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## **CHAPTER 1: GENERAL PROVISIONS**

- 1.1 GENERAL:** These Standards include the specifications and plates as contained herein. All work done in the public rights-of-way within the unincorporated area of Stanislaus County shall conform to these Standards and the Stanislaus County Code.

Copies of these Standards may be purchased at the Stanislaus County Department of Public Works, 1100 "H" Street, Second Floor, Modesto, CA 95354. The purchase price includes a subscription for future changes. The purchase price and subscription term shall be established by the Department of Public Works.

Developers are advised to have their representatives contact the Department of Public Works during design to insure conformance with these Standards.

Work requiring plans prepared by a registered engineer such as public improvements for subdivisions, parcel maps, planned developments, building permits, etc. shall conform to these Standards, even though reference to these Standards is not made on such plans.

Work not requiring plans prepared by a registered engineer shall conform to these Standards, and it shall be the responsibility of the Developer to determine the requirements.

Where subdivision improvements are required, the improvements shall be completed according to these Standards or shall be bonded pursuant to the Stanislaus County Code prior to the recording of the map.

- 1.2 DEFINITIONS:** The following definitions shall apply to these Standards:

- a. **County:** The County of Stanislaus.
- b. **Department:** Stanislaus County Department of Public Works.
- c. **Design Engineer:** A person, firm, corporation, partnership or agent thereof, legally registered to perform civil engineering in the State of California.
- d. **Developer:** Subdivider, Developer, property owner, Utility, Registered Engineer or Contractor proposing to design work or do work in the County public rights-of-way.

- e. Engineer: Director of Public Works and/or authorized representative.
- f. Engineer's Estimate: The list of estimated quantities of work items for the project and the estimated cost to perform the work. It shall be dated, signed and stamped by the Design Engineer.
- g. Inspector: Any person employed by the County under the authority of the Engineer to inspect on-going construction projects.
- h. Plans: Improvement Plans prepared by the Developer for a specific project.
- i. Record Drawings: An original set of plans showing the actual work as completed in the field, also known as "as-built" drawings.
- j. Special Provisions: Specific clauses setting forth conditions or requirements particular to the work and supplementary to the Standards as a part of the contract documents.
- k. Specifications: Directions, provisions, and requirements contained in this manual. The specifications pertain to the method and manner of performing the work and the quality and quantity of materials involved.
- l. Standards: These Improvement Standards of the County of Stanislaus including the text and drawings contained in this manual.
- m. Surveyor: A person, firm, corporation, partnership or agent thereof, legally licensed to perform surveys in the State of California.
- n. State Standards: The current edition of the Standard Specifications, the Standard Plans and the Highway Design Manual of the State of California, Department of Transportation.
- o. Utility: Public sewer, public storm drain, public water, irrigation districts, gas companies, power companies, water companies, telephone companies, television cable companies, community services districts, railroads and any company holding a franchise to occupy road right-of-way within Stanislaus County.

**1.3 PLANS:** Improvement Plans shall be prepared by the Developer and shall be submitted to the Engineer. Plans shall be approved by the Engineer prior to commencement of any work. The Plans shall be on a translucent medium 24 inches by 36 inches with a minimum 1 inch border on the left side with ½ inch border on all other sides.

- a. Datum: All Plans shall be based on the National Geodetic Survey Vertical (elevation) datum. When available, 1988 datum shall be used.
- b. Scale: The Plans shall be scaled to sufficiently show the necessary details when reproduced on blue-line and to construct the project. Generally, use a scale of 1"=10' or 1"=20' on highly detailed plan drawings and on larger projects, a scale of 1"=40' or 1"=50'. On cross sections or profiles, use a vertical scale of 1"=2' for mild slopes and 1"=4' for steeper slopes and a horizontal scale of 1"=5'. The scale shall be indicated on all sheets. Letters and numbers shall be minimum 0.10 inch in size.
- c. Title Block: Each sheet of the Plans shall have a title block showing the project name; sheet title; date of the drawing and revisions; scale of drawings; page number; the Design Engineer's name, address and telephone number; registration stamp showing the number and expiration date; and the Design Engineer's signature.
- d. Orientation and Stationing: If practical, arrange the design and drawings so that the north direction points to the top or right edge of the sheet. Stationing should be positive in the north and east directions. If practical, the stationing on the plan and profile sheet shall read from left to right or from bottom to top. A north arrow shall be placed on all appropriate sheets.
- e. Format: Plans should consist of the following: Title sheet, topographical sheet, grading and drainage sheet, utility sheet, plan and profile sheet, detail sheet, and traffic signing and striping plan. Plans shall also show sufficient data to enable the design to be reviewed for conformance to County Standards and for the project to be constructed.
- f. Title Sheet: The first sheet or title sheet may contain, but not be limited to:
  - 1. The layout of the entire project drawn to an appropriate scale including road names and lot numbers, centerline monuments and bearings and distances. The bearing, distance and the basis of bearing from an established monument of record to a proposed project monument in the subdivision.
  - 2. A vicinity map and north arrow.
  - 3. An index of sheets (if more than one sheet).
  - 4. A legend of symbols.

5. The location, description, elevation, and datum of the reference benchmark. The benchmarks must tie to National Geodetic Survey datum. Only benchmarks on file with the Department shall be used.
  6. The location of the project by township, range, section, and Assessor's Parcel Number. Also include reference to any permits that regulate the project.
  7. A signature block for the Department is required on each sheet. Individual sheets may also require signature blocks for Stanislaus County Department of Environmental Resources, Stanislaus County Department of Fire Safety, other County Departments, or Utility.
- g.** Topographical Sheet: A topographical survey sheet may be required showing, but not limited to:
1. Spot elevations at appropriate intervals, drainage systems details, fences, structures, pipelines, ditches, utility poles, driveways, roads, pavement, right-of-way (both sides of the road), signs and pavement markings, trees, easements and any other feature which may affect the project.
  2. The topographical survey extending a minimum of 300 feet past the limits of the project. The survey must show the full right-of-way for that length.
- h.** Grading and Drainage Sheet: The Plans shall include an overall grading and drainage sheet showing, but not limited to:
1. A typical lot grading detail. Typical lot grading detail may be placed on detail sheet.
  2. The proposed lot corner elevations as well as any elevation differential between the project boundaries and the adjoining properties and finished elevation or building pad elevation for each lot.
  3. Gutter or ditch flow arrows and slopes, drainage courses (existing and proposed), drains, grade breaks, storm drainage pipe sizes and slopes, manholes, valley gutters, catch basins and grate elevations, sufficient top of curb elevations to show drainage patterns, retention basin location and a separate sheet for details, location of lift stations, location of any retaining walls, location and size of easements and any other items affecting grading and drainage.

4. Where soil borings are performed for drainage purposes, the location of the soil borings and the soil boring results shall be shown on the plans.
- i. Utility Sheet: The Plans shall include utility sheet(s) showing, but not limited to:
1. Streets lights, conduit runs and power source for each street light circuit, fire hydrants, water lines, valves, blow-offs, sanitary sewer lines and manholes, leach fields and waste system appurtenances, clean outs, sewer and water service locations, water wells, power lines, gas lines, television cable lines, utility boxes, telephone lines, driveways if locations are known, utility easements and any other utility items at or near the project location.
  2. All sheets shall contain a note about contacting USA prior to excavation.
  3. A signature block for any agency or Utility whose facilities shall be installed, made part of, or connected to, as part of the improvements.
- j. Plan and Profile Sheet: The Plans shall include a plan and profile sheet(s) showing the existing and proposed profiles of all roadways. They shall include, but not be limited to:
1. All elevations necessary to accurately describe the work.
  2. A cross section of the roadway along with the traffic index and soil R-value used in design including the design speed for each road.
  3. Grade breaks, centerline, vertical curves, percent slope, road stationing and survey data, original ground at centerline and right-of-way, top of curb profile, storm drainage lines, water lines, sewer lines, the station of the nearest cross street for mid-block improvements, any areas of possible conflict between underground utilities, indicate length and type of pipe between manholes and catch basins, elevations of pipe inverts, grate elevations of catch basins, drain inlets, manholes and all other pertinent data. Pipelines and underground utility lines shall be shown on both the plan and profile portion of the sheet.
  4. All sheets shall contain a notation about contacting USA prior to excavation.

- k. Detail Sheet: Include complete detail sheet(s) showing all construction details applicable to the project.

On the detail sheet(s) reproduce the Standards in this manual that apply to the project and identify by Plate Number. Clearly reference any Standard, either as-is or modified, utilized from this manual.

The required sheets may be combined into single sheets if the resulting sheets remain clear of over-detailing.

- l. Traffic Signing and Striping Plan: The traffic signing and striping plan shall contain, but not be limited to:

1. An overall plan of the project showing the new roadways and the surrounding existing roadways. The plan shall show both sides of the road, all traffic lanes, edges of pavement and handicap ramps.
2. Existing traffic signs, pavement markings and striping.
3. Proposed traffic signs, pavement markings and striping.
4. Traffic signs shall be identified by type and size either by verbal explanation or Caltrans designation, i.e., 36 inches "Stop Ahead" or simply 36 inches W17.
5. Traffic striping and pavement markings shall be identified by either verbal description or by "detail" designation as used in the State Standards, i.e., double yellow centerline stripe with two-way yellow reflective pavement markers or simply Detail 22.

Detail style designations are encouraged.

6. Sufficient data shall be shown on the Plans to identify the placement of signs, striping and pavement markings.

On uncomplicated street improvement plans the striping and signing details may be incorporated into another sheet. However, on most multi-lot/multi-road subdivisions, a separate plan is required.

- m. Supplemental Information:

1. When the Plans mention products like pumps, motors, street lights, etc., the Design Engineer shall provide the manufacturers' specifications.

2. The Design Engineer shall present calculations for pavement structural section design, storm drainage, retaining wall or other items not covered in the Standards. The calculations shall clearly reveal, using figures and diagrams, how the result was obtained. If the result is computer generated, the Design Engineer shall provide the means to verify the result to the Department.
3. Quantities and the Engineer's Estimate shall show a detailed itemized estimate of cost.
4. A geotechnical report, if required, prepared by a person, firm, or corporation licensed to prepare such report shall be submitted with Plans.

Prior to acceptance by County of any improvements, the geotechnical professional may be required to verify that "as-built" conditions represent their original evaluations.

- n. Departmental Review: The Design Engineer shall present two blueline sets of plans (signed and stamped by Design Engineer) to the Department's Engineering Division for review.

If additional Department review is needed, the Design Engineer shall present two corrected blueline sets along with the previous checked set. On one set of the corrected blueline sets, the Design Engineer shall highlight all changes.

The Department may be the last agency to sign the Plans for approval. The Design Engineer shall present the original Plans with all signatures and stamps to the Department for signature. If there are required changes during construction after the Plans have been approved and signed by the Engineer, the changes shall be properly documented on the record drawing. Said changes shall be in accordance with County Standards.

Signed original Plans shall be reproduced on 3-mil Mylar at Developers expense and provided to the Department, before the signed originals can be released to the Design Engineer.

- o. Record Drawings:
  1. "As-built", "as-constructed" or "record" Plans, known as "Record Drawings", shall be provided to the Department prior to acceptance of the improvements. These Plans shall show changes made during the construction process.

2. Record drawings shall be on 3-mil Mylar or polyester and stamped "Record Drawings" with the Design Engineer's registration stamp and signature on each sheet.
3. Portions of the Plans replaced by changes during construction shall not be erased but simply crossed off.
4. All utilities not shown on the construction Plans shall be drawn on the record drawings.
5. Street light conduit runs, power source and pull boxes shall be shown on the record drawings.
6. All lettering must be clear and legible.
7. Extensive unclear changes must be shown clearly on a supplemental sheet.
8. Record drawings shall become the property of the Department .

**1.4 PRIORITY OF WORK:** All underground utilities shall be constructed and approved prior to surfacing of roads or rights-of-way. The Developer shall be responsible for making arrangements, as necessary, with utility companies to insure that the necessary underground utilities are constructed.

**1.5 STAKING:** The Developer is responsible for providing all required construction staking.

**1.6 INSPECTION:** The Inspector shall perform inspection of all work done and all materials furnished to assure conformance with these Standards. The cost of all inspections shall be paid by the Developer.

The Developer shall request inspections a minimum of 48 hours in advance to permit scheduling of inspection by the Inspector.

All work not accepted by the Inspector shall be remedied, removed or replaced by the Developer. Any work done beyond that shown on the Plans approved by the Engineer may be ordered removed, by the Engineer, at the Developer's expense.

Materials proposed for use and not specified herein shall be submitted for approval by the Engineer prior to ordering such material.



Underground work shall not be backfilled or covered until an inspection by the Inspector has been made and the work accepted. Any work that is backfilled or covered without inspection shall be uncovered, at Developer's expense, upon the request of the Inspector.

Inspector shall have access to the work at all times and shall be furnished every reasonable facility for ascertaining that the work done, materials used and workmanship performed are in accordance with the requirements and intentions of these Standards and the approved Plans and Specifications. Failure of the Inspector to note faulty material or workmanship during construction or on material submittals shall not relieve the Developer of the responsibility for correcting such deficiencies at Developer's expense. The inspection of the work or materials shall not relieve the Developer of any obligations to fulfill the contract. Work or materials not meeting these Standards shall be rejected regardless of any previous inspection by the Inspector.

- 1.7 CONCRETE:** Portland cement concrete, unless otherwise specified by the Engineer, shall be as defined in the State Standards. The concrete shall consist of a 5 sack mix minimum with aggregates graded pursuant to State Standards with a maximum size gradation of 3/4 inch.
- 1.8 DUST CONTROL:** Dust control shall be the responsibility of the Developer. In the work area, the dust may be controlled by use of water, but the horizontal drains and storm drain system must be protected.
- 1.9 SURFACE RESTORATION:** The surface of the work area shall be restored to its original condition.

Work in easement areas must be confined to the easement and the surface must be reseeded, leveled and all undesirable material removed.

Written agreements must be made with the property owners if work or equipment is outside the easement. The surface of the area outside the easement must be restored to the satisfaction of the property owner.

In the case of paved areas, excavations that leave 6 feet or less of existing surfacing shall have the remaining surfacing removed and repaved with the same material as the trench section.

Excavations in the shoulder area located within 3 feet of the edge of pavement shall be restored with a minimum of 8 inches of aggregate base material.

Prior to paving, all uneven or loose edges shall be saw cut in true and even lines parallel to the centerline of the work.

Aggregate base shall conform to the requirements of Section 26, "Aggregate Bases", of the State Standards.

Asphalt paint binder shall conform to Section 39, "Asphalt Concrete", of the State Standards, shall be applied to all existing vertical surfaces and construction joints prior to placing asphalt concrete.

Asphalt concrete shall conform to the requirements of Section 39, "Asphalt Concrete", of the State Standards. Asphalt concrete shall typically be Type A using AR4000 paving asphalt with medium fine graded aggregate. The Engineer may require alternate type, paving asphalt and gradation depending on the proposed improvements.

A seal coat, as specified in Section 37.1, "Seal Coats", of the State Standards, shall be applied to all new asphalt concrete 1 year after acceptance.

- 1.10 CLEAN UP:** Developer shall clean up the dirt and debris in all the adjacent roads caused by the construction. All sidewalks, curbs, approaches, crosswalks, existing and new drain inlets, lawns, etc., shall be kept free of excess dirt and rubbish and kept in a clean and neat condition.

Before a final inspection of a project is requested, the following shall be completed:

- a. All of the right-of-way, adjacent property, adjacent roads and alleys and all areas used by the Developer in connection with the project shall be cleared of all debris and excess material and left in a neat and presentable condition.
- b. All paved areas shall be free of dirt and dust.
- c. All concrete surfaces shall be left free of excess concrete, paving materials, dirt and dust. All expansion joints shall be trimmed flush with concrete.
- d. All old and new storm drain inlet bottoms and outlet pipes shall be left free of all dirt and debris. If water is used to clean streets, care shall be taken to keep sand and silt out of storm drains, catch basins, manholes or horizontal drains. Any storm drains, catch basins, manholes or horizontal drains affected by the work shall be cleaned by the Developer.
- e. All manhole bottoms shall be cleaned of all foreign matter and covers shall have all paving asphalt removed.

The Developer shall not remove temporary warning, regulatory and guide signs prior to formal acceptance by the County. Such signs shall be removed when directed by the Engineer.

- 1.11 DEVIATIONS:** These Standards are intended to be minimum standards which apply to all new development. Any deviations from these Standards are to be specifically approved in writing by the Engineer. For in-fill developments, the Engineer may approve variations and modifications from these Standards as necessary by the conditions of, and the compatibility with, existing improvements adjacent to the development.
- 1.12 GUARANTEE:** The Developer or Utility shall inspect and repair all work done on improvements in the public right-of-way for a period of one year from the date the work is initially accepted as complete by the Engineer.
- 1.13 MONUMENTS:** All existing road monuments within the area of construction shall be placed in monument boxes and raised to grade.

Final maps and recorded maps shall show by appropriate statement when monuments will be set and a description of monuments installed. Monuments shall be set at least 1 foot below the finished grade in unpaved areas.

Final maps or recorded maps shall show where monuments are to be set.

- a. Road Monuments:** Road monuments and monument boxes shall be installed in conformance with the Road Monument Plate contained in these Standards on the centerline of each road at the following locations:

1. Intersection of the road centerline;
2. Beginning and end of curves;
3. Any change of direction; and,
4. Any other points deemed necessary by the Engineer.

Road monuments shall be 3/4 inch inside diameter x 24 inches long galvanized iron pipe. The monument shall be tagged as required by the State of California Land Surveyors' Act.

- b. Boundary Monuments:** Boundary monuments shall be placed on the exterior boundary of the subdivision at the following locations:

1. Any changes of direction;
2. Beginning and end of curves;
3. Block corners and alley corners; and,

4. Any other points authorized by the Subdivision Map Act.

Boundary monuments shall be 3/4 inch inside diameter x 24 inches long galvanized iron pipe. The monument shall be tagged as required by the State of California Land Surveyors' Act. The top shall be set at least 1 foot below the ground surface.

- c. Lot Corner Monuments: Lot corner monuments shall be placed in the subdivision at the following locations:

1. At each corner except as otherwise provided by this section;
2. On other than standard R-1 lots, there shall be a minimum of four corners set; and,
3. Any other lot corners deemed necessary by the Subdivision Map Act. Monuments shall not be located under footings or structures.

Lot corner monuments shall be 3/4 inch inside diameter x 24 inches long galvanized iron pipe. The monument shall be tagged as required by the State of California Land Surveyors' Act. The top shall be at least 1 foot below the ground surface.

On standard R-1 lots, the monuments may be 1/2 inch inside diameter x 24 inches long.

- 1.14 **BENCHMARK**: A minimum of one benchmark shall be established (on a brass cap) within each subdivision. The location and elevation shall be shown on the record drawings. If possible, the benchmark shall be set at the base of a street light standard. National Geodetic Survey vertical (elevation) datum shall be used. When available, 1988 data shall be used or most recent datum.

COUNTY SURVEYOR'S STATEMENT

This is to certify that the accompanying map has been examined, that it substantially conforms to the tentative map, and any approved alternations thereof. That all provisions of the State Subdivision Map Act, Chapter 2, and Title 20, Stanislaus County Subdivision code has been complied with, and the map is technically correct.

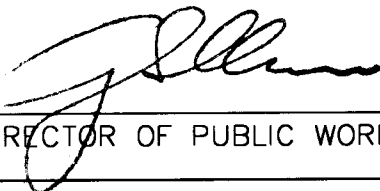
\*I hereby accept on behalf of the public for public use and offer of dedication of the (size) and/or (description) road right of way and/or the (size) and/or (description) public utility easement along (road name).

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 199\_\_\_\_\_  
Stanislaus County Surveyor  
BY: \_\_\_\_\_

NOTES:

This part used only when offers of dedication are made for public utility easements or widening of existing public road rights of way, or irrevocable offers of dedication for potential future roads, extension or widening of existing public right of way.

The County Surveyor or his Deputy may also accept subject to improvement, or reject any offer of dedication in lieu of acceptance.

APPROVED   
DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
COUNTY SURVEYOR'S  
STATEMENT

PLATE 1-A

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
 TYPICAL PARCEL MAP  
 SHEET 1 OF 2  
 PLATE 1-B1

APPROVED *[Signature]* DATE JUN 9 1988  
 DIRECTOR OF PUBLIC WORKS

**OWNER'S STATEMENT**

WE, THE UNDERSIGNED, HEREBY STATE THAT WE ARE THE OWNERS OF, OR HAVE SOME RIGHT, TITLE OR INTEREST IN, THE LANDS DESCRIBED IN THE ACCOMPANYING MAP AND WE CONSENT TO THE MAKING AND FILING OF THIS MAP IN THE OFFICE OF THE COUNTY RECORDER OF STANISLAUS COUNTY, CALIFORNIA. WE ALSO OFFER FOR DEDICATION ALONG THE BOUNDARY OF PARCELS THE AS SHOWN WITHIN THE EXTERIOR BOUNDARY OF THE LAND BEING SUBDIVIDED.

OWNERS: \_\_\_\_\_

AUTHORIZED OFFICER \_\_\_\_\_

VEHICLE: \_\_\_\_\_ AND \_\_\_\_\_

**COUNTY RECORDER'S STATEMENT**

I, \_\_\_\_\_, CLERK OF THE BOARD OF SUPERVISORS STANISLAUS COUNTY, CALIFORNIA, DO HEREBY CERTIFY THAT THE ACCOMPANYING MAP HAS BEEN EXAMINED, THAT IT IS SUBSTANTIALLY CONFORMS TO THE TENTATIVE MAP AND ANY APPROVED ALTERATIONS THEREOF, THAT ALL PROVISIONS OF THE STATE SUBDIVISION MAP ACT AND THE STANISLAUS COUNTY SUBDIVISION CODE HAVE BEEN COMPLIED WITH, AND IT IS TECHNICALLY CORRECT.

COUNTY RECORDER \_\_\_\_\_

BY DEPUTY \_\_\_\_\_

**ALL-PURPOSE ACKNOWLEDGMENT**

STATE OF \_\_\_\_\_ BEFORE ME, \_\_\_\_\_ (NAME, TITLE OF OFFICIAL, PERSONALLY APPROVED BY ME ON THE BASIS OF SUBSTANTIAL EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO BE THAT HE/SHE/IT/ET AL EXECUTED THE SAME IN HIS/HER/IT/ET AL AUTHORIZED CAPACITY(IES) AND THAT BY THE SIGNATURE(S) SUBSCRIBED ON THE WITHIN INSTRUMENT, THE PERSON(S) OR THE ENTITY (LEGAL ENTITY) OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

WITNESS MY HAND AND OFFICIAL SEAL.

SIGNATURE \_\_\_\_\_

Expiration Date \_\_\_\_\_

**CLERK OF THE BOARD OF SUPERVISOR'S CERTIFICATE**

THIS IS TO CERTIFY THAT THE OWNERS OF THE PROPERTY SHOWN ON THE ACCOMPANYING MAP HAVE FILED WITH THE BOARD OF SUPERVISORS:

- CHECK ONE A. A BOND OR DEPOSIT APPROVED BY SAID BOARD TO SECURE THE PAYMENT OF TAXES AND SPECIAL ASSESSMENTS COLLECTED AS TAXES, WHICH ARE AT THE TIME OF FILING OF THIS MAP, A LIEN AGAINST SAID PROPERTY OR ANY PART THEREOF.
- B. RECEIPTED TAX BILL OR BILLS OR SUCH OTHER EVIDENCE AS MAY BE REQUIRED BY SAID BOARD SHOWING FULL PAYMENT OF ALL APPLICABLE TAXES.

DATED THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 19\_\_

CLERK OF THE BOARD OF SUPERVISORS STANISLAUS COUNTY, CALIFORNIA

BY: \_\_\_\_\_

**TAX COLLECTOR'S CERTIFICATE**

THIS IS TO CERTIFY THAT THERE ARE NO LIENS FOR ANY UNPAID STATE, COUNTY, SCHOOLS, SPECIAL DISTRICT, SPECIAL TAXES, OR SPECIAL ASSESSMENTS DUE OR SPECIAL ASSESSMENTS OR TAXES NOT YET PAYABLE AGAINST THE LAND SHOWN ON THIS MAP:

AS TO STATE, COUNTY, SCHOOL, OR MUNICIPAL TAXES.

DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 19\_\_

COUNTY TAX COLLECTOR \_\_\_\_\_

BY DEPUTY \_\_\_\_\_

**EASEMENT HOLDERS**

PURSUANT TO SECTION 8643.36 OF THE SUBDIVISION MAP ACT THE SIGNATURES OF THE FOLLOWING INTEREST HOLDERS HAVE BEEN OBTAINED:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**AGRICULTURAL STATEMENT**

ANY PROCEDURES NORMAL AND NECESSARY TO THE OPERATION OF AGRICULTURAL USES SUCH AS FELD CROPS, WINTERED ORCHARDS, DAIRY AND POULTRY FARMS AND FEED LOTS RESULT IN ROADS, DRIVEWAYS, AND OTHER IMPROVEMENTS. SUCH IMPROVEMENTS ARE NECESSARY TO THE PROPER OPERATION OF AGRICULTURAL OPERATIONS AND SHOULD BE CONSIDERED AS NECESSARY TO THE PURPOSE OF ESTABLISHING RESERVES SHOULD INSTANTANEOUSLY BE NECESSARY FOR SUCH PURPOSES.

**SURVEYOR'S STATEMENT**

THIS IS TO STATE THAT THE ACCOMPANYING MAP HAS BEEN EXAMINED, THAT IT IS SUBSTANTIALLY CONFORMS TO THE TENTATIVE MAP AND ANY APPROVED ALTERATIONS THEREOF, THAT ALL PROVISIONS OF THE STATE SUBDIVISION MAP ACT AND THE STANISLAUS COUNTY SUBDIVISION CODE HAVE BEEN COMPLIED WITH, AND IT IS TECHNICALLY CORRECT.

DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 19\_\_

STANISLAUS COUNTY SURVEYOR \_\_\_\_\_

BY DEPUTY DIRECTOR \_\_\_\_\_



**COUNTY SURVEYOR'S STATEMENT**

THIS IS TO CERTIFY THAT THE ACCOMPANYING MAP HAS BEEN EXAMINED AND THAT IT SUBSTANTIALLY CONFORMS TO THE TENTATIVE MAP AND ANY APPROVED ALTERATIONS THEREOF. ALL PROVISIONS OF THE STATE SUBDIVISION MAP ACT, CHAPTER 2, AND TITLE 20, STANISLAUS COUNTY SUBDIVISION CODE HAVE BEEN COMPLIED WITH, AND THE MAP IS TECHNICALLY CORRECT.

DATED THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 19\_\_

COUNTY SURVEYOR \_\_\_\_\_

BY \_\_\_\_\_ TITLE \_\_\_\_\_



(Name & Address of the Engineer and/or Surveyor)

**PARCEL MAP**

A PORTION OF SECTION \_\_\_\_\_, T. \_\_\_\_\_ S.,  
 R. \_\_\_\_\_ E., M.D.M., STANISLAUS  
 COUNTY, CALIFORNIA

SCALE: 1" = \_\_\_\_\_' (MONTH), 199\_\_  
 COUNTY FILE NO. \_\_\_\_\_

SHEET 1 OF 2

The wording of the statements may change.  
 All signatures must have the printed name by the signature

STANDARD SIZE FOR ALL MAPS SHALL BE 18"x 26" WITH A 1" BLANK MARGIN.

**LEGEND**

- MONUMENT FOUND AS NOTED
- MONUMENT SET. A 3/4" IRON PIPE TAGGED
- ALL DISTANCES ARE MEASURED UNLESS OTHERWISE NOTED.
- (A) VOLUME --- OF SURVEYS, PAGE ---
- (B) VOLUME --- OF OFFICIAL RECORDS, PAGE ---

**GENERAL NOTES**

1. ALL BEARINGS AND DISTANCES SHOWN ARE MEASURED UNLESS OTHERWISE NOTED.
2. ALL DISTANCES AND DIMENSIONS SHOWN ARE IN FEET AND DECIMALS THEREOF.
3. ALL RECORD INFORMATION IS FROM STANISLAUS COUNTY RECORDS UNLESS OTHERWISE NOTED.

**BASIS OF BEARINGS**

THE BEARING OF --- FOR THE --- LINE OF SECTION ---, T. ---S, R. ---E., M.D.M., AS SHOWN IN VOLUME --- OF SURVEYS AT PAGE ---, STANISLAUS COUNTY RECORDS.

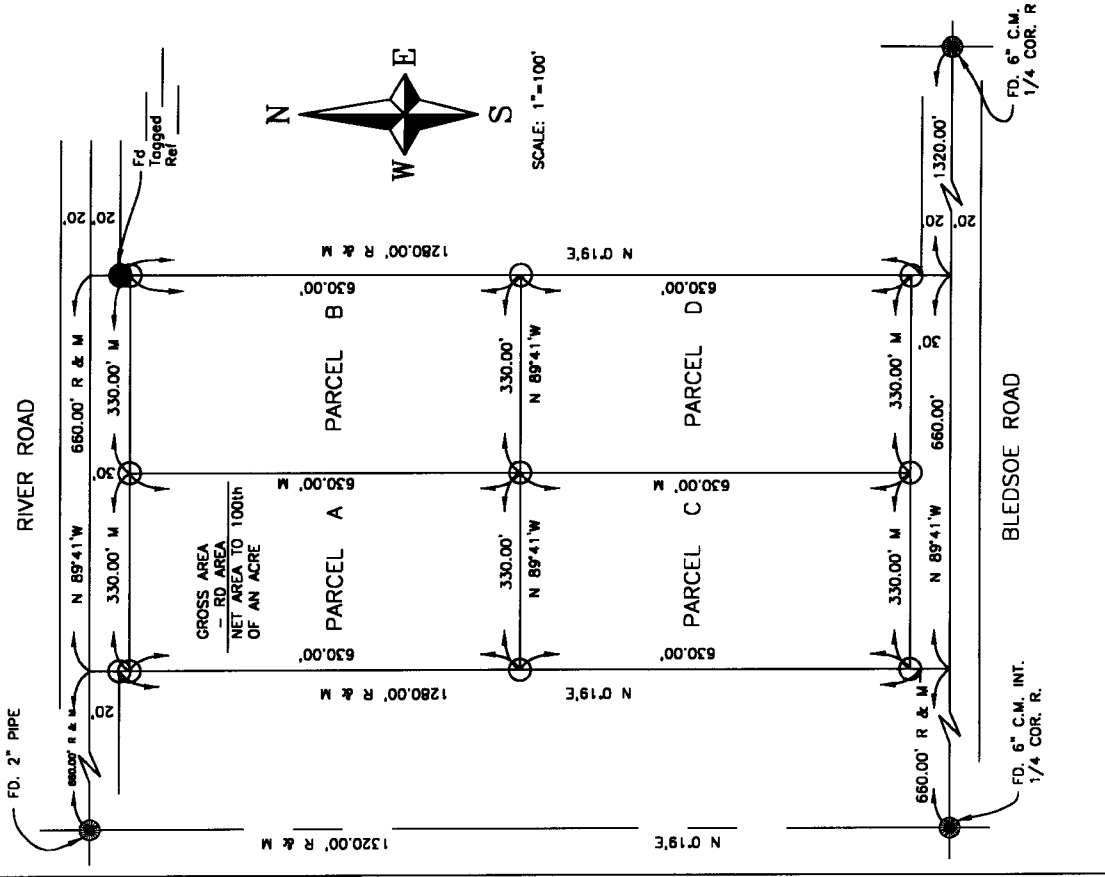
**RECORDERS STATEMENT**

FILED THIS --- DAY OF ---, 199---, AT --- O'CLOCK ---M IN BOOK --- OF PARCEL MAPS AT PAGE ---, STANISLAUS COUNTY RECORDS, AT THE REQUEST OF --- BY --- FEE --- PAID ---

**PARCEL MAP**

A PORTION OF SECTION ---, T. ---S, R. ---E., M.D.M., STANISLAUS COUNTY, CALIFORNIA.

SCALE: 1" = --- (MONTH), 199--- COUNTY FILE NO. --- SHEET 2 OF 2



APPROVED *[Signature]* DATE JUN 9 1998  
 DIRECTOR OF PUBLIC WORKS

See Subdivision Map Act & Land Surveyors Act for map requirements  
 STANDARD SIZE FOR ALL MAPS SHALL BE 18" x 26" WITH A 1" BLANK MARGIN.  
 The wording of the statements may change.

IMPROVEMENT STANDARDS

STANISLAUS COUNTY
TYPICAL PARCEL MAP
SHEET 2 OF 2
PLATE 1-B2

# HAPPY HILLS ESTATES UNIT NO. 1

**OWNER'S STATEMENT:**  
I, THE UNDERSIGNED, DO HEREBY STATE THAT I AM THE OWNER OR HAVE SOME RIGHT, TITLE OR INTEREST IN THE LAND SHOWN ON THIS MAP AND I CONSENT TO THE MAKING AND FILING OF THIS MAP IN THE OFFICE OF THE COUNTY RECORDER OF STANISLAUS COUNTY, CALIFORNIA. I ALSO OFFER FOR DEDICATION TO THE PUBLIC FOR PUBLIC USE, ALL THE STREETS, AVENUES, ROADS, ROAD WIDENINGS, EASEMENTS, WATER RIGHTS, AND OTHER PUBLIC PLACES AND DEDICATIONS AS SHOWN WITHIN THE EXTERIOR BOUNDARY OF THE LAND BEING DIVIDED.

BY: \_\_\_\_\_  
TRUSTEE: \_\_\_\_\_

**ALL-PURPOSE ACKNOWLEDGMENT**

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_  
ON \_\_\_\_\_ BEFORE ME, \_\_\_\_\_ (NAME, TITLE OF OFFICER, PERSONALLY APPEARED OR ON THE BASIS OF SAID PERSONAL KNOWLEDGE TO BE THE PERSONS) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/IT/ THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES) AND THAT BY THE SIGNATURE(S) OF SAID PERSON(S) AND THAT BY THE SIGNATURE(S) OF SAID ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

WITNESS MY HAND AND OFFICIAL SEAL.  
\_\_\_\_\_  
SIGNATURE  
\_\_\_\_\_  
EXPIRATION DATE

THE SIGNATURES OF SAID EASEMENT HOLDERS MAY BE OMITTED, PURSUANT TO TITLE 7, DIVISION 2, CHAPTER 2, ARTICLE 2, SECTION 66436 (C) OF THE GOVERNMENT CODE.

**TAX COLLECTOR'S STATEMENT:**

THIS IS TO STATE THAT THERE ARE NO LENS FOR ANY UNPAID STATE, COUNTY, SCHOOL, MUNICIPAL OR IRRIGATION TAXES OR SPECIAL ASSESSMENTS, EXCEPT TAXES OR SPECIAL ASSESSMENTS NOT YET PAYABLE, AGAINST THE LAND SHOWN ON THIS MAP.

DATE: \_\_\_\_\_ BY: \_\_\_\_\_ DEPUTY \_\_\_\_\_ PRINT NAME \_\_\_\_\_ COUNTY TAX COLLECTOR

**BOARD OF SUPERVISOR'S STATEMENT:**

THIS IS TO STATE THAT THIS MAP IS DULY ACKNOWLEDGED, STATED AS REQUIRED BY LAW, TO HAVE BEEN PREPARED BY AN ENGINEER, SURVEYOR, BODY HAVING CONTROL OF THE ROADS, HIGHWAYS, STREETS, ALLEYS, LAKES, WAYS, EASEMENTS, PLACES, ETC., IN THE TERRITORY SHOWN ON THIS MAP AND IT IS ORDERED THAT ALL ROADS, HIGHWAYS, STREETS, AVENUES, ALLEYS, LANES, WAYS, EASEMENTS, PLACES, ETC., NOT BE ACCEPTED AT THIS TIME, BUT RESERVING THE RIGHT TO ACCEPT AT ANY FUTURE TIME ON BEHALF OF THE PUBLIC, OTHERWISE THIS MAP IS APPROVED.

DATED THIS \_\_\_\_\_ OF \_\_\_\_\_, 199\_\_

CHAIR OF THE BOARD OF SUPERVISORS \_\_\_\_\_

ATTEST: \_\_\_\_\_, CLERK OF THE BOARD OF SUPERVISORS

BEING A SUBDIVISION OF A PORTION OF PARCEL "1", AS FOUND IN BOOK \_\_\_\_\_ OF PARCEL MAPS, PAGE \_\_\_\_\_, STANISLAUS COUNTY RECORDS, LYING IN THE SOUTHEAST 1/4 OF SECTION \_\_\_\_\_, T. \_\_\_S., R. \_\_\_E., M.D.M.

STANISLAUS COUNTY CALIFORNIA

(Name & Address of the Engineer and/or Surveyor)

**CLERK OF THE BOARD OF SUPERVISOR'S STATEMENT:**

THIS IS TO STATE THAT THE OWNERS OF THE PROPERTY SHOWN ON THE ACCOMPANYING MAP HAVE FILED WITH THE BOARD OF SUPERVISOR'S: (CHECK ONE)

- A) A BOND OR DEPOSIT APPROVED BY SAID BOARD TO SECURE THE PAYMENT OF ANY AND ALL ASSESSMENTS COLLECTED AS TAXES WHICH ARE AT THE TIME OF FILING THIS MAP, A LIEN AGAINST SAID PROPERTY OR ANY PART THEREOF.
- B) RECEIVED TAX BILL OR BILLS OR SUCH OTHER EVIDENCE AS MAY BE REQUIRED BY SAID BOARD SHOWING FULL PAYMENT OF ALL APPLICABLE TAXES.

DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 199\_\_

CLERK TO THE BOARD \_\_\_\_\_

DEPUTY \_\_\_\_\_

Stanislaus County Tentative Map # \_\_\_\_\_

STANDARD SIZE FOR ALL MAPS SHALL BE 18" x 26" WITH A 1" BLANK MARGIN. The wording of the statement may change from time to time.

APPROVED \_\_\_\_\_ DATE JUN 9 1998  
DIRECTOR OF PUBLIC WORKS

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
TYPICAL FINAL MAP  
SHEET 1 OF 3  
PLATE NO. 1-C1



# HAPPY HILLS ESTATES UNIT NO. 1

BEING A SUBDIVISION OF A  
PORTION OF PARCEL "1", AS  
FOUND IN BOOK ---, OF PARCEL  
MAPS, PAGE ---, STANISLAUS  
COUNTY RECORDS, LYING IN THE  
SOUTHEAST 1/4 SECT. OF  
SECTION ---, T. ---S., R. ---E.

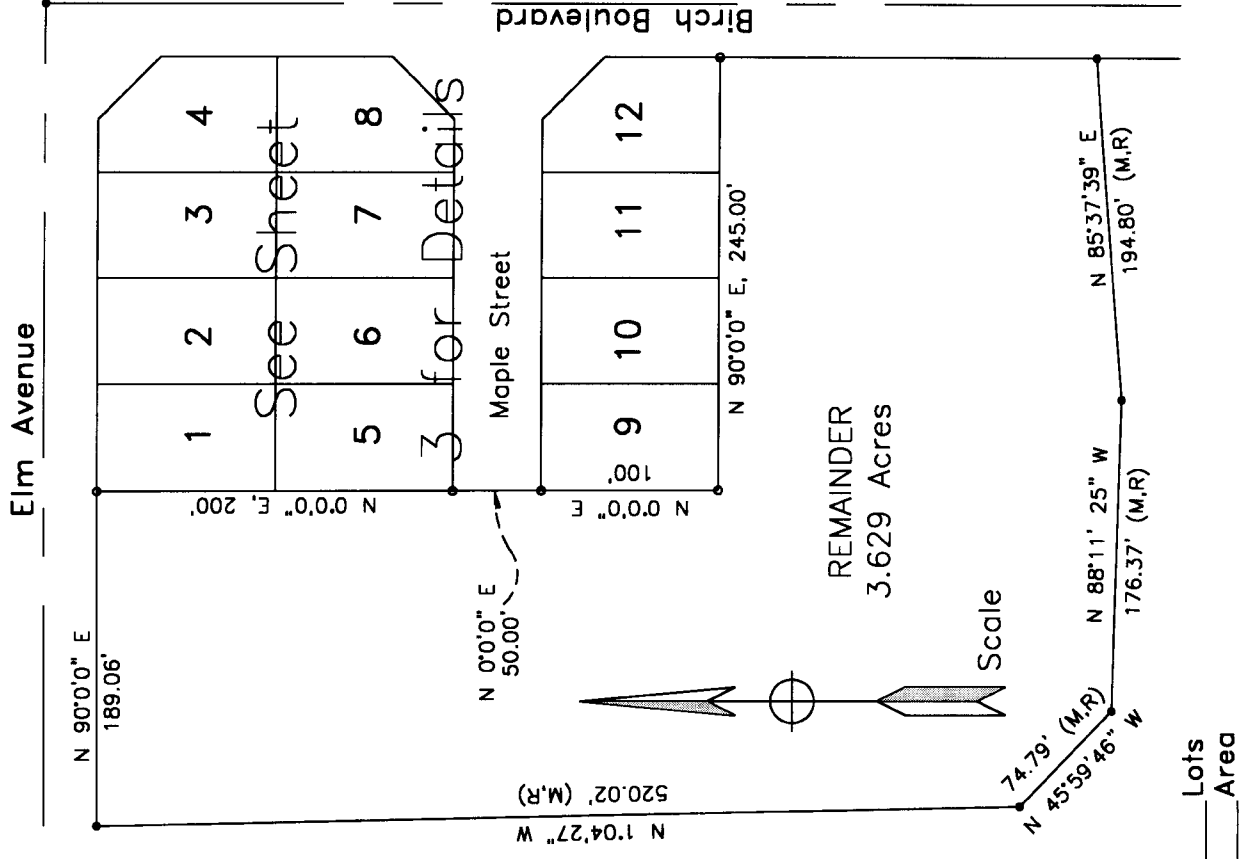
STANISLAUS COUNTY CALIFORNIA  
  
(Name & Address of the  
Engineer and/or Surveyor)

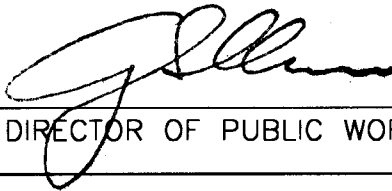
- LEGEND:
- Found 3/4" Iron Pipe, Tagged L.S. XXXX unless noted otherwise
  - Set 3/4" Iron Pipe, Tagged L.S. XXXX
  - └ Set 1/2" Iron Pipe, Tagged L.S. XXXX at all lot corners unless noted otherwise.
  - Set 3/4" Iron Pipe, Tagged L.S. XXXX in Monument Box
- (R.B.) Radial Bearing  
(PUE) Public Utility Easement  
(SCR) Stanislaus County Records

REFERENCES:  
(M) Measured Distances, all distances are measured unless otherwise noted.  
(R) Record per: Book 42, of Parcel Maps, Page 78, (S.C.R.)

BASIS OF BEARINGS:  
The Bearing of N 0°07'57" E, for the North Line of the Southeast 1/4 Section of Section 3, as shown in Book XX, of Parcel Maps, Page XX, Stanislaus County Records, was used as the Basis for all Bearings shown on this map.

RECORDER'S STATEMENT:  
Filed the \_\_\_\_\_ day of \_\_\_\_\_, 1998, at \_\_\_\_\_ m.  
in Book \_\_\_\_\_ of Maps, Page \_\_\_\_\_, Stanislaus County Records, at the  
request of Sam P. Surveyor.  
Instrument No. \_\_\_\_\_  
Page 3 of \_\_\_\_\_  
(NAME OF RECORDOR)  
Stanislaus County Recorder  
By: \_\_\_\_\_ Assistant Recorder



APPROVED   
DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

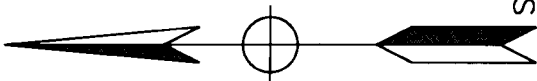
STANISLAUS COUNTY  
TYPICAL FINAL MAP  
SHEET 2 OF 3  
PLATE 1-C2

# HAPPY HILLS ESTATES UNIT NO. 1

BEING A SUBDIVISION OF A  
PORTION OF PARCEL "1", AS  
FOUND IN BOOK ---, OF PARCEL  
MAPS, PAGE ---, STANISLAUS  
COUNTY RECORDS, LYING IN THE  
SOUTHEAST 1/4 SECT. OF  
SECTION ---, T ---S., R. ---E.

STANISLAUS COUNTY CALIFORNIA

(Name & Address of the  
Engineer and/or Surveyor)



**BASIS OF BEARINGS:**  
The Bearing of N 90°07'57" E, for the North Line of the Southeast 1/4 Section of Section X, as shown in Book XX of Parcel Maps, Page XX, Stanislaus County Records, was used as the Basis for all Bearings shown on this Map.

**CURVE DATA:**

Street or Lot	Delta	Radius	Length	Tangent	Chord	Chord Bearing
---	---	---	---	---	---	---
---	---	---	---	---	---	---
---	---	---	---	---	---	---
---	---	---	---	---	---	---
---	---	---	---	---	---	---

**REFERENCES:**

(M) Measured Distance  
(R) Record per: Book XX, of Parcel Maps, Page XX (SCR)

**LEGEND:**

(Insert a legend of symbols here)

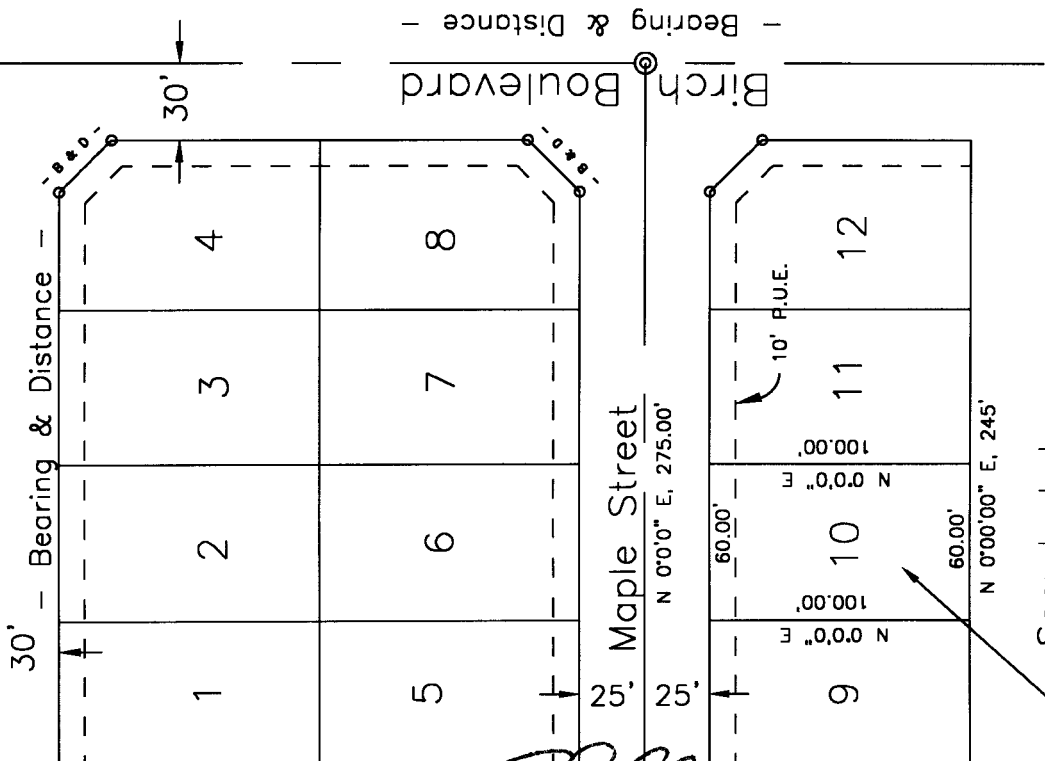
**RECORDER'S STATEMENT:**

Filed this \_\_\_\_\_ day of \_\_\_\_\_, 199\_\_\_\_, at \_\_\_\_\_ M., in Book \_\_\_\_\_ of Maps, Page \_\_\_\_\_, Stanislaus County Records, at the request of \_\_\_\_\_ (Surveyor).  
Instrument No. \_\_\_\_\_  
Fee \$ \_\_\_\_\_ Paid.

By: \_\_\_\_\_ Assistant Recorder  
Stanislaus County Recorder

Sheet 3 of 3

Elm Avenue Tie to Section Corner



APPROVED

*[Signature]*  
DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

NOTE:

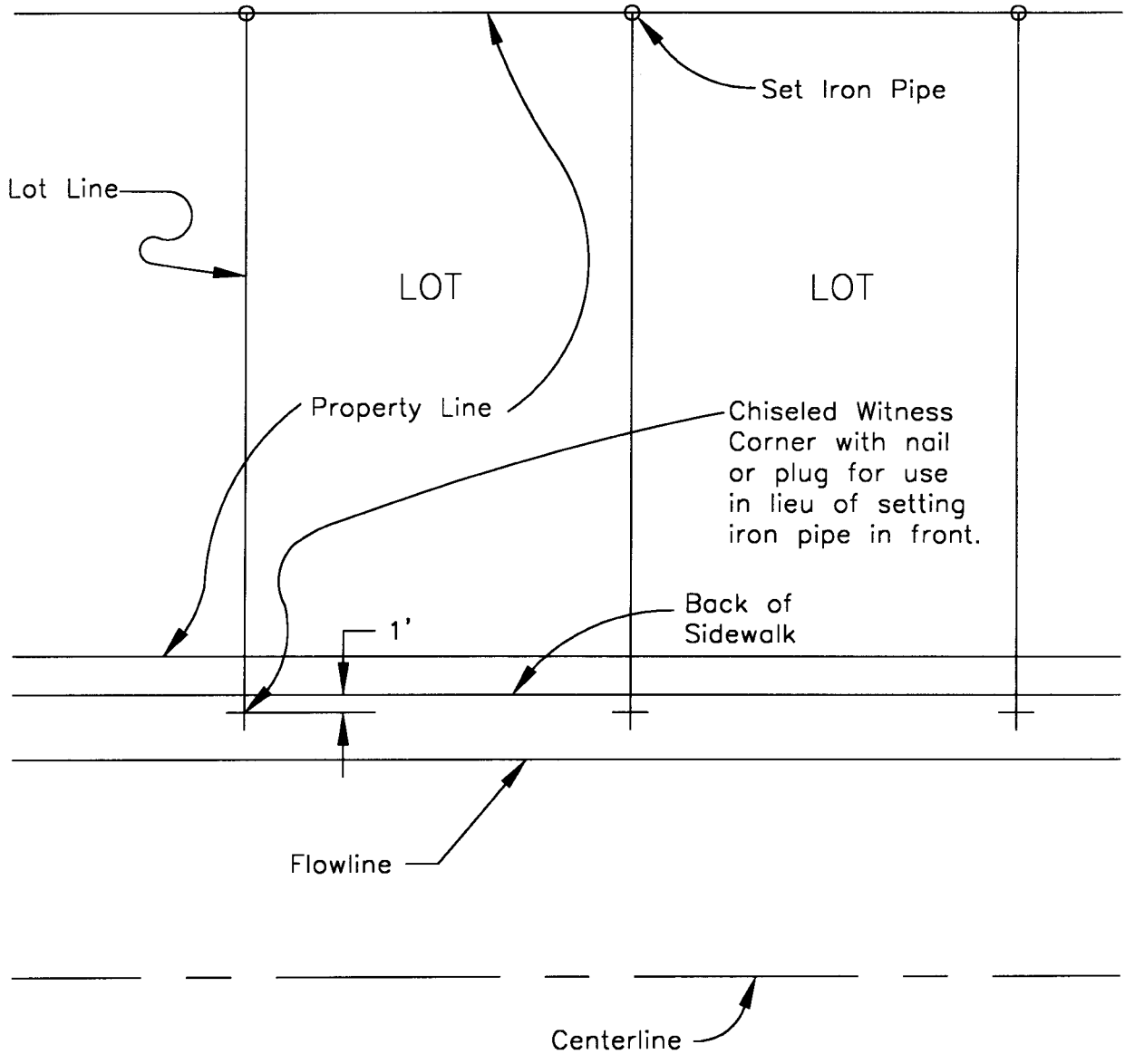
Place dimensions on the Block

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

TYPICAL FINAL MAP  
SHEET 3 OF 3

PLATE 1-C3

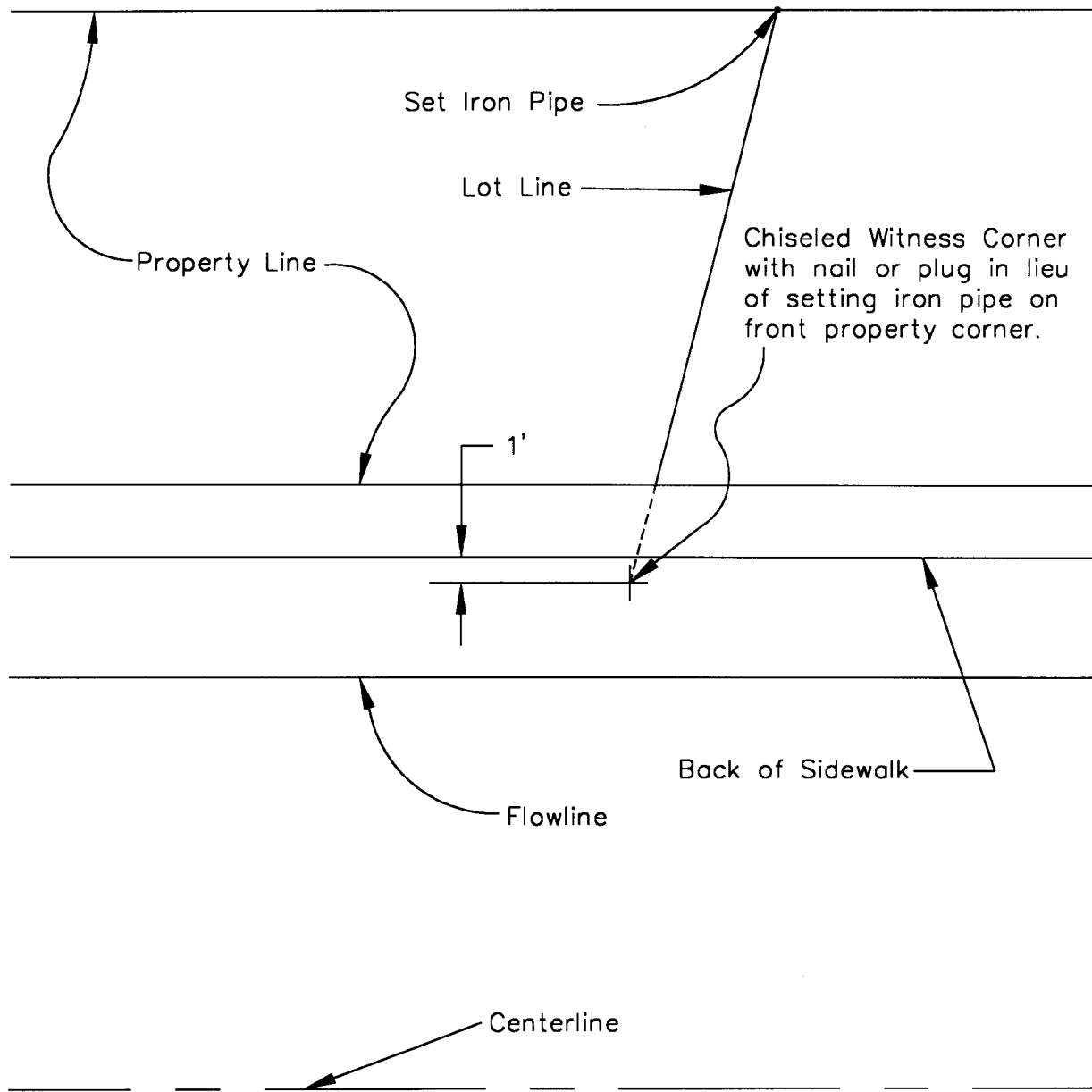


TYPICAL CHISELED WITNESS  
 CORNER IN NEW SUBDIVISIONS  
 FOR 90° LOT LINES

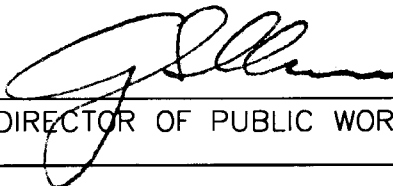
APPROVED *J. J. [Signature]* DATE JUN 9 1998  
 DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY  
 Witness  
 Corners for 90° Lot  
 Lines  
 PLATE 1-D1



TYPICAL CHISELED WITNESS CORNER FOR  
NEW SUBDIVISIONS FOR OTHER THAN  
90° LOT LINES

APPROVED  DIRECTOR OF PUBLIC WORKS

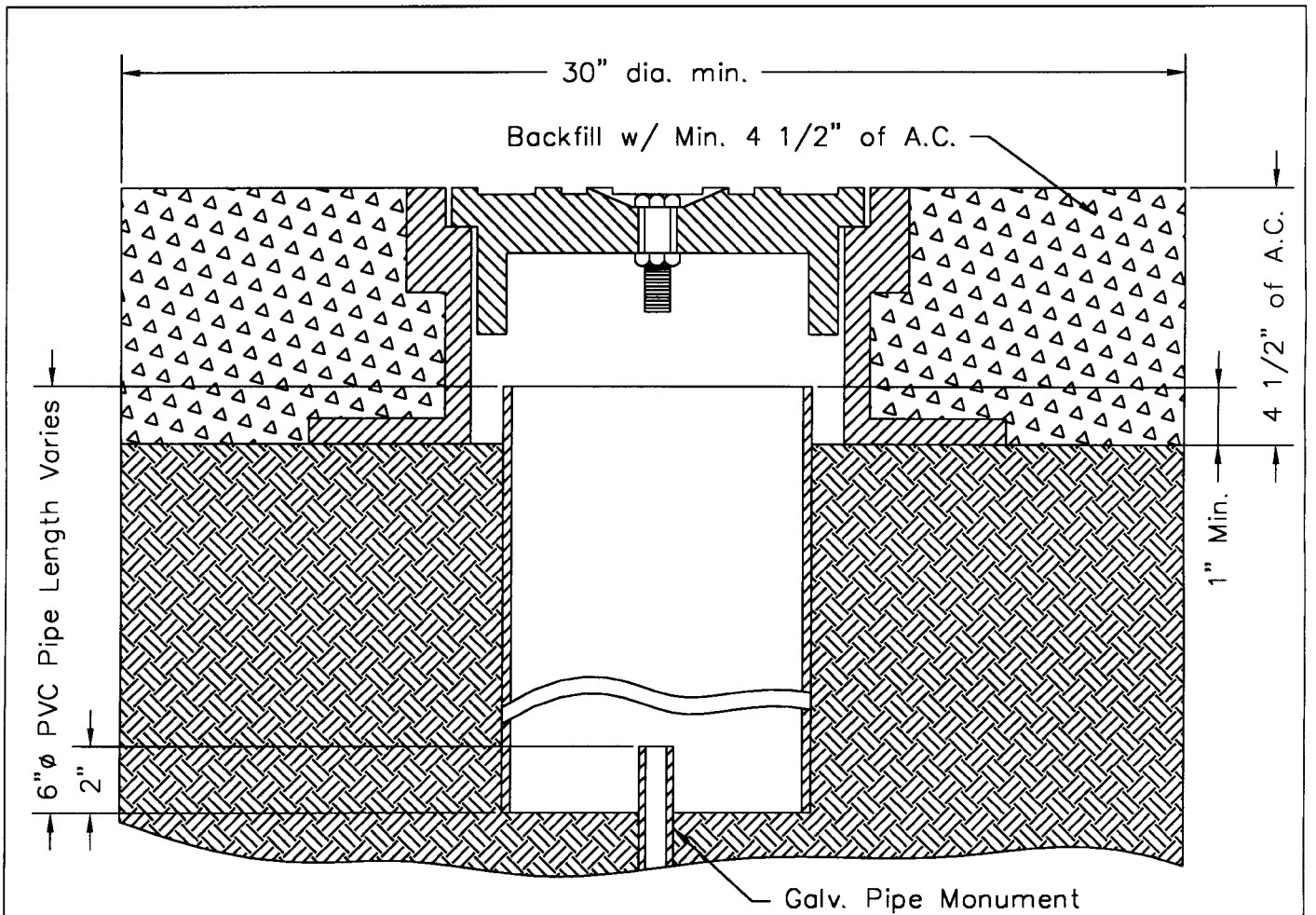
DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

Witness  
Corners for Other than  
90° Lot Lines

PLATE 1-D2



NOTES:

1. Monument box shall resemble cast iron cover in detail 1-E2 or approved equal.
2. Monument cover shall be marked "MONUMENT".
3. The monument shall be a new 3/4 inch X 24 inch long galvanized iron pipe.
4. The monument shall be tagged as required by the State of California Land Surveyor's Act.
5. The monument shall be capped with a survey marker identifying the monument.
6. All government corners shall be 2 inch X 24 inch galvanized iron pipe with identification cap. The County will provide pipe and cap upon request.

