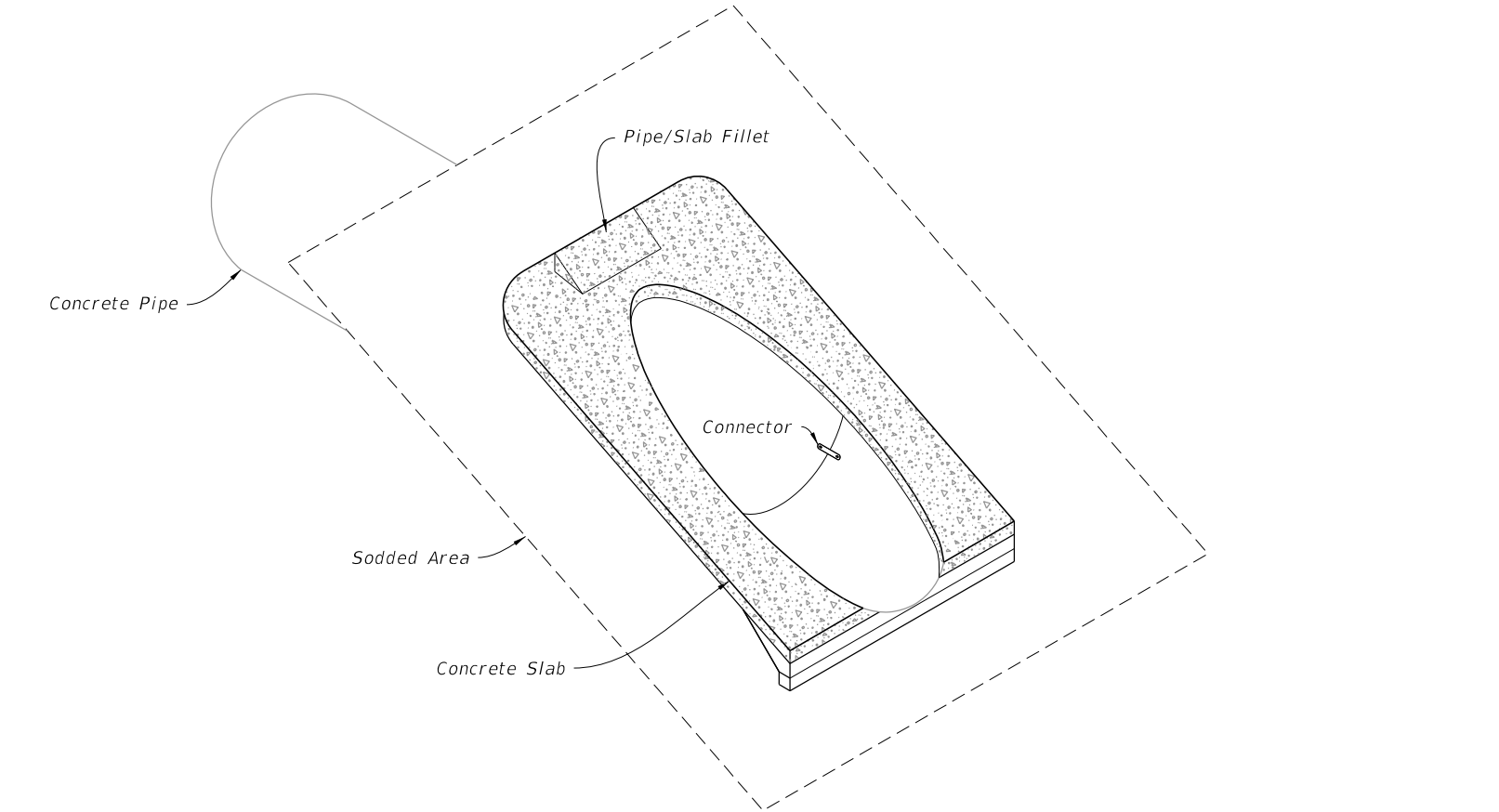


GENERAL NOTES:

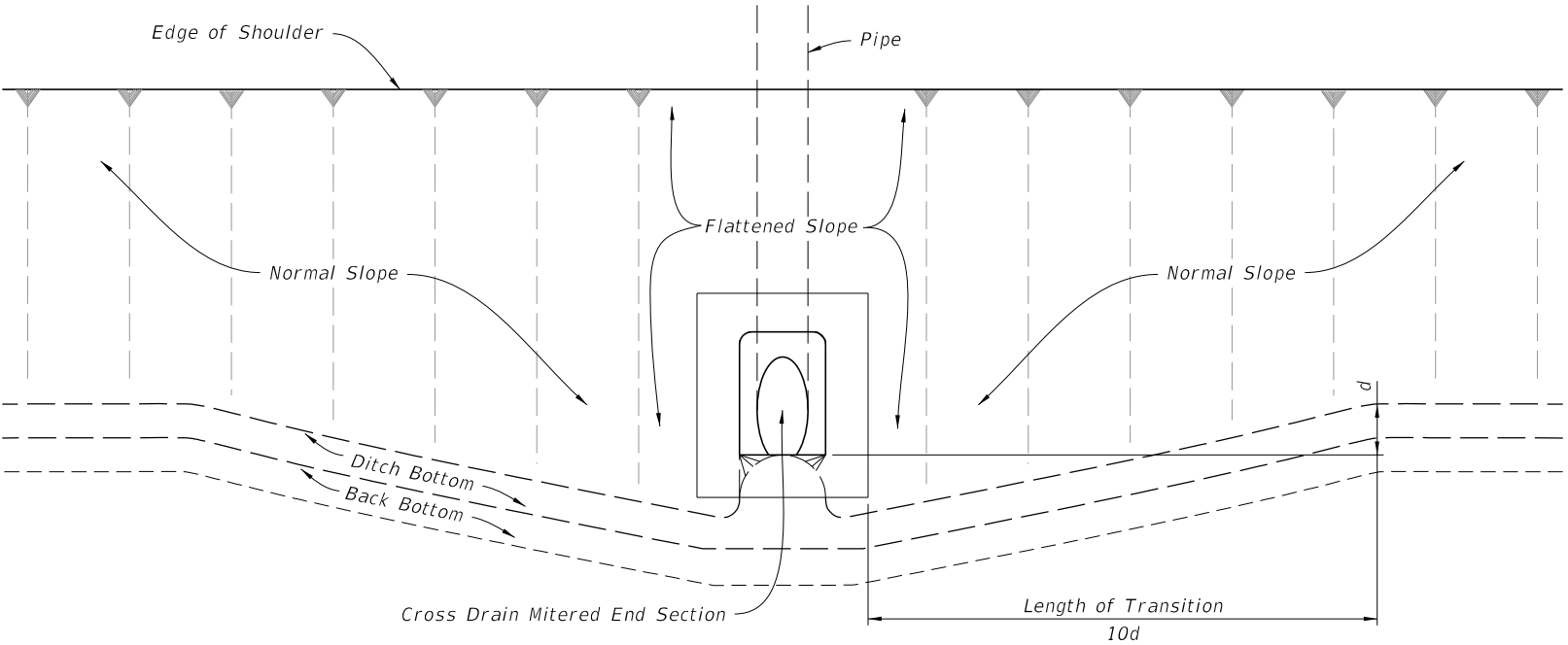
1. Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of cross drain pipe; corrugated steel pipe mitered end sections may be used with any type of cross drain pipe except aluminum pipe; and, corrugated aluminum mitered end sections may be used with any type of cross drain pipe except steel pipe. When bituminous coated metal pipe is specified for cross drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the cross drain pipe, construct a concrete jacket in accordance with Index 430-001.
2. Use either corrugated metal or concrete mitered end sections for corrugated polyethylene pipe (HDPE), polyvinyl-chloride pipe (PVC), steel reinforced polyethylene pipe (SRPE), and polypropylene pipe (PP). When used in conjunction with corrugated mitered end sections, make connection using either a formed metal band specifically designated to join HDPE, PVC, SRPE, or PP pipe, with metal pipe. When used in conjunction with a concrete mitered end sections, construct concrete jacket in accordance with Index 430-001.
3. Class NS concrete cast-in-place reinforced slabs are required for all sizes of cross drain pipes. Construct slabs at 5½" thick, unless 3" thickness is called for in the Plans.
4. Select lengths of concrete pipe that avoid excessive connections in the assembly of the mitered end section.
5. Repair corrugated metal pipe galvanizing that is damaged during beveling and perforating.
6. When existing multiple cross drain pipes are spaced other than the dimensions shown in this Index, have nonparallel axes, or non-uniform sections, either construct the mitered end sections separately as single pipe or collectively as multiple pipe end sections as directed by the Engineer.
7. Saddle Slope:

1:4 Miter – Slope to  $\text{C}$  of pipe for round pipes less than or equal to 18" diameter and 1:1 for round pipes greater than or equal to 24" diameter.  
Slope to the major axis for elliptical pipes 24"x38" or smaller and 1:2 for pipes 29"x45" or larger.  
Slope to the span line for pipe arch 28"x20" or smaller and 1:2 for pipe arch 35"x24" or larger.

1:2 Miter – Slope to  $\text{C}$  of pipe for round pipes less than or equal to 18"diameter and 1:2 for round pipes greater than or equal to 24" diameter.  
Slope to the major axis for elliptical pipes 29"x45" or smaller and 1:1 for pipes 34"x53" or larger.  
Slope 1:1 for all pipe arch sizes.
8. Quantities shown are for estimating purposes only.



