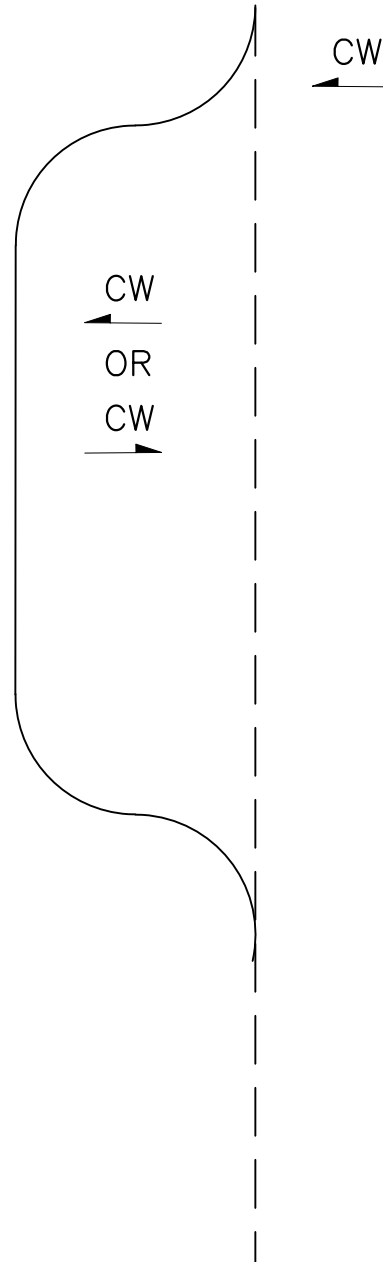


NOTES:

1. WHEN A CURB BULB MID-BLOCK (SHOWN) OR INTERSECTION IS DESIGNED, THE IMPACTS TO DRAINAGE MUST BE EVALUATED. THE STANDARDS FOR INTERCEPTING THE DRAINAGE BEFORE A MARKED OR UNMARKED CROSSINGS MUST BE APPLIED. AS LONG AS THERE IS POSITIVE FLOW ALONG THE GUTTER LINE, THE DRAINAGE STRUCTURE SHOULD BE LOCATED JUST UPSTREAM OF THE ADA RAMP AND OUTSIDE THE MARKED CROSSWALK.
2. TOPOGRAPHIC SURVEY MAY BE REQUIRED TO INFORM A DRAINAGE DESIGN. DEPENDING ON THE LOCATION AND EXTENT OF PAVING, USING A SMART LEVEL ON THE EXISTING SURFACES MAY PROVIDE THE INFORMATION THAT IS REQUIRED.
3. THE STANDARDS FOR AVOIDING CLOSED CONTOURS MUST BE APPLIED. IF A MINOR LOW POINT IS CREATED ALONG THE REVERSE CURVES, THE ALIGNMENT OF THE CURB SHALL BE MODIFIED TO ALLOW THE INSTALLATION OF EITHER AN INLET OR CB ALONG A TANGENT SECTION.
4. IF THE PROPOSED BULB IS EITHER APPENDED TO EXISTING SIDEWALK, OR THE EXISTING ROADWAY CROSS-SLOPES AND GRADES AT THE BACK OF WALK PRECLUDE THE STANDARD CROSS SLOPE ACROSS THE EXPANDED SIDEWALK WITH A MINIMUM CURB HEIGHT OF 4" TO THE NEW GUTTER LOCATION, A DEPRESSION LINE MAY BE RUN ALONG THE PROJECTION OF THE EXISTING CURB TO A POINT WHERE IT CAN DRAIN TO THE CURB. THIS MUST CONSIDER PRIVATE PROPERTY ACCESS AND CANNOT BE AT AN ADA RAMP.
5. IF THE EXISTING DRAINAGE LAYOUT IS INLET TO CB, THIS MAY BE REPLICATED WITH THE FOLLOWING CONDITIONS:
  - A. THE EXISTING CB AND CB OUTFALL ARE IN GOOD CONDITION AND DO NOT CONFLICT WITH THE NEW CURBLINE,
  - B. THE MINIMUM INLET CONNECTION SLOPE REQUIREMENTS WITH A LENGTH OF 50' OR LESS ARE MET AND
  - C. THE CONNECTION AT THE CB IS 0.2' HIGHER THAN THE OUTLET PIPE



