


# GENERAL NOTES:

## A. DESIGN CONSIDERATIONS

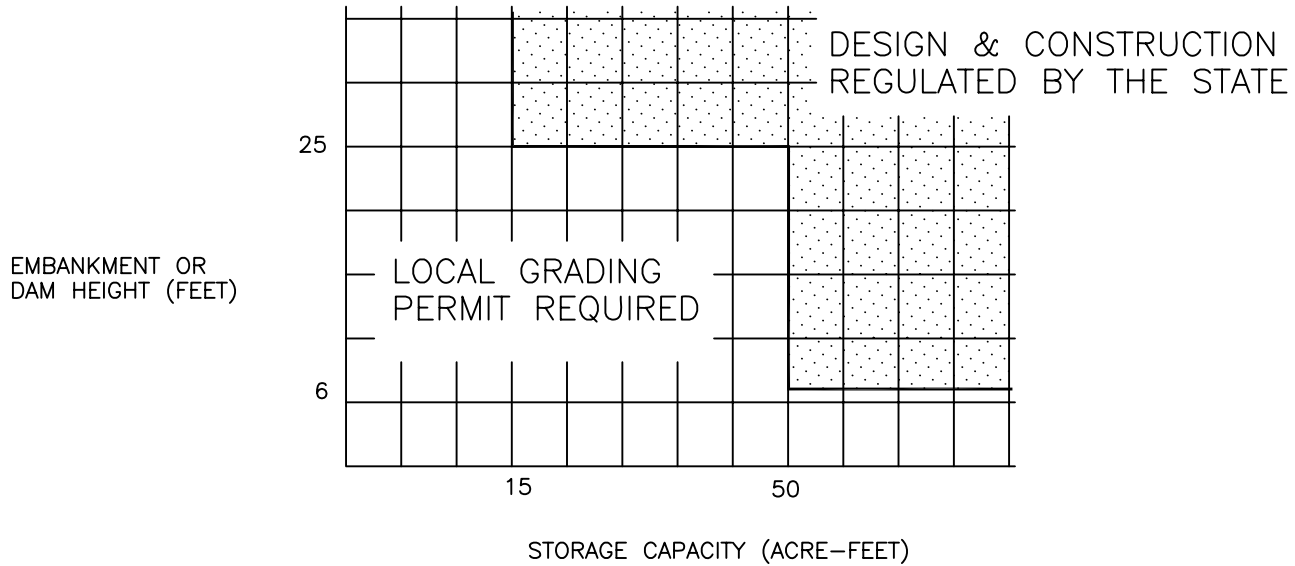
1. MINIMAL EROSION PROBLEMS MAY BE HANDLED BY THE USE OF A SANDBAG DIKE CONSTRUCTION IF APPROVED BY THE CITY ENGINEER.
2. SIZING OF BASIN SHALL BE BASED ON THE TOTAL DRAINAGE AREA TRIBUTARY TO THE BASIN. GRAPH "A" MAY BE USED TO ESTIMATE VOLUME. IF GRAPH "A" IS NOT USED, THE PROJECT ENGINEER SHALL JUSTIFY HIS DESIGN WITH ADEQUATE CALCULATIONS. (SEE PAGE 4)
3. THE COMBINED PIPE AND SPILLWAY OUTFLOW SHALL NOT EXCEED THE DOWNSTREAM CAPACITY NOR INCREASE THE DOWNSTREAM SEDIMENT LOADS, EXCEPT THAT THE OVERFLOW SPILLWAY SHALL BE DESIGNED TO CARRY 1.5 TIMES THE MAXIMUM RUNOFF.
4. BASIN MUST BE ACCESSIBLE FOR CLEANOUT DURING SATURATED GROUND CONDITION.
5. TO REDUCE TURBULENCE IN THE BASIN, THE BASIN SHALL HAVE AN ENERGY DISSIPATOR AT ITS UPSTREAM END AS APPROVED BY THE CITY ENGINEER.
6. THE BASIN SHALL BE LOCATED FOR EFFECTIVELY ACCOMPLISHING ITS PURPOSE, IN ACCORDANCE WITH ENGINEERED PLANS MEETING THE APPROVAL OF THE CITY ENGINEER.
7. BEYOND CERTAIN LIMITATIONS OF EMBANKMENT HEIGHT AND STORAGE CAPACITY, THE DESIGN OF THE BASIN WILL COME UNDER THE JURISDICTION OF, AND REQUIRE THE APPROVAL OF, THE CALIFORNIA DEPARTMENT OF WATER RESOURCES, DIVISION OF SAFETY OF DAMS, 2200 X STREET, SUITE 200, SACRAMENTO, CA 95818, 916-445-7606. (SEE EXHIBIT 1 ON PAGE 2)
8. DESILTING BASIN SHALL BE SO LOCATED THAT FAILURE OF THE BASIN STRUCTURE WILL NOT PRESENT A DANGER TO LIFE AND PROPERTY.
9. DRAINAGE DEVICES SHALL BE DESIGNED TO HANDLE RUN-OFF FROM A STORM OF 25 YEAR INTENSITY.

