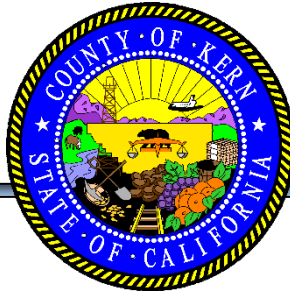


# GRADING GUIDELINES



Kern County  
Public Works Department  
Floodplain Management Section  
May 9, 2016



The Kern County Grading Code is based on the provisions found in the current California Building Standards Code, as amended and adopted by local ordinance. This grading bulletin presents a brief overview of grading requirements. A copy of the complete Kern County Grading Code may be obtained at the Building Inspection Division offices or on our web site at <http://esps.kernds.com/>.

### **Permit Required**

A person is required to first obtain a permit from the Building Official before doing any grading work. A separate permit shall be obtained for each site; however adjacent lots may be combined for a single permit. Grading permits may be obtained at any Building Inspection Office.

Some types of grading may not require a permit. A complete list of exempted work is provided in the Kern County Code. The main types are listed below.

A grading permit is not required for:

1. An excavation for a building site which:
  - a. Is less than 2 feet in depth.
  - b. Does not create a cut slope greater than 5 feet in height and steeper than 1½ horizontal to 1 vertical.
2. A fill not intended to support structures and which does not obstruct a drainage course, if such fill is to be placed on natural grade that has a slope flatter than 5 horizontal to 1 vertical, is less than 3 feet in depth and does not exceed 50 cubic yards on any single lot.
3. Agricultural grading that does not obstruct a drainage course.
4. Land leveling and related farm grading that is necessary for preparing a field for crop production.
5. Roads with maximum cut and fill slopes less than 2 feet in height.

The building official shall not issue a grading permit in a case where he finds the work as proposed by the applicant is likely to adversely affect the stability of adjoining property or deposit debris on a public way. The applicant is required to submit a statement describing the proposed future use of the grading site so that the Building Official can determine the compatibility of the intended use with zoning requirements.

## **Grading Permit Requirements**

To obtain a grading permit an information sheet is filled out and submitted along with copies of the grading plan and specifications according to the procedures outlined in the Grading Plan Requirements of this bulletin. Special attention should be given to the types of information that should be on the plans.

## **Filing and Checking Procedure**

Apply for a grading permit at a Building Inspection Office. The application shall consist of:

1. Completed information sheet for a grading permit.
2. Two or more prints (as required) of the proposed grading plan.
3. Copy of P-D plan or CUP conditions, if applicable.
4. Soils engineering report and/or engineering geology report if required.
5. Earth quantities and drainage calculations.
6. Plan checking, grading and issuance fees.

## **Fees**

Grading and plan check fees are based on the volume of excavation or fill whichever is greater, according to the latest fee resolution as adopted by the Board of Supervisors.

## **Preparation**

All grading plans shall incorporate, as a minimum, the listed requirements for regular grading. If the plans do not show sufficient data, the Building Official may delay processing of the permit until adequate plans are provided.

## **Grading Designation**

All grading in excess of 2000 cubic yards shall be performed in accordance with the approved grading plan prepared by a civil engineer or architect and shall be designated engineered grading. Grading other than engineered grading shall be designated regular grading.

## **Engineered Grading Requirements**

For engineered grading it shall be the responsibility of the civil engineer or architect who prepares the approved grading plan to incorporate all recommendations from the soil engineering and engineering geology report into the grading plan. The permittee shall act as the coordinating agent between the civil engineer, soils engineer or other professionals, the contractor and the Building

Official. The civil engineer or architect shall be responsible for the preparation of revised plans and the submission of as graded plans, when required, upon completion of the work. The soils engineer shall prepare a final soil report for submittal to the Building Official.

### **Engineered Grading (2000 Cubic Yards or More)**

1. Grading work will be supervised by an engineer as engineered grading in accordance with the Kern County Grading Code.
2. Plans shall be approved, stamped and signed by a civil engineer or an architect.
3. The permittee shall ensure that the work is performed in compliance with the approved plans and engage consultants to provide inspections on a timely basis.

### **Special Reports**

The Building Official may require an engineering geology report or an engineering soils report which will include an adequate investigation and description of relevant conditions as they pertain to the proposed development. All reports shall be subject to review by the Building Official.

Grading that will result in the disturbance of one or more acres is subject to the applicability of the NPDES (National Pollutant Discharge Elimination System) Storm Water Program. The NPDES applicability form must be stamped and signed by a civil engineer and submitted with the grading plans. If all storm water is not being retained on site, a SWPPP (Storm Water Pollution Prevention Plan) must be developed and BMP (Best Management Practices) must be implemented in addition to submitting NPDES applicability form.

Structures located within an Alquist-Priolo Fault Rupture Hazard Zone require a complete fault-hazard rupture report and study if the proposed structure is to have three or more floors.

### **Grading Permit Issuance**

Once the plans have been determined to be in compliance with the County Grading Ordinance, the permit will be issued upon receipt of the following:

1. Zoning approval from the Planning and Community Development Department or Building Official.
2. A bond or cash deposit as may be required by the County Grading Ordinance.

The Building Official shall not issue a grading permit in a case where he finds the work as proposed by the applicant is likely to adversely affect the stability of adjoining property or deposit debris on a public way. The applicant is required to submit a statement describing the proposed future use of the grading site so that the Building Official can determine the compatibility of the intended use with zoning requirements.

## **Grading Inspection**

A permittee shall be designated for each permit as the person (or firm) responsible for ensuring that the work is performed in accordance with the approved plans and specifications. The permittee shall engage consultants, as necessary, to provide professional inspections (i.e. bench inspections, compaction testing, etc.) on a timely basis.

All grading operations for which a permit is required may be subject to inspection by the Building Official.

