

PRIVATE ROAD

*Cluster, Condominium, Planned Unit — Rural, Hillside, Urban
(Cluster Areas Less Than 2 1/2 Ac. Per Unit)*

NOTES

1. This standard applies to private roads in new subdivisions or planned unit developments where the densities in the cluster areas exceed one dwelling unit per 2 1/2 Ac. gross area.
2. Elements in the above typical section may be deleted where they are not required. For design alternatives and requirements see sections of the manual on policies and standards for rural, hillside and cluster subdivisions.
3. Roadbeds may be elevated above natural ground in rural non-hillside areas if underground storm sewers are not required.
4. Structural section minimums.
*Outside urban service areas — 2 1/2" A.C. on 6" Cl. III Agg. base.
 Inside urban service areas — 4" A.C. on 4" Cl. III Agg. base*
5. Curb & Gutter may be rolled or vertical type (36" width). Developer's option.
6. Lane width may be reduced to 10' for roads serving 6 or less dwellings at ultimate development. One-way roads may have a single 14' wide lane (min.).
7. Road easements shall include a 10' minimum width border on each side of the shoulder or curb and all cut and fill slopes.
8. Drainage shall conform to the section in the manual on policies and standards for drainage. Where storm sewers are required, conform to Transportation Agency Standards for the design and construction of drainage facilities.

Approved:

Date:

Stan Larson
 Manager / County Surveyor

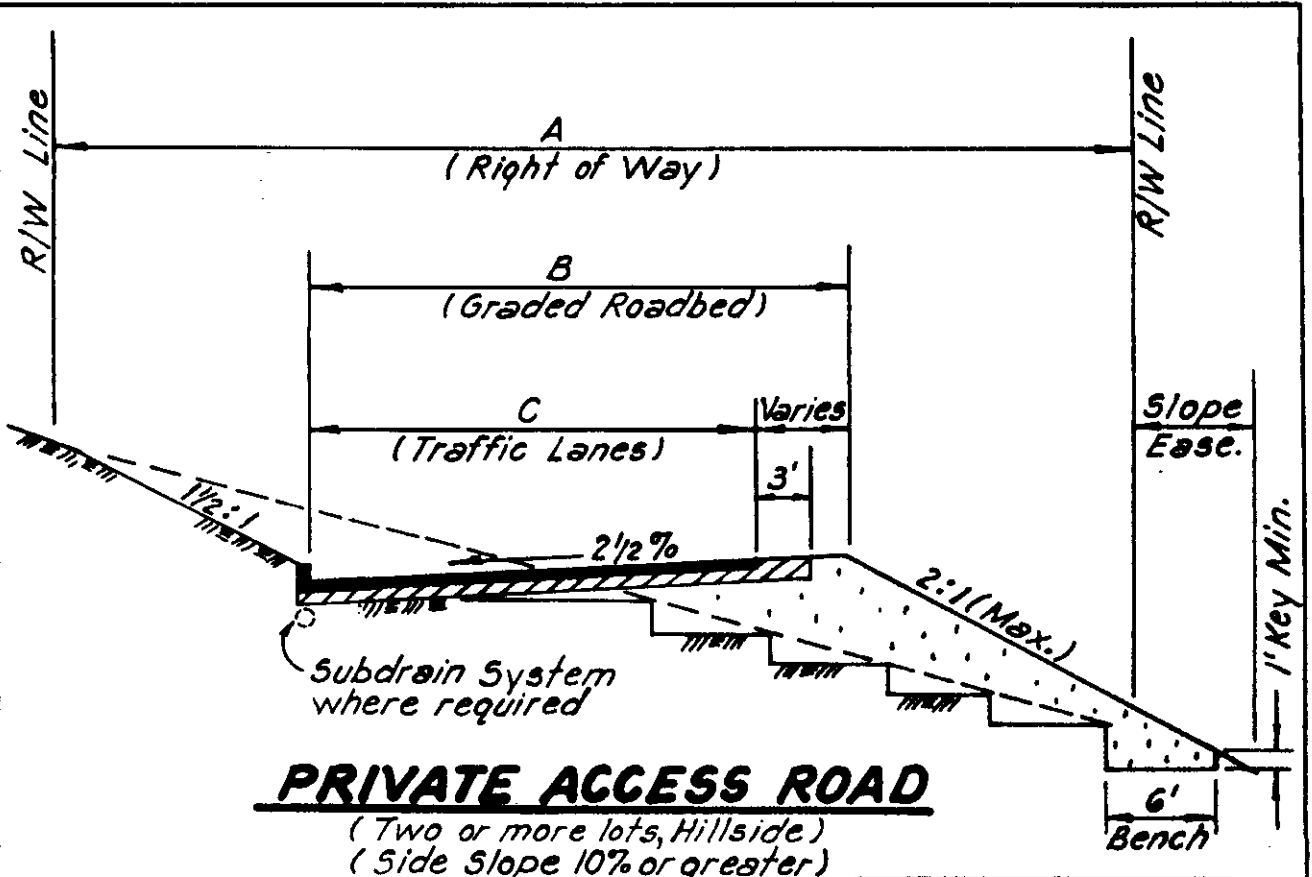
Land Dev., Engineering & Surveying

COUNTY OF SANTA CLARA
 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

No.	Revision	Date

PRIVATE ROAD

SD
1



PRIVATE ACCESS ROAD

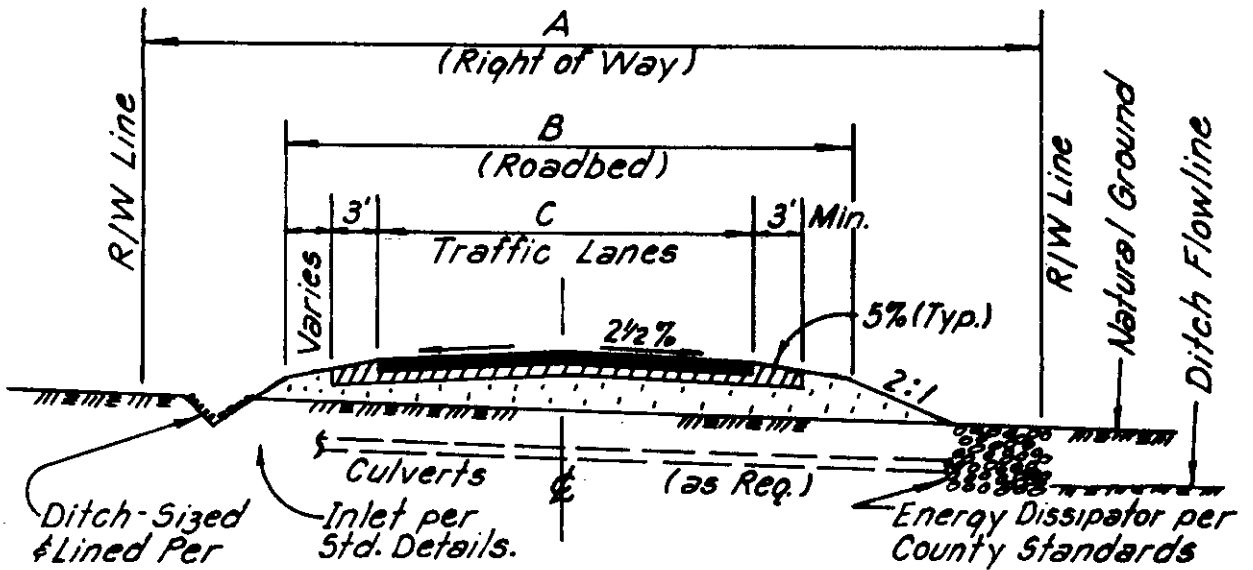
(Two or more lots, Hillside)
(Side Slope 10% or greater)

TYPE OF ROAD	MINIMUMS		
	A	B	C
ONE-WAY LOOP (Turnouts as specified)	40'	18'	12'
2+3 LOTS (Ultimate Development)	40'	24'	18'
4 OR MORE LOTS (Ultimate Development)	60'	30' or 36'	18'
HALF-ROAD (Initial Construction)	40'	24'	18'
EMERGENCY ACCESS ROAD (with turnouts)	20'	15'	12'

NOTES

- (1) Roads serving 4 or more lots are to be designed for future upgrading to County maintained road standards unless exempted by County Surveyor.
- (2) Base & surfacing - 2 1/2" asphalt on 4" aggregate base, except as otherwise specified by County Surveyor.
- (3) Asphalt dike may be deleted where erosion protection is not needed. (See Chart for Determining Ditch Lining Requirements.)
- (4) See section of manual entitled "Policies & Standards for Roads" for further design and construction information.
- (5) Benching may be deleted where cross is less than 20%.