## B. STORAGE

1. STORAGE CAPACITY SHALL BE THE VOLUME BELOW THE TOP OF THE PIPE RISER, AND SHALL BE BASED ON THE AVERAGE STREET SLOPE AND NATURE OF THE ERODIBLE SOIL IN THE AREA TRIBUTARY TO THE BASIN. SEE CHART OR GRAPH ON PAGE 4 FOR DETAILS.
2. THE DESIGN SHALL PROVIDE OPPORTUNITY FOR PERIODIC CLEANOUT IN ORDER TO MAINTAIN BASIN CAPACITY REQUIREMENTS. THE MAXIMUM ALLOWABLE LEVEL OF DEPOSITED SEDIMENT BEFORE CLEANOUT SHALL BE 1/2 FULL OR AS DETERMINED BY THE CITY ENGINEER AND PAINTED ON THE PIPE RISER.
3. SEDIMENT FROM BASIN CLEANOUT OPERATIONS SHALL BE DISPOSED OF IN SUCH A MANNER AS TO PREVENT ITS RETURN INTO THE DESILTING BASIN OR ITS MOVEMENT INTO DOWNSTREAM AREAS DURING SUBSEQUENT RUN-OFFS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATER CREATES A HAZARDOUS CONDITION.

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	<b>DESILTING BASIN STANDARD</b>	<b>319</b>
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# JURISDICTIONAL DAM SIZE



## EXHIBIT 1

**C. EMBANKMENT**

1. THE EMBANKMENT MATERIAL SHALL BE TAKEN FROM BORROW AREAS AS STATED ON THE PLANS. ALL BORROW AREAS OUTSIDE THE POOL SHALL BE GRADED, SEED, AND LEFT IN SUCH A MANNER THAT THEY ARE WELL-DRAINED AND PROTECTED FROM EROSION.
2. THE MATERIAL SHALL BE FREE OF ALL SOD, ROOTS, WOODY VEGETATION, LARGE ROCK (EXCEEDING 6 INCHES IN DIAMETER), AND OTHER DEBRIS.
3. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION WHICH PROVIDES FOR ANTICIPATED SETTLEMENT TO DESIGN ELEVATION (ALLOW 10% FOR SETTLEMENT).
4. THE FOUNDATION FOR THE EMBANKMENT SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL.
5. PLACEMENT OF FILL MATERIAL SHALL BE STARTED AT LOWEST POINT OF THE FOUNDATION AND SHALL BE PLACED IN 6 INCH MAXIMUM LIFTS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL AND APPROXIMATELY HORIZONTAL. EMBANKMENT SHALL HAVE A RELATIVE COMPACTION OF AT LEAST 90%.
6. EMBANKMENT SIDE SLOPES SHALL BE NO STEEPER THAN 2:1.

**D. SITE PREPARATION**

1. THE EMBANKMENT FOUNDATION AREA AND RESERVOIR AREA SHALL BE CLEARED OF ALL TREES, STUMPS, ROOTS, BRUSH, BOULDERS, SOD, AND DEBRIS.
2. ALL TOPSOIL CONTAINING EXCESSIVE AMOUNTS OF ORGANIC MATTER SHALL BE REMOVED.

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E. EROSION CONTROL PLAN

1. A SILTATION CONTROL PROGRAM AND PLAN FOR ALL PROPOSED DEVELOPMENTS MUST BE APPROVED BY THE CITY OF IRVINE PRIOR TO ISSUANCE OF GRADING PERMIT.

2. THE FOLLOWING NOTES SHALL BE PLACED ON THE PLANS:

a. IN CASE OF EMERGENCY CALL \_\_\_\_\_  
(RESPONSIBLE PERSON)

AT \_\_\_\_\_  
(24-HOUR PHONE NO.)

b. THE UNDERSIGNED CIVIL ENGINEER WILL SUPERVISE EROSION CONTROL WORK AND CERTIFY THAT WORK IS IN ACCORDANCE WITH THE APPROVED PLANS.