APPROVED

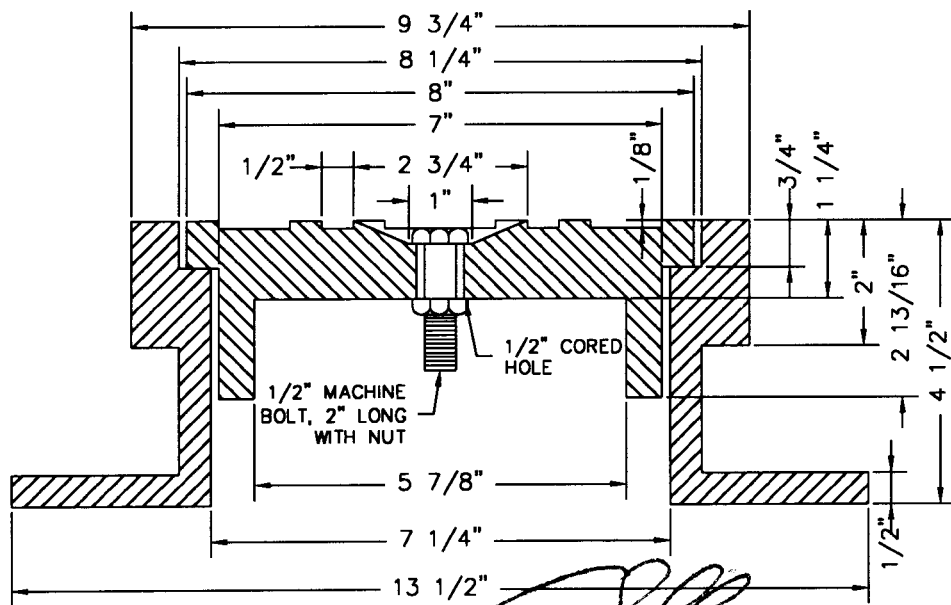
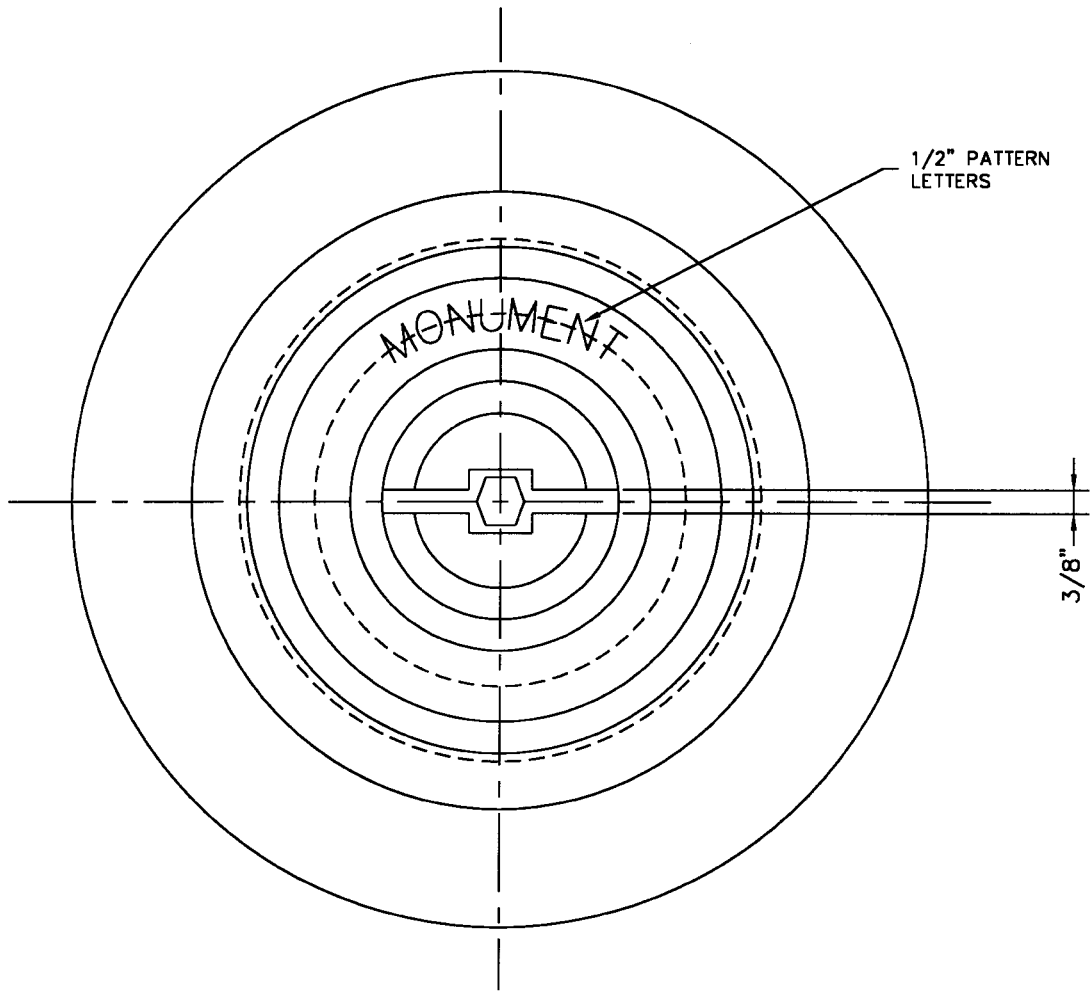
*J. Allen*  
 DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY  
 ROAD MONUMENT  
 SHEET 1 OF 2

PLATE 1-E1



APPROVED

*[Signature]*  
 DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY

ROAD MONUMENT  
 SHEET 2 OF 2

PLATE 1-E2

# SUGGESTED DRAFTING STANDARDS

DESCRIPTION	TO BE CONSTRUCTED	EXISTING
SANITARY SEWER		
STORM SEWER		
GAS LINE		
WATER LINE		
TELEPHONE		
CABLE TELEVISION		
GAS VALVE		
WATER VALVE		
ELECTRICAL CONDUIT		
MATCH LINE		
MANHOLE		
CATCHBASIN		
GAS METER		
WATER METER		
CURB AND GUTTER		
SIDEWALK		
DRIVEWAY		
CONFORM PAVEMENT		
FIRE HYDRANT		
SIGN		

APPROVED DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998




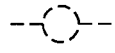
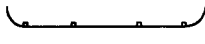
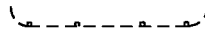
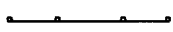
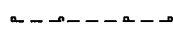
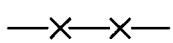
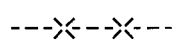
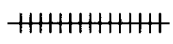

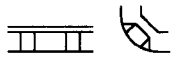
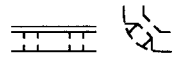
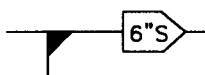
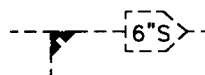
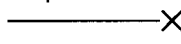
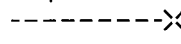
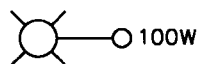
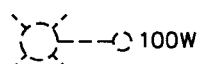
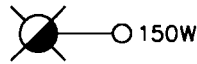
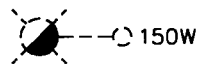
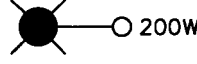
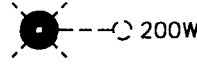




## IMPROVEMENT STANDARDS

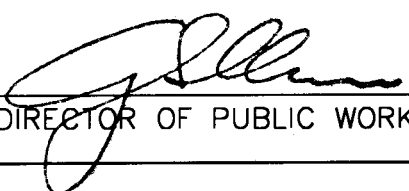
STANISLAUS COUNTY

DRAFTING STANDARDS  
SHEET 1 OF 3

PLATE 1-F1

# SUGGESTED DRAFTING STANDARDS

DESCRIPTION	TO BE CONSTRUCTED	EXISTING
SANITARY SEWER CLEANOUT		
UTILITY POLE		
GUARD RAIL		
BARRICADE		
FENCE		
RAILROAD		
WHEELCHAIR RAMP		
SANITARY SEWER SERVICE		
LAMPHOLE		
STREET LIGHT TYPE A		
STREET LIGHT TYPE B		
STREET LIGHT TYPE C		
POWER SOURCE FOR STREET LIGHT CIRCUIT		
PULL BOX WITH FUSE		

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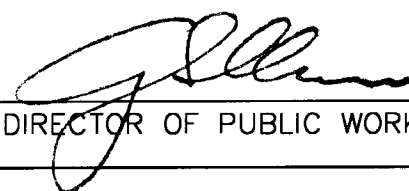
IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY  
 DRAFTING STANDARDS  
 SHEET 2 OF 3  
 PLATE 1-F2



# SUGGESTED DRAFTING STANDARDS

DESCRIPTION	TO BE CONSTRUCTED	EXISTING
ELECTRICAL CONDUIT	— E — E —	— E — E —
PULL BOX		
PULL BOX WITH DETECTOR STUB IN CONDUIT		
COMBINATION TRAFFIC SIGNAL WITH BACKPLATE & LUMINAIRE		
VEHICLE SIGNAL WITH AND WITHOUT BACKPLATE		
COMBINATION TRAFFIC SIGNAL, GREEN ARROW AND BACKPLATE		
MASTARM SIGNAL WITH STREET NAME SIGN		
PROGRAMMED VISIBILITY HEAD WITH BACKPLATE		
PEDESTRIAN SIGNAL FACE		
PEDESTRIAN PUSH BUTTON AND ASSOCIATED VEHICLE PHASE	PPB ∅ 6	PPB ∅ 6
INDUCTIVE DETECTOR LOOP		
TRAFFIC SIGNAL CONTROLLER CABINET WITH DOOR SWING AS SHOWN		
TYPE III OR III M SERVICE CABINET WITH DOOR SWING AS SHOWN		

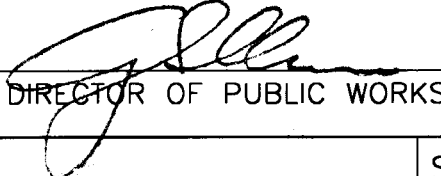
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## IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
DRAFTING STANDARDS  
SHEET 3 OF 3  
PLATE 1-F3

ABBREVIATIONS

- AAN American Association of Nurserymen
- AASHTO American Association of State Highway and Transportation Officials
- ACI American Concrete Institute
- ACPA American Concrete Pipe Association
- AISC American Institute of Steel Construction
- AISI American Iron and Steel Institute
- AREA American Railway Engineering Association
- ASA American Standards Association
- ASME American Society of Mechanical Engineers
- ASTM American Society of Testing and Materials
- AWG American Wire Gage
- AWS American Welding Society
- AWWA American Water Works Association
- CSAS California State Accessibility Standards
- CAC California Administrative Code
- EIA Electronic Industrial Association
- IEEE Institute of Electrical and Electronics Engineers
- OSHA Occupational Safety & Health Administration
- UBC Uniform Building Code
- UL Underwriters' Laboratories, Inc.
- USA Underground Service Alert

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IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

COMMON  
ABBREVIATIONS

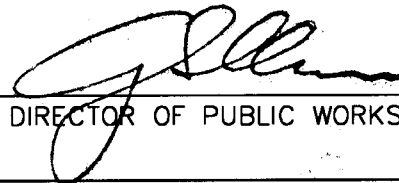
PLATE 1-G

**STANISLAUS COUNTY  
CONSTRUCTION NOTES**

The following notes shall be placed on all improvement plans.

1. Prior to starting any work, the contractor shall obtain a encroachment permit from the Stanislaus County Department of Public Works.
2. All material and work shall conform to Stanislaus County specifications and improvement standards. All improvements are subject to the inspection and approval of the Public Works Department.
3. The contractor shall, call U.S.A. at least forty-eight (48) hours prior to doing any excavating.
4. These plans have been checked by the Stanislaus County Department of Public Works and/ or authorized representative, but such checking and/or approval does not relieve the developer from his/her responsibility to correct errors, omissions or make changes required by conditions discovered in the field during course of construction.
5. Contractor shall control dust at all times during construction as required by Stanislaus County Department of Public Works.
6. All construction staking for curb, gutter, and sidewalk, sanitary sewers, storm drains, water lines, fire hydrants, electrollers, etc. shall be done under the direction of a registered civil engineer or licensed land surveyor.
7. The contractor shall take precautionary measures to protect all utilities. The contractor shall do no excavation until all utility agencies and the Stanislaus County Department of Public Works have been notified and have been given the opportunity to mark their facilities in the field.
8. House services, fire hydrant laterals, gas and telephone lines, and all other underground utilities shall be installed prior to curb, gutter, and sidewalk construction and street paving.
9. All lines abandoned during construction shall be removed.
10. All independent laboratory inspection called by the Engineer will be paid for by the developer or contractor.
11. Street striping shall include stop bars, centerline striping or markers, crosswalks and all other markings required by the Engineer. Striping shall be done with thermoplastic and reflective markers.
12. All trenches shall be back filled in accordance with Stanislaus County Specifications and Improvements Std..
13. When widening the pavement on an existing road, the existing pavement shall be cut (saw) to a neat line and removed back to an existing adequate structural section, or to the original road section. An exploratory trench, or pot-holing, may be required to determine the limits of pavement removal.

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DATE

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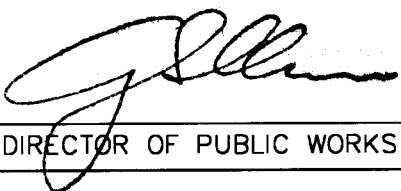
IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

CONSTRUCTION  
NOTES  
SHEET 1 OF 2

PLATE 1-H1

14. Existing curb and sidewalk within the project limits that are damaged or displaced, even through they were not to be removed, shall be repaired or replaced per Stanislaus County Standards even if damage or displacement occurred prior to any work performed by the contractor.
15. Asbestos Cement Pipe (ACP) or fittings shall not be used.
16. Prior to trenching for storm drain pipe, the contractor shall verify, in the field, the size and location of existing pipe at the point of connection. Any deviation from the plans shall be resolved by the design engineer and approved by the County prior to trenching.
17. Manholes, valves, clean outs, etc. shall be brought to finish grade by the underground contractor after the final paving course is placed.
18. Storm drain pipe sizes shall not be changed without the approval of Stanislaus County.
19. All construction site activities shall conform to the State Water Resources Control Board, National Pollution Discharge Elimination System (NPDES), Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity.

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IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY
CONSTRUCTION NOTES
SHEET 2 OF 2
PLATE 1-H2

## CHAPTER 2: SAFETY

- 2.1 GENERAL:** This Safety Section is intended to establish general principles of safety and traffic control while in the performance of any work covered by these Standards.

No specification contained herein shall be deemed to create a legal standard of conduct or duty toward the public, nor shall it limit the County in the exercise of powers conferred by law in modifying the specification under special conditions.

The requirements of the current edition of the State of California Department of Transportation, "Manual of Traffic Controls for Construction and Maintenance Work Zones", herein referred to as the Manual of Traffic Controls, shall take precedence over the requirements of this Safety Section.

- 2.2 TRAFFIC CONTROL:** The safe movement of traffic through construction areas depends upon communicating concise and proper information to the public by signs, channelizing devices, barricades, markings, lighting devices and control of traffic through work zones. All such devices necessary during construction shall be furnished by the Developer. The size, shape and color of such devices shall be as required by the Manual of Traffic Controls. No traffic control devices shall be altered or removed from the construction site without prior approval of the Engineer.

- 2.3 CONSTRUCTION SIGNS:** All signs shall conform to Section 5-02 of the Manual of Traffic Controls.

Signs used for night-time conditions shall be reflectorized or illuminated. The use of orange flags in conjunction with signs is permitted if they do not at any time interfere with a clear view of the sign face.

- 2.4 CHANNELIZING DEVICES:** The functions of channelizing devices are to warn and alert drivers of hazards created by construction or maintenance activities in or near the traveled way and to guide and direct drivers safely past the hazards. Channelizing devices shall conform to Section 5-03 of the Manual of Traffic Controls.

Channelization devices should be uniformly positioned laterally and longitudinally relative to the line of traffic and they must be maintained in an erect position. Consideration must also be given to the necessity for stability against knock-down from wind or from the wash of passing traffic.

Channelization devices for night-time use shall be reflectorized to be visible from 500 feet under normal atmospheric conditions.

**2.5 BARRICADES AND PORTABLE BARRIERS:** The function of barricades is to separate motorists from objects or unusual situations created by construction or maintenance activities in or near the traveled way. All barricades shall conform to Section 5-04 of the Manual of Traffic Controls.

Barricades shall not be used unless they are needed to separate the motorist from objects of greater hazard than the barricades themselves. Barricades should never be used primarily for delineation. The use of non-standard types of barricades, such as drums, buckets, sandbags, etc., can be hazardous and their use is prohibited.

**2.6 MARKINGS:** Pavement markings in conformance with Section 5-05 of the Manual of Traffic Controls shall be required if field conditions warrant their use. They may be required at the discretion of the Inspector.

**2.7 LIGHTING DEVICES:** Construction and maintenance activities create conditions on or near the traveled way that are potentially hazardous, particularly at night when the ability of drivers to see is sharply reduced from daytime conditions. It is necessary to supplement the reflectorized signs, barriers and channelizing devices with lighting devices. All lighting devices shall conform to Section 5-06 of the Manual of Traffic Controls.

**2.8 CONTROL OF TRAFFIC THROUGH WORK ZONES:** The primary function of traffic control procedures is to move traffic safely and expeditiously through or around work zones. All hand signal devices, flaggers, flagging procedures, flagger stations, one-way traffic control, flagger control, flag-carrying or official car, pilot car and traffic control signals shall conform to Section 5-07 of the Manual of Traffic Controls.

Flaggers shall be required, as necessary, for safe conduct of the traffic through the construction zone or as directed by the Engineer. Flaggers shall not be used as a substitute for other warning signs and devices.

**2.9 PRINCIPLES OF WORK ZONE TRAFFIC CONTROL:** In work zones, the work and traffic controls must be coordinated to provide safe and expeditious movement of traffic, while allowing the work to progress as rapidly, safely and efficiently as possible. Placement of all work zone traffic control signs and devices shall conform to Section 5-08 of the Manual of Traffic Controls.

**2.10 ROAD CLOSURES:** A minimum of 7 working days prior to any temporary road closure a traffic control plan (detour plan) prepared by the Developer shall be submitted to the Engineer for review and approval. After Engineer's approval of the traffic control plan, the Developer shall obtain an encroachment permit pursuant to Section 1460 et. seq. of the California Streets and Highway Code. The permit shall be obtained a minimum of 2 working days prior to the actual road closure. The

encroachment permit may require a cash guarantee at the time of issuance to ensure that all requirements of the road closure are met. The Inspector must be notified by the Developer 48 hours prior to the road closure and must be kept informed of closure status. The California Highway Patrol, Stanislaus County Sheriff's Department, Stanislaus County Department of Fire Safety, Stanislaus County all Emergency Dispatch, and the local school districts shall be notified by the Developer of the road closure a minimum of 24 hours prior to the closure.

A copy of the encroachment permit and approved traffic control plan shall be provided to the Inspector upon request. All barricades, warning lights, traffic signs and any other safety devices required by the traffic control plan shall be provided and maintained by the Developer. At the discretion of the Inspector, and based on field conditions, additional safety devices may be required. Protective barricades shall be provided on each side of, and parallel to, an open trench crossing a road when the trench will remain uncovered overnight and/or when work on the trench ceases.

One lane for each direction of through traffic must be maintained; except, where flagmen are provided to control traffic, then one lane may serve both directions. However, roads less than 20' in width shall be used for detouring only one direction of traffic unless the Engineer's approval for use has been previously obtained. When trenching is necessary across intersecting streets, the work shall be done in such a manner as to maintain two-way traffic on cross streets at all times. When detouring a 4-lane road onto a detour route of less than four lanes in width, parking may be prohibited on the detour route at the Engineer's discretion.

Where the trench line crosses an entrance to private property, until the trench is backfilled, access to the property shall be maintained at all times by means of a suitable bridge. Such bridges shall be properly guarded and illuminated at night.

Where any crosswalk is cut by the trench, suitable bridging shall be constructed. Such bridging shall be at least 4 feet in width, shall have suitable hand-railing, shall be properly guarded and shall be illuminated at night.

**2.11 RULES AND REGULATIONS:** All work performed and all materials used by the Developer shall comply with the following: The State Labor Code; the California Administrative Code, Construction Safety Order, Title 8, Subchapter 4; and all other applicable Federal, State and local laws and regulations.

Specifically, the Developer shall furnish, install and maintain all shoring, bracing and sheeting. Any damage resulting from a lack of adequate shoring, bracing or sheeting shall be repaired at the Developer's expense.

Additional requirements may be imposed by the Inspector in the interest of public safety.

**2.12 UNDERGROUND SERVICE ALERT (USA):** USA is a "One-call Notification Center" used for identifying underground facilities prior to digging. The Developer shall call USA at least 48 hours prior to the start of any excavation. All participating members are to be informed by USA of the location, date, time and description of the proposed excavation.

Any existing underground facilities are then to be located and marked in the field by the appropriate USA member organization(s). Request for field meetings shall be included in the initial call to USA.

All excavations shall be in compliance with Section 1540-a(1) of the Construction Safety Orders, (Title 8, California Administrative Code), which states:

"Prior to opening an excavation, effort shall be made to determine whether underground installations; i.e., sewer, water, fuel, electrical lines, etc., will be encountered and, if so, where such underground installations are located. When the excavation approaches the approximate location of such an installation, the exact location shall be determined by careful probing or hand digging; and, when it is uncovered, adequate protection shall be provided for the existing installation. All known owners of underground facilities in the area concerned shall be advised of proposed work at least 48 hours prior to the start of actual excavation."

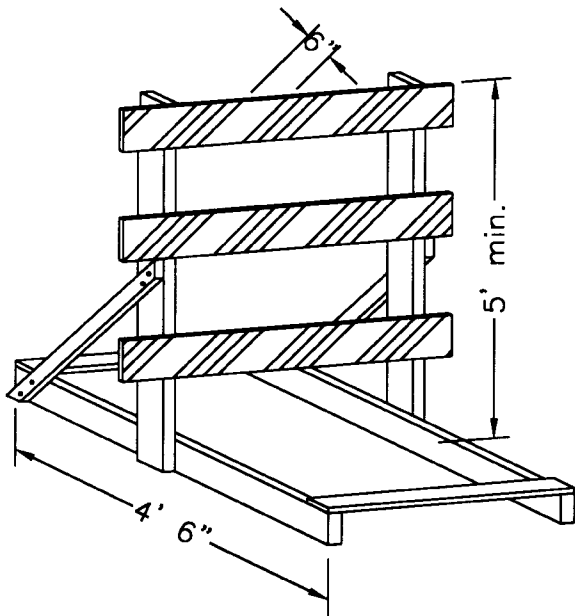
The Developer shall be responsible for the preservation of, and any damage to, both private and public property in conformance with Section 7-1.11 of the State Standards.



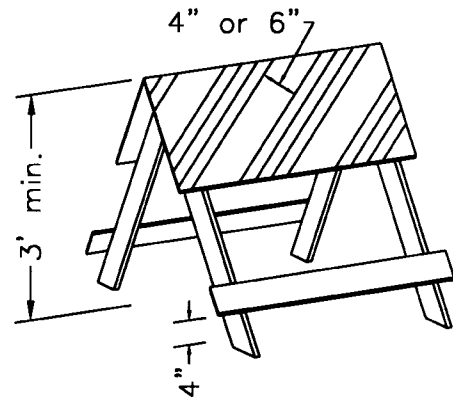
## BARRICADE CHARACTERISTICS

TYPE *	I	II	III
Width of Rail	8" min. - 12" max.	8" min. - 12" max.	8" min. - 12" max.
Length of Rail	2' min.	2' min.	4' min.
Width of Stripes**	6"	6"	6"
Height	3' min.	5' min.	
Number of ReflectORIZED Rail Faces	2 (one each direction)	4 (two each direction)	3 - if facing traffic in one direction. 6 - if facing traffic in two directions.

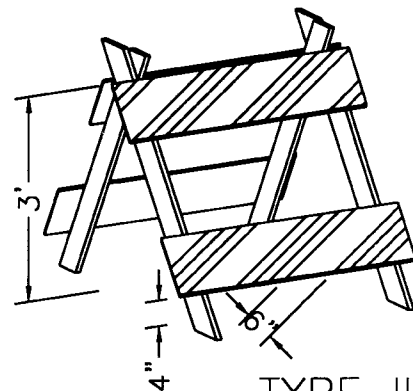
(\*) For wooden barricades nominal lumber dimensions will be satisfactory.  
 (\*\*) For rails less than 3 feet long, 4 inch wide stripes shall be used.



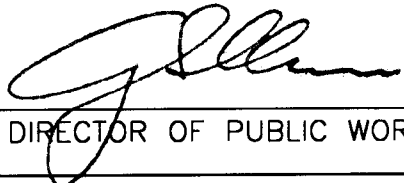
TYPE III



TYPE I



TYPE II

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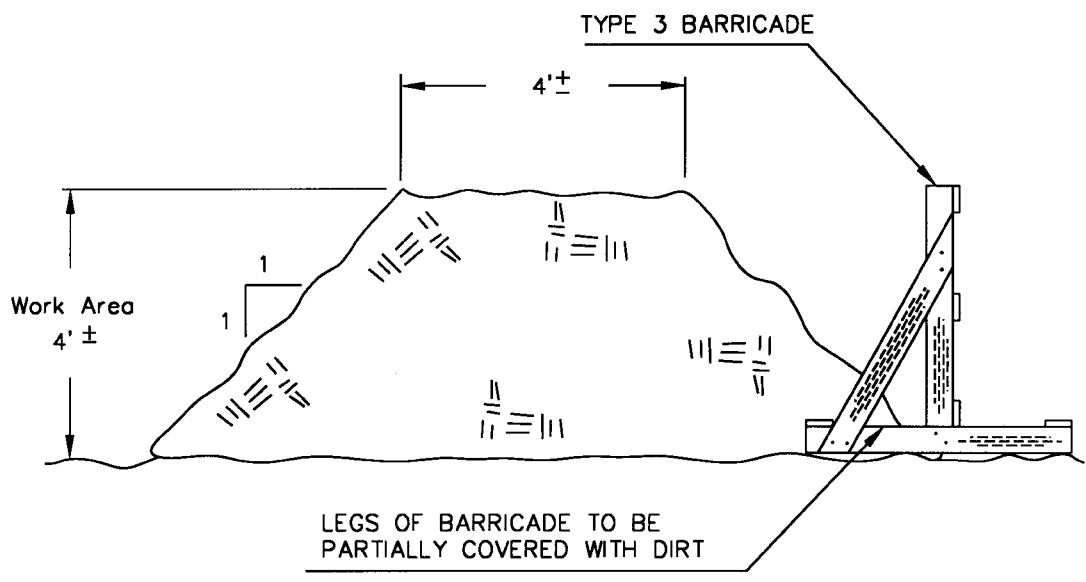
DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

BARRICADE  
PROTECTIVE  
SHEET 1 OF 2

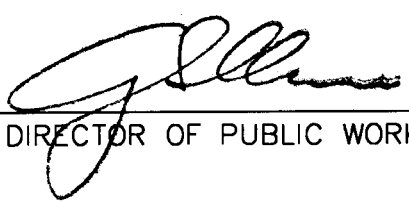
PLATE 2-A1



SCALE: NONE

NOTES:

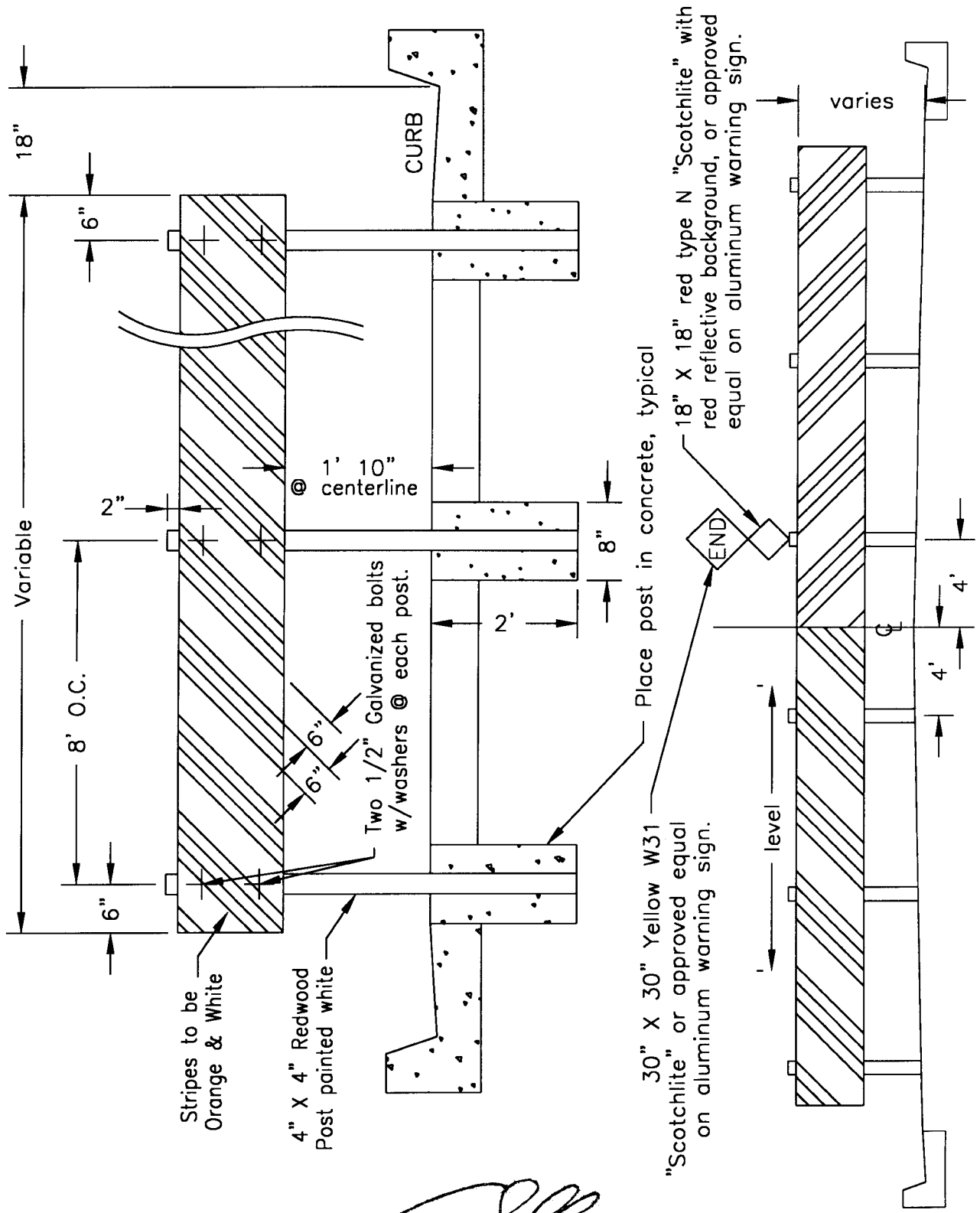
1. The developer shall construct and maintain protective barricades at the locations shown on the detour plan approved by the County.
2. At a minimum, each protective barricade shall consist of three Type 3 barricades, an "N-3", two C2 signs (black on white, 48 inch X 30 inch, 8 inch series "D" letters), and fill material.
3. The developer shall submit to the Engineer plans for the protective barricade. Placement of the fill material and Type 3 barricades shall not begin until the developer receives an encroachment permit from the County.

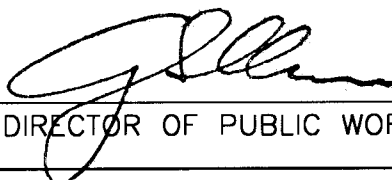
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IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
BARRICADE  
PROTECTIVE  
SHEET 2 OF 2  
PLATE 2-A2

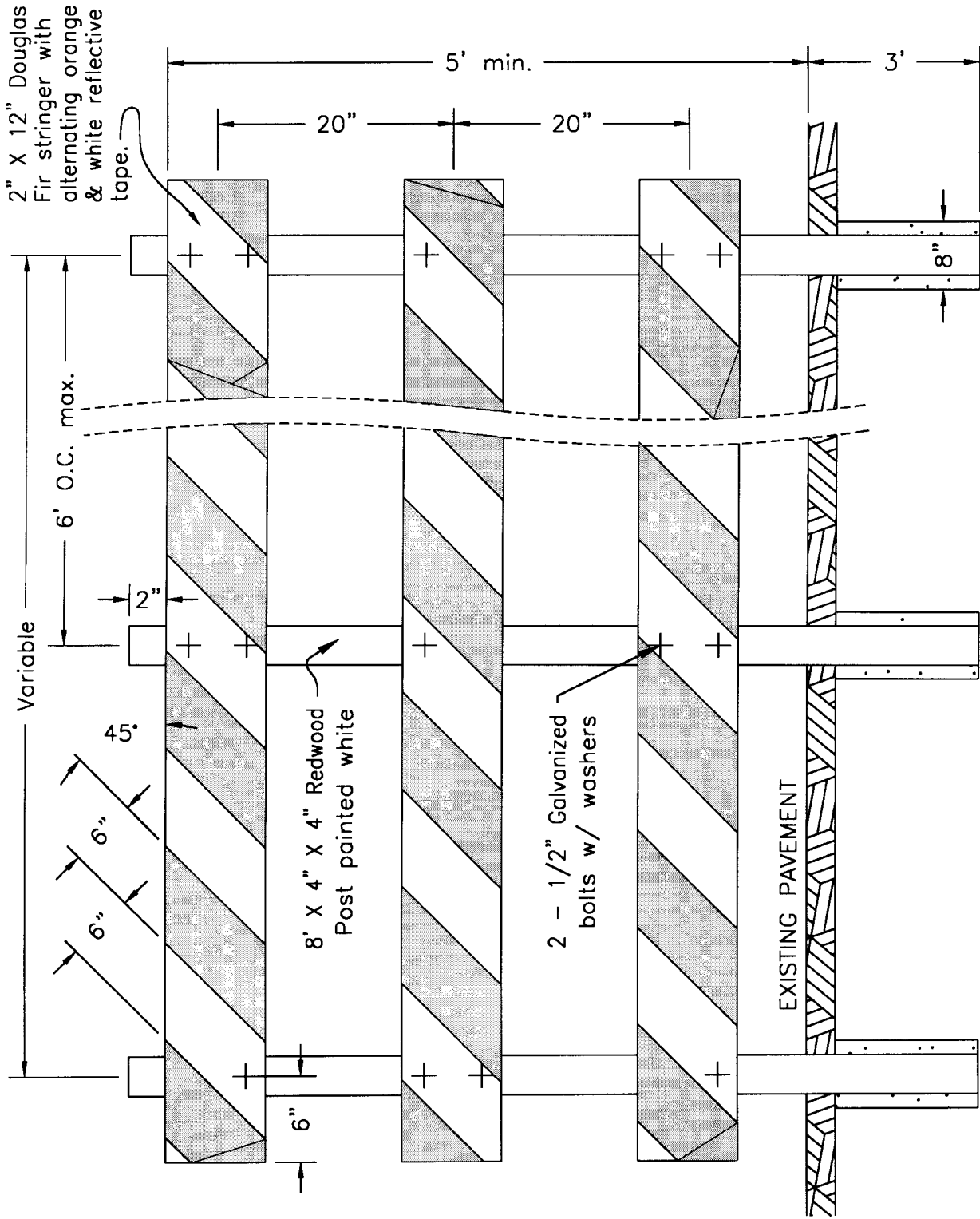


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IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
 BARRICADE  
 DEAD END ROAD  
 SHEET 1 OF 2  
 PLATE 2-A3



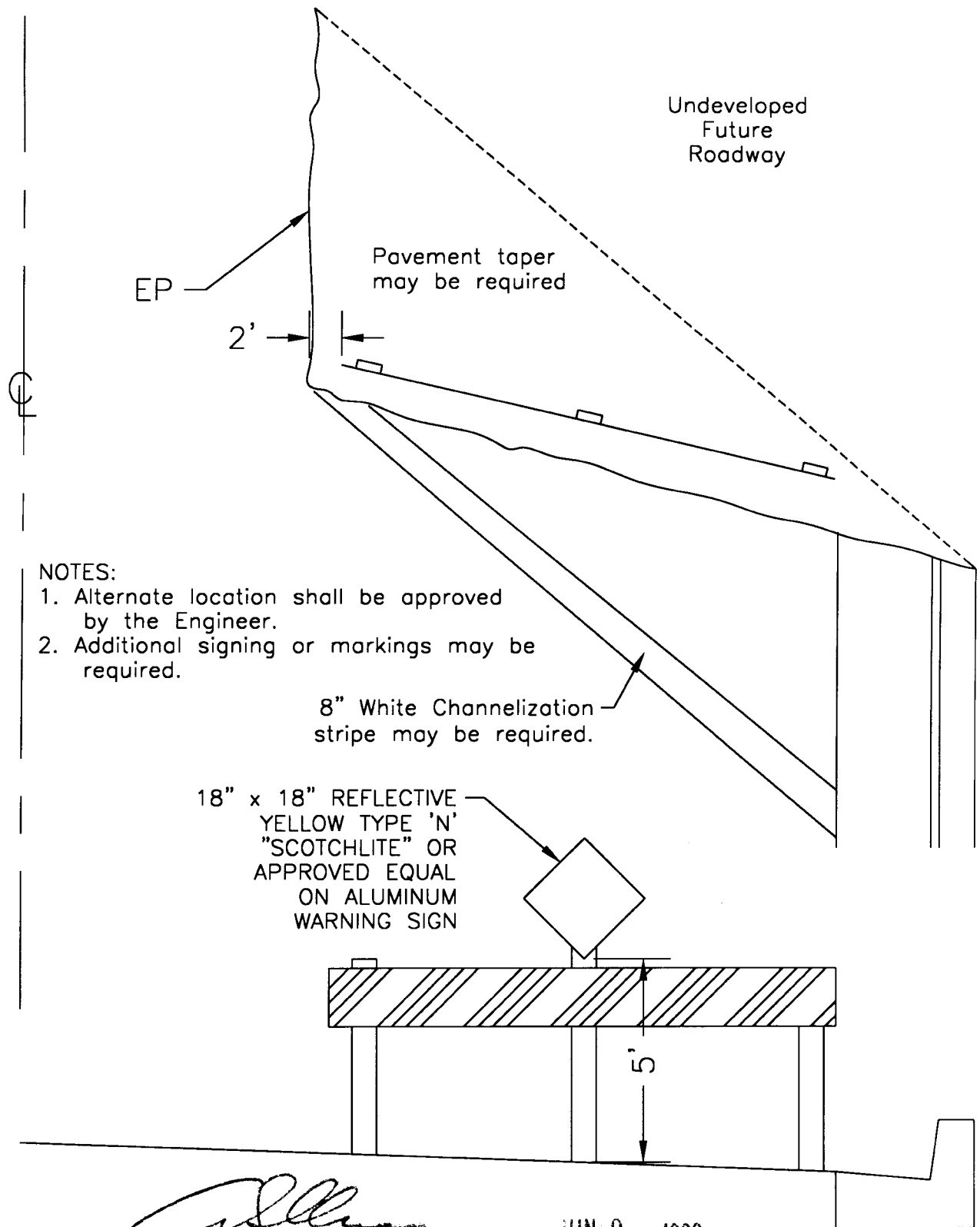
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NOTE:  
Use single board  
barricade unless  
directed otherwise.

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
BARRICADE  
DEAD END ROAD  
SHEET 2 OF 2  
PLATE 2-A4

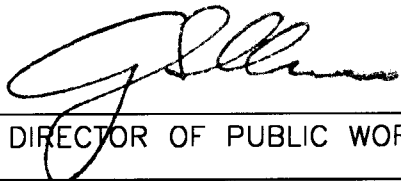


NOTES:

1. Alternate location shall be approved by the Engineer.
2. Additional signing or markings may be required.

8" White Channelization stripe may be required.

18" x 18" REFLECTIVE YELLOW TYPE "N" "SCOTCHLITE" OR APPROVED EQUAL ON ALUMINUM WARNING SIGN

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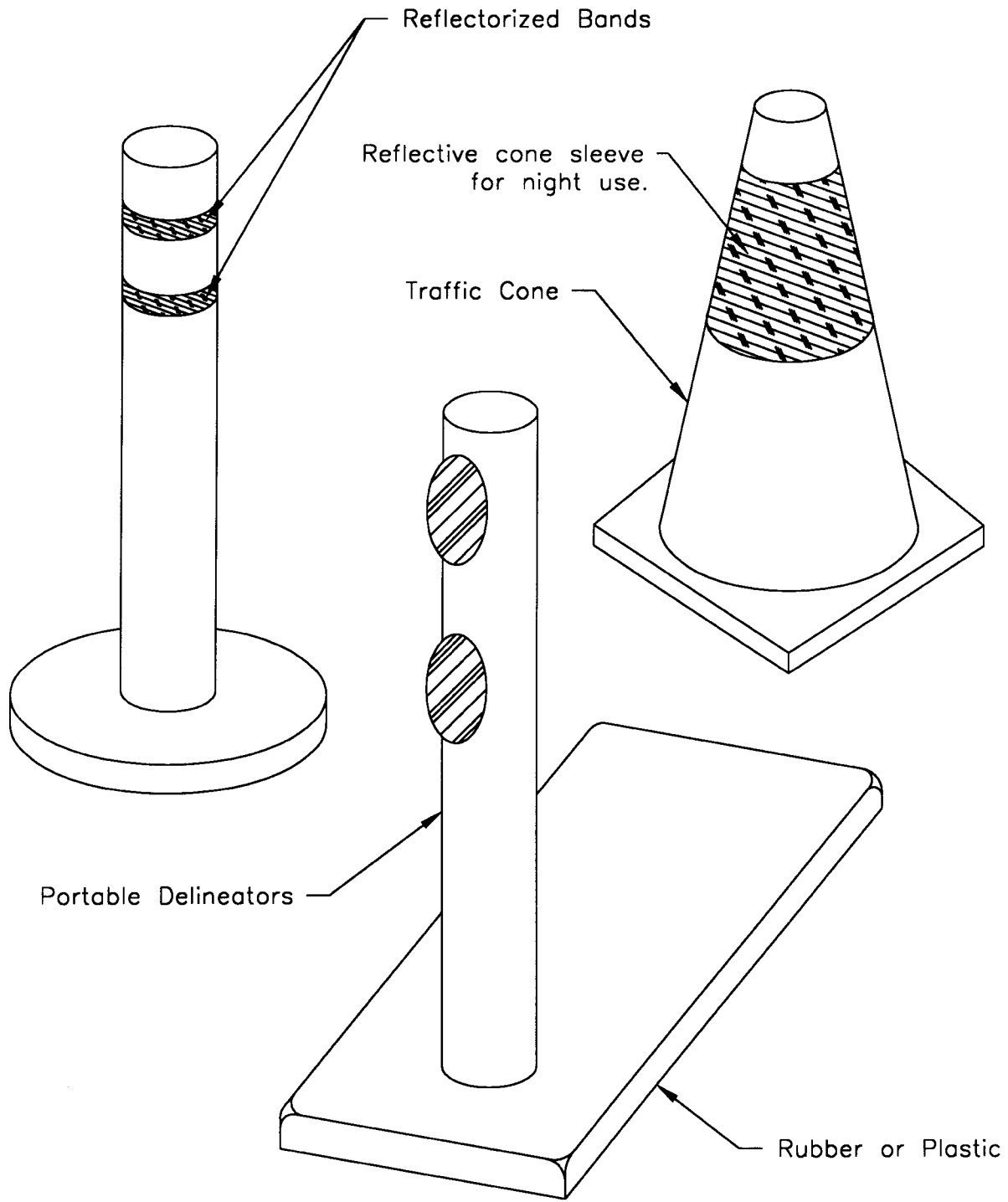
DATE JUN 9 1998

IMPROVEMENT STANDARDS

STANISLAUS COUNTY

BARRICADE ROAD WIDTH TRANSITION

PLATE 2-A5



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DATE JUN 9 1998

IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY

DELINEATORS

PLATE 2-B

## CHAPTER 3: ROADS

- 3.1 GENERAL:** Road improvements in the public right-of-way shall be constructed by the Developer to conform to these Standards.

Only a Developer with an appropriate license and required insurance may perform the work described herein.

Any road improvement damaged by the Developer shall be repaired by the Developer as required by the Engineer.

**3.2 ROAD CLASSIFICATION:**

- a. Minor: A cul-de-sac or a street designed to front 50 or less residential lots and that does not have any through traffic.
- b. Local: A street designed to:
  - 1. Carry traffic from minor streets.
  - 2. Front or service more than 50 residential lots.
  - 3. Prohibit / restrict through traffic between collectors or larger road right-of-ways.
- c. Collector (60' R/W & 80' R/W): A street designed to provide traffic circulation between residential, commercial and industrial areas.
- d. Major: A street designed to join collectors and provide through traffic between other majors, expressways and freeways.
- e. Industrial Minor: A street designed to provide traffic circulation within an industrial subdivision / development.
- f. Industrial Major: A street designed to provide traffic circulation between industrial subdivisions / developments.

- 3.3 GEOMETRIC DESIGN:** Road widths shall conform with the plates contained in these Standards.

The gutter slope shall not be less than 0.20%. With the approval of the Engineer, in problem areas, the gutter slope may be less than 0.20%.

The maximum grade for all roads shall not exceed 6.0% except under exceptional conditions and when the Engineer determines that a steeper grade is necessary. When required by the Engineer, a truck auxiliary lane shall be installed.

The cross slope of County roadways shall be 2.0% for new construction. When matching existing pavement and/or other restrictions, the cross slope may vary between 1.0% and 3.0% upon approval from the Engineer.

Vertical and horizontal alignment shall be designed in accordance with the State Standards.

The following table gives the minimum design speed and radii for various types of roadway:

Type of Roadway	Minimum Horizontal Design Speed <sup>1</sup>	Minimum Centerline Radius (feet)
Minor Interior Subdivision (50 feet R/W)	30	500
Minor Industrial or Commercial	35	600
Urban or Residential 2-Lane Collector	35	600
Urban 4-lane Collector	45	1200
50 foot & 60 foot R/W Rural	55	1800
110 foot R/W Rural Major	65	2200
4-Lane Divided Collector, Urban	45	1200
Urban Major	50	1500
4-Lane Collector, Rural	60	2200
Expressway, Urban	55	1800
Expressway, Rural	70	3000
Major Industrial	45	1200
Rural Foothill Road	45	1200

1. Design Speed for Vertical Alignment shall be 5 m.p.h. higher than the minimum shown.



**3.4 INTERSECTIONS:** Road intersections shall be as close as possible to right angles. Where required by topographic conditions, the angle of intersection may be less than perpendicular but must always be 70° or greater.

Opposing roads entering upon any given road shall have their centerlines directly opposite each other. If centerlines are not opposite each other, then opposing roads intersecting minor or collector roads shall be separated by at least 200 feet. Opposing roads intersecting major roads shall be separated by at least 500 feet.

Roadway and "T" intersections with curb and gutter shall have a curb ramp constructed on all curb returns.

Access roads (non-maintained County roads) or driveways that intersect a roadway which has a structure, shall have its centerline (of the access road) no less than 85 feet from the closest end of the structure.

Only collector or major roads may intersect a major road.

When a 60-foot right-of-way collector road intersects a major road, the right-of-way shall be widened to 70 feet to provide for a left turn lane. The configuration of the bay taper for the left-turn lane shall be per the State Standards.

**3.5 EXISTING ROADWAYS:** The following will be required whenever pavement widening is to be done on an existing roadway unless special conditions require otherwise as determined by the Engineer.

- a. The existing edge of pavement shall be saw cut at a uniform distance parallel to the centerline prior to placement of the paveout.
- b. Structural section thickness shall be per Section 3.7, "Structural Design", of this chapter.
- c. When the Engineer determines a paveout will be temporary, a thinner structural section may be considered for approval by the Engineer.

**3.6 PART WIDTH ROADS:** A part width road shall be defined, for the purpose of these Standards, as a new or existing road on the edge of a subdivision, development or improvement not contained entirely within the parcel boundaries of the subdivision or development. The part width road shall be fully developed on the side adjacent to the development plus 12 feet or more of pavement on the opposite side of centerline.

Part width roads shall be constructed:

- a. On new or existing roads bordering new subdivisions or developments.

- b. If the pavement width on the opposite side of the road adjacent to the improvement or subdivision is inadequate for the safe flow of traffic.
- c. When grade differences or existing profiles create an uneven crown or cross slope.

Any above-ground utilities along the part width road on the side opposite the improvements shall be relocated to the side of the improvements when inadequate right-of-way exists on the opposite side of the part width road as determined by the Engineer.

**3.7 STRUCTURAL DESIGN:** The R-value design method contained in the State Standards shall be used as the basis to determine the structural section of the roads.

The T.I. is based on a 20-year design life.

The minimum T.I. used to determine the structural section, except for intersections listed below, shall be as follows:

<u>ROAD</u>	<u>T.I.</u>
Major	10
Industrial	9
Collector	8
Local	6
Minor	5

The minimum T.I. used to determine the structural section for intersections shall be as follows:

<u>ROAD INTERSECTION</u>	<u>T.I.</u>
Major - Major	11
Industrial - Industrial	10

The limits of an intersection T.I. shall be 50 feet beyond the projection of the flow lines.

These values may be adjusted for those roads designated as bus routes or with significant truck traffic, as determined by the Engineer. The Engineer may approve a specific T.I., other than the minimum, based on an engineering study including a site specific 24-hour vehicle classification count to verify the T.I.

The Developer shall be responsible for obtaining soil R-value tests, specifically supervised by a registered engineer, in sufficient quantity to establish the quality of the soil and to provide a basis for the design of the structural section. R-value

tests shall be taken at Developer's expense. In order to establish the design, R-value tests will be required at the road subgrade elevation. On roads where the frontage is less than 500 feet, two R-value tests shall be made. On roads where the frontage exceeds 500 feet, a minimum of one R-value test shall be taken at each 500-foot interval. Exact locations and number of the R-value tests shall be as approved by the Engineer. The Developer shall stake the field test locations and shall provide an existing ground and finish grade elevation for each test location. The Developer shall provide the results of the R-value tests to the Engineer. The test results shall include a verification signed by a registered engineer that the R-value tests were taken at the depth and locations(s) as shown on the approved plan.

The following table shows the minimum allowable structural section for the given road classifications:

<u>ROAD</u>	<u>ASPHALT CONCRETE</u>	<u>AGGREGATE BASE</u>
	<u>Feet</u>	<u>Feet</u>
Major	0.50	0.35
Industrial	0.45	0.35
Collector	0.40	0.35
Local	0.25	0.35
Minor	0.25	0.35

**3.8 CLEARING AND GRUBBING:** All work shall be done in accordance with Section 16 "Clearing and Grubbing" of the State Standards.

**3.9 EARTHWORK:** Earthwork shall be performed as set forth in Section 19 "Earthwork" of the State Standards.

Relative compaction shall be determined by California Test 231 utilizing the nuclear gauge. California Test 231 shall be modified to use 30-second counts or one-minute counts at the option of the Engineer. Five 30-second warmup counts shall be used instead of ten one-minute counts for testing with 30 second counts.

Section "B" of California Test 231 shall be amended as follows:

"At the discretion of the Engineer, a guide plate measuring approximately 9-3/4 inches x 14 inches x 3/16 inch may be substituted for standard plate. Additionally, a sliding sleeve impact hammer which incorporates a 13/16-inch diameter pin, and is manufactured specifically for use with a nuclear gauge and guide plate, may be used in lieu of standard driving pin."

The Developer shall obtain a disposal site for all of the roadway excavation not used on the job-site. The Developer shall obtain and file with the County a letter showing permission and conditions for use of the disposal site. The Developer shall control dust at the disposal site and keep any roads used free of excess material.

**3.10 AGGREGATE BASE:** The aggregate base material shall conform to the requirements of Section 26 "Aggregate Bases" of the State Standards for Class 2, 3/4 inch maximum combined grading.

**3.11 PRIME COAT:** An asphaltic emulsion shall be used as a prime coat and applied in conformance with Section 39 "Asphalt Concrete" of the State Standards. A prime coat shall be applied only to those areas designated by the Engineer. The prime coat grade shall be approved by the Engineer.