## **Completion of Work**

The permittee shall notify the Building Official when the grading operation is ready for final inspection. Final approval shall not be given until all work has been completed in accordance with the approved plans and all grading confirmations and reports have been provided to the Building Official.

## **Erosion Control**

The faces of all cut and fill slopes shall be prepared and maintained to control against erosion. Where necessary, berms, rip-rap or other devices or methods shall be utilized for erosion control.

## **Cuts**

Cut slopes shall be no steeper than is safe or no steeper than 2 horizontal to 1 vertical unless recommended in an approved engineering or engineering geology report, certifying that the site has been investigated and giving an opinion that a steeper slope will be stable and not create a hazard.

**EXCEPTIONS:** A cut surface may be at a slope of 1.5 horizontal to 1 vertical (67 percent slope) provided that all the following are met:

1. It is not intended to support structures or surcharges.
2. It is adequately protected from erosion.
3. It is no more than 8 feet in height.
4. It is approved by the building official.

## **Fills**

All fills shall comply with the provisions of the Kern County Grading Code and if provided, the engineering soils report. The slope of the fill shall be no steeper than is safe and generally no steeper than 2 horizontal to 1 vertical. Fill slope surfaces of 3 horizontal to 1 vertical may be required in floodplain areas.

The existing ground surface shall be prepared to receive fill by removing vegetation, non-complying fill, top-soil or other unsuitable material and scarifying to provide a bond with the new

fill. Where existing slopes are greater than 5 horizontal to 1 vertical the new fill shall be supported by level benches cut into competent material.

All fills shall be compacted to a minimum of 90 percent of the maximum density. Compaction of 85 percent may be allowed in areas designated for septic systems by an engineer. See sheet G4 for additional fill requirements.

## **GRADING PLAN REQUIREMENTS**

### **Regular Grading**

1. All grading plans should be prepared on sheet(s) no smaller than 17 inches by 22 inches.
2. Grading plans should be drawn to a standard engineer's scale of 1 inch equals 50 feet or larger.
3. Show north arrow, scale and legend.
4. Vicinity map indicating site location showing local cross streets.
5. Street address, Assessor's Parcel Number and owner's name.
6. Show and label property lines (permit boundary).
7. Show elevations, dimensions, location, extent and slopes of all proposed grading. Include pad areas, access road grading, etc. Use sections where necessary.
8. Specify the slope ratio (horizontal to vertical) of all proposed cut and fill slopes (maximum 2:1). Maximum 3:1 for floodplain requirements.
9. Slopes steeper than 2:1 require their stability to be approved by a civil engineer, soils engineer or engineering geologist.
10. Show drainage and location of all drainage devices and erosion control features.
11. Show flood protection requirements (height of pad/finished floor, slope protection, etc.) as identified with Flood Hazard Evaluation (if applicable).
12. Show estimated quantity of excavation and fill including export or import. Export and import may require a letter of permission from the off-site property owner.
13. Show setback from property lines (permit boundary) per Section 17.28.120 (See Sheet G4).
14. General grading specifications: Purpose, scope of grading, location of export or import, excavating procedures and various grading requirements per Kern County Grading Code.
15. Name of person who prepared plans.

**THE FOLLOWING NOTES OR REQUIREMENTS REPRESENT A MINIMUM THAT SHOULD BE ON THE PLANS**

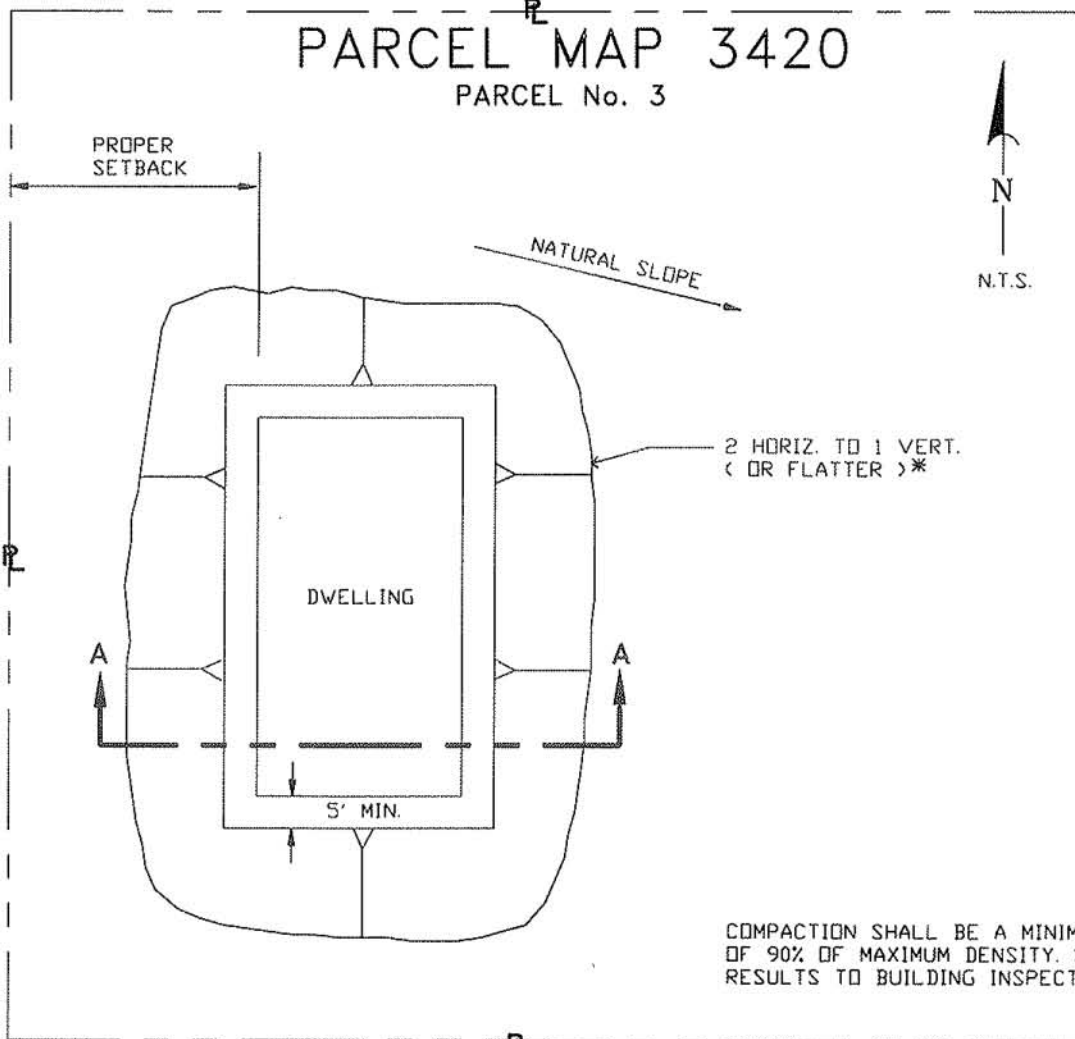
1. All grading shall conform to Kern County Grading Code and Standards pertaining thereto.
2. All cut and fill slopes shall not be steeper than 2 horizontal to 1 vertical and 3 horizontal to 1 vertical for floodplain areas.
3. Fill areas sloping steeper than 5:1 shall be keyed and benched to support fill (See Sheet G4).
4. All fill areas shall be cleared of all vegetation and other unsuitable material for a structural fill and the areas scarified to a depth of 6 inches.
5. Fill materials shall be placed in layers not exceeding 6 inches in compacted thickness and compacted at optimum moisture content by approved method.
6. All fill to be compacted to a minimum of 90% density of the maximum density and so certified by tests and reports performed by a soils engineer.
7. Berms or drainage devices shall be placed at the top of all fill slopes.
8. Surface drainage to be 2.0% toward approved drainage. (Limited waivers to allow 1.0% drainage from the building pad may be allowed if waived per Section 17.28.130)
9. Quantity of earth to be moved:
  - \_\_\_\_\_ Cut Cubic Yards
  - \_\_\_\_\_ Fill Cubic Yards
  - \_\_\_\_\_ Import/Export Cubic Yards
10. All fill material shall not contain detrimental amounts of organic matter. No rock or irreducible material with a minimum dimension greater than 12 inches shall be buried or placed in fills.
11. Erosion and sedimentation will be controlled by berms, planting, rip-rap or other devices or methods.