Approved: <i>Sean Pearson</i> Manager / County Surveyor Land Dev., Engineering & Surveying			COUNTY OF SANTA CLARA ENVIRONMENTAL MANAGEMENT / GENERAL SERVICES AGENCY	
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			SD	2



Ditch-Sized & Lined Per County Stds.

PRIVATE ACCESS ROAD

(Two or More lots) Non-Hillside

TYPE OF ROAD	MINIMUMS		
	A	B	C
ONE-WAY LOOP (Turnouts as specified)	40'	20'	14'
2 & 3 LOTS (Ultimate Development)	60'	24'	18'
4 OR MORE LOTS (Ultimate Development)	60'	30 or 36'	18'
HALF-ROAD (Initial Construction)	40'	24'	18'
EMERGENCY ACCESS ROAD (with turnouts)	30'	15'	12'

NOTES

- (1) Road may be uncrowned with 2 1/2% complete cross slope where side slope is 5% or greater.
- (2) Roads serving 4 or more lots are to be designed for future upgrading to County maintained standards unless specifically exempt by County Surveyor.
- (3) Base & surfacing to be 2 1/2" asphalt on 4" aggregate base except as otherwise specified by County Surveyor.
- (4) Construct roadbed above natural ground in flood prone and drainage problem areas; for further design & construction information see manual section entitled "Policies and Standards for Roads."

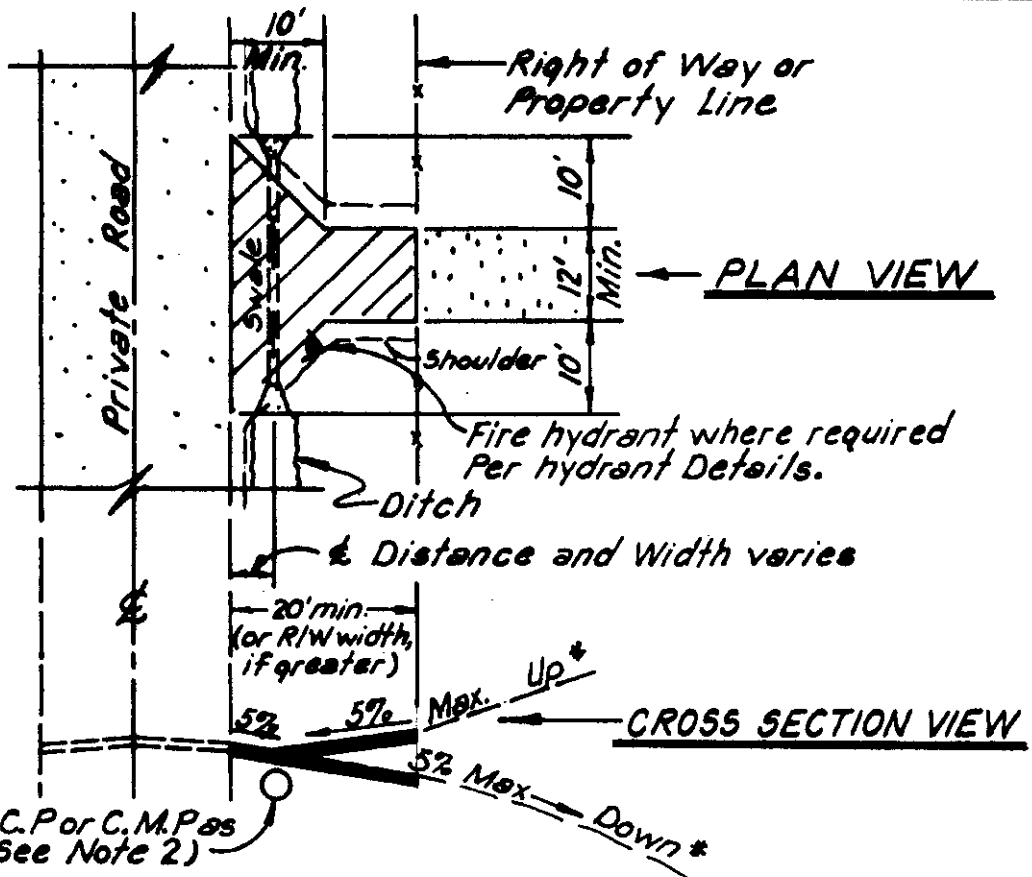
Approved: *Diana Larson*
 Date: _____
 Manager / County Surveyor
 Land Dev., Engineering & Surveying

COUNTY OF SANTA CLARA
 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

No.	Revision	Date

PRIVATE ACCESS ROAD
 (Non-Hillside Conditions)

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DRIVEWAY APPROACH

Connection to Private Road

* Maximum grade as per Fire Marshal

NOTES

- (1) Culvert plus swale shall accommodate maximum flow. Minimum culvert size to be 12". Culvert shall extend 1' beyond each toe of shoulder. Provide headwalls and/or rip-rap as required. C.M.P. to be not less than 14 gauge.
- (2) Culvert may be omitted where no roadside ditch exists with written approval of County Surveyor.
- (3) Driveway approach base & paving to be same as or better than ultimate private road base & pavement.
- (4) See Driveway section (this manual) for more information.

Approved: *Dean Larson*
 Manager / County Surveyor
 Land Dev., Engineering & Surveying

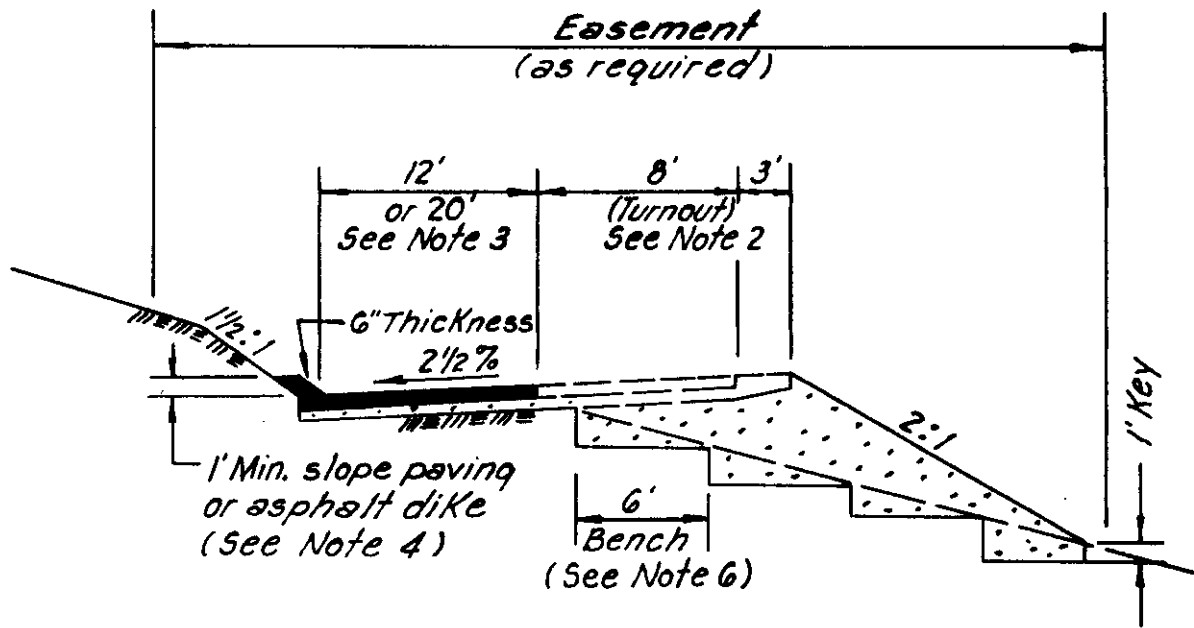
Date:

COUNTY OF SANTA CLARA
 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

No.	Revision	Date

DRIVEWAY APPROACH
(PRIVATE ROAD)

SD
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SINGLE DRIVEWAY

NOTES

- (1) Base & surfacing - 2" asphalt on 4" aggregate base (min.) is recommended (required where grades are 15% or more - See Fire Marshal Standards.)
- (2) Provide 40' long turnouts at locations determined by Fire Marshal. Turnouts to be same structural section as driveways.
- (3) Provide 8' of additional driveway width where needed for off-street parking (See section on Hillside Subdivision Standards)
- (4) Slope paving (or dike) may be deleted in flat land conditions or where erosion protection is not needed. See "Chart for Determining Ditch Lining Requirements."
- (5) See sections of manual entitled "Fire Marshal Policies & Standards" and "Policies & Standards for Driveways", for further design & construction information.
- (6) Benching may be deleted where slopes are less than 20%.

Approved:

Date:

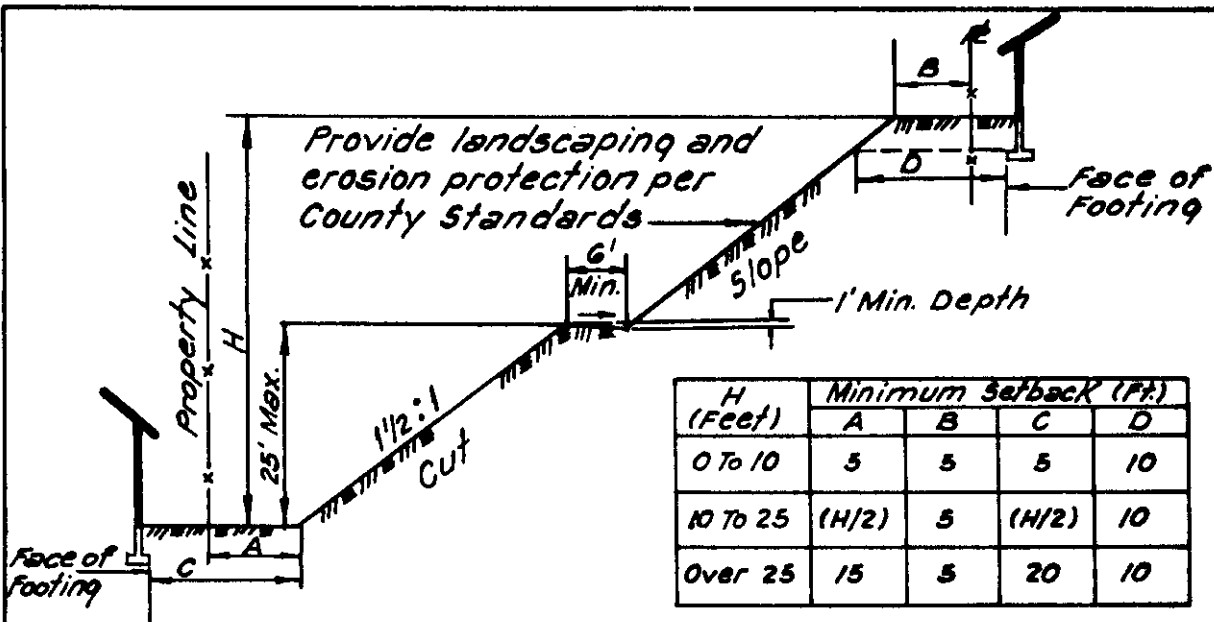
Walter Larson
 Manager / County Surveyor
 Land Dev., Engineering & Surveying

COUNTY OF SANTA CLARA
 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

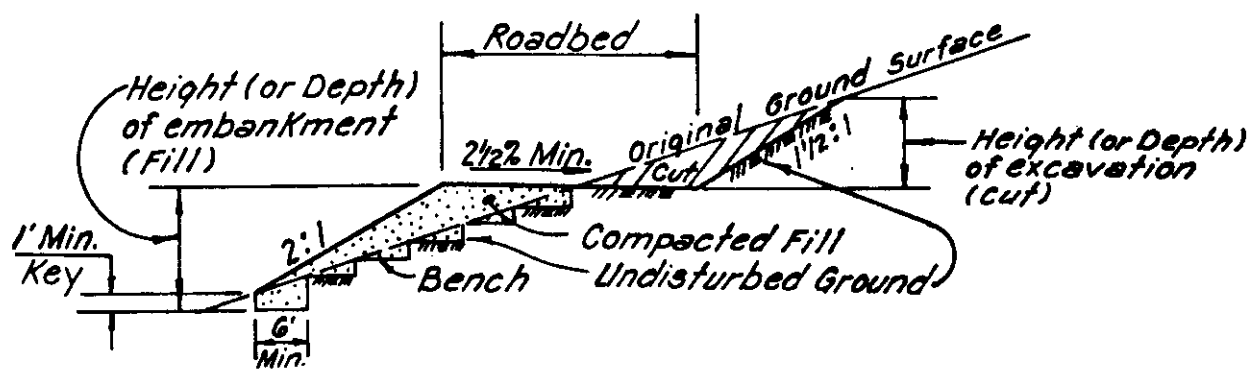
No.	Revision	Date

SINGLE LOT DRIVEWAY

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TYPICAL LOT GRADING
(Hillside)