When directed by the Engineer, a sand cover shall be spread over the prime coat at approaches and side roads in order to maintain use. Before through traffic is permitted on the prime coat, all wet spots shall be covered with sand. All loose sand shall be completely removed from the treated areas before the placing of any surfacing material.

**3.12 ASPHALT CONCRETE:** The asphalt concrete shall conform to the requirements of Section 39 "Asphalt Concrete" of the State Standards. Asphalt concrete shall be Type A. Aggregate used in all but the final course shall be 3/4 inch maximum medium grading. Aggregate used in the final course shall be 1/2 inch maximum, medium grading.

The asphalt shall be grade AR 4000 as specified in the State Standards, unless otherwise approved by the Engineer.

- a. The final surface course shall be paved in the number of passes approved by the Engineer starting from the curb and paving toward the centerline.
- b. Rolling equipment shall conform to the requirements of Section 39 "Asphalt Concrete" of the State Standards. Vibratory rollers may be used as approved by the Engineer.
- c. The surface course shall be laid with a self propelled paving machine except when permitted otherwise by the Engineer.
- d. Left turn pockets, tapers, and returns shall be paved independently from the main line paving. Main line paving shall take precedence over any other portion of the roadway paving.

- 3.13 ASPHALT PAINT BINDER:** An asphalt paint binder shall be applied in conformance with Section 39 "Asphalt Concrete" of the State Standards.
- 3.14 SEAL COAT:** A seal coat complying with the requirements of Section 37 "Bituminous Seals" of the State Standards shall be applied to the finished surface of the asphalt concrete.
- 3.15 HEADER BOARDS:** Header boards shall be installed to protect the edges of the asphalt concrete where roads are partially completed in conformance with the plates contained in these Standards.

The boards shall be Douglas Fir with an American Wood Preservers Bureau stamp indicating its use for ground contact and an application of an approved preservative or redwood.

The boards shall be nominal 2 inches x 4 inches, dimensioned of appropriate material.

- 3.16 CONCRETE CURBS AND SIDEWALKS:** Concrete curb and sidewalks shall be constructed and repaired in conformance with the Plates contained in these Standards. Construction shall conform to Section 73 "Concrete Curb and Gutter" of the State Standards. However, where concrete is to be placed on basement material, all soft or spongy material shall also be removed to a depth of not less than 0.5 feet below subgrade elevation for sidewalk and curb ramps.

All concrete surfaces shall have a broom finish.

All earthwork shall conform to Section 19 "Earthwork" of the State Standards.

Weakened plane joints shall have a maximum interval of 10 feet and shall be constructed in conformance with the plates contained in these Standards. Weakened plane joint intervals for curbs shall match adjacent sidewalk. Depth of weakened plane joint shall be a minimum of 1 inch. Concrete shall be scored at equal intervals between weakened plane joints to approximate squares.

All gutters shall be water tested under the supervision of the Inspector.

All sidewalks shall be placed adjacent to curb unless otherwise approved by the Engineer.

All sidewalks placed adjacent to drive over curb shall be 5-1/2 inches thick.

Sidewalk subgrade shall be compacted to not less than 95% relative compaction for a minimum depth of 12 inches.

When removing curb, the asphalt shall be cut a minimum of 12 inches from the lip of curb, unless otherwise directed by the Engineer.

Sidewalks shall have a cross slope toward the curb face of 1/8 inch per foot minimum to 1/4 inch per foot maximum, unless otherwise approved by Engineer.

When matching 6-inch vertical curb sections, the curb return shall also be 6-inch vertical curb.

Unless poured monolithic, all curbs shall be doweled to adjacent sidewalk with No. 4 rebar at intervals not exceeding 5 feet. The rebar shall extend 6 inches into the sidewalk and 3 inches into the curb.

Transitions between different types of curb and different widths of sidewalk shall be constructed as shown on plates contained in these Standards. All curb transitions shall occur outside curb returns.

Traffic, parking and road name signs on County roads which require relocation because of the work will be relocated by the Developer at locations approved by the County. Traffic signs on State highways and stop signs on roads entering State highways must be relocated by Caltrans. Utility poles which require relocation because of the work shall be relocated by the utility company owning the poles. The Developer shall be responsible for protecting the work against damage and insuring the safety of the public.

Sidewalks which are required against the property line shall be placed 1 inch from the property line to provide space for lot corner monuments.

**3.17 APPROACHES:** Approaches shall be constructed and repaired in conformance with the plates contained in these Standards. The construction shall conform to Sections 73 "Concrete Curb and Gutter" and Section 19 "Earthwork" of the State Standards. The Engineer may require additional requirements where these Standards cannot be met.

All concrete surfaces shall have a broom finish.

Weakened plane joints shall be constructed at a maximum interval of 10 feet and in conformance with the plates contained in these Standards. Depth of weakened plane joint shall be a minimum of 1-inch deep.

The width of approaches serving a parcel of land shall conform to the following:

- a. Unless otherwise directed by the Engineer, the width of residential and commercial drive approaches shall conform to the Plates contained in these Standards.

- b.** The total maximum width of approaches shall be the greater of 50% of the road frontage of the property or a single approach with a width conforming to the Plates contained in these Standards. In the case of corner lots, the limitation shall apply to each road frontage.

The minimum distance between approaches serving the same parcel of land shall be 30 feet. The distance between approaches on adjacent parcels may be less than 30 feet.

On-site improvements shall not restrict access to the approach.

Approaches shall be located so they will not interfere with intersecting sidewalks, traffic signals, light poles, fire hydrants or other public improvements unless specific approval is given by the Engineer and the necessary adjustments to the improvements are accomplished without cost to the County.

The number of commercial approaches on a parcel shall be kept to a minimum by making the approach available for multiple uses.

Based on conditions, drop curb approaches may be required for neighborhood shopping centers or other comparable commercial, industrial or multiple-family uses with equal or greater than expected traffic. There shall be only one drop-curb approach for each frontage. In no case shall the approach be closer than 200 feet from the end of an intersection return.

Commercial approaches on major roads shall conform to the following:

- a.** Approach shall be located a minimum of 350 feet from the intersection as measured from intersection centerline to approach centerline.
- b.** When condition No. a cannot be met due to lack of property width, the approach shall be placed at or near the farthest property line from the intersection and a curbed, full-width median extending 100 feet past approach return shall be installed by Developer at Developer's expense.

Commercial approaches on collector roads shall conform to the following:

- a.** Approach shall be located a minimum of 150 feet from the intersection as measured from intersection centerline to approach centerline.
- b.** When condition No. a cannot be met due to lack of property width, the approach shall be placed at or near the farthest property line from the intersection, or a shared driveway may be required.

The approach elevation at the ultimate right-of-way line shall be within 1 foot, either above or below the existing roadway centerline.

The approach shall have its centerlines as perpendicular as possible to the roadway centerline.

- 3.18 ALLEYS:** Commercial and residential alleys shall be constructed in conformance with the Plates contained in these Standards.

Residential R-1 Zone alleys shall be constructed, at a minimum, with a 2-inch crown and surfaced with 2 inches of asphalt over compacted native material.

Alleys used as access to new development shall be improved to a minimum width of 14 feet, unless otherwise approved by the Engineer.

- 3.19 VALLEY GUTTERS:** Valley gutters designed to permit drainage across a road shall be constructed in conformance with the Plates contained in these Standards.

- 3.20 CURB RAMPS:** Curb ramps shall be constructed at all intersections in conformance with the Plates contained in these Standards.

- 3.21 FINAL ADJUSTMENT TO UTILITY COVERS:** The covers for all manholes, lampholes, water valves and survey monuments existing at the time paving takes place shall be adjusted to final grade by the Developer within 10 working days after the pavement has been placed.

Where existing utility boxes are in the work area, their frames and covers shall be removed before subgrade compaction is made and a cover shall be placed to prevent dirt and loose material from entering the facility. Base and surface material shall be placed over the covers, after which the frames and covers shall be set to finish grade in conformance with the plates contained in these Standards.

- 3.22 TESTING:** Material testing required by the Engineer for work done under the provisions of this section shall be provided by the Developer and submitted to the Engineer for approval. Where approved by the Engineer, materials certificates of compliance may be submitted in lieu of actual tests.

- 3.23 INSPECTION:** The Developer shall request inspections as follows:

- a. Completion of subgrade preparation;
- b. Completion of forms installation;
- c. During placement of concrete;



- d. During placement of aggregate base;
- e. Completion of aggregate base grade;
- f. During placement of asphalt concrete;
- g. During drainage facility construction;
- h. During location of pavement markers, pavement markings and signage; and,
- i. Completion of final clean up.

Other inspections to cover special items shall be as determined by the Engineer as needed.

All underground utilities shall be inspected and approved by the governing utility prior to paving. The developer shall provide the Inspector with a letter from all applicable utility companies, approving their respective underground utilities prior to the contractor doing any paving.

**3.24 ACCESS CONTROL WALL:** A 6-foot access control wall shall be constructed between irrigation district laterals and adjacent subdivision lots. A 7-foot access control wall shall be constructed when the subdivision lots back up to freeways, major roads and expressways. Walls shall be higher than 7 feet when required by a noise study. The wall height shall be measured from the highest adjacent finished grade.

The wall shall be shown on the Plans and, if the wall exceeds 6 feet in height, a building permit shall be obtained by the Developer from the Chief Building Official prior to commencement of work on the wall.

For additional information regarding specific construction requirements for access control walls and fences, contact the Chief Building Official.

**3.25 CURBED MEDIANS:** On existing roads of 70 feet from curb to curb or wider, a 6-inch high curbed median shall be installed at the intersection of a major road, at Developer's expense, in conformance with the plates contained in these Standards or as directed by the Engineer.

The median shall extend a minimum of 350 feet from the intersection centerline.

The minimum width of a median shall be 4 feet without landscaping or 8 feet with landscaping.

On new major roads or where part of a road is widened from 2 lanes to 4 or more lanes, a curbed median shall be installed for the full length of the new road or road widening at Developer's expense and shall conform to one of the following:

- a. A 4-foot wide curbed median without landscaping, surfaced with concrete, "Bomonite" or approved equal.
- b. A curbed median ranging in width from 8 feet to 16.5 feet with landscaping. A water barrier shall be installed 6 inches beneath the road structural section.

Breaks in curbed medians shall be at all major and collector roads with a minimum of 600 feet between breaks. Additional breaks shall be as approved by the Engineer.

Traffic lanes adjacent to curbed medians shall be 12.5 feet in width. Specific design of medians and traffic lanes shall be as directed by the Engineer.

**3.26 BUS TURNOUT:** Bus turnouts may be required on major and collector roads where there is a curbside travel lane or the probability of replacing curbside parking with travel lanes. Bus turnouts may be placed approximately 1,000 feet apart, or as directed by the Engineer. Turnouts may be required at all 4 corners at major/major and major/collector road intersections where there is no parking lane or where the parking lane will be eliminated, as directed by the Engineer.

Bus turnouts may be placed on the far side of the intersection in the travel direction. Other locations shall be as determined by the Engineer. Location of mid-block turnouts shall be as approved by the Engineer and shall only be approved if there is no intersection available to accommodate a turn-out within 1000 feet.

Bus turnouts shall be constructed in conformance with the plates contained in these Standards. The slope of the bus turn-out parallel to the roadway shall match the slope of the roadway, unless otherwise approved by the Engineer.

A maximum cross slope of 2% is allowed perpendicular to the roadway in the passenger loading area.

**3.27 BRIDGE AND CULVERT DESIGN:** All bridge and culvert designs shall be in accordance with the California Department of Transportation's Bridge Design Specifications.

The minimum clear width of bridges shall be the traveled way width plus the width of the graded shoulders of the existing or proposed road, whichever is greater, except the minimum width shall be 32 feet in rural areas. In urban areas, the

minimum width of bridges shall be sufficient to accommodate full curb-to-curb width plus standard sidewalks and railings on each side.

For culverts, all headwalls or other appurtenant structures shall be located outside the right-of-way. The maximum fill slope over culverts shall be 4 to 1 or flatter.

All fill below 2 feet above the 100-year flood ( $Q_{100}$ ) elevation shall be protected from erosion by slope protection as approved by the Engineer.

**3.28 BORING:** Private and public facilities that go under a County road shall be bored if one or more of the following conditions exist:

- a. The road pavement is in average or better condition based on Department records and/or field inspection.
- b. The road has been overlaid within the last 10 years or chip-sealed within the last 5 years.
- c. The road is designated as a "Major" or "Expressway" on the County General Plan.
- d. The road carries daily traffic exceeding 2,000 vehicles per day.
- e. Utility service lines and/or connections for placement under the roadway are 10 inches in diameter or less.
- f. The surface area of bore pit(s) excavated in the roadway does not exceed the surface area of a trench needed to perform the same task.

Any request for an exception to the boring requirement shall be in writing stating the reasons why a bore cannot be performed. Exceptions must be approved by the Engineer.

**3.29 TRENCHING:** Trenching across existing County roadways requires prior approval from the Department. All requests for this approval shall be in writing.

All trenching shall conform to OSHA safety requirements.

When groundwater or unstable soil conditions are encountered in excavations, trenches shall be excavated below the subgrade. Aggregate base or other suitable materials shall be placed to provide a firm and stable base for the proposed pipe installation.

All trenching operations shall have adequate provision for the protection of the traveling public on all roads affected by the work.

Excess native material and broken pavement shall be disposed of outside the road right-of-way at an approved disposal area.

Where a trench crosses a roadway, the excavation and backfilling shall be completed prior to the end of the working day. In the event an excavation cannot be backfilled prior to the end of the working day, suitable bridging shall be provided to safely carry vehicular traffic over the excavation.

The patch surface shall not deviate from the finished grade by more than 0.02 foot in elevation. The edges of the patch shall be straight.

If a longitudinal trench excavation damages or destroys more than 50% of the traffic lane width at any point in either lane, that entire lane, together with any part of the trench lying outside the lane, shall receive a 0.1 foot thick minimum finished course asphalt concrete overlay for at least the entire length of the trench, in addition to the full structural section otherwise required. The length of the overlaid areas as required shall be determined by the Engineer. If a longitudinal trench within a traffic lane has an edge 3 feet or less from the edge of that lane, then replace the structural section to the original edge of the lane.

Existing pavement shall be saw cut in a clean straight line.

**3.30 UTILITY PLOWING:** Plowing is only permitted in dirt shoulder areas and not within 3 feet of the edge of pavement.

No equipment shall be permitted to pull a plow from the paved portion of the roadway.

No tract laying equipment without pads is permitted on the road pavement.

All areas disturbed by plowing shall be compacted to 95% relative compaction.

No plowing is permitted during rainy weather or when the shoulder is soggy.

**3.31 UTILITIES:** The location of all new utilities/facilities and the relocation of existing utilities/facilities are subject to the approval of the Department.

All at ground or above ground permitted utilities/facilities shall be placed in Public Utilities Easement (PUE). If no PUE exists, then place the above ground permitted utilities/facilities so that its roadside edge is within 2 feet of the right-of-way line. Place the at ground level utility/facility (manholes, boxes, etc.) so that its roadside edge is within 3 feet of the right-of-way line.

No underground pipelines, conduits, cables, etc., except for sewer, storm drain, and water lines shall be placed under a paved portion of the roadway.

The minimum cover for all underground utilities and/or facilities outside the pavement area shall be the lower of:

- a. 2.5 feet or more below the surface at the point of installation.
- b. 2.5 feet or more below the edge of pavement of the corresponding station.

All utility backfills within 5 feet of the edge of pavement shall be backfilled with a material having a sand equivalent value of not less than 20 and shall be compacted to a relative compaction of not less than 95%. Other locations can use native material and shall be compacted to a relative compaction of not less than 90%. Compaction tests shall be taken at the rate of not less than 1 for each 250 feet of trench in a paved area and 1 for each 500 feet of trench in an unpaved area. The test results shall be filed with the Engineer.

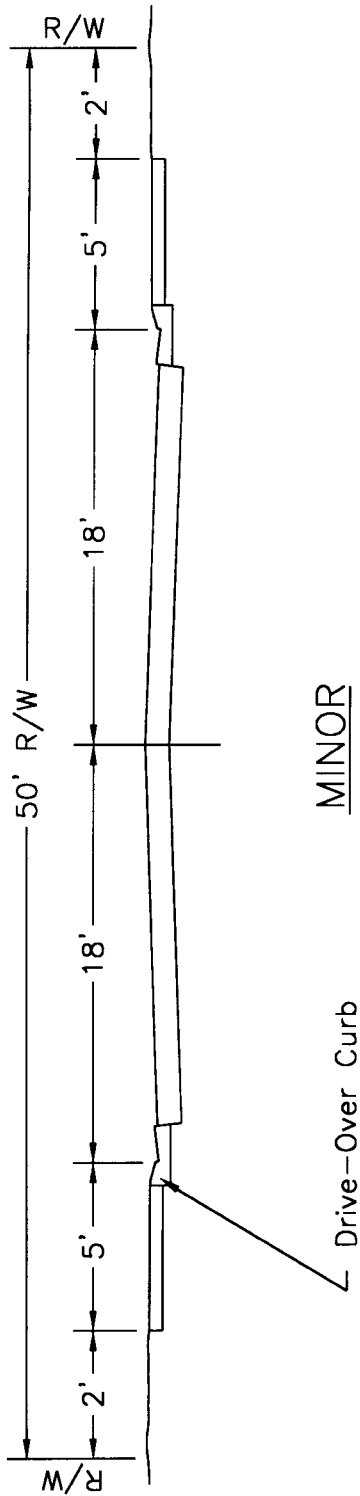
All above ground facilities (poles, pedestals, etc.) should be a minimum of 70 feet from any intersection centerline.

All at-grade facilities (manholes, grates, etc.) in unpaved areas shall have an asphalt pad around them in conformance with the Plate contained in these Standards.

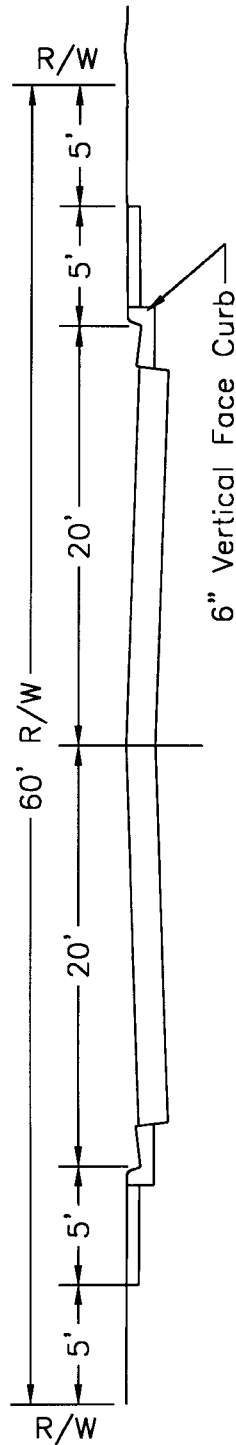
The use of utility poles shall be avoided whenever possible. If above ground poles must be used, use poles already in existence where possible. Two sets of utility poles in the same location or along the same road shall be discouraged.

Route alignment of new or relocated pole lines shall be reviewed and approved by the County prior to construction.

Whenever an underground pipeline facility including, but not limited to water, sewer irrigation, drainage, gas and petroleum products is being relocated or abandoned, the facility no longer being used shall be removed from the right-of-way, unless otherwise approved by the Engineer.



MINOR



LOCAL

NOTE:  
 $S = 1/4"$  per foot between back  
of sidewalk and right-of-way.

*[Signature]*  
DIRECTOR OF PUBLIC WORKS

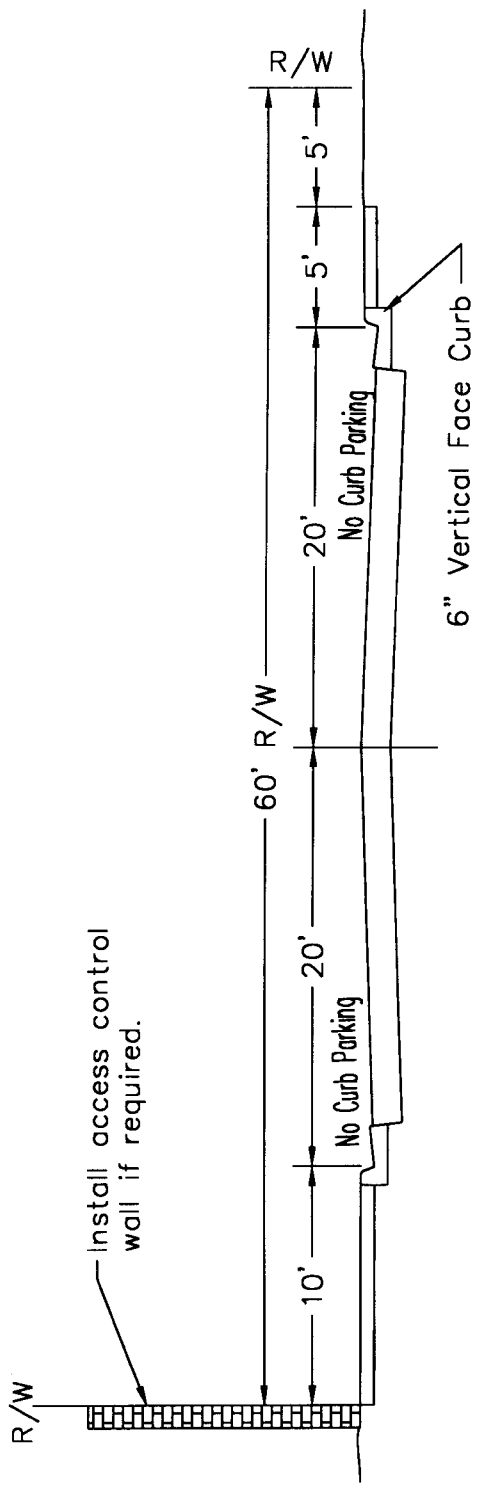
JUN 9 1998  
DATE

# IMPROVEMENT STANDARDS

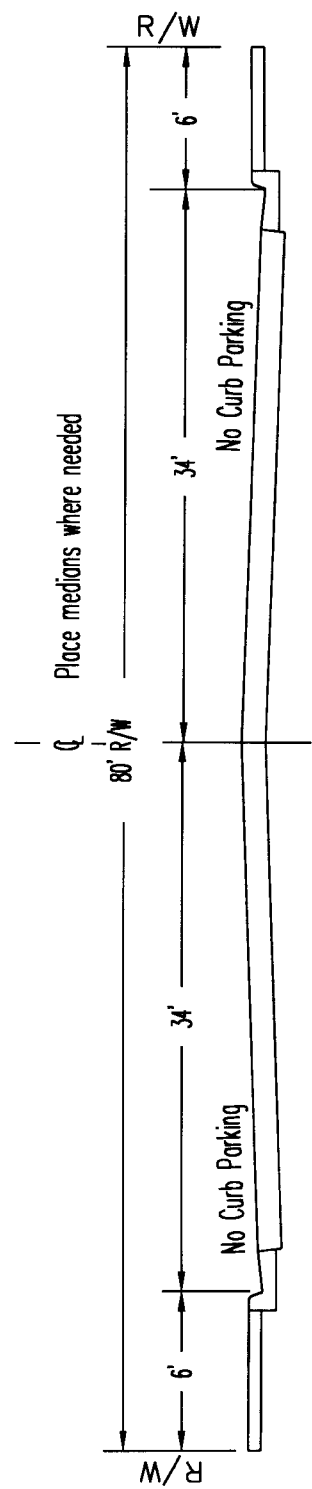
STANISLAUS COUNTY

ROAD SECTION  
MINOR & LOCAL

PLATE 3-A1



60' COLLECTOR \*



80' COLLECTOR \*

\* INSTALL "NO STOPPING ANY TIME" SIGNS TWO FEET FROM THE FLOWLINE.

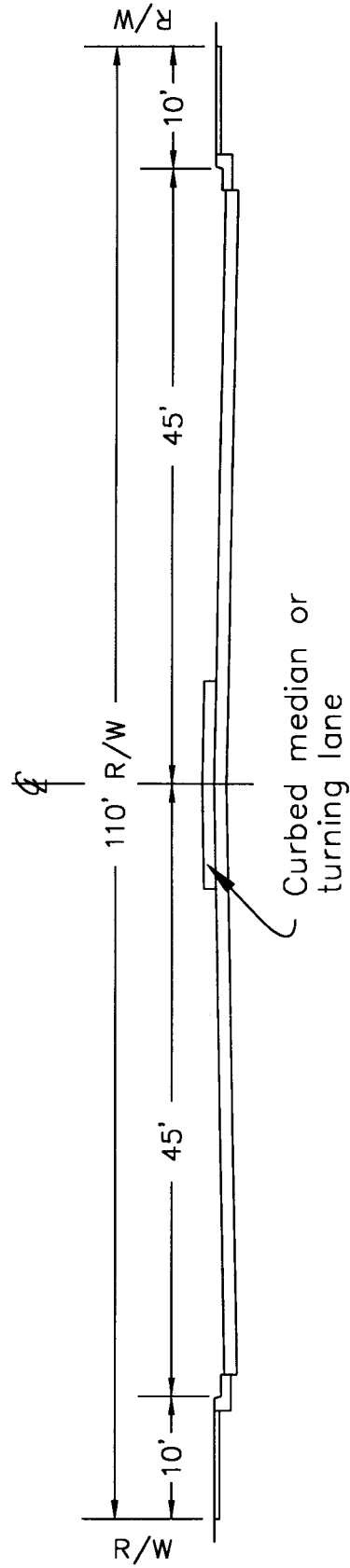
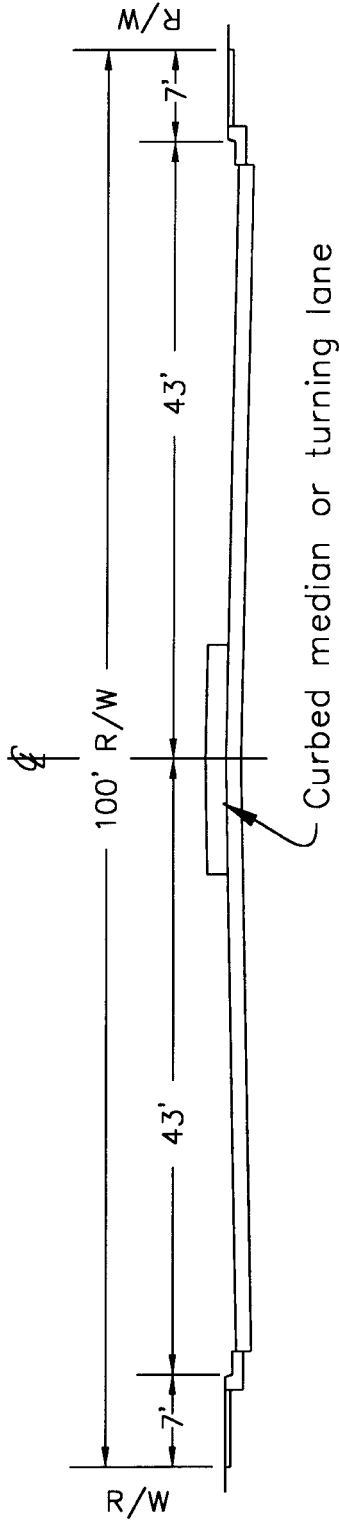
*[Signature]*  
 DIRECTOR OF PUBLIC WORKS

JUN 9 1998

DATE

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY
ROAD SECTION COLLECTOR (60' - 80')
PLATE 3-A2



APPROVED

*[Signature]*  
 DIRECTOR OF PUBLIC WORKS

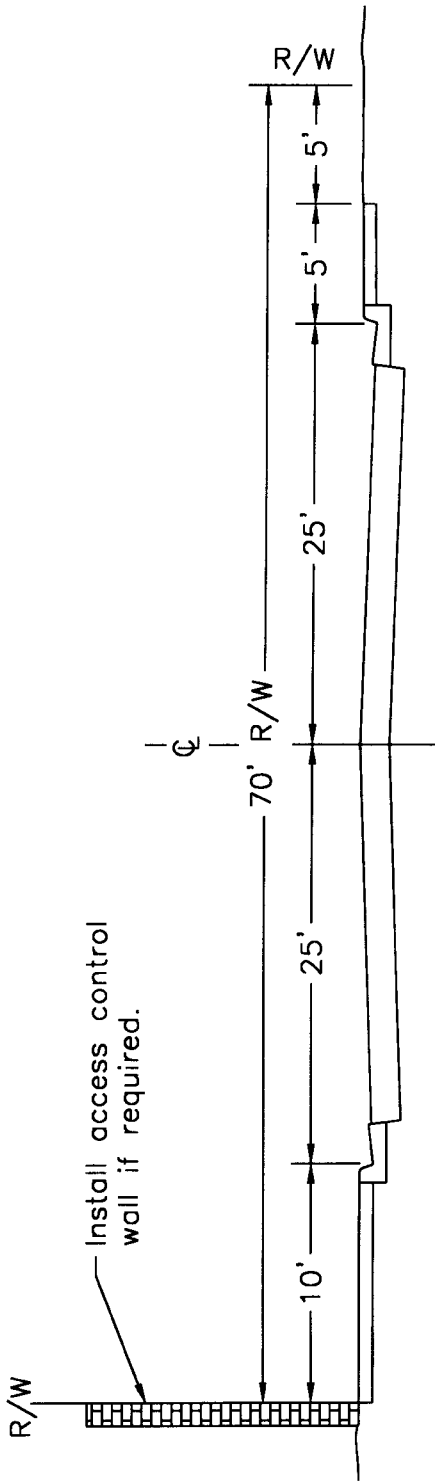
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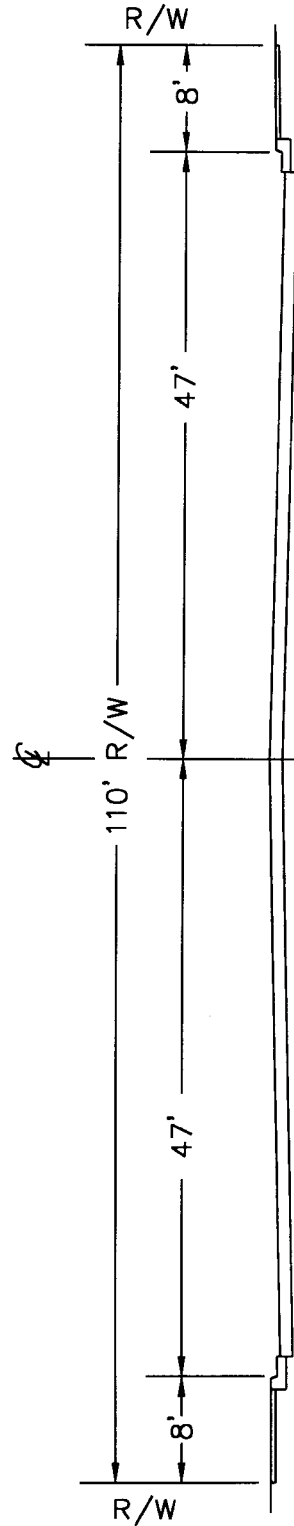
# IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
 ROAD SECTION  
 100' MAJOR & 110' MAJOR  
 PLATE 3-A3





MINOR INDUSTRIAL STREET



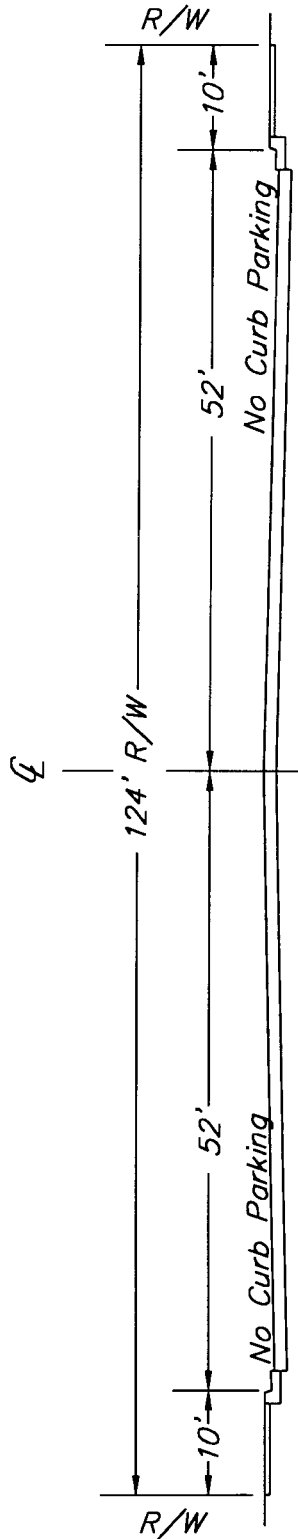
MAJOR INDUSTRIAL STREET

*[Signature]*  
 DIRECTOR OF PUBLIC WORKS

APPROVED \_\_\_\_\_ DATE JUN 9 1998

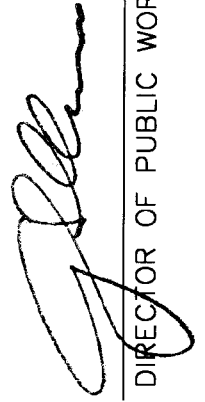
IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY  
 ROAD SECTION  
 INDUSTRIAL  
 MINOR & MAJOR  
 PLATE 3-A4



*Install "No Stopping Anytime" signs two feet from the flowline.*

URBAN  
6 LANE EXPRESSWAY

APPROVED  DIRECTOR OF PUBLIC WORKS  
DATE JUN 9 1998

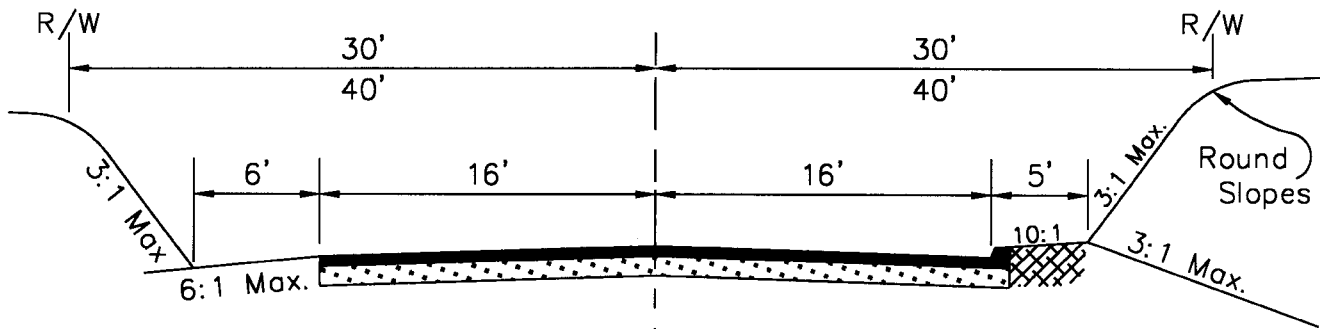
# IMPROVEMENT STANDARDS

STANISLAUS COUNTY

ROAD SECTION  
6-LANE EXPRESSWAY

PLATE 3-A5

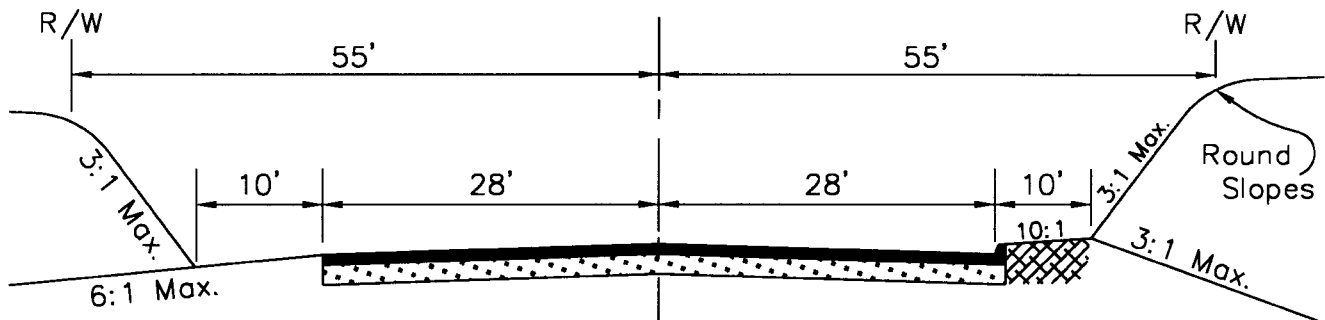
## RURAL COLLECTOR\*



Typical Section  
Without AC Dike

Typical Section  
Where AC Dike  
is Required to  
Control Drainage

## RURAL MAJOR\*



Typical Section  
Without AC Dike

Typical Section  
Where AC Dike  
is Required to  
Control Drainage

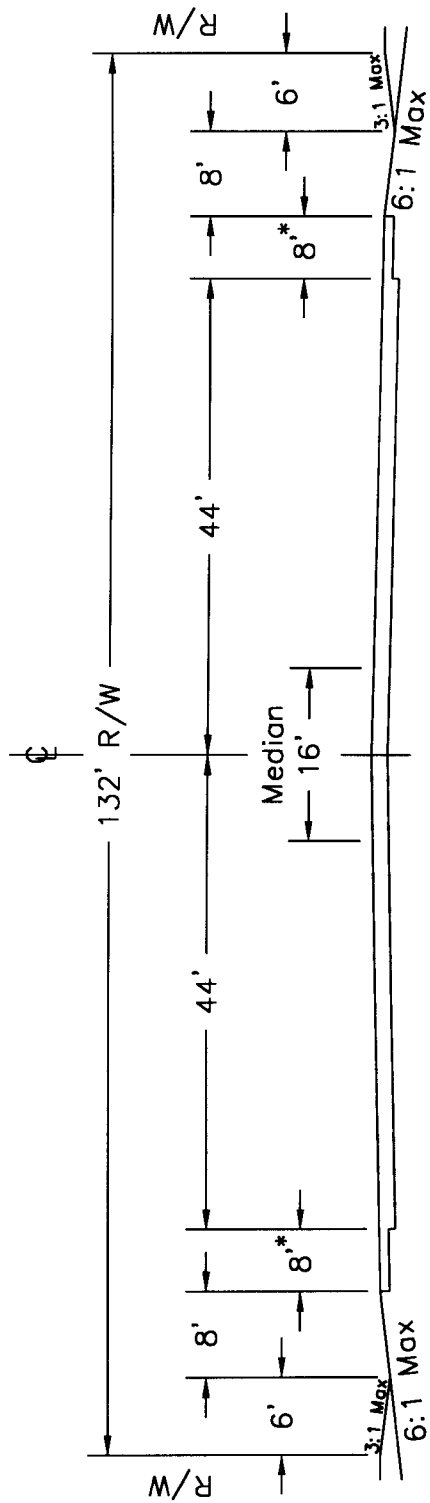
\*Additional slope easements may be required.

APPROVED    
 DIRECTOR OF PUBLIC WORKS

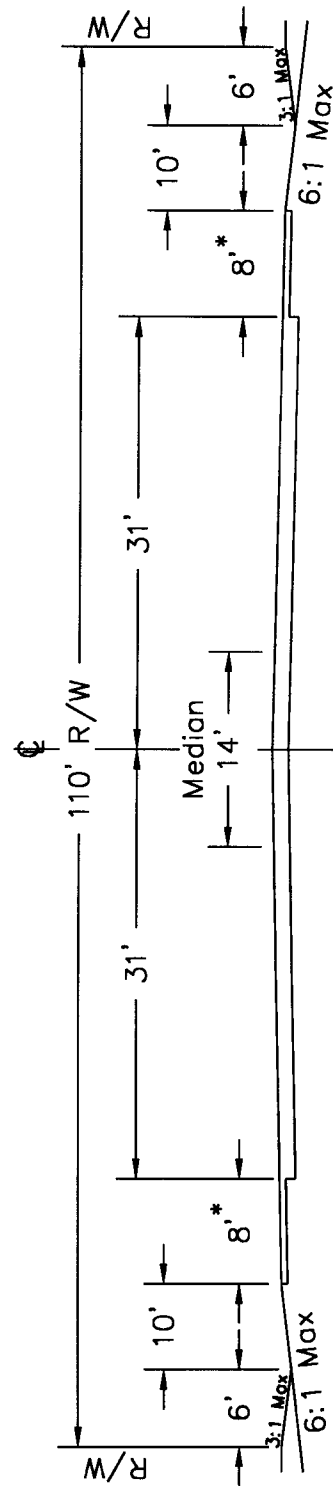
DATE JUN 9 1998

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY
RURAL ROAD SECTION 2 LANE
PLATE 3-A6

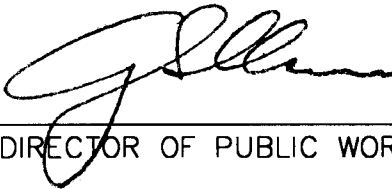


SIX LANE TYPICAL SECTION



FOUR LANE TYPICAL SECTION

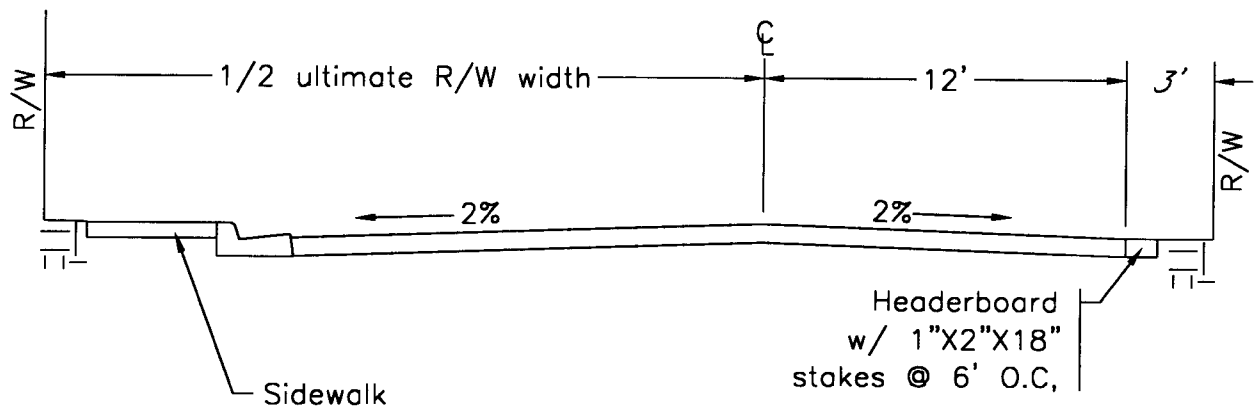
\* Paved shoulder

APPROVED  DATE JUN 9 1998  
DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
RURAL ROAD SECTION  
4 LANE & 6 LANE

PLATE 3-A7



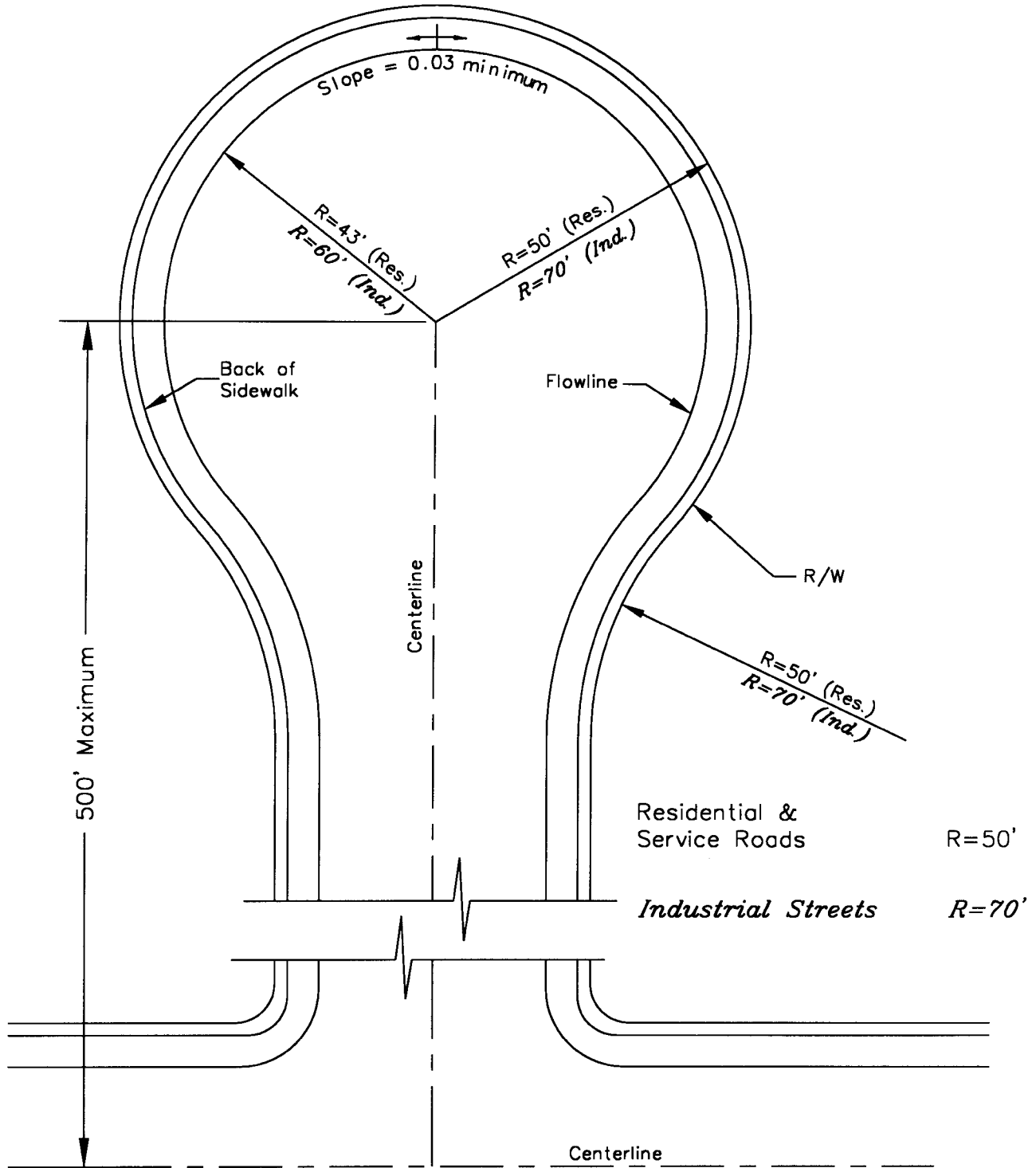
NOTES:

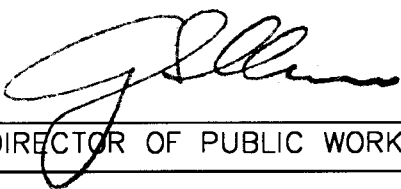
1. The part-width road is only permitted on a frontage where the developer does not have ownership or control of the right-of-way for full width road improvements.
2. Developer will be required to provide drainage facilities for the entire road section. A 6 inch asphalt dike may be required adjacent to the 12 foot lane.

APPROVED *[Signature]* DATE JUN 9 1999  
 DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
 PART WIDTH  
 ROAD SECTION  
 PLATE 3-A8



Approved    
 DIRECTOR OF PUBLIC WORKS

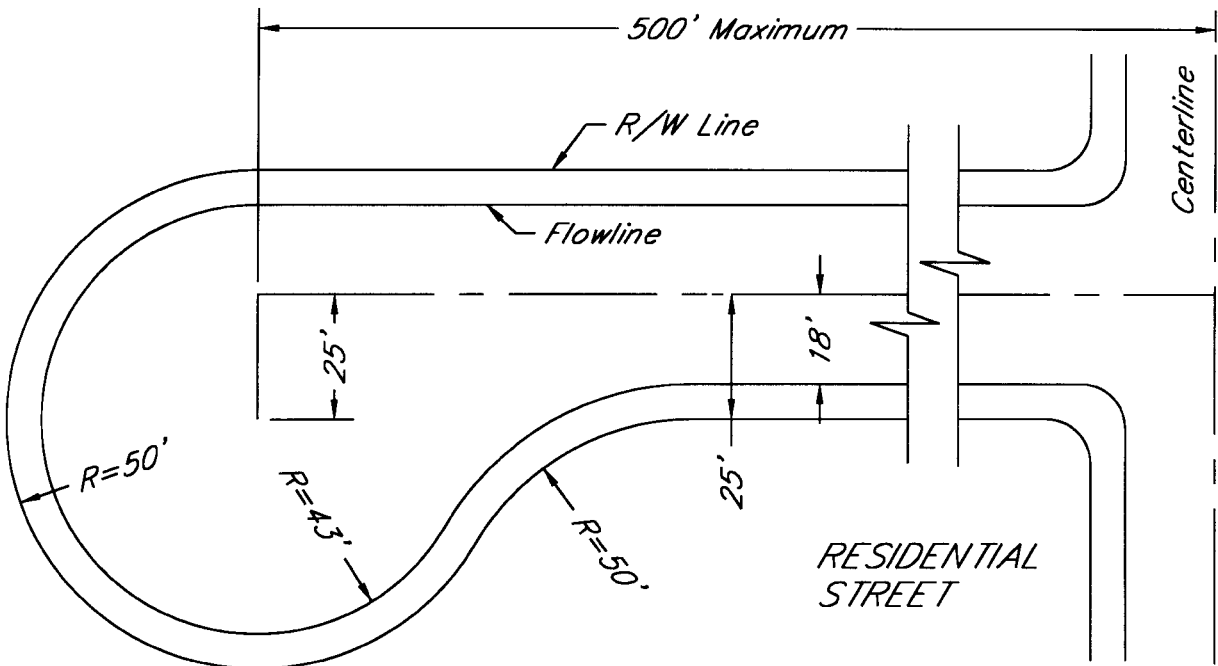
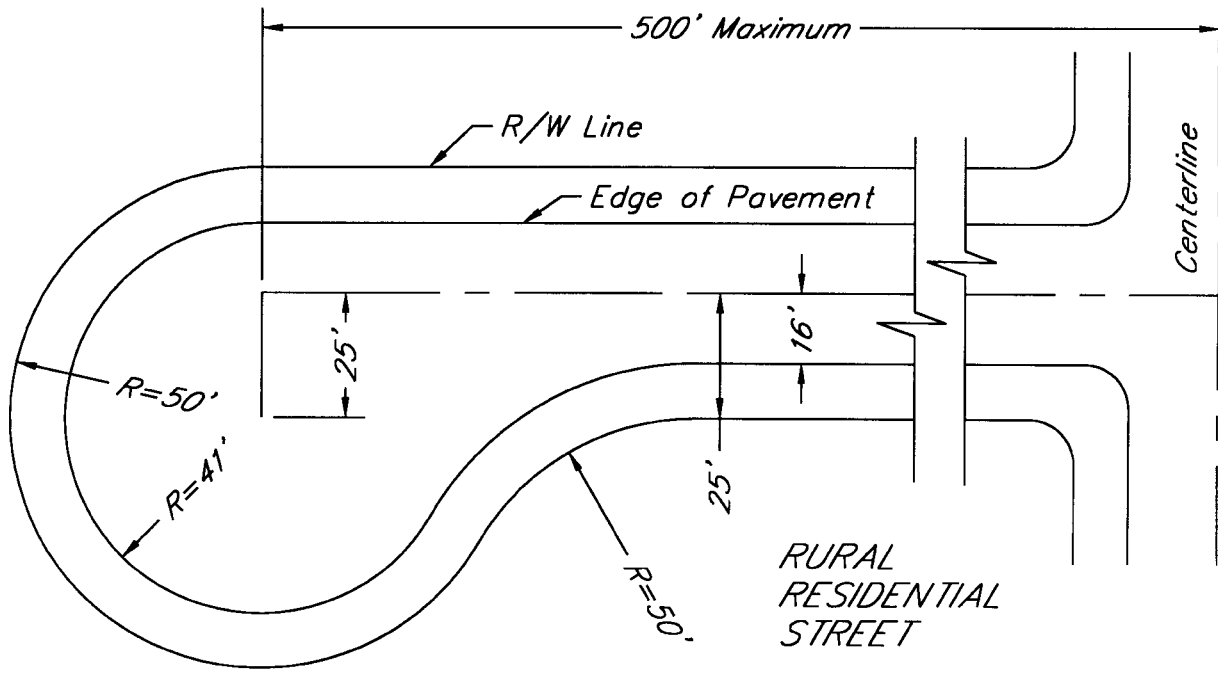
Date: JUN 9 1975

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY

CUL-DE-SAC

PLATE 3-B1

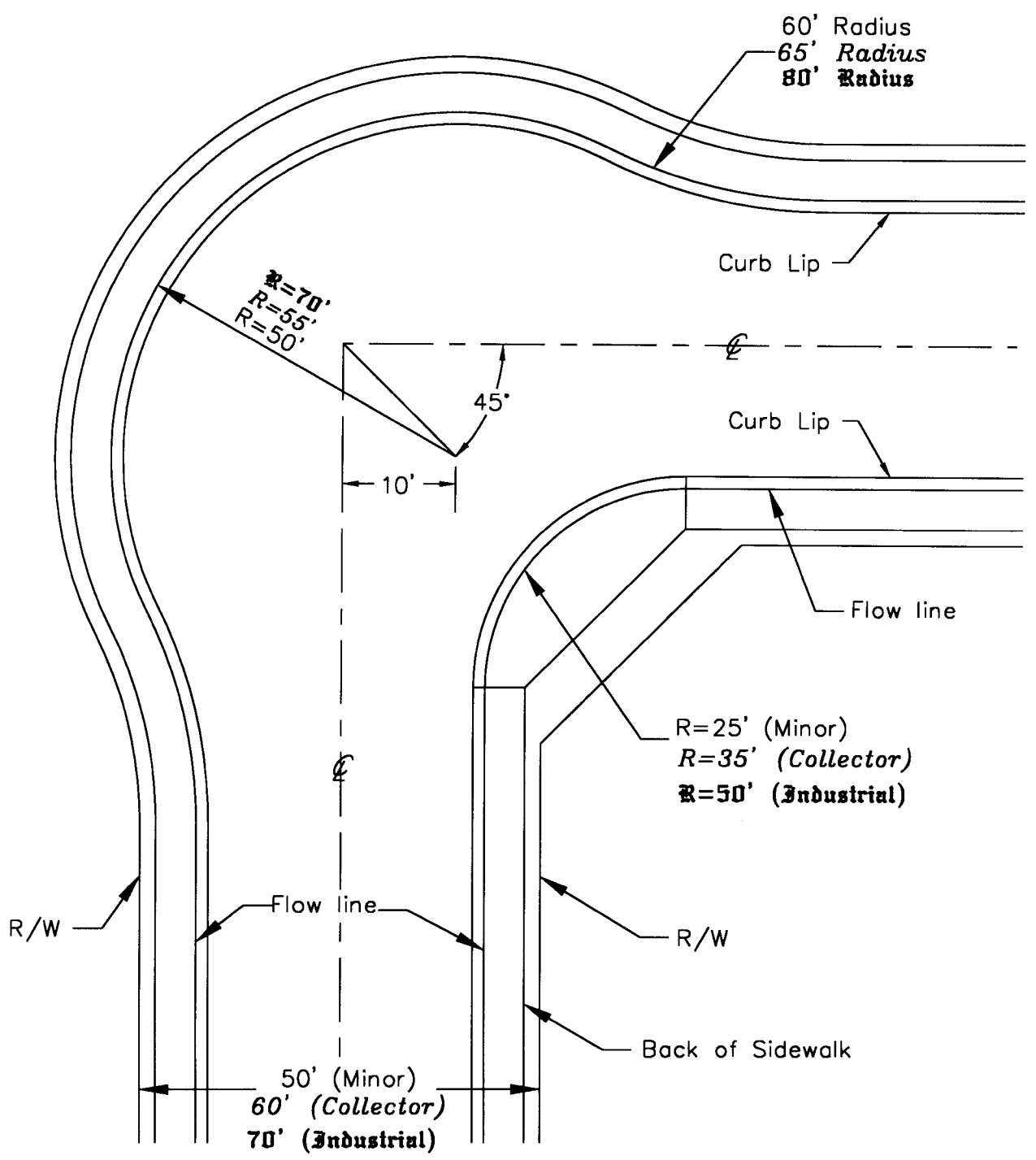


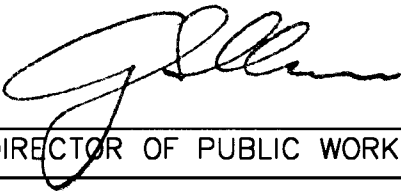
Approved DIRECTOR OF PUBLIC WORKS

Date: JUN 9 1998

IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
 OFFSET  
 CUL-DE-SAC  
 PLATE 3-B2



