<table>
<thead>
<tr>
<th>CONSTRUCTION APPROACH WARNING SIGNS</th>
<th>SHAPE</th>
<th>SIZE</th>
<th>COLOR</th>
<th>SIGN NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol (Pavement Transition)</td>
<td>D</td>
<td>36&quot;x36&quot;</td>
<td>B-O</td>
<td>W4-1</td>
</tr>
<tr>
<td>Two Way Traffic (Symbol)</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-O</td>
<td>W6-3</td>
</tr>
<tr>
<td>Road Construction _______ Ft.</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-O</td>
<td>W20-1</td>
</tr>
<tr>
<td>Detour _______ Ft.</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-O</td>
<td>W20-2</td>
</tr>
<tr>
<td>Street Road Closed _______ Ft.</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-O</td>
<td>W20-3</td>
</tr>
<tr>
<td>One Lane Road _______ Ft.</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-O</td>
<td>W20-4</td>
</tr>
<tr>
<td>Right Left Lane Closed _______ Mile</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-O</td>
<td>W20-5</td>
</tr>
<tr>
<td>Flagman _______ Ft.</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-O</td>
<td>W20-7</td>
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<tr>
<td>Road Machinery Ahead</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-O</td>
<td>W21-3</td>
</tr>
<tr>
<td>Road Work _______ Mile</td>
<td>D</td>
<td>48&quot;x48&quot;</td>
<td>B-W</td>
<td>W21-4</td>
</tr>
<tr>
<td>Shoulder Work</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-W</td>
<td>W21-5</td>
</tr>
<tr>
<td>Road Closed Ahead-Local Traffic Only</td>
<td>R</td>
<td>60&quot;x30&quot;</td>
<td>B-W</td>
<td>R11-3</td>
</tr>
<tr>
<td>Road Closed to Thru Traffic</td>
<td>R</td>
<td>60&quot;x30&quot;</td>
<td>B-W</td>
<td>R11-4</td>
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</table>

<table>
<thead>
<tr>
<th>DETOUR ROUTE SIGNS</th>
<th>SHAPE</th>
<th>SIZE</th>
<th>COLOR</th>
<th>SIGN NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detour (Appropriate Arrow)</td>
<td>R</td>
<td>30&quot;x24&quot;</td>
<td>B-O</td>
<td>M4-9</td>
</tr>
<tr>
<td>Detour (Appropriate Arrow)</td>
<td>R</td>
<td>48&quot;x18&quot;</td>
<td>B-O</td>
<td>M4-10</td>
</tr>
<tr>
<td>Do Not Pass</td>
<td>R</td>
<td>24&quot;x30&quot;</td>
<td>B-W</td>
<td>R4-1</td>
</tr>
<tr>
<td>Two-Way Keep Right</td>
<td>R</td>
<td>24&quot;x30&quot;</td>
<td>B-W</td>
<td>R6-4</td>
</tr>
<tr>
<td>Large Arrow</td>
<td>D</td>
<td>48&quot;x24&quot;</td>
<td>B-O</td>
<td>W1-6</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>MISCELLANEOUS WARNING SIGNS</th>
<th>SHAPE</th>
<th>SIZE</th>
<th>COLOR</th>
<th>SIGN NO.</th>
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<tbody>
<tr>
<td>Turn Arrow -Right Angle</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W1-1</td>
</tr>
<tr>
<td>Turn Arrow - 45° Angle</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W1-2</td>
</tr>
<tr>
<td>Reverse Turn Arrow</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W1-3</td>
</tr>
<tr>
<td>Reverse Curve Arrow</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W1-4</td>
</tr>
<tr>
<td>Stop Ahead</td>
<td>D</td>
<td>36&quot;x36&quot;</td>
<td>B-O</td>
<td>W3-1</td>
</tr>
<tr>
<td>Yield Ahead</td>
<td>D</td>
<td>36&quot;x36&quot;</td>
<td>B-O</td>
<td>W3-2</td>
</tr>
<tr>
<td>Road Narrows</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W5-1</td>
</tr>
<tr>
<td>Narrow Bridge</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W5-2</td>
</tr>
<tr>
<td>One-Lane Bridge</td>
<td>D</td>
<td>36&quot;x36&quot;</td>
<td>B-O</td>
<td>W5-3</td>
</tr>
<tr>
<td>Divided Highway (Symbol)</td>
<td>D</td>
<td>36&quot;x36&quot;</td>
<td>B-O</td>
<td>W6-1</td>
</tr>
<tr>
<td>Divided Highway Ends (Symbol)</td>
<td>D</td>
<td>36&quot;x36&quot;</td>
<td>B-O</td>
<td>W6-2</td>
</tr>
<tr>
<td>Bump</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W8-1</td>
</tr>
<tr>
<td>Dip</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W8-2</td>
</tr>
<tr>
<td>Pavement Ends</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W8-3</td>
</tr>
<tr>
<td>Soft Shoulder</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W8-4</td>
</tr>
<tr>
<td>Slippery When Wet (Symbol)</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W8-5</td>
</tr>
<tr>
<td>Right Lane Ends</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W9-1</td>
</tr>
<tr>
<td>Lane Ends - Merge Left</td>
<td>D</td>
<td>36&quot;x36&quot;</td>
<td>B-O</td>
<td>W9-2</td>
</tr>
<tr>
<td>Double Arrow - Downward</td>
<td>D</td>
<td>24&quot;x24&quot;</td>
<td>B-O</td>
<td>W12-1</td>
</tr>
<tr>
<td>Automatic Speed Plate</td>
<td>R</td>
<td>24&quot;x24&quot;</td>
<td>B-O</td>
<td>W13-1</td>
</tr>
<tr>
<td>No Passing Zone</td>
<td>Triangle 36&quot;x48&quot;x48&quot;</td>
<td>B-O</td>
<td>W14-3</td>
<td></td>
</tr>
<tr>
<td>Men Working</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W21-1</td>
</tr>
<tr>
<td>French Oil</td>
<td>D</td>
<td>30&quot;x30&quot;</td>
<td>B-O</td>
<td>W21-2</td>
</tr>
<tr>
<td>No Left Turn (Symbol)</td>
<td>R</td>
<td>24&quot;x24&quot;</td>
<td>B-W</td>
<td>R3-2</td>
</tr>
<tr>
<td>Keep Right (Symbol)</td>
<td>R</td>
<td>24&quot;x30&quot;</td>
<td>B-W</td>
<td>R4-7</td>
</tr>
<tr>
<td>End Construction</td>
<td>R</td>
<td>60&quot;x24&quot;</td>
<td>B-W</td>
<td>G20-3</td>
</tr>
</tbody>
</table>


**SHAPE:** D - Diamond  R - Rectangular

**SIZE:** 48"x48" for Rural Applications, Smaller Size Can be Used in Urban Areas

**COLOR:** B-O Black on Orange  B-W Black on White

**STANDARD ROAD DETAIL:**

**TYPICAL TRAFFIC CONTROL SIGNS**

**R 19.1**
TYPE III BARRICADE

BARRICADES

SIGNS

ITEM

GROSS REF

SPEC REF

TYPICAL TRAFFIC CONTROL

(DETOUR)

19.2

STANDARD ROAD DETAIL

R

19.2

8/8/62

7/7/88

6/10/74

APPROVED

REvised

CITY OF

METROPOLITAN

ST. PAUL

TATE OF MINNESOTA

COUNTY OF

MEDELLIN

APARTMENT OF

TRAFFIC AND

TRANSPORTATION

DEPARTMENT

OF

METROPOLITAN

COUNTY OF

MINNESOTA

APARTMENT OF

TRAFFIC AND

TRANSPORTATION

DEPARTMENT

OF

19.2

SHEET 2 OF 8
NOTES
1. REGULATORY TRAFFIC CONTROL DEVICES TO BE MODIFIED AS NEEDED FOR THE DURATION OF THE DETOUR.
2. PROPER ROUTING WITH COMPLETE SIGNING TO BE PROVIDED BACK TO ORIGINAL ROUTE.

BARRICADES
SIGN

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CROSS REF</th>
<th>SPEC REF</th>
</tr>
</thead>
</table>

STANDARD ROAD DETAIL
- TYPICAL TRAFFIC CONTROL -
ROAD CLOSED BEYOND DETOUR POINT

METROPOLITAN DADE COUNTY
DEPARTMENT OF TRAFFIC AND TRANSPORTATION

APPROVED 6/8/81
REVISED 7/7/88 6/10/74

R 19.2
SHEET 3 OF 3
JTE: TYPICAL APPLICATION—DAYTIME MAINTENANCE
OPERATION OF SHORT DURATION ON A
2-LANE ROADWAY AND FLAGGING IS
PROVIDED

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CROSS REF.</th>
<th>SPEC. REF.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARRIAGES</td>
<td>R-19.6</td>
<td></td>
</tr>
<tr>
<td>SIGNS</td>
<td>R-19.1</td>
<td></td>
</tr>
</tbody>
</table>
NOTE: WARNING SIGN SEQUENCE IN OPPOSITE DIRECTION SAME AS BELOW.

CHANNELIZATION DEVICES SEPARATE WORK AREA FROM TRAVELEDWAY.

WORK AREA

NOTE: TYPICAL APPLICATION ON 2-LANE ROADWAY WHEN ONE LANE IS CLOSED AND Flagging IS PROVIDED.

NOTES:
1. LIGHTS SHOULD BE PROVIDED TO MARK FLAGMAN STATIONS AND BARRICADES AT NIGHT, AS NEEDED.
2. WARNING LIGHTS SHOULD BE USED TO MARK CHANNELIZATION DEVICES AT NIGHT AS NEEDED.
3. EXTEND BARRICADES TO A POINT WHERE IT IS VISIBLE TO APPROACHING TRAFFIC.

TYPE I BARRICADE
- FLAGMAN
- DRUM

500' FEET

ONE LANE ROAD 1000 FT

ROAD CONSTRUCTION 500 FT

BARRICADES
R-196

SIGNS
R-191

ITEM CROSS REF SPEC. REF

METROPOLITAN DADE COUNTY
DEPARTMENT OF TRAFFIC AND

19.4

APPROVED 10/26/86
REvised 7/7/88

STANDARD ROAD DETAIL
TYPICAL TRAFFIC CONTROL
2 LANE ROAD - 1 LANE BLOCKED
NOTES
1. LIGHTS SHOULD BE USED TO MARK BARRICADE AND CHANNELIZATION AT NIGHT
2. SPEED LIMIT TO BE APPROVED BY DADE CO PUBLIC WORKS
3. AT NIGHT STEADY BURN LAMPS REQUIRED TO DELINEATE VEHICLE PATH.

LEGEND
L = MINIMUM LENGTH OF TAPER.
S = NUMERICAL VALUE OF THE SPEED LIMIT OR 85 PERCENTILE SPEED.
W = WIDTH OF OFFSET.
- TYPE I BARRICADE.
- TYPE II BARRICADE.
△ CONE (ORANGE).
□ FLASHER ARROW BOARD.