\_\_\_\_\_  
(SIGNATURE) (DATE)

c. A STANDBY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. NECESSARY MATERIAL SHALL BE AVAILABLE ON SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES OR TO REPAIR ANY DAMAGED EROSION CONTROL MEASURES WHEN RAIN IS IMMINENT.

d. DEVICES SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE CITY INSPECTOR.


e. ALL REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY, WHEN THE FIVE-DAY RAIN PROBABILITY FORECAST EXCEEDS 40 PERCENT.

f. AFTER A RAINSTORM, ALL SILT AND DEBRIS SHALL BE REMOVED FROM CHECK BERMS AND DESILTING BASINS AND THE BASINS PUMPED DRY. ANY GRADED SLOPE SURFACE PROTECTION MEASURES DAMAGED DURING A RAINSTORM SHALL ALSO BE IMMEDIATELY REPAIRED.

g. FILL SLOPE AT THE TRACT PERIMETER MUST DRAIN AWAY FROM THE TOP OF THE SLOPE AT THE CONCLUSION OF EACH WORKING DAY.

h. A GUARD SHALL BE POSTED ON THE SITE WHENEVER THE DEPTH OF WATER IN ANY DEVICE EXCEEDS TWO FEET.

3. PLACEMENT OF DEVICES TO REDUCE EROSION DAMAGE WITHIN THE TRACT MUST BE SHOWN ON THE PLAN.

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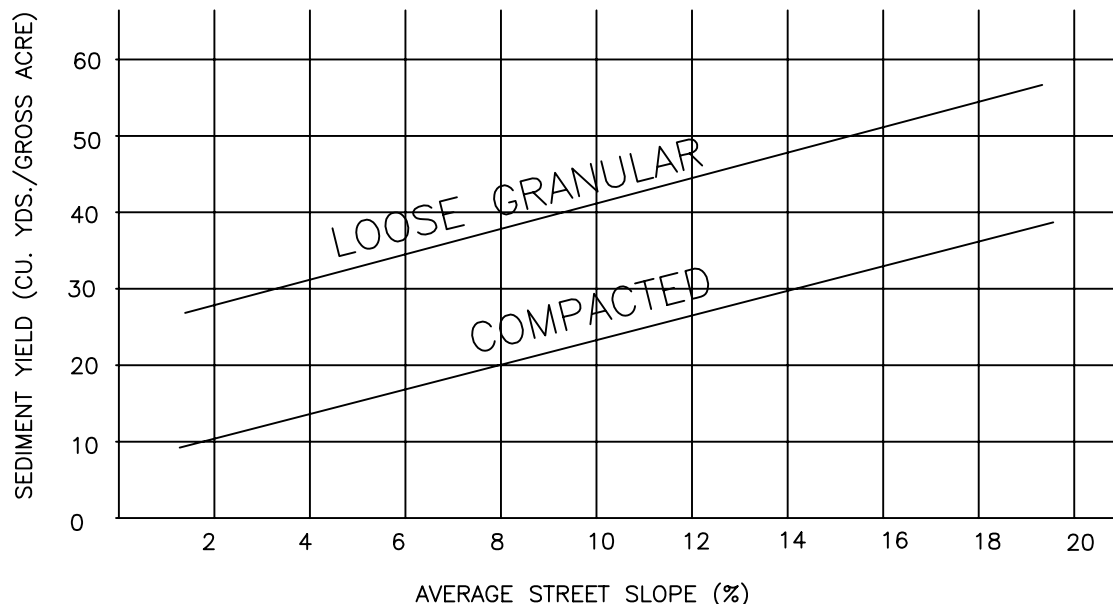
## CHART A

FOR ESTIMATING QUANTITIES OF SEDIMENT IN CUBIC YARDS  
PER GROSS ACRE

TYPE OF SOIL	AVERAGE STREET SLOPE					
	2%	5%	8%	10%	12%	15%
LOOSE GRANULAR	28	33	38	41	45	50
COMPACTED	10	17	20	24	27	30