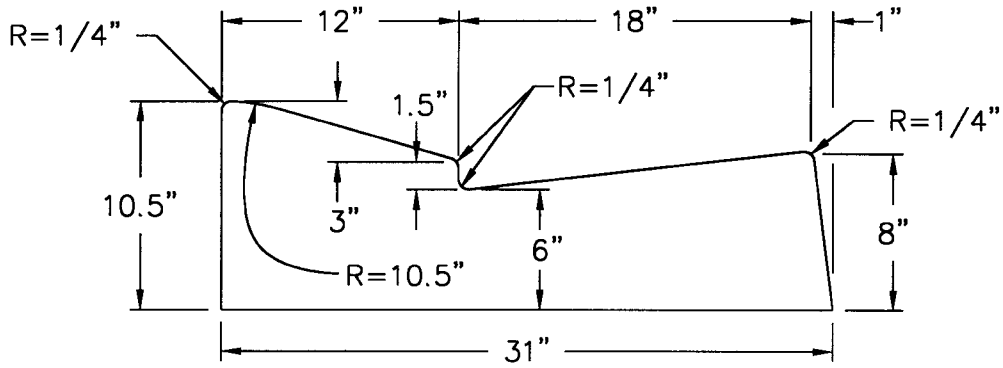
Approved   
DIRECTOR OF PUBLIC WORKS

Date: JUN 9 1998

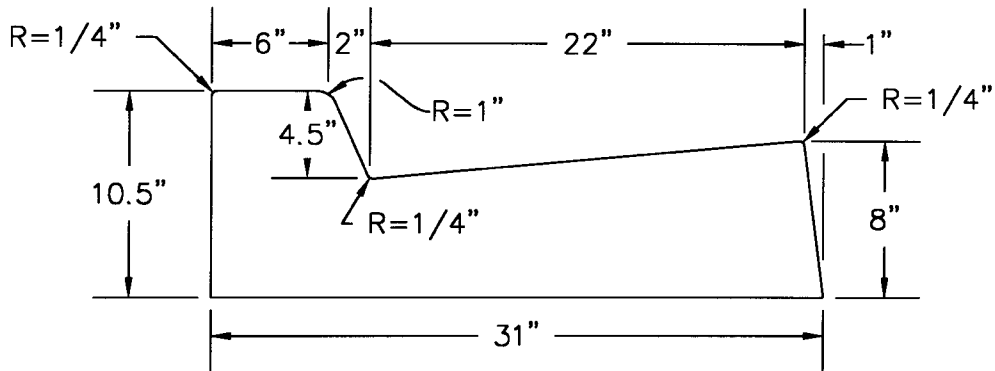
# IMPROVEMENT STANDARDS

STANISLAUS COUNTY
KNUCKLE
PLATE 3-C

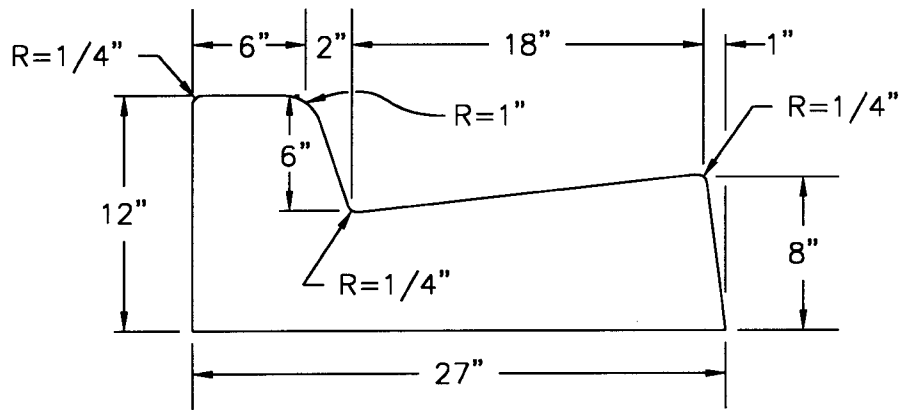




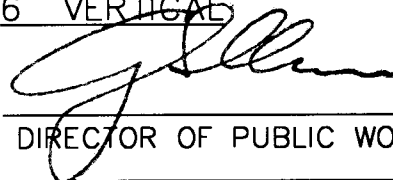
DRIVE-OVER



4-1/2" VERTICAL



6" VERTICAL

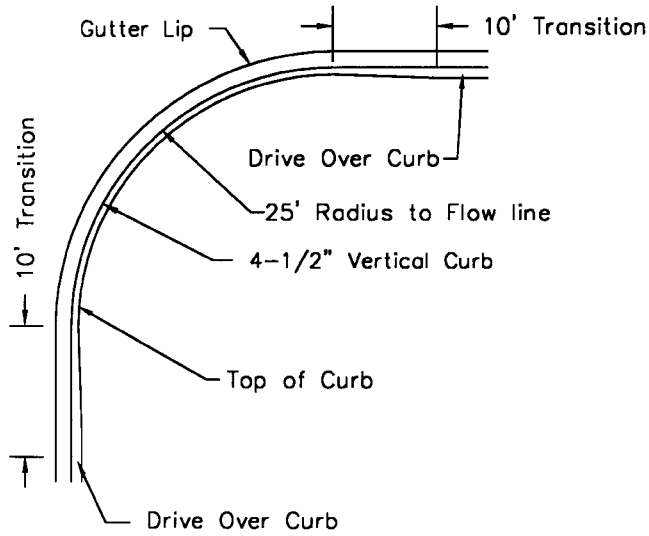
APPROVED  DATE JUN 9 1998  
 DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
STANDARDS

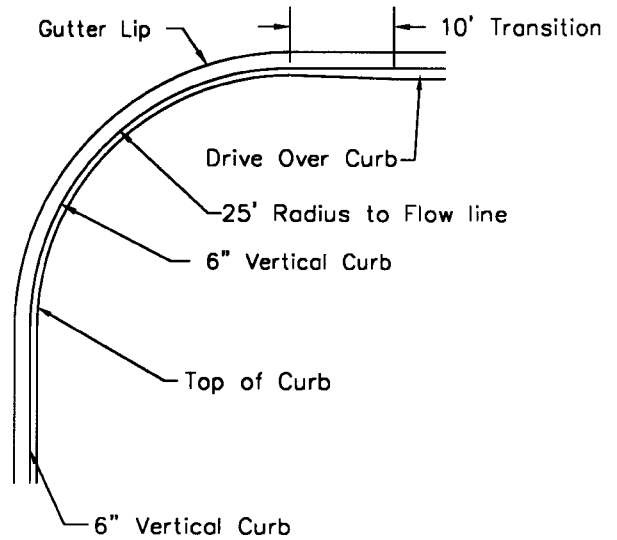
STANISLAUS COUNTY

CURB & GUTTER  
STANDARDS

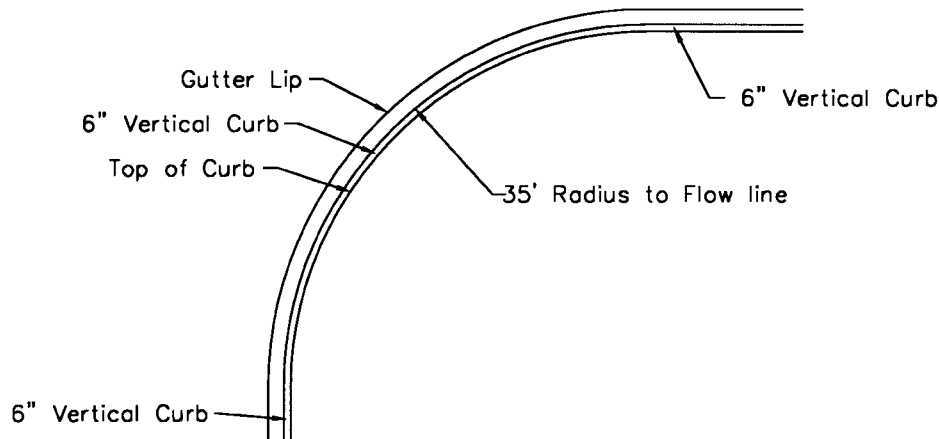
PLATE 3-D1



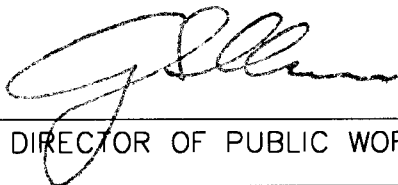
Drive Over to Drive Over Curb



Vertical to Drive Over Curb



Vertical to Vertical Curb

APPROVED  DIRECTOR OF PUBLIC WORKS

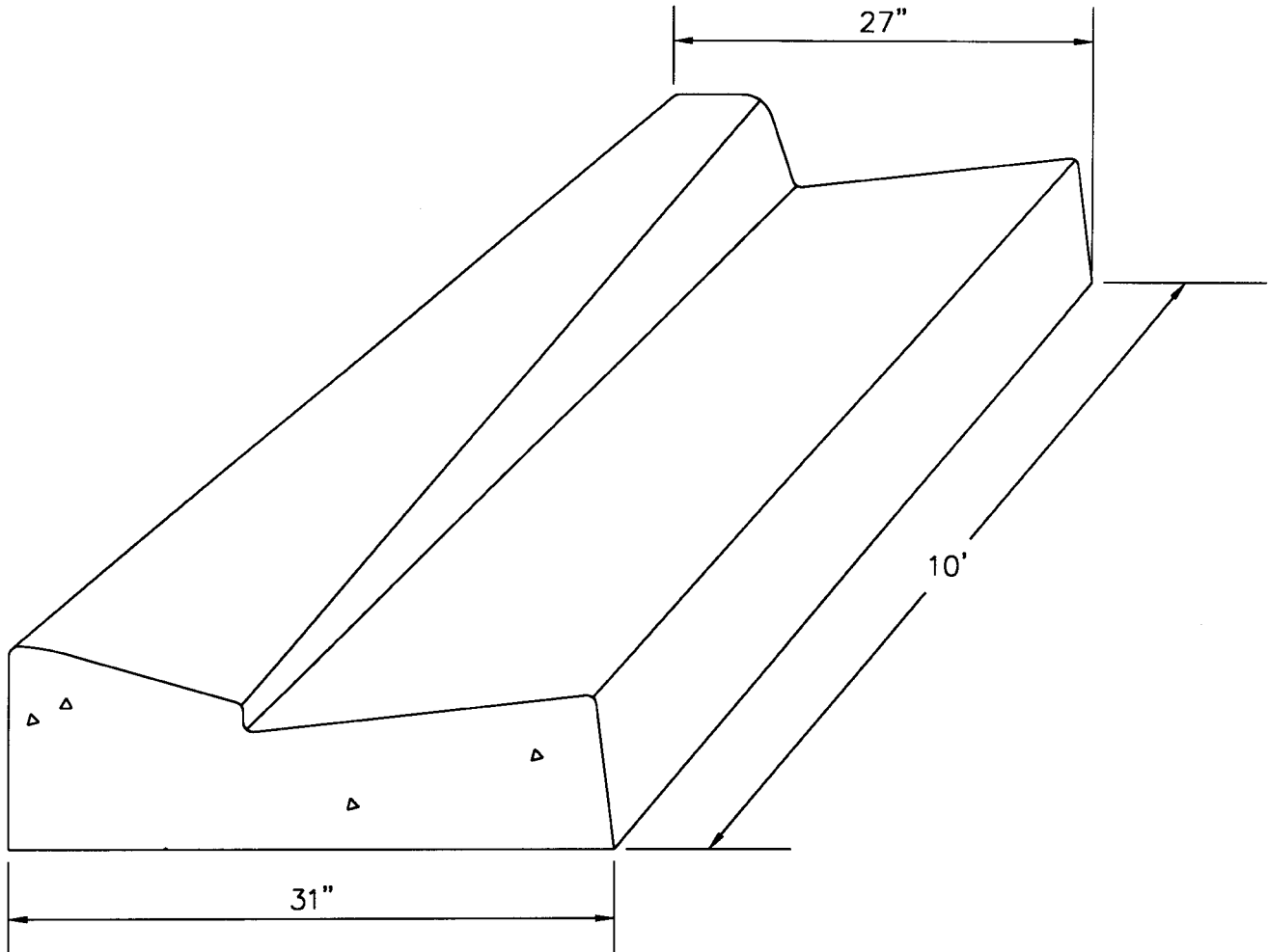
DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

CURB RETURN  
DETAILS

PLATE 3-D2

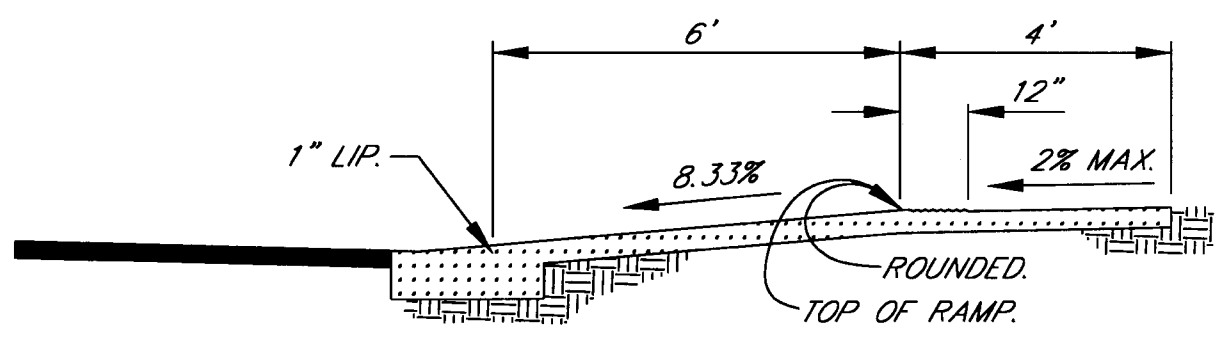
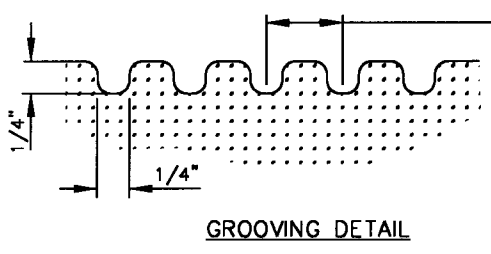
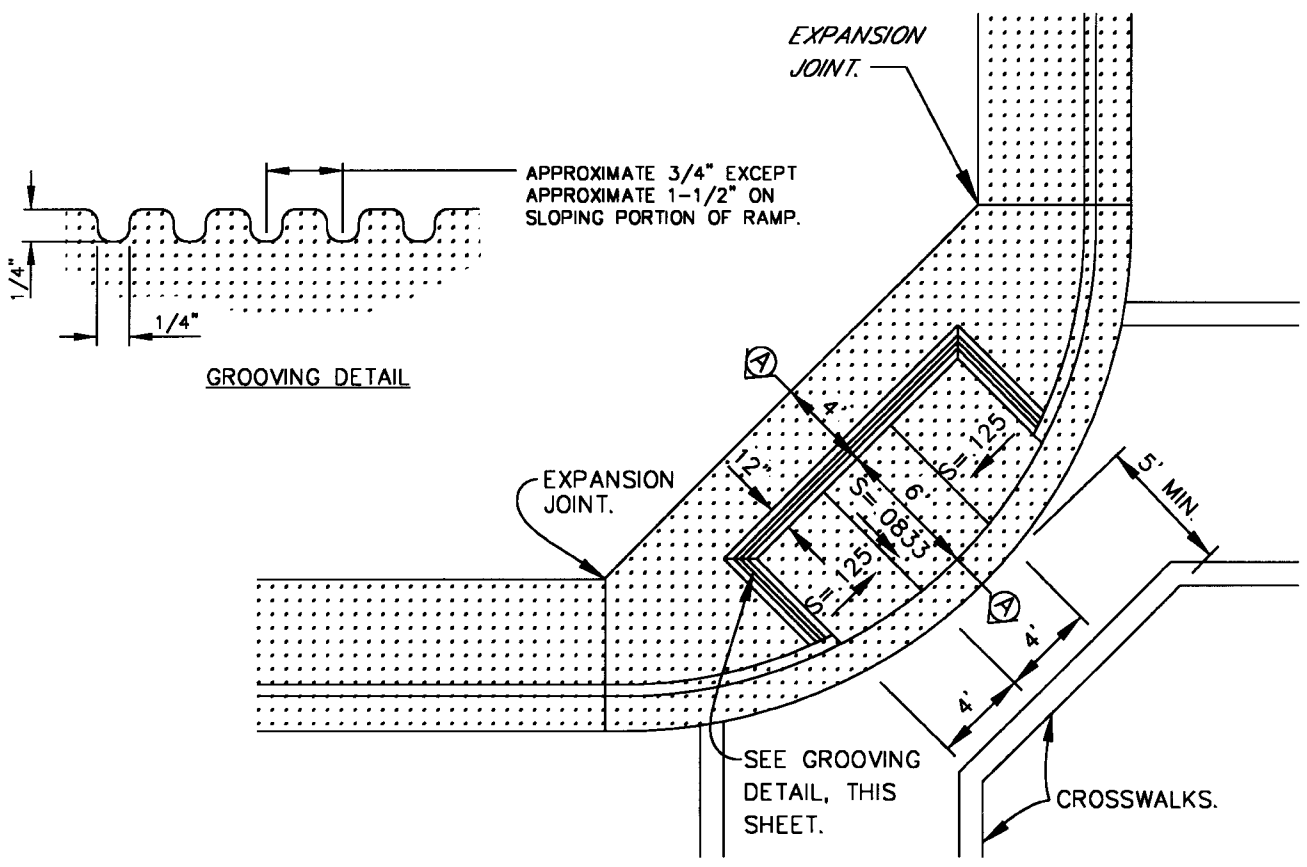


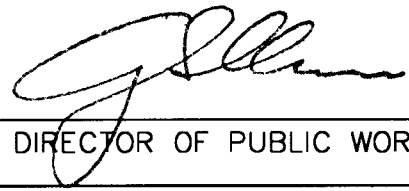
APPROVED *J. Gillman*  
 DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

IMPROVEMENT  
 STANDARDS

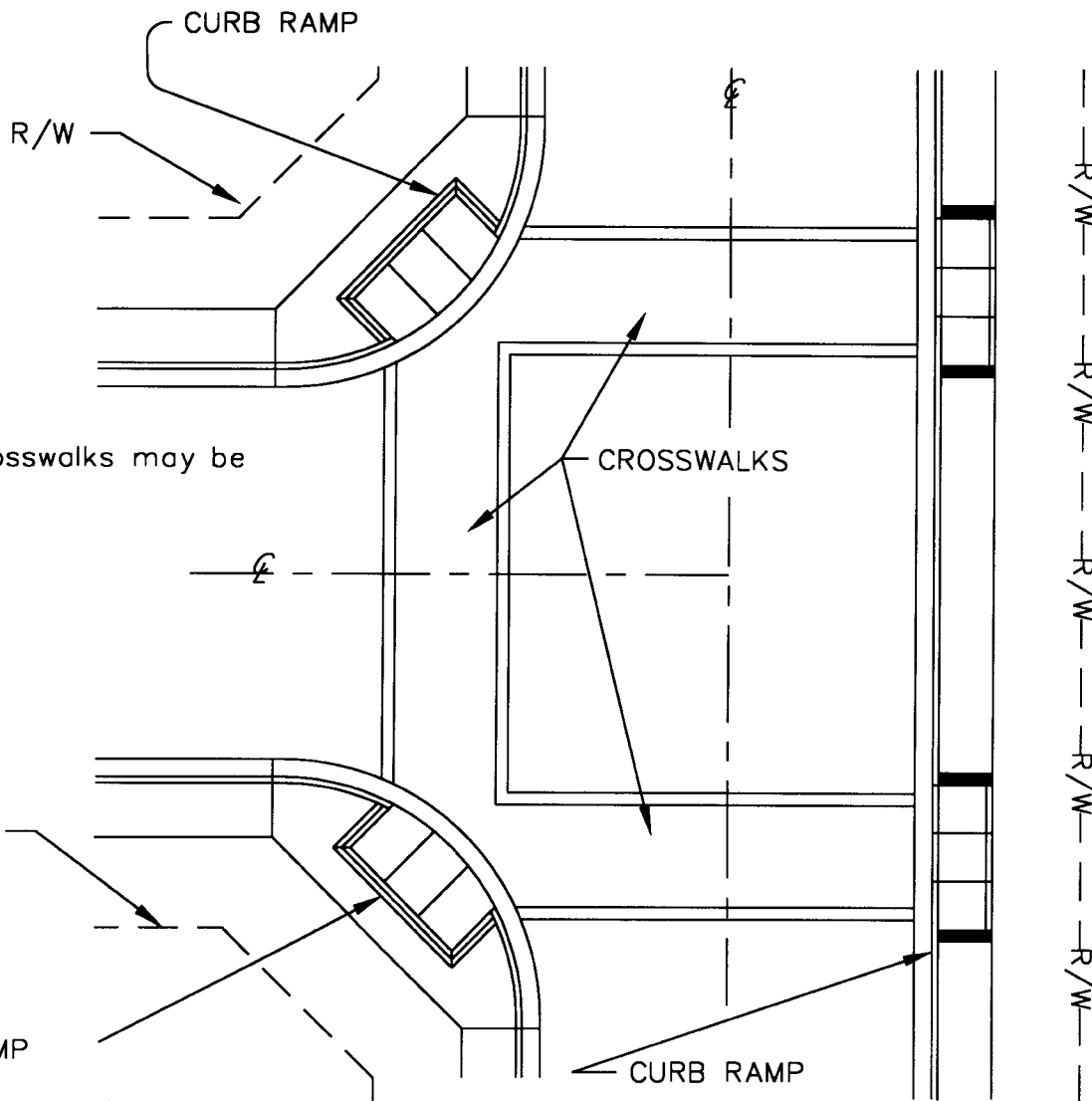
STANISLAUS COUNTY  
 CURB & GUTTER  
 TRANSITION  
 PLATE 3-D3



APPROVED  DATE JUN 9 1998  
 DIRECTOR OF PUBLIC WORKS

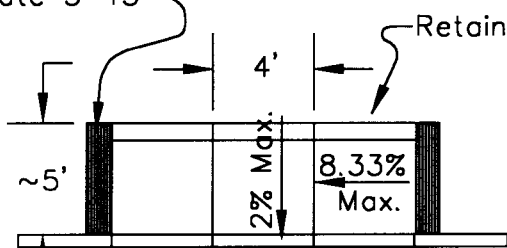
IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
 CURB RAMP  
 AT CURB RETURN  
 PLATE 3-D4

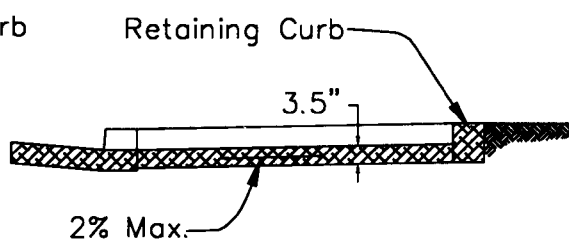


NOTE:  
Marked crosswalks may be required.

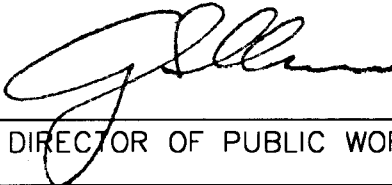
See grooving detail  
on Plate 3-15



Mid-Block Ramp Plan



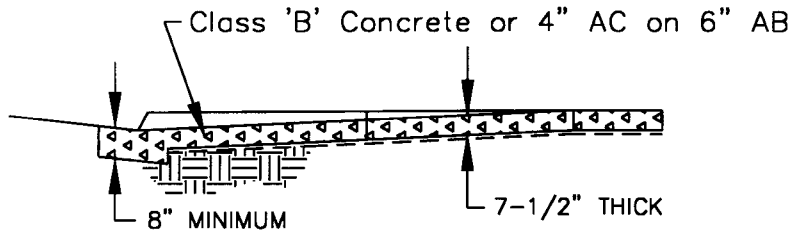
Mid-Block Ramp Profile

APPROVED   
DIRECTOR OF PUBLIC WORKS

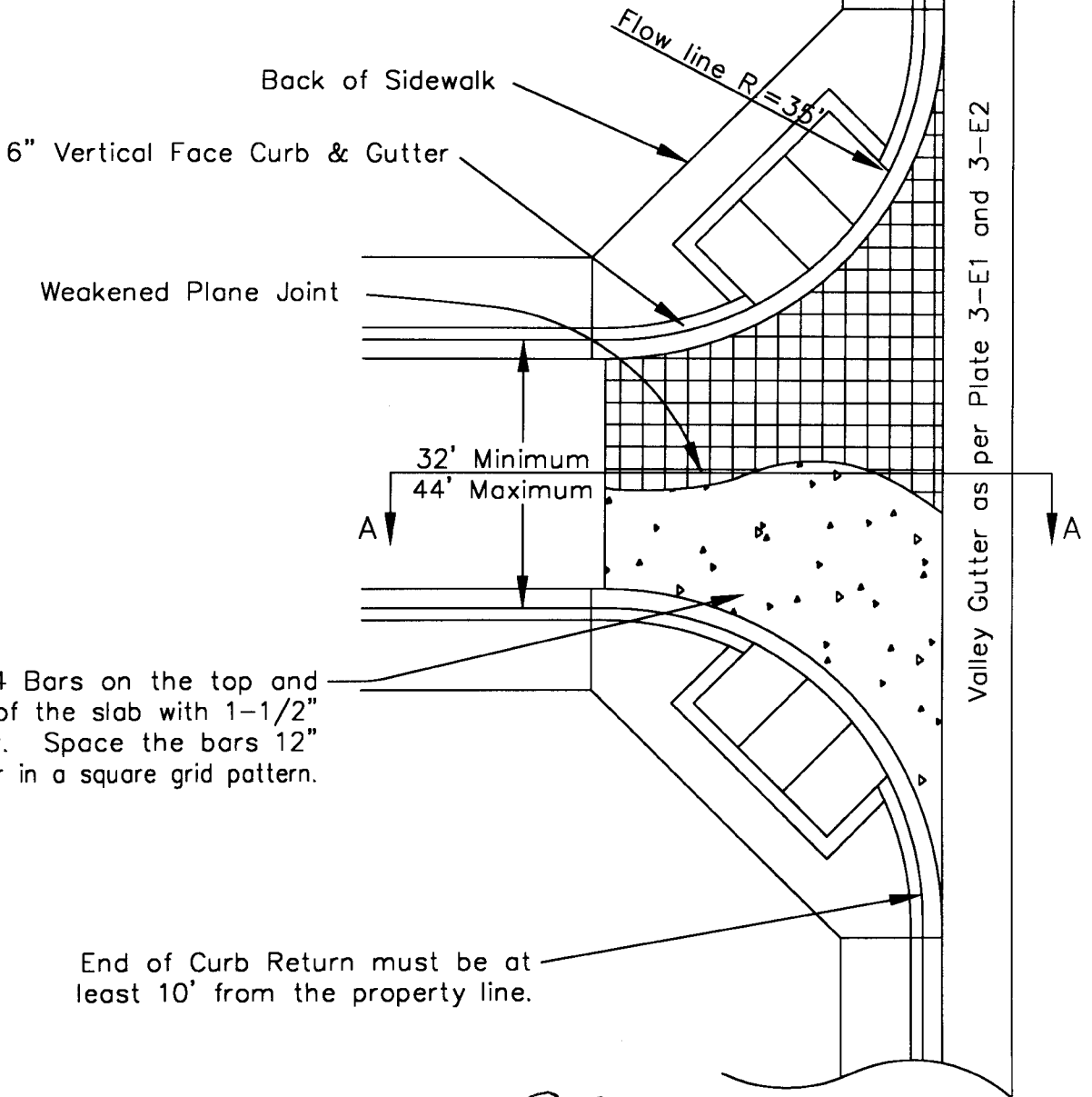
DATE JUN 9 1993

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
CURB RAMPS AT  
3-WAY INTERSECTIONS  
PLATE 3-D5

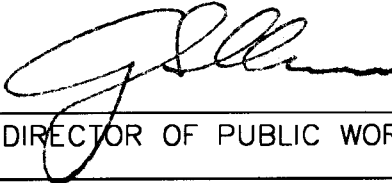


SECTION A-A



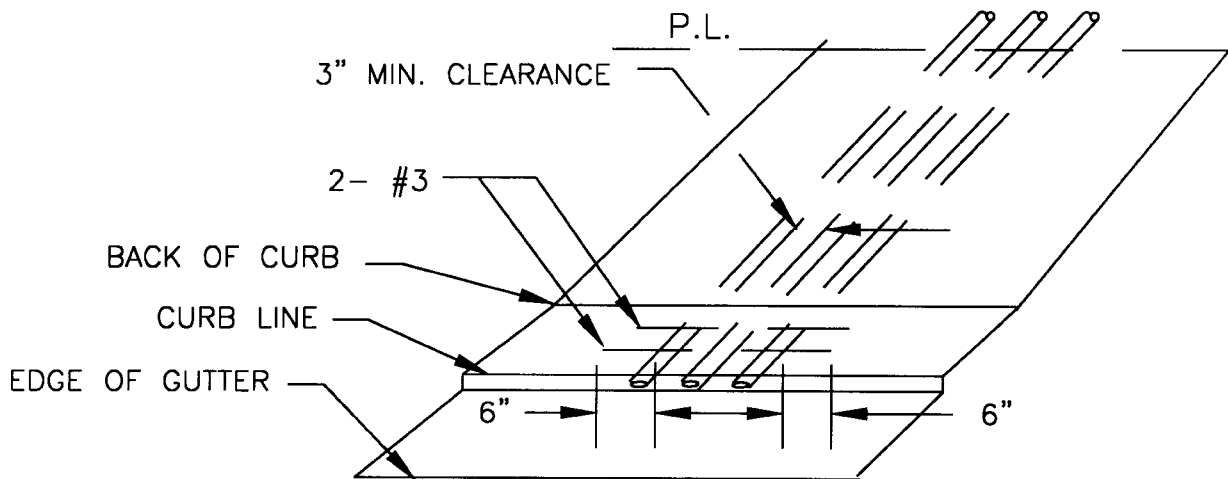
Use #4 Bars on the top and bottom of the slab with 1-1/2" of cover. Space the bars 12" on center in a square grid pattern.

End of Curb Return must be at least 10' from the property line.

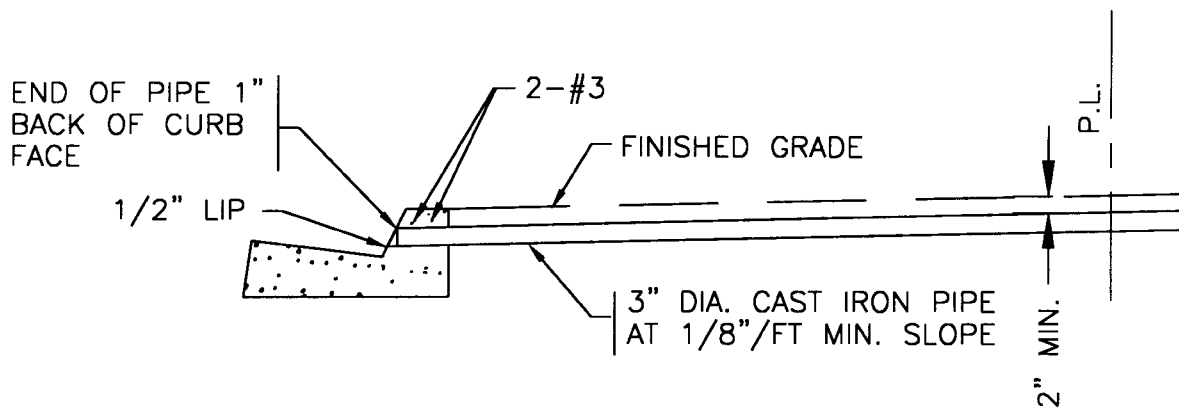
APPROVED  DATE JUN 9 1998  
DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY
DROP CURB APPROACH
PLATE 3-D6



PLAN



SECTION

NOTES:

1. PIPES WILL NOT BE MAINTAINED BY THE COUNTY.
2. ANGLE  $\theta = 90^\circ$ , UNLESS OTHERWISE SPECIFIED.
3. THE NUMBER OF PIPES AT ANY LOCATION SHALL NOT EXCEED 4.

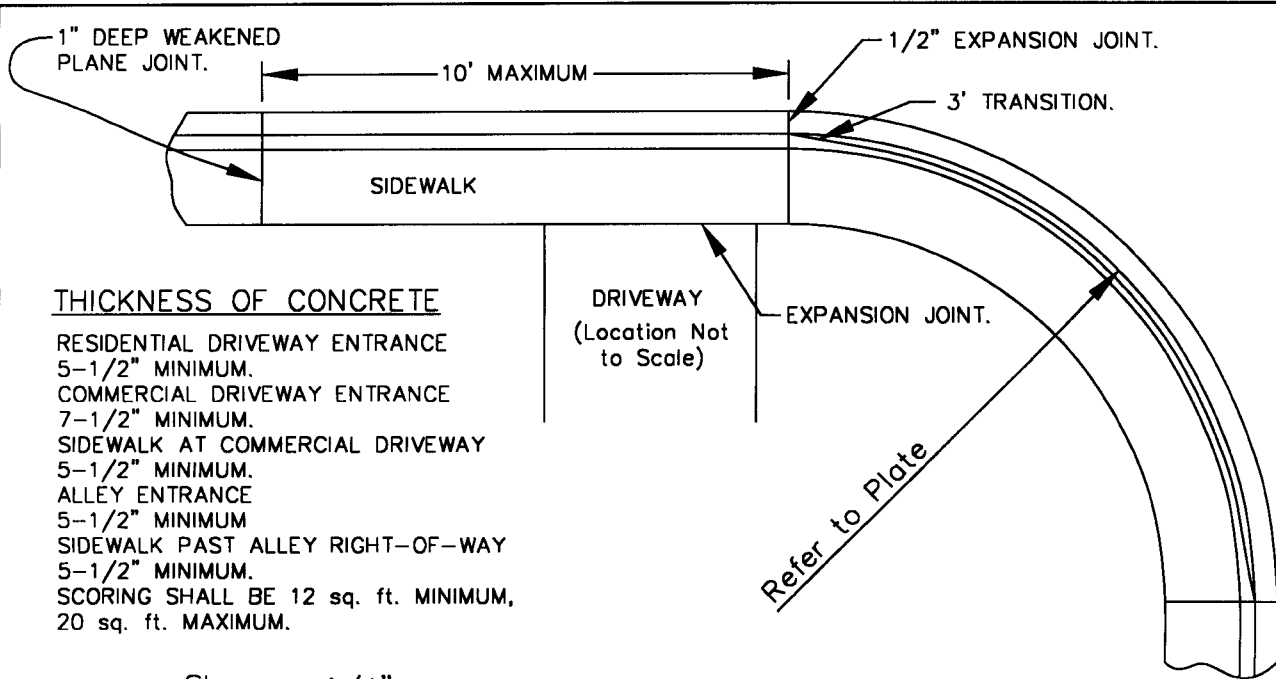
APPROVED  DATE JUN 9 1998  
 DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

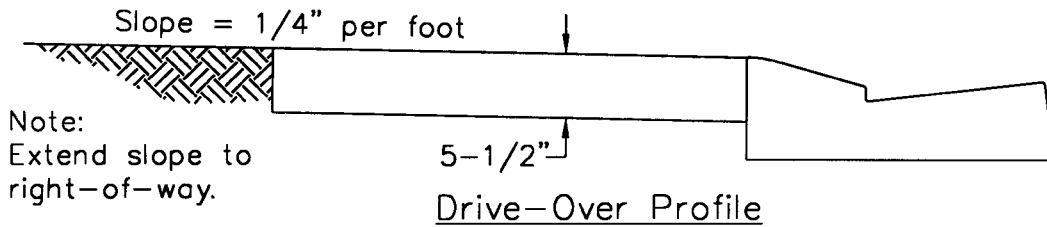
CURB DRAIN

PLATE 3-D7



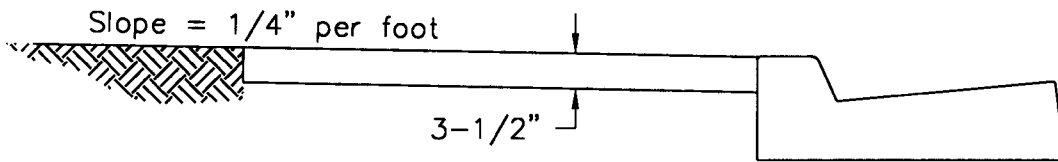
THICKNESS OF CONCRETE

- RESIDENTIAL DRIVEWAY ENTRANCE  
5-1/2" MINIMUM.
- COMMERCIAL DRIVEWAY ENTRANCE  
7-1/2" MINIMUM.
- SIDEWALK AT COMMERCIAL DRIVEWAY  
5-1/2" MINIMUM.
- ALLEY ENTRANCE  
5-1/2" MINIMUM
- SIDEWALK PAST ALLEY RIGHT-OF-WAY  
5-1/2" MINIMUM.
- SCORING SHALL BE 12 sq. ft. MINIMUM,  
20 sq. ft. MAXIMUM.



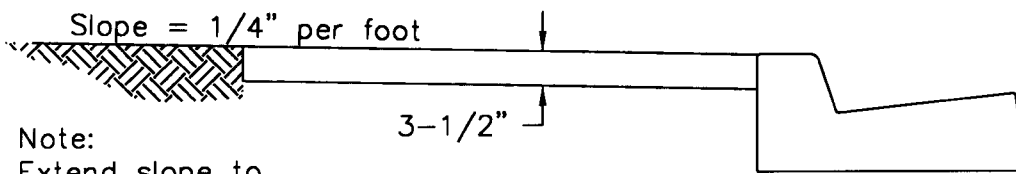
Note:  
Extend slope to  
right-of-way.

Drive-Over Profile



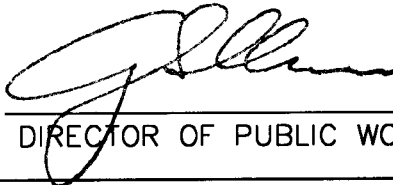
Note:  
Extend slope to  
right-of-way.

4-1/2\" Vertical Face Adjacent  
to Mid-block Curb Inlets



Note:  
Extend slope to  
right-of-way.

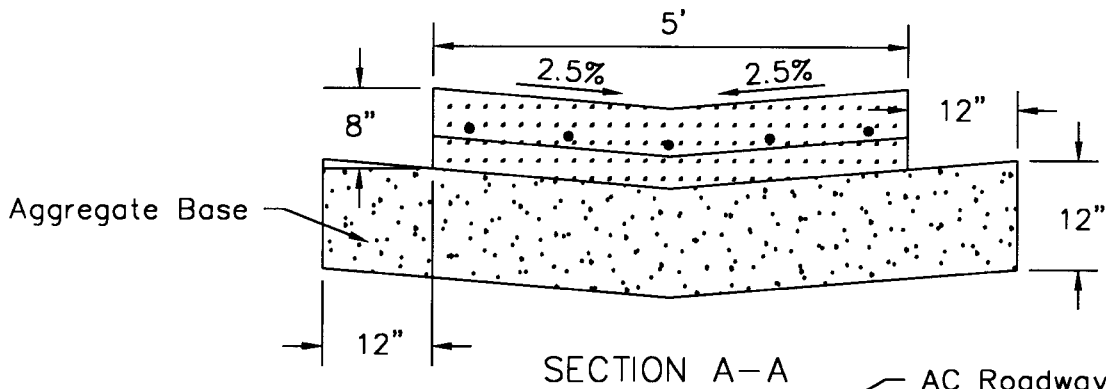
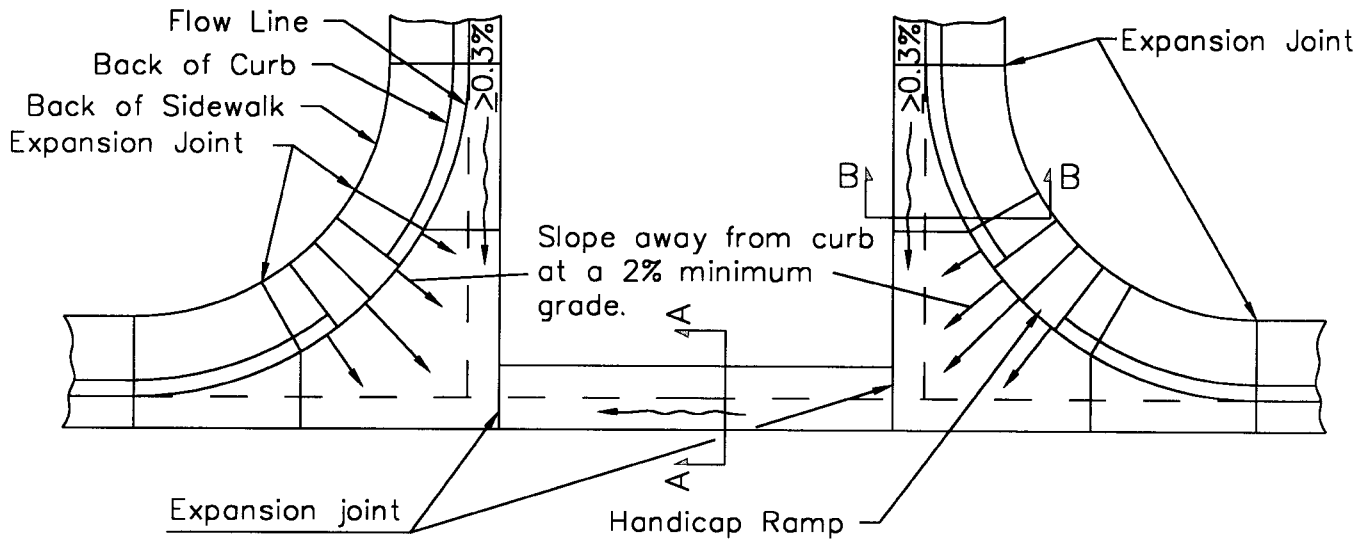
Vertical Face Profile

APPROVED  DATE JUN 9 1998  
DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
STANDARDS

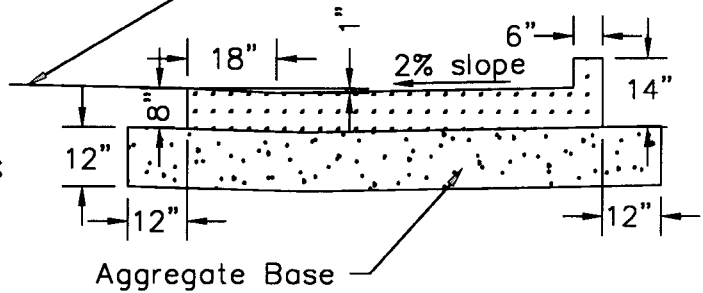
STANISLAUS COUNTY
SIDEWALK STANDARDS
PLATE 3-D8

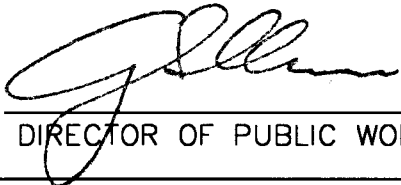




**NOTES:**

1. ALL CONCRETE TO BE CLASS "A" UNLESS OTHERWISE APPROVED.
2. REFER TO PLATE 3-E2 FOR SPECIFICATIONS ON REINFORCEMENT.
3. THIS CONSTRUCTION PERMITTED ONLY WITH CROSS SLOPE OF INTERSECTION MORE THAN 0.3% AND ONLY WITH APPROVAL OF THE ENGINEER.
4. A EXPANSION JOINT IS REQUIRED AT THE CENTERLINE OF THE STREET.
5. A SEPARATE CONCRETE PAD IS REQUIRED WHEN VALLEY GUTTER IS POURED HALF AT A TIME.



APPROVED   
DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

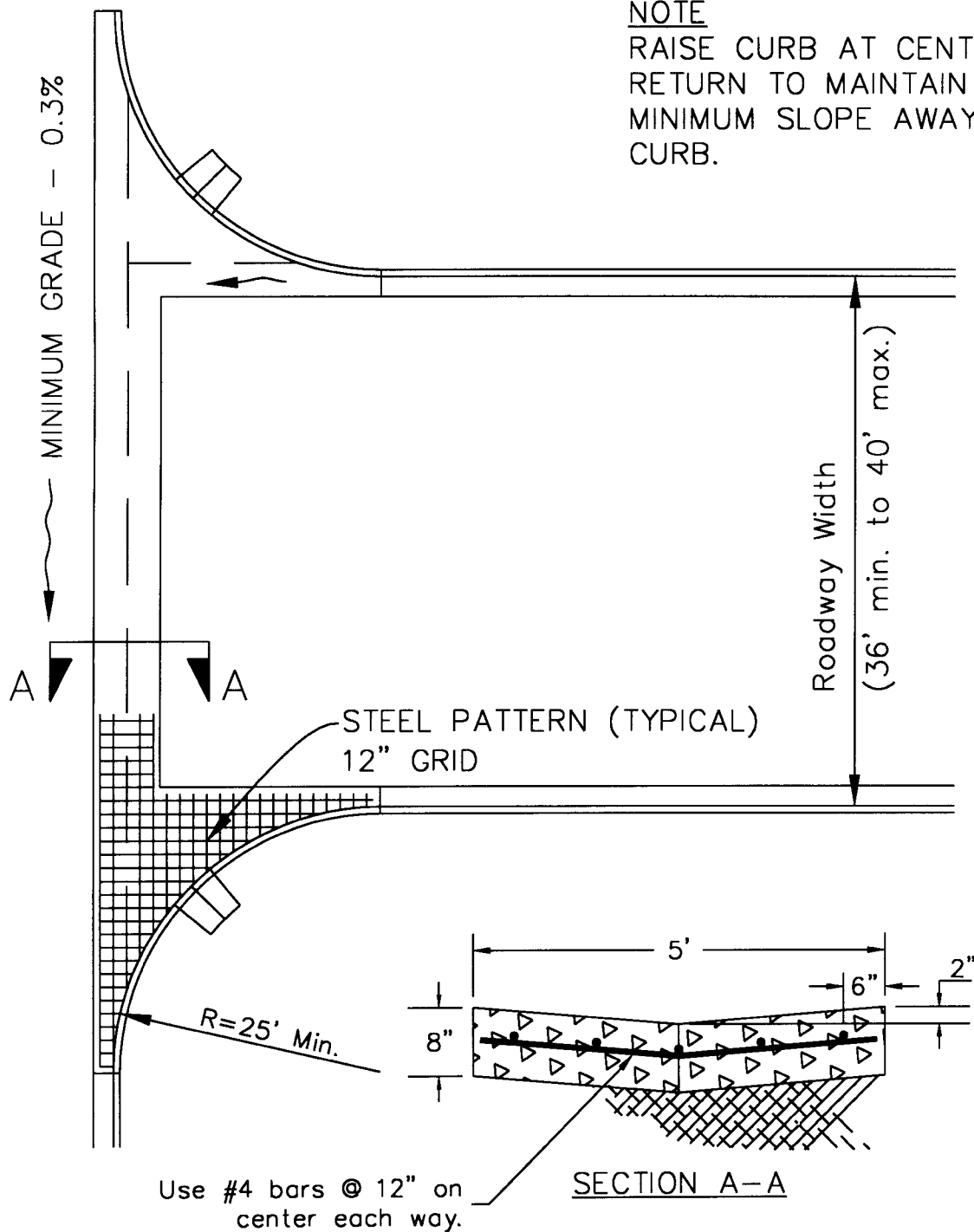
IMPROVEMENT  
STANDARDS

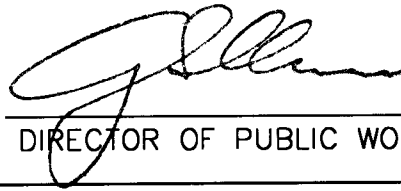
STANISLAUS COUNTY

VALLEY GUTTER

PLATE 3-E1

NOTE  
RAISE CURB AT CENTER OF  
RETURN TO MAINTAIN 2%  
MINIMUM SLOPE AWAY FROM  
CURB.

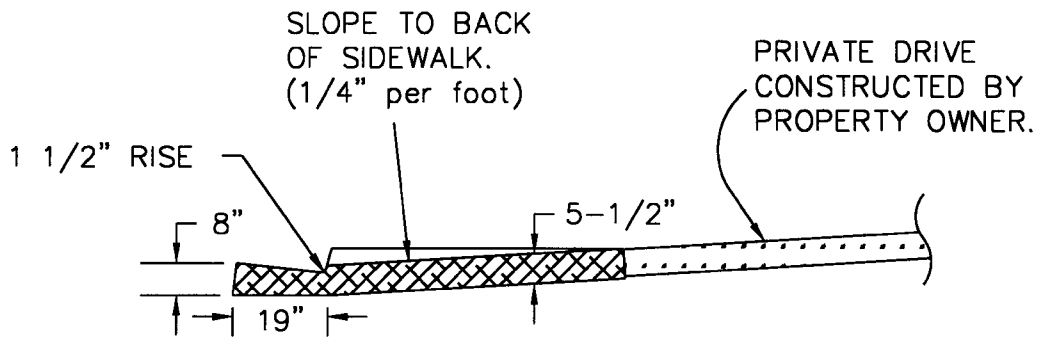


APPROVED   
DIRECTOR OF PUBLIC WORKS

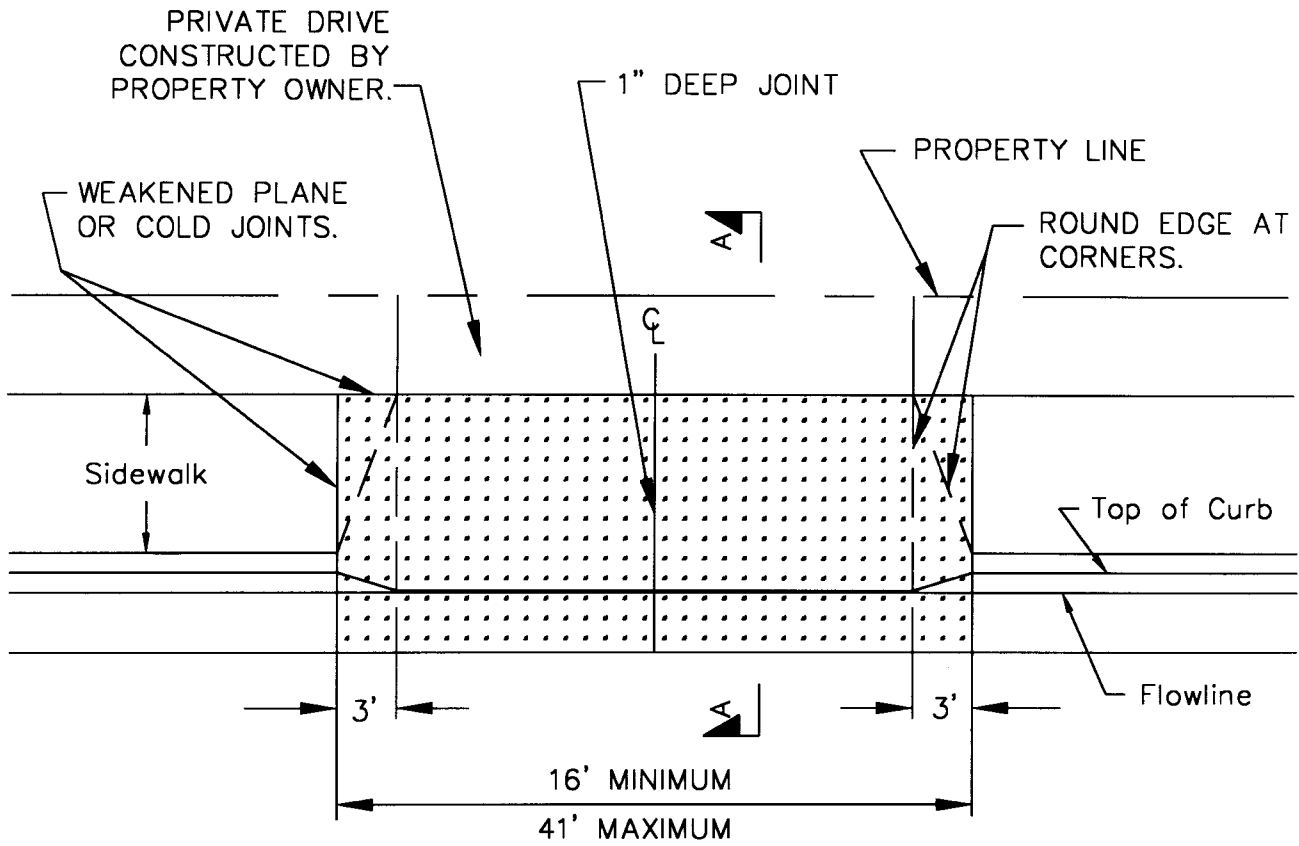
DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
REINFORCEMENT FOR  
VALLEY GUTTER  
PLATE 3-E2



SECTION A-A



NOTES:

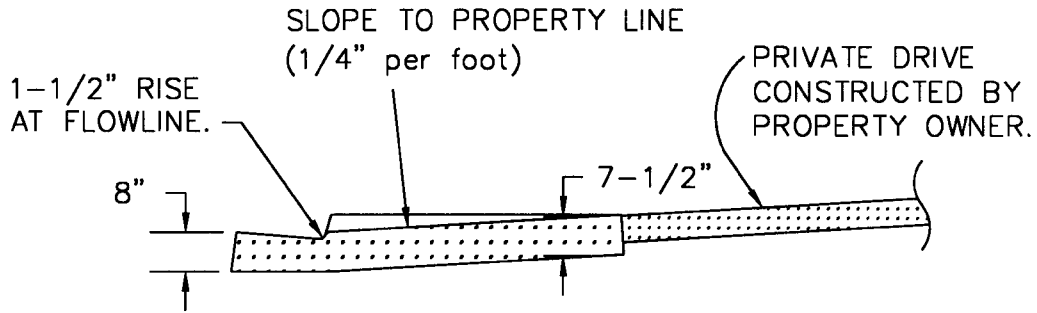
1. UNSUITABLE SOIL SHALL BE REMOVED AND REPLACED WITH SAND.
2. NON-MONOLITHIC DRIVE APPROACHES MAY BE CONSTRUCTED WHERE DEPRESSED CURB EXISTS OR WHERE CURB IS PLACED WITH A SLIP FORM MACHINE.

APPROVED DIRECTOR OF PUBLIC WORKS

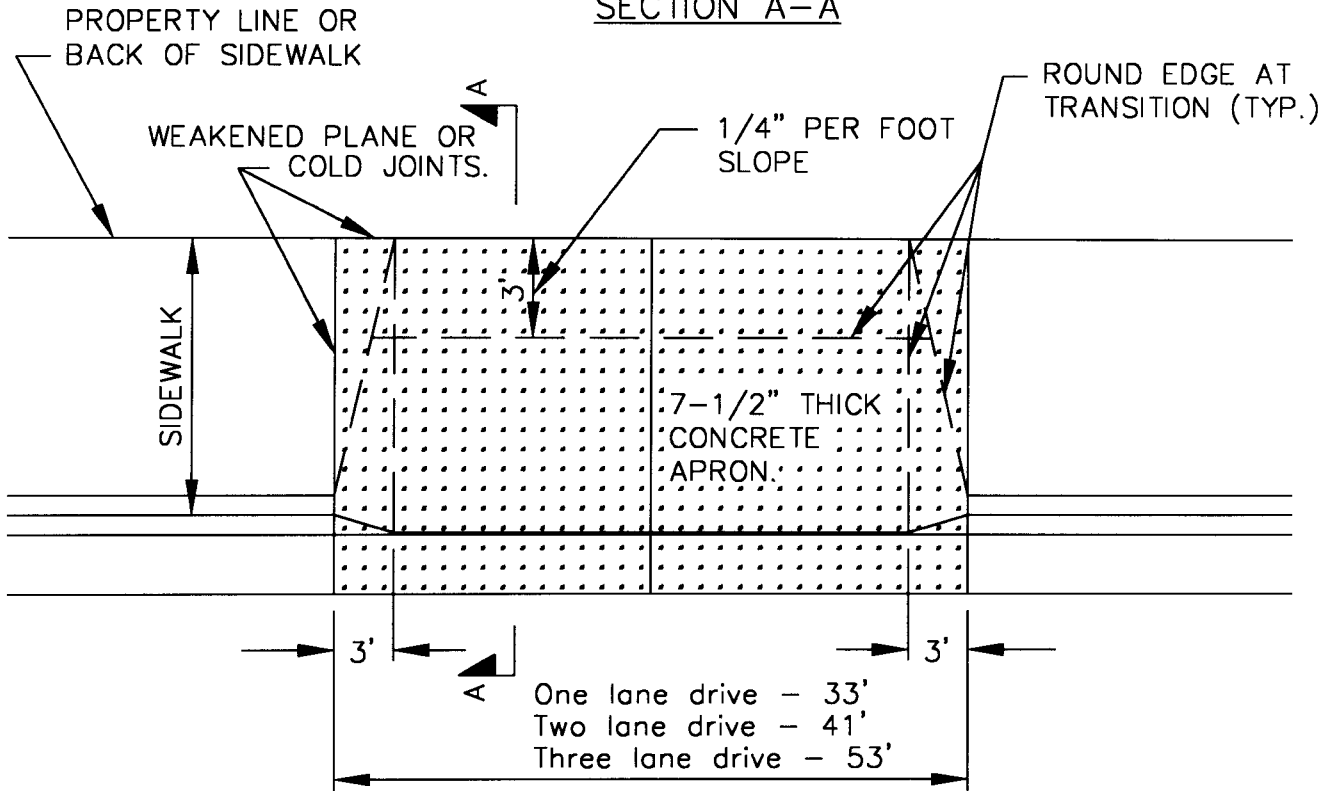
DATE JUN 9 1998

IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
RESIDENTIAL DRIVE APPROACH  
PLATE 3-F1

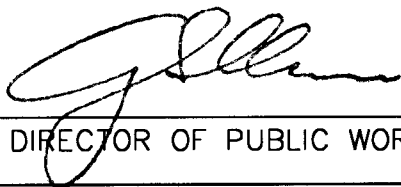


SECTION A-A



NOTES:

1. 6X6X10 wire mesh required.
2. Unsuitable soil shall be removed and replaced with sand.
3. Non-monolithic drive approaches may be constructed where depressed curb exists or where curb is placed with a slip form machine.
4. Commercial driveways that accommodate truck traffic shall have #4 rebar installed 12" O.C. in both directions.