Metropolitan Dade County
Department of Traffic and Transportation

STANDARD ROAD DETAIL
TYPICAL TRAFFIC CONTROL
4 LANE DIVIDED ROADWAY
(1 ROADWAY CLOSED)
LEGEND:
L: Minimum length of taper.
S: Numerical value of the speed limit or 85 percentile speed.
W: Width of offset.

- Type I barricade.
- Cone (orange).
- Flasher arrow board.

NOTES:
1. Lights should be used to mark barricades and channelization at night.
2. Speed limit to be approved by Dade Co Public Works.
3. At night steady burn lamps required to delineate vehicle path.

<table>
<thead>
<tr>
<th>BARRICADES</th>
<th>R-19.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNS</td>
<td>R-19</td>
</tr>
</tbody>
</table>

**STANDARD ROAD DETAIL**

**TYPICAL TRAFFIC CONTROL**

**4 LANE UNDIVIDED ROADWAY**

**(2 LANES CLOSED)**

**METROPOLITAN**

**DADE COUNTY**

**DEPARTMENT OF TRAFFIC AND TRANSPORTATION**

**APPROVED**

8/6/62

6/4/86

7/7/88

**REVISED**

**CROSS REF.**

**SPEC REF.**

**SHEET 2 OF 5**

**R 19.5**
LEFT LANE CLOSED  RIGHT LANE CLOSED

NOTE
L = Minimum Length of Taper
S = Numerical Value of the Speed Limit
or 85 Percentile Speed
W = Width of Offset

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CROSS REF</th>
<th>SPEC REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARRICADES</td>
<td>R-19 6</td>
<td></td>
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<tr>
<td>SIGNS</td>
<td>R-19 1</td>
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ETTROPOLITAN
DADE COUNTY
DEPARTMENT OF
TRAFFIC AND
TRANSPORTATION

APPROVED  REVISIONS
8 / 3 / 66  7 / 7 / 88
6 / 10 / 74  6 / 4 / 96

STANDARD ROAD DETAIL
• TYPICAL TRAFFIC CONTROL
4 LANE DIVIDED ROADWAY
(LANE CLOSED)

R
19.5
SHEET 3 OF 7
LEGEND:

L = Minimum Length of Taper.
S = Numerical Value of the Speed Limit or 85 Percentile Speed.
W = Width of Offset.

I = Type I Barricade.
D = Flasher Arrow Board.

NOTES:

1. Lights should be used to mark barricading and channelization at night.
2. Speed limit to be approved by Dade Co. Public Works.
3. At night steady burn lamps required to delineate vehicle path.

<table>
<thead>
<tr>
<th>BARRICADES</th>
<th>R-19.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNS</td>
<td>R-19.1</td>
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<tr>
<td>ITEM</td>
<td>CROSS REF</td>
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METROPOLITAN ADE COUNTY
DEPARTMENT OF TRAFFIC AND TRANSPORTATION

APPROVED: 8/3/66

REVISED: 7/7/68
6/10/74
6/4/86

STANDARD ROAD DETAIL
TYPICAL TRAFFIC CONTROL
4 LANE UNDIVIDED ROADWAY
(LANE CLOSED)
NOTE:
1. LIGHTS SHOULD BE USED TO MARK BARRICADING AND CHANNELIZATION AT NIGHT.
2. STEADY BURN LAMPS TO DELINEATE VEHICLE PATH.

* SIGNS SAME AS OPPOSITE SIDE

NOTE:

L = Minimum Length of taper
S = Numerical Value of the Speed Limit
or 85 Percentile Speed
W = Width of Offset

TYPE I BARRICADE

CONE (Orange)

FLASHERS AND/OR FLAGS CAN BE USED TO CALL ATTENTION TO THE EARLY WARNING SIGNS IF NEEDED

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CROSS REF</th>
<th>SPEC REF</th>
</tr>
</thead>
<tbody>
<tr>
<td>BARRICADES</td>
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<tr>
<td>SIGNS</td>
<td>R-197</td>
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</tbody>
</table>

STANDARD ROAD DETAIL

TYPICAL TRAFFIC CONTROL
MULTI-LANE ROADWAY
(MULTIPLE LANEs CLOSED)

R 19.5

METROPOLITAN DADE COUNTY
DEPARTMENT OF TRAFFIC AND TRANSPORTATION

APPROVED 6/4/86
REVISED 6/10/74
7/7/86

SHEET 5 OF 5
### TABLE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>TYPE</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAIL LENGTH</td>
<td></td>
<td>6'-6&quot;</td>
<td>3'-0&quot;</td>
<td>3'-0&quot; - VAR</td>
</tr>
<tr>
<td>RAIL WIDTH</td>
<td></td>
<td>8'-0&quot; - 12'</td>
<td>8'-0&quot; - 12'</td>
<td>8'-0&quot; - 12&quot;</td>
</tr>
<tr>
<td>STRIPE WIDTH</td>
<td></td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>6&quot;</td>
</tr>
<tr>
<td>HEIGHT</td>
<td></td>
<td>3'-0&quot;</td>
<td>3'-0&quot;</td>
<td>5'-0&quot;</td>
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<td>FRAME TYPE</td>
<td></td>
<td>DE-MOUNTABLE OR HEAVY &quot;A&quot; FRAME</td>
<td>LIGHT &quot;A&quot; FRAME</td>
<td>POST OR SKIDS</td>
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<tr>
<td>MOBILITY</td>
<td></td>
<td>MOVABLE</td>
<td>PORTABLE</td>
<td>PERMANENT</td>
</tr>
</tbody>
</table>

### Notes:

1. MARKINGS FOR BARRICADE RAILS SHALL BE ALTERNATE ORANGE AND WHITE STRIPES
2. DIAGONAL STRIPES SHALL SLOPE DOWNWARD TOWARD THE SIDE OF THE BARRICADE ON WHICH TRAFFIC WILL PASS

**PORTABLE AND TEMPORARY MOUNTINGS**
PRIVATE CROSSING
NOT A PUBLIC THOROUGHFARE

SHAPE: 18" x 48" RECTANGLE WITH 2" RADIUS CURVES.

MATERIAL: 080 GAUGE ALUMINUM.

COLOR: BLACK ON WHITE (REFLECTORIZED).

MOUNTING: MAY BE ON 1 OR 2 U-IRONS OR POSTS.

METROPOLITAN DADE COUNTY PUBLIC WORKS DEPARTMENT

STANDARD ROAD DETAIL
APPROACH SIGN FOR PRIVATE CULVERT CROSSING

R 19.7

APPROVED 8/3/66
NOTE.

1. INSTALLATION TO BE PARALLEL WITH PAVEMENT EDGE

*IF GUARDRAIL IS NOT CONTINUOUS (R206) PROVIDE ANCHOR ENDS TYPE I OR II AT EACH END OF DISTANCE 'Q'.

<table>
<thead>
<tr>
<th>R/W WIDTH</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ft, 60 ft, 70 ft</td>
<td>50' min</td>
</tr>
<tr>
<td>80 ft, 86 ft, 100 ft</td>
<td>100' min</td>
</tr>
</tbody>
</table>

GUARDRAIL POST: R 20
GUARDRAIL: R-202

STANDARD ROAD DETAIL
GUARDRAIL INSTALLATION AT T-INTERSECTION ADJACENT TO CANAL OR DITCH

R 20.4
**NOTES**

1. The desirable safety width shall normally be 50' or more as shown above. The absolute minimum width shall be 15'. Special approval must be obtained and guardrail or other safety devices provided for widths less than 50'. Where the water area lies outside of a horizontal roadway curve, the necessary safety requirements shall include safety devices as approved but not limited to, horizontal distances, guardrail, etc.

2. Access to canal or pond for maintenance purposes to be approved by Public Works Department.

3. Solid sod or grass and mulch safety area.

---

**TYPICAL SECTIONS**

**STANDARD ROAD DETAIL ROADWAY SHOULDER REQUIREMENTS ALONG CANAL & POND FRONTAGE**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>CROSS REF</th>
<th>SPEC REF</th>
</tr>
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<tbody>
<tr>
<td>20.6</td>
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**METROPOLITAN DADE COUNTY PUBLIC WORKS DEPARTMENT**

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<th>APPROVED</th>
<th>REVISED</th>
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</thead>
<tbody>
<tr>
<td>6/1/82</td>
<td>3/1/83</td>
</tr>
</tbody>
</table>
NOTES:

1. WHERE THE WATER AREA LIES OUTSIDE OF A HORIZONTAL ROADWAY CURVE, THE NECESSARY SHOULDER SAFETY REQUIREMENTS SHALL INCLUDE SAFETY DEVICES AS APPROVED BUT NOT LIMITED TO, HORIZONTAL DISTANCES, GUARDRAIL ETC.

2. SOLID SOD OR GRASS AND MULCH SAFETY AREA.

3. 20' MINIMUM OFFSET TO TOP OF LAKE SLOPE MAY BE DELETED WHERE CURB AND GUTTER ROADWAY IS PROVIDED.
TYPICAL SECTION

MAXIMUM FILL SLOPES

<table>
<thead>
<tr>
<th>FILL HEIGHT (FT)</th>
<th>FILL SLOPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 2</td>
<td>6:1</td>
</tr>
<tr>
<td>2 - 6</td>
<td>4:1</td>
</tr>
<tr>
<td>6 - 10</td>
<td>3:1</td>
</tr>
<tr>
<td>ABOVE 10</td>
<td>2:1</td>
</tr>
</tbody>
</table>

NOTES

1. Minimum shoulder width shall be 11'-6".
2. Guardrail required when shoulder width is 20' or less and fill height is greater than 2'.
3. When fill height is 2' or less, no guardrail is required.
4. Guardrail face to be no closer than 8' from pavement edge back of guardrail to be placed 2' inside shoulder point.
5. When roadway lies adjacent to lake frontage, then toe of slope ground elevation must be minimum flood criteria elevation.
6. Guardrail may not be required if 6:1 fill slopes are constructed outside shoulder limits and meet requirements of recovery area.

METROPOLITAN
DADE COUNTY
PUBLIC WORKS
DEPARTMENT

APPROVED
6/1/62

REVISED
5/17/72

R-203

GUARDRAIL POST

R-20:

ITEM | CROSS REF | SPEC REF

GUARDRAIL REQUIREMENTS ON FILL

R 20.7

SHEET OF
**PLAN**

**SECTION A-A & B-B**

- **TACK COAT ALL SURFACES AND EDGES**
- **VARIES**
- **ASPHALTIC CONCRETE THICKNESS AND TYPE TO BE THE SAME AS ADJACENT ROADWAY. IT SHALL BE 1" THICK WHEN CONCRETE SLAB IS USED FOR BASE.**
- **FOR BASE RESTORATION REFER TO SECTION 40 OF THE ROAD SPECIFICATIONS**
- **TRENCH BACKFILLED IN 8" COMPACTED LAYERS**
- **TRENCH BACKFILLED TO A LEVEL ONE (1) FOOT ABOVE PIPE OR STRUCTURE, IN 8" COMPACTED LAYERS.**

**DIRECT BURIAL CABLE OR CONDUIT**

- **SELECTED MATERIAL 100% TO PASS 1" SIEVE; COMPACT IN 6" LAYERS.**
- **CLEAN SAND**
- **CABLE & CONDUIT**

**NOTES:**

1. PAVEMENT RESTORATION FOR LONGITUDINAL CUTS SHALL INCLUDE FULL LANE WIDTH RESURFACING FOR EACH LANE WITHIN WHICH THE CUT EXTENDS.