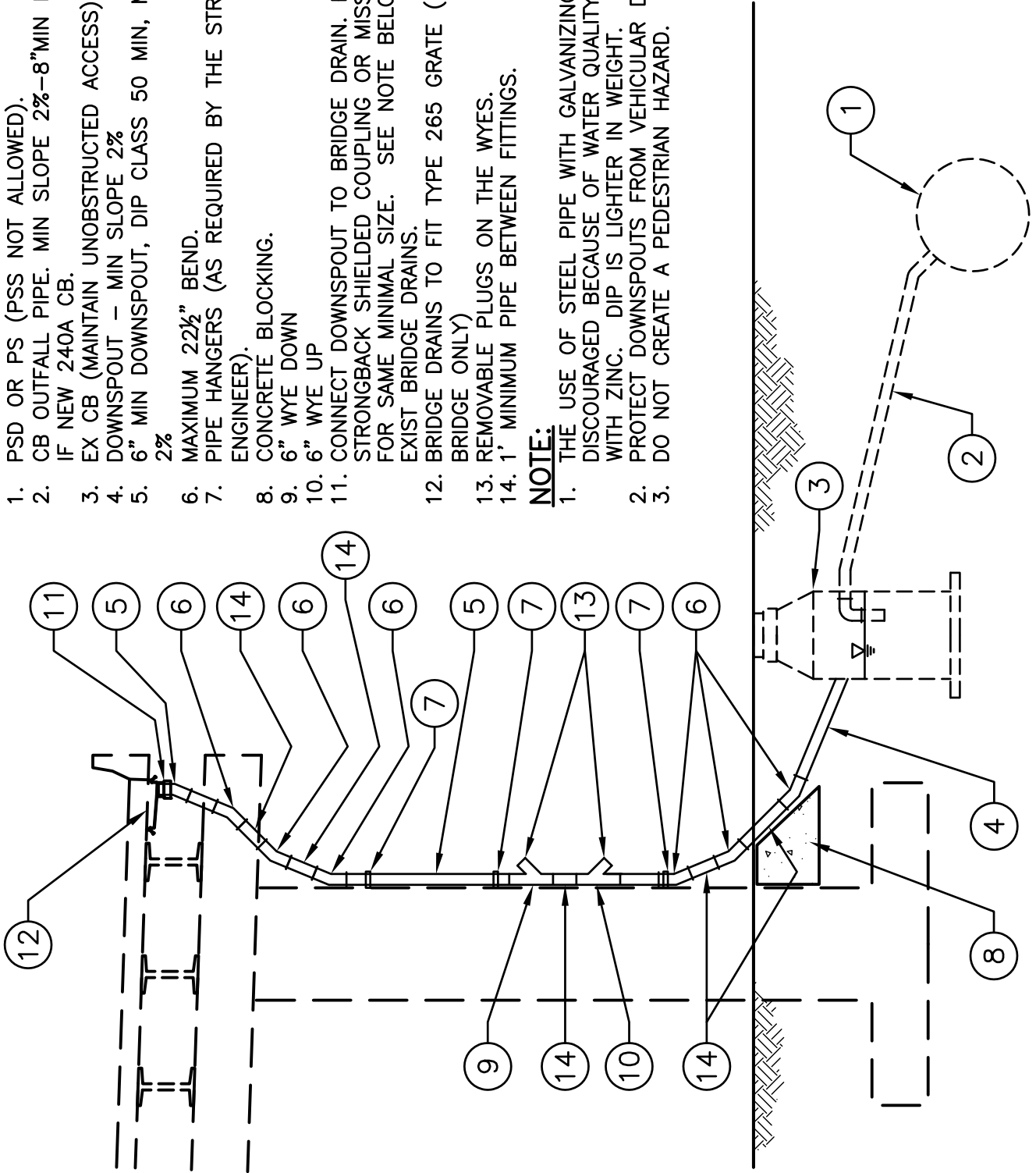
R/W MARGIN

**CURB BULB DRAINAGE**  
NOT TO SCALE

1. PSD OR PS (PSS NOT ALLOWED).
2. CB OUTFALL PIPE. MIN SLOPE 2%--8"MIN DIAMETER IF NEW 240A CB.
3. EX CB (MAINTAIN UNOBSTRUCTED ACCESS).
4. DOWNSPOUT - MIN SLOPE 2%
5. 6" MIN DOWNSPOUT, DIP CLASS 50 MIN, MIN SLOPE 2%
6. MAXIMUM 22½" BEND.
7. PIPE HANGERS (AS REQUIRED BY THE STRUCTURAL ENGINEER).
8. CONCRETE BLOCKING.
9. 6" WYE DOWN
10. 6" WYE UP