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DIRECTOR OF PUBLIC WORKS

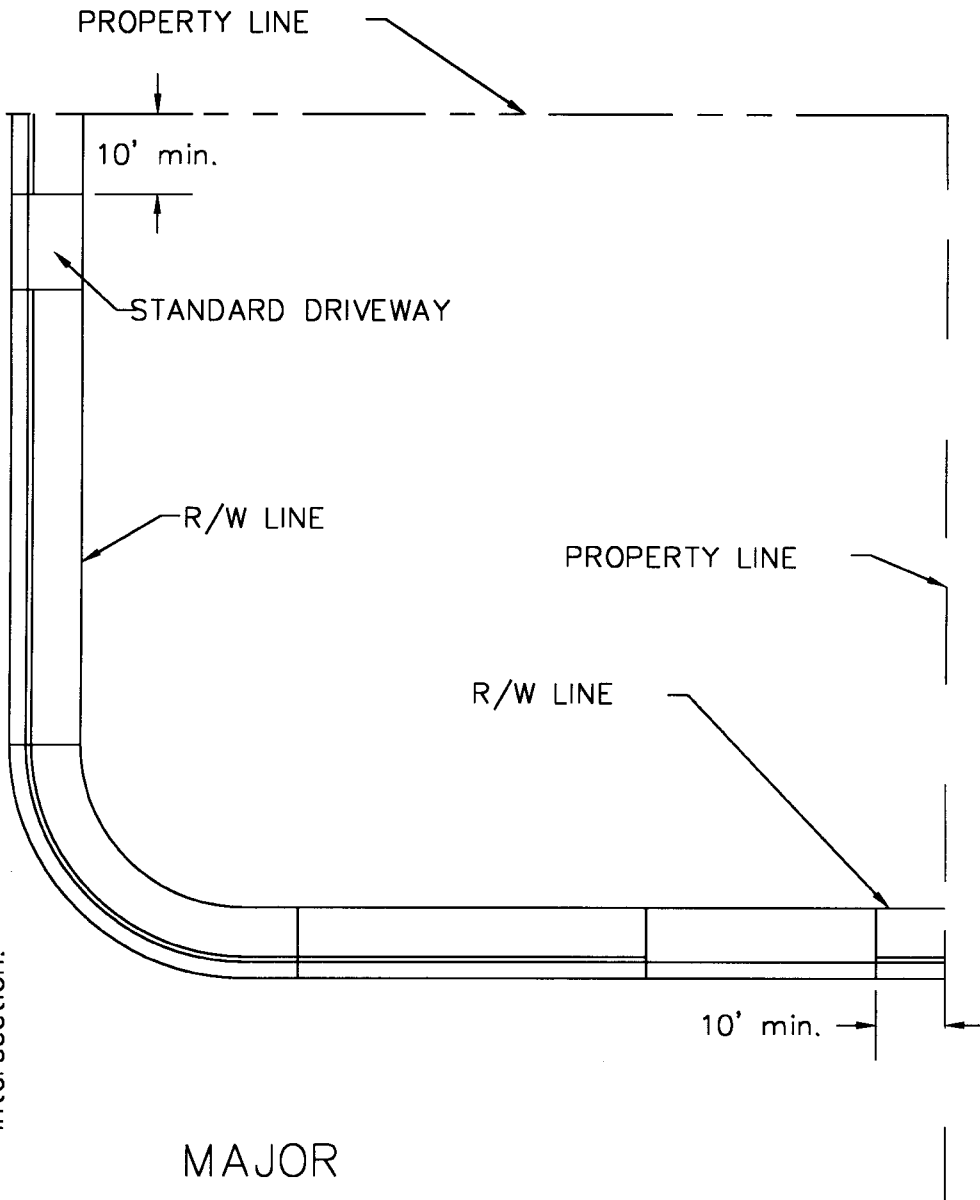
DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
COMMERCIAL DRIVE  
APPROACH  
PLATE 3-F2

COLLECTOR

Commercial approaches on collector roads shall conform to the following:  
 1. Approach shall be located a minimum of 150 feet from the intersection as measured from intersection in centerline to approach centerline.  
 2. When condition no. 1 can not be met due to lack of property width, the approach shall be placed at or near the farthest property line from the intersection.



MAJOR

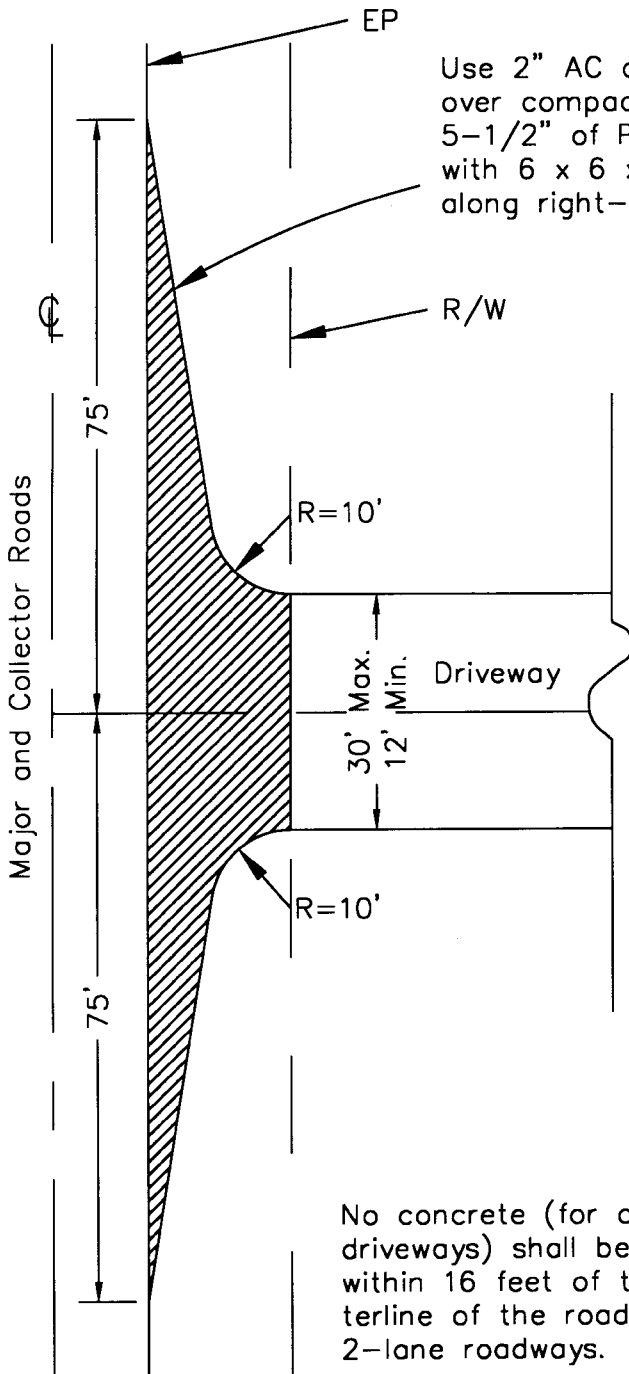
Commercial approaches on major roads shall conform to the following:

1. Approach shall be located a minimum of 350 feet from the intersection as measured from intersection centerline to approach centerline.
2. When condition No. 1 can not be met due to lack of property width, the approach shall be placed at or near the farthest property line from the intersection and a curbed, full median extending 100 feet past the approach shall be installed by Developer at the Developers' expense.

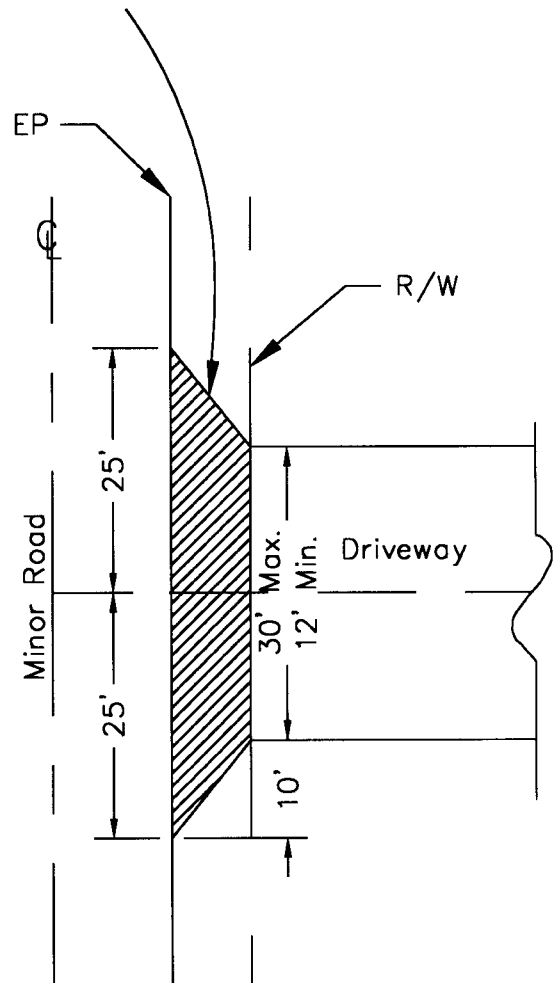
APPROVED DATE JUN 9 1998  
 DIRECTOR OF PUBLIC WORKS

IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
 COMMERCIAL DRIVEWAY REGULATIONS  
 PLATE 3-F3



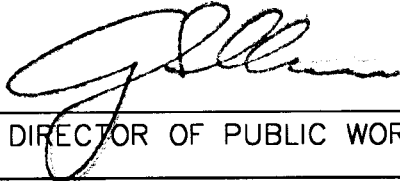
Use 2" AC over 4" AB or 3" AC over compacted native soil OR 5-1/2" of Portland Cement Concrete with 6 x 6 x 10 wire mesh. Flow line along right-of-way shall be maintained.



No concrete (for concrete driveways) shall be placed within 16 feet of the centerline of the roadway for 2-lane roadways.

NOTE: The approach elevation at the ultimate right-of-way line shall be within 1 foot, either above or below the existing roadway centerline.

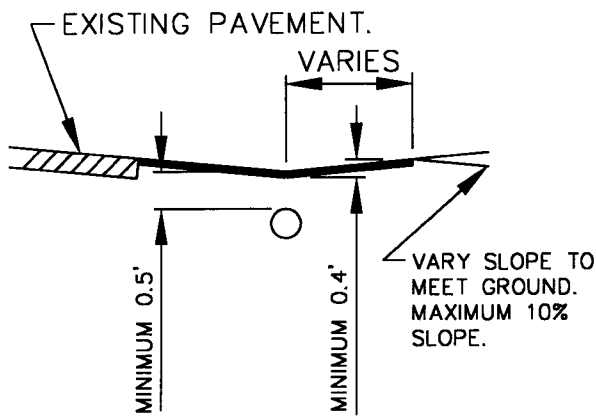
Encroachment Permit Required

APPROVED  DIRECTOR OF PUBLIC WORKS

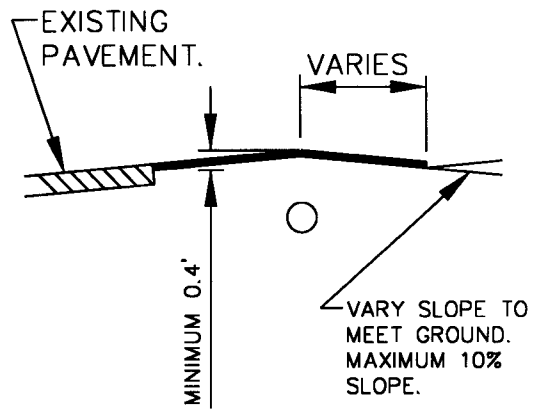
DATE JUN 9 1998

IMPROVEMENT STANDARDS

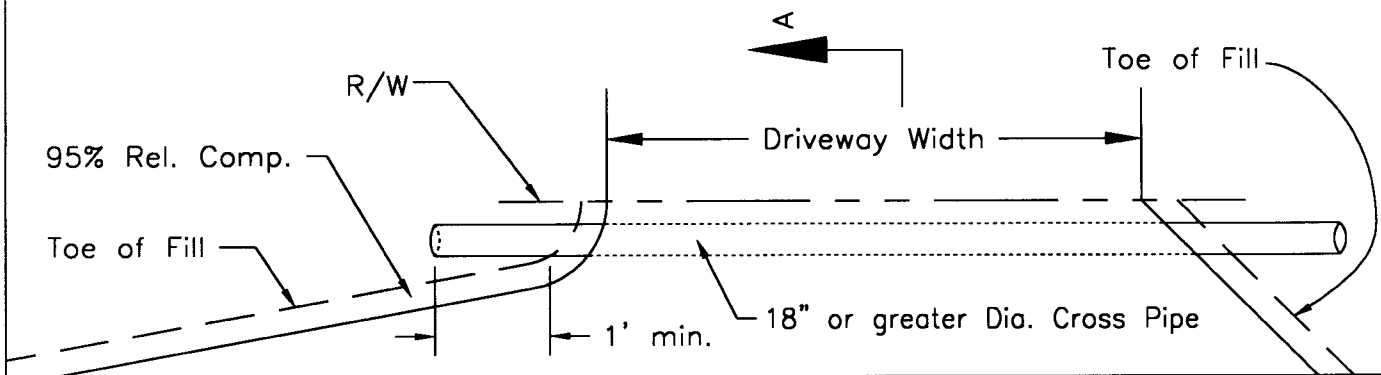
STANISLAUS COUNTY
RURAL DRIVEWAY APPROACH
PLATE 3-F4



SECTION A-A



SECTION A-A



Edge of Pavement

Culverts shall be placed so as to maintain flow.

Set pipe in line with existing ditch at elevation that will not disrupt natural drainage.

Use 12 ga. minimum for all metal pipe or HDP plastic pipe. For RCP 24" or smaller, use a minimum of Class 3 RCP. For pipe greater than 24", use Class 4 or better.

APPROVED

*[Signature]*  
 DIRECTOR OF PUBLIC WORKS

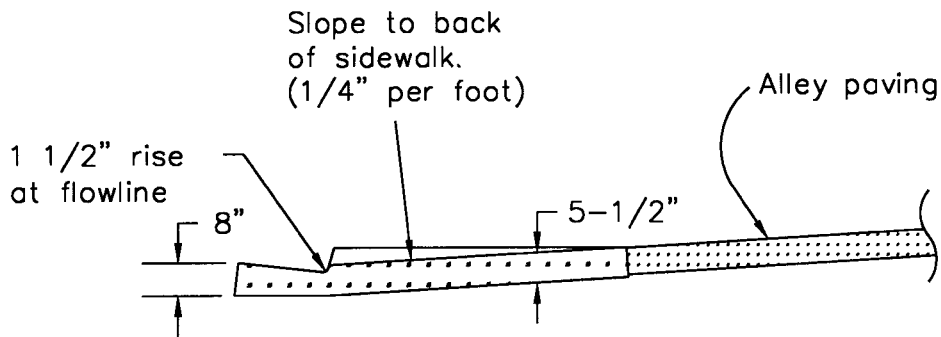
DATE JUN 9 1998

IMPROVEMENT  
 STANDARDS

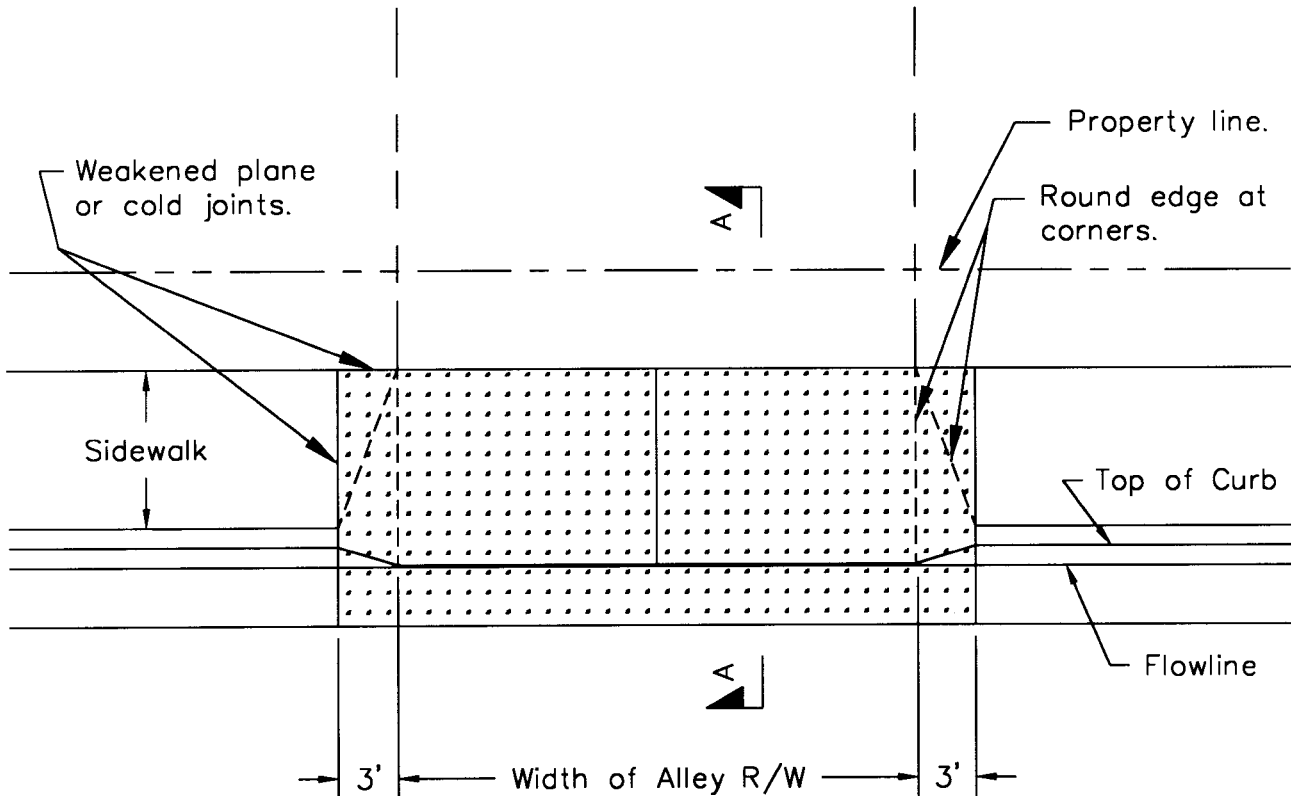
STANISLAUS COUNTY

CULVERT PLACEMENT  
 UNDER RURAL  
 DRIVE APPROACH

PLATE 3-F5

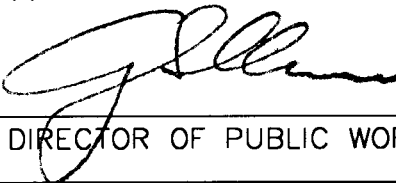


SECTION A-A



NOTES:

1. Unsuitable soil shall be removed and replaced with sand.
2. 6X6X10 wire mesh required throughout approach.
3. One inch deep weakened plane shall be installed at centerline of approach.

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DATE JUN 9 1998

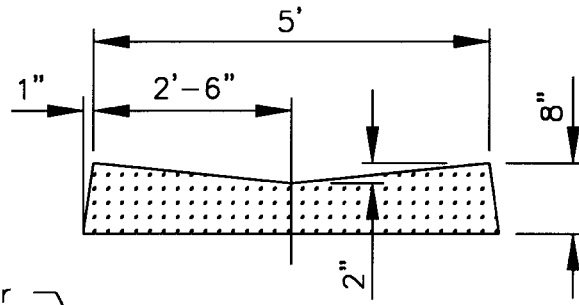
IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

RESIDENTIAL  
ALLEY APPROACH

PLATE 3-G1



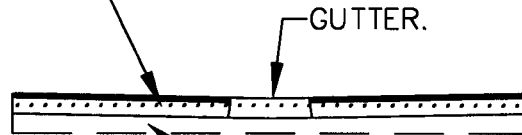


2" AC over 6" AB or 5 1/2" concrete with 6X6X10 wire mesh.

SECTION A-A

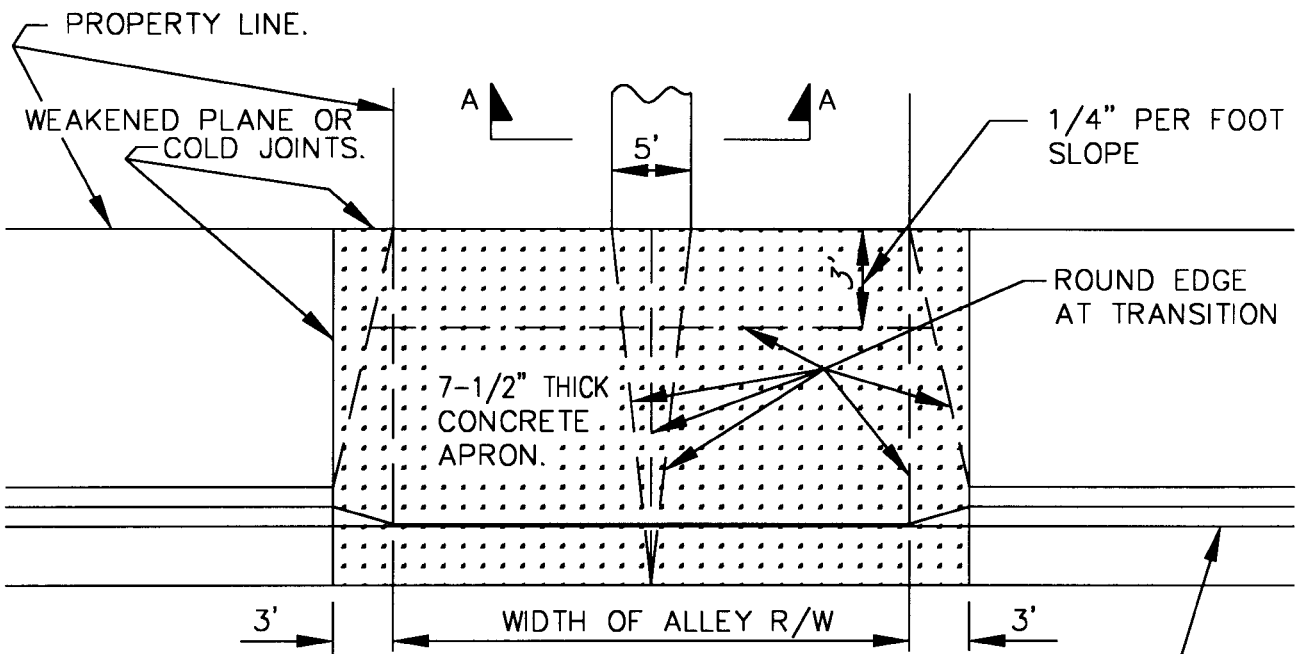
NOTES:

1. 6X6X10 WIRE MESH REQUIRED THROUGHOUT PROJECT.
2. UNSUITABLE SOIL SHALL BE REMOVED AND REPLACED WITH SAND.



6" SUB-BASE. SCARIFY AND COMPACT TO 95% R.C..

ALLEY SECTION



PLAN

Flow Line

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DATE JUN 9 1998

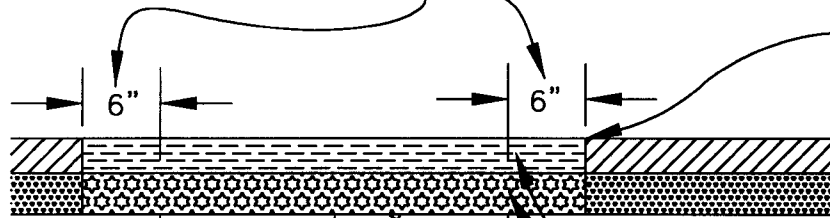
IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

COMMERCIAL ALLEY  
APPROACH

PLATE 3-G2

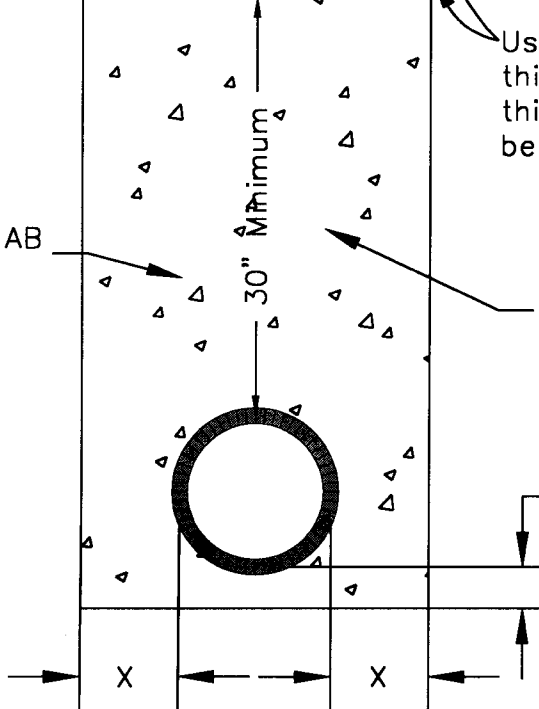
For Transverse Trenches



Saw cut smooth vertical joint.

Use a pavement and base thickness of 1" thicker than the existing. The minimum thickness for the pavement and base shall be 3" and 6" respectively.

Class 2 AB



Provide 95% Relative Compaction in 8" layers.

6" of bedding if soil is hardpan or rock.

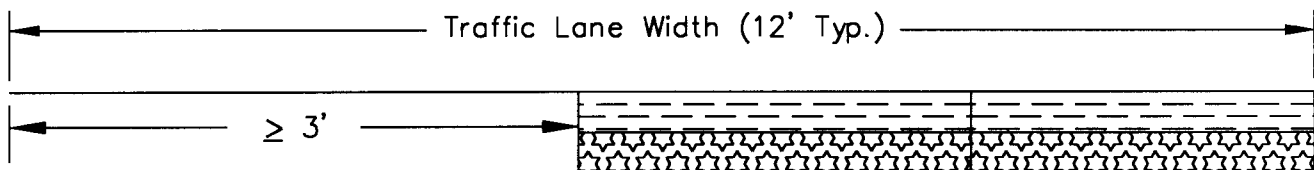
-Ponding or jetting will not be allowed.

-All storm and sewer laterals shall be a minimum of 30" below sub grade at edge of pavement unless a lesser depth is approved by the Engineer.

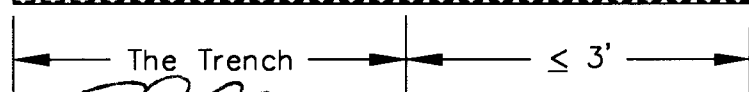
Pipe Size	≤ 33"	36"-54"	60"-72"
Minimum X	10"	12"	18"

If one edge of the trench is within 3' of the edge of pavement, then replace the structural section to the edge of pavement.

For Longitudinal Trenches:



If the edge of the trench is ≤ 3' from the edge of the travel lane, then overlay the lane with 1" of AC.



APPROVED

*[Signature]*  
DIRECTOR OF PUBLIC WORKS

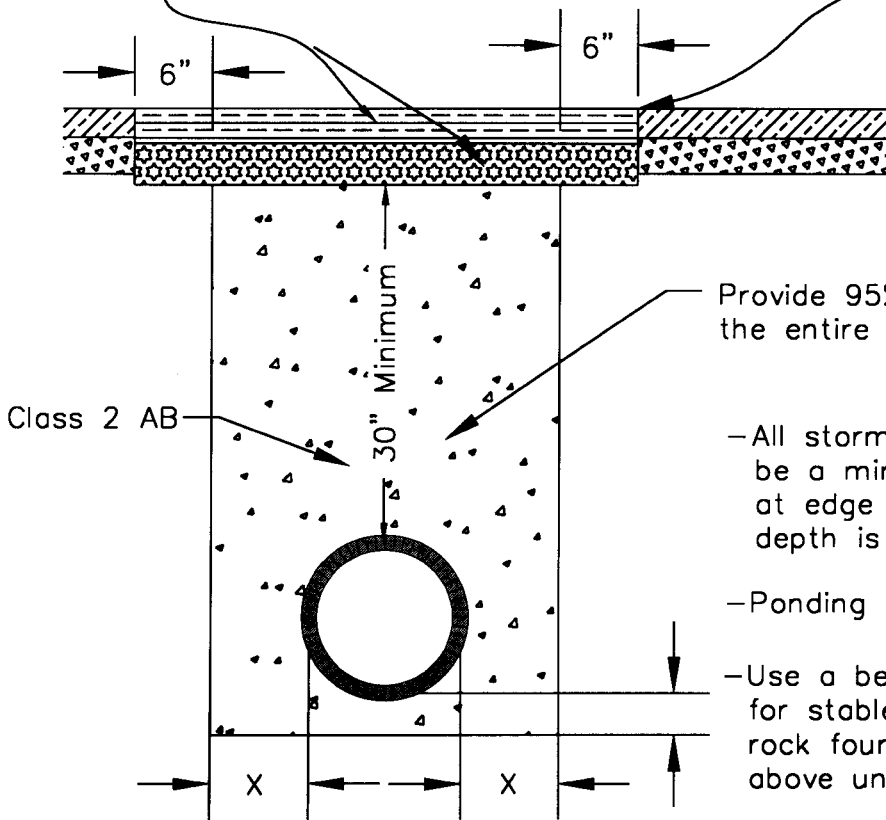
DATE JUN 9 1998

IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
TRENCHING REQUIREMENTS FOR RIGID PIPE  
PLATE 3-H1

Use a pavement and base thickness of at least 3" and 6" respectively or 1" thicker than the existing, whichever is greater.

Saw cut smooth vertical joint.



Provide 95% Compacting in 8" layers for the entire depth of trench.

-All storm and sewer laterals shall be a minimum of 30" below sub grade at edge of pavement unless a lesser depth is approved by the Engineer.

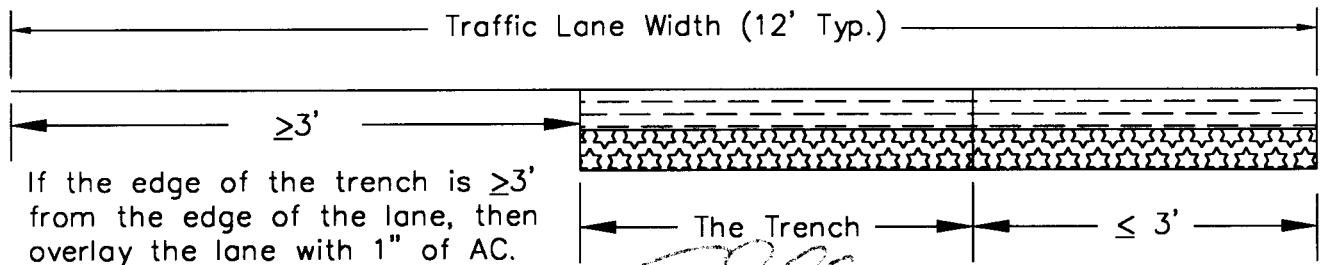
-Ponding or jetting will not be allowed.

-Use a bedding depth of at least 6" for stable soil foundations, 1' above rock foundations, and 18" or more above unstable foundations.

Pipe Size	≤ 33"	36"-54"	60"-72"
Minimum X	10"	12"	18"

If one edge of the trench is within 3' of the edge of pavement, then replace the structural section to the edge of pavement.

Longitudinal Trenches:



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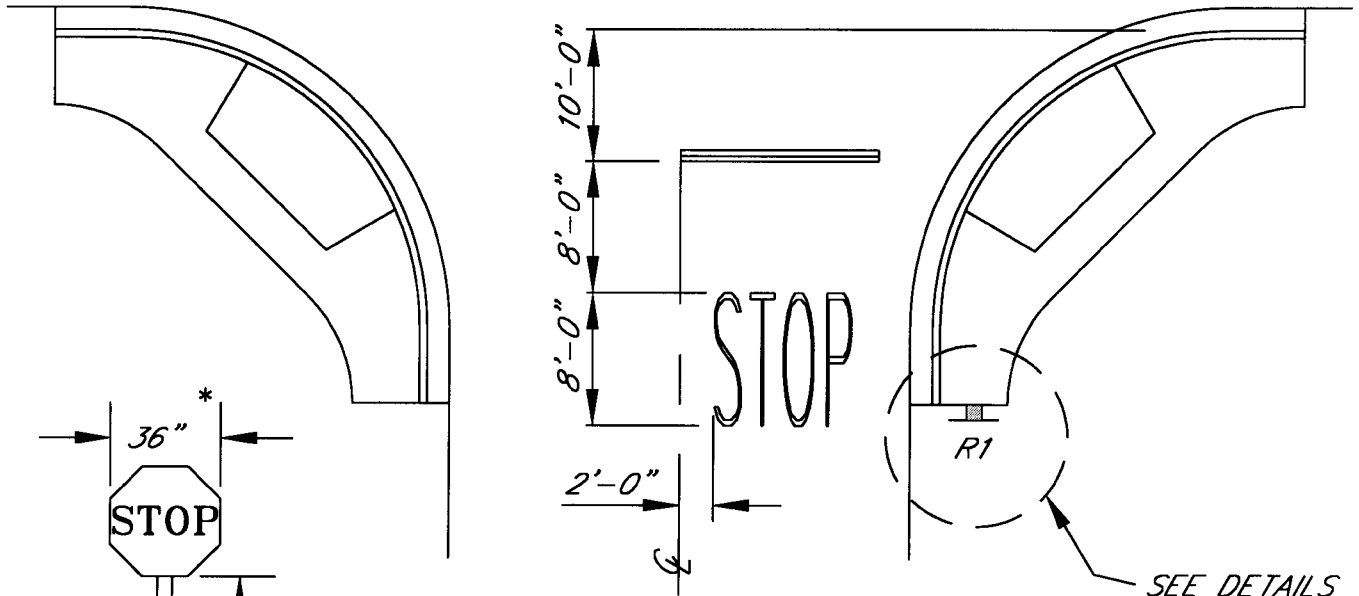
DATE JUN 9 1998

IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY

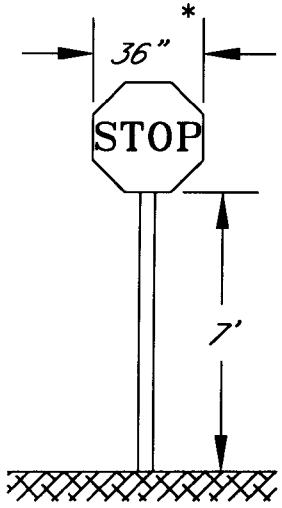
TRENCHING  
 REQUIREMENTS FOR  
 FLEXIBLE PIPE

PLATE 3-H2

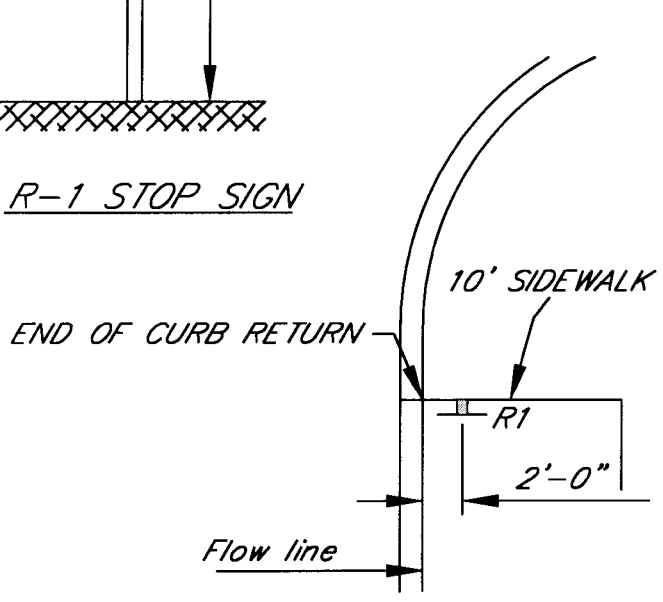


\* WITH APPROVAL OF ENGINEER, 30" SIGN MAY BE USED IN RESIDENTIAL AREA.

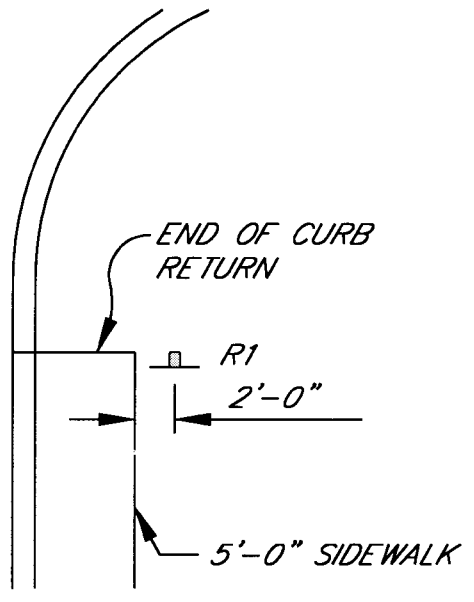
SEE DETAILS THIS SHEET.



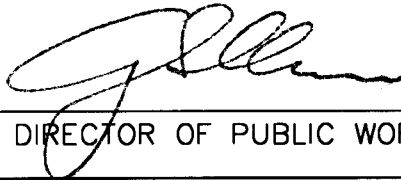
R-1 STOP SIGN



DETAIL "A"



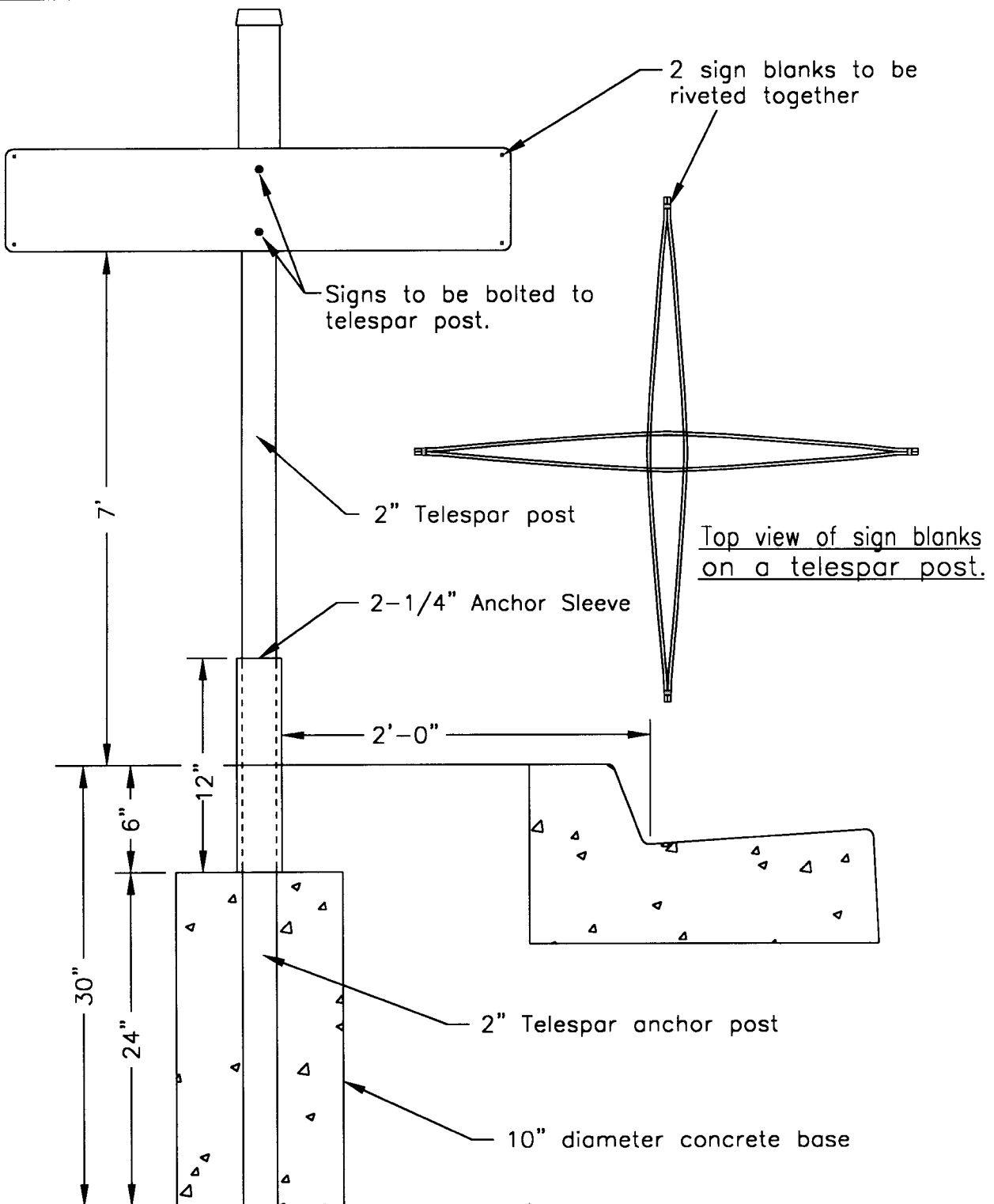
DETAIL "B"

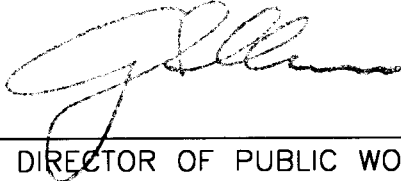
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DATE JUN 9 1998

IMPROVEMENT STANDARDS

STANISLAUS COUNTY
STOP SIGN INSTALLATION
PLATE 3-I1



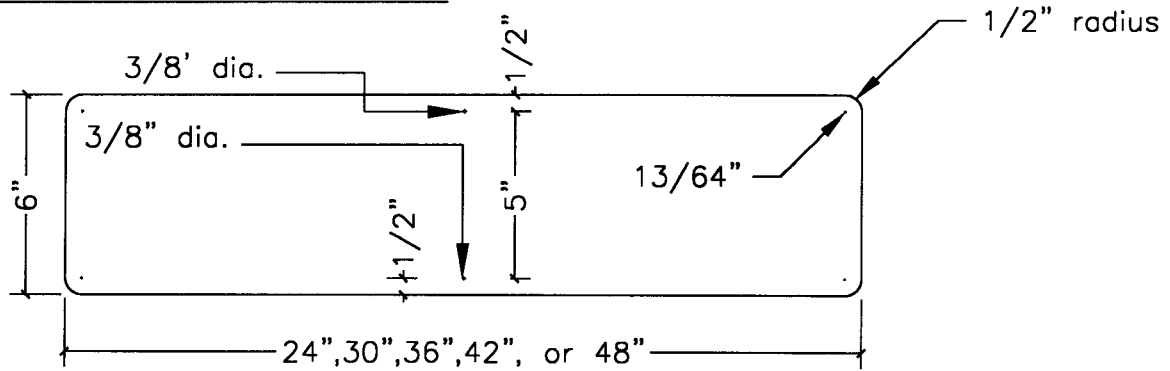
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DATE JUN 9 1998

IMPROVEMENT STANDARDS

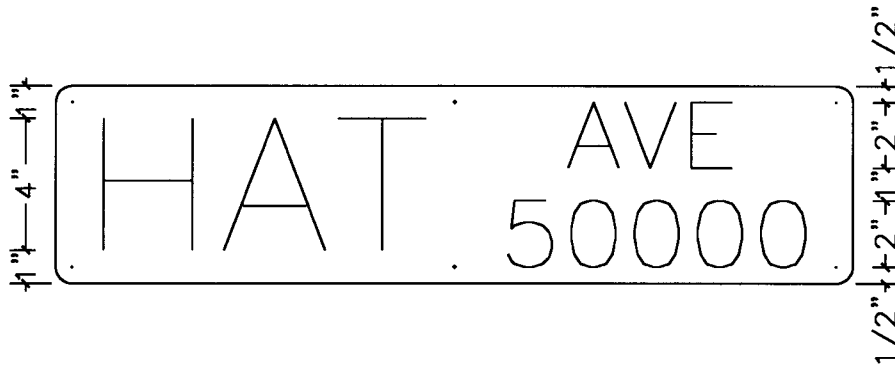
STANISLAUS COUNTY
SIGN POST
PLATE 3-I2

# ALUMINUM SIGN BLANK

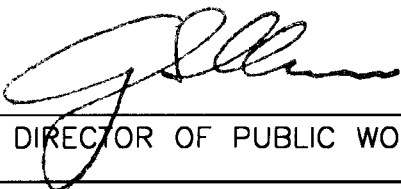


1. All blanks to be 0.063 gauge aluminum alloy (6061-TB or 5155-H3B), degreased and treated with Aladdin 1200.
2. The sign blanks shall conform to the standard B.P.R. shapes and corner radii, except that hole punching, or drilling, shall conform to the hole sizes and locations shown hereon. Each corner shall have a 13/64" diameter hole.
3. All blanks shall be 6" high by 24", 30", 36", 42", or 48" wide. The 3/8" holes shall be centered on the vertical centerline of each blank.

## NAME FACE



1. All faces shall be "Engineer Grade" reflective sheeting with reflective silver copy on reflective green background.
2. Each sign face shall have sufficient spacing provided to permit application of a 5-digit number.
3. Numerical street names shall be spelled out instead of using the numeral letter type abbreviated legends.

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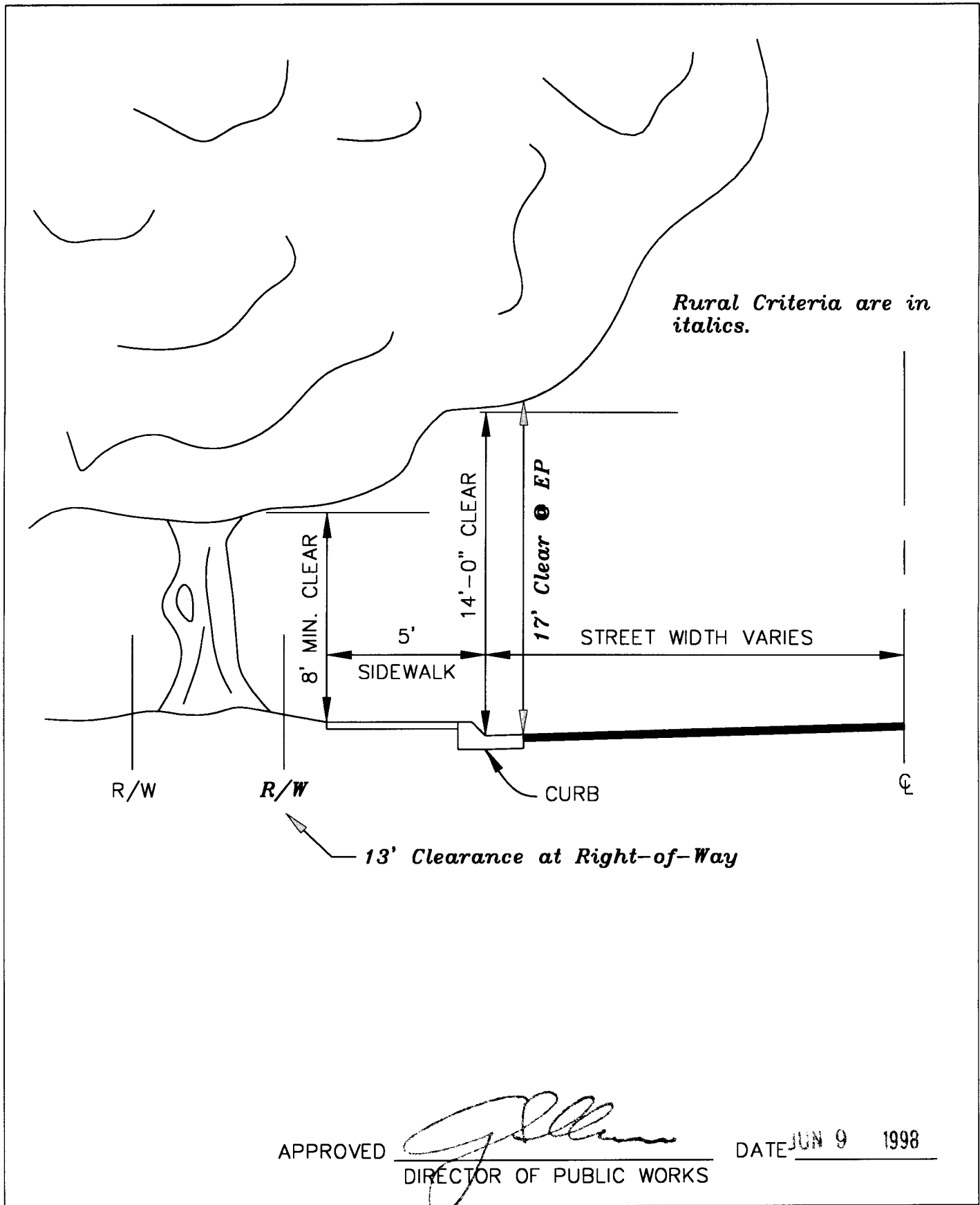
DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

STREET NAME SIGN

PLATE 3-I3

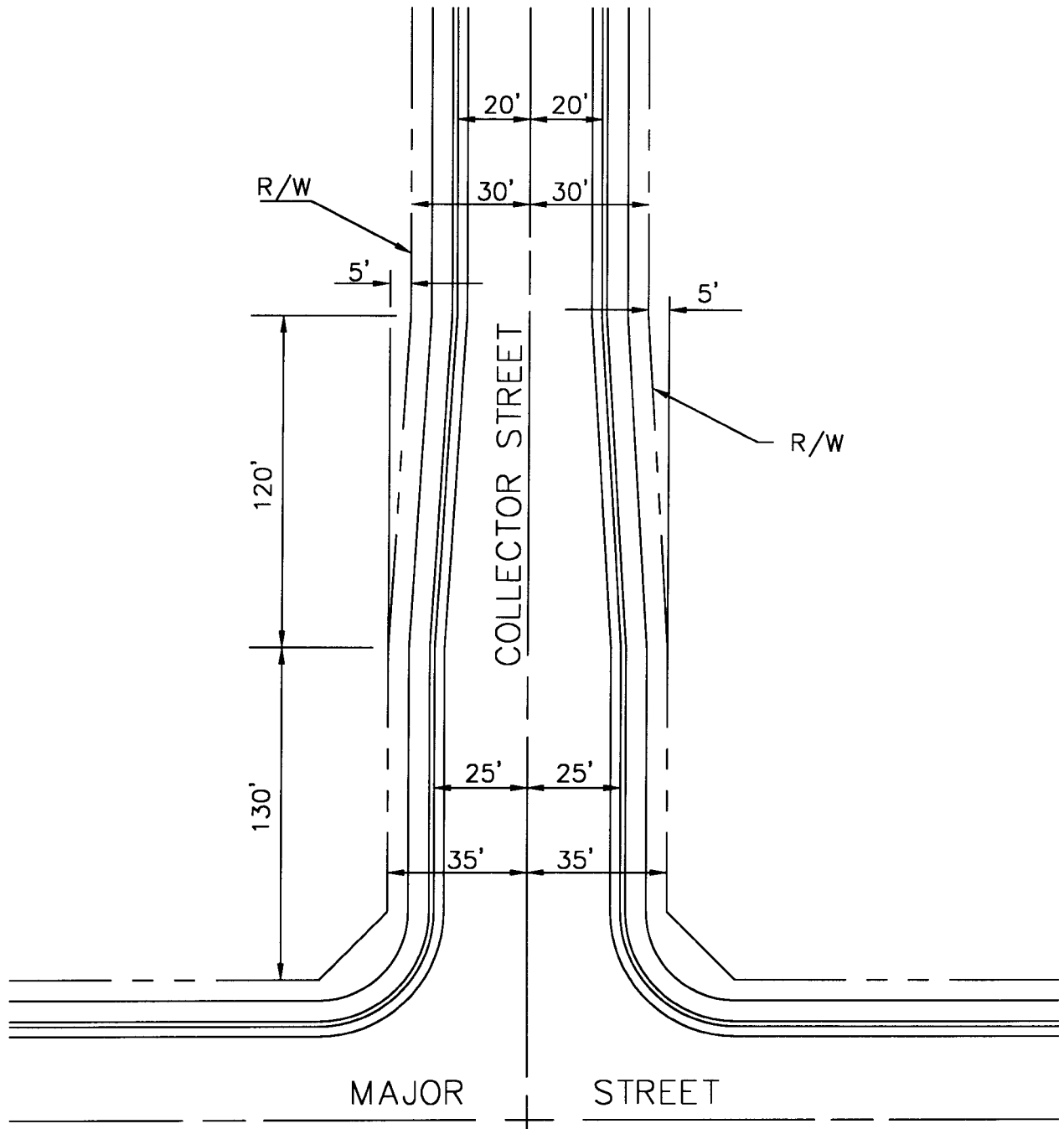


IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

TREE TRIMMING  
STANDARDS

PLATE 3-J

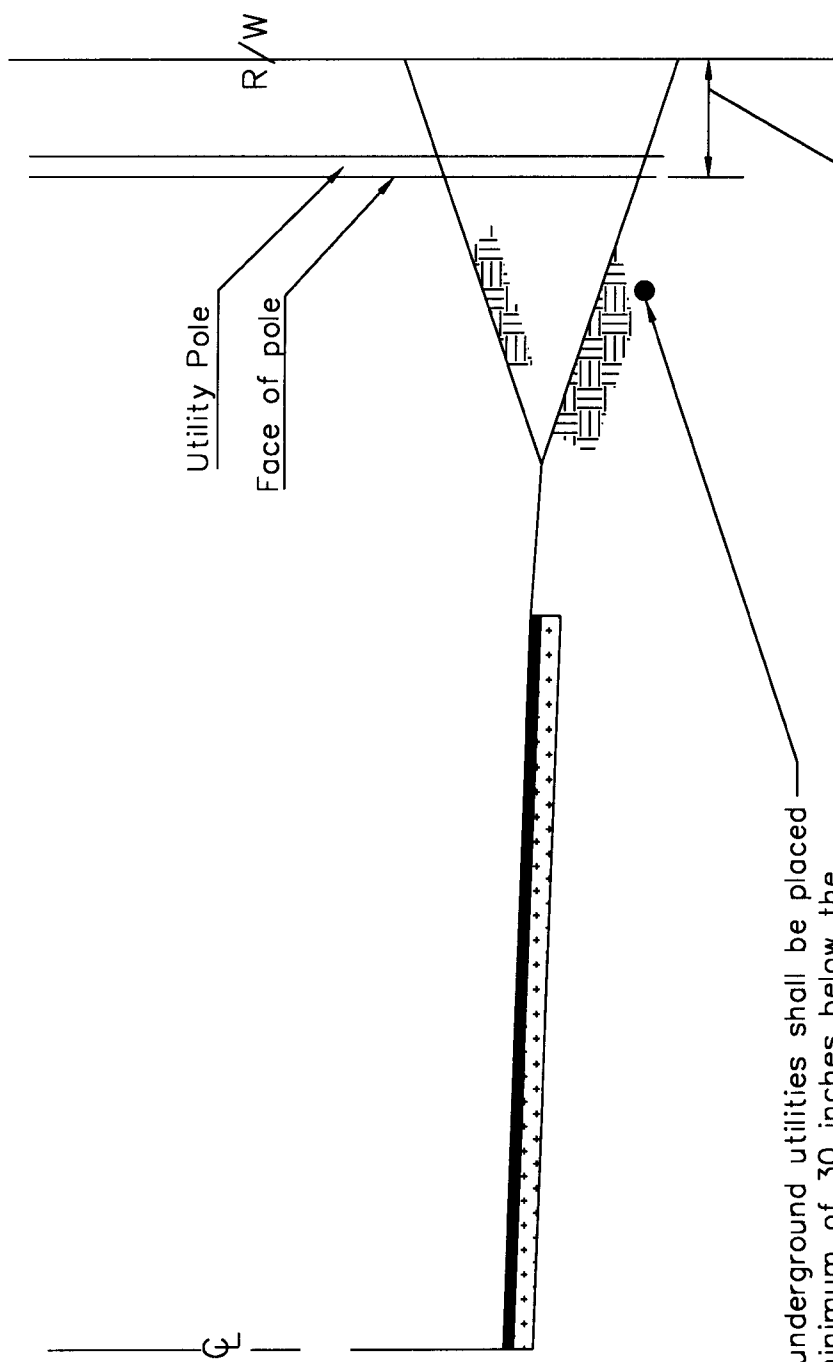


APPROVED *[Signature]* DATE JUN 9 1998  
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IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
 TYPICAL INTERSECTION  
 OF A MAJOR/COLLECTOR  
 PLATE 3-K



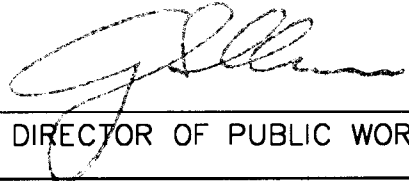


All underground utilities shall be placed a minimum of 30 inches below the edge of pavement elevation or a minimum of 30 inches below the surface at the point of installation, whichever is lowest.