2. IN SOME CASES IT WILL BE NEEDED TO OVERLAY MORE THAN ONE (1) LANE WITH ASPHALTIC CONCRETE TO SATISFY PAVEMENT SLOPE.

3. CONTRACTOR MAY ELECT TO BACKFILL WITH 1:10 SAND-CEMENT MIX.

---

**STANDARD ROAD DETAIL PAVEMENT RESTORATION FOR TRENCHES CUT IN PUBLIC RIGHTS-OF-WAY**

**METROPOLITAN DADE COUNTY PUBLIC WORKS DEPARTMENT**

**APPROVED 6/5/81**

**REVISED**
- 5/17/72
- 7/14/80
- 6/4/86
NOTES:
1. PLEASE NOTE THAT FOR CASES 1-5 NOTED ABOVE, FULL INTERSECTION OVERLAY WILL BE REQUIRED FOR ALL SIGNALIZED INTERSECTIONS WITHOUT EXCEPTIONS.
2. RESTORE ALL PAVEMENT MARKINGS AS PER DADE COUNTY PUBLIC WORKS STANDARD.
3. ANY VARIATION OF THE LIMITS OF PAVEMENT OVERLAYS SHOWN ABOVE MUST BE APPROVED PRIOR TO REPLACEMENT BY DADE COUNTY PUBLIC WORKS DEPARTMENT.
4. ANY DAMAGE ENTERING AN ADJACENT INTERSECTION QUADRANT WILL REQUIRE THE REPAIR OF SAID QUADRANT.

LEGEND:
- RIGHT OF WAY LINE
- LIMITS OF PAVEMENT.
NOTES:

1. ALL DAMAGED TRAFFIC LOOPS SHALL BE PROPERLY REPAIRED IN ACCORDANCE WITH CURRENT MIAMI-DADE COUNTY PUBLIC WORKS STANDARDS.

2. ALL PAVEMENT MARKING SHALL BE REPLACED IN ACCORDANCE WITH CURRENT MIAMI-DADE COUNTY PUBLIC WORKS STANDARDS.

3. ANY VARIATION TO THE LIMITS OF MILLING OR PAVEMENT OVERLAYS SHOWN ABOVE MUST BE APPROVED PRIOR TO RESTORATION BY MIAMI-DADE COUNTY PUBLIC WORKS DEPARTMENT.

4. PAVEMENT CUTS WITHIN FIFTY (50) FEET OF EACH OTHER SHALL BE RESTORED UNDER THE SAME PATCH.

LEGEND:

- RIGHT OF WAY LINE
- LIMITS OF PAVEMENT
BRIDGE AND CULVERT DETAILS
NOTES:

1. WIDENING IS TO BE APPLIED TO INSIDE OF CURVE ONLY.

2. PAVEMENT WIDENING IS TO BE CONSTRUCTED SIMULTANEOUSLY WITH THE NORMAL ROADWAY PAVEMENT.

3. THE TYPICAL SECTION OF THE NORMAL ROADWAY IS TO BE ADJUSTED TO ACCOMODATE THE WIDENING.

4. FOR CURB AND GUTTER ROADWAY SECTIONS, NO WIDENING IS REQUIRED.
PLAN

NOTES:

1 WIDTH OF TYPICAL SECTION FOR A PRIVATE CROSSING MAY BE REDUCED TO PROVIDE NO LESS THAN 10' OF PAVEMENT WITH 6' SHOULDER.

2 PRIVATE CROSSING MUST BE POSTED WITH AN APPROVED SIGN ENTITLED "PRIVATE CROSSING - NOT A PUBLIC THOROUGHFARE".

3 PRIVATE ROAD DESIGN LOADING SHALL BE IN ACCORDANCE WITH THE PROPOSED USE OF THE STRUCTURE BUT SHALL NOT BE LESS THAN H20-44.

4 HEADWALLS MAY BE ELIMINATED IF DESIGNED AS SHOWN FILL SLOPE TO BE SLOPED TO WATER LEVEL USE 3:1 SLOPE BELOW WATER LEVEL.

5 MINIMUM COVER OVER CULVERT TO BE APPLIED AT THE LOWEST ROADWAY SECTION ELEVATION.

6 APPROPRIATE VERTICAL CURVES FOR ROADWAY PROFILE GRADES SHALL BE USED FOR DESIGN SPEEDS IN ACCORDANCE WITH AASHTO STANDARDS FOR STOPPING SIGHT DISTANCES.

PUBLIC

<table>
<thead>
<tr>
<th>2 LANE</th>
<th>4 LANE</th>
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PRIVATE

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* SEE SDC DETAIL R-977

METROPOLITAN DADE COUNTY
PUBLIC WORKS DEPARTMENT

APPROVED: 6/5/6
8/15/81

STANDARD BRIDGE AND CULVERT DETAIL
CULVERT CROSSING
TYPE B

BC
1.2

SHEET 1 OF 2
NOTES:
1. WHEN SWALE SECTION IS SPECIFIED AS SHOWN ON R-11 AND R-21, THE FOLLOWING ALTERNATE METHODS OF CONSTRUCTION MAY BE USED:
   a. CONSTRUCT BRIDGE WIDTH FOR FULLY DEVELOPED ROADWAY SECTION OR R-2.2 RESPECTIVELY.
   b. CONSTRUCT BRIDGE WITH CURB & GUTTER APPROACHES TO FIRST INTERSECTING STREET OR FOR 300' WHICHEVER APPLIES. BARRIER TO BARRIER WIDTH TO BE 30' (R-11 & R-2.1 ROADWAY).

2. A 2'-0" GUARDRAIL EASEMENT BEHIND ROADWAY RIGHT-OF-WAY WILL BE REQUIRED FOR APPROACH GUARDRAIL.

3. BRIDGE SHALL HAVE A DESIGN LOADING OF HS 20-44.
PLAN

SECTION A-A
(FOR R-3.I & R-8.I ROADWAY)

NOTE
1. CONSTRUCT ONE HALF BRIDGE SECTION TO FIT FINAL LOCATION FULLY DEVELOPED BRIDGE SECTION. EXTEND BRIDGE BEYOND CENTER LINE OF RIGHT-OF-WAY AND CONSTRUCT BARRIER & SIDEWALK WHICH ARE TO BE REMOVED WHEN REMAINING PORTION OF BRIDGE IS CONSTRUCTED.

2. A 2'-0" GUARDRAIL EASEMENT BEHIND ROADWAY RIGHT-OF-WAY WILL BE REQUIRED FOR APPROACH GUARDRAIL.

3. BRIDGE SHALL HAVE A DESIGN LOADING OF HS-20-44.

METROPOLITAN DADE COUNTY
PUBLIC WORKS DEPARTMENT

APPROVED
6/5/6
10/12/83
5/17/72
6/24/77

STANDARD BRIDGE AND CULVERT DETAIL
BRIDGE CROSS-SECTION AND LOADING REQUIREMENTS FOR 70' RIGHT-OF-WAY

BC 2.2
SHEET 1 OF 2
SECTION A-A
(FOR R-3.2 ROADWAY)

NOTES:
1. A 2'-0" GUARDRAIL EASEMENT BEHIND ROADWAY RIGHT-OF-WAY WILL BE REQUIRED FOR APPROACH GUARDRAIL.
2. BRIDGE SHALL HAVE A DESIGN LOADING OF HS-20-44.
SECTION A-A
(FOR R-4.4 & R-4.5 ROADWAY)

NOTES

1. WHEN ROADWAY TYPICAL SECTION FOR ONE HALF RIGHT-OF-WAY IS SPECIFIED AS SHOWN ON R-8.1 THE FOLLOWING ALTERNATE METHOD OF CONSTRUCTION MAY BE USED.
   a. CONSTRUCT BRIDGE WIDTH FOR FULLY DEVELOPED ROADWAY SECTION R-4.4 OR R-4.5
   b. CONSTRUCT ONE HALF BRIDGE SECTION TO FIT FINAL LOCATION OF FULLY DEVELOPED SECTION. CONSTRUCT TEMPORARY GUARDRAIL ON THE MEDIAN SIDE OF THE BRIDGE.

2. A 2'-0" GUARDRAIL EASEMENT BEHIND ROADWAY RIGHT-OF-WAY WILL BE REQUIRED FOR APPROACH GUARDRAIL.

3. BRIDGE SHALL HAVE A DESIGN LOADING OF HS 20-44.

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METROPOLITAN DADE COUNTY
PUBLIC WORKS DEPARTMENT

APPROVED: 5/17/72
REVISED: 6/24/77; 10/2/83

STANDARD BRIDGE AND CULVERT DETAIL
BRIDGE CROSS-SECTION AND LOADING REQUIREMENTS FOR 80' & 86' RIGHT-OF-WAY

BC 2.3
SHEET 1 OF 1
SECTION A-A
(FOR R-5.2 & R-6.2 ROADWAY)

NOTES
1. WHEN ROADWAY TYPICAL SECTION FOR ONE HALF RIGHT OF WAY IS SPECIFIED AS SHOWN ON R-81 THE FOLLOWING ALTERNATE METHODS OF CONSTRUCTION MAY BE USED:
   a. CONSTRUCT BRIDGE WIDTH FOR FULLY DEVELOPED ROADWAY SECTION R-5.2 OR R-6.2
   b. CONSTRUCT ONE HALF BRIDGE SECTION TO FIT FINAL LOCATION OF FULLY DEVELOPED
      SECTION. CONSTRUCT TEMPORARY GUARDRAIL ON THE MEDIAN SIDE OF BRIDGE.