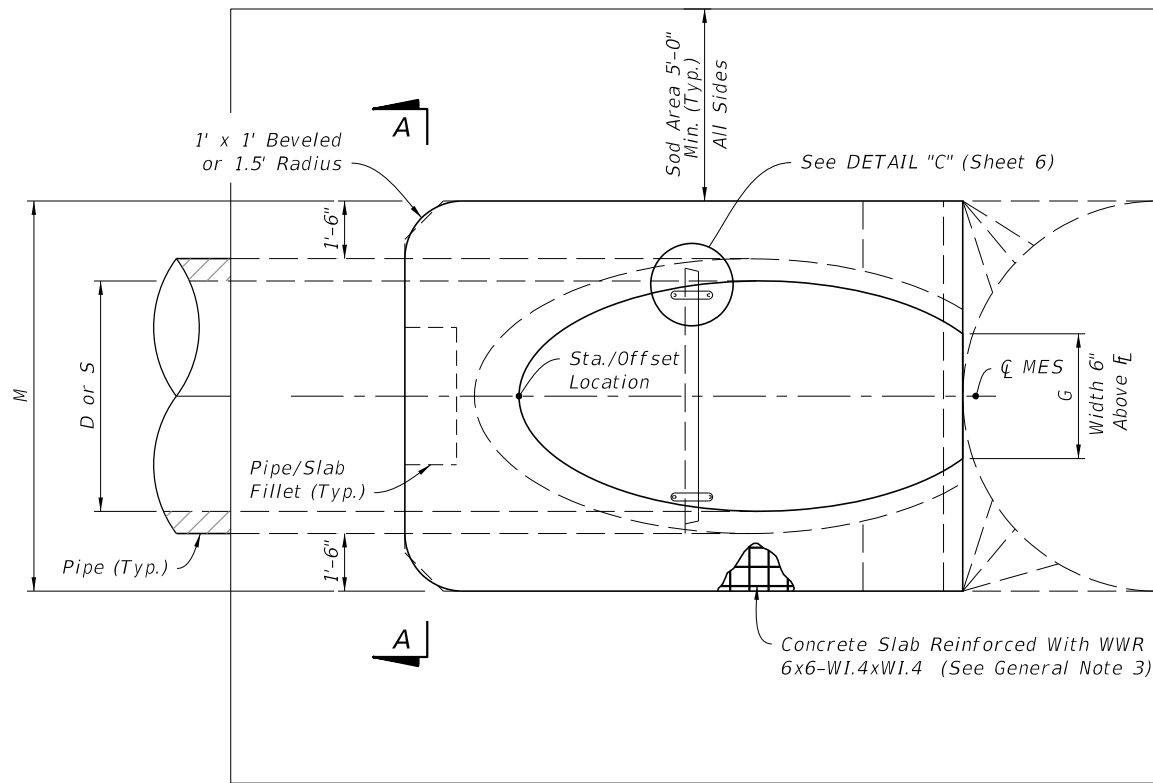
CROSS DRAIN MITERED END SECTION  
(Concrete Pipe Shown, Corrugated Metal Pipe Similar)



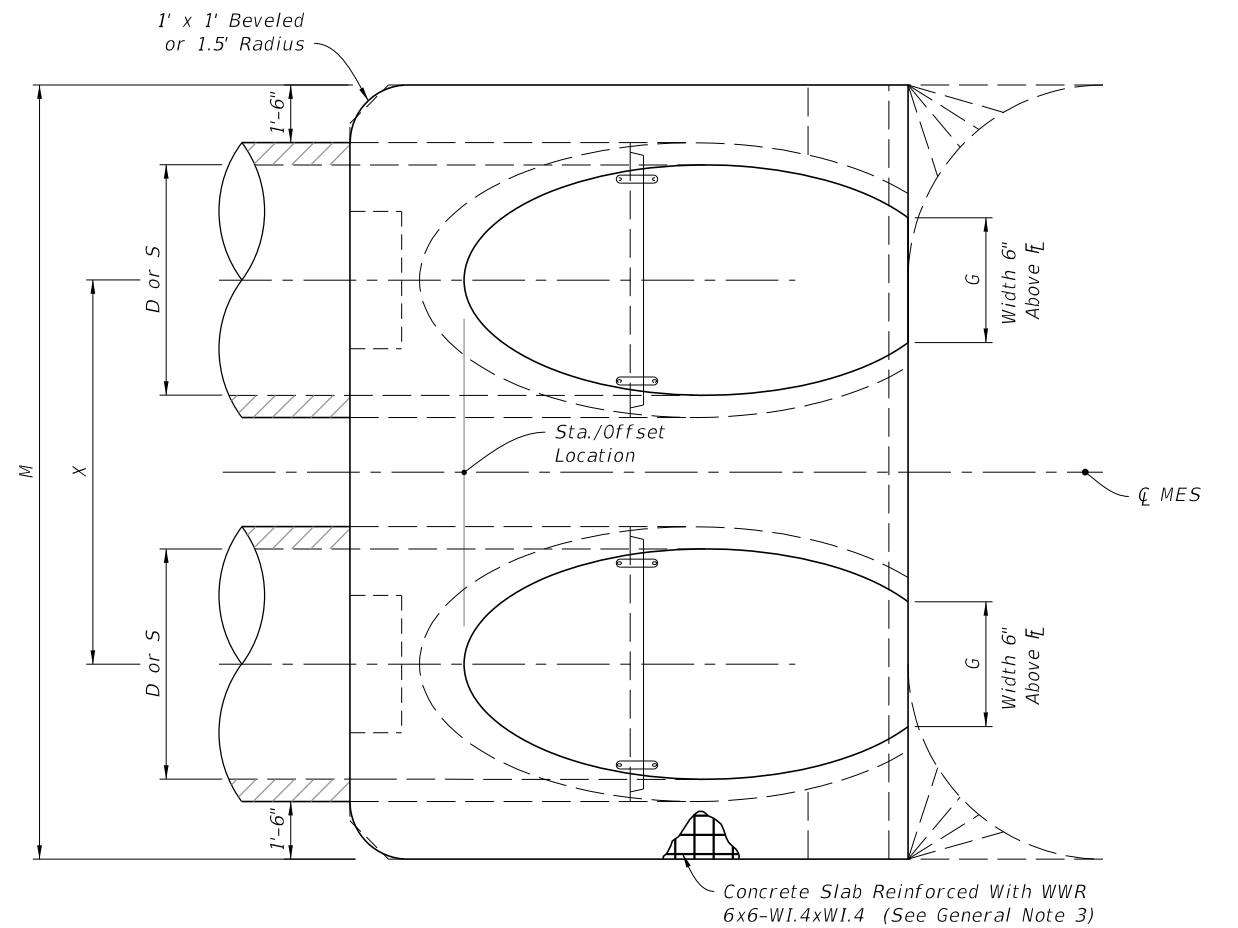
SLOPE AND DITCH TRANSITIONS

| TABLE OF CONTENTS: |                                                                         |
|--------------------|-------------------------------------------------------------------------|
| Sheet              | Description                                                             |
| 1                  | General Notes and Contents                                              |
| 2                  | Single and Multiple Concrete Pipe                                       |
| 3                  | Concrete Pipe Dimensions and Quantities                                 |
| 4                  | Single and Multiple Corrugated Metal Pipe                               |
| 5                  | Corrugated Metal Pipe Dimensions and Quantities                         |
| 6                  | Concrete Pipe Connections and Corrugated Metal Pipe (CMP) Anchor Detail |

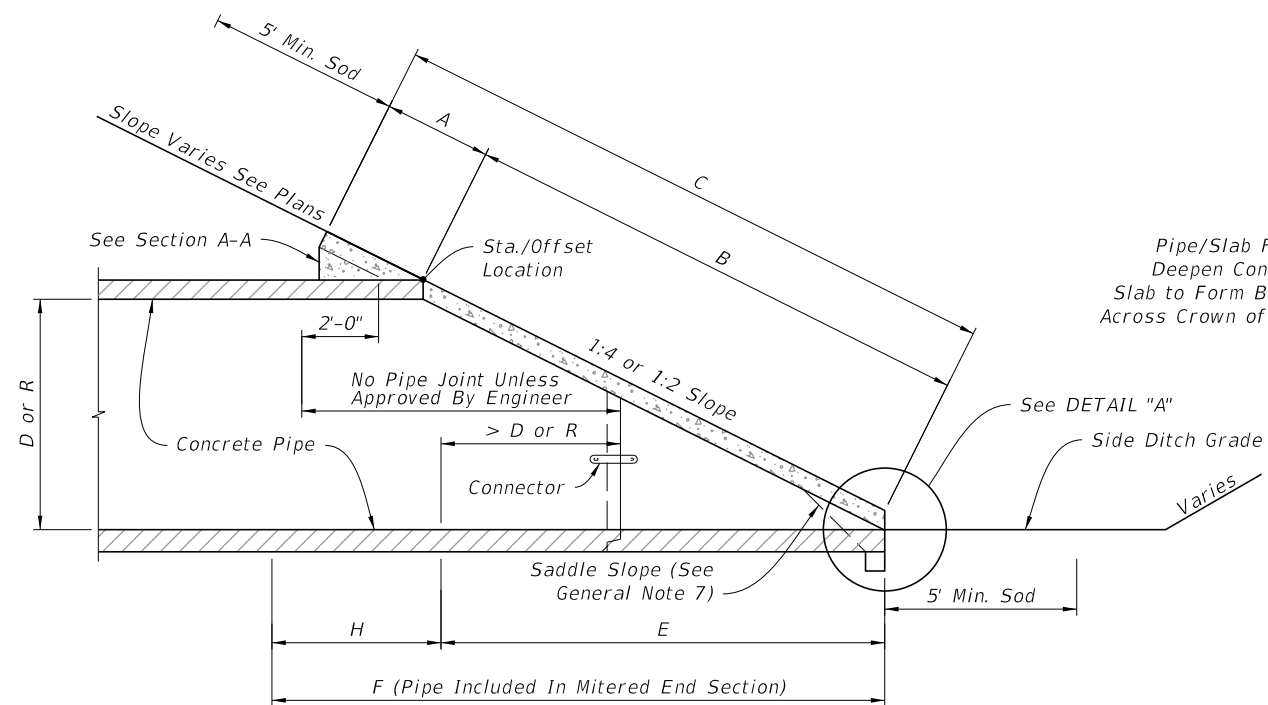
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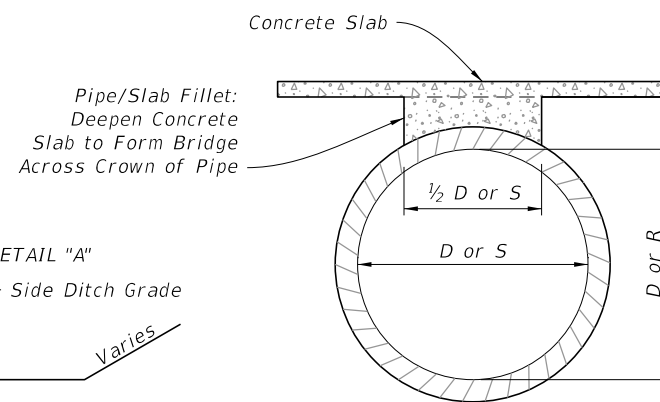
PLAN - SINGLE PIPE