Place all above ground utilities/facilities in a P.U.E., otherwise the road-side edge of the utility/facility shall be within 24" of the R/W.

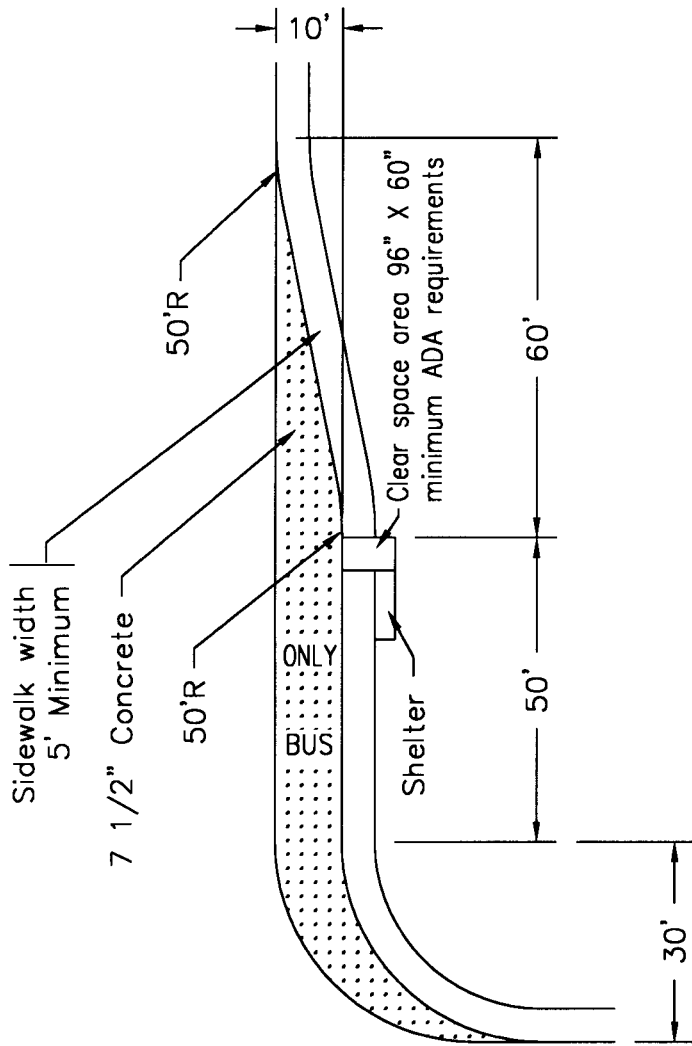
Place all below or at grade utilities/facilities in a P.U.E., otherwise the road-side edge of the utility/facility shall be within 36" of the R/W.

NOTE:  
Where applicable, all irrigation facilities shall be placed in the P.U.E. area or outside the R/W.

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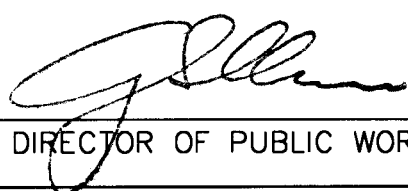
# IMPROVEMENT STANDARDS

STANISLAUS COUNTY
UTILITY LOCATIONS
PLATE 3-L



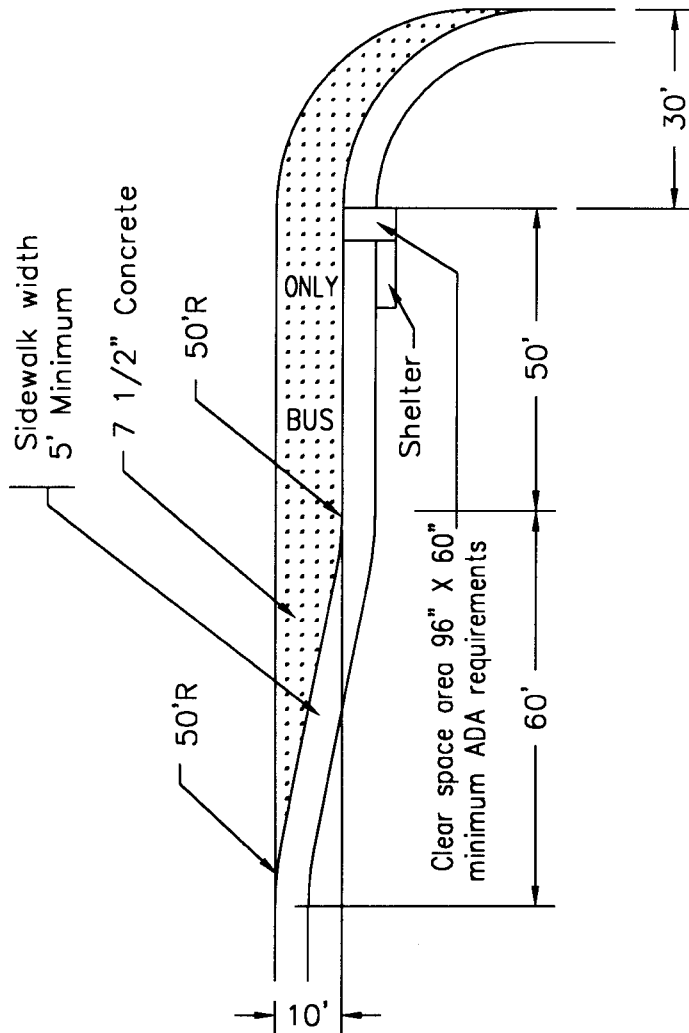
NOTES:

1. Shelter pad needed only for sidewalks less than 10 feet wide.
2. No extra shelter pad needed for sidewalks wider than 10 feet.
3. Shelter pad and shelters must be wide enough to meet ADA requirements 40" X 30" clear floor area within shelter perimeter.

APPROVED  DATE JUN 9 1998  
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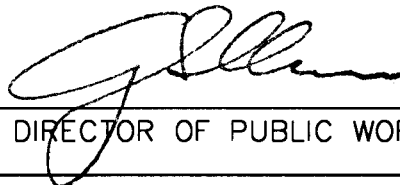
IMPROVEMENT STANDARDS

STANISLAUS COUNTY
FAR SIDE BUS TURNOUT
PLATE 3-M1



**NOTES:**

1. Shelter pad needed only for sidewalks less than 10 feet wide.
2. No extra shelter pad needed for sidewalks wider than 10 feet.
3. Shelter pad and shelters must be wide enough to meet ADA requirements 40" X 30" clear floor area within shelter perimeter.

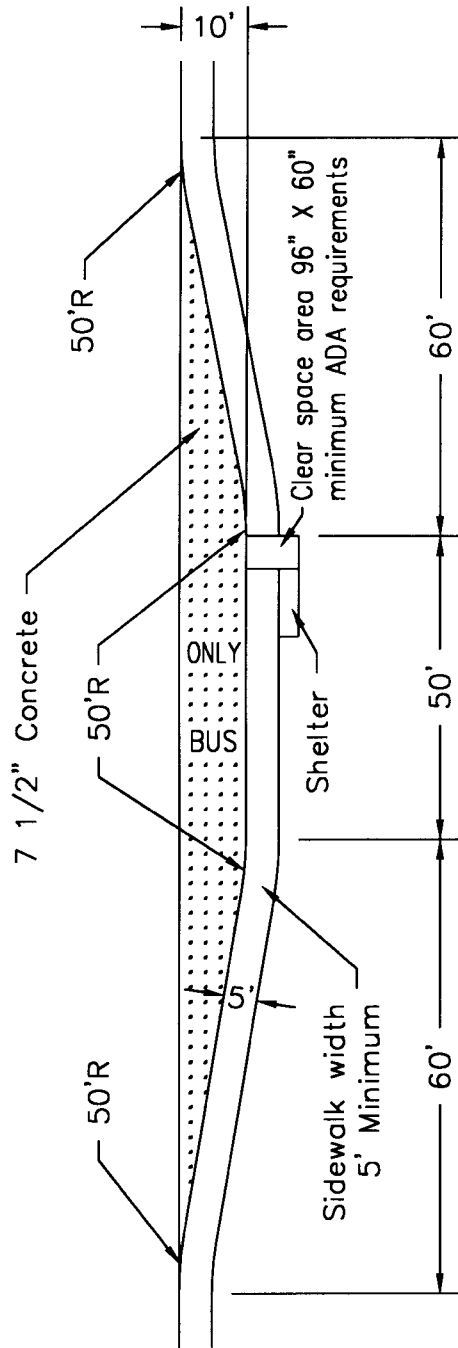
APPROVED  DATE JUN 9 1998  
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IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

NEAR SIDE  
BUS TURNOUT

PLATE 3-M2



NOTES:

1. Shelter pad needed only for sidewalks less than 10 feet wide.
2. No extra shelter pad needed for sidewalks wider than 10 feet.
3. Shelter pad and shelters must be wide enough to meet ADA requirements 40" X 30" clear floor area within shelter perimeter.

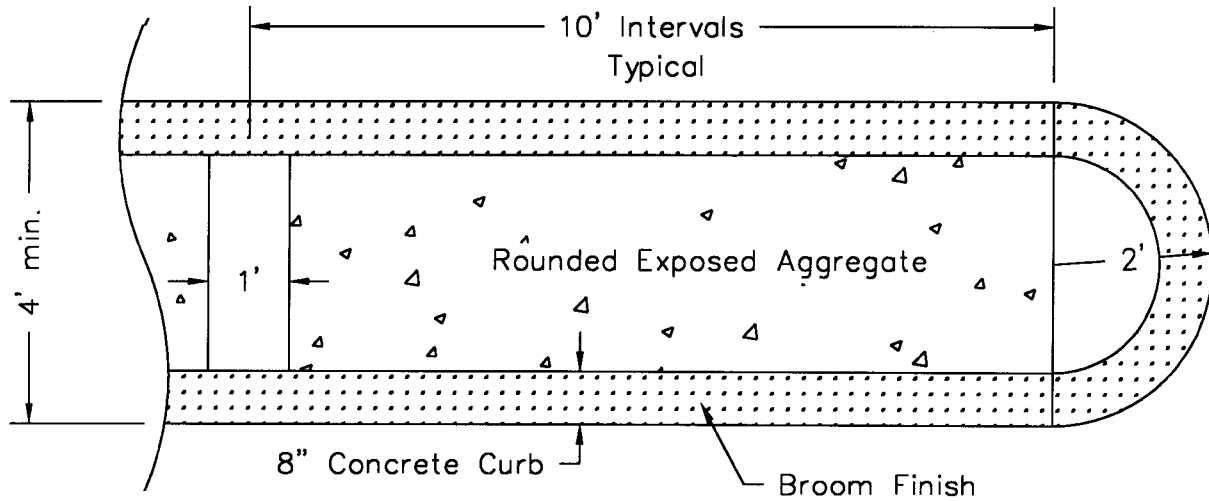
APPROVED DATE JUN 9 1998  
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IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY

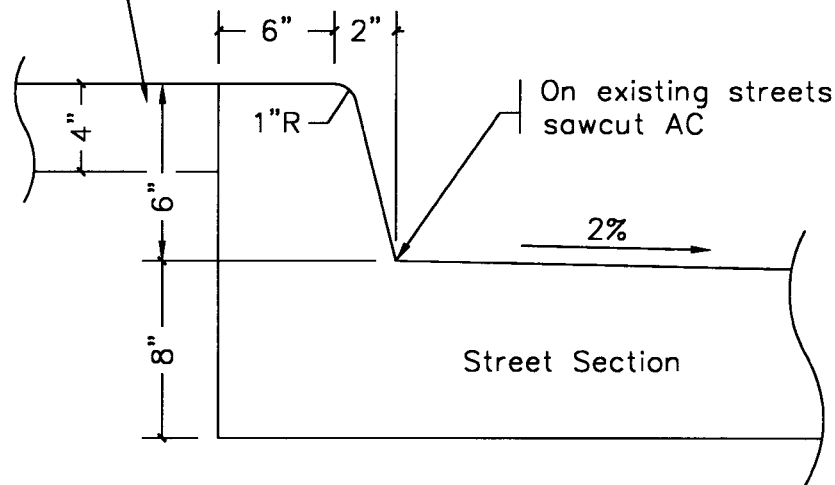
MID-BLOCK  
 BUS TURNOUT

PLATE 3-M3



Rounded exposed aggregate 3/4" max.

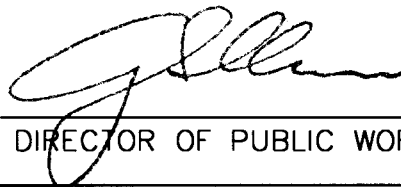
PLAN



CURB SECTION

NOTES:

1. On landscaped medians curb shall extend to bottom of aggregate base.
2. Provide weakened plane joints every 10 feet and at end of returns.
3. Landscaped medians shall be a minimum of 8 feet wide.

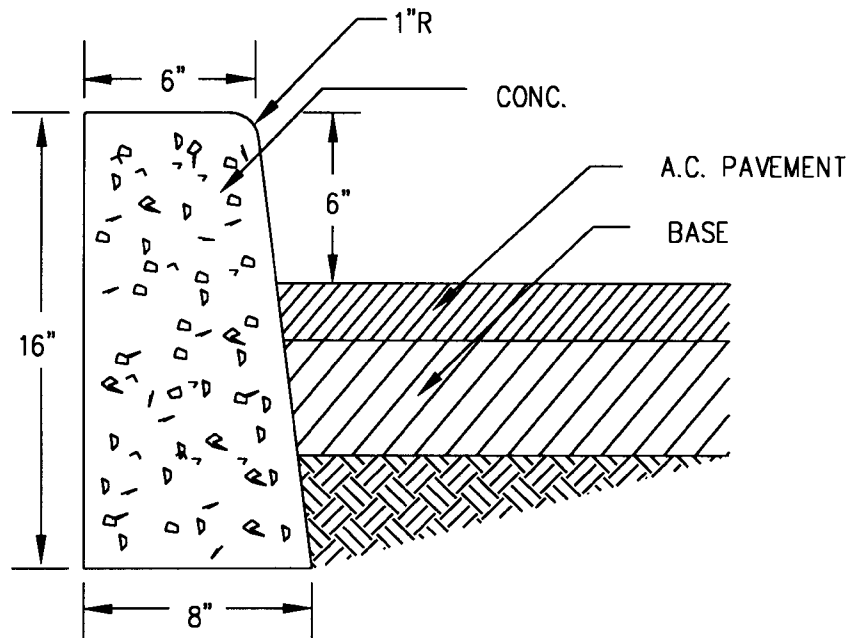
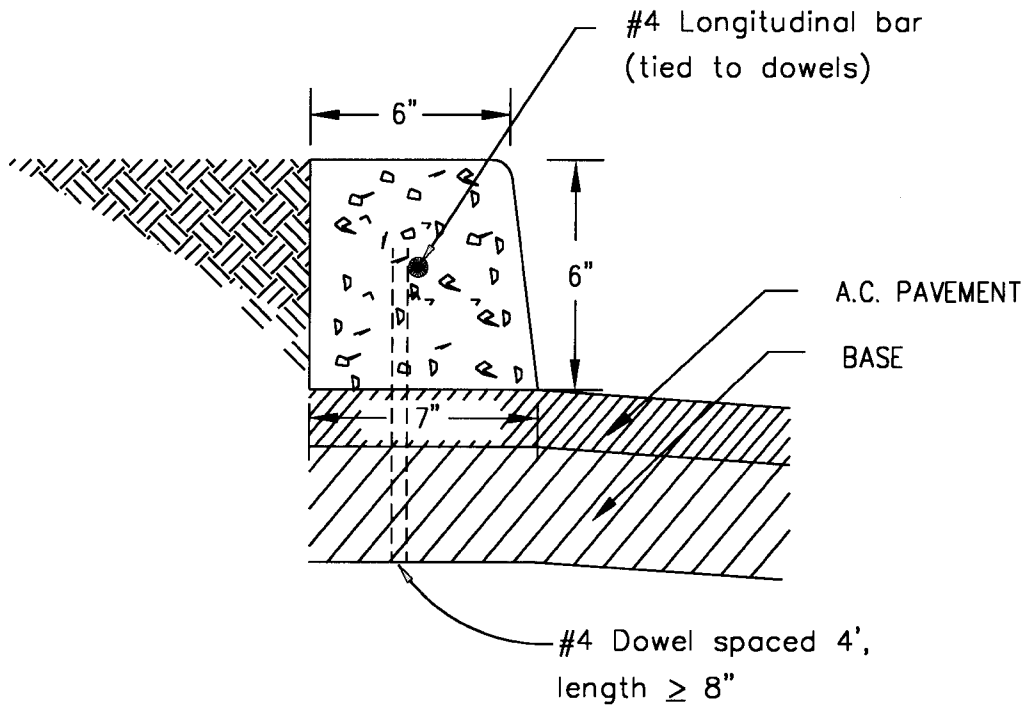
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 DIRECTOR OF PUBLIC WORKS

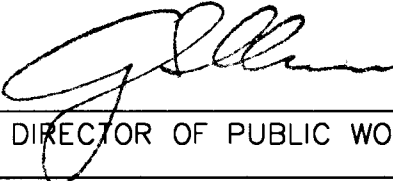
IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

MEDIAN  
DETAIL

PLATE 3-N1



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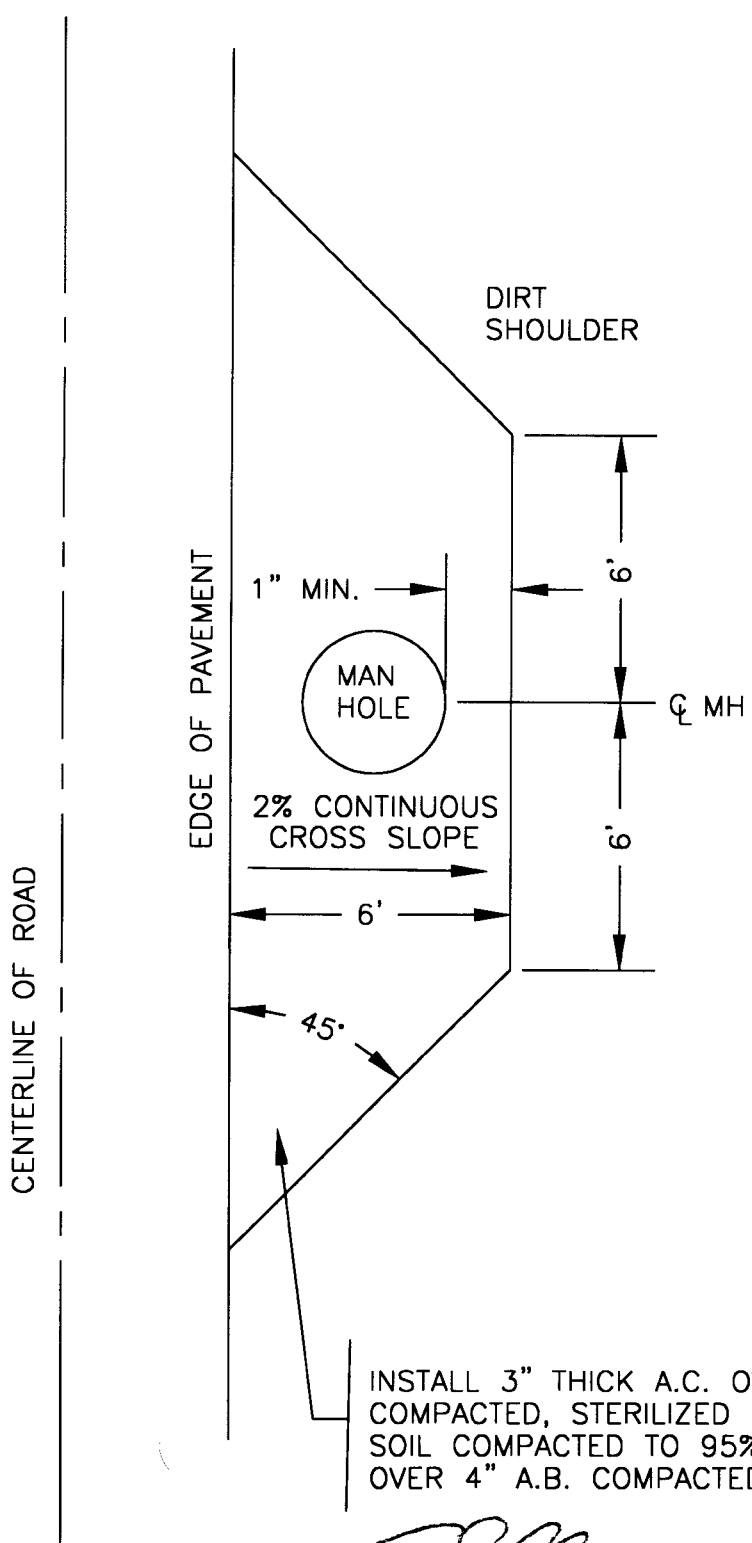
DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

MEDIAN CONCRETE  
VERTICAL CURBS

PLATE 3-N2



APPROVED DATE JUN 9 1998

DIRECTOR OF PUBLIC WORKS

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY

PAVING REQUIREMENT  
MANHOLE LESS THAN 6FT  
FROM EDGE OF PAVEMENT

PLATE 3-01

CENTER LINE OF ROAD

EDGE OF PAVEMENT

1' MIN

6'

1' MIN

6'

☉ MH

MAN HOLE

2%  
CONTINUOUS  
CROSS SLOPE

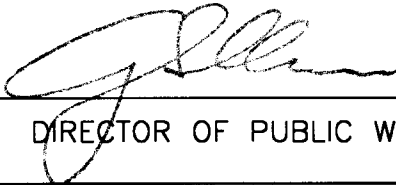
IF 6' OR  
LESS, PAVE  
TO EP AS PER  
3-01

6'

DIRT SHOULDER

INSTALL 2" THICK A.C. OVER COMPACTED,  
STERILIZED NATIVE SOIL OR 3 1/2"  
THICK CONCRETE.

APPROVED



DIRECTOR OF PUBLIC WORKS

DATE

JUN 9 1998

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY

PAVING REQUIREMENTS  
MANHOLE MORE THAN 6FT  
FROM EDGE OF PAVEMENT

PLATE 3-02



## **CHAPTER 4: STORM DRAINAGE**

As Adopted June 12, 2001

- 4.1 GENERAL:** These Standards have been prepared for use in the design of storm water facilities within the unincorporated areas of Stanislaus County. The criteria and guidelines set forth herein shall be followed in instances where the facilities are subject to review by the Department.

Residential, commercial and industrial developments shall have surface drainage disposal accommodated in one or more of the following ways:

- a. Positive Drainage: Positive drainage is a gravity flow storm drainage collection and discharge system into a river, stream, creek, irrigation facility, or other water way.
  - b. Drainage Retention Facility: Drainage retention facilities may be used when positive drainage is not available.
  - c. Rock Well: A rock well (vertical or horizontal) may be used only when above methods 4.1a or 4.1b are not feasible. Department approval of the use of a rock well shall be obtained prior to submittal of the drainage plan.
  - d. On-Site Drainage: Commercial and Industrial properties shall contain all storm drainage on-site unless above methods are available and approved for use by the Department prior to submittal of the drainage plan.
- 4.2 STANDARD OF DESIGN:** All storm drainage facilities within Stanislaus County shall be designed using a 50 year storm or greater. All drainage facilities shall be designed to provide for public safety.
- 4.3 PEAK FLOW RATE:** The peak flow rate shall be used to size pipes and culverts and shall be determined using the following rational formula:

$$Q=CIA$$

- a. Peak Flow Rate (Q): Peak rate of flow in cubic feet per second.
- b. Coefficient of Runoff (C): Values between 0.0 and 1.0 which are to be extrapolated from the following table:

<u>LAND USE</u>	<u>C</u>
Pavement	0.95
Roofs	0.95
Compacted earth without pavement	0.80
Lawns, pasture and farmland	0.30
Single family residence:	
Over 1.5 acres	0.35
0.5 to 1.5 acres	0.45
6000 sf. to 0.5 acres	0.50
Less than 6000 sf.	0.55
Multi-family residence	
Apts., condos, duplexes, & town homes	0.70
Commercial and industrial	0.90

- c. Intensity (I): The average intensity of rainfall in inches per hour for a duration equal to the time of concentration (Tc) and is determined using the following formula:

$$I = Im \times \frac{M.A.P.}{10.9}$$

Im: Average intensity of rainfall in inches per hour for the Modesto rainfall gauging station. Coefficient is extrapolated from Plate 4-A using the calculated time of concentration (Tc).

Tc: The time of concentration or the sum of the overland flow and conduit flow times. The following table shows minimum travel times to be used when the calculated Tc is less than the minimum shown.

<u>Land Use</u>	<u>Minimum Travel Time</u>
Single family (0.5 to 1.0 acre)	30 min.
Single family (less than 0.5 acre)	20 min
Multi-family	20 min
Commercial & Industrial	10 min
Gutters	1 ft. / Sec

M.A.P.: The mean annual precipitation for the design area in question. Coefficient is extrapolated from Plate 4-B.

- d. Area (A): The total tributary area, expressed in acres, that will contribute runoff to the drainage system, regardless of the limits of the development under construction.

**4.4 DRAINAGE Retention**: Drainage retention facilities shall be designed in conformance with the guidelines contained in these Standards and shall be to a standard not less than the following criteria:

- a. Volume (V): Drainage facilities shall have the capacity to hold the total runoff from a 50 year frequency, 24 hour storm. The volume shall be determined with no allowance for percolation or outlet facilities using the following basic formula:

$$V = \frac{CAR}{12}$$

V: Volume in acre-feet

C: Coefficient of Runoff (see section 4.3 part b)

A: Area in acres (see section 4.3 part d)

R: 2.33 times M.A.P. divided by 10.9 (for M.A.P. see Plate 4-B)

$$R = \frac{2.33 \times \text{M.A.P.}}{10.9}$$

- b. Elevation: Drainage retention facilities shall be designed so that a hydraulic grade line (HGL) extended from the drainage retention facility's highest water surface elevation (Z) shall be at least 6 inches below all tributary drainage inlets at their respective locations. The HGL at a given point shall be calculated using the following formula:

$$\text{HGL} = Z + H_f$$

HGL: Hydraulic grade line elevation in feet at a particular point

Z: The high water surface elevation of a drainage facility in feet

H<sub>f</sub>: Head loss in feet due to friction loss from a pipe. The friction loss shall be calculated using the following formula:

$$H_f = \frac{(3.022)(v)^{1.85}(L)}{(C)^{1.85}(D)^{1.165}}$$

v: Velocity of water in pipe in feet per second (assume full pipe)

L: length of pipe in feet

D: Inside diameter of pipe in feet

C: Design coefficient based on pipe material. Coefficient to be extrapolated from the following table:

<u>Pipe</u>	<u>C</u>
Steel welded and seamless	100
Steel corrugated	60
Concrete	100
Cement-asbestos	140
Cast iron	100
Cast iron tar (asphalt) coated	100
Cast iron cement lined	140
Cast iron bituminous lined	140
Cast iron galvanized	100
Plastic	130

- c. Dewatering: A drainage facility must be emptied of a 10 year event storm within 48 hours by outlet facilities providing positive drainage or through percolation.

**4.5 DISCHARGE APPROVAL AND PERMITS**: It shall be the responsibility of the Developer to obtain written approval and encroachment permits from all agencies controlling the discharge of drainage into the receiving waterways.

**4.6 ROCK WELLS**: Rock wells (vertical and horizontal), when approved by the Engineer, shall be constructed as shown on the plates contained in these Standards. The rock wells shall be located at least 150 feet from domestic water wells. Individual rock wells shall have a 20 foot minimum horizontal separation from all other vertical rock wells. Rock wells shall store the volume from a 50 year frequency storm and be designed in the following manner:

- a. Find Percolation Rate (PR): For design purposes this value shall be determined by the design engineer by means of a percolation test performed by a qualified testing firm. The test shall be taken at the intended location, both horizontal and vertical of said drainage unit. The percolation rate shall be expressed in cubic feet per minute. The percolation rate shall be sufficient to completely percolate a 10 year storm's stored volume within 48 hours
- b. Determine the Volume of Storm Water (V): See methodology in item 4(a) above. The volume shall be determined with no allowance for percolation or outlet facilities.
- c. Determine the Storage Volume (SV): Storage may be a combination of surface, subsurface or aggregate voids. If a portion of the paved roadway is intended to be used for storage, the stored water on the pavement shall not encroach into the travel way of the nearest traffic lane.

- d. Dewatering: A rock well must be emptied of a 10 year event storm within 48 hours through percolation.
- f. Testing: Rock wells shall be tested for adequacy after their completion. Testing shall consist of flooding the rock well at a rate equal to its design percolation for a duration equal to the Peak Flow Time. If a static head is obtained then the rock well shall be allowed to drained for 1 hour, then refilled and its percolation rate calculated.

The measured percolation rate of the drainage unit shall be compared to the design percolation rate. If the measured rate is less than the design, additional percolation area will be required.

**4.7** PIPE: Storm drain pipe shall be as shown on the plates contained in these Standards, and conform to the following:

- a. Material: The pipe material may be reinforced concrete, non-reinforced concrete, cast-in place concrete or high density polyethylene (HDPE). The type of pipe used and its intended use must conform to accepted engineering practice and must be approved by the Engineer.

The class of pipe to be used shall be clearly shown on the improvement plans and specified in the special provisions, if any. All pipe shall conform to State Standards.

- b. Size: Catch basin laterals, mains, trunk lines, cross culverts or any other type of gravity flow storm drainage pipe shall be smooth walled and no less than 18 inches in diameter.

Pipe curvature between man holes shall not exceed manufactures recommendations.

Pipe sizes shall not decrease going down stream.

Minimum Cover: Pipe alignment shall be designed to allow for a minimum cover of 30 inches as measured from the natural ground or finished grade of pavement to the inside top of pipe.

- c. Velocity: Pipes (for calculation purposes) shall be considered to be flowing full. Minimum velocity shall be a velocity sufficient to maintain a clean pipe generally not less than 2 feet per second.
- d. Installation: The pipe shall be laid in conformity with the prescribed lines and grades.

The design engineer shall field verify the depth and alignment of existing storm drain lines prior to construction. If the existing storm drain line depth, alignment and size is not as shown on the improvement plans, the design

engineer shall notify the Engineer and make appropriate corrections before proceeding.

All adjustment of pipe to line grade shall be made by scraping away or filling in and tamping under the body of the pipe and not by blocking or wedging. All pipe sections shall be laid with bell end upstream and shall be laid upstream (from the lowest point to the highest point) and from structure to structure. Grade stakes shall be provided at 25 foot intervals, and each stake shall be used in establishing the grade for the pipe.

**4.8 MANHOLES:** Storm drain manholes shall be constructed as shown on the plates contained in these Standards.

Manholes shall not be constructed within a gutter.

Manholes shall be placed at junction points, changes in gradient, and changes in pipe size. On curved pipes with radii of 200 feet to 400 feet, manholes shall be placed at the beginning of the curve (BC) and at the ending of the curve (EC) and on 300 foot maximum intervals along the curve. On curves with a radii exceeding 400 feet, manholes shall be placed at the BC and EC of the curve and on 400 foot maximum intervals along the curve for pipes 24 inches and less in diameter and 500 foot intervals along the curve for pipes greater than 24 inches in diameter. Manhole locations on curves with radii less than 200 feet will be specified on an individual basis.

Spacing of manholes shall not exceed 500 feet. Whenever possible spacing of manholes shall be equal.

Manhole covers shall be as shown in the plates of these Standards.

**4.9 CATCH BASIN:** Catch basins shall be as shown in the plates of these Standards. Catch basins shall not be allowed to drain into or through other catch basins without the approval of the Engineer.

The maximum lineal feet of road right-of-way that may discharge into a catch basin is 500 feet. However, in no case shall the width of water flowing in the gutter be allowed to encroach into the traveled way of the nearest traffic lane.

Metal parts of all catch basin grates and frames shall be hot dipped galvanized.

**4.10 DRAINAGE PUMPS:** Drainage pumps shall only be used for emptying drainage retention facilities. Inflow pumps shall not be allowed. If pumps are used to empty a drainage facility, the following criteria shall be incorporated into the design of the pump station:

- a. Pump station shall be designed with a securable facility.
- b. Drainage pumps shall be submersible and be of the non-clog type capable of passing at least 3 inch spheres. Each installation shall have two pumps

that automatically operate on an alternating basis with both pumps operating together during times of heavy flow. The design pumping head shall be based on the maximum flood water elevation in the receiving facility.

- c.** Performance curves shall be submitted for the pumps showing the diameter of the runner to be used, the pump capacity, total dynamic head, kilowatts, horse power, and efficiency of pump throughout the working range of the pumps.
- d.** The pump station and wet well shall be lighted. Lights shall be switchable.
- e.** The wet well rim and electrical panel shall be above the 100-year flood elevation.
- f.** A securable NEMA weatherproof enclosure shall be provided for all outdoor controls, including lighting. Electric service shall be provided by underground conduit to the utility service pedestal.
- g.** Controls shall be a solid state programmable controller with LED digital readout with purge and clean capacities and automatic pump alternating. Switches for manual operation of each pump shall be included.
- h.** An on-site alarm with an automatic telephone dialer with message capability, exterior lights and horn shall be installed. The alarm shall have a battery back-up, and sensors that will respond to power failure, pump failure and high water level.
- i.** An access and work area for the pump station shall be provided. The access and work area shall be paved with a minimum of 2 inches of AC over 4 inches of AB or 5.5 inches of concrete as shown on the plans approved by the Engineer.
- j.** Trash racks shall be provided upstream from the pumps. The trash rack shall be designed to be easily cleaned.
- k.** Emergency operation during power outages shall be provided by a connection for a County portable generator.
- l.** All electrical installations shall comply with the National Electric Code, NEMA, Division of Industrial Safety, and County of Stanislaus Electrical Code. All local utility requirements shall be met. A building permit for the electrical service will be required from the County.
- m.** The County shall be provided with 3 complete sets of manufacturer's brochures, technical data, operation and maintenance manuals, schematics, wiring diagrams, warranties, etc. for all equipment and controls. Said data shall be provided to the Engineer organized with each set in its own three

ring binder. The Developer shall provide on-site training for County maintenance personnel.

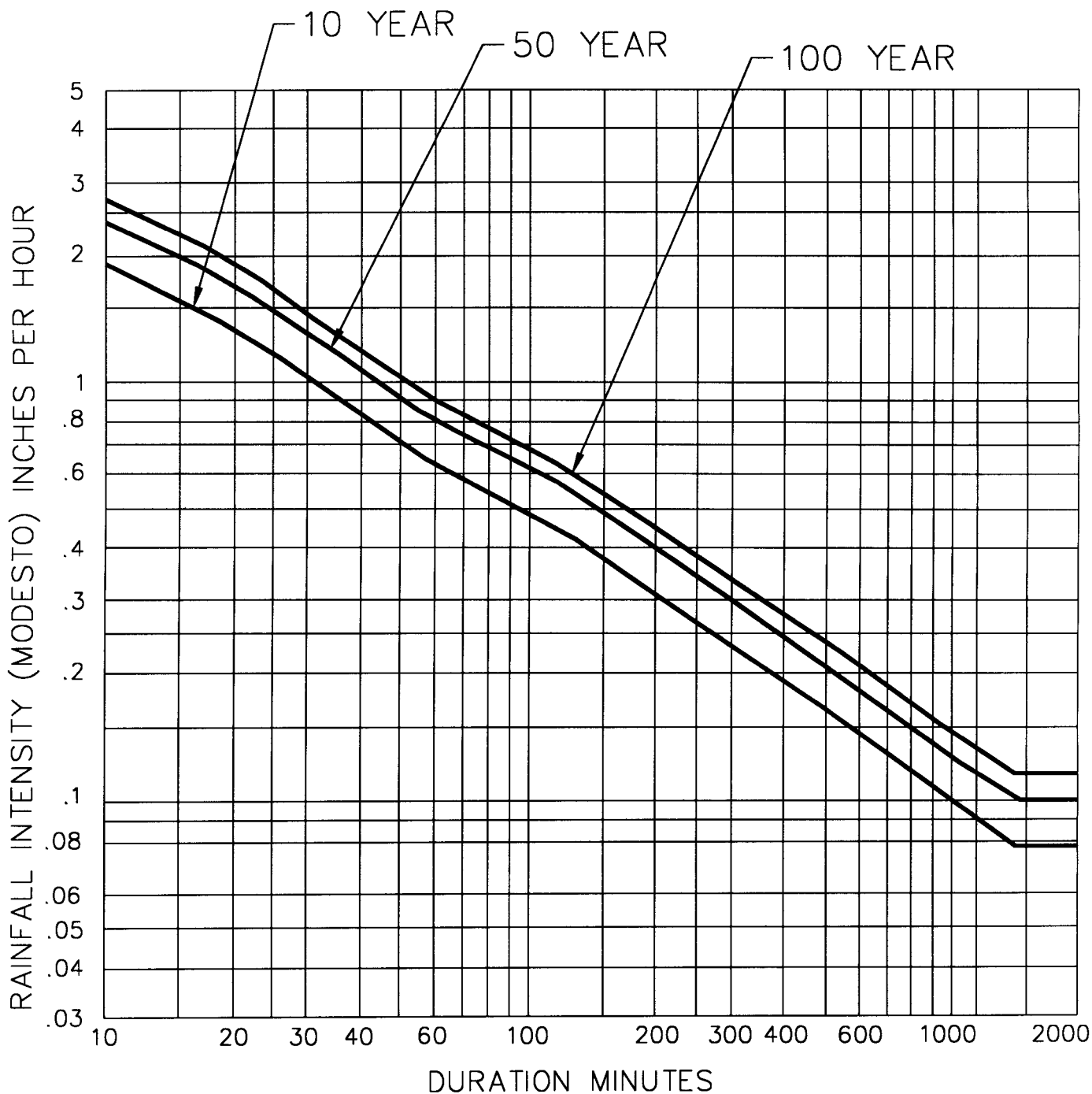
- 4.11 EXCAVATION AND BACKFILL:** Excavation and backfill shall be as per the plates in these Standards. If a situation arises that is not covered, then the excavation and backfill shall be per State Standards.
- 4.12 TESTING:** Testing for proper compaction and for control of the concrete shall be as directed and observed by the Engineer. Testing shall be performed by the Developer unless otherwise directed by the Engineer. Certificates of Compliance, weigh master tags or other standard design data may be required by the Engineer in lieu of testing for proper concrete design. The cost of all testing shall be at the Developer or Contractor's expense.
- 4.13 INSPECTION:** All work shall be inspected by the Engineer prior to backfilling. After compaction has been completed all new lines shall be inspected with closed circuit television or by visual inspection. The method of inspection will be at the discretion of the Engineer.

If closed circuit television is used, the Developer shall give the Engineer at least 2 working days notice prior to televising the work. All dirt and other debris shall be cleaned from the pipeline and manholes, trenches shall be compacted and manhole rims raised to grade. Infiltration, leaks and deficiencies shall be corrected prior to inspection. The suitability of the system for televising shall be at the discretion of the Engineer. The Engineer shall be present during the televising of the work.

The tape (in VHS format) and tape logs shall be provided to the Engineer after the system has been televised.

The Developer shall repair all substandard work to the Engineer's satisfaction.





THESE CURVES ARE BASED ON CALIFORNIA DEPARTMENT OF WATER RESOURCES DATA FROM THE MODESTO RAINFALL GAGING STATION. (MEAN ANNUAL PRECIPITATION = 10.9 INCHES).

TO OBTAIN INTENSITIES FOR LOCATIONS OTHER THAN MODESTO, MULTIPLY INTENSITY ON THIS CHART BY MEAN ANNUAL PRECIPITATION AT THE POINT IN QUESTION DIVIDED BY 10.90.

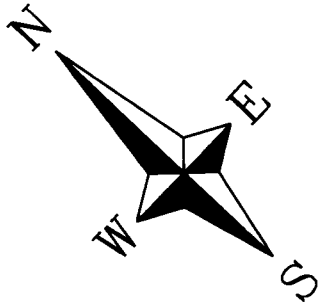
APPROVED DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

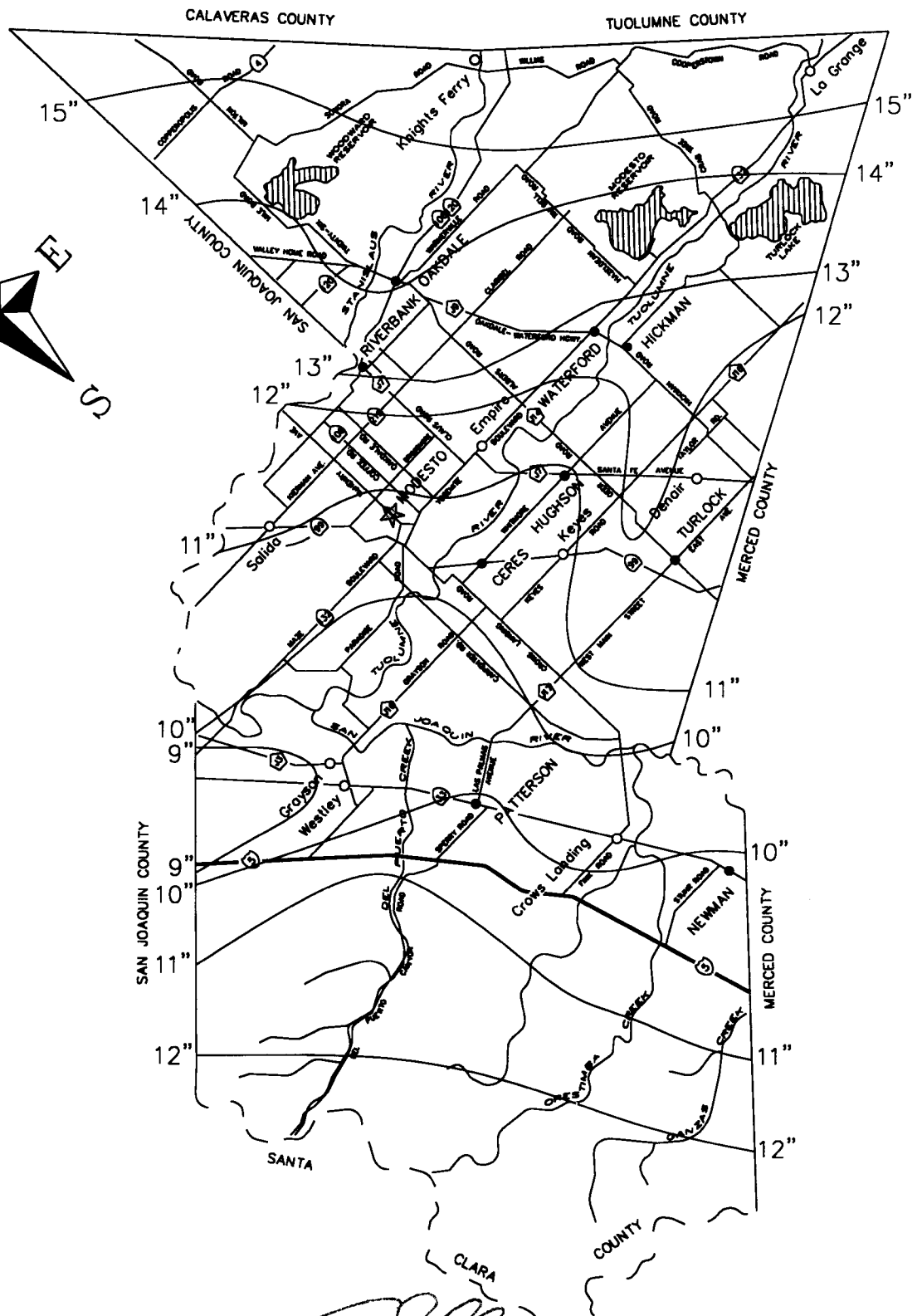
# IMPROVEMENT STANDARDS

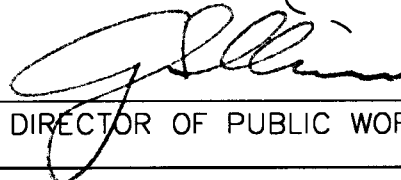
STANISLAUS COUNTY  
RAINFALL INTENSITY  
CURVES

PLATE 4-A



STANISLAUS COUNTY



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DATE JUN 9 1998

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
MEAN ANNUAL  
PRECIPITATION

PLATE 4-B

Plate 4-C1 Removed

Plate 4-C2 Removed

Plate 4-C3 Removed

Plate 4-C4 Removed

Plate 4-C5 Removed

Use a pavement and base thickness of 0.1' thicker than the existing. The minimum thickness for the pavement and base shall be 0.25' and 0.50' respectively.

95% Compaction of Backfill Soil and Base Rock

Roadway/Sidewalk subgrade or ground surface.

Use 3/4" to 2-1/2" clean crushed rock in trench.

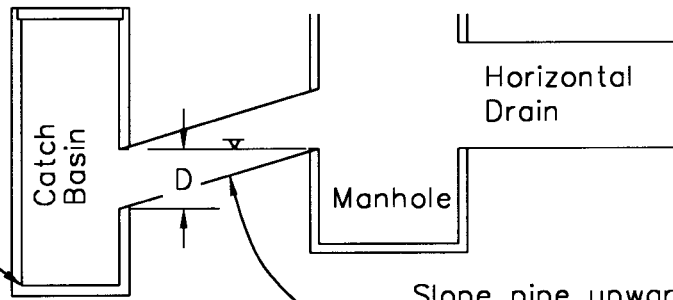
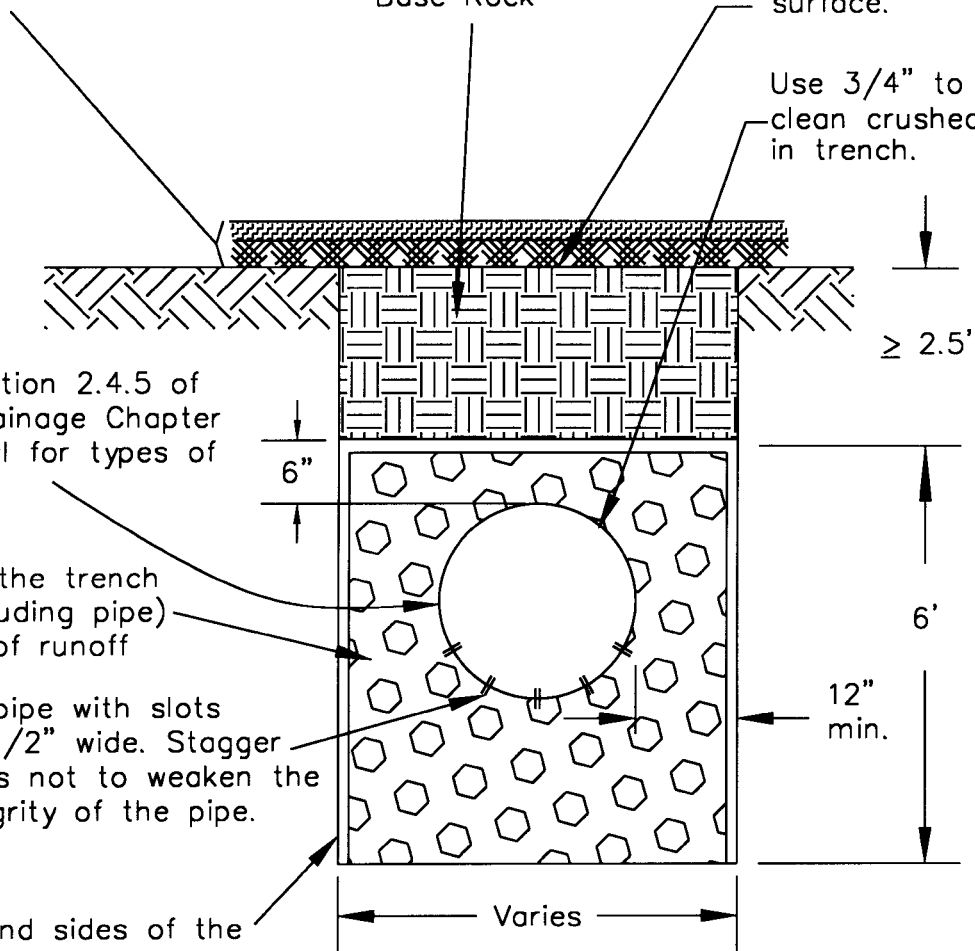
Reference Section 2.4.5 of the Storm Drainage Chapter of this manual for types of pipe allowed.

Use 25% of the trench volume (excluding pipe) for storage of runoff

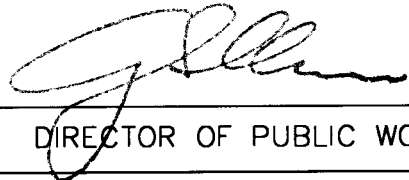
Perforate the pipe with slots 12" long and 1/2" wide. Stagger the slots so as not to weaken the structural integrity of the pipe.

Line the top and sides of the trench with non-woven needle-punched engineering fabric that weighs 6 oz. per square yard or greater.

Drop the bottom of the inlet and manhole at least 2' below pipe invert.



Slope pipe upwards to the manhole one pipe diameter.

Approved  DIRECTOR OF PUBLIC WORKS

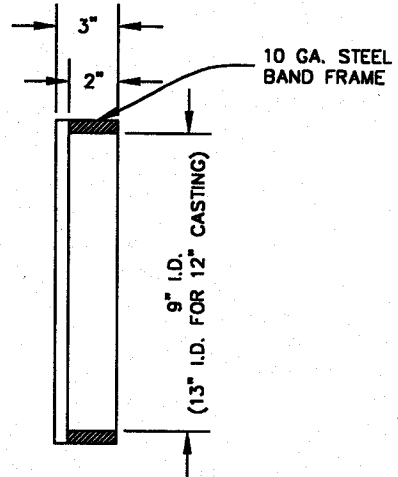
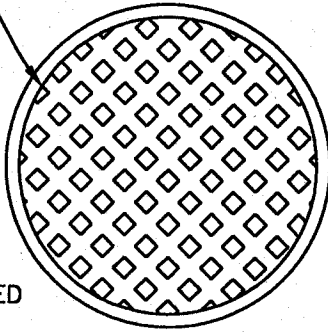
Date: JUN 9 1998

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY
TYPICAL HORIZONTAL DRAIN
PLATE 4-D1

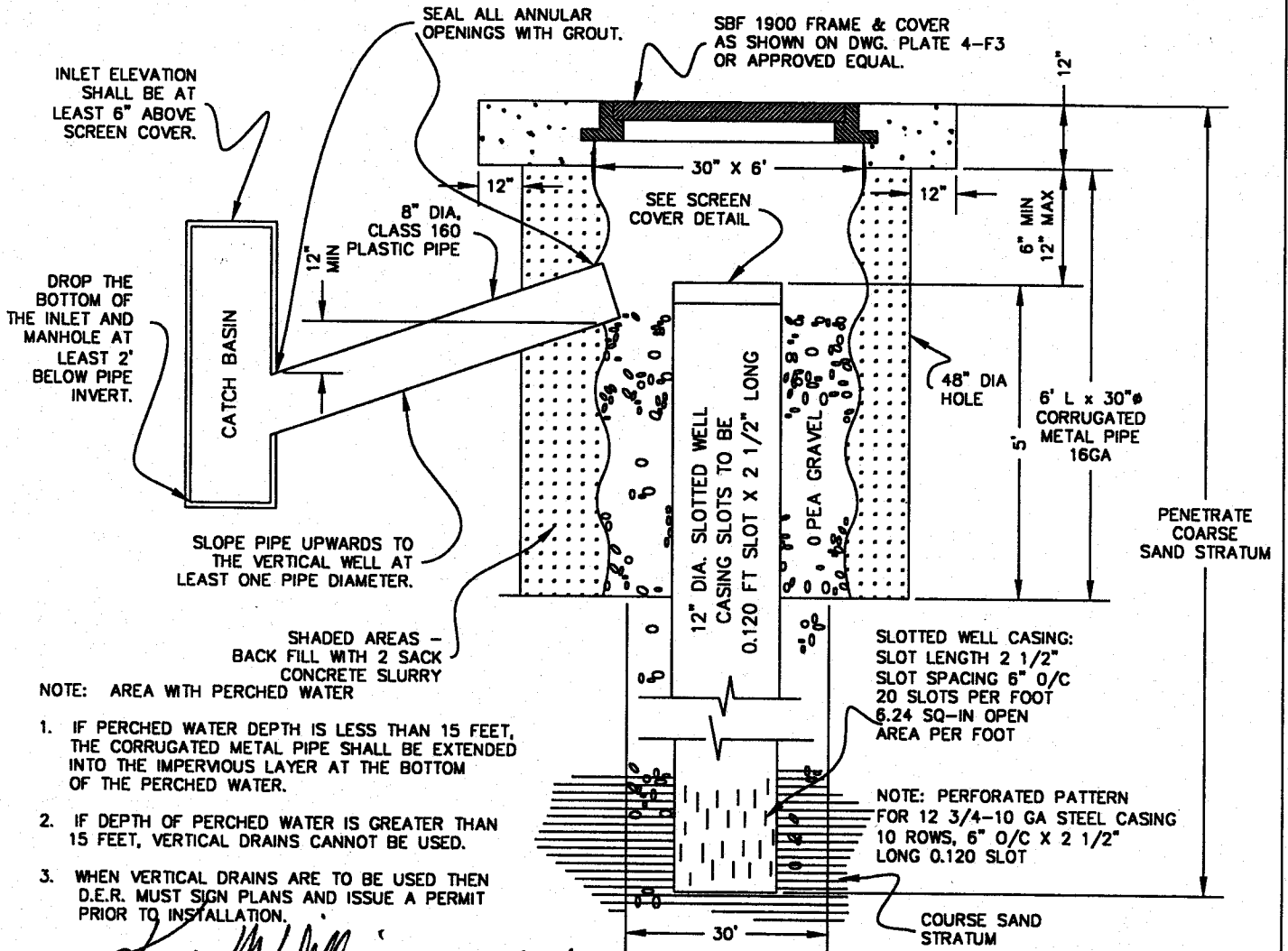
**SCREEN COVER**

SCREEN COVER  
3/4" - 0-11  
FLATTENED  
EXPANDED METAL  
WELDED TO FRAME



**NOTE**

1. UNIT TO BE HOT-DIPPED GALVANIZED AFTER MANUFACTURING.



NOTE: AREA WITH PERCHED WATER

1. IF PERCHED WATER DEPTH IS LESS THAN 15 FEET, THE CORRUGATED METAL PIPE SHALL BE EXTENDED INTO THE IMPERVIOUS LAYER AT THE BOTTOM OF THE PERCHED WATER.
2. IF DEPTH OF PERCHED WATER IS GREATER THAN 15 FEET, VERTICAL DRAINS CANNOT BE USED.
3. WHEN VERTICAL DRAINS ARE TO BE USED THEN D.E.R. MUST SIGN PLANS AND ISSUE A PERMIT PRIOR TO INSTALLATION.