PARCEL MAP 3420  
PARCEL No. 3



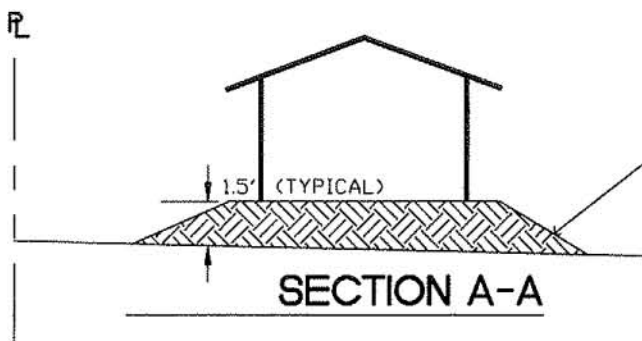
FLOWER AVE.



COMPACTION SHALL BE A MINIMUM OF 90% OF MAXIMUM DENSITY. SUBMIT RESULTS TO BUILDING INSPECTION

CLOVER ST.

MATERIAL IMPORTED FROM COMMERCIAL SITE. (OR PRIVATE PARTY, SUBMIT PERMISSION OF PROPERTY OWNER.)



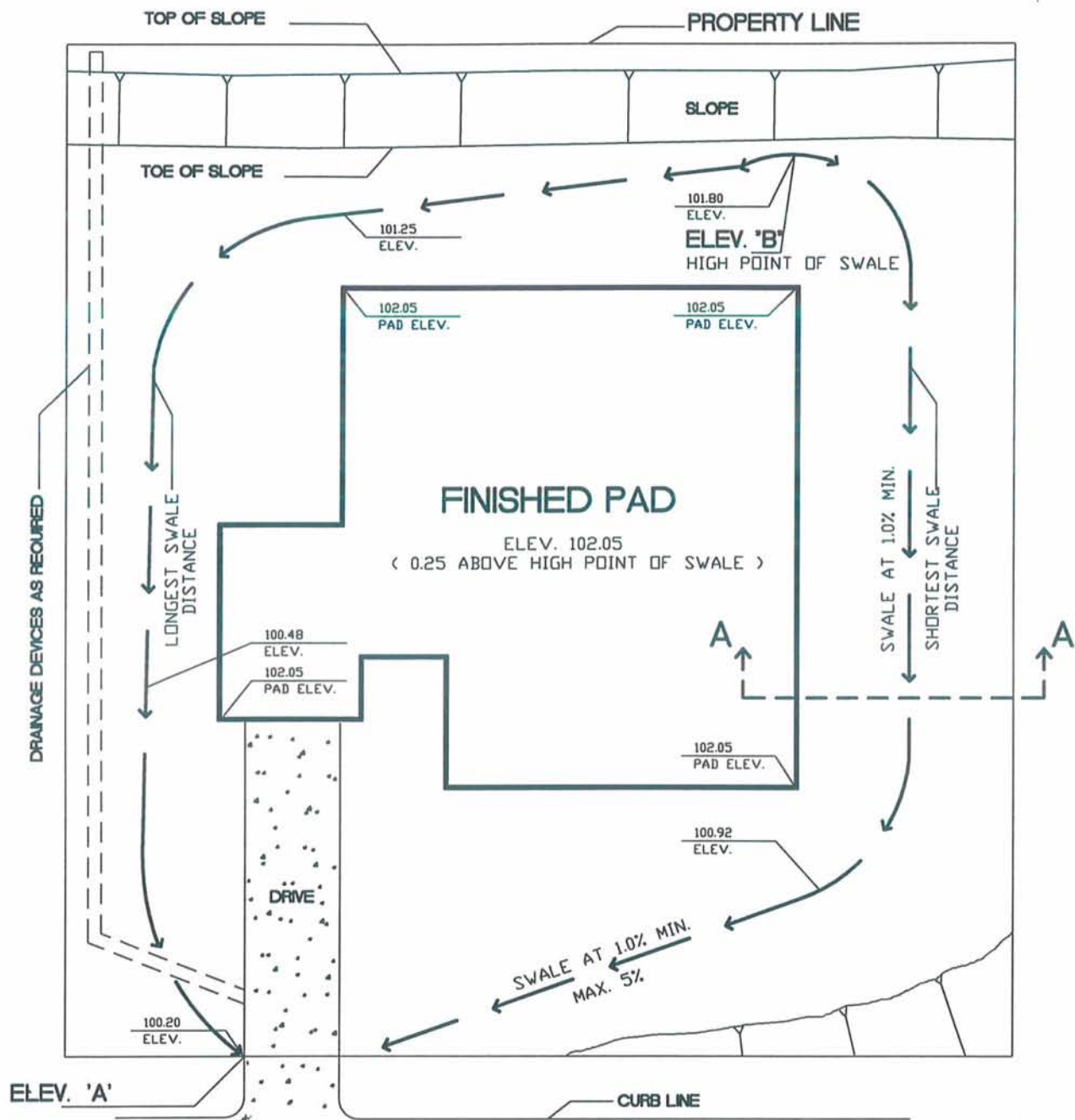
\* 3:1 MAX. FLOODPLAIN MANAGEMENT REQUIREMENT.