## GRAPH A

FOR ESTIMATING QUANTITIES OF SEDIMENT IN CUBIC YARDS  
PER GROSS ACRE



\* BASED ON UNIVERSAL SOIL EQUATION FOR ORANGE COUNTY FIELD CONDITIONS

EXAMPLE

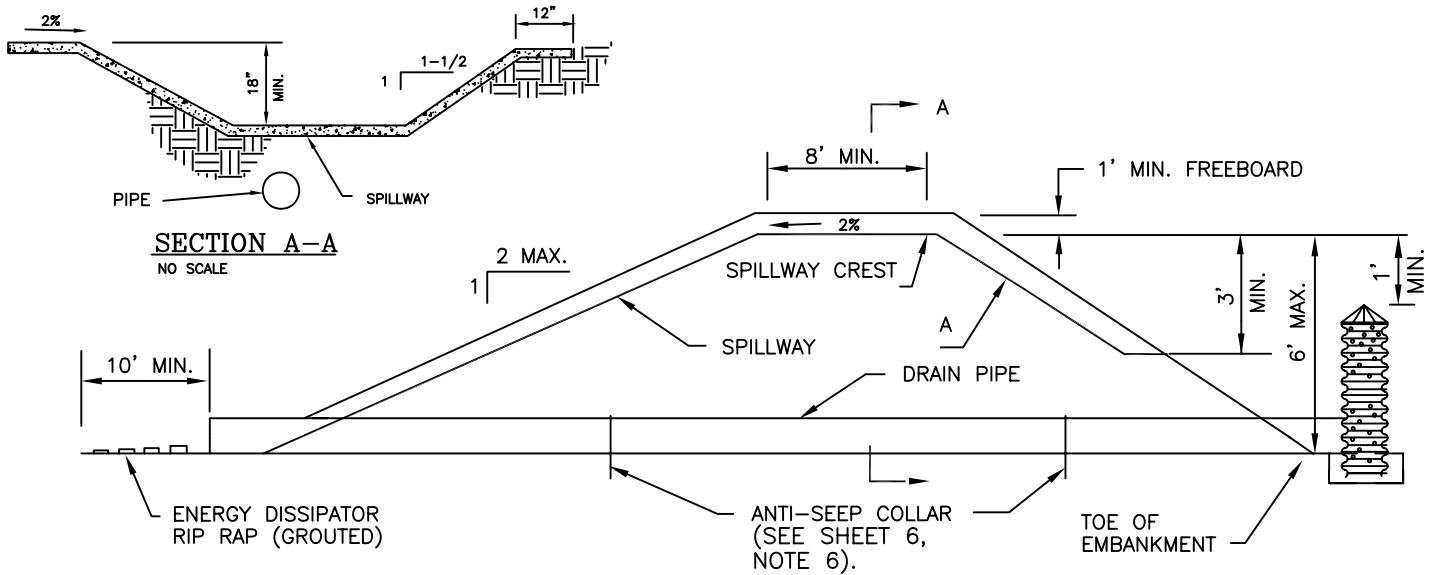
TRACT AREA = 56 GROSS ACRES  
 AVERAGE STREET SLOPE = 8%  
 SOIL TYPE = LOOSE GRANULAR

FROM EITHER CHART OR GRAPH IT CAN BE DETERMINED THAT:

SEDIMENT YIELD = 38 CU. YDS./GROSS ACRE  
 $\therefore$  TOTAL SEDIMENT =  $38 \times 56 = 2128$  CU. YDS.

BASIN SIZE = 2200 CU. YDS.

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## SECTION THROUGH EMBANKMENT


**NOTES:**

**A. SPILLWAY**

1. THE SPILLWAY MUST BE LINED WITH 3 INCH THICK GUNITE OR 4 INCH THICK CONCRETE, (EACH REINFORCED WITH 6 x 6 - 10 x 10 WELDED WIRE FABRIC). SPILLWAY WILL BE A MINIMUM OF 18 INCHES DEEP WITH 1-1/2":1 SIDE SLOPE.
2. THE SPILLWAY SHALL BE DESIGNED TO PROVIDE ONE SQUARE FOOT OF CROSS SECTIONAL AREA FOR EACH GROSS ACRE OF TRIBUTARY DRAINAGE AREA, OR 1.5 TIMES THE MAXIMUM DESIGN RUN-OFF, WHICHEVER IS GREATER.
3. THE MAXIMUM HEIGHT OF THE EARTH DIKE SHALL BE 6 FEET FROM THE TOE OF THE UPSTREAM SLOPE TO THE SPILLWAY CREST.

**B. FREEBOARD**

1. FREEBOARD IS THE VERTICAL DISTANCE BETWEEN THE ELEVATION OF THE WATER SURFACE IN THE POND WHEN SPILLWAY IS DISCHARGING AT DESIGNED DEPTH AND THE ELEVATION OF THE TOP OF THE EMBANKMENT AFTER ALL SETTLEMENT HAS TAKEN PLACE.
2. MINIMUM FREEBOARD SHALL BE 1'-0" FOR BASIN WHERE THE MAXIMUM LENGTH OF POND IS LESS THAN 660 FEET. FOR MAXIMUM POND LENGTHS OF 660 FEET OR MORE, THE MINIMUM FREEBOARD SHALL BE DETERMINED BY THE CITY ENGINEER.

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