2. A 2'-0" GUARDRAIL EASEMENT BEHIND ROADWAY RIGHT OF WAY WILL BE REQUIRED FOR
   APPROACH GUARDRAIL.
3. BRIDGE SHALL HAVE A DESIGN LOADING OF HS-20-44.
TYPICAL SECTION

NOTES:
1. SIDEWALK MAY BE DELETED FROM ONE SIDE OF PRIVATE BRIDGE.
2. PRIVATE BRIDGE MUST BE POSTED WITH AN APPROVED SIGN ENTITLED: "PRIVATE CROSSING, NOT A PUBLIC THOROUGHFARE." *
3. PRIVATE BRIDGE DESIGN LOADING SHALL BE IN ACCORDANCE WITH THE PROPOSED USE OF THE STRUCTURE BUT SHALL NOT BE LESS THAN HS-20-44.
4. GUARDRAIL REQUIREMENTS TO BE SAME AS FOR A PUBLIC BRIDGE.
NOTES
1. CLASS II CONCRETE SHALL BE USED IN BARRIER.
2. REINFORCING STEEL SHALL BE 60 GRADE.
3. CYLINDER STRENGTH OF THE CONCRETE SHALL BE 3,400 PSI MINIMUM AT 28 DAYS.
WING ELEVATION

NOTE: AFTER NUTS HAVE BEEN TIGHTENED THE THREADS SHALL BE NICKED TO PREVENT REMOVAL OF NUTS

RAIL SECTION

NOTES:
1. BLACK PLASTIC LETTERS AND FIGURES 3" IN HEIGHT AS APPROVED BY THE ENGINEER MAY BE USED IN LIEU OF LETTERS FORMED BY "V" GROOVES. "V" GROOVES SHALL BE FORMED BY PREFORMED LETTERS AND FIGURES

V-GROOVE FOR
INSCRIBED LETTERS

CONCRETE PARAPET WALL

METROPOLITAN
DADE COUNTY
PUBLIC WORKS
DEPARTMENT

STANDARD BRIDGE AND CULVERT DETAIL

BC
2.6
SHEET 2 OF 3
RAIL CLAMP BAR

SECTION C-C

RAIL END CAP

RAIL SPlice

RAIL

STAINLESS STEEL HEX CAP SCREW WITH ALUMINUM WASHER

OUTLINE OF ELLIPTICAL SHAPE

MAJOR AXIS

MINOR AXIS

PROVIDE FOR DRIVE FIT INTO RAIL

MAJOR AXIS

MINOR AXIS

4'-0'

2'

1'-6'

METROPOLITAN DADE COUNTY PUBLIC WORKS DEPARTMENT

STANDARD BRIDGE AND CULVERT DETAIL CONCRETE PARAPET WALL

BC 2.6
DIMENSIONS

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<tr>
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<th>B</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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</table>
| 12" | 1"-2" | 1"-1" | 1"-0" | 1"-4" | 2'-0"
| 15" | 1"-2" | 1"-1" | 1"-2" | 5"-0" | 2'-3"
| 18" | 1"-3" | 1"-1" | 1"-3" | 6"-0" | 2'-6"
| 24" | 1"-4" | 2'-0" | 1"-4" | 8"-0" | 3'-0"
| 30" | 1"-6" | 2'-2" | 1"-6" | 10"-0" | 3'-6"
| 36" | 1"-8" | 2'-4" | 1"-8" | 12"-0" | 4'-0"
| 42" | 1"-10" | 2'-6" | 2'-0" | 14"-0" | 4'-6"
| 48" | 2'-1" | 2'-9" | 2'-0" | 16"-0" | 5'-0"
| 54" | 2'-5" | 3'-1" | 2'-4" | 18"-0" | 5'-6"

NOTES:

1. ALL EXPOSED EDGES ARE TO BE CHAMFERED 1" EXCEPT WHERE NOTED
2. ALL REINFORCING SHALL HAVE A MINIMUM COVER OF 2" EXCEPT WHERE NOTED
NOTES:
1. ALL EXPOSED EDGES SHALL BE CHAMFERED 1", EXCEPT AT PIPE ENDS AS NOTED.
2. VERTICAL-REINFORCING BARS SHALL BE PLACED EQUIDISTANT BETWEEN WALL FACES AS SHOWN

**TABLE OF DIMENSIONS**

<table>
<thead>
<tr>
<th>TABLE</th>
<th>D 18&quot; 24&quot; 30&quot; 36&quot; 42&quot; 48&quot; 54&quot; 60&quot;</th>
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<td>B</td>
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<td>C</td>
<td>2'-6&quot; 3'-0&quot; 3'-6&quot; 4'-0&quot; 4'-6&quot; 5'-0&quot; 5'-6&quot; 6'-0&quot;</td>
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**CONCRETE HEADWALL WITH 45° WINGS**
**ELEVATION**

**SECTION A-A**

**PLAN**

---

**TABLE OF DIMENSIONS**

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<th>24&quot;</th>
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</table>

**NOTES**
1. ALL EXPOSED EDGES SHALL BE CHAMFERED 1" EXCEPT AS NOTED.
2. ALL REINFORCING SHALL HAVE A MIN. COVER OF 2" EXCEPT WHERE NOTED.

---

**FILL SLOPE**

R-207

**ITEM** | **CROSS REF** | **SPEC REF**
---|---|---

**METROPOLITAN**

DADE COUNTY

PUBLIC WORKS DEPARTMENT

APPROVED

6/1/62

REvised

6/24/77

**STANDARD BRIDGE AND CULVERT DETAIL**

CONCRETE HEADWALL

'U' TYPE

BC

3.3

SHEET 1 OF 1
GENERAL DETAILS
Some Elevation and Datum previously called:
U.S.C. B.G.S. 1929 MEAN SEA LEVEL
SEA LEVEL DATUM OF 1929
NOTE

* FOR SOIL OTHER THAN ROCK, THE CONCRETE ENCASEMEN T
  SHALL BE EXTENDED TO FIRM MATERIAL BUT NO LESS THAN
  18 INCHES

INSTALLATION IN SOIL
(OTHER THAN ROCK)
1. All main valves at intersections shall be located at the intersection of the main with the projection of the R/W line.
2. All sanitary sewer manholes at intersections shall be located at the centerline of the intersecting streets.
3. Fire hydrants at intersections shall be located opposite the P.C. of the R/W line.
4. All underground utilities shall be placed parallel or perpendicular to the centerline of right of way.
Minimum Cover for Lateral:
Not crossing centerline.

Minimum Cover for Sanitary Sewer:
1) 24" for extra strength VC. pipe and for schedule 80 C.I. pipe.
2) 36" for other pipe.

Water Meter shall be placed at outer edge of sidewalk when sidewalk already exists, when conditions permit.

Maintain 18' min. vertical clearance at all times. Ref: Nat'l Electrical Code 1990 Handbook, Sec. 225.18 & 230.24(b)

<table>
<thead>
<tr>
<th>R/W Widths</th>
<th>Sewer and Water Main OFFSETS</th>
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<tbody>
<tr>
<td>50'</td>
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<tr>
<td>60'</td>
<td>15'</td>
</tr>
<tr>
<td>70'</td>
<td>17'</td>
</tr>
</tbody>
</table>

Notes:
1. All construction or adjustment of underground utilities must be completed before final asphaltic concrete surface may be placed.
2. On streets with curb & gutter place utility poles at the R/W line, and fire hydrants 0' from R/W line (see G 2.1, Sheets 1, 3)
3. Where utility crosses arterial, use minimum 36" cover through arterial
4. (See Sheet 4, Note 6)
NOTES:
1. All main valves at intersections shall be located at the intersection of the main with the projection of the R/W line.
2. Fire hydrants at intersections shall be located opposite the PC of the R/W line.
3. All underground utilities shall be placed parallel or perpendicular to the centerline of right-of-way.
4. Access manholes shall not be placed in traffic lanes unless special approval is obtained. Median and sidewalk areas shall be used.
NOTES:

1. PROVIDE MINIMUM 36" COVER ON ALL UTILITIES. GREATER COVER MAY BE REQUIRED ON UTILITIES LARGER THAN 24" AT INTERSECTING ARTERIALS.

2. NO UTILITY POLES TO BE PLACED ON ARTERIALS EXCEPT BY SPECIAL APPROVAL.

3. PLACE FIRE HYDRANTS 1'-0" FROM BACK OF SIDEWALK (R/W LINE), EXCEPT IN AREAS W/CURB & GUTTER. FIRE HYDRANTS SHALL NOT BE MORE THAN 8 FEET FROM FACE OF CURB.

3A. MAINTAIN 18" MIN. VERTICAL CLEARANCE AT ALL TIMES. REF: NAT'L ELECTRICAL CODE 1990 HANDBOOK, SEC. 225.18 & 230.24(b)

4. PLACE WATER METER AT OUTER EDGE OF SIDEWALK WHEN SIDEWALK ALREADY EXISTS, WHEN CONDITIONS PERMIT.

5. ROADWAY LIGHTING POWER LINE COVER 12" TO 36", AS REQUIRED BY EXISTING CONDITIONS.

6. PROVIDE NOT LESS THAN 48 HOURS NOTIFICATION TO ALL OWNERS OF ANY EXISTING UTILITY FACILITIES IN THE PROPOSED AREA OF WORK. IN ADDITION, THE PERMITTEE AND/OR HIS CONTRACTOR ALONG WITH THE OWNER OF THE UTILITY MUST COOPERATE TO DETERMINE THE EXACT LOCATION (FIELD EXPOSURE AS WARRANTED) OF THE RESPECTIVE UTILITY FACILITIES, BY WHATEVER MEANS AVAILABLE.

**PAINTED MEDIAN, 10' TOTAL WIDTH**

**SECTION B-B**

**HYDRANT INSTALLATION**

<table>
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<tr>
<td>#5-62</td>
<td>G-21111</td>
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NOTES:

1. ALL UNDERGROUND UTILITY LINES SHALL HAVE A MINIMUM 24" VERTICAL CLEARANCE BELOW FINISHED GRADE. VERTICAL CLEARANCE BETWEEN LINES TO BE DECIDED BY UTILITY COMPANIES INVOLVED.

2. WATER AND SEWER LINES LOCATED IN STREET RIGHT-OF-WAY. (SEE G-2.1).

For Joint Trench Application
See G-2.2-3
UTILITY LOCATION IN 10' EASEMENT

FOR JOINT TRENCH APPLICATION
SEE G-2.2-3

NOTES
1. ALL UNDERGROUND UTILITY LINES SHALL HAVE
   A MINIMUM 24" VERTICAL CLEARANCE BELOW
   FINISHED GRADE. VERTICAL CLEARANCE BETWEEN
   LINES TO BE DECIDED BY UTILITY COMPANIES INVOLVED.
2. WATER AND SEWER LINES LOCATED IN STREET
   RIGHT-OF-WAY (SEE G-2.1)
NOTES

1. ALL UNDERGROUND UTILITY LINES SHALL HAVE A MINIMUM 24" VERTICAL CLEARANCE BELOW FINISHED GRADE.

2. WATER AND SEWER LINES LOCATED IN STREET RIGHT-OF-WAY (SEE G-2.1)

3. All cables installed in joint trench must be either in conduits or if direct buried cable then each utility shall bundle and secure its facilities every ten (10) feet or less to insure proper placement.
NOTES
1. ELEVATED UTILITY CROSSING SHALL BE ON THE DOWNSTREAM SIDE OF BRIDGE
2. HORIZONTAL CLEARANCE BETWEEN PILING SHALL EQUAL EXISTING BRIDGE PILING OR BE APPROVED BY THE PUBLIC WORKS DEPARTMENT
3. ALL UTILITIES (WHERE PRACTICAL), SHOULD UTILIZE THE SAME SUPPORTING STRUCTURE
4. UTILITY COMPANY SHALL RELOCATE AT THEIR EXPENSE, ANY UTILITY CROSSING (BOTH ELEVATED AND/OR BURIED), WHICH WOULD INTERFERE WITH FUTURE DEEPENING OR WIDENING OF CANALS OR WIDENING OF BRIDGES
5. WATER AND SEWER MAINS TO BE LOCATED IN ACCORDANCE WITH THE FLORIDA STATE BOARD OF HEALTH REGULATIONS
6. CLASS III PERMIT REQUIRED FOR ALL UTILITY CROSSINGS OVER COUNTY CANALS

METROPOLITAN DADE COUNTY
PUBLIC WORKS DEPARTMENT

REVISIONS:
- APPROVED: 6/1/62
- 5/17/72
- 4/5/74
- 4/6/8

GENERAL DETAIL

UTILITY PLACEMENT AT ROAD (OR PROPOSED ROAD) CROSSING OF CANAL
### Utility Symbols

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<td>Gas or Water Valve</td>
<td>![Gas or Water Valve Graphic]</td>
<td>![Proposed Gas or Water Valve Graphic]</td>
</tr>
<tr>
<td>Pedestrian Signal</td>
<td>![Pedestrian Signal Graphic]</td>
<td>![Proposed Pedestrian Signal Graphic]</td>
</tr>
</tbody>
</table>

Note: All utilities (underground) should specify material used.