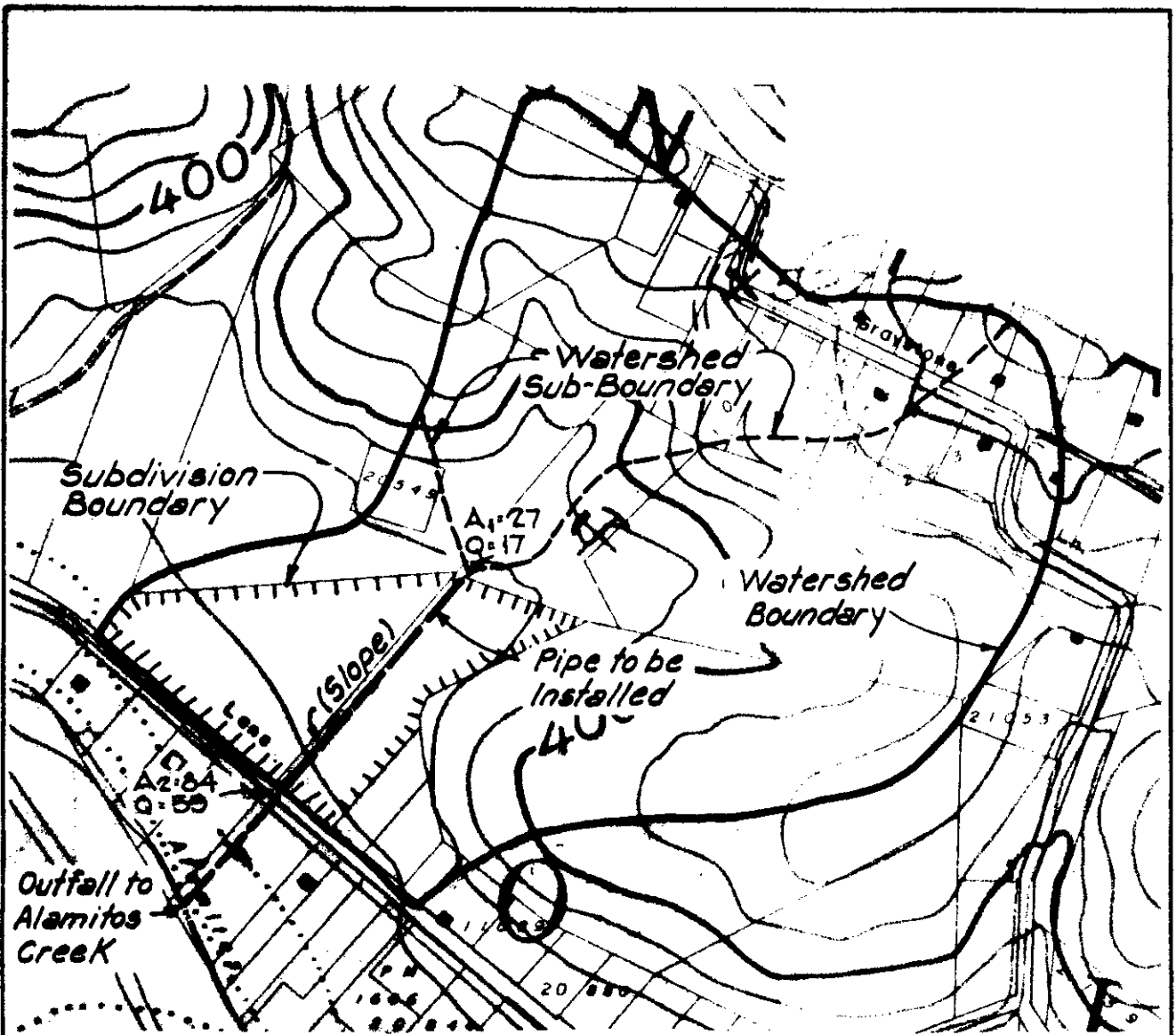


TYPICAL ROAD GRADING
(Hillside)

NOTES

- (1) See Grading Ordinance for complete design standards.
- (2) See section of manual entitled "Policies and Standards Pertaining to Grading" for additional information.

Approved: <i>Diana Larson</i> Date: _____ Manager / County Surveyor Land Dev., Engineering & Surveying			COUNTY OF SANTA CLARA ENVIRONMENTAL MANAGEMENT / GENERAL SERVICES AGENCY	
No.	Revision	Date	GRADING STANDARDS	
			SD 6	



SAMPLE WATERSHED STUDY MAP

NOTE:

- (1) Compute peak flows in accordance with County Drainage Manual.
- (2) Use Drainage Master Plan Sheet where available.
- (3) This map to accompany calculations as required Per Drainage Section of EMA Manual, Pages E1.8, E1.9 & E1.10

Scale
1" = 500'

Engineer's Title Block 7

ABC ENGINEERS
GARDEN ESTATES
(Proposed Subdivision)
WATERSHED STUDY

DATE _____ R.C.E. 100,000

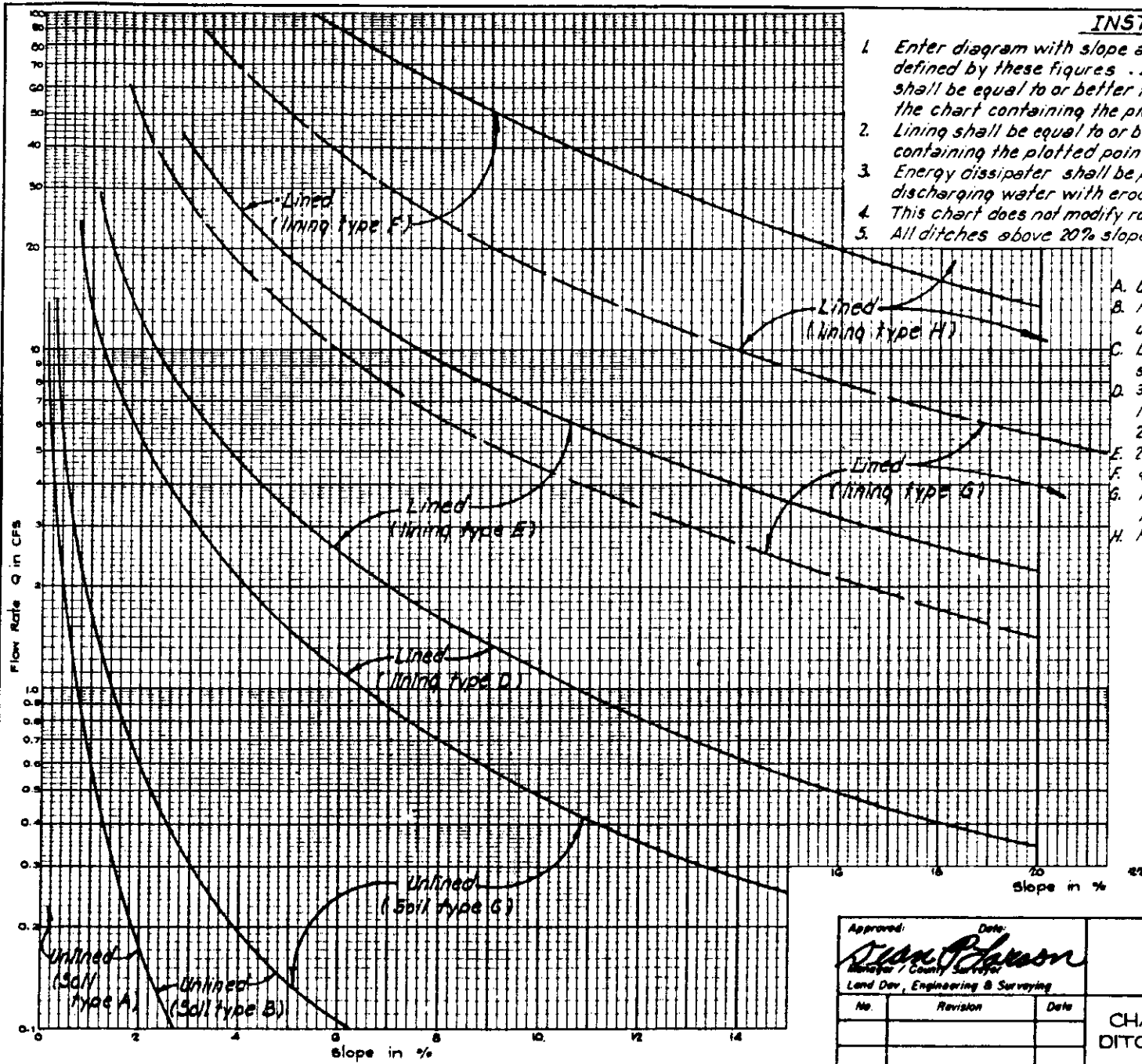
Approved: *Dean Larson*
Date: _____
Manager / County Surveyor
Land Dev., Engineering & Surveying

COUNTY OF SANTA CLARA
ENVIRONMENTAL MANAGEMENT /
GENERAL SERVICES AGENCY

No.	Revision	Date

WATERSHED STUDY
(SAMPLE)

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INSTRUCTIONS

1. Enter diagram with slope and flow rate known. Plot the point defined by these figures. If the ditch is to be unlined, the ditch soil shall be equal to or better than that indicated for the segment of the chart containing the plotted point.
2. Lining shall be equal to or better than that specified for the segment containing the plotted point.
3. Energy dissipater shall be placed at the end of all lined ditches discharging water with eroding velocities.
4. This chart does not modify road standards that specify curb & gutter.
5. All ditches above 20% slope shall be lined.

SOIL TYPES-DITCH LINING SPECIFICATIONS

- A. Unconsolidated clay, loam, or silt.
- B. Fairly compact clay, loam, or silt; unconsolidated sand.
- C. Dense clayey soil; fairly compact clayey sandy soil; unconsolidated gravel.
- D. 3/4" lining: per Cal-Trans specifications 19-3.065 for pervious material (3/4" replacing 2" sieve size.)
- E. 2" lining: per Cal-Trans specifications above.
- F. 4" hand-placed cobbles.
- G. A.C. lining, or P.C.C. with wire mesh reinforcing.
- H. Reinforced concrete lining.