VOLUME = 205 CU. YDS.

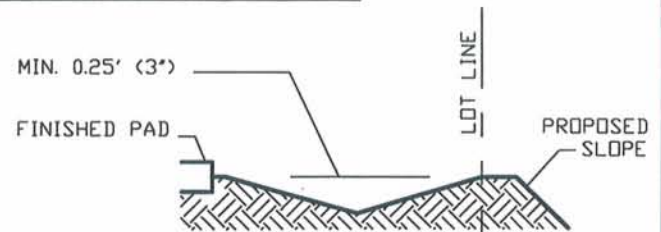
OWNER: JOHN DOE  
231 CLOVER ST.  
INYOKERN, CA.

PREPARED BY:

GRADING SHALL BE DONE ACCORDING TO THE KERN COUNTY GRADING CODE. ( AND OTHER GRADING NOTES )



**ELEV. 'A'**  
 TOP OF CURB ELEV.  
 HIGH SIDE OF DRIVEWAY  
 100.00 (ASSUMED)  
 DIRECTION OF FLOW  
 IN STREET

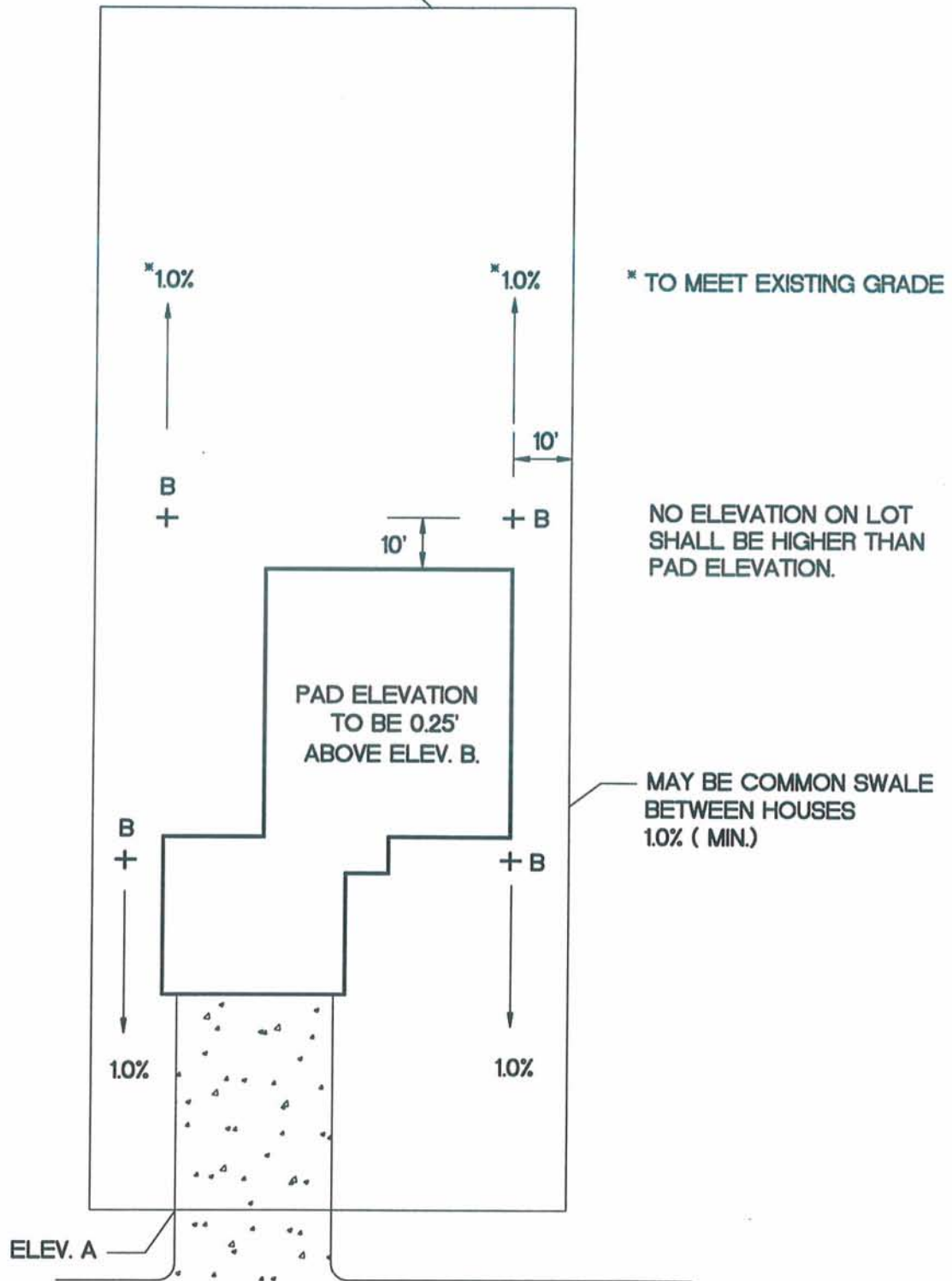