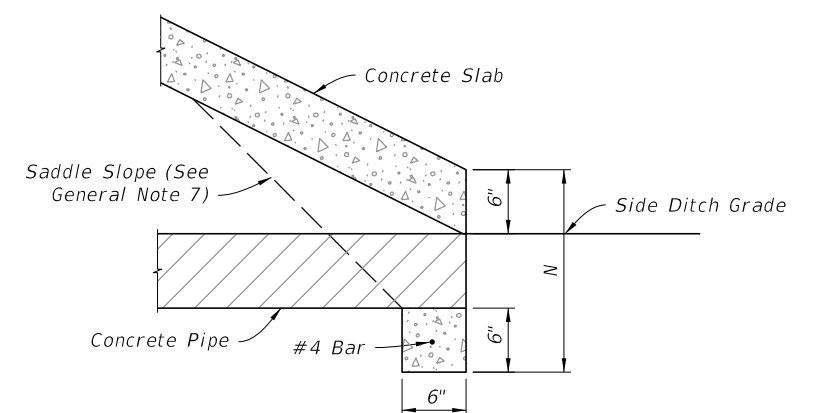
PLAN - MULTIPLE PIPE



ELEVATION



SECTION A-A  
(Pipe/Slab Fillet)



DETAIL "A"

ROUND CONCRETE PIPE  
(Elliptical Pipe Similar)

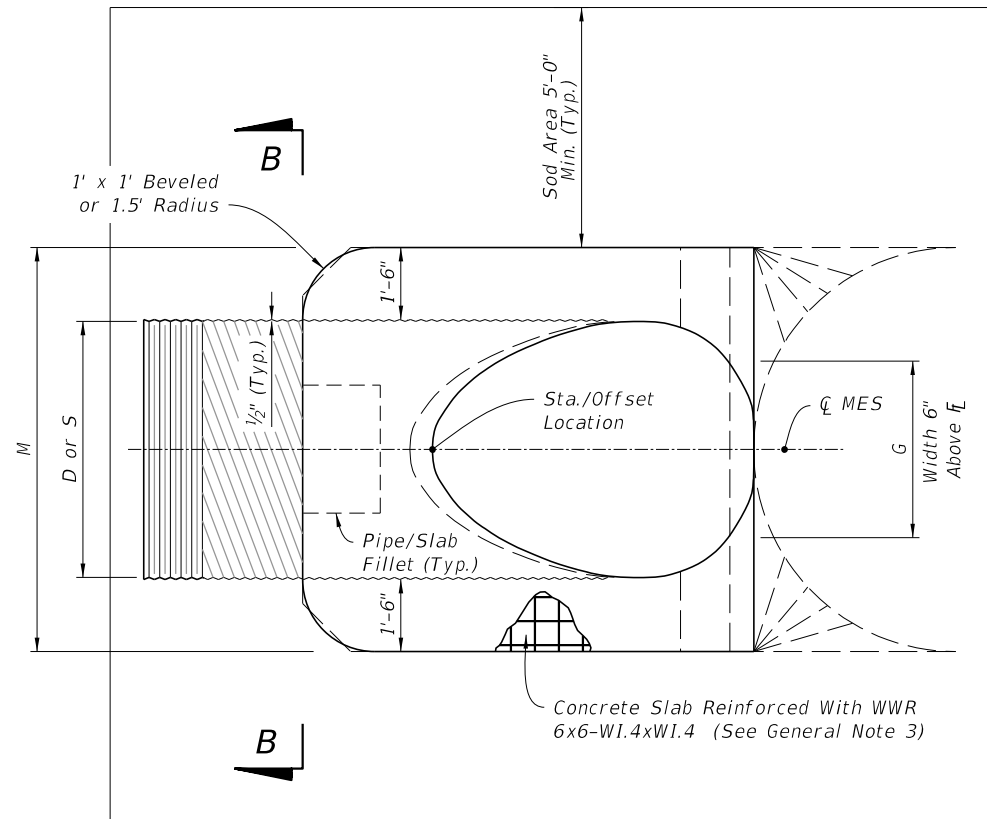
NOTE: See Table 1 on Sheet 3 for Dimensions and Quantities.

SINGLE AND MULTIPLE CONCRETE PIPE

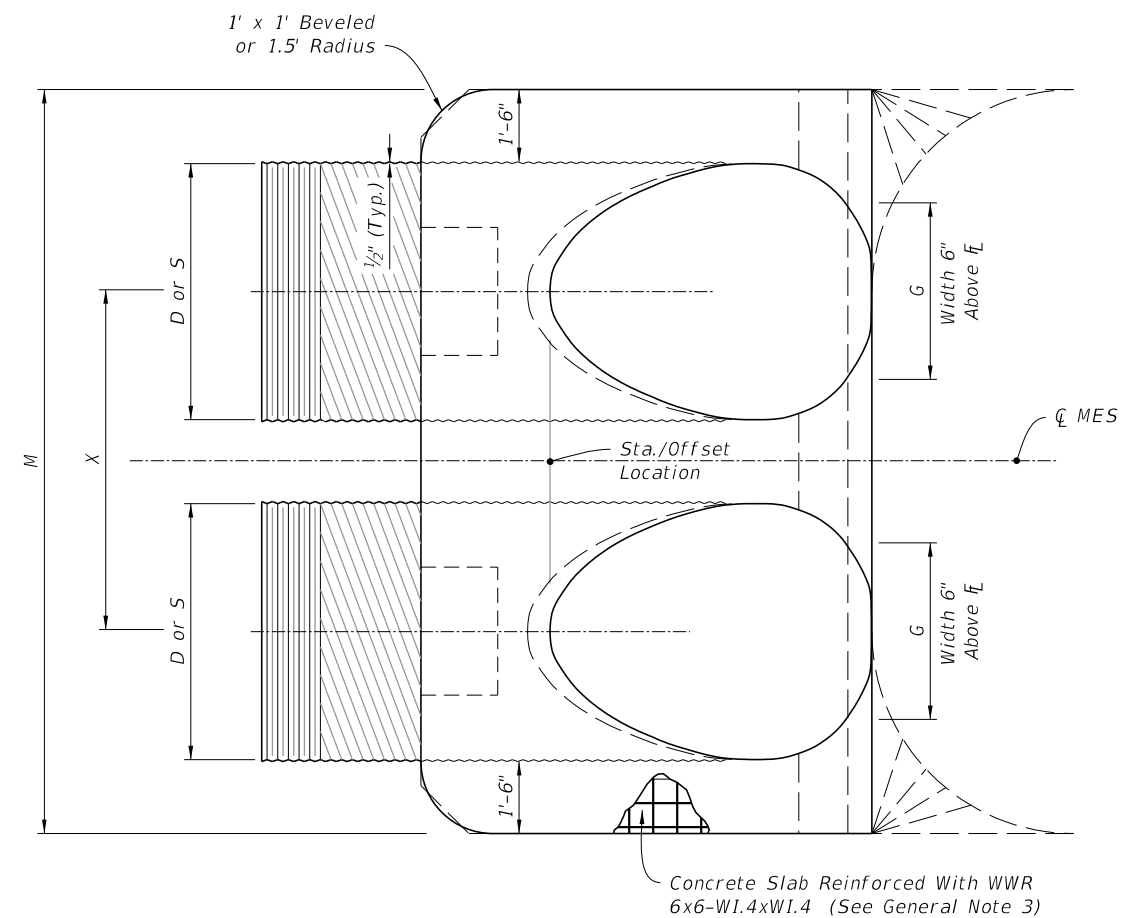
|                              |              |                                      |                                 |                  |                 |
|------------------------------|--------------|--------------------------------------|---------------------------------|------------------|-----------------|
| LAST<br>REVISION<br>11/01/19 | DESCRIPTION: | FDOT<br>FY 2027-28<br>STANDARD PLANS | CROSS DRAIN MITERED END SECTION | INDEX<br>430-021 | SHEET<br>2 of 6 |
|------------------------------|--------------|--------------------------------------|---------------------------------|------------------|-----------------|