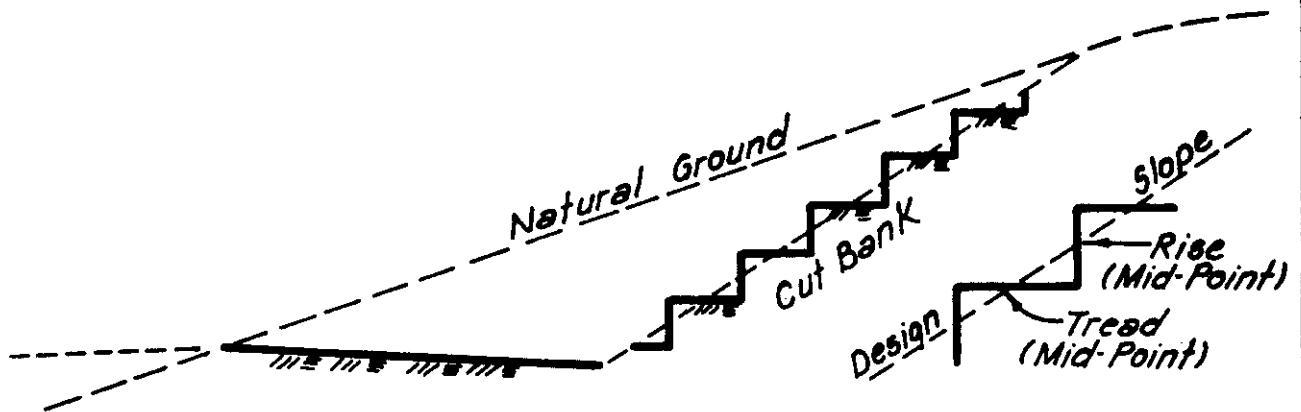
Approved: _____ Date: _____
[Signature]
 Manager, County Engineer
 Land Dev., Engineering & Surveying

No.	Revision	Date

COUNTY OF SANTA CLARA
 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

CHART FOR DETERMINING
 DITCH LINING REQUIREMENTS

5D
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SCARIFIED & SERRATED SLOPES

Cut Banks Only (For Erosion Control)

NOTES

1. Scarified/serrated banks may be specified by the design engineer, or required by the County, for cut banks to facilitate the growth of vegetation. The outer corners of the treads shall be cambered and the loose material spread uniformly on the treads. Higher fertility imported soil may be specified in lieu of or in addition to the cambering.
2. Scarified banks shall have tread widths of 8" to 10". Scarifying may be used, or required, for soil conditions ranging from moderately cohesive to soft rock. This work may be done during or after the completion of the excavation.
3. Serrated banks with tread widths of 2' to 4' may be used, or required, where cut slopes are steeper than 2:1 and the soil conditions range from firm to soft rock. Riser cuts shall be approximately vertical. Tread cuts shall be within 5% of the horizontal on the transverse axis and 2% on the longitudinal axis.
4. Serrations shall be well rounded at the beginning and the end of the cut slopes.

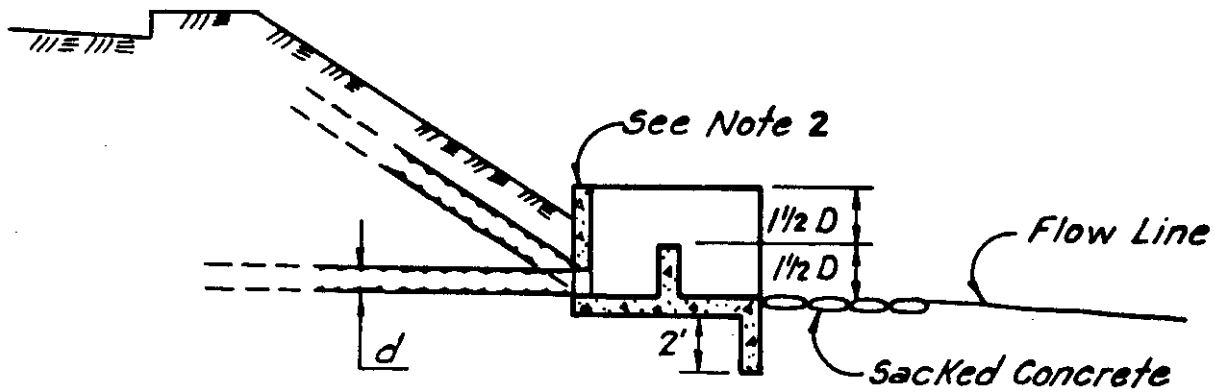
Approved: *Dean Peterson* Date: 3/18
 Manager / County Surveyor
 Land Dev., Engineering & Surveying

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 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

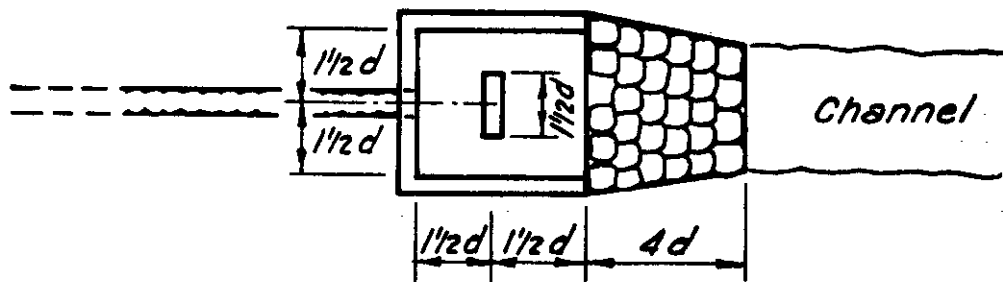
No.	Revision	Date

SCARIFIED & SERRATED
 SLOPES

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Cross Section



Plan View

ENERGY DISSIPATOR

(Small Culverts)

NOTES

1. Energy dissipator shall be used in all situations where water is discharged from a culvert with eroding velocities.
2. The dissipator shall be class A reinforced concrete not less than 4 1/2" thick throughout. The engineer may propose other designs of equal energy dissipating effectiveness and structural durability subject to approval of the county, utilizing any suitable combination of materials, such as C.M.P. tee, overbank culverts, and dumped rock or sacked concrete riprap.

Approved:

Date:

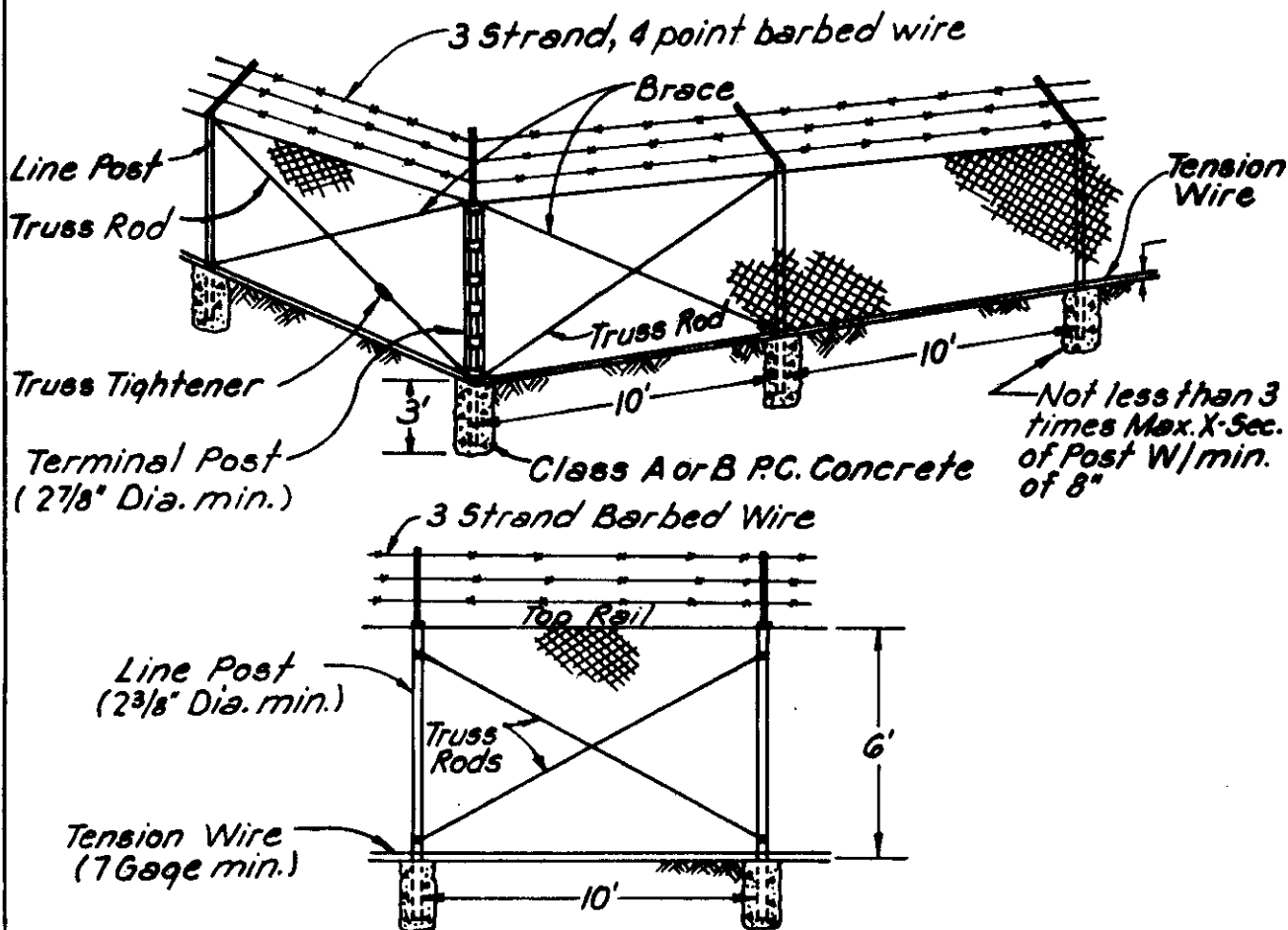
Sean Larson
 Manager / County Surveyor
 Land Dev., Engineering & Surveying