---

**General Detail**

<table>
<thead>
<tr>
<th>Metropolitan Dade County</th>
<th>Approved</th>
<th>Revisions</th>
<th>Standard Symbols (Utility)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Works Department</td>
<td>6/3/61</td>
<td>6/1/62</td>
<td>SHEET 3.2 OF 1</td>
</tr>
</tbody>
</table>

---
<table>
<thead>
<tr>
<th>Surveyors Symbols</th>
<th>Natural Features</th>
</tr>
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<tbody>
<tr>
<td><strong>Bench Mark BM</strong></td>
<td><strong>Shoreline or Bank</strong></td>
</tr>
<tr>
<td><strong>Permanent Reference Monument PRM</strong></td>
<td><strong>Palm Trees</strong></td>
</tr>
<tr>
<td><strong>Section Corner</strong></td>
<td><strong>Fruit or Shade Trees</strong></td>
</tr>
<tr>
<td>MON IN PLACE</td>
<td><strong>Pine Trees</strong></td>
</tr>
<tr>
<td>REF POINT</td>
<td><strong>Bushes</strong></td>
</tr>
<tr>
<td><strong>County Line</strong></td>
<td><strong>Hedge</strong></td>
</tr>
<tr>
<td>Dade County</td>
<td><strong>Grass</strong></td>
</tr>
<tr>
<td>County</td>
<td><strong>Marsh or Swamp</strong></td>
</tr>
<tr>
<td><strong>Township or Range Line</strong></td>
<td><strong>Architectural and Structural Symbols</strong></td>
</tr>
<tr>
<td><strong>Section Line</strong></td>
<td><strong>Concrete</strong></td>
</tr>
<tr>
<td><strong>Quarter Section Line</strong></td>
<td><strong>Metal</strong></td>
</tr>
<tr>
<td><strong>City Limit</strong></td>
<td><strong>Reinforcing Bars</strong></td>
</tr>
<tr>
<td><strong>Limited Access Right of Way Line</strong></td>
<td><strong>Wire Mesh</strong></td>
</tr>
<tr>
<td><strong>Base or Survey Line</strong></td>
<td><strong>Wood</strong></td>
</tr>
<tr>
<td><strong>Property or Block Line</strong></td>
<td><strong>Sand</strong></td>
</tr>
<tr>
<td><strong>Center Line</strong></td>
<td><strong>Riprap</strong></td>
</tr>
<tr>
<td><strong>EARTH</strong></td>
<td><strong>Earth</strong></td>
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**General Detail**

**Standard Symbols**
(Surveyors, Natural Features, Architectural and Structural)
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>A.C.S.P.</td>
<td>Wrought Iron</td>
</tr>
<tr>
<td>A.C.W.P.</td>
<td>Point of Curvature</td>
</tr>
<tr>
<td>C.I.</td>
<td>Point of Intersection</td>
</tr>
<tr>
<td>C.I.P.</td>
<td>Point of Tangency</td>
</tr>
<tr>
<td>C.S.P.</td>
<td>Point on Tangent</td>
</tr>
<tr>
<td>C.M.P.</td>
<td>Point of Reverse Curve</td>
</tr>
<tr>
<td>C.M.A.P.</td>
<td>Point of Vertical Curvature</td>
</tr>
<tr>
<td>G.I.</td>
<td>Point of Vertical Intersection</td>
</tr>
<tr>
<td>R.C.P.</td>
<td>Point of Vertical Tangency</td>
</tr>
<tr>
<td>V.C.P.</td>
<td></td>
</tr>
<tr>
<td><strong>NOTE:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For extra strength pipe add the</td>
</tr>
<tr>
<td></td>
<td>letter 'X' to the abbreviation.</td>
</tr>
</tbody>
</table>

**GENERAL DETAIL**

<table>
<thead>
<tr>
<th>METROPOLITAN DADE COUNTY PUBLIC WORKS DEPARTMENT</th>
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</thead>
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<tr>
<td>Approved: 6-2-62</td>
</tr>
<tr>
<td>Revised: 6-1-62</td>
</tr>
</tbody>
</table>

**STANDARD SYMBOLS**

| ABBREVIATIONS |
|---------------|--------------|
| A.C.S.P.      | Wrought Iron|
| A.C.W.P.      | Point of Curvature|
| C.I.          | Point of Intersection|
| C.I.P.        | Point of Tangency|
| C.S.P.        | Point on Tangent|
| C.M.P.        | Point of Reverse Curve|
| C.M.A.P.      | Point of Vertical Curvature|
| G.I.          | Point of Vertical Intersection|
| R.C.P.        | Point of Vertical Tangency|

**G 3.5**

Sheet 1 of _
# STANDARD COLOR CODE FOR IDENTIFYING UNDERGROUND UTILITIES

<table>
<thead>
<tr>
<th>UTILITY &amp; PRODUCT TYPE</th>
<th>IDENTIFYING COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Power Distribution and Transmission</td>
<td>Safety Red</td>
</tr>
<tr>
<td>Municipal Electric Systems</td>
<td>Safety Red</td>
</tr>
<tr>
<td>Gas Distribution and Transmission</td>
<td>High Visibility Safety Yellow</td>
</tr>
<tr>
<td>Oil Distribution and Transmission</td>
<td>High Visibility Safety Yellow</td>
</tr>
<tr>
<td>Dangerous Materials, Product Lines</td>
<td>High Visibility Safety Yellow</td>
</tr>
<tr>
<td>Telephone and Telegraph Systems</td>
<td>Safety Alert Orange</td>
</tr>
<tr>
<td>Cable Television</td>
<td>Safety Alert Orange</td>
</tr>
<tr>
<td>Police and Fire Communications</td>
<td>Safety Alert Orange</td>
</tr>
<tr>
<td>Water Systems, Slurry Pipelines</td>
<td>Safety Precaution Blue</td>
</tr>
<tr>
<td>Sewer Systems</td>
<td>Safety Green</td>
</tr>
<tr>
<td>Treated Waste Water Pipe Lines</td>
<td>Safety Brown</td>
</tr>
</tbody>
</table>

**NOTE:** Utility location to be marked prior to any intended trenching or excavating.

*American Public Works Association Identifying Color Coding Specification*
MAILBOXES MAY NOT BE INSTALLED WITHIN CURVE LIMITS AT INTERSECTIONS.

NOTES:
1. NO OBSTRUCTIONS ARE PERMITTED WITHIN THE RIGHT OF WAY THAT WOULD PRECLUDE A MAIL CARRIER FROM PULLING OFF TRAFFIC LANES OF PAVEMENT TO MAKE DOOR DELIVERIES.
2. THE MAILBOX SHOULD BE SET 3 1/2 TO 4' ABOVE THE ROADWAY.
3. THE MAILBOX MUST BE LOCATED SO THAT THE MAIL CARRIER DOES NOT HAVE TO LEAVE HIS VEHICLE IN ORDER TO PLACE MAIL IN BOX.

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>MAILBOX</th>
<th>OFFSET - FEET</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ARTERIAL</td>
<td>10</td>
</tr>
<tr>
<td>B</td>
<td>RESIDENTIAL</td>
<td>3</td>
</tr>
</tbody>
</table>

DRIVEWAY
MAILBOXES MAY NOT BE INSTALLED WITHIN CURVE LIMITS AT INTERSECTIONS

EDGE OF PAVEMENT

DRIVEWAY

Cluster Mailbox

NOTES:
1. No obstructions are permitted within the right of way that would preclude a mail carrier from pulling off traffic lanes of pavement to make door deliveries.
2. The mailbox should be set 3 1/2' to 4' above the roadway.
3. The mailbox must be located so that the mail carrier does not have to leave his vehicle in order to place mail in box.
4. A lot with frontage of less than 50' shall place the mailbox at the right property line as determined by facing the structure on the property, or at a common joint use location if both property owners agree.
5. The footprint of a mailbox shall be limited to 48" x 48" x 5'.
6. The slab upon which mailboxes are placed shall not exceed ground level height.
7. The installation of any mailbox shall not violate any of the provisions of the Americans with Disabilities Act (ADA).
Newspaper Racks may not be installed within curve limits at intersection.

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>ARTERIAL</th>
<th>RESIDENTIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>10'</td>
<td>6'</td>
</tr>
<tr>
<td>B</td>
<td>10'</td>
<td>5'</td>
</tr>
<tr>
<td>C</td>
<td>15'</td>
<td>15'</td>
</tr>
</tbody>
</table>

Newspaper Rack Offset shall mean:
A - The distance from the edge of pavement to the newspaper rack.
B - The distance from the edge of pavement of a driveway to the side edge of newspaper rack.
C - The distance from the curve limit and edge of a newspaper rack.

See Note 12

NOTES:
1) Newspaper racks and newspaper storage racks to be used for vending and distribution may be placed in the public right-of-way. The number of newspaper racks and newspaper storage racks at any given location will be dictated by the individual geographic location to relate to the requirements contained in this code and in this detail.
2) Newspaper racks and newspaper storage racks will be secured by the use of internal weights with a minimum aggregate weight of 125 pounds.
3) No newspaper racks to be located within road center medians.
4) Newspaper racks and newspaper storage racks can be placed at the back of a sidewalk or bike-path if no room exists on the side, provided that all applicable current (36 inches minimum clearance) or future ADA and State statute requirements are met.
5) Owner's name and phone number to be placed on newspaper rack. A numbered newspaper rack decal to be placed on face of rack. Decal will be issued upon payment of permit fee which is established by Administrative Order.
6) A certificate of insurance and a hold harmless agreement is required where the owner agrees to indemnify and hold Dade County harmless from any and all liability which may arise by virtue of Dade County permitting the installation of these items within the public right of way.
7) Any non conforming newspaper racks will be subject to a daily fine in compliance with Chapter 8CC of the County Code.
8) Owner shall remove newspaper rack within 5 business days of a request when the location interferes with road or utility construction. Failure to remove within 5 business days will result in the County or the contractor removing and disposing of the newspaper rack.
9) Newspaper racks must be kept in good repair and kept free of any graffiti.
10) Where newspaper racks and/or newspaper storage racks cause a traffic flow safety problem, as determined by a traffic engineering evaluation, the newspaper racks and/or newspaper storage racks will have to be removed from that location.
11) For arterial roads with curb and gutter and no swale, newspaper racks and newspaper storage racks shall be placed at the back of the sidewalk providing the minimum ADA clearance requirements are met. For arterial roads without curb and gutter and a swale, the offset shall be 10 feet.
NOTE: *
FOR ADDITIONAL INFORMATION CONCERNING R/W PLANTING, REFER TO "POLICY ON PLANTING WITHIN PUBLIC RIGHT-OF-WAY" IN DADE COUNTY.