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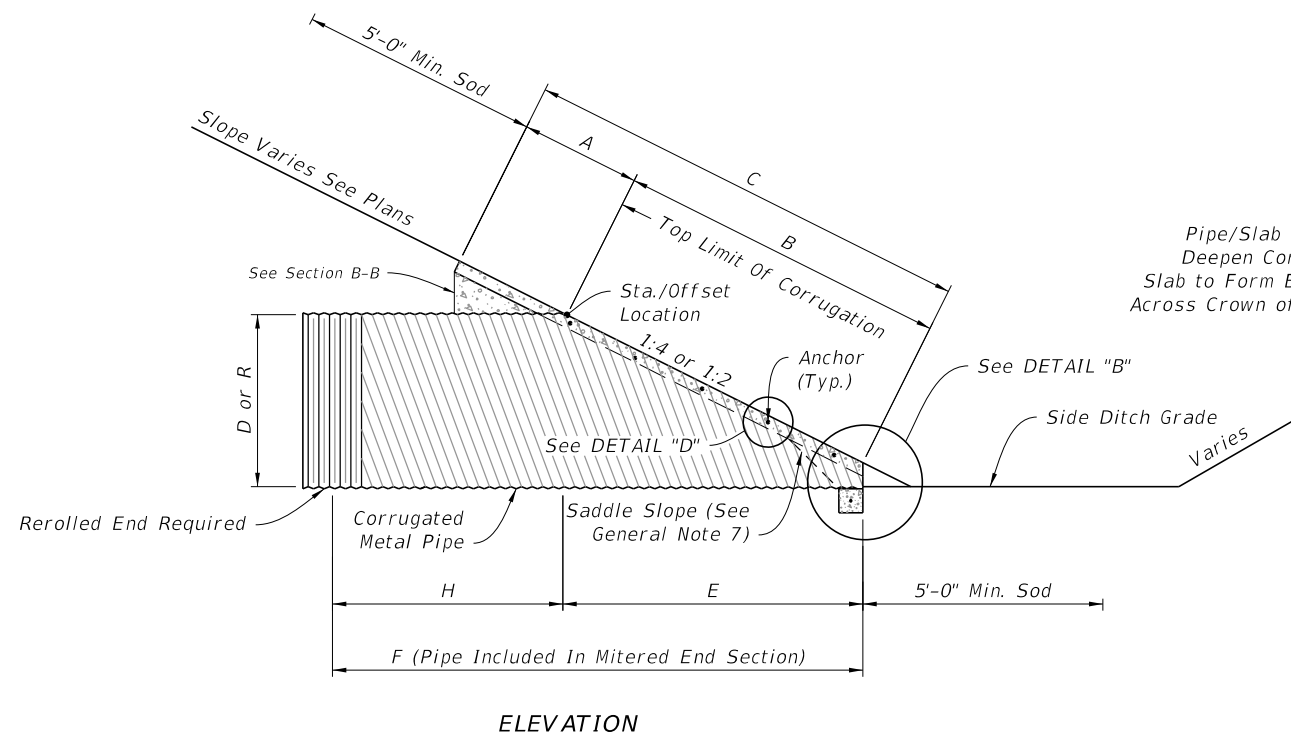
| TABLE 1<br>SINGLE AND MULTIPLE CONCRETE PIPE DIMENSIONS AND QUANTITIES |              |           |           |        |        |        |          |        |          |       |        |                |                |                |               |        |                                             |                |                |               |                                            |                |                |               |                |                |                |               |    |
|------------------------------------------------------------------------|--------------|-----------|-----------|--------|--------|--------|----------|--------|----------|-------|--------|----------------|----------------|----------------|---------------|--------|---------------------------------------------|----------------|----------------|---------------|--------------------------------------------|----------------|----------------|---------------|----------------|----------------|----------------|---------------|----|
|                                                                        | Dia.<br>D    | Rise<br>R | Span<br>S | X      | A      | B      | C        | E      | F        | G     | H      | M              |                |                |               | N      | 5½" CONC. SLAB (CY)<br>(See General Note 3) |                |                |               | 3" CONC. SLAB (CY)<br>(See General Note 3) |                |                |               | SODDING (SY)   |                |                |               |    |
|                                                                        |              |           |           |        |        |        |          |        |          |       |        | Single<br>Pipe | Double<br>Pipe | Triple<br>Pipe | Quad.<br>Pipe |        | Single<br>Pipe                              | Double<br>Pipe | Triple<br>Pipe | Quad.<br>Pipe | Single<br>Pipe                             | Double<br>Pipe | Triple<br>Pipe | Quad.<br>Pipe | Single<br>Pipe | Double<br>Pipe | Triple<br>Pipe | Quad.<br>Pipe |    |
|                                                                        |              |           |           |        |        |        |          |        |          |       |        |                |                |                |               |        |                                             |                |                |               |                                            |                |                |               |                |                |                |               |    |
| Round Concrete Pipe                                                    | 1:2<br>Slope | 15"       | —         | —      | 2'-7"  | 1.92'  | 2.18'    | 4.10'  | 2.06'    | 5'    | 1.22'  | 2.9'           | 4.63'          | 7.21'          | 9.79'         | 12.37' | 1.19'                                       | 0.38           | 0.58           | 0.77          | 0.96                                       | 0.27           | 0.41           | 0.54          | 0.67           | 21             | 24             | 27            | 30 |
|                                                                        |              | 18"       | —         | —      | 2'-10" | 1.97'  | 2.74'    | 4.71'  | 2.56'    | 6'    | 1.41'  | 3.4'           | 4.92'          | 7.75'          | 10.58'        | 13.42' | 1.21'                                       | 0.44           | 0.65           | 0.87          | 1.09                                       | 0.31           | 0.45           | 0.60          | 0.75           | 22             | 25             | 28            | 31 |
|                                                                        |              | 24"       | —         | —      | 3'-5"  | 2.06'  | 3.85'    | 5.91'  | 3.56'    | 7'    | 1.73'  | 3.4'           | 5.50'          | 8.92'          | 12.33'        | 15.75' | 1.25'                                       | 0.54           | 0.83           | 1.12          | 1.42                                       | 0.39           | 0.59           | 0.79          | 1.00           | 24             | 28             | 32            | 35 |
|                                                                        |              | 30"       | —         | —      | 4'-3"  | 2.15'  | 4.95'    | 7.10'  | 4.56'    | 8'    | 2.00'  | 3.4'           | 6.08'          | 10.33'         | 14.58'        | 18.83' | 1.29'                                       | 0.66           | 1.09           | 1.50          | 1.91                                       | 0.46           | 0.76           | 1.04          | 1.32           | 26             | 31             | 35            | 40 |
|                                                                        |              | 36"       | —         | —      | 5'-1"  | 2.25'  | 6.08'    | 8.33'  | 5.56'    | 9'    | 2.24'  | 3.4'           | 6.67'          | 11.75'         | 16.83'        | 21.92' | 1.33'                                       | 0.81           | 1.38           | 1.95          | 2.51                                       | 0.55           | 0.94           | 1.33          | 1.71           | 28             | 34             | 39            | 45 |
|                                                                        |              | 42"       | —         | —      | 6'-0"  | 2.34'  | 7.21'    | 9.55'  | 6.56'    | 10'   | 2.45'  | 3.4'           | 7.25'          | 13.25'         | 19.25'        | 25.25' | 1.38'                                       | 0.97           | 1.70           | 2.45          | 3.19                                       | 0.66           | 1.15           | 1.66          | 2.15           | 30             | 37             | 43            | 50 |
|                                                                        |              | 48"       | —         | —      | 6'-9"  | 2.43'  | 8.33'    | 10.76' | 7.56'    | 11'   | 2.65'  | 3.4'           | 7.83'          | 14.58'         | 21.33'        | 28.08' | 1.42'                                       | 1.13           | 2.04           | 2.93          | 3.84                                       | 0.76           | 1.37           | 1.96          | 2.57           | 32             | 39             | 47            | 54 |
|                                                                        |              | 54"       | —         | —      | 7'-8"  | 2.52'  | 9.44'    | 11.96' | 8.56'    | 12'   | 2.83'  | 3.4'           | 8.42'          | 16.08'         | 23.75'        | 31.42' | 1.46'                                       | 1.31           | 2.44           | 3.58          | 4.72                                       | 0.87           | 1.62           | 2.38          | 3.14           | 34             | 42             | 51            | 59 |
|                                                                        |              | 60"       | —         | —      | 8'-6"  | 2.62'  | 10.56'   | 13.18' | 9.56'    | 14'   | 3.00'  | 4.4'           | 9.00'          | 17.50'         | 26.00'        | 34.50' | 1.50'                                       | 1.51           | 2.89           | 4.28          | 5.68                                       | 0.99           | 1.90           | 2.81          | 3.73           | 36             | 45             | 55            | 64 |
|                                                                        | 66"          | —         | —         | 9'-2"  | 2.71'  | 11.68' | 14.39'   | 10.56' | 15'      | 3.18' | 4.4'   | 9.58'          | 18.75'         | 27.92'         | 37.08'        | 1.54'  | 1.68                                        | 3.25           | 4.84           | 6.43          | 1.11                                       | 2.15           | 3.21           | 4.27          | 38             | 48             | 58             | 68            |    |
|                                                                        | 72"          | —         | —         | 10'-0" | 2.80'  | 12.80' | 15.60'   | 11.56' | 16'      | 3.30' | 4.4'   | 10.16'         | 20.16'         | 30.16'         | 40.16'        | 1.58'  | 1.89                                        | 3.74           | 5.59           | 7.45          | 1.24                                       | 2.46           | 3.68           | 4.90          | 40             | 51             | 62             | 73            |    |
|                                                                        | 1:4<br>Slope | 15"       | —         | —      | 2'-7"  | 2.27'  | 4.09'    | 6.36'  | 4.03'    | 8'    | 1.22'  | 4.0'           | 4.63'          | 7.21'          | 9.79'         | 12.37' | 1.19'                                       | 0.57           | 0.87           | 1.15          | 1.44                                       | 0.40           | 0.61           | 0.80          | 1.00           | 23             | 26             | 29            | 32 |
|                                                                        |              | 18"       | —         | —      | 2'-10" | 2.36'  | 5.12'    | 7.48'  | 5.03'    | 9'    | 1.41'  | 4.0'           | 4.92'          | 7.75'          | 10.58'        | 13.42' | 1.21'                                       | 0.66           | 0.99           | 1.31          | 1.65                                       | 0.47           | 0.69           | 0.91          | 1.14           | 25             | 28             | 31            | 35 |
|                                                                        |              | 24"       | —         | —      | 3'-5"  | 2.53'  | 7.18' △  | 9.71'  | 7.03' △  | 11'   | 1.73'  | 4.0'           | 5.50'          | 8.92'          | 12.33'        | 15.75' | 1.25'                                       | 0.85           | 1.30           | 1.75          | 2.20                                       | 0.60           | 0.90           | 1.21          | 1.52           | 28             | 32             | 36            | 40 |
|                                                                        |              | 30"       | —         | —      | 4'-3"  | 2.70'  | 9.25'    | 11.95' | 9.03'    | 13'   | 2.00'  | 4.0'           | 6.08'          | 10.33'         | 14.58'        | 18.83' | 1.29'                                       | 1.10           | 1.74           | 2.39          | 3.05                                       | 0.76           | 1.19           | 1.63          | 2.07           | 31             | 36             | 41            | 46 |
|                                                                        |              | 36"       | —         | —      | 5'-1"  | 2.87'  | 11.31' ◇ | 14.18' | 11.03' ◇ | 15'   | 2.24'  | 4.0'           | 6.67'          | 11.75'         | 16.83'        | 21.92' | 1.33'                                       | 1.32           | 2.21           | 3.08          | 3.96                                       | 0.89           | 1.48           | 2.05          | 2.63           | 34             | 40             | 46            | 52 |
|                                                                        |              | 42"       | —         | —      | 6'-0"  | 3.05'  | 13.37'   | 16.42' | 13.03'   | 17'   | 2.45'  | 4.0'           | 7.25'          | 13.25'         | 19.25'        | 25.25' | 1.38'                                       | 1.58           | 2.76           | 3.91          | 5.09                                       | 1.05           | 1.82           | 2.57          | 3.34           | 38             | 44             | 51            | 58 |
|                                                                        |              | 48"       | —         | —      | 6'-9"  | 3.22'  | 15.43'   | 18.65' | 15.03'   | 19'   | 2.65'  | 4.0'           | 7.83'          | 14.58'         | 21.33'        | 28.08' | 1.42'                                       | 1.85           | 3.30           | 4.73          | 6.17                                       | 1.21           | 2.15           | 3.07          | 4.00           | 41             | 48             | 56            | 63 |
| 54"                                                                    |              | —         | —         | 7'-8"  | 3.39'  | 17.49' | 20.88'   | 17.03' | 21'      | 2.83' | 4.0'   | 8.42'          | 16.08'         | 23.75'         | 31.42'        | 1.46'  | 2.14                                        | 3.95           | 5.77           | 7.58          | 1.39                                       | 2.55           | 3.72           | 4.88          | 44             | 52             | 61             | 69            |    |
| 60"                                                                    |              | —         | —         | 8'-6"  | 3.56'  | 19.55' | 23.11'   | 19.03' | 23'      | 3.00' | 4.0'   | 9.00'          | 17.50'         | 26.00'         | 34.50'        | 1.50'  | 2.45                                        | 4.66           | 6.87           | 9.07          | 1.59                                       | 3.02           | 4.44           | 5.86          | 47             | 56             | 66             | 75            |    |
| 66"                                                                    | —            | —         | 9'-2"     | 3.73'  | 21.62' | 25.35' | 21.03'   | 25'    | 3.18'    | 4.0'  | 9.58'  | 18.75'         | 27.92'         | 37.08'         | 1.54'         | 2.88   | 5.54                                        | 8.18           | 10.84          | 1.91          | 3.66                                       | 5.40           | 7.15           | 49            | 59             | 69             | 80             |               |    |
| 72"                                                                    | —            | —         | 10'-0"    | 3.91'  | 23.68' | 27.59' | 23.03'   | 27'    | 3.30'    | 4.0'  | 10.16' | 20.16'         | 30.16'         | 40.16'         | 1.58'         | 3.54   | 6.61                                        | 9.87           | 13.13          | 2.12          | 4.18                                       | 6.24           | 8.30           | 52            | 63             | 74             | 85             |               |    |
| Elliptical Concrete Pipe                                               | 1:2<br>Slope | —         | 12"       | 18"    | 2'-10" | 1.97'  | 1.62'    | 3.59'  | 1.56'    | 4'    | 1.50'  | 2.4'           | 4.92'          | 7.75'          | 10.58'        | 13.42' | 1.21'                                       | 0.30           | 0.49           | 0.67          | 0.85                                       | 0.19           | 0.33           | 0.45          | 0.57           | 21             | 24             | 27            | 30 |
|                                                                        |              | —         | 14"       | 23"    | 3'-4"  | 2.01'  | 1.99'    | 4.00'  | 1.89'    | 5'    | 1.90'  | 3.1'           | 5.38'          | 8.71'          | 12.04'        | 15.38' | 1.23'                                       | 0.37           | 0.59           | 0.81          | 1.02                                       | 0.25           | 0.40           | 0.55          | 0.69           | 22             | 26             | 29            | 33 |
|                                                                        |              | —         | 19"       | 30"    | 4'-0"  | 2.11'  | 2.92'    | 5.03'  | 2.73'    | 6'    | 2.37'  | 3.3'           | 6.04'          | 10.04'         | 14.04'        | 18.04' | 1.27'                                       | 0.50           | 0.80           | 1.09          | 1.39                                       | 0.34           | 0.55           | 0.75          | 0.95           | 24             | 28             | 33            | 37 |
|                                                                        |              | —         | 24"       | 38"    | 5'-0"  | 2.20'  | 3.85'    | 6.05'  | 3.56'    | 7'    | 2.85'  | 3.4'           | 6.79'          | 11.79'         | 16.79'        | 21.79' | 1.31'                                       | 0.62           | 1.03           | 1.45          | 1.86                                       | 0.43           | 0.71           | 1.00          | 1.28           | 26             | 31             | 37            | 42 |
|                                                                        |              | —         | 29"       | 45"    | 5'-11" | 2.34'  | 4.79'    | 7.13'  | 4.39'    | 8'    | 3.19'  | 3.6'           | 7.50'          | 13.42'         | 19.33'        | 25.25' | 1.38'                                       | 0.75           | 1.30           | 1.84          | 2.39                                       | 0.52           | 0.90           | 1.27          | 1.65           | 28             | 34             | 41            | 47 |
|                                                                        |              | —         | 34"       | 53"    | 7'-0"  | 2.43'  | 5.72'    | 8.15'  | 5.23'    | 9'    | 3.57'  | 3.8'           | 8.25'          | 15.25'         | 22.25'        | 29.25' | 1.42'                                       | 0.90           | 1.61           | 2.32          | 3.03                                       | 0.62           | 1.11           | 1.60          | 2.09           | 30             | 37             | 45            | 53 |
|                                                                        |              | —         | 38"       | 60"    | 7'-10" | 2.52'  | 6.46'    | 8.98'  | 5.89'    | 9'    | 3.95'  | 3.1'           | 8.92'          | 16.75'         | 24.58'        | 32.42' | 1.46'                                       | 1.03           | 1.89           | 2.74          | 3.60                                       | 0.70           | 1.29           | 1.87          | 2.46           | 31             | 40             | 49            | 57 |
|                                                                        |              | —         | 43"       | 68"    | 8'-11" | 2.62'  | 7.39'    | 10.01' | 6.73'    | 10'   | 4.28'  | 3.3'           | 9.67'          | 18.58'         | 27.50'        | 36.42' | 1.50'                                       | 1.19           | 2.26           | 3.33          | 4.40                                       | 0.81           | 1.54           | 2.26          | 2.99           | 33             | 43             | 53            | 63 |
|                                                                        |              | —         | 48"       | 76"    | 9'-11" | 2.71'  | 8.33'    | 11.04' | 7.56'    | 11'   | 4.59'  | 3.4'           | 10.42'         | 20.33'         | 30.25'        | 40.17' | 1.54'                                       | 1.38           | 2.65           | 3.93          | 5.21                                       | 0.93           | 1.79           | 2.66          | 3.53           | 35             | 46             | 57            | 68 |
|                                                                        | —            | 53"       | 83"       | 10'-8" | 2.80'  | 9.26'  | 12.06'   | 8.39'  | 12'      | 4.77' | 3.6'   | 11.08'         | 21.75'         | 32.42'         | 43.08'        | 1.58'  | 1.55                                        | 3.03           | 4.50           | 5.96          | 1.04                                       | 2.04           | 3.03           | 4.02          | 37             | 49             | 61             | 73            |    |
|                                                                        | —            | 58"       | 91"       | 11'-8" | 2.90'  | 10.19' | 13.09'   | 9.23'  | 13'      | 5.01' | 3.8'   | 11.83'         | 23.50'         | 35.17'         | 46.83'        | 1.63'  | 1.75                                        | 3.47           | 5.20           | 6.93          | 1.17                                       | 2.33           | 3.49           | 4.66          | 39             | 52             | 65             | 78            |    |
|                                                                        | 1:4<br>Slope | —         | 12"       | 18"    | 2'-10" | 2.36'  | 3.06'    | 5.42'  | 3.03'    | 5'    | 1.50'  | 2.0'           | 4.92'          | 7.75'          | 10.58'        | 13.42' | 1.21'                                       | 0.45           | 0.68           | 0.92          | 1.14                                       | 0.30           | 0.45           | 0.61          | 0.76           | 23             | 26             | 29            | 32 |
|                                                                        |              | —         | 14"       | 23"    | 3'-4"  | 2.44'  | 3.75'    | 6.19'  | 3.70'    | 6'    | 1.90'  | 2.3'           | 5.38'          | 8.71'          | 12.04'        | 15.38' | 1.23'                                       | 0.53           | 0.83           | 1.13          | 1.42                                       | 0.36           | 0.56           | 0.76          | 0.95           | 24             | 28             | 32            | 35 |
|                                                                        |              | —         | 19"       | 30"    | 4'-0"  | 2.62'  | 5.47'    | 8.09'  | 5.36'    | 8'    | 2.37'  | 2.6'           | 6.04'          | 10.04'         | 14.04'        | 18.04' | 1.27'                                       | 0.74           | 1.15           | 1.57          | 1.98                                       | 0.51           | 0.79           | 1.08          | 1.36           | 27             | 32             | 36            | 40 |
|                                                                        |              | —         | 24"       | 38"    | 5'-0"  | 2.79'  | 7.18'    | 9.97'  | 7.03'    | 10'   | 2.85'  | 3.0'           | 6.79'          | 11.79'         | 16.79'        | 21.79' | 1.31'                                       | 0.97           | 1.57           | 2.19          | 2.81                                       | 0.68           | 1.10           | 1.53          | 1.96           | 30             | 36             | 41            | 47 |
|                                                                        |              | —         | 29"       | 45"    | 5'-11" | 3.05'  | 8.90'    | 11.95' | 8.70'    | 12'   | 3.19'  | 3.3'           | 7.50'          | 13.42'         | 19.33'        | 25.25' | 1.38'                                       | 1.22           | 2.07           | 2.92          | 3.77                                       | 0.86           | 1.45           | 2.04          | 2.63           | 33             | 40             | 46            | 53 |
|                                                                        |              | —         | 34"       | 53"    | 7'-0"  | 3.22'  | 10.62'   | 13.84' | 10.36'   | 13'   | 3.57'  | 2.6'           | 8.25'          | 15.25'         | 22.25'        | 29.25' | 1.42'                                       | 1.48           | 2.62           | 3.77          | 4.92                                       | 1.02           | 1.81           | 2.60          | 3.39           | 36             | 44             | 52            | 59 |
|                                                                        |              | —         | 38"       | 60"    | 7'-10" | 3.39'  | 11.99'   | 15.38' | 11.70'   | 15'   | 3.95'  | 3.3'           | 8.92'          | 16.75'         | 24.58'        | 32.42' | 1.46'                                       | 1.72           | 3.12           | 4.53          | 5.92                                       | 1.18           | 2.14           | 3.10          | 4.05           | 38             | 47             | 56            | 65 |
| —                                                                      |              | 43"       | 68"       | 8'-11" | 3.56'  | 13.71' | 17.27'   | 13.36' | 17'      | 4.28' | 3.6'   | 9.67'          | 18.58'         | 27.50'         | 36.42'        | 1.50'  | 2.02                                        | 3.78           | 5.56           | 7.32          | 1.38                                       | 2.58           | 3.79           | 4.99          | 41             | 51             | 61             | 71            |    |
| —                                                                      |              | 48"       | 76"       | 9'-11" | 3.73'  | 15.43' | 19.16'   | 15.03' | 19'      | 4.59' | 4.0'   | 10.42'         | 20.33'         | 30.25'         | 40.17'        | 1.54'  | 2.34                                        | 4.49           | 6.64           | 8.79          | 1.59                                       | 3.05           | 4.51           | 5.97          | 44             | 55             | 66             | 77            |    |
| —                                                                      | 53"          | 83"       | 10'-8"    | 3.91'  | 17.15' | 21.06' | 16.70'   | 20'    | 4.77'    | 3.3'  | 11.08' | 21.75'         | 32.42'         | 43.08'         | 1.58'         | 2.66   | 5.17                                        | 7.66           | 10.16          | 1.80          | 3.50                                       | 5.19           | 6.88           | 47            | 59             | 71             | 83             |               |    |
| —                                                                      | 58"          | 91"       | 11'-8"    | 4.08'  | 18.87' | 22.95' | 18.36'   | 22'    | 5.01'    | 3.6'  | 11.83' | 23.50'         | 35.17'         | 46.83'         | 1.63'         | 3.02   | 5.98                                        | 8.95           | 11.90          | 2.04          | 4.04                                       | 6.05           | 8.05           | 50            | 63             | 76             | 89             |               |    |