COUNTY OF SANTA CLARA
 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

No.	Revision	Date

ENERGY DISSIPATOR

SD
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TYPICAL CHAIN LINK FENCE FOR WELLS AND STORAGE TANK SITES

NOTE: Chain link fence materials and construction shall conform to Cal-Trans standard specifications, section 80-4. All posts shall be schedule 40, fabric shall be galvanized, 9-gage, with 2" mesh.

Approved:

Date: 3/81

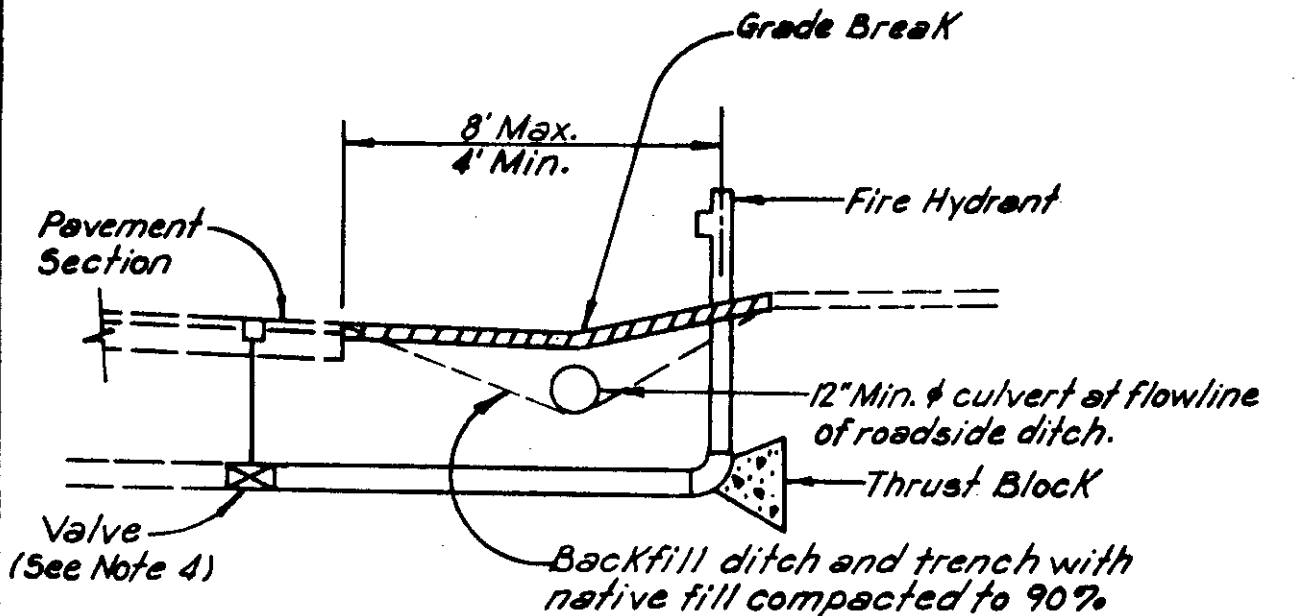
Stan Peterson
 Manager / County Surveyor
 Land Dev., Engineering & Surveying

COUNTY OF SANTA CLARA
 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

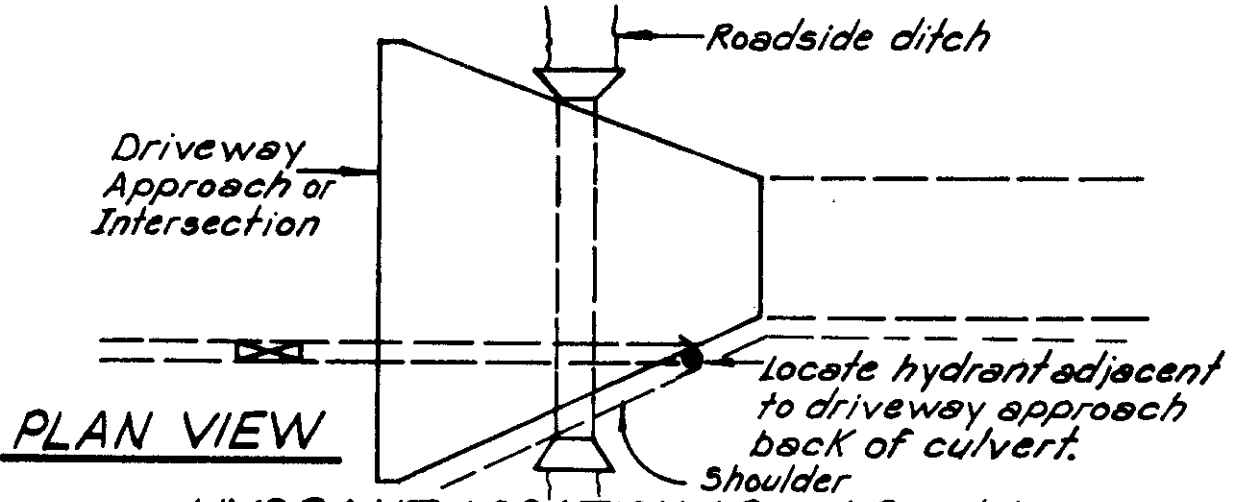
No.	Revision	Date

CHAIN LINK FENCE

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CROSS SECTION



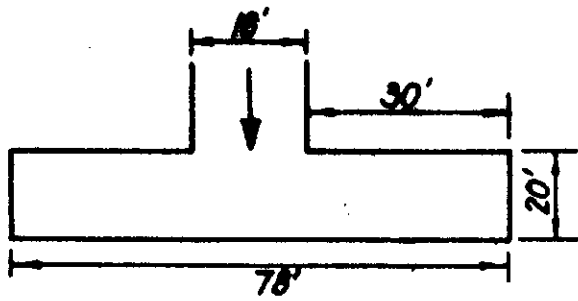
PLAN VIEW

HYDRANT LOCATION (Rural Roads)

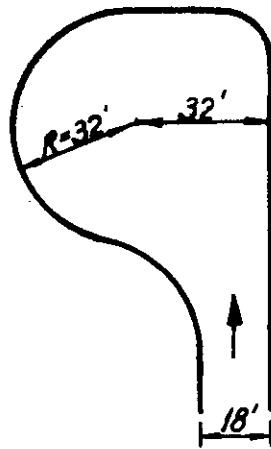
NOTES

- (1) Locate hydrants at driveway approaches & intersections in rural areas.
- (2) Provide a minimum of 3 foot clearance between hydrants and any cut slope, wall or other obstructions.
- (3) See Transportation Agency standard detail B/4 for driveway approach to County road and EMA/GSA detail SD4 for driveway approach to private road.
- (4) See Transportation Agency standard detail A/9 for typical underground watermain installations.