<table>
<thead>
<tr>
<th>ROADWAYS</th>
<th>BELOW 35 mph</th>
<th>35-45 mph</th>
<th>50 mph &amp; ABOVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO CURB &amp; GUTTER</td>
<td>6'</td>
<td>14'</td>
<td>30'*</td>
</tr>
<tr>
<td>WITH CURB &amp; GUTTER</td>
<td>4'</td>
<td>4'</td>
<td>14'</td>
</tr>
</tbody>
</table>

GENERAL DETAIL
LOCATION OF PLANTING WITHIN PUBLIC R/W
Plan

Note:
For additional information concerning R/W planting, refer to Landscape Manual Section 49 of Dade County.
NO PLANTING OR OTHER OBJECT ALLOWED IN MEDIAN WHERE WIDTH IS 4 OR LESS.

NO SIGHT OBSTRUCTION OVER 2.5 HIGH ALLOWED IN THIS AREA.

NOTE:
FOR ADDITIONAL INFORMATION CONCERNING R/W PLANTING, REFER TO LANDSCAPE MANUAL, SECTION 4a OF DADE COUNTY.
NOTE:
OTHER THAN THE CONCRETE BUTTON OR PYRAMID DESCRIBED HEREIN, NO OTHER OBJECT MAY BE PLACED IN THE RIGHT-OF-WAY AS A RESIDENTIAL MARKER.
STORM DRAINAGE DETAILS
LONGITUDINAL SECTION

1. After the coarse aggregate has been placed to the proper elevation, it shall be carefully washed down with clean water, or tampered, to allow for initial settlement that may occur. If settlement does take place, additional No. 4 coarse aggregate shall be added to restore the proper elevation so that the exfiltration trench is completed in accordance with the details.

TRANSVERSE SECTION

* May be used in areas where trench walls will not stand vertical, or where Cave-in Below the Water Table is likely to occur, to be used at the Engineer’s discretion.

NOTES (CONTINUED ON NEXT PAGE)

1. Plastic filter fabric shall be woven monofilament polypropylene geotextile. Permeability shall be greater than 0.50 sec and flow rate greater or equal to 50 gpd/min.

2. Maximum exfiltration rate which can be used in calculating French drain length is 0.1 cfs/ft.
GENERAL NOTES FOR PIPE CULVERTS

CONTRACTOR HAS THE OPTION OF INSTALLING ANY PIPE MEETING THE REQUIREMENTS OF SECTION 443–2 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AS LONG AS THE MANUFACTURER IS LISTED, AT THE TIME OF PIPE INSTALLATION, IN FDOT'S LIST OF PRODUCERS WITH ACCEPTED QUALITY CONTROL PROGRAMS. PIPES WITH LESS THAN A 100-YEAR CERTIFICATION CANNOT BE USED ON SECTION LINE, HALF SECTION LINE, COLLECTOR ROADWAYS, AND ARTERIALS. 50-YEAR PIPE CERTIFICATION REQUIRED FOR ALL OTHER MINOR/LOCAL ROADWAYS.

MINIMUM NUMBER OF PERFORATION IN PIPE CULVERTS

<table>
<thead>
<tr>
<th>PIPE DIAMETER (inches)</th>
<th>OUTER SHELL</th>
<th>LINER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of 5/8&quot; Dia. Holes (PER LIN. FT. OF PIPE)</td>
<td>No. of 5/8&quot; Dia. Holes (PER LIN. FT. OF PIPE)</td>
</tr>
<tr>
<td>15</td>
<td>100</td>
<td>50</td>
</tr>
<tr>
<td>18</td>
<td>120</td>
<td>60</td>
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<tr>
<td>24</td>
<td>160</td>
<td>80</td>
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<td>30</td>
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<td>36</td>
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<td>48</td>
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<td>54</td>
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<td>60</td>
<td>395</td>
<td>200</td>
</tr>
<tr>
<td>72</td>
<td>470</td>
<td>235</td>
</tr>
<tr>
<td>84</td>
<td>550</td>
<td>275</td>
</tr>
</tbody>
</table>

NOTE:

PERFORATIONS SHALL BE UNIFORMLY SPACED AROUND THE FULL PERIPHERY OF THE PIPE TO WITHIN 4" OF EACH END OF EACH LENGTH OF PIPE. THE NUMBER OF PERFORATIONS PER LINEAR FOOT OF PIPE AND THE DIAMETER OF THE PERFORATIONS SHALL BE AS SHOWN ON THE ABOVE TABLE.
NOTES:
1. CAST TOP SLAB TO FIT WALL USED.
2. USE 4,000 psi CONCRETE. (MINIMUM), MAXIMUM W/C=0.53, GRADE 60 STEEL FOR REBAR AND GRADE 65 FOR WWF.
3. PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4".
4. APPLY A SMOOTH LINE OF MORTAR 1/2" THICK INSIDE AND OUTSIDE.
5. WEEP HOLES ARE TO BE USED WHEN THE YEARLY LOWEST WATER ELEVATION IS ABOVE THE TOP OF THE BOTTOM SLAB OF THE STRUCTURE.
### SQUARE STRUCTURE

<table>
<thead>
<tr>
<th>Standard Detail</th>
<th>Width (ft)</th>
<th>Length (ft)</th>
<th>Height (ft)</th>
<th>Wall Thickness (in)</th>
<th>Wall Steel</th>
<th>Top Slab Thickness (in)</th>
<th>Top Slab Steel</th>
<th>Bottom Slab Thickness (in)</th>
<th>Bottom Slab Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>3</td>
<td>3</td>
<td>0.0 - 5.0</td>
<td>6</td>
<td>#4@10&quot;H</td>
<td>8</td>
<td>#4@5&quot; E.W.</td>
<td>8</td>
<td>#4@10&quot; E.W.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#4@10&quot;V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>3</td>
<td>3</td>
<td>5.1 - 10.0</td>
<td>6</td>
<td>#4@7.5&quot;H</td>
<td>8</td>
<td>#4@5&quot; E.W.</td>
<td>8</td>
<td>#4@10&quot; E.W.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#4@10&quot;V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>3</td>
<td>3</td>
<td>10.1 - 15.0</td>
<td>6</td>
<td>#5@7.5&quot;H</td>
<td>8</td>
<td>#4@5&quot; E.W.</td>
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<td>#4@10&quot; E.W.</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>#4@10&quot;V</td>
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</table>

### ROUND STRUCTURE

<table>
<thead>
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<th>Standard Detail</th>
<th>Dia. (ft)</th>
<th>Height (ft)</th>
<th>Wall Thickness (in)</th>
<th>Wall Steel</th>
<th>Top Slab Thickness (in)</th>
<th>Top Slab Steel</th>
<th>Bottom Slab Thickness (in)</th>
<th>Bottom Slab Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2</td>
<td>3</td>
<td>0.0 - 5.0</td>
<td>6</td>
<td>8 X 8 W20</td>
<td>#4@5&quot; E.W.</td>
<td>8</td>
<td>#4@10&quot; E.W.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#4@10&quot;E.W.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>3</td>
<td>5.1 - 15.0</td>
<td>6</td>
<td>8 X 8 W20</td>
<td>#4@5&quot; E.W.</td>
<td>8</td>
<td>#4@10&quot; E.W.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#4@10&quot;E.W.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PLAN

* 20' MINIMUM FOR COMMERCIAL DRIVeways (SEE R 12.5)
** FOR WIDTHS BETWEEN 40' & 60 SEE R-12.2
PLAN

FRAME ELEVATION REFERS TO THIS POINT (SEE NOTE 1)

SECTION A-A

NOTES
1. FRAME ELEVATION SHALL BE AT LEAST 3" BELOW SWALE GRADE ELEVATIONS AS SHOWN ON DETAILS R-11 THRU R-81.
2. FRAME ELEVATION SHALL BE AT LOW POINT OF CATCH BASIN PAVEMENT.
3. 6" CONCRETE SLAB MAY BE SUBSTITUTED FOR 6" BASE COURSE. REINFORCING STEEL TO BE APPROVED BY PUBLIC WORKS DEPARTMENT.
4. A SMOOTH LINE OF MORTAR ½" THICK INSIDE AND OUTSIDE

INLET CONSTR. | SEC 355 | CATCH BASIN CONST | SEC 350 | CATCH BASIN FR & GR | SD-23
---|---|---|---|---|---
ITEM | CROSS REF | SPEC. REF

| METROPOLITAN DADE COUNTY PUBLIC WORKS DEPARTMENT | | | STANDARD STORM DRAINAGE DETAIL |
| | | | CATCH BASIN PAVEMENT |
| | | | (OTHER THAN DRIVEWAY LOCATIONS) |
| | | | SD 25 |

| | | | SHEET 2 OF 2 |
NOTES

1. CATCH BASIN No.1 (DESIGNED LOCATION)

2. CATCH BASIN No. 2 (ALTERNATE LOCATION), WHEN EXISTING SIDEWALK WILL NOT BE REPLACED.

3. EXTEND INLET PAVEMENT 3' BEYOND LOW POINT OF PAVEMENT RETURN.

4. CATCH BASIN NOT TO INTERFERE WITH PEDESTRIAN RAMPS.
NOTES:
1. CAST TOP SLAB TO FIT WALL USED.
2. USE 4,000 psi CONCRETE. (MINIMUM), MAXIMUM W/C=0.53, GRADE 50 STEEL FOR REBAR AND GRADE 65 FOR WWF.
3. PIPE MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4".
4. APPLY A SMOOTH LINE OF MORTAR 1/2" THICK INSIDE AND OUTSIDE.
5. WEEP HOLES ARE TO BE USED WHEN THE YEARLY LOWEST WATER ELEVATION IS ABOVE THE TOP OF THE BOTTOM SLAB OF THE STRUCTURE.
J-10M

SQUARE TOP

REINFORCEMENT AS PER TABLE ON SHEET 4 OF 4
OPENING PER FRAME AND GRATE CHOSEN

ROUND TOP

REINFORCEMENT AS PER TABLE ON SHEET 4 OF 4

FRAME & GRATE
FOR SWALE AREAS SEE U.S. FOUNDRY 4700-6223
FOR CURB & GUTTER SEE U.S. FOUNDRY 5129-6176 (SEE NOTE #6)
FOR VALLEY GUTTER SEE U.S. FOUNDRY 5105-6148 (SEE NOTE #7)
FOR DRIVEWAY CURB SEE U.S. FOUNDRY 5120-6167 (SEE NOTE #7)