11. CONNECT DOWNSPOUT TO BRIDGE DRAIN. FERROCEMENT STRONGBACK SHIELDED COUPLING OR MISSION ARC FOR SAME MINIMAL SIZE. SEE NOTE BELOW FOR EXIST BRIDGE DRAINS.
12. BRIDGE DRAINS TO FIT TYPE 265 GRATE (NEW BRIDGE ONLY)
13. REMOVABLE PLUGS ON THE WYES.
14. 1' MINIMUM PIPE BETWEEN FITTINGS.

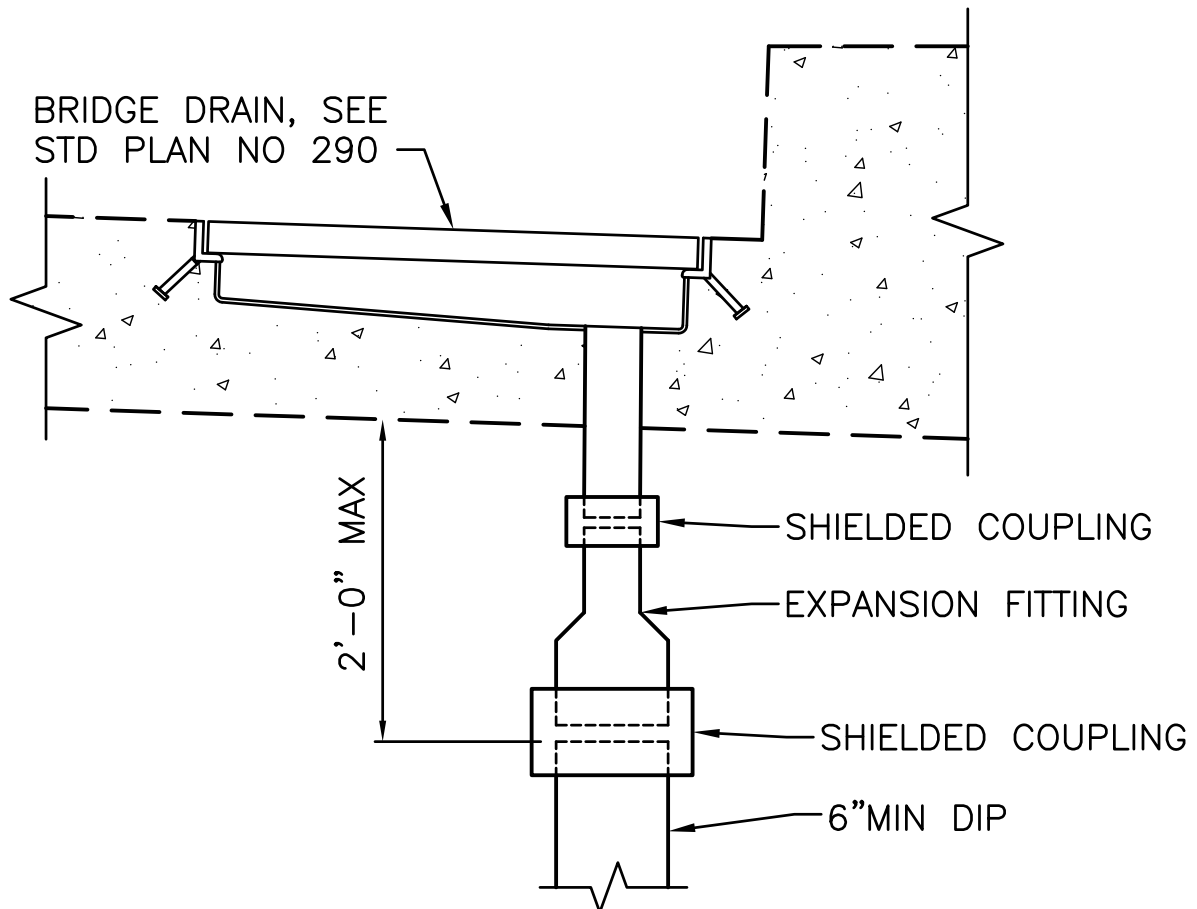
**NOTE:**

1. THE USE OF STEEL PIPE WITH GALVANIZING IS NOW DISCOURAGED BECAUSE OF WATER QUALITY ISSUES WITH ZINC. DIP IS LIGHTER IN WEIGHT.
2. PROTECT DOWNSPOUTS FROM VEHICULAR DAMAGE.
3. DO NOT CREATE A PEDESTRIAN HAZARD.



