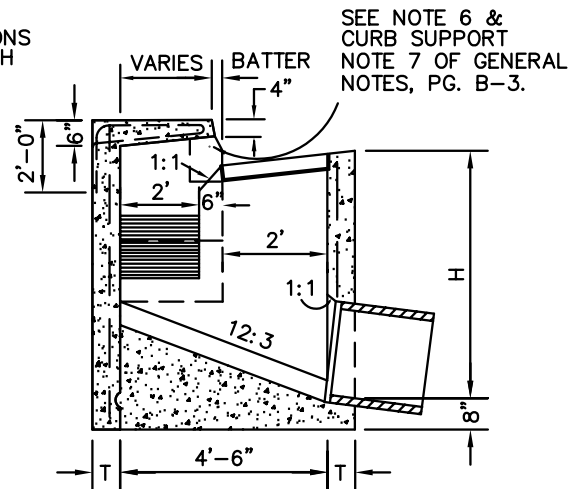
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SD 3.7

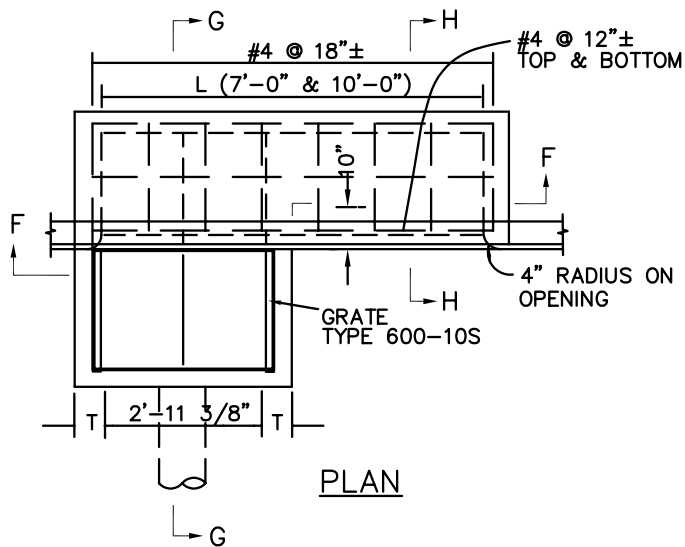
TOWN OF HILLSBOROUGH STANDARD DETAILS



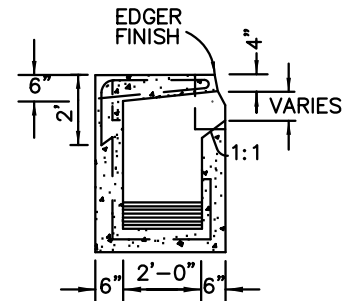
SECTION F-F



SECTION G-G



PLAN



SECTION H-H

NOTES:

1. IF H=3'-0" TO 8'-0" THEN T=6" AND IF H=8'-1" TO 20'-0" THEN T=6"
2. BASED ON 8" FLOOR SLAB
3. INLET GRATE SHALL BE CALTRANS TYPE 600-10S (BICYCLE PROOF RETICULINE)

INLET TYPE GOL

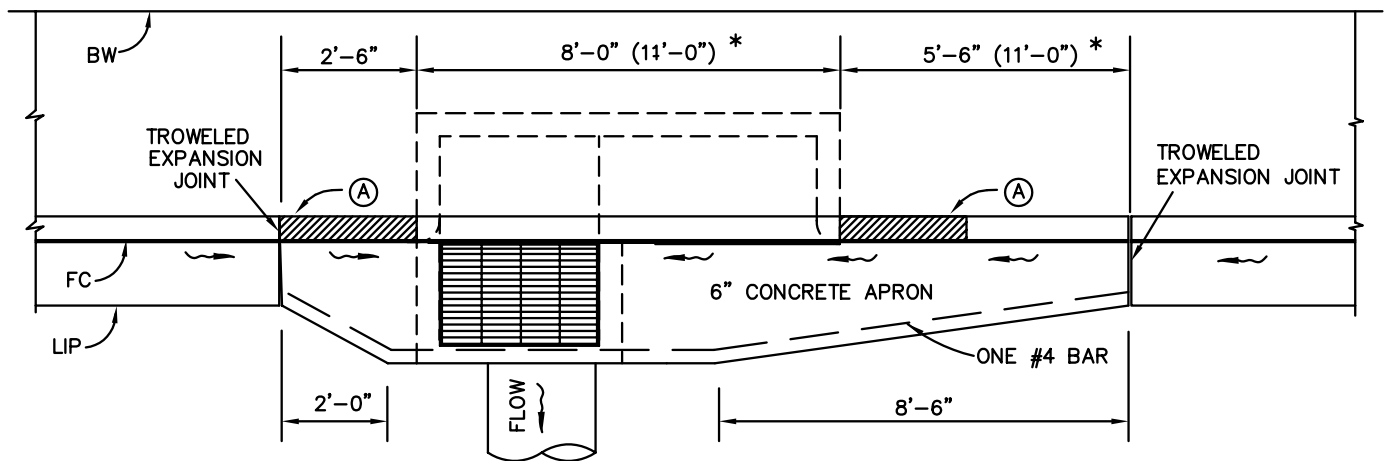
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SCALE: N.T.S.