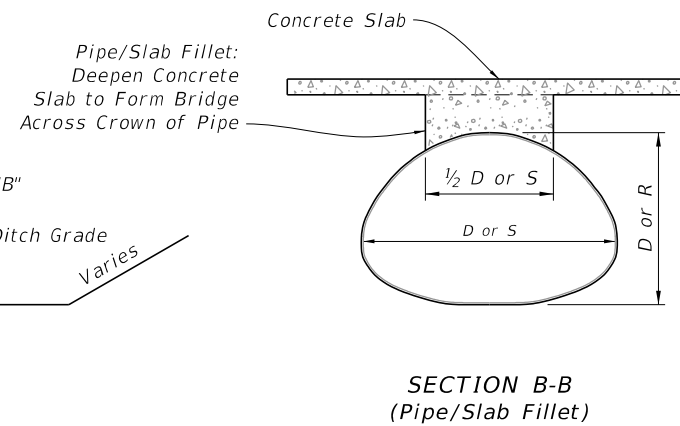
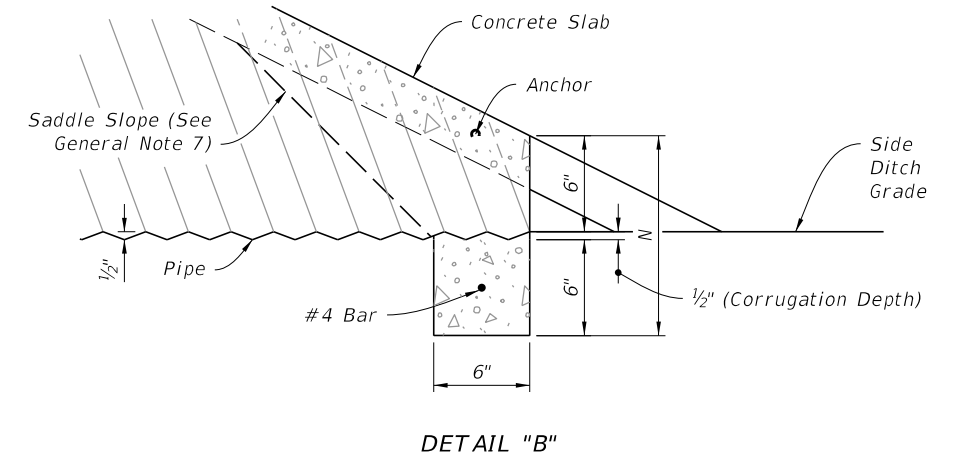
PLAN - SINGLE PIPE