**NOTES:**

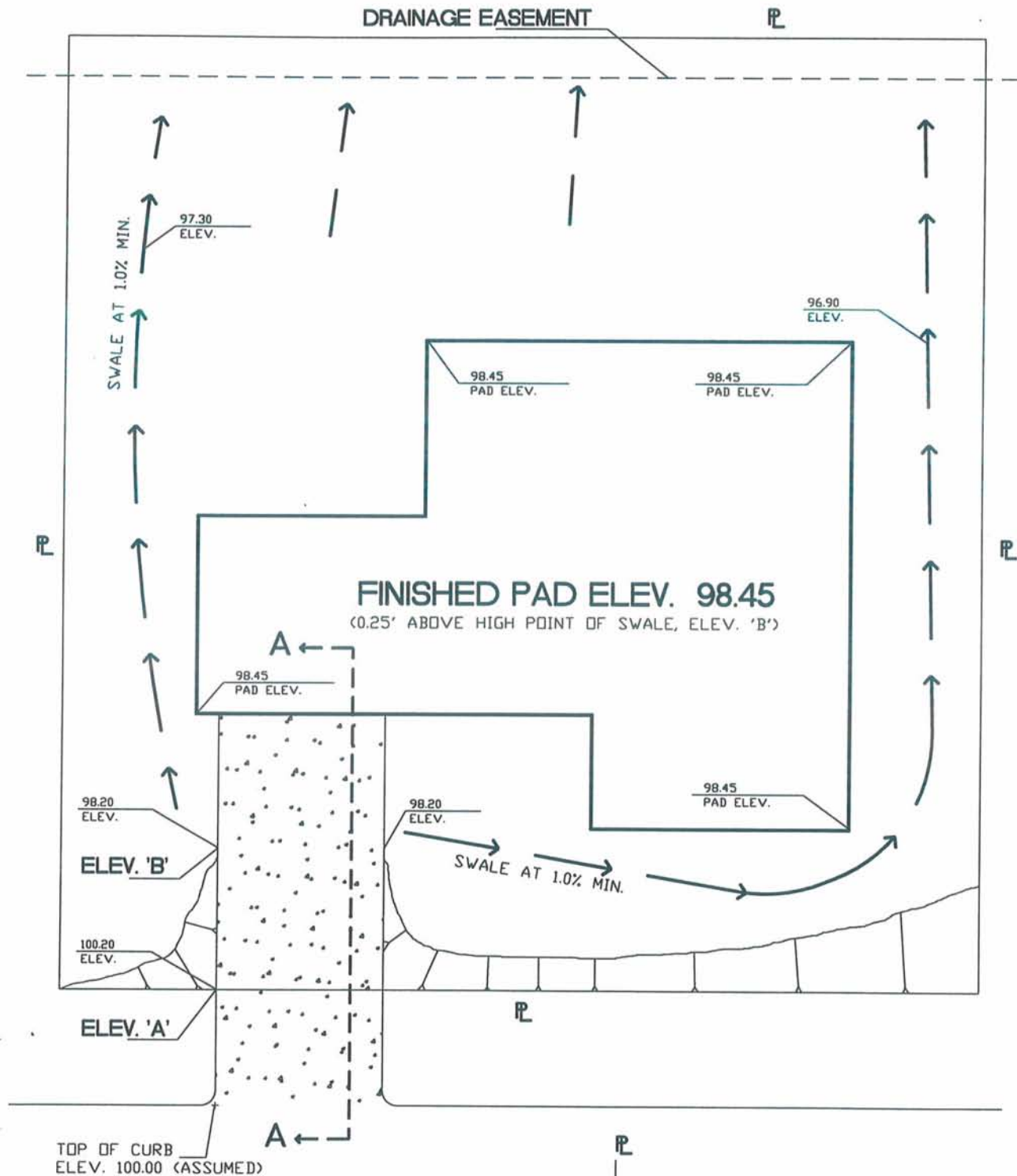
1. ELEVATION "B" SHALL BE ESTABLISHED BY USING THE LONGEST SWALE DISTANCE WITH A GRADE OF 1% (MINIMUM).
2. BUILDING PADS SHALL BE A MINIMUM OF 0.25 FOOT (3") ABOVE THE THE HIGHEST POINT IN THE SWALE (ELEVATION "B") OR AS APPROVED BY BUILDING OFFICIAL

**SECTION A - A  
SWALE DETAIL**

PROPERTY LINE

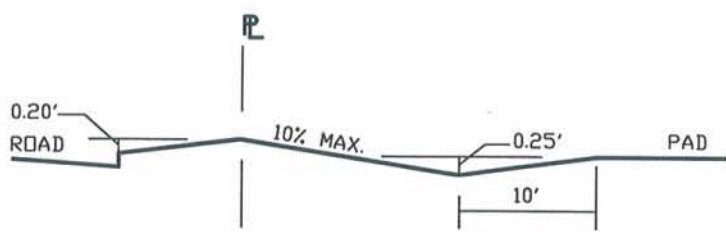


( NON-FLOODPLAIN )