APPROVED *Kevin M. Williams* DATE 8/24/01  
D.E.R.

*J. S. [Signature]* DATE 9/3/01  
DIRECTOR OF PUBLIC WORKS

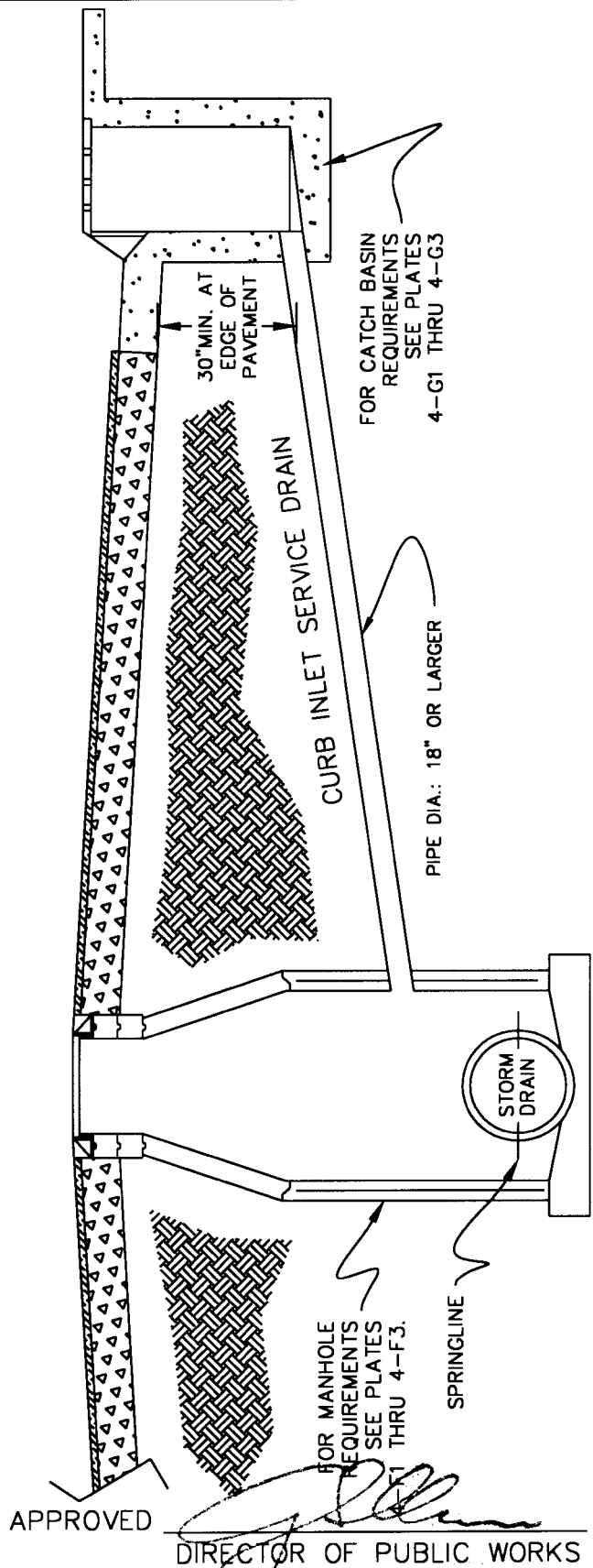
**IMPROVEMENT STANDARDS**

REVISED (10-22-2001)

STANISLAUS COUNTY

VERTICAL DRAIN

PLATE 4-D2



FOR CATCH BASIN  
REQUIREMENTS  
SEE PLATES  
4-G1 THRU 4-G3

PIPE DIA: 18" OR LARGER

FOR MANHOLE  
REQUIREMENTS  
SEE PLATES  
4-F1 THRU 4-F3.

SPRINGLINE

NOTE:  
FOR TRENCHING AND PIPE INSTALLATION  
SEE PLATES 3-H1 AND 3-H2.

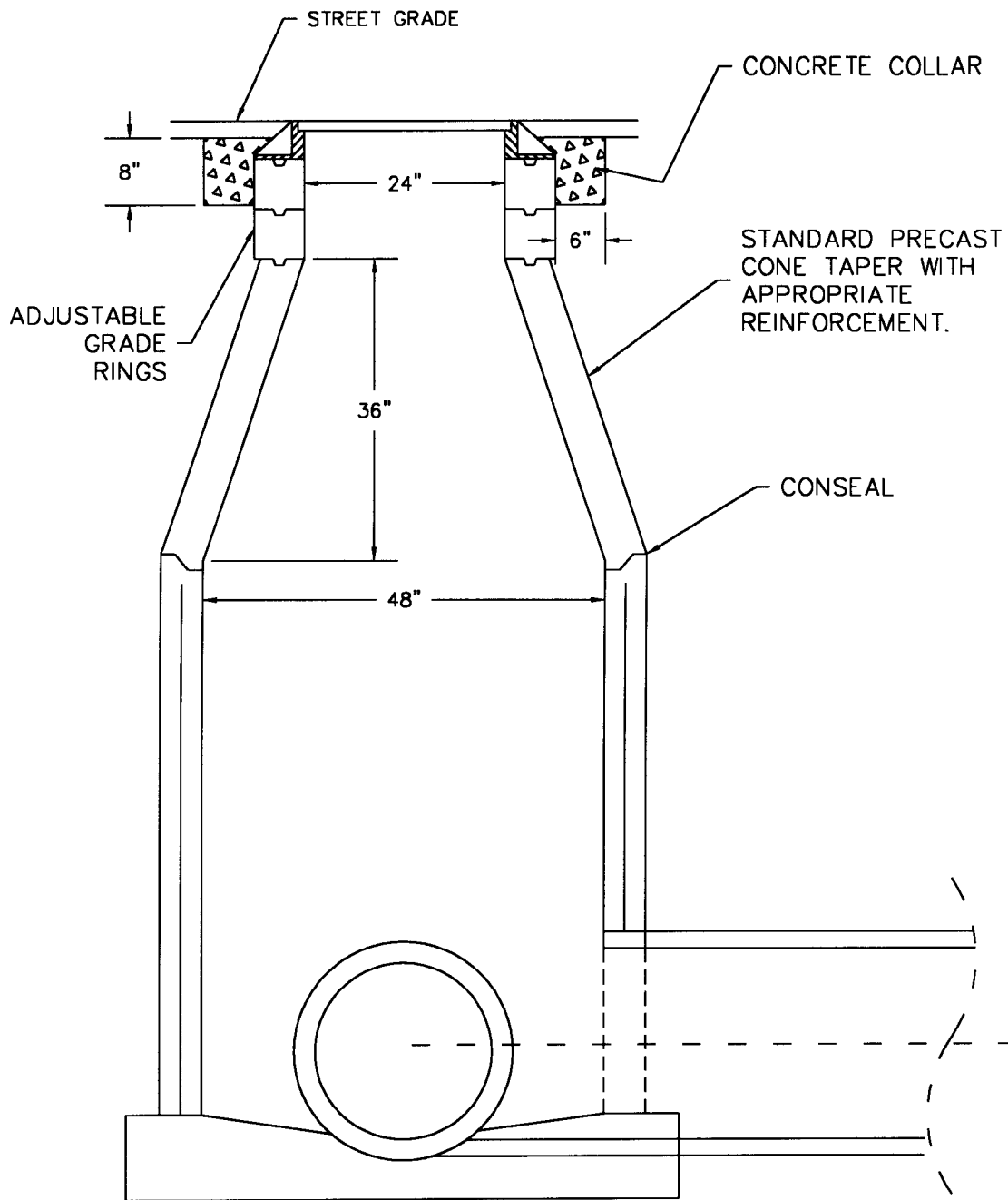
APPROVED

*[Signature]*  
DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1998

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY
CATCH BASIN TO MANHOLE CONNECTION
PLATE 4-E



NOTES:

1. FOR MANHOLE BASE SEE PLATE 4-F2
2. FOR MANHOLE FRAME AND COVER SEE PLATE 4-F3

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IMPROVEMENT  
STANDARDS

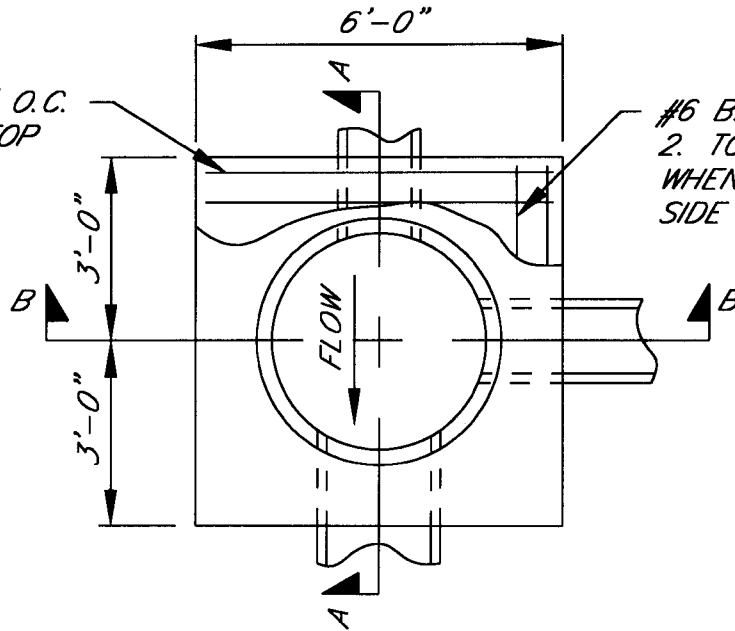
STANISLAUS COUNTY

TYPICAL MANHOLE

PLATE 4-F1

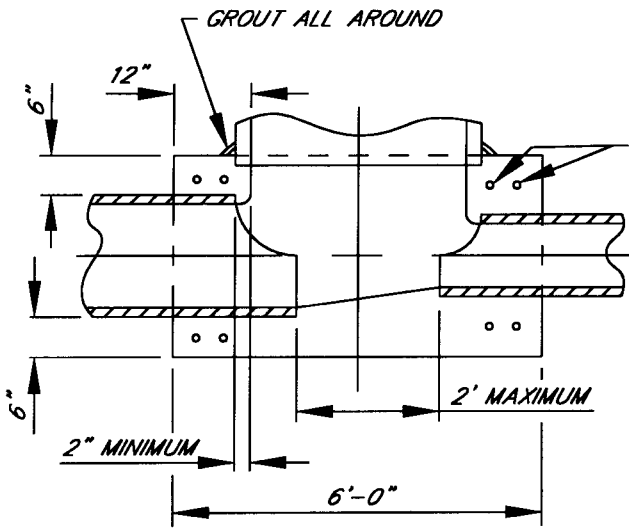
#6 BARS @ 6" O.C.  
TOTAL OF 2. TOP  
AND BOTTOM.

#6 BARS TOTAL OF  
2. TOP AND BOTTOM  
WHEN PIPE ENTERS  
SIDE OF MANHOLE.



PLAN

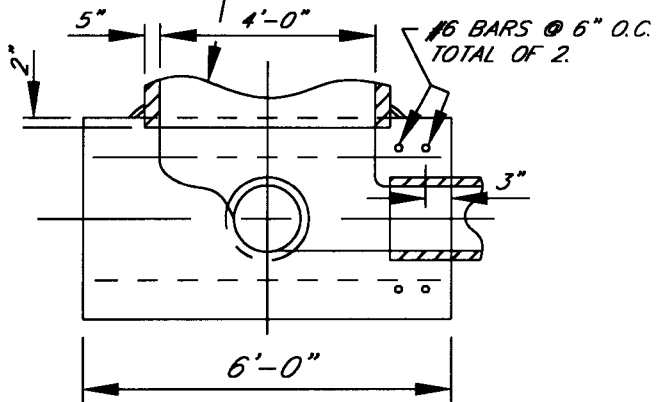
TOTAL OF 2.



SECTION A-A

#6 BARS @ 6" O.C.

MANHOLE SHAFT



SECTION B-B

NOTES

1. ALL CONCRETE TO BE CLASS "A"
2. MATCH SPRING LINES OF PIPES ENTERING M.H. UNLESS OTHERWISE NOTED.
3. CUT PIPES TO ALLOW SETTING OF 4' DIAMETER CYLINDRICAL FORM FROM 6" ABOVE MAIN LINE PIPE TO SPRING LINE. CUT PIPE 2" LARGER THAN FORM TO ALLOW 2" CONCRETE OVER ENDS OF ALL CUT PIPE.
4. INVERT AND BASE OF M.H. TO BE POURED AND INVERT TO BE SHAPED BY HAND TO MAKE SMOOTH TRANSITION. FINISH WITH RUBBER FLOAT.
5. CENTER M.H. ON PIPE JOINT WHERE PIPE CHANGES SIZES, LEAVING A GAP OF 12" MINIMUM, 24" MAXIMUM.

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DATE JUN 9 1998

IMPROVEMENT  
STANDARDS

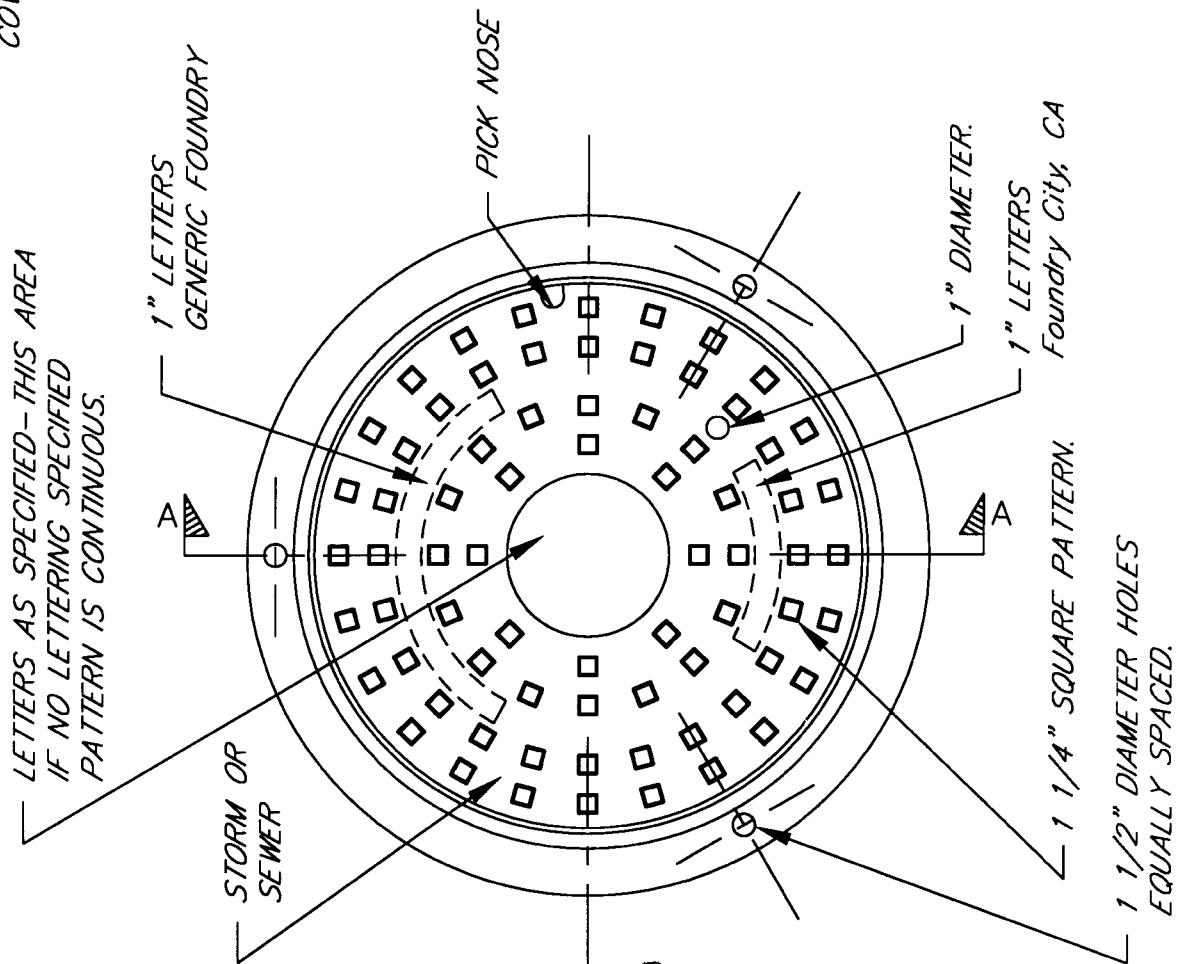
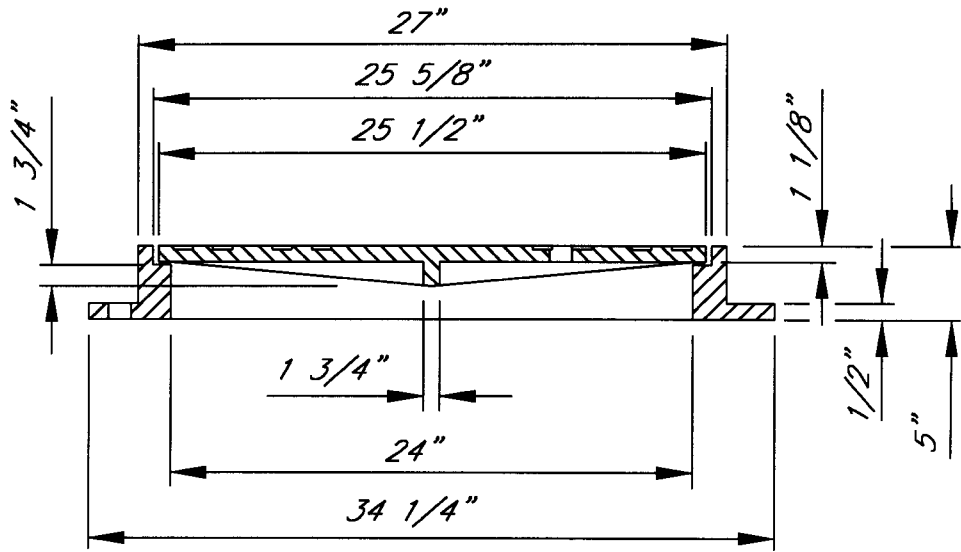
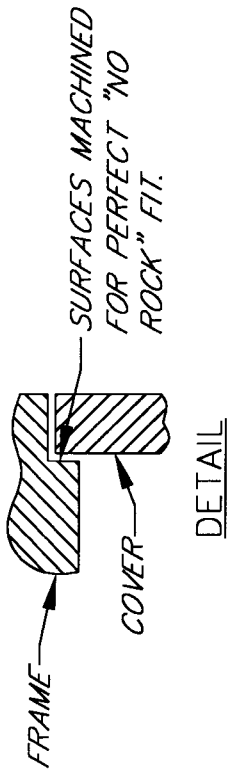
STANISLAUS COUNTY

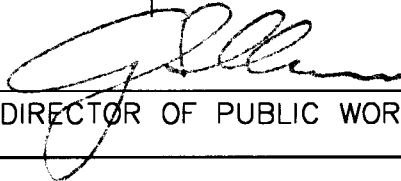
STORM DRAIN MANHOLE

BASE - 48"

PLATE 4-F2





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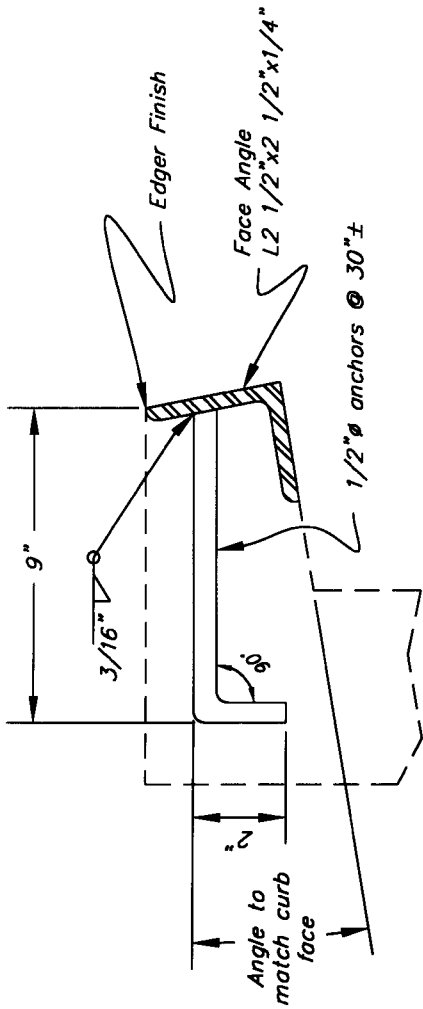
DATE JUN 9 1998

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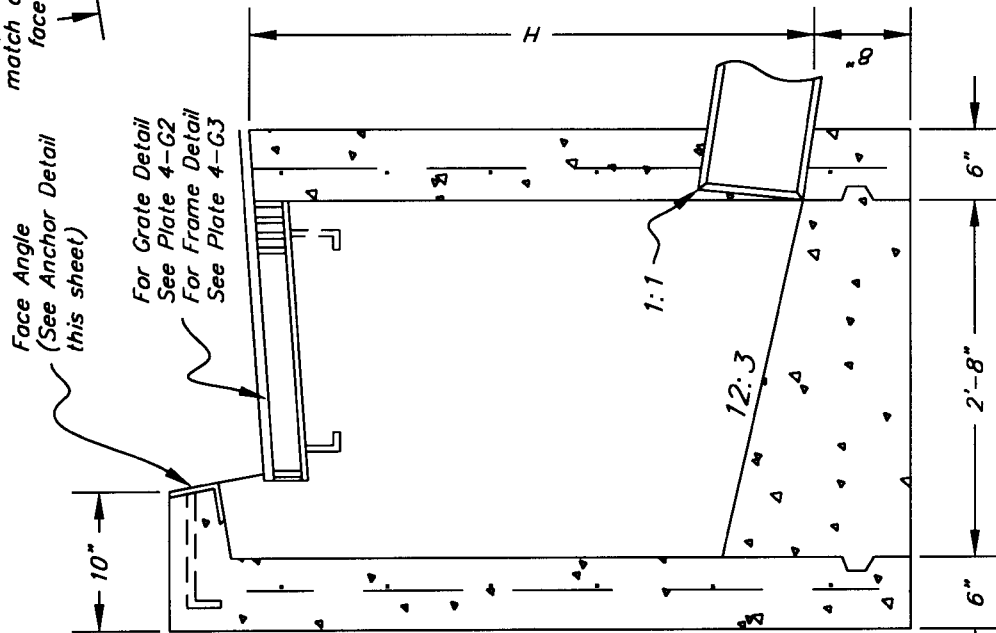
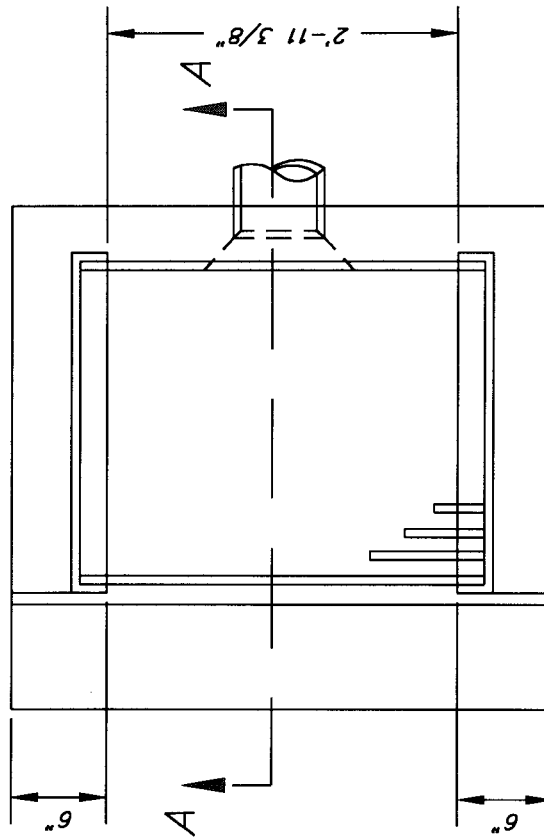
STANISLAUS COUNTY

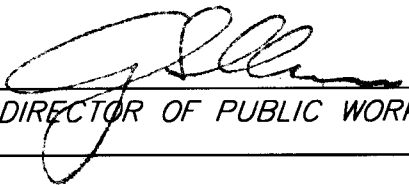
MANHOLE FRAME AND COVER

PLATE 4-F3



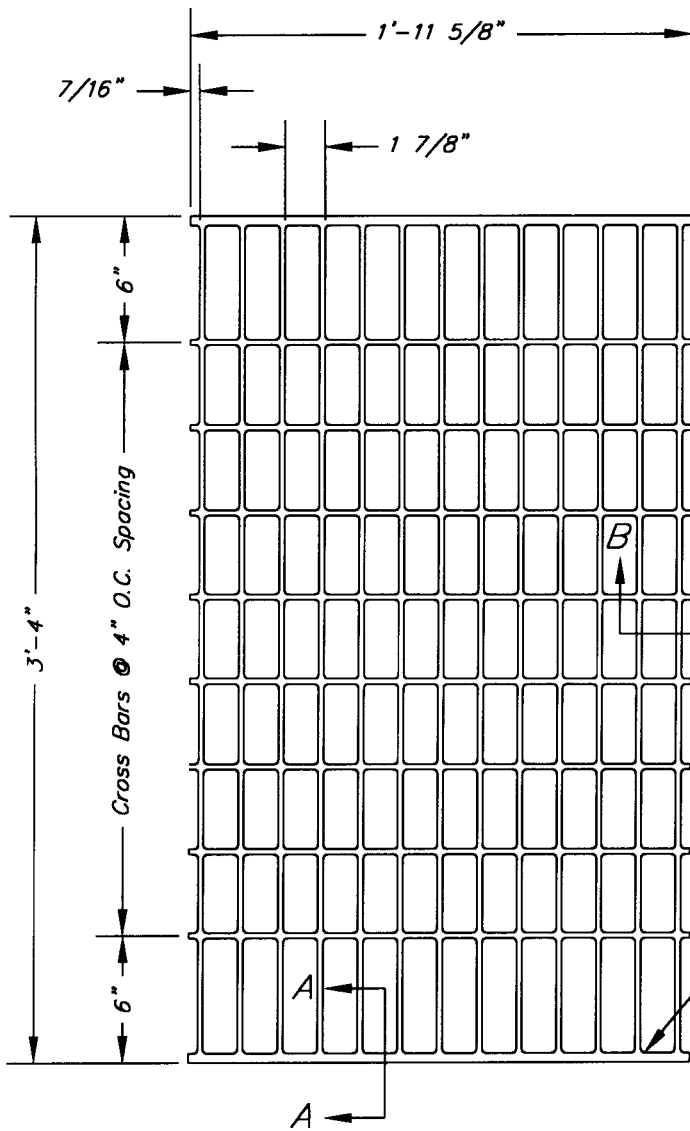
FACE ANGLE ANCHOR DETAIL



APPROVED  DATE JUN 9 1998  
 DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
STANDARDS

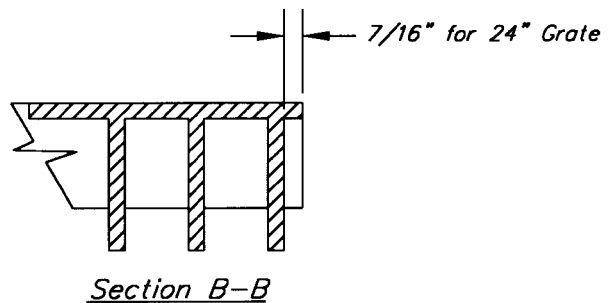
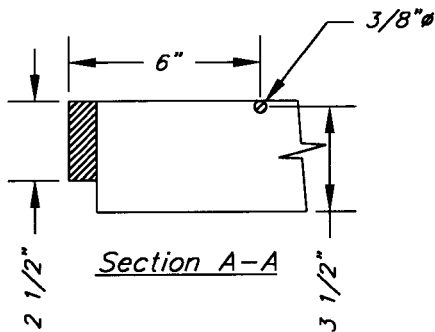
STANISLAUS COUNTY
G. O. CATCH BASIN
PLATE 4-G1



**Notes:**

1. Bearing Bars to be 3 1/2" x 1/4" bars on 1 7/8" Centers.
2. 3/8"  $\phi$  Cross Bars may be fillet welded, resistance welded or electroforged to Bearing Bars.
3. Weight of 24" Grate = 141lbs.
4. Grate shall be chained to catch basin.

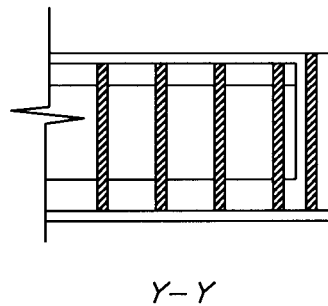
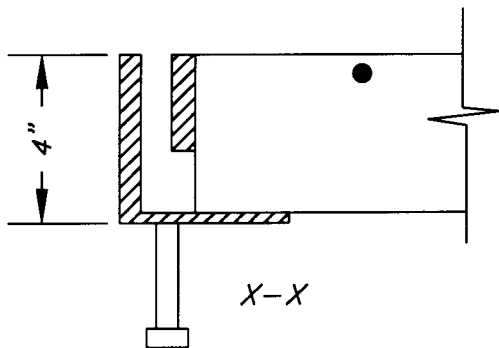
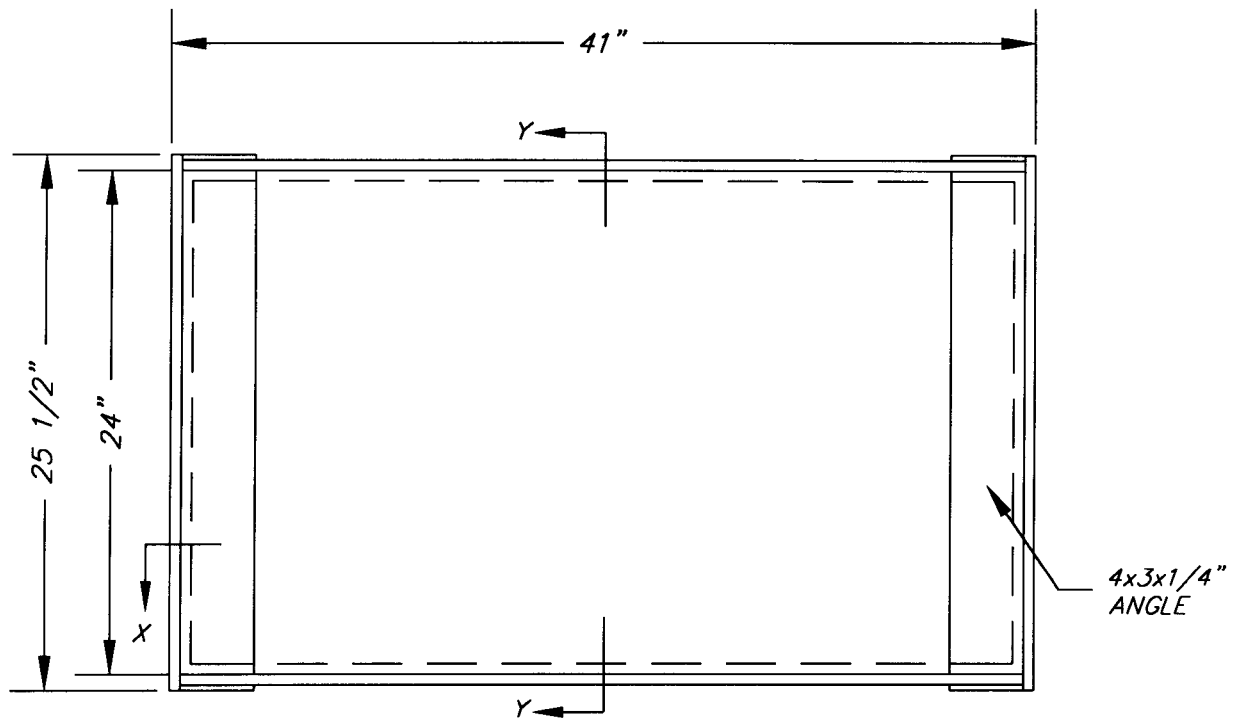
*3/16 Fillet Weld full depth each side on Outside Bearing Bars and on every third internal Bearing Bar.*



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IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY
G. O. CATCH BASIN GRATE
PLATE 4-G2



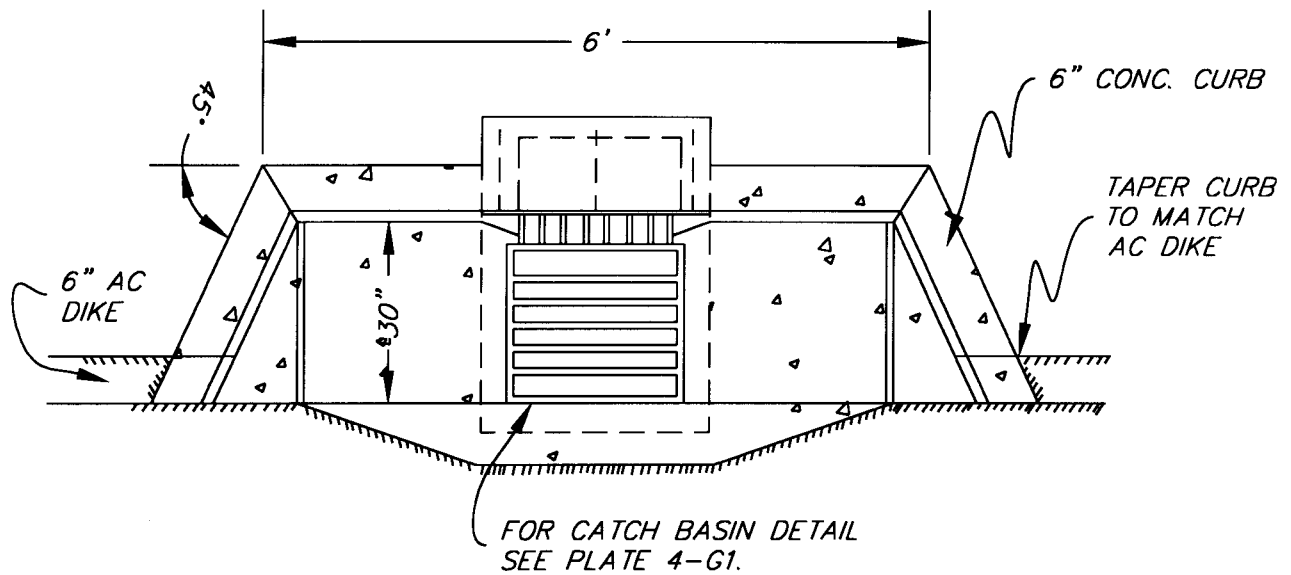
APPROVED *[Signature]* DATE 3/3/98 1998  
 DIRECTOR OF PUBLIC WORKS

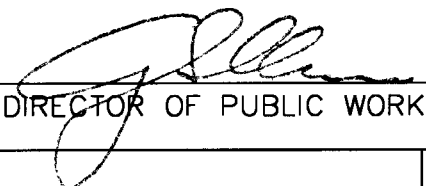
IMPROVEMENT  
 STANDARDS

STANISLAUS COUNTY

G. O. CATCH  
 BASIN FRAME

PLATE 4-G3



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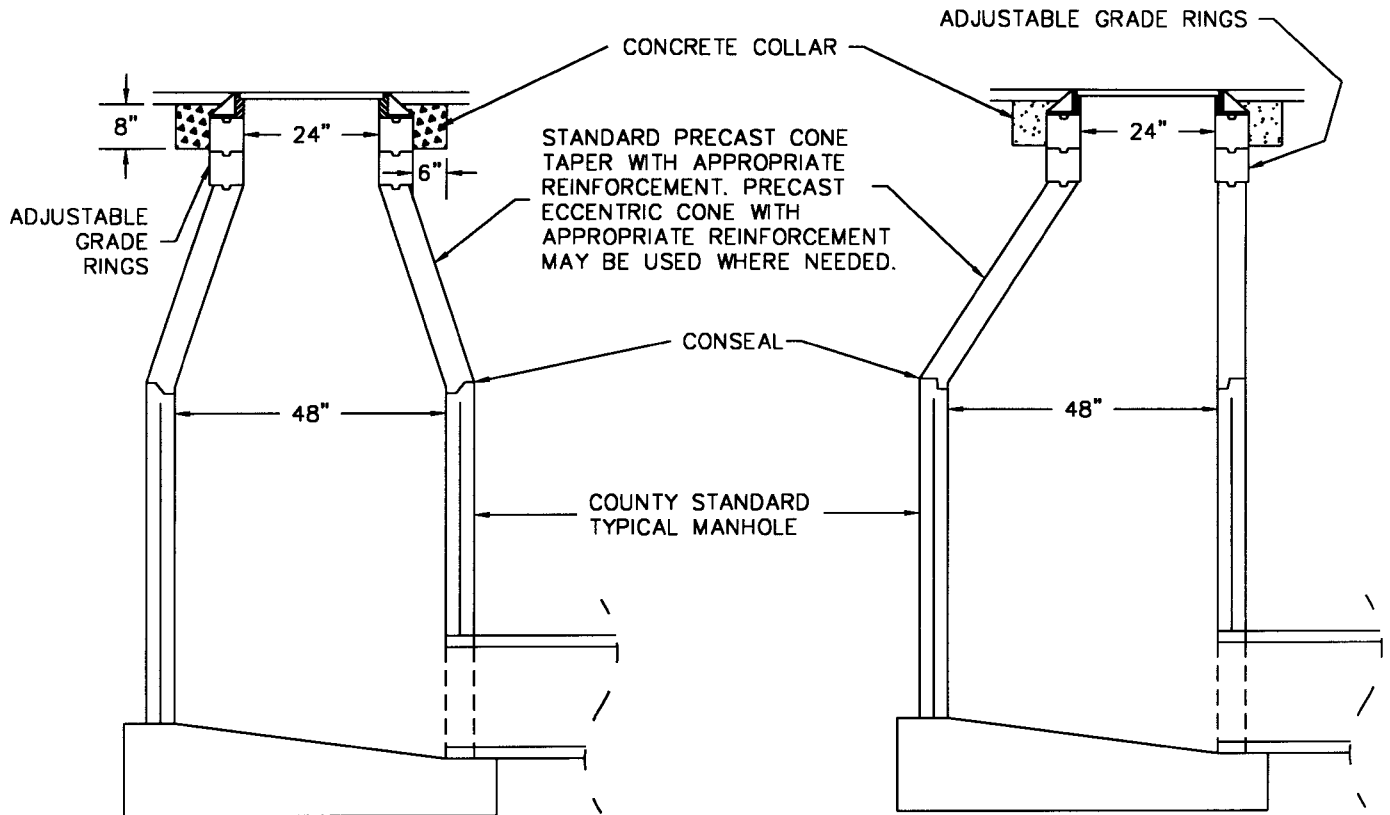
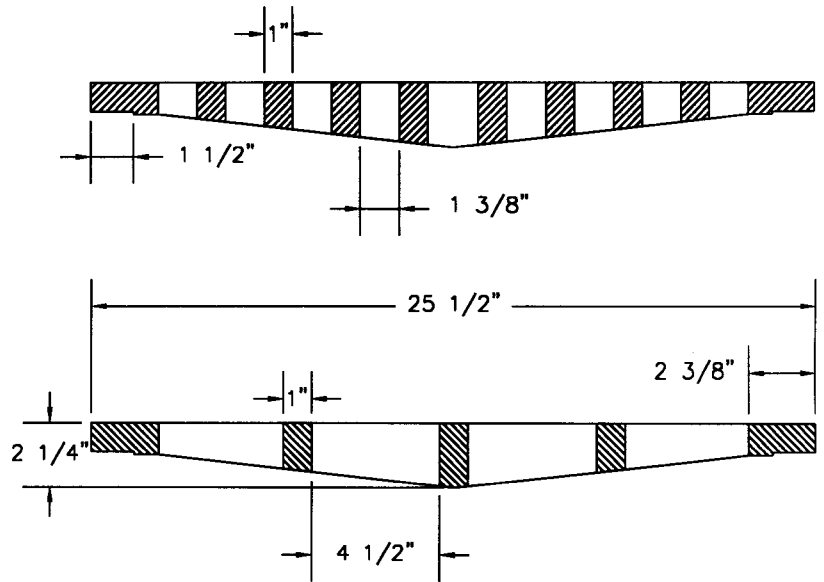
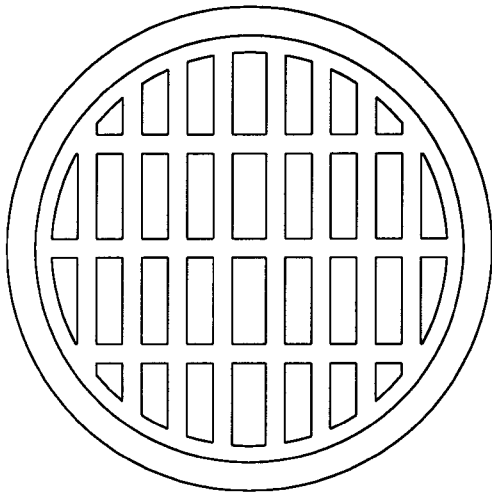
DATE JUN 9 1998

IMPROVEMENT STANDARDS

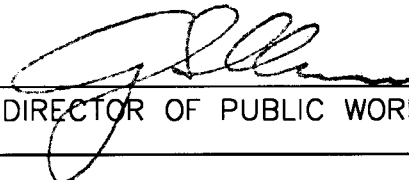
STANISLAUS COUNTY

G. O. CATCH BASIN IN A.C. DIKE

PLATE 4-G4

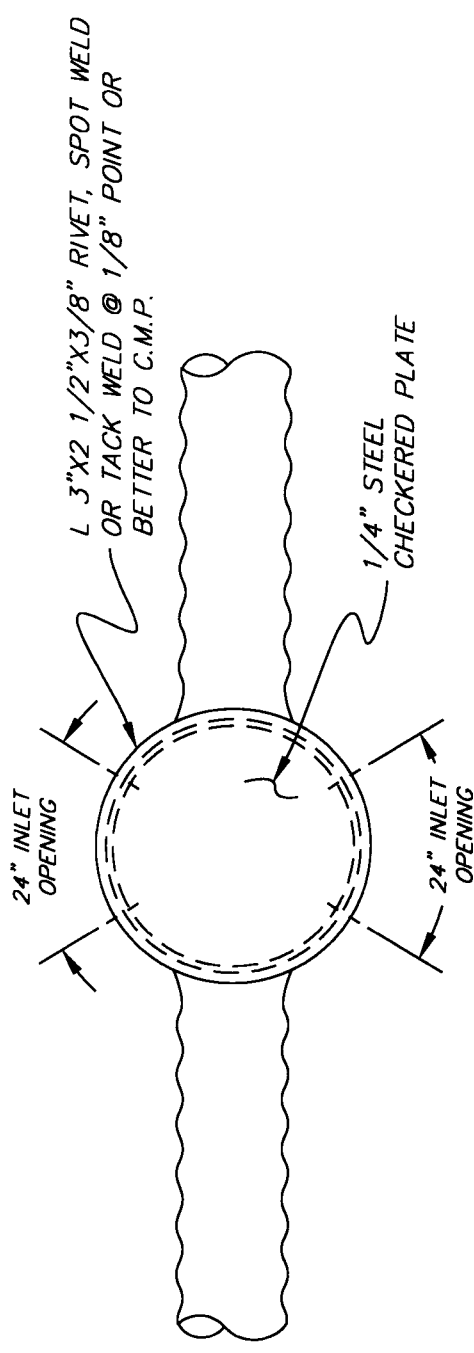


NOTE: THIS CATCH BASIN IS TO BE USED IN AREAS WITHOUT CURBING OR A.C. DIKE.

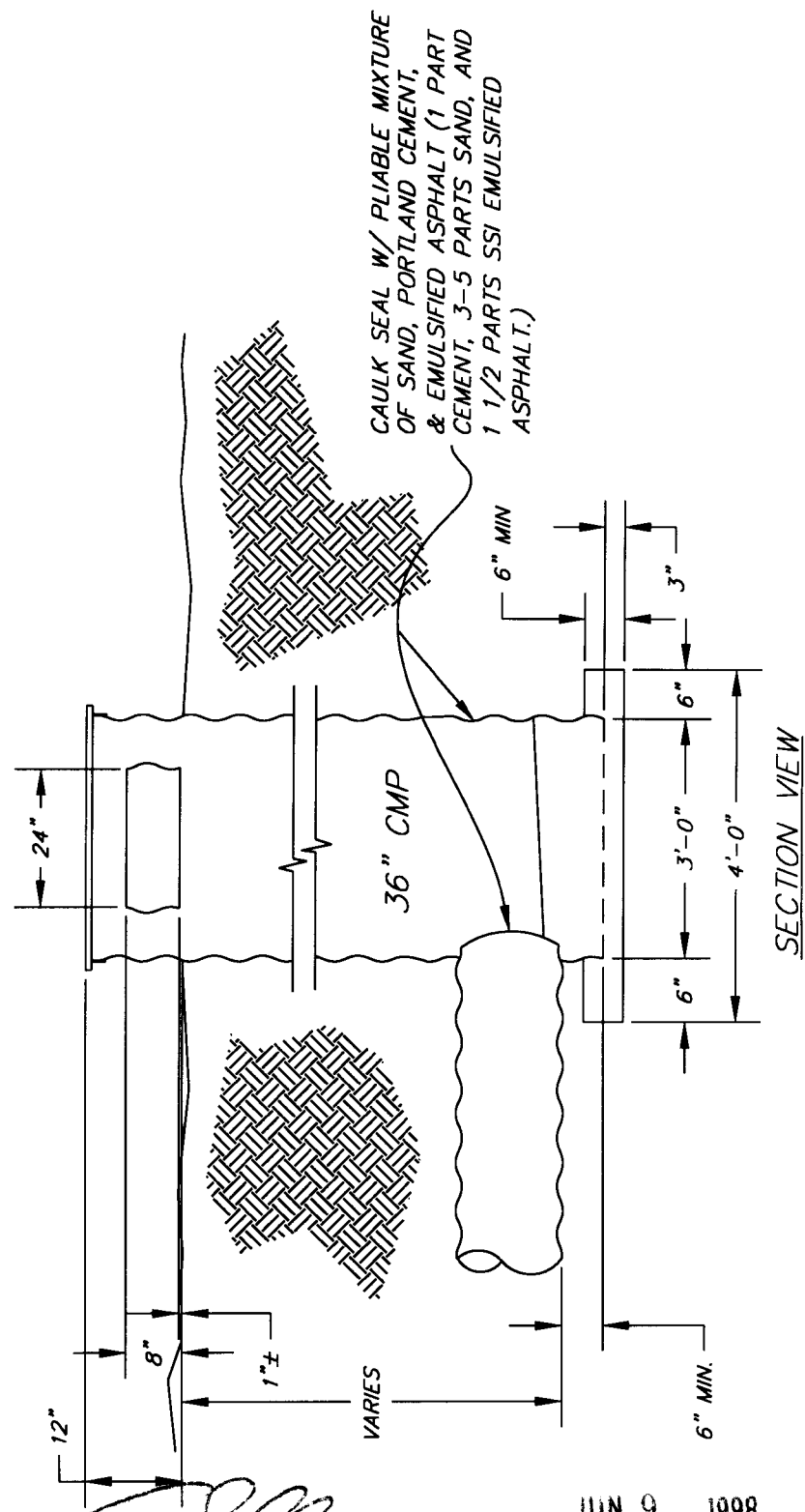
APPROVED  DATE JUN 9 1999  
DIRECTOR OF PUBLIC WORKS

IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
CATCH BASIN  
ALTERNATE  
PLATE 4-G5



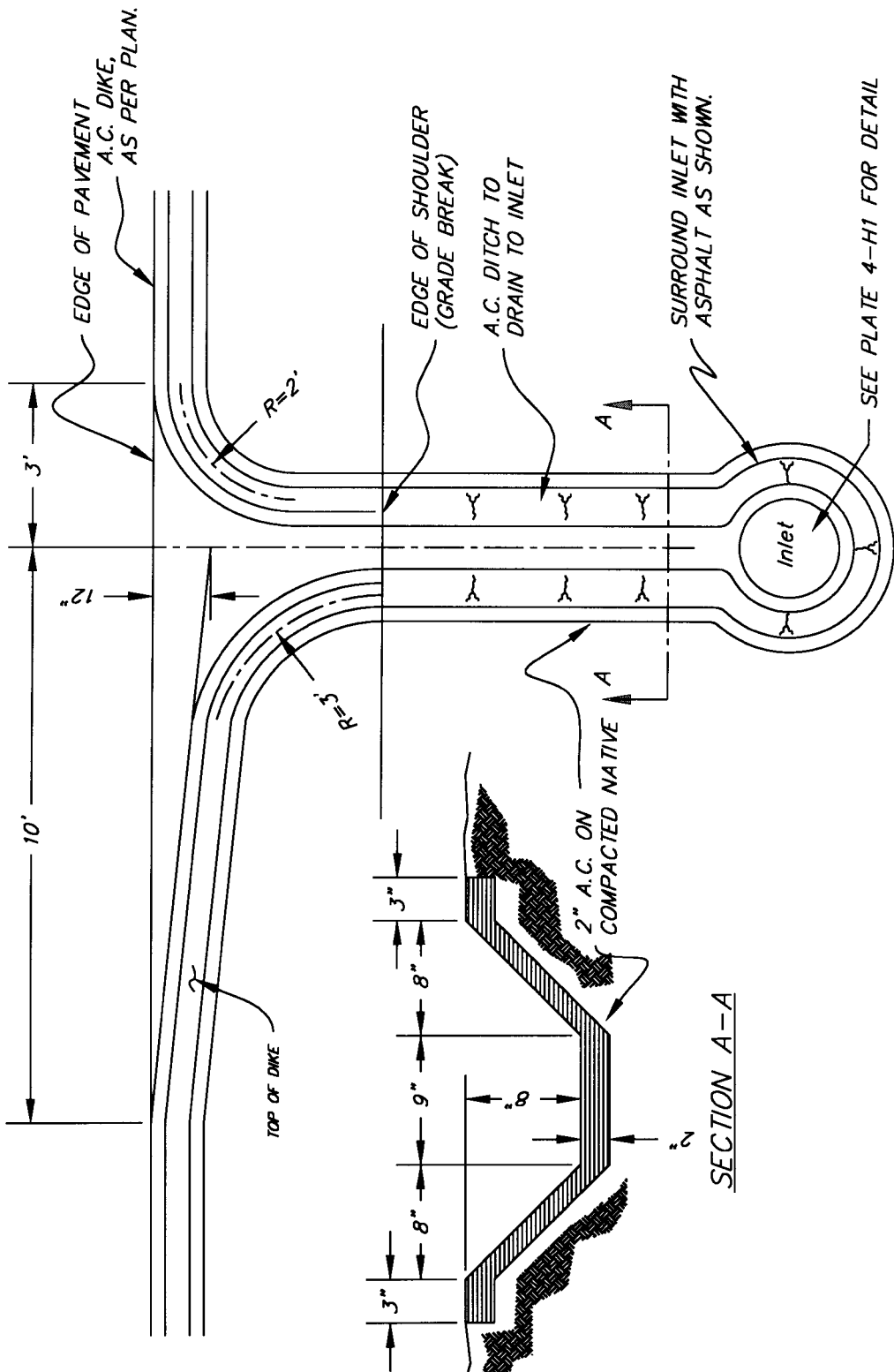
TOP VIEW



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IMPROVEMENT STANDARDS

STANISLAUS COUNTY  
 OVERSIDE DRAIN SHEET 1 OF 2  
 PLATE 4-H1

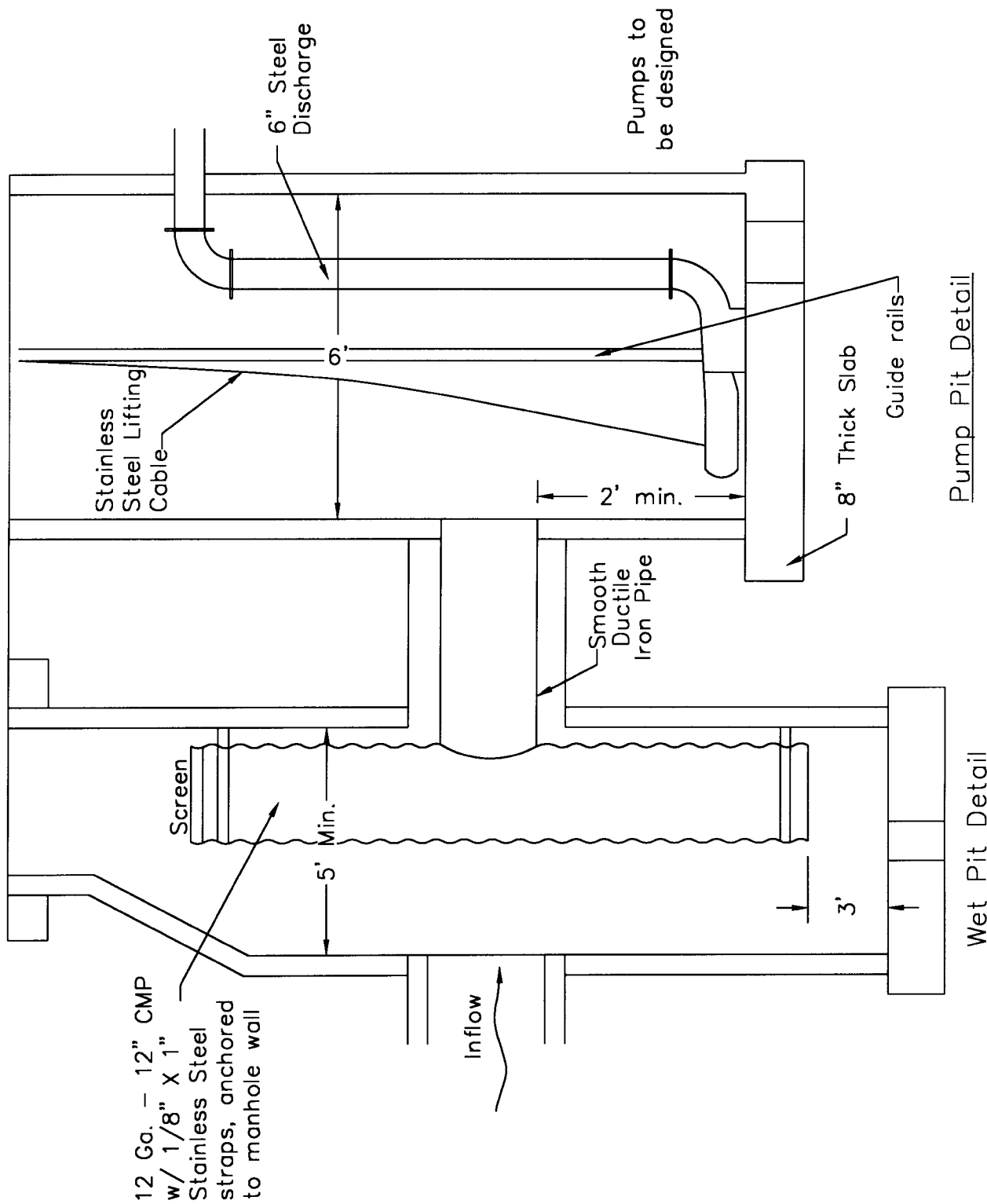


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IMPROVEMENT  
STANDARDS

STANISLAUS COUNTY  
OVERSIDE DRAIN  
SHEET 2 OF 2  
PLATE 4-H2





12 Ga. - 12" CMP  
w/ 1/8" X 1"  
Stainless Steel  
straps, anchored  
to manhole wall

APPROVED *[Signature]*  
DIRECTOR OF PUBLIC WORKS

DATE JUN 9 1996

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY
DRAINAGE PIT INSTALLATION
PLATE 4-1

## **CHAPTER 5: LIGHTING**

- 5.1 GENERAL:** Street lighting shall be installed to conform to these minimum Standards by a Developer or Contractor holding an appropriate license for such work under the provisions of the State of California Business and Professions Code. In the development of the plans, the Engineer shall be consulted to insure coordination with the electrical distribution systems as proposed by the Utility.