PLAN - MULTIPLE PIPE



ELEVATION



DETAIL "B"

ARCHED CORRUGATED METAL PIPE  
(Round Pipe Similar)

NOTE: See Table 2 on Sheet 5 for Dimensions and Quantities.

SINGLE AND MULTIPLE CORRUGATED METAL PIPE

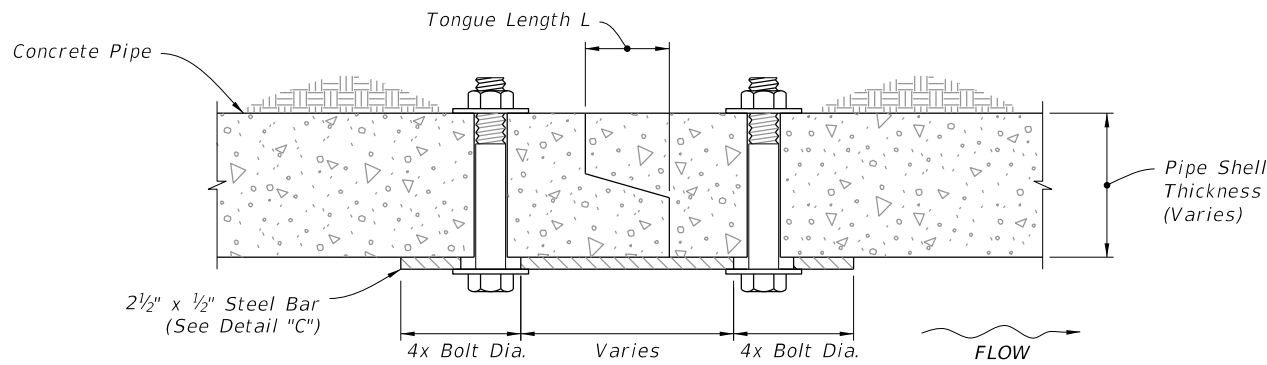
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|                              |          |              |                                      |                                 |                  |                 |
|------------------------------|----------|--------------|--------------------------------------|---------------------------------|------------------|-----------------|
| LAST<br>REVISION<br>11/01/19 | REVISION | DESCRIPTION: | FDOT<br>FY 2027-28<br>STANDARD PLANS | CROSS DRAIN MITERED END SECTION | INDEX<br>430-021 | SHEET<br>4 of 6 |
|------------------------------|----------|--------------|--------------------------------------|---------------------------------|------------------|-----------------|