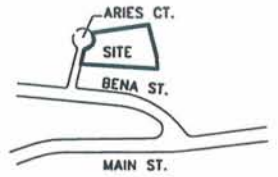
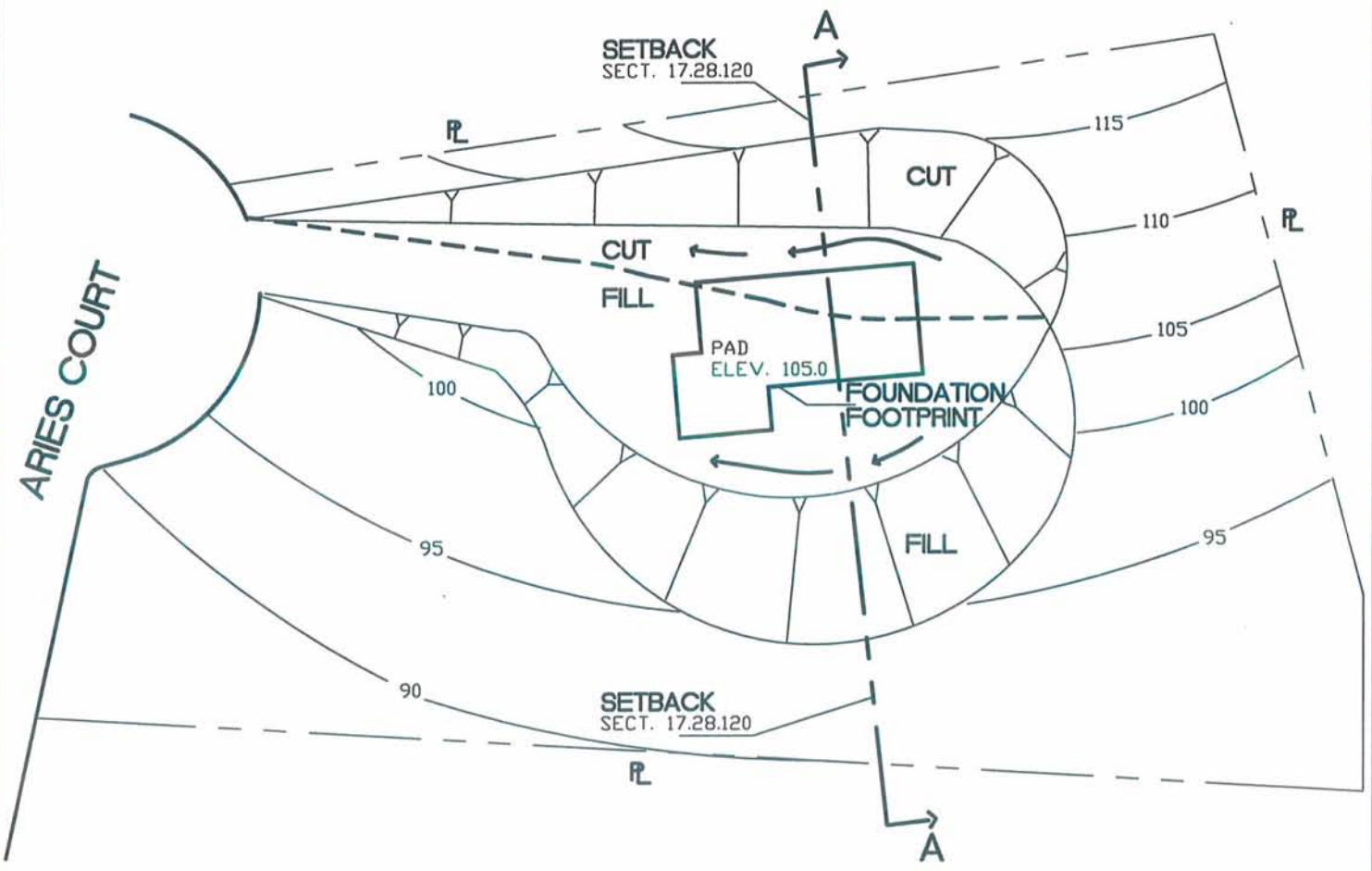


NOTE:

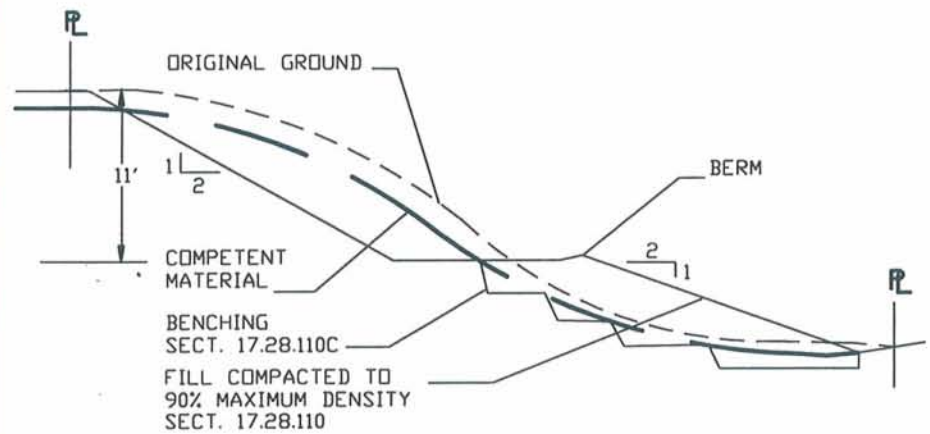
ALL DRAINAGE SHALL BE DIRECTED TO AN APPROVED DRAIN OR DRAINAGE EASEMENT.