## Downspout Guidelines

NOT TO SCALE



NOTES:

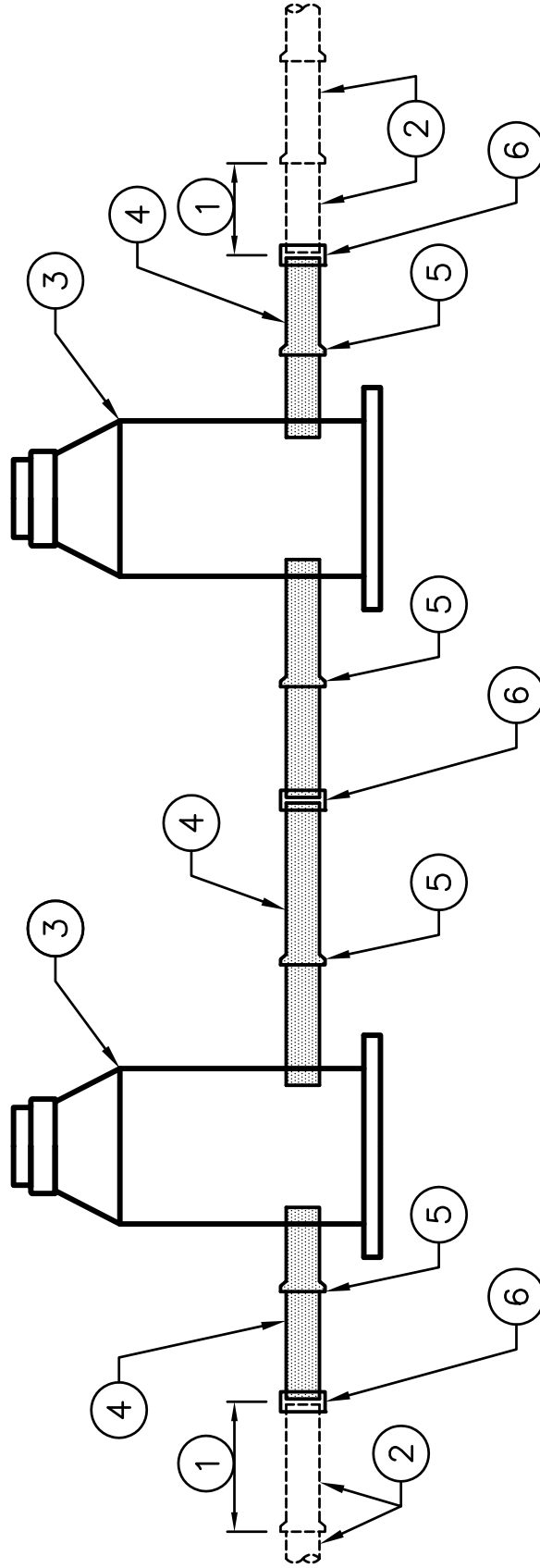
1. PROVIDE MAINTENANCE & OPERATIONS ACCESS TO CLEANOUTS
2. FOR NO.11, IN CASES WHERE THE EXISTING BRIDGE DRAIN IS SMALLER THAN 6", USE THE ABOVE DETAIL.
3. FOR BRIDGE DRAINS GREATER THAN 6", THE DOWNSPOUT MUST MATCH THE NOMINAL DIAMETER. REDUCING IS NOT ALLOWED.
4. SEE SPEC SECTION 7-08.3(9).

Downspout Guidelines

NOT TO SCALE

**LEGEND**

- 1. 1'-0" MIN
- 2. EXISTING PIPE
- 3. MAINTENANCE HOLE
- 4. NEW PIPE
- 5. BELL & SPIGOT
- 6. APPROVED COUPLING



**Use of Couplings**  
NOT TO SCALE

DO NOT USE FOR RESTRAINED CONDITIONS