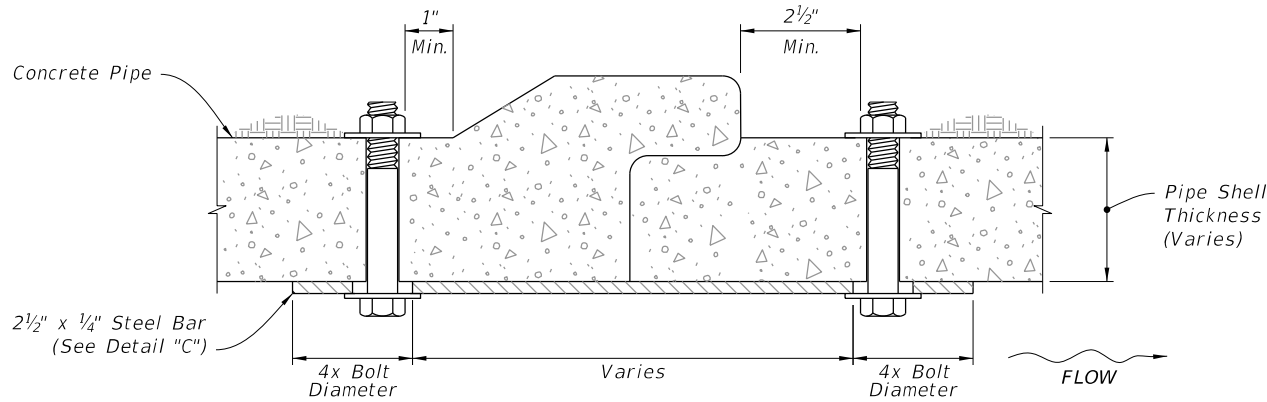
| TABLE 2<br>SINGLE AND MULTIPLE CORRUGATED METAL PIPE DIMENSIONS AND QUANTITIES |              |           |           |     |        |      |        |        |       |       |       |                |                |                |               |        |                                             |                |                |               |                                            |                |                |               |                |                |                |               |    |
|--------------------------------------------------------------------------------|--------------|-----------|-----------|-----|--------|------|--------|--------|-------|-------|-------|----------------|----------------|----------------|---------------|--------|---------------------------------------------|----------------|----------------|---------------|--------------------------------------------|----------------|----------------|---------------|----------------|----------------|----------------|---------------|----|
|                                                                                | Dia.<br>D    | Span<br>S | Rise<br>R | X   | A      | B    | C      | E      | F     | G     | H     | M              |                |                |               | N      | 5½" CONC. SLAB (CY)<br>(See General Note 3) |                |                |               | 3" CONC. SLAB (CY)<br>(See General Note 3) |                |                |               | SODDING (SY)   |                |                |               |    |
|                                                                                |              |           |           |     |        |      |        |        |       |       |       | Single<br>Pipe | Double<br>Pipe | Triple<br>Pipe | Quad.<br>Pipe |        | Single<br>Pipe                              | Double<br>Pipe | Triple<br>Pipe | Quad.<br>Pipe | Single<br>Pipe                             | Double<br>Pipe | Triple<br>Pipe | Quad.<br>Pipe | Single<br>Pipe | Double<br>Pipe | Triple<br>Pipe | Quad.<br>Pipe |    |
| Round Corrugated Metal Pipe                                                    | 1:2<br>Slope | 15"       | —         | —   | 2'-7"  | 2.5' | 1.68'  | 4.18'  | 1.5'  | 5.0'  | 1.23' | 3.5'           | 4.33'          | 6.92'          | 9.50'         | 12.08' | 1.04'                                       | 0.35           | 0.54           | 0.74          | 0.94                                       | 0.24           | 0.37           | 0.51          | 0.64           | 21             | 24             | 27            | 29 |
|                                                                                |              | 18"       | —         | —   | 2'-10" | 2.5' | 2.24'  | 4.74'  | 2.0'  | 6.0'  | 1.41' | 4.0'           | 4.58'          | 7.42'          | 10.25'        | 13.08' | 1.04'                                       | 0.38           | 0.62           | 0.87          | 1.12                                       | 0.26           | 0.43           | 0.61          | 0.78           | 22             | 25             | 28            | 31 |
|                                                                                |              | 24"       | —         | —   | 3'-5"  | 2.5' | 3.35'  | 5.85'  | 3.0'  | 7.0'  | 1.73' | 4.0'           | 5.08'          | 8.50'          | 11.92'        | 15.33' | 1.04'                                       | 0.47           | 0.76           | 1.05          | 1.34                                       | 0.32           | 0.52           | 0.72          | 0.91           | 23             | 27             | 31            | 35 |
|                                                                                |              | 30"       | —         | —   | 4'-3"  | 2.5' | 4.47'  | 6.97'  | 4.0'  | 8.0'  | 2.00' | 4.0'           | 5.58'          | 9.83'          | 14.08'        | 18.33' | 1.04'                                       | 0.57           | 0.96           | 1.37          | 1.77                                       | 0.38           | 0.64           | 0.91          | 1.18           | 25             | 30             | 35            | 39 |
|                                                                                |              | 36"       | —         | —   | 5'-1"  | 2.5' | 5.59'  | 8.09'  | 5.0'  | 9.0'  | 2.24' | 4.0'           | 6.08'          | 11.17'         | 16.25'        | 21.33' | 1.04'                                       | 0.67           | 1.19           | 1.72          | 2.26                                       | 0.44           | 0.78           | 1.13          | 1.48           | 27             | 33             | 38            | 44 |
|                                                                                |              | 42"       | —         | —   | 6'-0"  | 2.5' | 6.71'  | 9.21'  | 6.0'  | 10.0' | 2.45' | 4.0'           | 6.58'          | 12.58'         | 18.58'        | 24.58' | 1.04'                                       | 0.78           | 1.48           | 2.17          | 2.87                                       | 0.51           | 0.96           | 1.41          | 1.87           | 29             | 36             | 42            | 49 |
|                                                                                |              | 48"       | —         | —   | 6'-9"  | 2.5' | 7.83'  | 10.33' | 7.0'  | 11.0' | 2.65' | 4.0'           | 7.08'          | 13.83'         | 20.58'        | 27.33' | 1.04'                                       | 0.89           | 1.71           | 2.54          | 3.36                                       | 0.57           | 1.09           | 1.63          | 2.15           | 31             | 38             | 46            | 53 |
|                                                                                | 1:4<br>Slope | 54"       | —         | —   | 7'-8"  | 2.5' | 8.94'  | 11.44' | 8.0'  | 12.0' | 2.83' | 4.0'           | 7.58'          | 15.25'         | 22.92'        | 30.58' | 1.04'                                       | 1.02           | 2.06           | 3.10          | 4.14                                       | 0.65           | 1.32           | 1.99          | 2.66           | 33             | 41             | 50            | 58 |
|                                                                                |              | 60"       | —         | —   | 8'-6"  | 2.5' | 10.06' | 12.56' | 9.0'  | 13.0' | 3.00' | 4.0'           | 8.08'          | 16.58'         | 25.08'        | 33.58' | 1.04'                                       | 1.14           | 2.38           | 3.63          | 4.89                                       | 0.71           | 1.49           | 2.28          | 3.07           | 34             | 44             | 53            | 63 |
|                                                                                |              | 15"       | —         | —   | 2'-7"  | 2.5' | 3.09'  | 5.59'  | 3.0'  | 7.0'  | 1.23' | 4.0'           | 4.33'          | 6.92'          | 9.50'         | 12.08' | 1.04'                                       | 0.44           | 0.68           | 0.91          | 1.15                                       | 0.31           | 0.47           | 0.63          | 0.79           | 22             | 25             | 28            | 31 |
|                                                                                |              | 18"       | —         | —   | 2'-10" | 2.5' | 4.12'  | 6.62'  | 4.0'  | 8.0'  | 1.41' | 4.0'           | 4.58'          | 7.42'          | 10.25'        | 13.08' | 1.04'                                       | 0.49           | 0.77           | 1.03          | 1.31                                       | 0.34           | 0.53           | 0.71          | 0.90           | 24             | 27             | 30            | 33 |
|                                                                                |              | 24"       | —         | —   | 3'-5"  | 2.5' | 6.18'  | 8.68'  | 6.0'  | 10.0' | 1.73' | 4.0'           | 5.08'          | 8.50'          | 11.92'        | 15.33' | 1.04'                                       | 0.65           | 1.09           | 1.38          | 1.77                                       | 0.44           | 0.69           | 0.92          | 1.18           | 27             | 30             | 34            | 38 |
|                                                                                |              | 30"       | —         | —   | 4'-3"  | 2.5' | 8.25'  | 10.75' | 8.0'  | 12.0' | 2.00' | 4.0'           | 5.58'          | 9.83'          | 14.08'        | 18.33' | 1.04'                                       | 0.81           | 1.34           | 1.90          | 2.44                                       | 0.53           | 0.88           | 1.25          | 1.60           | 29             | 34             | 39            | 44 |
|                                                                                |              | 36"       | —         | —   | 5'-1"  | 2.5' | 10.31' | 12.81' | 10.0' | 14.0' | 2.24' | 4.0'           | 6.08'          | 11.17'         | 16.25'        | 21.33' | 1.04'                                       | 0.97           | 1.68           | 2.41          | 3.14                                       | 0.62           | 1.07           | 1.53          | 2.00           | 32             | 38             | 44            | 49 |
| Corrugated Metal Pipe Arch                                                     | 1:2<br>Slope | 42"       | —         | —   | 6'-0"  | 2.5' | 12.37' | 14.87' | 12.0' | 16.0' | 2.45' | 4.0'           | 6.58'          | 12.58'         | 18.58'        | 24.58' | 1.04'                                       | 1.13           | 2.08           | 3.06          | 4.02                                       | 0.71           | 1.30           | 1.92          | 2.52           | 35             | 42             | 48            | 55 |
|                                                                                |              | 48"       | —         | —   | 6'-9"  | 2.5' | 14.43' | 16.93' | 14.0' | 18.0' | 2.65' | 4.0'           | 7.08'          | 13.83'         | 20.58'        | 27.33' | 1.04'                                       | 1.29           | 2.49           | 3.69          | 4.88                                       | 0.80           | 1.54           | 2.29          | 3.02           | 38             | 46             | 53            | 60 |
|                                                                                |              | 54"       | —         | —   | 7'-8"  | 2.5' | 16.49' | 18.99' | 16.0' | 20.0' | 2.83' | 4.0'           | 7.58'          | 15.25'         | 22.92'        | 30.58' | 1.04'                                       | 1.48           | 2.98           | 4.47          | 5.98                                       | 0.91           | 1.83           | 2.74          | 3.67           | 41             | 49             | 58            | 66 |
|                                                                                |              | 60"       | —         | —   | 8'-6"  | 2.5' | 18.55' | 21.05' | 18.0' | 22.0' | 3.00' | 4.0'           | 8.08'          | 16.58'         | 25.08'        | 33.58' | 1.04'                                       | 1.66           | 3.49           | 5.31          | 7.13                                       | 1.02           | 2.15           | 3.27          | 4.39           | 44             | 53             | 63            | 72 |
|                                                                                |              | —         | 17"       | 13" | 2'-6"  | 2.5' | 1.30'  | 3.80'  | 1.17' | 4'    | 1.39' | 2.8'           | 4.50'          | 7.00'          | 9.50'         | 12.00' | 1.04'                                       | 0.41           | 0.61           | 0.81          | 1.02                                       | 0.33           | 0.49           | 0.65          | 0.81           | 21             | 23             | 26            | 29 |
|                                                                                |              | —         | 21"       | 15" | 2'-10" | 2.5' | 1.68'  | 4.17'  | 1.50' | 5'    | 1.76' | 3.5'           | 4.83'          | 7.67'          | 10.50'        | 13.33' | 1.04'                                       | 0.43           | 0.66           | 0.88          | 1.10                                       | 0.33           | 0.50           | 0.67          | 0.83           | 22             | 25             | 28            | 31 |
|                                                                                |              | —         | 28"       | 20" | 3'-5"  | 2.5' | 2.61'  | 5.11'  | 2.33' | 6'    | 2.22' | 3.7'           | 5.42'          | 8.83'          | 12.25'        | 15.67' | 1.04'                                       | 0.51           | 0.78           | 1.06          | 1.33                                       | 0.37           | 0.56           | 0.76          | 0.95           | 23             | 27             | 30            | 34 |
|                                                                                | 1:4<br>Slope | —         | 35"       | 24" | 4'-0"  | 2.5' | 3.35'  | 5.85'  | 3.00' | 7'    | 2.55' | 4.0'           | 6.00'          | 10.00'         | 14.00'        | 18.00' | 1.04'                                       | 0.57           | 0.90           | 1.22          | 1.55                                       | 0.40           | 0.62           | 0.84          | 1.07           | 24             | 29             | 33            | 38 |
|                                                                                |              | —         | 42"       | 29" | 4'-9"  | 2.5' | 4.29'  | 6.79'  | 3.83' | 8'    | 2.97' | 4.2'           | 6.58'          | 11.33'         | 16.08'        | 20.83' | 1.04'                                       | 0.64           | 1.04           | 1.46          | 1.87                                       | 0.43           | 0.70           | 0.98          | 1.25           | 26             | 31             | 37            | 42 |
|                                                                                |              | —         | 49"       | 33" | 5'-6"  | 2.5' | 5.03'  | 7.53'  | 4.50' | 9'    | 3.34' | 4.5'           | 7.17'          | 12.67'         | 18.17'        | 23.67' | 1.04'                                       | 0.73           | 1.23           | 1.72          | 2.22                                       | 0.49           | 0.82           | 1.15          | 1.48           | 28             | 34             | 40            | 46 |
|                                                                                |              | —         | 57"       | 38" | 6'-4"  | 2.5' | 5.96'  | 8.46'  | 5.33' | 10'   | 3.65' | 4.7'           | 7.83'          | 14.17'         | 20.50'        | 26.83' | 1.04'                                       | 0.83           | 1.44           | 2.04          | 2.64                                       | 0.55           | 0.95           | 1.35          | 1.75           | 29             | 36             | 44            | 51 |
|                                                                                |              | —         | 64"       | 43" | 7'-1"  | 2.5' | 6.89'  | 9.39'  | 6.17' | 11'   | 3.89' | 4.8'           | 8.42'          | 15.50'         | 22.58'        | 29.67' | 1.04'                                       | 0.95           | 1.67           | 2.39          | 3.11                                       | 0.62           | 1.10           | 1.57          | 2.05           | 31             | 39             | 47            | 55 |
|                                                                                |              | —         | 71"       | 47" | 7'-10" | 2.5' | 7.64'  | 10.14' | 6.83' | 12'   | 4.14' | 5.2'           | 9.00'          | 16.83'         | 24.67'        | 32.50' | 1.04'                                       | 1.05           | 1.89           | 2.74          | 3.57                                       | 0.69           | 1.24           | 1.80          | 2.35           | 33             | 41             | 50            | 59 |
|                                                                                |              | —         | 17"       | 13" | 2'-6"  | 2.5' | 2.41'  | 4.91'  | 2.33' | 7'    | 1.39' | 4.7'           | 4.50'          | 7.00'          | 9.50'         | 12.00' | 1.04'                                       | 0.48           | 0.71           | 0.95          | 1.18                                       | 0.38           | 0.56           | 0.74          | 0.92           | 22             | 25             | 27            | 30 |
|                                                                                |              | —         | 21"       | 15" | 2'-10" | 2.5' | 3.09'  | 5.59'  | 3.00' | 8'    | 1.76  | 5.0'           | 4.83'          | 7.67'          | 10.50'        | 13.33' | 1.04'                                       | 0.52           | 0.80           | 1.09          | 1.31                                       | 0.39           | 0.59           | 0.80          | 0.95           | 23             | 26             | 29            | 32 |
|                                                                                |              | —         | 28"       | 20" | 3'-5"  | 2.5' | 4.81'  | 7.31'  | 4.67' | 9'    | 2.22' | 4.3'           | 5.42'          | 8.83'          | 12.25'        | 15.67' | 1.04'                                       | 0.61           | 0.92           | 1.27          | 1.59                                       | 0.43           | 0.64           | 0.88          | 1.10           | 25             | 29             | 33            | 37 |