SECTION A-A



VICINITY MAP



VOLUME = \_\_\_\_\_ CU. YDS.  
GRADING NOTES

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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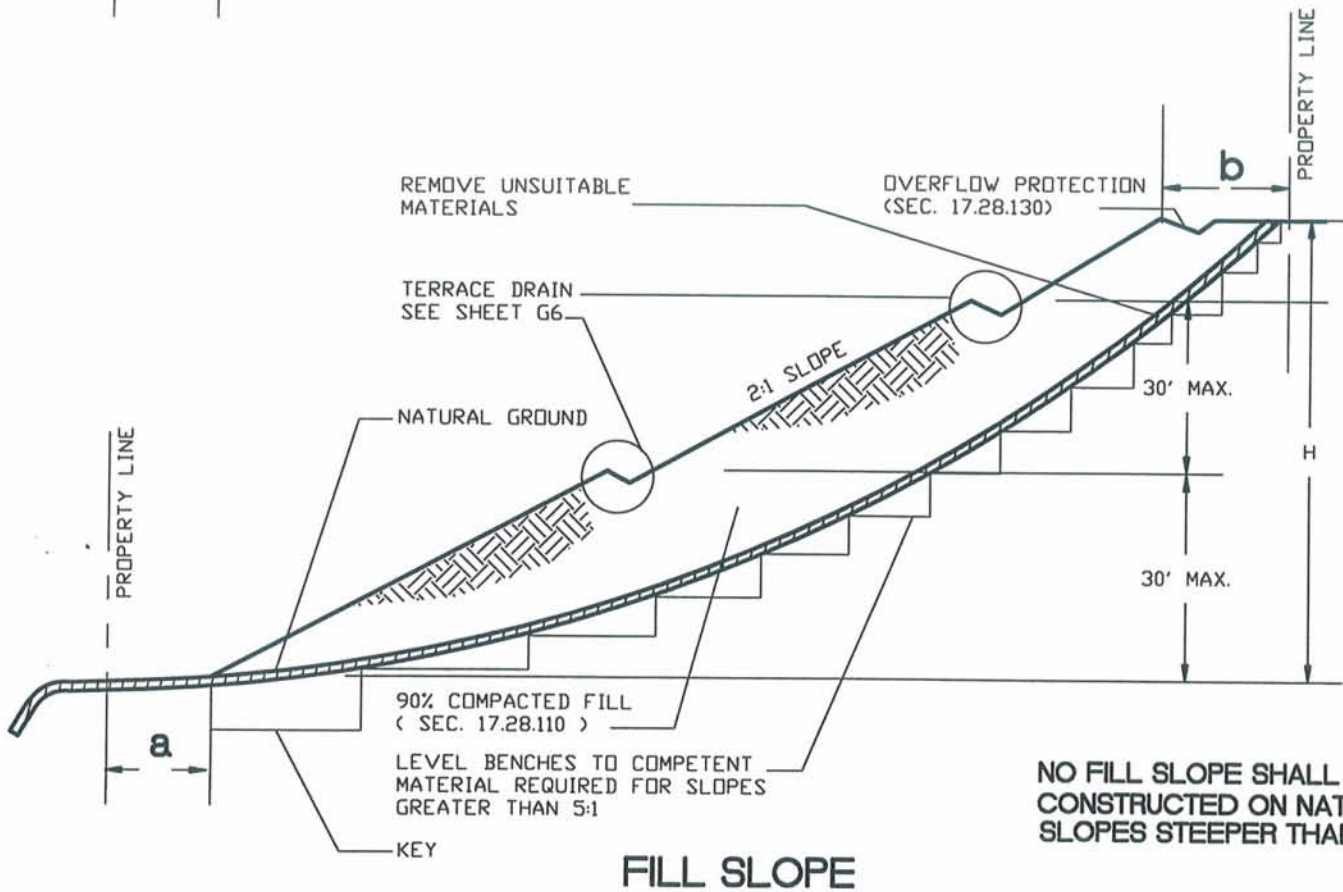
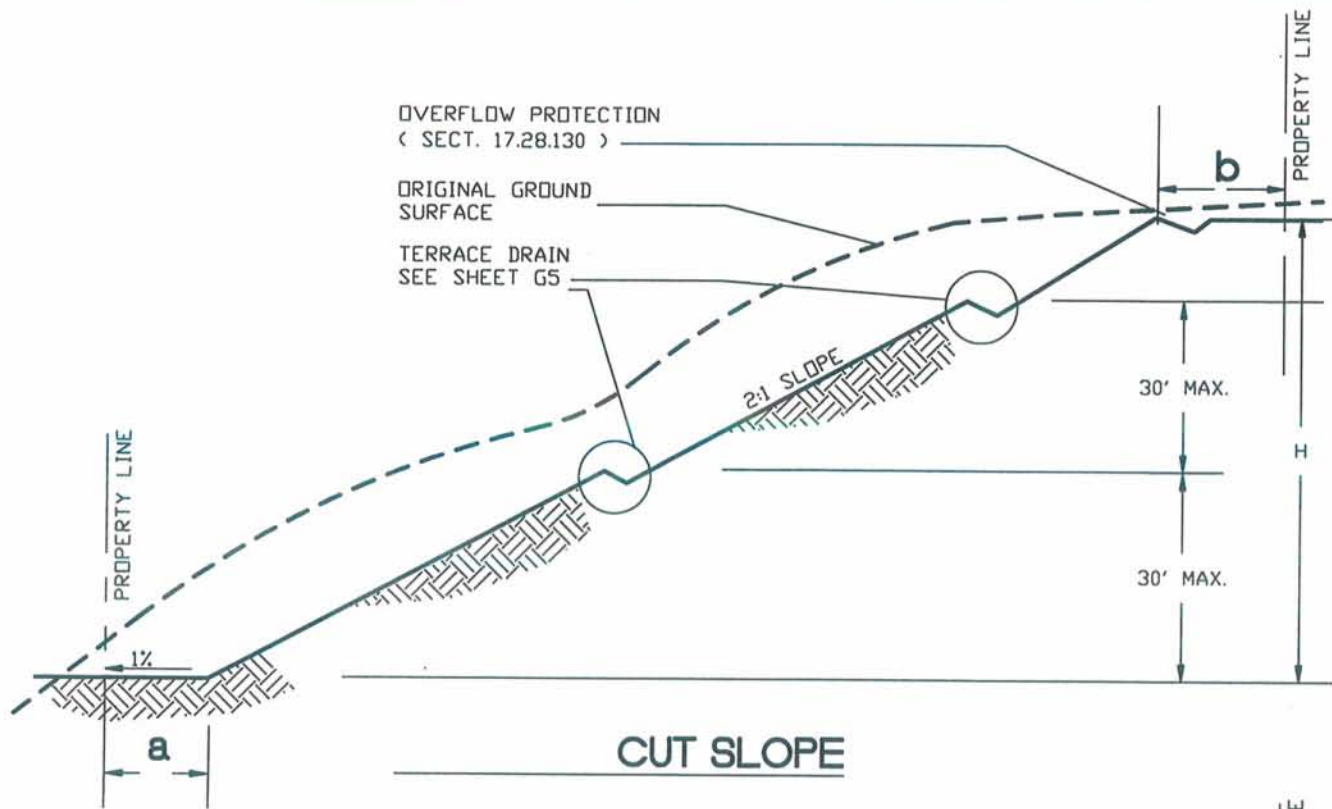
\_\_\_\_\_