LEVELING COURSE
(SEE SD=4.5 & NOTE 4)

SIZE OPENING TO MATCH GRATE USED
BRICK AND MORTAR SPACE BETWEEN PIPE STRUCTURE

FOR STRUCTURE SIZING SEE SHEET 4 OF 4

ROUND OR SQUARE
SEE NOTE 3

PIECE
14" MAX
2-0" MIN
SLAMP

10" WEEP HOLE
SEE NOTE 5

1/4" GALVANIZED HARDWARE CLOTH
EXTENDING 4" BEYOND HOLE

No.4 COARSE AGGREGATE MIN. 2'x2'x2'

NOTES:
1- CAST TOP SLAB TO FIT WALL USED.
2- USE 4,000 psi CONCRETE (MINIMUM). MAXIMUM W/C=0.53 GRADE 60 STEEL FOR REBAR AND 65 FOR WWF.
3- PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4''.
4- A SMOOTH LINE OF MORTAR 1/2'' THICK INSIDE AND OUTSIDE.
5- WEEP HOLES ARE TO BE USED WHEN THE YEARLY LOWEST WATER ELEVATION IS ABOVE THE TOP OF THE BOTTOM SLAB OF THE STRUCTURE.
6- USF 5129-6176 MAY ONLY BE USED WHEN STRUCTURES ARE TO BE PLACED WITHIN THE RADIUS OF A CORNER AND ITS USE MUST BE APPROVED BY THE DEPARTMENT. THE USE OF THIS FRAME AND GRATE IS NOT INTENDED TO REPLACE STANDARD CURB INLET TOPS. FOR CURB INLETS PLEASE REFER TO FDOT DESIGN STANDARDS INDEX 210 AND 211. INSTALLATION IN OTHER LOCATIONS IS NOT PERMITTED UNLESS APPROVED BY THE DEPARTMENT AS A RESULT OF MITIGATING CIRCUMSTANCES.
7- ALTERNATIVE GRATE 5112-6143 MAY BE USED ON NON-RESIDENTIAL ROADWAYS.
NOTE:
ANY GRATING THAT IS CAPABLE OF SUPPORTING H-20 LOADS MAY BE SUBSTITUTED FOR
THE USF NO. 6646 UPON APPROVAL BY THE DEPARTMENT PROVIDED IT MEETS THE
FOLLOWING TWO CONDITIONS:
1- THE NET OPEN AREA OF THE GRATE MUST NOT BE LESS THAN THAT OF THE
USF No. 6646.
2- THE MAXIMUM DISTANCE (MEASURED PERPENDICULAR) BETWEEN BARS DOES NOT
EXCEED 3".
3- MANUFACTURER MUST BE LISTED IN FDOT'S QPL.

STEEL GRATING
U.S. FOUNDRY NO. 6646 GRATE (or EQUAL)
STRAIGHT BARS 6" x 1"
RETICULINE BARS 1 1/2" x 1/8"
WEIGHT 445 lbs. (APPROX.)

SQUARE TOP

ROUND TOP

CONSTRUCTION JOINT
(OPTIONAL)

NOTES:
1- CAST TOP SLAB TO FIT WALL USED.
2- USE 4,000 psi CONCRETE (MINIMUM). MAXIMUM W/C=0.53 GRADE 60 STEEL FOR REBAR AND 55 FOR WWF.
3-PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4".
4- APPLY A SMOOTH LINE OF MORTAR 1/2" THICK INSIDE AND OUTSIDE.
5- WEEP HOLES ARE TO BE USED WHEN THE YEARLY LOWEST WATER ELEVATION IS ABOVE THE TOP OF THE BOTTOM SLAB
OF THE STRUCTURE.
6- GRATE TO BE SUPPORTED ON ALL SIDES.
7- STRUCTURE IS NOT TO BE USED IN HEAVY TRAFFIC AREAS OR WHERE THEY WOULD BE SUBJECTED TO CONSTANT
LOADING SUCH AS DRIVEWAY APPROACHES.
## SQUARE STRUCTURE

<table>
<thead>
<tr>
<th>Standard Detail</th>
<th>Width (ft) Min.</th>
<th>Width (ft) Max.</th>
<th>Height (ft)</th>
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<th>Wall Steel</th>
<th>Top Slab Thickness (in)</th>
<th>Top Slab Steel</th>
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<td>#5@8.5&quot; E.W.</td>
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## ROUND STRUCTURE

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<td>#6@6&quot; E.W.</td>
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<td>#5@8.5&quot; E.W.</td>
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<td>#5@8.5&quot; E.W.</td>
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LEVELING COURSE
(SEE SD 4.5 &
NOTE 4)

FRAME & COVER
SEE U.S. FOUNDRY
NO. 310A
(LABLED STORM)

LEVELING COURSE
(SEE SD 4.5 &
NOTE 4)

SECTION

NOTES:
1. CAST TOP SLAB TO FIT WALL USED.
2. PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4".
3. USE 4,000 psi CONCRETE (MINIMUM), MAXIMUM W/C=0.53, GRADE 60 STEEL FOR REBAR AND GRADE 65 FOR WWF.
4. A SMOOTH LINE OF MORTAR 1/2" THICK INSIDE AND OUTSIDE.
5. WEEP HOLES ARE TO BE USED WHEN THE YEARLY LOWEST WATER ELEVATION IS ABOVE THE TOP OF THE BOTTOM SLAB OF THE STRUCTURE.
REINFORCEMENT AS PER TABLE ON SHEET 4 OF 4

ROUND TOP

FRAME & GRADE
FOR SWALE AREAS SEE U.S. FOUNDRY 4700-6223
FOR CURB & GUTTER SEE U.S. FOUNDRY 5129-6176
(SEE NOTE # 6)
FOR VALLEY GUTTER SEE U.S. FOUNDRY 5105-6148 (SEE NOTE # 7)
FOR DRIVEWAY CURB SEE U.S. FOUNDRY 5120-6167 (SEE NOTE # 7)

LEVELING COURSE
(SEE SD 4.5 & NOTE 4)
NO GREATER THAN 1 FOOT

1/4" GALVANIZED HARDWARE
CLOTH EXTENDING 4" BEYOND HOLE

No.4 COARSE AGGREGATE
MIN. 2"X2"X2"

REINFORCEMENT AS PER TABLE ON SHEET 4 OF 4

SQUARE TOP

OPENING TO MATCH FRAME & GRATE USED

SECTION

NOTES:

1.- CAST TOP SLAB TO FIT WALL USED.
2.-PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4".
3.- USE 4,000 psi CONCRETE. (MINIMUM), MAXIMUM W/C=0.53, GRADE 60 STEEL FOR REBAR AND GRADE 85 FOR WWF.
4.- A SMOOTH LINE OF MORTAR 1/2" THICK INSIDE AND OUTSIDE.
5.- WEEP HOLES ARE TO BE USED WHEN THE YEARLY LOWEST WATER ELEVATION IS ABOVE THE TOP OF THE BOTTOM SLAB OF THE STRUCTURE.
6.- USF 5129-6176 MAY ONLY USED WHEN STRUCTURES ARE TO BE PLACED WITHIN THE RADIUS OF A CORNER AND ITS USE MUST BE APPROVED BY THE DEPARTMENT. THE USE OF THIS FRAME AND GRATE IS NOT INTENDED TO REPLACE STANDARD CURB INLET TOPS. FOR CURB INLETS PLEASE REFER TO FDOT DESIGN STANDARDS INDEX 210 AND 211. INSTALLATION IN OTHER LOCATIONS IS NOT PERMITTED UNLESS APPROVED BY THE DEPARTMENT AS A RESULT OF MITIGATING CIRCUMSTANCES.
STEEL GRATING

U.S. FCUNDRY NO. 6646
GRATE (or EQUAL)
STRAIGHT BARS 6" x 1/4"
RETICULINE BARS 1 1/4" x 1/8"
WEIGHT 445 lbs. (APPROX.)

NOTE:
1.- ANY GRATING THAT IS CAPABLE OF SUPPORTING H-20 LOADS MAY BE SUBSTITUTED FOR THE U.S. FCUNDRY NO. 6646 UPON APPROVAL OF THE DEPARTMENT PROVIDING IT MEETS THE FOLLOWING CONDITIONS:
   a.- MANUFACTURER MUST BE LISTED IN FDOT'S QPL.
   c.- THE MAXIMUM DISTANCE (MEASURED PERPENDICULAR) BETWEEN BARS DOES NOT EXCEED 3".

2.- PIPES MAY EXTEND INTO CATCH BASIN MAXIMUM OF 4".

3.- USE 4,000 psi CONCRETE (MINIMUM), MAXIMUM W/C=0.53, GRADE 60 STEEL FOR REBAR AND GRADE 65 FOR WWF.

4.- WEEP HOLES ARE TO BE USED WHEN THE YEARLY LOWEST WATER ELEVATION IS ABOVE THE TOP OF THE BOTTOM SLAB OF THE STRUCTURE.

CONSTRUCTION JOINT
(Optional)

KEY JOINT REQUIRED

GROUTED JOINTS

PLAN

SD
2.7
MAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
APPROVED 5/8/2018
REVISED 5/8/2018
STANDARD STORM DRAINAGE DETAIL
MANHOLE AND INLET
(TYPE P)

SEE NOTE 2

MIN. SUMP

1/4" GALVANIZED HARDWARE CLOTH EXTENDING 4" BEYOND HOLE

No.4 COARSE AGGREGATE MIN. 2" X 2" X 2"

10" WEEP HOLE SEE NOTE 5

CONST. JOINT PERMITTED
### SQUARE STRUCTURE

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<tr>
<th>Standard Detail</th>
<th>Width (ft)</th>
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<td>#4@7&quot;</td>
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<td>#4@10&quot;</td>
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<td>#4@10&quot;E.W</td>
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<td>#4@10&quot;</td>
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<td>E.W.</td>
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</table>
NOTE

1. Minimum size catch basin per STD detail SD 22 or larger.
2. Reinforcement per applicable STD SD detail, P.W. Manual Part I

* Two (2) tees as shown if exfiltration trench at both sides of structure

** Set pipe invert to O.C.T. water level, see detail WC 2.2, "Section 04, Water Control"

---

** Standard Storm Drainage Detail
Catch Basin with Grease & Oil Separator

---

** Metropolitan Dade County Public Works Department

** Approved 7/7/88

** Standard Storm Drainage Detail
Catch Basin with Grease & Oil Separator

---

** SD 2.9
NOTES:
1. - PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4".
2. - USE 4,000 psi CONCRETE. (MINIMUM), MAXIMUM W/C=0.53, GRADE 60 STEEL FOR REBAR AND GRADE 65 FOR WWF.
3. - A SMOOTH LINE OF MORTAR 1/2" THICK INSIDE AND OUTSIDE.
4. - WEEP HOLES ARE TO BE USED WHEN THE YEARLY LOWEST WATER ELEVATION IS ABOVE THE TOP OF THE BOTTOM SLAB OF THE STRUCTURE.
5. - THIS STRUCTURE IS ONLY TO BE USED WHERE UTILITY CONFLICTS DO NOT ALLOW FOR INSTALLATION OF STANDARD STRUCTURES. THE INSTALLATION OF THIS STRUCTURE MUST BE APPROVED BY THE DEPARTMENT.
<table>
<thead>
<tr>
<th>Standard Detail</th>
<th>Width (ft)</th>
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<td>#4@12&quot; E.W.</td>
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</table>
NOTES

1. Maximum total curb distance length when draining into one (1) inlet at low point. When low point exists at intersecting street as shown in above plan, and there is an inlet on each corner, then the 300' spacing applies.