CORRUGATED METAL PIPE DIMENSIONS AND QUANTITIES

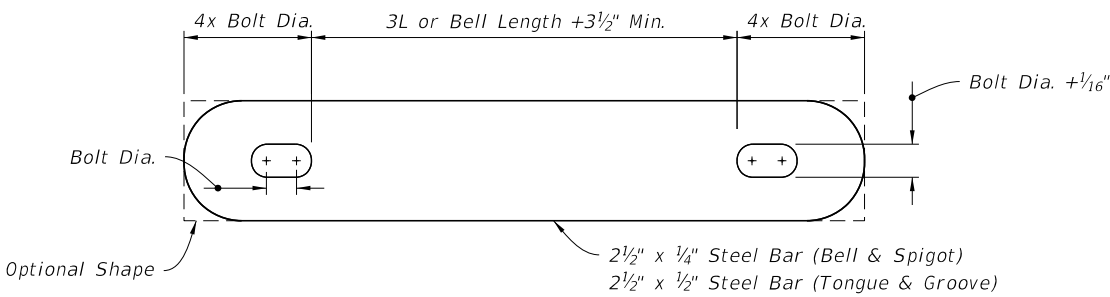
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TONGUE AND GROOVE CONNECTOR DETAIL



BELL AND SPIGOT CONNECTOR DETAIL



STEEL BAR

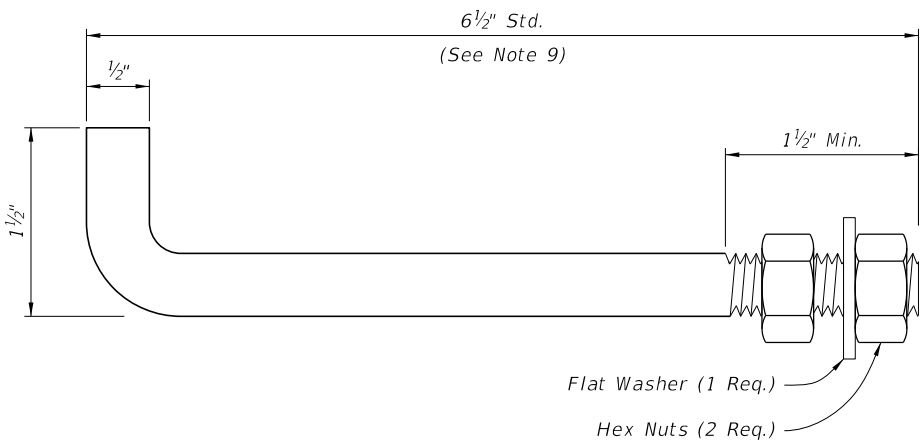
NOTES:

- 1. Use galvanized steel for all bars, bolts, nuts, and washers.
- 2. Two connectors required per joint, located 60° right and left of bottom center of pipe.
- 3. Bolt holes in pipe shell are to be drilled.

| Bolt Dia. | Pipe Dia.  |
|-----------|------------|
| 3/8"      | 15" to 36" |
| 5/8"      | 42" to 72" |

CONCRETE PIPE CONNECTION DETAIL

DETAIL "C"



NOTES:

- 1. Anchors required for CMP only.
- 2. Use galvanized steel for all anchors, nuts, and washers.
- 3. Bend anchor where required to center in concrete slab.
- 4. Repair damaged surfaces after bending.
- 5. Space anchors a distance equal to four (4) corrugations.
- 6. Place the anchors in the outside crest of corrugation.
- 7. Place flat washers on inside wall of pipe.
- 8. Drill or punch holes in the mitered end pipe; burning not permitted.
- 9. A 6" x 1/2" bolt substitution is permitted.

CORRUGATED METAL PIPE (CMP) ANCHOR DETAIL

DETAIL "D"

CONCRETE PIPE CONNECTION AND CORRUGATED PIPE ANCHOR DETAILS

CROSS DRAIN MITERED END SECTION

| LAST REVISION | DESCRIPTION: |
|---------------|--------------|
| 11/01/19      |              |



FY 2027-28  
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