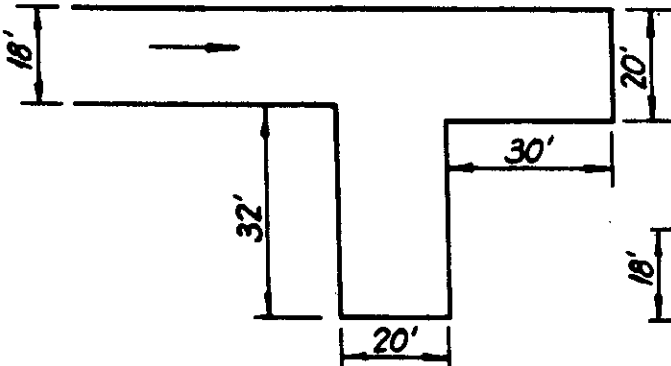
Approved: <i>Dean Peterson</i> Manager / County Surveyor Land Dev., Engineering & Surveying		Date: 3/81		COUNTY OF SANTA CLARA ENVIRONMENTAL MANAGEMENT / GENERAL SERVICES AGENCY	
No.	Revision	Date	STANDARD HYDRANT LOCATION ACCESS ROAD WITH ROADSIDE DITCH		SD 12



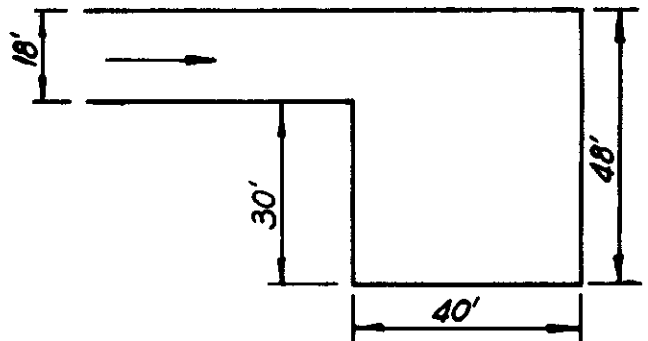
Turn Around



Turn Around



Turn Around



Turn Around

NOTES

- (1) Turnaround pavement section to be equal to section of roadway providing service to the turnaround, per Details SD 1 through SD 5.
- (2) Maximum Slope 5%.
- (3) Developer extending roadway beyond an existing temporary turnaround shall be responsible for removing the existing turnaround and restoring the right-of-way when the extension is completed.
- (4) Dimensions shown are to face of curb where curb is installed, to edge of pavement where no curb is installed.

Approved: *Dean Larson*
 Date: _____
 Manager / County Surveyor
 Land Dev., Engineering & Surveying

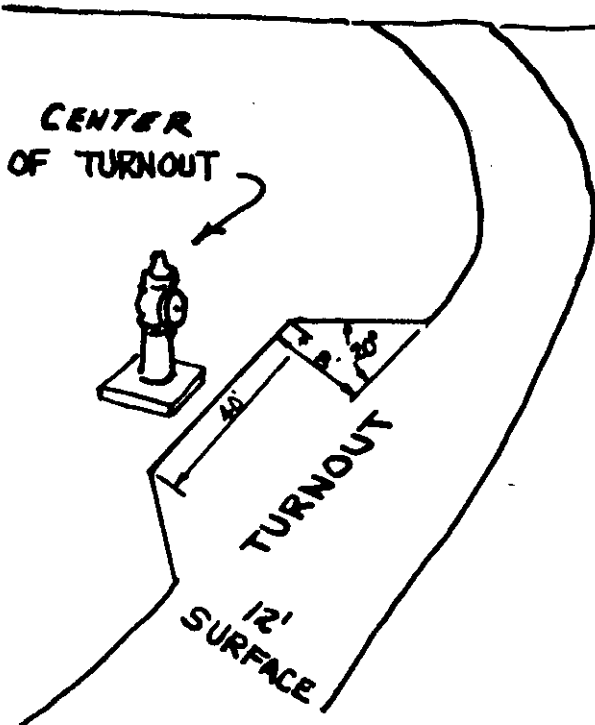
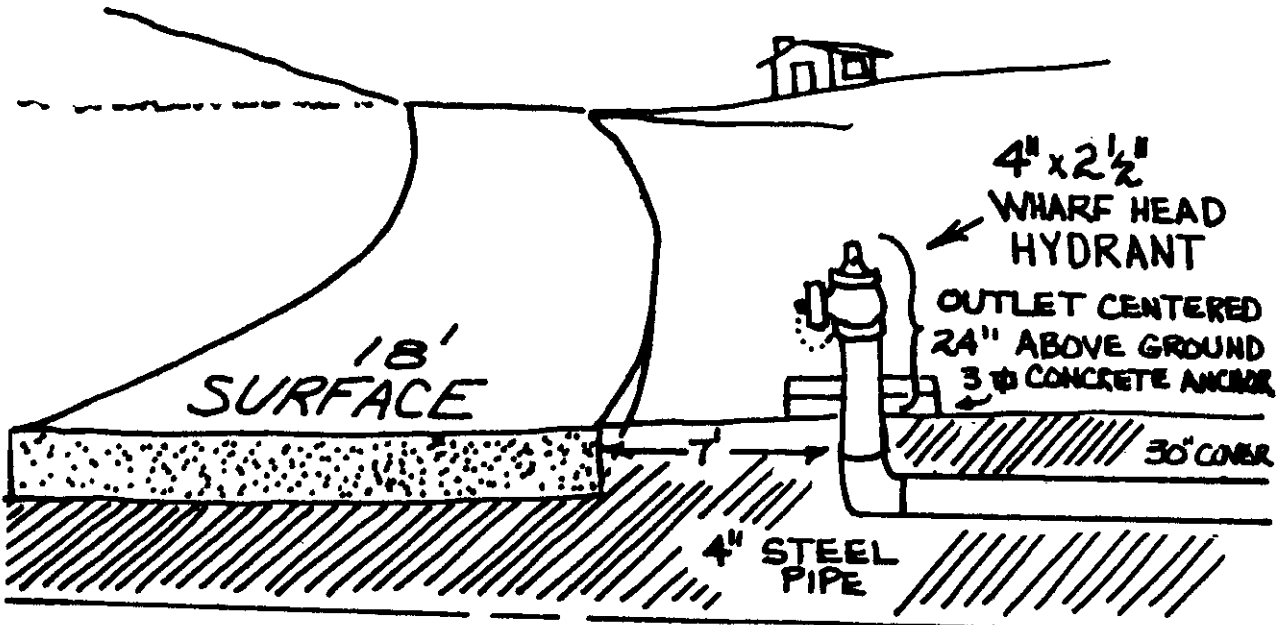
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 ENVIRONMENTAL MANAGEMENT /
 GENERAL SERVICES AGENCY

No.	Revision	Date

STANDARD TEMPORARY
 TURNAROUNDS
 (PRIVATE ROADS)

SD
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REQUIREMENTS FOR THE LOCATION AND INSTALLATION OF
FIRE HYDRANTS ON DRIVEWAYS AND ACCESS ROADS



1. Riser and elbow to be steel pipe. Horizontal run may be plastic.
2. Hydrant to be at height and set back as above.
3. Concrete anchor 3' x 3' x 4"
4. Paint RISER yellow; paint HYDRANT yellow if pressured over 20 P.S.I., RED if less.
5. Hydrant to have cap.
6. Hydrant to be Rich Valve Company #123, or equal.
7. Plastic pipe must be of approved type and must be completely buried.
8. All underground piping and equipment must be inspected prior to covering.