SD 3.8

TOWN OF HILLSBOROUGH STANDARD DETAILS



(A) TRANSITION FROM CURB & GUTTER TO ROLLED CURB WITH A MINIMUM OF 30"

TYPE GOL APRON

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SCALE: N.T.S.

SD 3.9

TOWN OF HILLSBOROUGH

STANDARD DETAILS

GENERAL NOTES:

1. "H" IS THE DIFFERENCE IN ELEVATION BETWEEN THE OUTLET PIPE FLOW LINE AND THE NORMAL GUTTER GRADE LINE UNDEPRESSED AT THE CURB FACE.
2. FOR "T" WALL THICKNESS SEE TABLE.
3. HEIGHT OF CURB OPENING WILL VARY WITH THE TYPE OF CURB AND THE DEPTH OF THE LOCAL DEPRESSION.
4. WALL REINFORCING NOT REQUIRED WHEN $H = 8'$ OR LESS AND THE UNSUPPORTED WIDTH OR LENGTH = $7'$ OR LESS. WALLS EXCEEDING THESE LIMITS SHALL BE REINFORCED WITH #4 BARS @ $18'' \pm$ CENTERS PLACED $1-1/2''$ CLEAR TO INSIDE OF BOX UNLESS OTHERWISE SHOWN.
5. POLYPROPELENE STEPS – NONE REQUIRED WHERE "H" IS LESS THAN 30 INCHES. WHERE "H" IS 30 INCHES OR MORE, INSTALL STEPS WITH LOWEST RUNG 12 INCHES ABOVE THE FLOOR, AND HIGHEST RUNG NOT MORE THAN 6 INCHES BELOW TOP OF INLET. THE DISTANCE BETWEEN STEPS SHALL NOT EXCEED 12 INCHES AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF WALL. PLACE STEPS IN THE WALL WITHOUT AN OPENING.
6. WHEN SHOWN ON THE PROJECT PLANS, PLACE A #6 PROTECTION BAR HORIZONTALLY ACROSS THE ENTIRE LENGTH OF THE OPENING AND BEND BACK $4''$ INTO THE INLET WALL ON EACH SIDE.
7. CURB SUPPORTS SHALL BE EVENLY SPACED AND MINIMAL IN NUMBER SUCH THAT MAXIMUM SPAN OF UNSUPPORTED CURB IS $7'$.
8. EXCEPT FOR INLETS USED AS JUCTION BOXES, BASIN FLOOR SHALL HAVE A MINIMUM SLOPE OF 12:3 FROM ALL DIRECTIONS TOWARD OUTLET PIPE AND SHALL HAVE A WOOD TROWEL FINISH.
9. GALVANIZING: SEE STANDARD SPECIFICATION OR SPECIAL PROVISIONS.
10. FULL PENETRATION BUTT WELDS MAY BE SUBSTITUTED FOR THE FILLET WELDS ON ALL ANCHORS.
11. STANDARD SQUARE, HEXAGON, ROUND OR EQUIVALENT HEADED ANCHORS MAY BE SUBSTITUTED FOR THE RIGHT ANGLE HOOKS ON THE ANCHORS SHOWN ON THIS PLAN.
12. CAST-IN-PLACE OR PRECAST ALTERNATIVE IS OPTIONAL WITH CONTRACTOR. SEE STANDARD SPECIFICATIONS.

STORM DRAIN INLETS – GENERAL NOTES

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SD 3.10