SECTION A-A

SEE SHEET G4 FOR SLOPE STANDARDS AND SETBACKS

SCALE: \_\_\_\_\_

MR. JOHN DOE  
203 ARIES COURT  
LAKE ISABELLA, CA

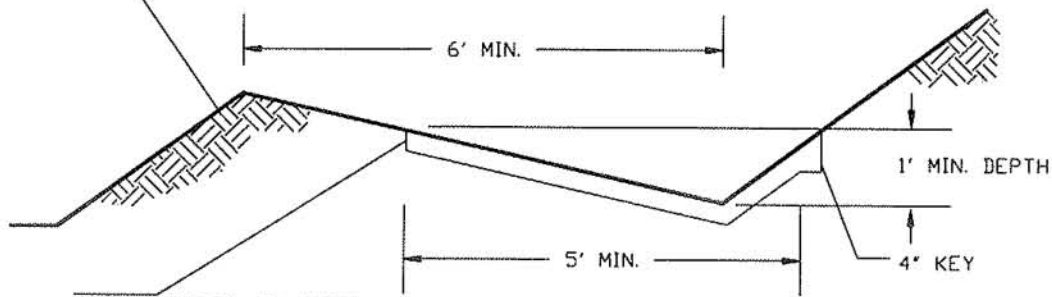


NO FILL SLOPE SHALL BE CONSTRUCTED ON NATURAL SLOPES STEEPER THAN 2:1

a: H/2 BUT 2' MIN. AND 20' MAX.  
b: H/5 BUT 2' MIN. AND 10' MAX.

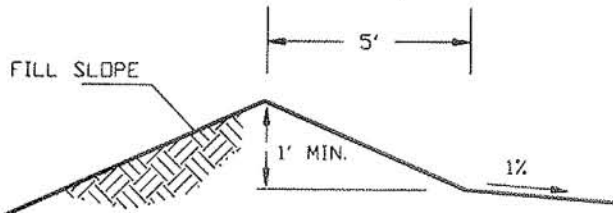
LONGITUDINAL GRADE NOT LESS THAN 5%

CUT OR FILL SLOPE

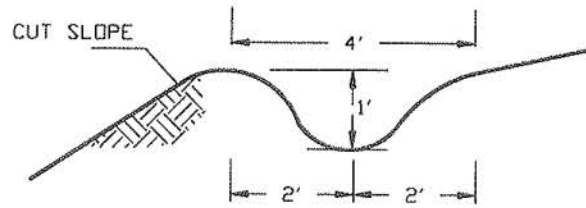


3" REINFORCED CONCRETE  
6" x 6" - #10 x #10  
WELDED WIRE FABRIC  
OR APPROVED EQUAL PAVING

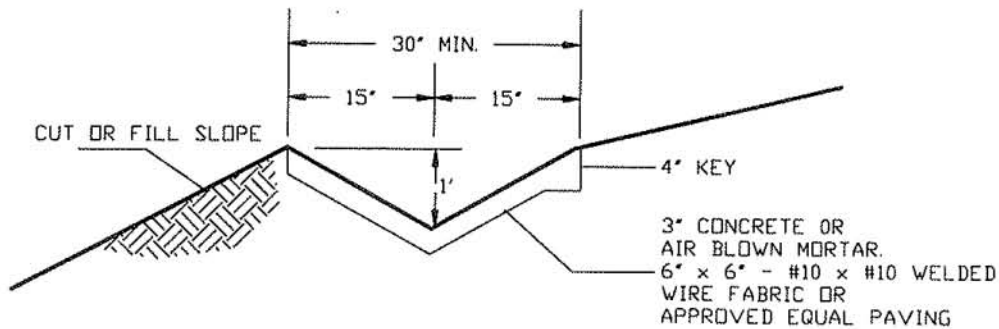
### TERRACE DRAIN



### BERM



### SWALE



### INTERCEPTOR DRAIN

NOTES:

1. BERMS, SWALES OR INTERCEPTOR DRAINS SHALL BE PROVIDED AT THE TOP OF ALL FILL SLOPES AND MAY BE REQUIRED AT THE TOP OF ALL CUTS SLOPES AS PROVIDED IN SECT. 17.28.130
2. TERRACE DRAINS SHALL BE PROVIDED AT 30' VERTICAL INTERVALS EXCEPT WHERE ONLY ONE TERRACE IS REQUIRED AT MIDHEIGHT
3. SINGLE RUN TERRACE DRAIN SHALL NOT COLLECT RUNOFF FROM A TRIBUTARY AREA EXCEEDING 13,500 SQ. FT. WITHOUT DISCHARGING INTO A DOWNDRAIN