Approved: *Clifford Johnson* 4-2-51
County Fire Marshal

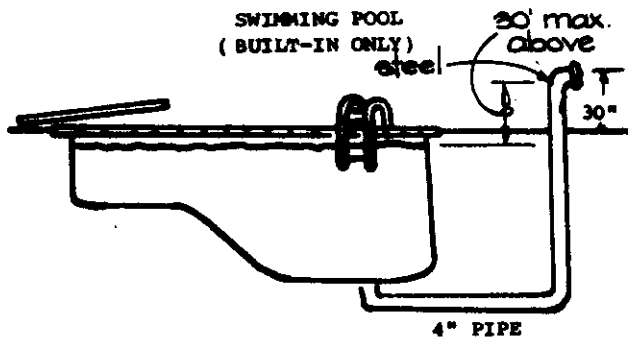
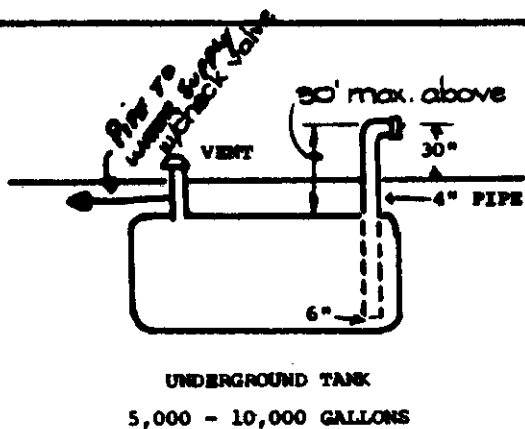
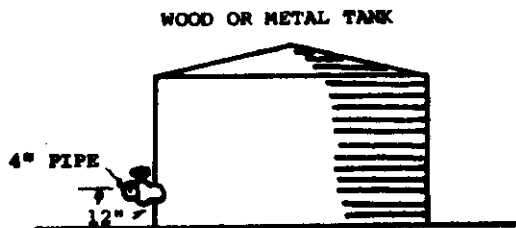
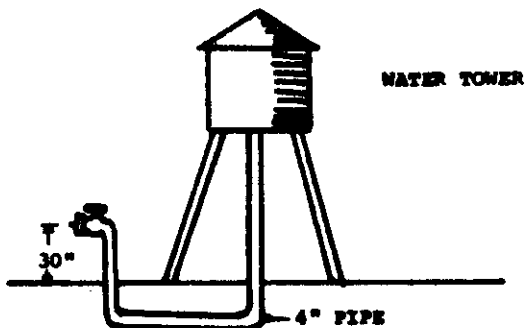
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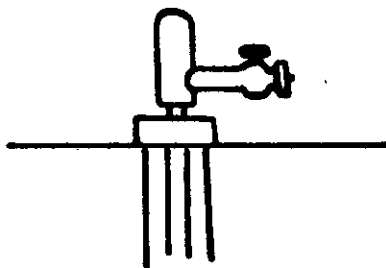
**STANDARD
HYDRANT LOCATIONS
ACCESS ROADS**

RURAL WATER SUPPLY

SUGGESTIONS ON HOW TO PROVIDE A WATER SUPPLY FOR FIRE PROTECTION



**IRRIGATION WELL - MIN. 200 GPM
SEPARATE ELECTRIC HOOK-UP
AUTOMATIC SWITCHING**



GENERAL NOTES

1. PIPING - TO BE MIN. 4" PIPE (STEEL)
2. VALVES - 2 1/2" GLOBE OR GATE
NO VALVE NECESSARY IF OUTLET ABOVE THE WATER LEVEL. ALL OUTLETS MUST HAVE CAPS
3. OUTLET - 2 1/2" NATIONAL STANDARD THREAD WITH CAP
4. ALL OUTLETS TO BE BETWEEN SIX TO EIGHT FEET FROM THE EDGE OF A FIRM ROAD SURFACE
5. BUILDING PERMIT REQUIRED. CALL 299-2531

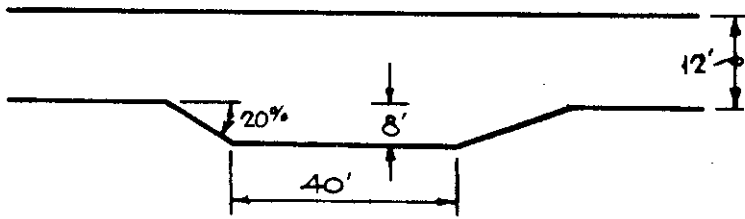
Approved: *Clifford W. Johnson 4-2-81*
County Fire Marshal

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GENERAL SERVICES AGENCY**

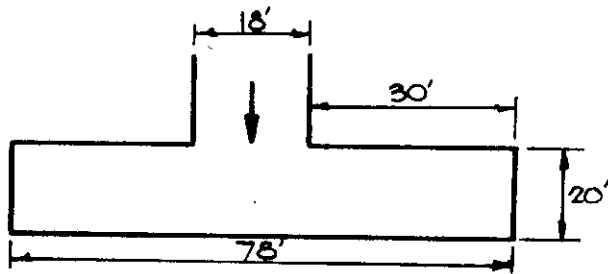
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**TYPICAL
RURAL FIRE WATER SUPPLY**

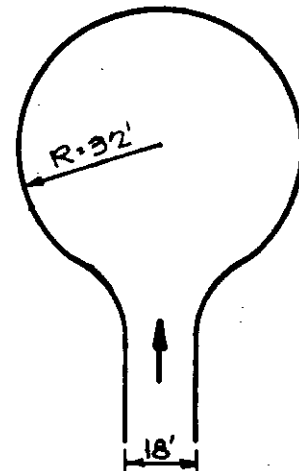
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15**



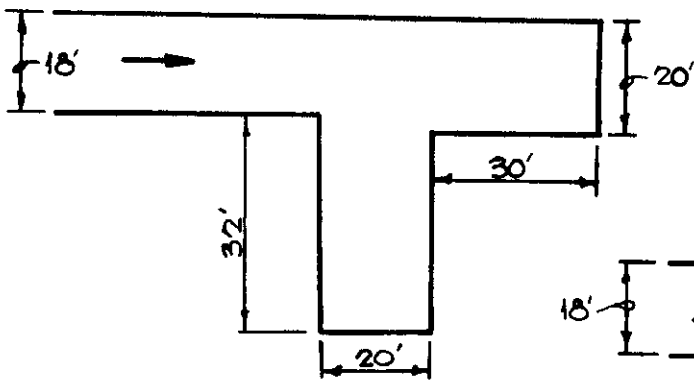
Turn around



Turn around

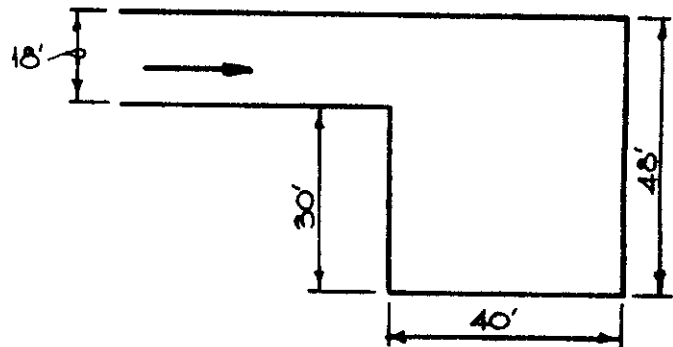


Turn around



5% Maximum Slope

Turn around



Turn around

**TYPICAL DRIVEWAY
TURNAROUNDS**

Approved: *Clifford W. Johnson* 4-9-81
County File Marshal

Date:

**COUNTY OF SANTA CLARA
ENVIRONMENTAL MANAGEMENT /
GENERAL SERVICES AGENCY**

No.	Revision	Date

**STANDARD
TURNAROUNDS & TURNOUTS
(DRIVEWAYS)**

**SD
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