2. The horizontal dimensions do not control distances between points of intersections of grade tangents.

3. Use above requirements on projects with curb & gutter road section only.

---

WATER CONTROL

<table>
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<tr>
<th>ITEM</th>
<th>CROSS REF</th>
<th>SPEC REF</th>
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STANDARD STORM DRAINAGE DETAIL

INLET SPACING FOR POSITIVE DRAINAGE SYSTEMS

SD 3.5

METROPOLITAN DADE COUNTY
PUBLIC WORKS DEPARTMENT

APPROVED
6/4/86
5/17/72

SHEET 1 OF 1
NOTE
UNIT MAY BE PRECAST OR CAST IN PLACE CONCRETE
CONSTRUCTION WALL THICKNESS & STEEL SAME AS
USED FOR SUPPORTING UNIT WALL. ECCENTRIC CONE
MAY BE USED

BARS (BOT ROW) -
6 BARS, 6"C-C
4'-0" or 6'-0" DIA

VARIIES
5'-4" for 54" PIPE
6'-0" for ALL OTHER SIZES

CONCRETE SLAB
REINFORCEMENT

SECTION
BRICK INLET OR M.H.
ON PRECAST CONCRETE RISER

NOTE
THE INSIDE AND OUTSIDE OF BRICK
WALLS SHALL BE PLASTERED WITH
1/2 CEMENT MORTAR THICK.

STANDARD STORM DRAINAGE DETAIL
JUNCTION BOX, MANHOLE TOP
& PRECAST CONCRETE RISER DETAILS

SD
3.6
SLIDE GRATE DETAIL

SECTION B-B

SECTION A-A

MIAMI-DADE COUNTY
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS

APPROVED 5/8/2018

REVISED 5/8/2018

STANDARD STORM DRAINAGE DETAIL
MANATEE GRATE

SD 5.1
SHEET 1 OF 4
LOCK DETAIL

E

1/4" THICK CHANNEL (TYP.)

3/8" x 3" PLATE

TOP VIEW

A

3/8" PLATE TO BE WELDED AT THE BACK OF THE FRAME

MIDDLE ATTACHMENT PLATES

3 1/2" x 3 1/2" x 3/8"

LOWER ATTACHMENT ANGLE

d

SECTION E - E

NTS
## MANATEE GRATE TABLE

<table>
<thead>
<tr>
<th>D</th>
<th>A</th>
<th>C</th>
<th>E</th>
<th>Al</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
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<td>3/4&quot;X4 1/2&quot;X10&quot;</td>
<td>L3 1/2&quot;X3 1/2&quot;X1/2&quot;</td>
<td>C1/8&quot;X1 1/4&quot;X4&quot;</td>
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THREE CHAMBERS (3C)

FOR SWALE AREAS SEE U.S. FOUNDRY 4700-6223
FOR CURB & GUTTER SEE U.S. FOUNDRY 5129-6176
(SEE NOTE # 5)
FOR VALLEY GUTTER SEE U.S. FOUNDRY 5105-6148
FOR DRIVEWAY CURB SEE U.S. FOUNDRY 5120-6167
FOR MANHOLE SEE U.S. FOUNDRY 310A

LEVELING COURSE
(SEE SD 4.5 & NOTE 4)

FRAME & COVER
SEE U.S. FOUNDRY 310A
(LA B ELE STORM)

REINFORCEMENT AS PER
TABLE ON SHEET 4 OF 4

SECTION A-A

NOTES:
1. CAST TOP SLAB TO FIT WALL USED.
2. PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4”.
3. USE 4,000 psi CONCRETE. (MINIMUM), MAXIMUM W/C=0.53, GRADE 60 STEEL FOR REBAR AND GRADE 65 FOR WWF.
4. A SMOOTH LINE OF MORTAR 1/2” THICK INSIDE AND OUTSIDE.
5. USF 5129-6176 MAY ONLY USED WHEN STRUCTURES ARE TO BE PLACED WITHIN THE RADIUS OF A CORNER AND ITS USE MUST BE APPROVED BY THE DEPARTMENT. THE USE OF THIS FRAME AND GRATE IS NOT INTENDED TO REPLACE STANDARD CURB INLET TOPS. FOR CURB INLETS PLEASE REFER TO FDOT DESIGN STANDARDS INDEX 210 AND 211. INSTALLATION IN OTHER LOCATIONS IS NOT PERMITTED UNLESS APPROVED BY THE DEPARTMENT AS A RESULT OF MITIGATING CIRCUMSTANCES.
TWO CHAMBERS WITH A WEIR WALL (2C)

FRAME & COVER
SEE U.S.
FOUNDRY NO. 310A
(LABELED STORM)

FRAME & GRATE
FOR SWALE AREAS SEE
U.S. FOUNDRY
4700-6223
FOR CURB & GUTTER
SEE U.S. FOUNDRY
5129-6176
(SEE NOTE # 5)
FOR VALLEY GUTTER
SEE U.S. FOUNDRY
5105-6148
FOR DRIVEWAY CURB
SEE U.S. FOUNDRY
5120-6167

PLAN
N.T.S.

LEVELING COURSE
(SEE SD 4.5 & NOTE 4)

REINFORCEMENT
AS PER TABLE ON
SHEET 4 OF 4

SECTIONS A-A
N.T.S.

SECTION B-B
N.T.S.

NOTES:
1.- CAST TOP SLAB TO FIT WALL USED.
2.- PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4".
3.- USE 4,000 psi CONCRETE. (MINIMUM), MAXIMUM W/C=0.53, GRADE 60 STEEL
   FOR REBAR AND GRADE 65 FOR WWF.
4.- A SMOOTH LINE OF MORTAR 1/2" THICK INSIDE AND OUTSIDE.
5.- IF USING THE FIRST CHAMBER AS AN INLET, A BAFFLE IS REQUIRED BEFORE THE FINAL OUTLET POINT.
TWO CHAMBERS WITH A BAFFLE WALL (2C)

FRAME & COVER
SEE U.S. FOUNDRY NO. 310A
(LABELED STORM)

LEVELING COURSE
(SEE SD 4.5 & NOTE 4)

REINFORCEMENT
AS PER TABLE ON
SHEET 4 OF 4

SECTION A-A

NOTES:
1.-CAST TOP SLAB TO FIT WALL USED.
2.-PIPES MAY EXTEND INTO CATCH BASIN A MAXIMUM OF 4".
3.- USE 4,000 psi CONCRETE. (MINIMUM), MAXIMUM W/C=0.53, GRADE 60 STEEL
   FOR REBAR AND GRADE 65 FOR WWF.
4.-A SMOOTH LINE OF MORTAR 1/2" THICK INSIDE AND OUTSIDE.
5.-INVERT ELEVATION OF OUTFLOW PIPE SHALL BE EQUAL OR HIGHER THAN
   BOTTOM ELEVATION OF BAFFLE WALL.
6.-BOTTOM ELEVATION OF BAFFLE WALL SHALL BE 6" BELOW LOW MONTH WATER LEVEL
   OR 1.5" FROM INFLOW PIPE.

SECTION B-B

MAMI-DADE
COUNTY
DEPARTMENT OF
TRANSPORTATION
AND PUBLIC WORKS

REVISED
5/8/2018
9/27/2012

STANDARD STORM DRAINAGE DETAIL
POLLUTION CONTROL STRUCTURE

SD
5.2
SHEET 3 OF 4
<table>
<thead>
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<th>Standard Detail</th>
<th>Width (ft)</th>
<th>Length (ft)</th>
<th>Height (ft)</th>
<th>Wall Thickness (in)</th>
<th>Wall Steel</th>
<th>Top Slab Thickness (in)</th>
<th>Top Slab Steel</th>
<th>Bottom Slab Thickness (in)</th>
<th>Bottom Slab Steel</th>
<th>Bottom Slab Overhang (in)</th>
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<tbody>
<tr>
<td>5.2-3C</td>
<td>8.0</td>
<td>14.0</td>
<td>0.0 - 5.0</td>
<td>10.0</td>
<td>#5@9.5&quot;H E.W.</td>
<td>10.0</td>
<td>#6@6&quot; E.W.</td>
<td>10.0</td>
<td>#4@8&quot; E.W.</td>
<td>12.0</td>
</tr>
<tr>
<td>5.2-3C</td>
<td>8.0</td>
<td>14.0</td>
<td>5.1 - 10.0</td>
<td>10.0</td>
<td>#7@9&quot;H E.W.</td>
<td>10.0</td>
<td>#6@6&quot; E.W.</td>
<td>10.0</td>
<td>#4@8&quot; E.W.</td>
<td>12.0</td>
</tr>
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<td>14.0</td>
<td>10.1 - 15.0</td>
<td>10.0</td>
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<td>10.0</td>
<td>#6@6&quot; E.W.</td>
<td>10.0</td>
<td>#4@8&quot; E.W.</td>
<td>12.0</td>
</tr>
<tr>
<td>5.2-2C</td>
<td>8.0</td>
<td>9.0</td>
<td>0.0 - 5.0</td>
<td>8.0</td>
<td>#5@9.5&quot;H E.W.</td>
<td>10.0</td>
<td>#6@6&quot; E.W.</td>
<td>10.0</td>
<td>#4@8&quot; E.W.</td>
<td>12.0</td>
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<tr>
<td>5.2-2C</td>
<td>8.0</td>
<td>9.0</td>
<td>5.1 - 10.0</td>
<td>8.0</td>
<td>#7@9&quot;H E.W.</td>
<td>10.0</td>
<td>#6@6&quot; E.W.</td>
<td>10.0</td>
<td>#4@8&quot; E.W.</td>
<td>12.0</td>
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<tr>
<td>5.2-2C</td>
<td>8.0</td>
<td>9.0</td>
<td>10.1-15.0</td>
<td>8.0</td>
<td>#8@8&quot;H E.W.</td>
<td>10.0</td>
<td>#6@6&quot; E.W.</td>
<td>10.0</td>
<td>#4@8&quot; E.W.</td>
<td>12.0</td>
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5.2-3C - POLLUTION CONTROL STRUCTURE 3 CHAMBER
5.2-2C - POLLUTION CONTROL STRUCTURE 2 CHAMBER