Electrical equipment shall conform to the requirements of the National Electrical Manufacturers' Association and material and work shall conform to the requirements of the National Electrical Code, the Electrical Safety Orders of the Division of Industrial Safety, Department of Industrial Relations of the State of California, Public Utilities Commission, the Standards of the American Society for Testing Materials and the American Standards Association.

- 5.2 DESIGN:** The lighting system shall be designed to best serve the area and to minimize the length of service runs from the points of connection to the street lights.

All street lights to be installed shall be shown on the Plans. The location of the power source(s), the location of pull box(es) containing circuit fuse and of all conduit runs shall be shown on the Plans.

The circuit lengths and conductors shall be sized such that the maximum voltage drop between the source and any street light does not exceed 5 percent of the nominal circuit voltage.

The spacing and location for 25-foot poles and 28-foot poles shall be as shown on the Plates contained in these Standards.

- 5.3 CONDUIT:** Conductors shall be run in metal conduit except when run inside poles. Conduit and fittings shall be rigid metal or intermediate metal in locations where approved by the National Electric Code. Conduit shall be 1-inch minimum in diameter. All fittings installed in concrete shall be of the concrete tight type.

Conduit shall be zinc-coated by the sherardizing, hot-dip or electroplating process. Each length shall bear the label of the Underwriters Laboratory, Inc.

Conduits shall be bonded together in pull boxes and pole bases with not less than No. 8 AWG copper wire.

Where factory bends are not used, conduit shall be bent without crimping or flattening using the longest radius practicable. In no case shall the bend radius be less than six times the inside diameter of the conduit.

Conduits crossing a paved right-of-way shall be installed by the jacking or boring method and shall be installed 30 inches below flow line grade.

**5.4 CONDUCTORS:** Conductors shall be No. 10 copper or larger, THW single conductor and Underwriters Laboratory approved.

No conductors shall be drawn into the conduit until the conduit run is complete and the conduit is free of debris. If the conduit is installed in a pole foundation, the conductors shall not be drawn into the conduit for at least 3 days after placement of the foundation concrete.

Conductors shall not be spliced except in pole bases (or in pull boxes when approved by the Engineer). The splices shall be made as follows:

- a. In pole bases, all splices shall be made with wire connections, ITT No. 10-604, 10-606 or 10-6010 or approved equal.
- b. Where specifically approved by the Engineer, splices in pull boxes shall be made using Ilson IK8 10 STP-8 STP split bolt or approved equal to connect wire ends. Split bolt shall be wrapped first with Plymouth Bishop 122 Rubber Tape (splicing compound) #2002 or approved equal and then with 3M "33+" electrical tape or approved equal. The entire splice shall be coated with 3M "Scotchkote" electrical coating or approved equal.

Each light shall be individually fused (in accordance with Section 5.13) in the pull box at the base of the street light standard.

**5.5 PULL BOXES:** Pull boxes shall be concrete and conform to Caltrans No. 3-1/2 pull box specifications. The pull box installation shall conform with the Plates contained in these Standards. A pull box shall be installed at the base of each street light standard.

Where a utility company transformer is designated as the service point, a pull box shall be installed adjacent to the transformer with a fuse holder and fuse installed in this pull box.

Additional pull boxes shall be installed in conduit runs as necessary so that no conduit run shall exceed 200 feet between pull boxes.

Traffic pull boxes conforming to Caltrans specifications shall be used in areas subject to vehicular traffic.

All pull box lids shall be marked "Street Lighting."

**5.6 FOUNDATIONS:** Foundations for poles shall be constructed of concrete and shall be located in conformance with the Plates contained in these Standards.

Foundations shall be placed monolithically to within 4 inches of sidewalk grade. After pole is installed, a 36-inch square cap shall be placed to bring the foundation to sidewalk grade.

All work on foundations must conform to Section 15-2 " Miscellaneous Highway Facilities" and Section 86-2 "Materials and Installation" of the State Standards. Sidewalk grade shall conform to these Standards. In no case shall the base of the standard be permitted to be more than 2 inches above grade. Where the new grade will be higher than the original established grade, the standards may be raised as permitted by unused threads on the anchor bolts. In all cases, a full nut of threads must be maintained. Welding shall not be performed on the body of high strength anchor bolts. Base of standards may never be left below grade. Where these standards cannot be met, a new pole foundation must be installed.

Where steel poles are to be served by an overhead service, acceptable landing gear shall be provided and the foundations shall include a concrete-encased grounding electrode complying with Article 250-81(c) of the National Electrical Code.

**5.7 ANCHOR BOLTS:** Anchor bolts shall be 1 inch in diameter, 40 inches long with a 4 inch "L" bend at the bottom end. Anchor bolts shall conform to ASTM Designation A-307.

**5.8 POLES:** Poles shall be hot-dip galvanized steel. The 28-foot poles with 15-foot arms shall be Ameron Catalog No. N-2815-2 or an approved equal. The 25-foot poles with 15-foot arms shall be Ameron Catalog No. N-2515-2 or an approved equal. Pole tops and base covers shall be furnished and installed with each pole.

Poles shall not be installed until the foundation has set at least 5 days. Poles shall be plumbed by adjusting the leveling nuts; leveling shims shall not be used. The poles shall be grounded to conform to the provisions of the National Electrical Code.

Poles shall have hand-holes near their bases. The hand covers shall have theft-proof bolts.

When the pole is not located at the back of the sidewalk, the length of the luminaire arm shall be as directed by the Engineer.

**5.9 ELECTROLIERS:** The electroliers shall be located according to size as shown on the Plates contained in these Standards. The luminaires shall be as follows, or an approved equal:

- |           |          |                               |   |
|-----------|----------|-------------------------------|---|
| <b>a.</b> | 200 Watt | I.E.S. Type III               | I.T.T. 113-62J3<br>G.E. M2RR20S1A2GMS2<br>Hubbell RM GT 20 S31 071 0 3 4 0  |
| <b>b.</b> | 150 Watt | I.E.S. Type II<br>or Type III | I.T.T. 113-56262<br>G.E. M2RR15S1M2GMS2<br>Hubbell RM GT 15 S31 061 0 3 4 0 |

- |    |          |                               |   |
|----|----------|-------------------------------|---|
| c. | 100 Watt | I.E.S. Type II<br>or Type III | I.T.T. 113-56262<br>G.E. M2RR10S1M2GMS2<br>Hubbell RM GT 10 S31 061 0 3 4 0 |
|----|----------|-------------------------------|---|

Luminaires shall have high-pressure sodium vapor lamps, glass refractors, built-in receptacles for photoelectric cells and regulator or auto-regulator type ballasts with a power factor of not less than 92%.

**5.10 PHOTOELECTRIC CELLS:** Photoelectric cells shall be adjustable, compatible with related equipment and adequate for the load. They shall be General Electric No. C402G660, Fisher Pierce No. 6690B or an approved equal.

**5.11 INSTALLATION:** The trench excavation shall be made by the Developer as shown on the Plates contained in these Standards. Trenches shall be straight and of even depth. Special locations or depths must be approved by the Engineer prior to excavation.

The conduit shall be laid in the trench as shown on the Plates contained in these Standards. Wherever possible, the conduit shall be placed adjacent to the sidewalk for protection from future excavation. Conduit shall be jacked or bored at existing street crossings.

**5.12 BACKFILL:** The backfill shall be compacted as shown on the Plates contained in these Standards.

**5.13 CONNECTION TO ELECTRICAL DISTRIBUTION SYSTEMS:** Where lighting circuit and energy sources meet, the circuit shall terminate in the Utility service or pull box (see 5.5, "Pull Boxes"), as shown on the Plates contained in these Standards. The circuit shall terminate with a Bussman TRON fuse-holder, with a 30-amp cartridge fuse, type HEB-AB or an approved equal. The fuse shall be taped to the cable and there shall be 4 feet of slack conductor coiled in the service box.

The Utility shall make service connections for light standards in the pull box. Where service is from a Utility transformer, and no service or pull box exists, the Developer shall furnish and install a pull box at the transformer location, as shown on the Plates contained in these Standards. The Developer shall furnish and install conduit and conductors from the pull box into the Utility transformer. Entrance in the Utility transformer shall be coordinated with, and supervised by, the Utility.

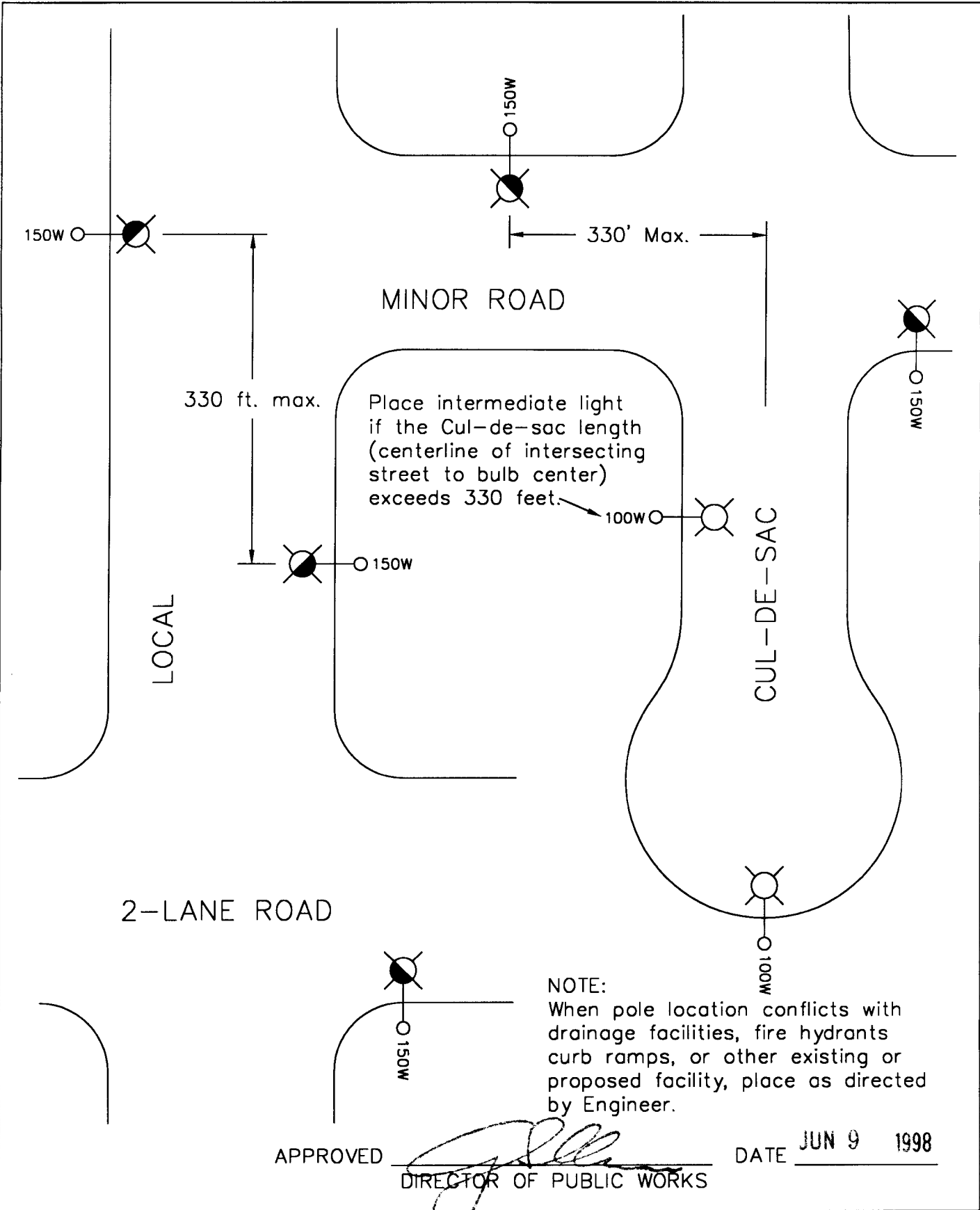
The connection to either an overhead or underground energy source will be made by the Utility, upon receipt of request for service by the County. All necessary wiring, conduit or the like to an existing and available power source shall be installed prior to acceptance by the County.

All utility identification numbers shall be installed in accordance with the Utility's Standards before the lights will be energized.

**5.14 TESTING:** The street lights shall be tested in normal service for a minimum of 4 nights before acceptance by the County.

**5.15 CONFLICT WITH UTILITIES:** Developer shall be responsible for contacting other utilities to determine that locations for foundations and conduit runs are clear.

Where conflicts exist, the locations may be altered with the approval of the Engineer.

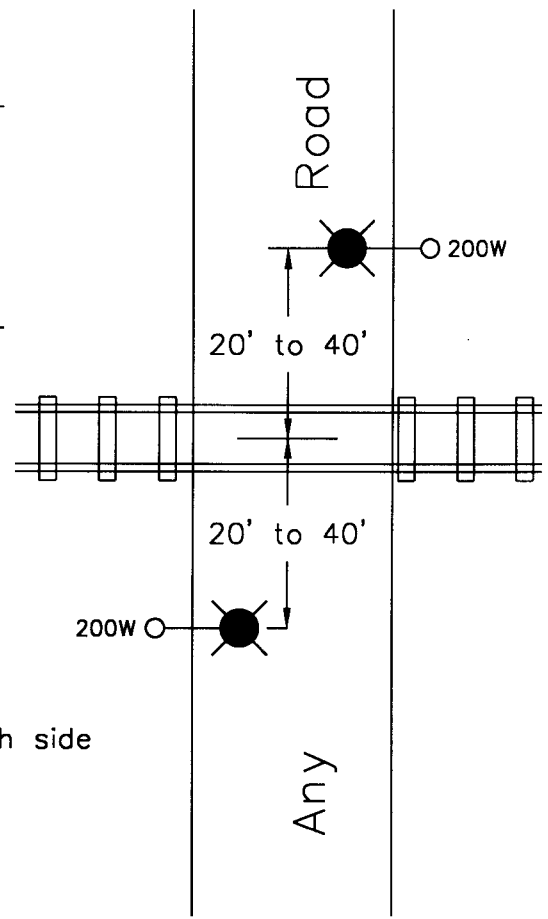
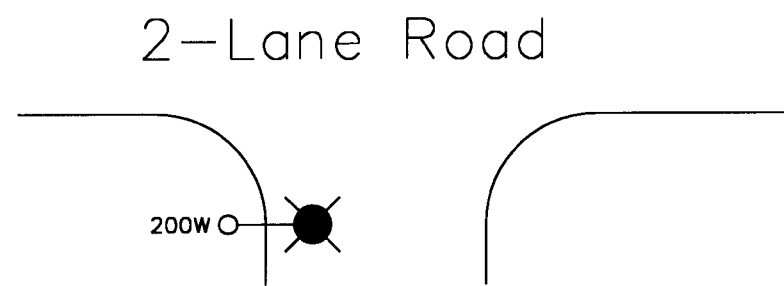
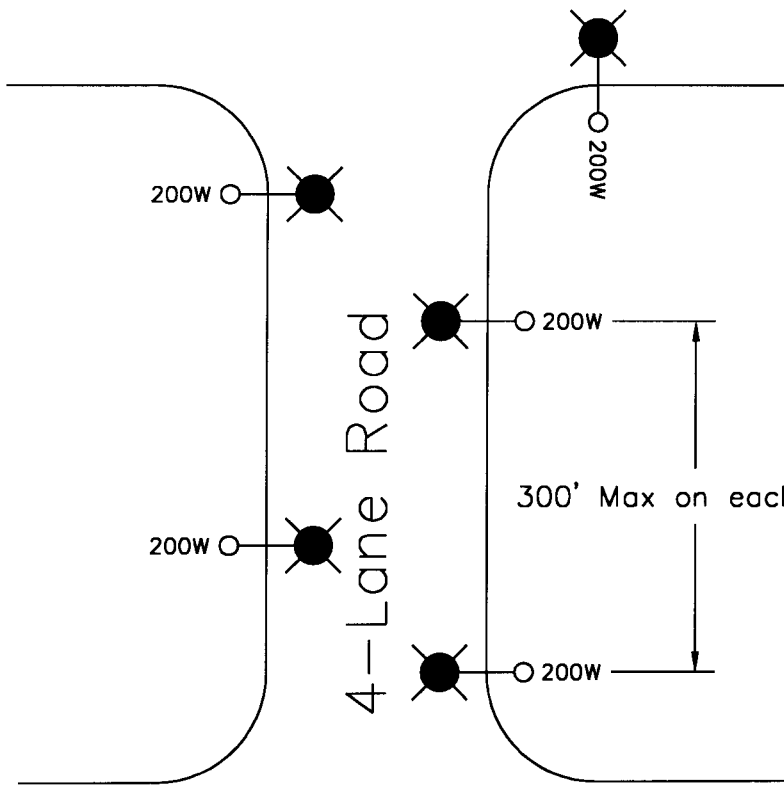
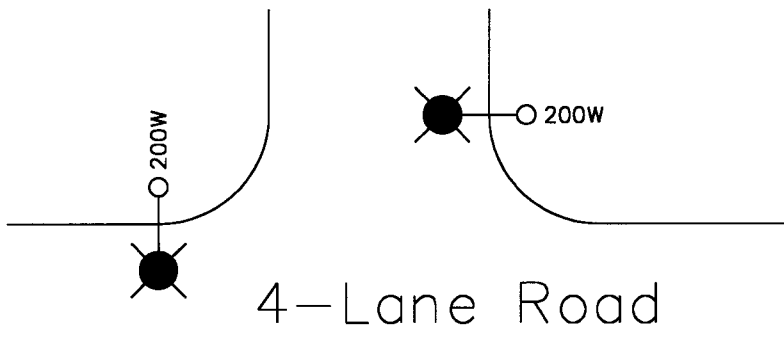


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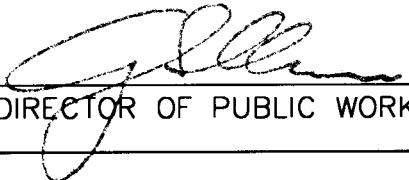
STANISLAUS COUNTY

LOCATIONS OF  
25 FT. POLES

PLATE 5-A1



NOTE:  
 When pole location conflicts with drainage facilities, fire hydrants, curb ramps or other existing or proposed facilities, place as directed by the Engineer.

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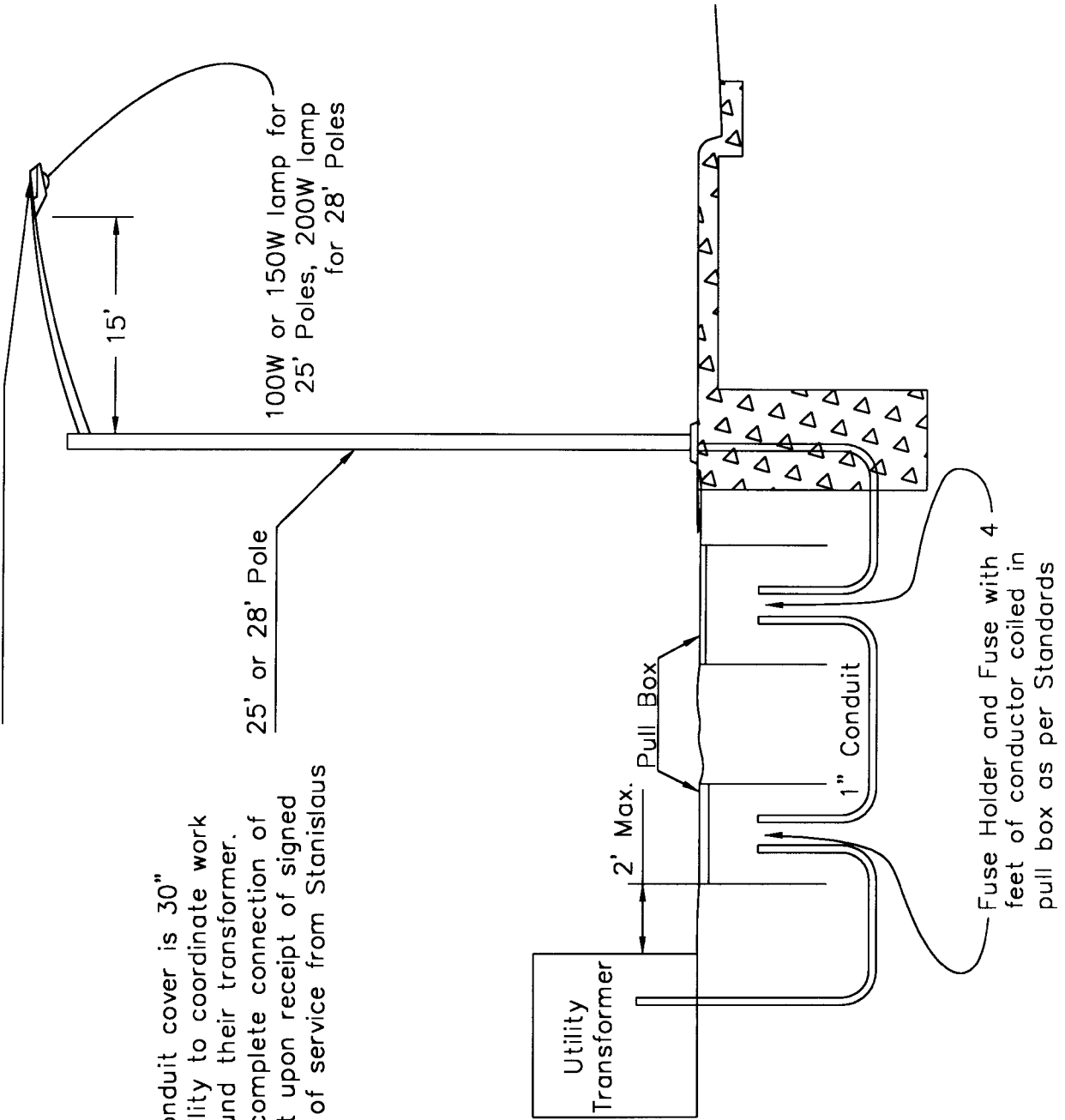
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 STANDARDS

STANISLAUS COUNTY
LOCATION OF 28 FT. POLES
PLATE 5-A2



Luminaires shall be 120V with built-in photoelectric cells.



NOTES:

1. Minimum conduit cover is 30"
2. Contact Utility to coordinate work in and around their transformer.
3. Utility will complete connection of 120V circuit upon receipt of signed application of service from Stanislaus County.

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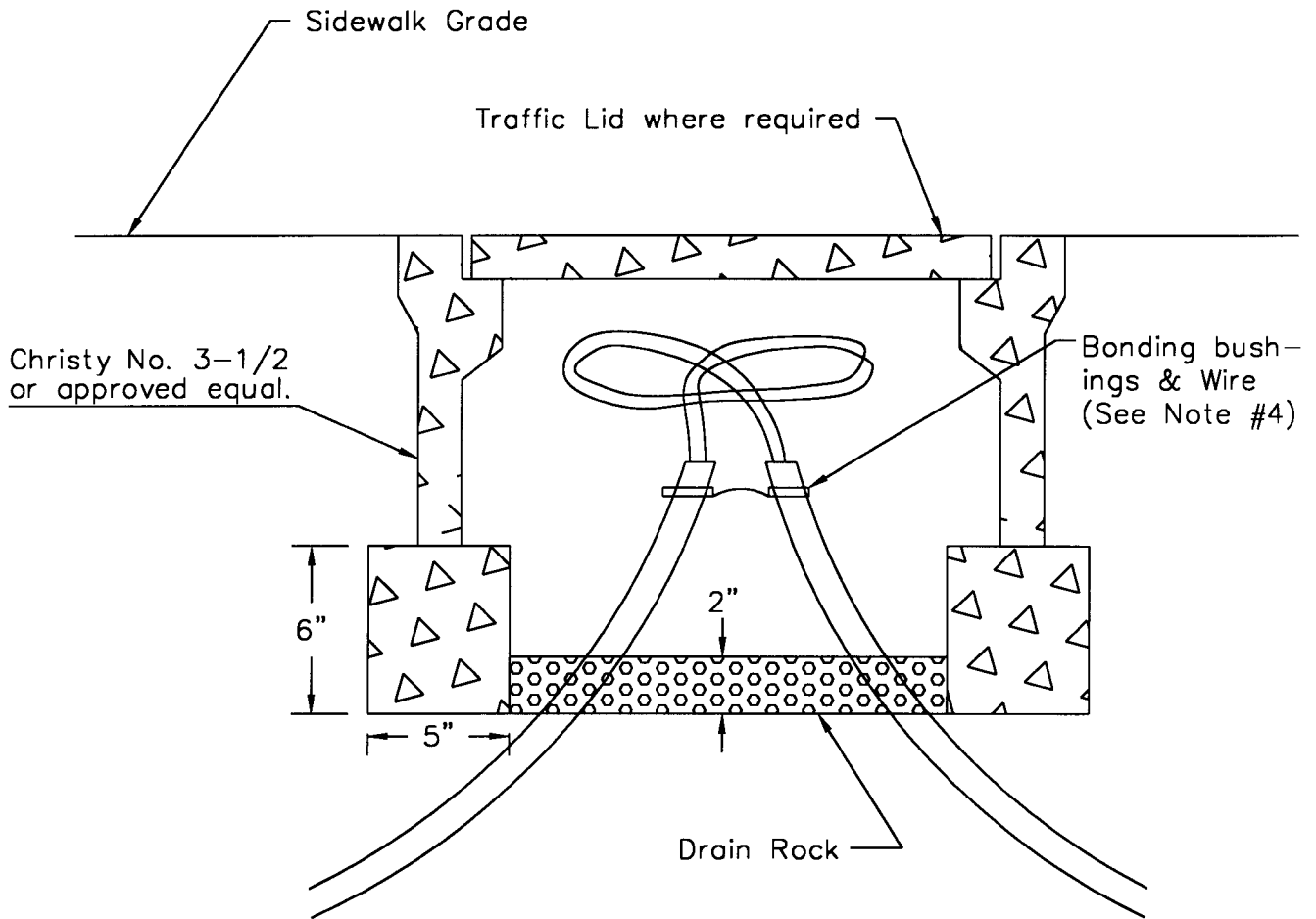
DATE JUN 9 1998

IMPROVEMENT STANDARDS

STANISLAUS COUNTY

INSTALLATION LAYOUT

PLATE 5-B



NOTES:

1. If box is mid-circuit, leave 4 ft. of slack conductor in box.
2. If box is a circuit terminus at power source or adjacent, install fuse holder with 4 ft of slack conductor. Tape fuse to conductor in box.
3. Conduit entering a Utility service box shall conform to Utility specifications.
4. The bonding wire shall be at least the same gauge as the largest circuit conductor. (min. no. 8 AWG copper wire)
5. Lid shall be stamped street lights.

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DATE JUN 9 1998

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 STANDARDS

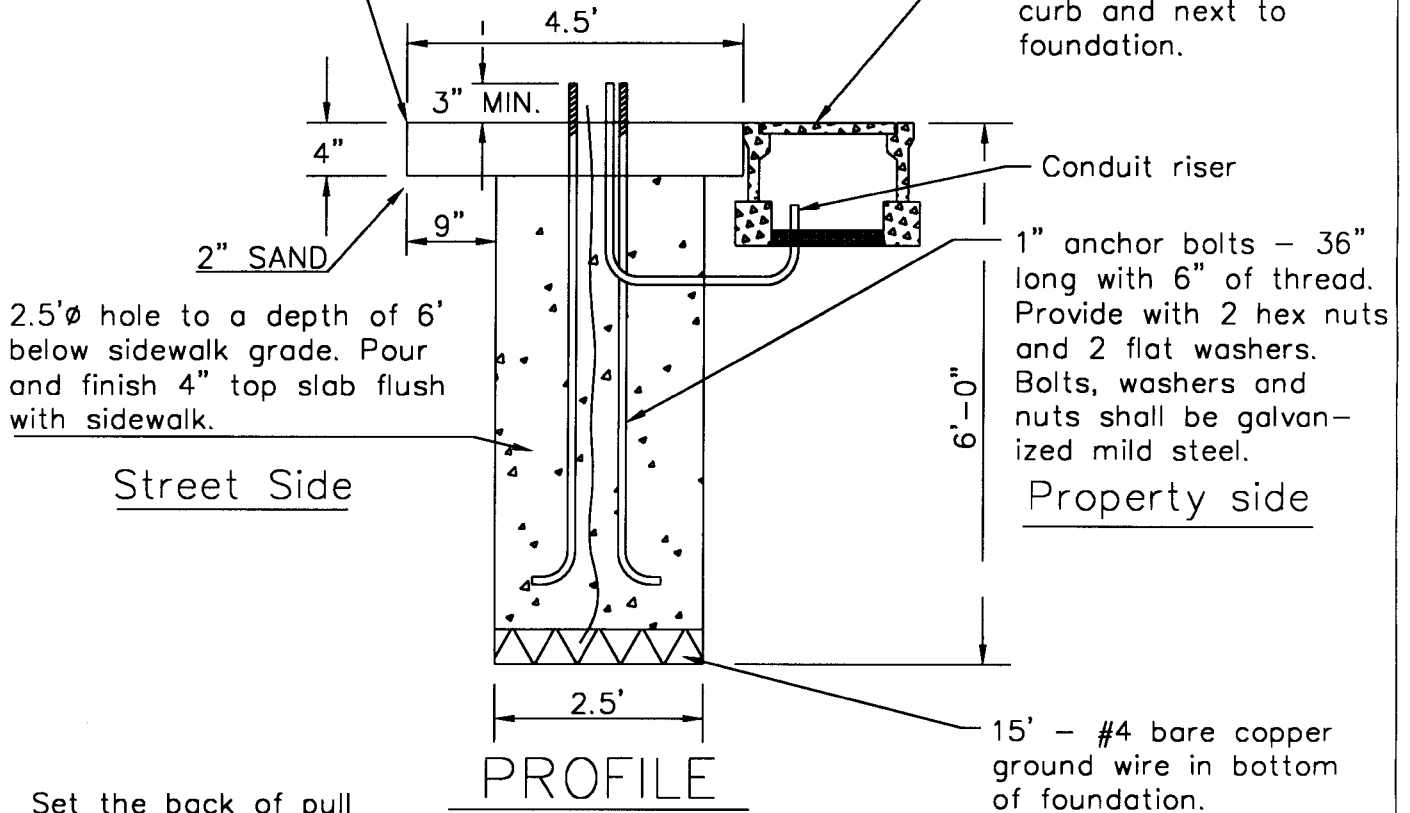
STANISLAUS COUNTY

PULL BOX

PLATE 5-C

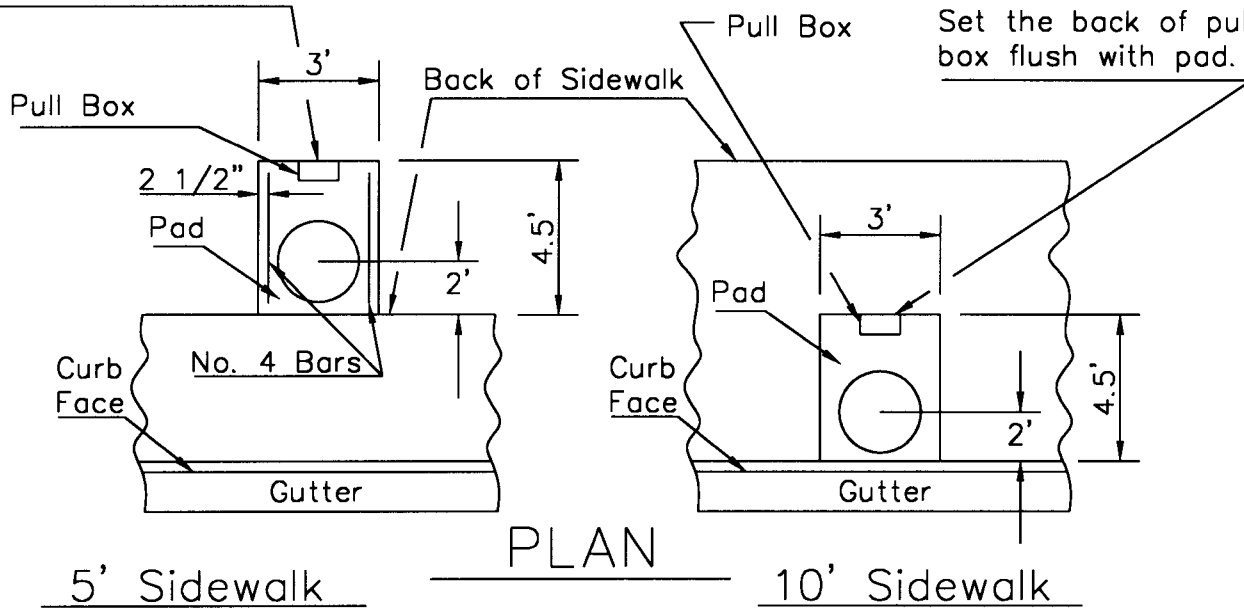
3' X 4.5' CONCRETE PAD.

Pull box  
Locate box away from curb and next to foundation.



Set the back of pull box flush with pad.

Set the back of pull box flush with pad.



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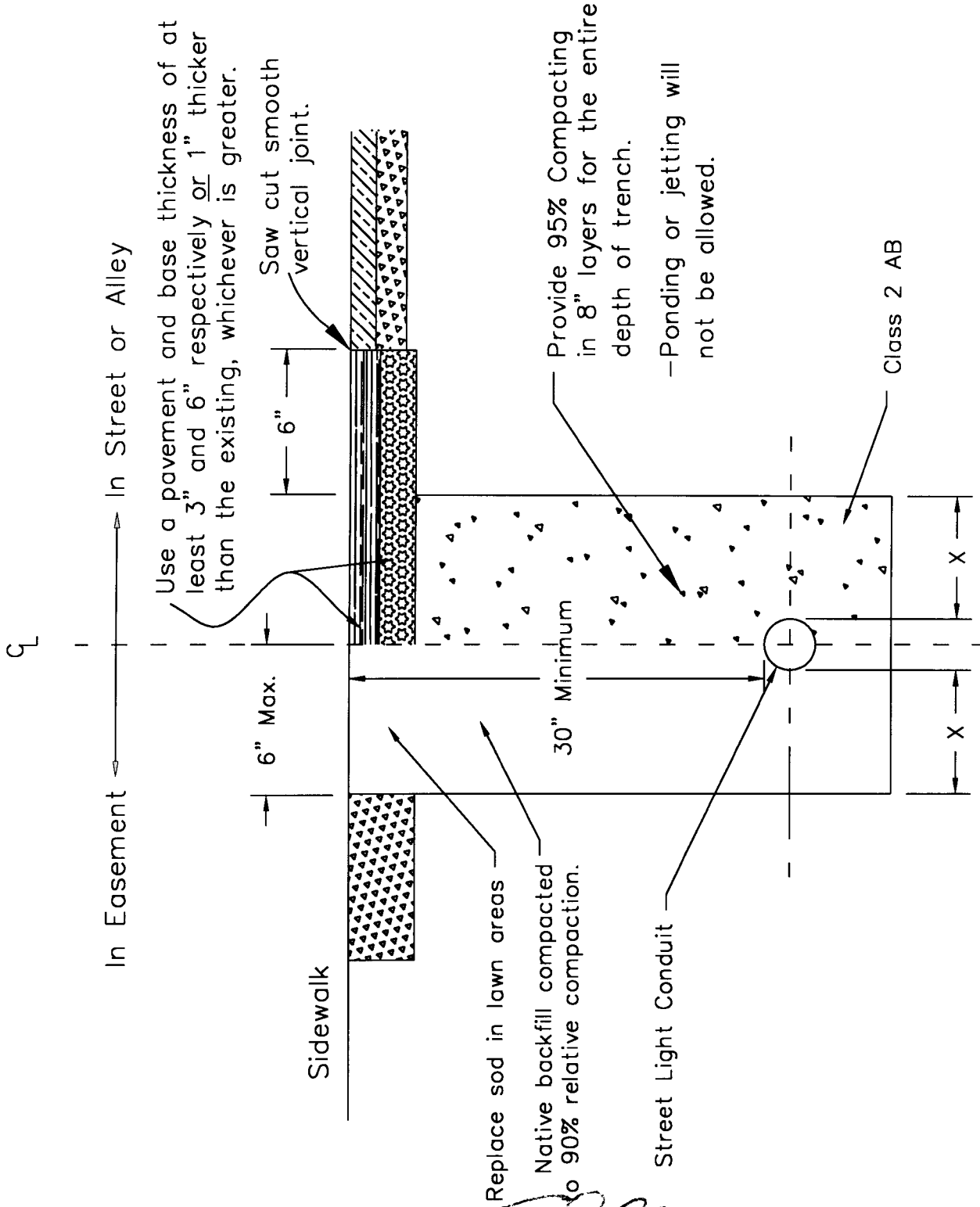
DATE JUN 9 1998

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY

POLE FOUNDATION

PLATE 5-D



APPROVED *[Signature]* DATE JUN 9 1998  
 DIRECTOR OF PUBLIC WORKS

# IMPROVEMENT STANDARDS

STANISLAUS COUNTY
STREET LIGHT CONDUIT DETAIL
PLATE 5-E

## CHAPTER 6: MISCELLANEOUS

### 6.1 OFF-STREET PARKING

- a. **GENERAL:** Each off-street parking space shall contain at least a rectangular area of a minimum width of (9) feet and a minimum length of eighteen (18) feet. A parallel parking space shall be a minimum width of nine (9) feet and a minimum length of 22 feet. If desired, 30% required parking stalls may be so sized and posted to be used for parking small cars. Small car stalls shall contain a rectangular area a minimum of 7.5 feet in width and a minimum of fifteen (15) feet in length. Small car spaces shall be identified by the words "small car" or "compact" painted on the pavement.

Any Driveway used for both ingress and egress to and from a parking lot and not directly serving parking stalls shall have a minimum width of twenty (20) feet. Any driveway used only for either ingress or egress to or from a parking lot and not directly serving parking stalls shall be a minimum of ten (10) feet in width. All driveways connecting public rights-of-way to off-street parking lots shall comply with the regulations regarding driveways contained in these Standards.

All parking areas shall have internal circulation in which no backing movement, except that required to leave a parking space, is permitted. It shall also be possible to maneuver within a parking area without the use of street right-of-way. No parking area design shall require an exiting vehicle to back onto a street, except for parking serving single-family houses, duplexes, or triplexes.

Parking areas, including driveways to and from parking areas, shall be paved with a minimum of two inches of asphalt concrete surfacing or a minimum of 3½ inches of concrete, and be graded and designed as to dispose of all surface water in accordance with these Standards.

All parking areas shall be marked by either striping or buttons to delineate spaces. The spaces shall be double-striped with a painted line width of four inches. If buttons are used they shall be 3.5" to 4" in diameter, spaced no more than 3 feet on center. The lines shall be laid parallel to and one foot within each stall, eighteen feet in length for a full-sized space and fifteen feet in length for a small car space, not including the semicircular cap.

- b. **HANDICAPPED PARKING:** Every parking area for nonresidential uses shall include spaces designed for use by the physically handicapped which shall be as close to the primary building entrance(s) as practical. These spaces shall be located so the handicapped person is not required

to wheel or walk behind a parked car other than their own. Pedestrian ways accessible to the handicapped shall be provided from each space to the use served.

If one space is provided, it shall be seventeen feet wide and lined to provide a 9 foot wide space and 8 foot wide loading and unloading area on the passenger side of the vehicle. Two spaces can share the loading/unloading area. If a walkway is used as a wheelstop (maximum 2.5 foot vehicle overhang permitted), the walkway must still have a net clear width of four feet.

All handicapped parking shall comply with the California State Accessibility Standards, Title 24 of the California Administrative Code.

A raised sidewalk serving as a wheelstop may be less than six inches high if necessary to accommodate a handicapped ramp.

Markings and signs shall be as required by state law, including signs at parking lot entrances regarding towing of cars for unauthorized parking in a space for the handicapped, signs at the spaces restricting use to handicapped persons, and pavement markings displaying the handicapped symbol.

The number of handicapped spaces are as follows:

Total Spaces in Lot	Number of Spaces
1-25	1
26-50	2
51-75	3
76-100	4
101-150	5
151-200	6
201-300	7
301-400	8
401-500	9
501-1,000	2% of total spaces
Over 1,000	20 spaces plus 1 space for every 100 spaces, or a fraction thereof, over 1,000

In lots with less than five spaces, one space fourteen feet wide must be provided. This space shall be striped to provide a 9 ft. wide vehicle area and a 5 ft. ramp area. However, this space need not be signed for or limited to exclusive use by the handicapped.

Surface slopes of parking spaces for the physically handicapped shall be the minimum possible and shall not exceed ¼-inch per foot (2.083% gradient) in any direction.

- c. **WHEELSTOPS:** Every parking space that is not separated by a fence, wall or landscaped area from any alley property line upon which it abuts, shall be provided with a suitable concrete curb or timber barrier not less than six inches in height. The curb or barrier shall be located not less than 2.5 feet from the alley property line, and be securely installed and maintained.

Every parking space that abuts a fence, wall, or landscaped area shall be separated from them by a suitable wheelstop consisting of a concrete curb or timber barrier not less than six inches in height. The curb or barrier shall be located not less than 2.5 foot from the fence, wall, or landscaped area; and be securely installed and maintained. If low-lying plant materials that will permit a 2.5 foot vehicular overhang are specified in an approved landscaping plan, a six-inch concrete curb can be utilized for a planter border as well as a wheelstop.

Every parking area with an aisle that abuts a fence, wall, or landscaped area shall have the aisle separated from them by a suitable wheelstop consisting of a concrete curb or timber barrier not less than six inches in height and not less than 4.5 feet from the fence, wall, or landscaped area. The curb or barrier shall be securely installed and maintained. If low-lying plant materials that will permit a 2.5 foot vehicular overhang are specified in an approved landscaping plan, a six inch concrete curb can be utilized for planter border as well as a wheelstop.

## 6.2 **EMERGENCY ACCESS:**

- a. **GENERAL:** Road and street networks, whether public or private, shall provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency.

All roads shall be constructed to provide two-way traffic flow using a minimum of two 9 foot traffic lanes.

The surface of access roads shall provide unobstructed access to conventional drive vehicles, including sedans and fire engines. The surface must also be capable of supporting a 40,000 pound load.

The grade for all roads, streets, private lanes, and driveways shall **not** exceed 16 percent.

All roadways shall have a horizontal radius of curvature along the inside edge of pavement of no less than 50 feet. An additional roadway width of 4 feet shall be added to curves of 50-100 feet radius and 2 feet to those from 100-200 feet.

The length of vertical curves in roadways, exclusive of gutters, ditches, and drainage structures designed to hold or divert water, shall be not less than 100 feet.

Turnarounds are required on driveways and dead-end roads as specified in this article. The minimum turning radius for a turnaround shall be 40 feet from the centerline of the road.

Turnouts shall be a minimum of 10 feet wide and 30 feet long with a minimum 25 foot taper on each end.

All driveway, road, street, and private lane roadway structures shall be constructed to carry at least the maximum load and provide a minimum vertical clearance of 16.5 feet.

Appropriate signing, including but not limited to weight or vertical clearance limitations, one-way road or single lane conditions, shall reflect the capability of each bridge.

All one-way roads shall be constructed to provide a minimum of one 10 foot traffic lane. All one-way roads shall connect to a two lane roadway at both ends, and shall provide access to an area currently zoned for no more than 10 dwelling units. In no case shall it exceed 2,640 feet in length. A turnout shall be placed and constructed at approximately the midpoint of each one-way road.

- b. **DEAD-END ROADS**: The maximum length of a dead-end road, including all dead-end roads accessed from that dead-end road, shall not exceed the following cumulative lengths, regardless of the number of parcels served:



Parcels zoned for less than one acre	800 feet
Parcels zoned for 1 to less than 5 acres	1320 feet
Parcels zoned for 5 to less than 20 acres	2640 feet
Parcels zoned for 20 acres or larger	5280 feet

Where parcels are zoned 5 acres or larger, turnarounds shall be provided at a maximum of 1320 foot intervals.

Each dead-end road shall have a turnaround constructed at its terminus.

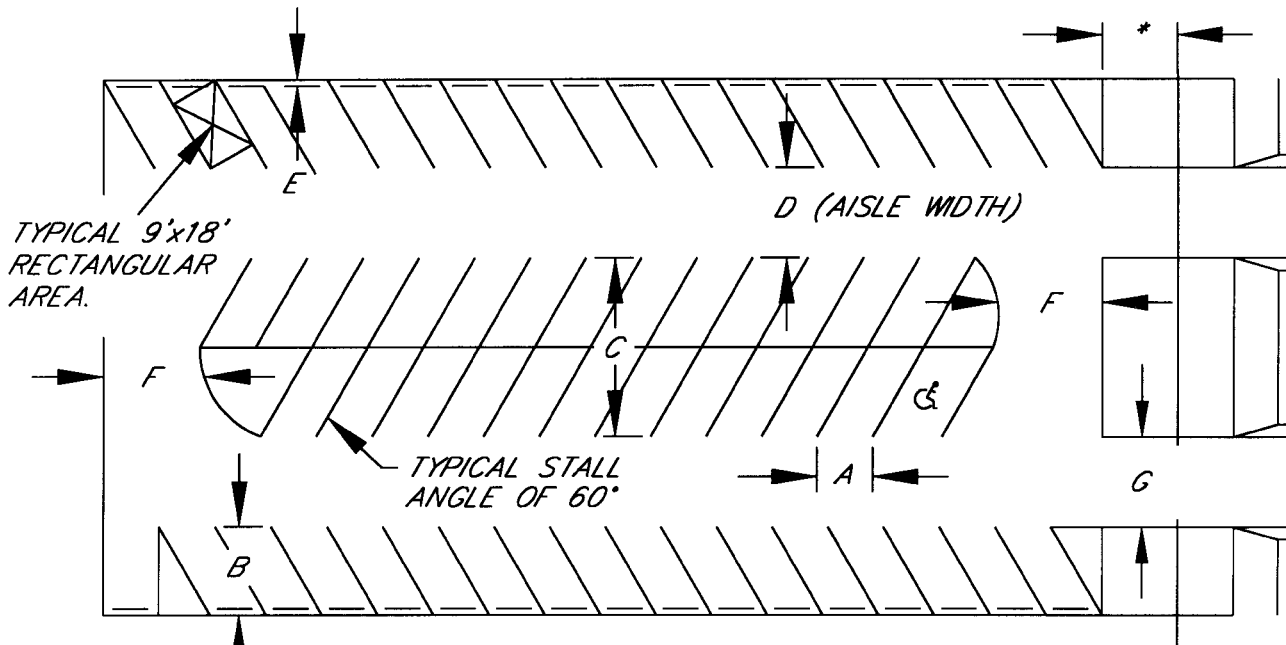
- c. **DRIVEWAYS**: All driveways shall provide a minimum 10 foot traffic lane and unobstructed vertical clearance of 15 feet along its entire length.

Driveways exceeding 150 feet in length, but less than 800 feet in length, shall provide a turnout near the midpoint of the driveway. Where the driveway exceeds 800 feet, turnouts shall be provided no more than 400 feet apart.

A turnaround shall be provided at all building sites on driveways over 300 feet in length, and shall be within 50 feet of the building.

- 6.3 FIRE SAFETY**: The fire system shall conform to the requirements of the fire district in which the development is located. The governing fire district shall sign the improvement plans prior to the plans being approved by the County.
- 6.4 WATER**: The water system shall conform to the requirements of the water district in which the development is located. The governing water district shall sign the improvement plans prior to the plans being approved by the County. If the development is located outside of a water district, then the water system shall be designed and constructed in conformance with the City of Modesto water standards.
- 6.5 SANITARY SEWER**: The sewer system shall conform to the requirements of the sewer district in which the development is located. The governing sewer district shall sign the improvement plans prior to the plans being approved by the County. If the development is located outside of a sewer district, then the sewer system shall be designed and constructed in conformance with the City of Modesto sanitary sewer standards

# TYPICAL PARKING LOT DIAGRAM



The required front setback dimension (\*) is as specified in the Ordinance Code of Stanislaus County for the Zoning District in which the parking lot is to be located.

## PARKING SPACE AND AISLE DIMENSION TABLE

		PARKING ANGLE TO DRIVEWAY						
		45°	50°	55°	60°	70°	80°	90°
SPACE WIDTH	A	12.7'	11.7'	11.0'	10.4'	9.6'	9.1'	9.0'
SPACE DEPTH	B	19.1'	19.6'	19.9'	20.1'	20.0'	19.3'	18.0'
DOUBLE SPACE DEPTH	C	31.8'	33.4'	34.7'	35.7'	36.9'	37.0'	36.0'
AISLE WIDTH	D	8.8'	9.8'	12.2'	15.8'	19.0'	21.7'	24.0'

FOR ANY GIVEN PARKING ANGLE BETWEEN 45° AND 90° NOT SPECIFICALLY LISTED IN THE ABOVE TABLE, USE A TABLE ANGLE NEAREST THE GIVEN ANGLE.

THE MINIMUM AISLE WIDTH (D) AT ANY PARKING SPACE ANGLE LESS THAN 45°; INCLUDING PARALLEL STALLS, IS 8.8 FEET.

THE TURNAROUND OR END DRIVEWAY WIDTH (F) SHALL BE A MINIMUM OF EIGHTEEN (18) FEET. IF WHEEL-STOPPS ARE USED, THE WHEELSTOP SETBACK DIMENSION (E) SHALL BE A MINIMUM OF TWO AND ONE-HALF (2.5) FEET FOR ANY PARKING PLAN.

THE MINIMUM DRIVEWAY WIDTH (G) FOR ONE-WAY TRAFFIC IS 10 FEET AND FOR TWO-WAY TRAFFIC IS 20 FEET.

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*[Signature]*  
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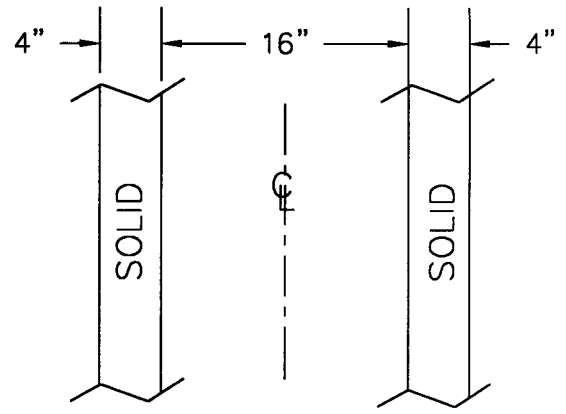
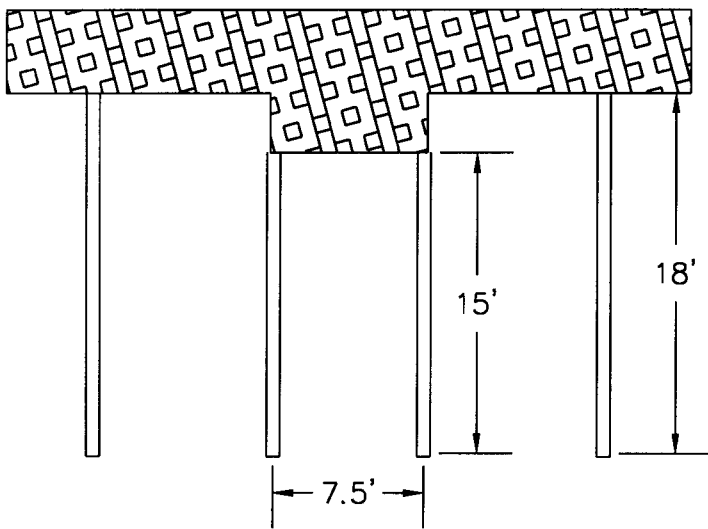
DATE JUN 9 1998

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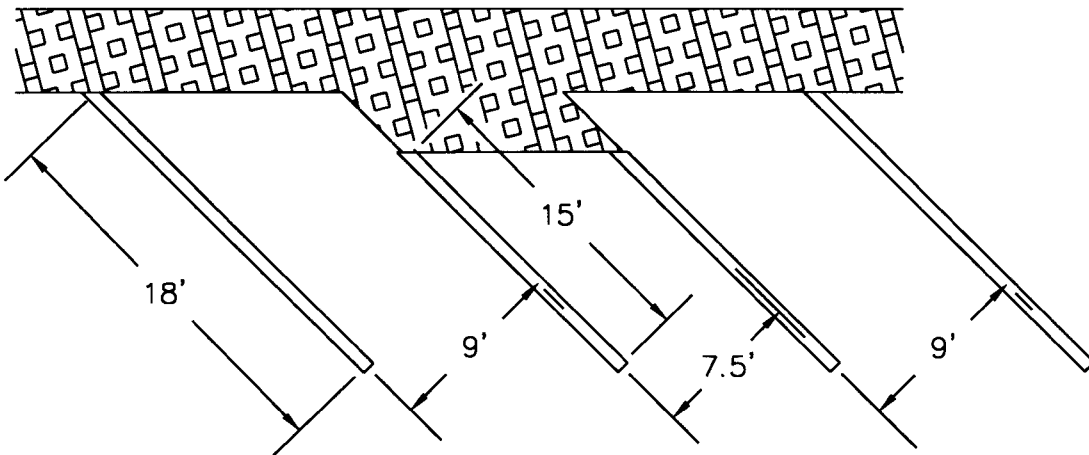
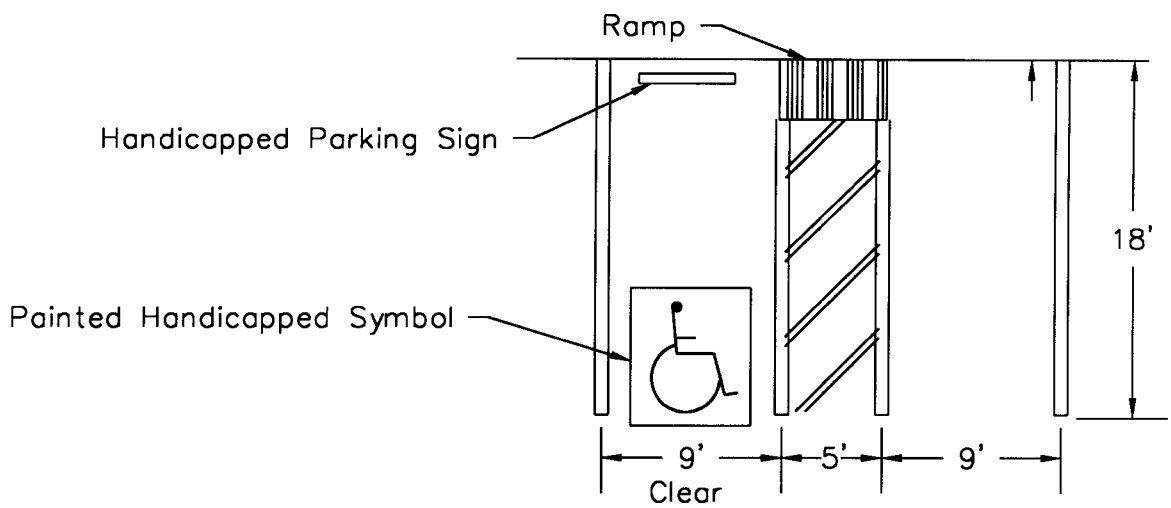
PARKING  
DESIGN

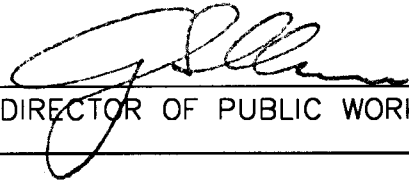
PLATE 6-A1



Double Stripe Detail

4' Clear



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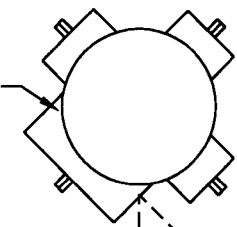
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STANISLAUS COUNTY

PARKING STALL

6-A2

4.5" Steamer Connection

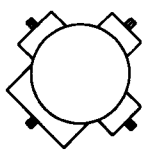
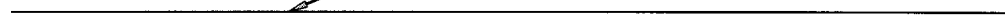


2.5" Hose Connection

Street Run

45°±5°

Property Line

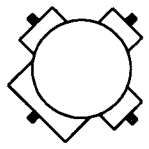


1'

Back of Sidewalk



Split Sidewalk /Property Line

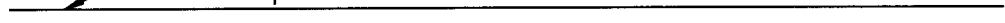


2'

Top of Curb

Gutter lip

Flow line



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*[Signature]*

DATE

JUN 9 1998

DEPARTMENT OF FIRE SAFETY

IMPROVEMENT STANDARDS

STANISLAUS COUNTY
FIRE HYDRANT LOCATION
PLATE 6-B