

## CHAPTER 9. EROSION AND SEDIMENTATION CONTROL

### 9.1 Sediment Control

Sediment basins are barriers or dams constructed across a waterway or at another suitable location to intercept sediment-laden runoff and to retain a portion of the sediment. Sediment basins are used at the downstream end of a construction site which exposes soil for potential erosion to protect the downstream drainage system and properties from sediment deposition.

Sediment control measures shall generally conform to the following design criteria:

1. For drainage areas less than 5 acres, straw bale ditch checks shall be installed, if needed, as per Exhibit IX-1 (page 9-3) and shall have small pits excavated behind them. These ditch checks shall generally be located at changes in grade and other critical locations. Ditch checks shall be spaced so that no check is within the backwater of a downstream check.
2. For drainage areas from 5 through 20 acres, sediment basins or dams shall be constructed in accordance with the U.S. Soil Conservation Service handbook Water Management and Sediment Control for Urbanizing Areas. The sediment basins or dams shall provide a minimum of 67 cubic yards of storage for each acre of contributing area.
3. For drainage areas larger than 20 acres for which off-site drainage cannot be diverted around the project area, the channel bed and banks shall be shaped and stabilized with temporary or permanent lining and a straw bale dike constructed along the banks to intercept runoff and filter out sediment. Where the project area does not drain directly into a channel, a straw bale dike shall be constructed at the edge of the construction site.

Details of the sediment basin design and construction shall be submitted for approval and shall contain the following:

1. Specific location of the basin.
2. Plan view of the dam, storage basin, and emergency spillway.
3. Cross-section of the dam principal and emergency spillways, and a profile of the emergency spillway.
4. Details of pipe connections, riser to pipe connections, riser bases, anti-seep collars, trash racks, and anti-vortex devices.
5. Runoff calculations for the 2-, 10-, and 25-year storms.
6. Storage calculations showing the total storage required, total storage available, and the level of sediment at which cleanout shall be required.
7. Calculations showing the design of the pipe and the emergency spillway.

## 9.2 Long-Term Erosion and Sedimentation Control

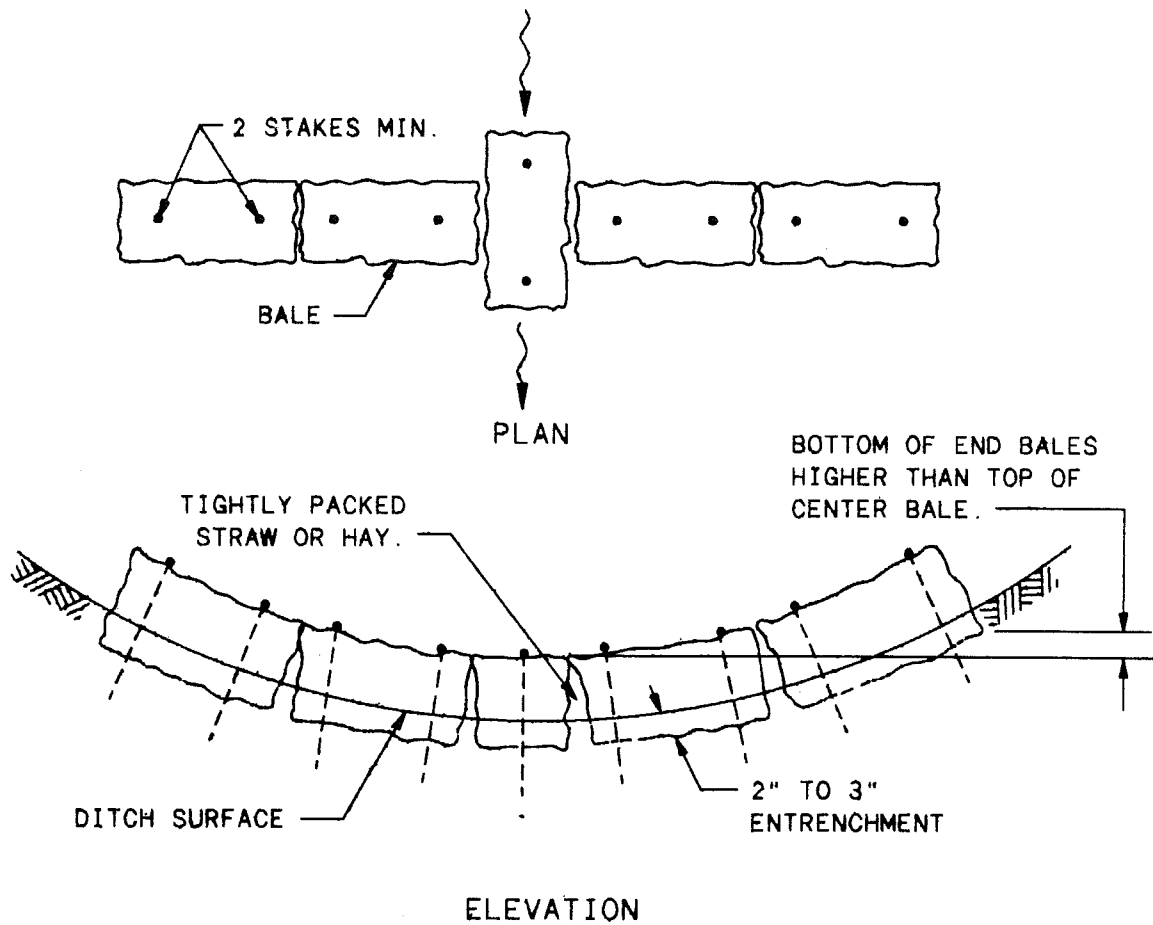
When long-term erosion and sedimentation problems are anticipated, the City Engineer shall require that measures be taken to control the situation and such measures may include:

1. Design, construct, and maintain concentrated water flow channels such that the velocity of the flow does not exceed the permissible velocities listed elsewhere in this manual; or,
2. Design, construct, and maintain sediment basins sized in accordance with the United States Soil Conservation Service handbook, Water Management and Sediment Control for Urbanizing Areas; or
3. Use other methods to control sediment pollution; this may include, but is not limited to a combination of paragraphs (1) and (2) of this standard, provided those methods are acceptable to the City.

## 9.3 Control of Sloughing, Landsliding, and Dumping

To control sediment pollution of public water caused by sloughing, landsliding, or dumping of earth material, or placing of earth material into such proximity that it may readily slough, slide, or erode into public waters by natural forces, no person shall:

1. Dump or place earth material into public water or into such proximity that it may readily slough, slide, or erode into public water unless such dumping or placing is authorized by the approving agency for such purposes as, but not limited to, constructing bridges, culverts, erosion control structures, and other in-stream or channel bank improvement works; or
2. Grade, excavate, fill, or impose a load upon any soil or slope known to be prone to slipping or landsliding, thereby causing it to become unstable, unless qualified engineering assistance has been employed to explore the stability problems and made recommendations to correct, eliminate, or adequately address the problems. Grading, excavating, filling, or construction shall commence only after the utility has reviewed and approved the exploratory work and recommendations and the work shall be done in accordance with the approved recommendations.



**BALE PLACEMENT:**

BALES SHALL BE TIGHTLY PLACED, ADJACENTLY, AND ENTRENCHED 2" TO 3" BEFORE STAKING.

EACH BALE SHALL BE FIRMLY STAKED WITH A MINIMUM OF 2 STAKES AT LEAST 3' IN LENGTH. STAKES SHALL BE WOODEN 2"x2", REINFORCING BARS OR FENCE POSTS.

LOOSE STRAW OR HAY SHALL BE SCATTERED FOR A DISTANCE OF 10' ON THE UPSTREAM SIDE OF EACH DITCH CHECK, AND SHALL BE WEDGED BETWEEN AND UNDER STAKED BALES.

**STRAW BALE DITCH CHECKS**