

California Department of Water Resources
Division of Operations and Maintenance

ENCROACHMENT PERMIT



GUIDELINES

June 2005

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NOTE TO APPLICANTS

PURPOSE OF THE ENCROACHMENT PERMIT

A paramount concern to the State of California, Department of Water Resources (DWR) is maintaining DWR's ability to construct, operate, maintain, repair, and replace (if necessary) the various facilities of the State Water Project (SWP). With SWP facilities delivering water for municipal, industrial, residential, agricultural, and recreational use to more than half the population of the State, DWR takes its protection role very seriously. Inappropriate activities in proximity to SWP facilities can be costly, damaging, dangerous, and even life-threatening. The Encroachment Permit serves as the primary means for monitoring the orderly and controlled construction, operations and maintenance of improvements, while assuring the maximum protection of the SWP.

PURPOSE OF THE GUIDELINES

These guidelines supersede all previous revisions.

The guidelines have been prepared to facilitate your understanding and application of the rules and requirements to obtain an Encroachment Permit from DWR. The guidelines are divided into different sections. The Specific Encroachments includes alphabetically organized sections, with each section addressing the most common encroachment issues encountered since the construction of the initial SWP facilities. **Do not assume that these guidelines are all-inclusive!!** Each encroachment application is considered on its own merits; additional information may be required, and additional restrictions may be placed on the encroachment prior to issuance of the permit.

DWR policy is to keep and maintain all DWR fee-owned right of way free from all encumbrances not in existence at the time of DWR's acquisition. Proposed encroachments onto DWR easements will be considered on an individual basis, focusing on protection of SWP facilities and the ability of DWR to construct, operate, maintain, repair, and replace SWP facilities.

Where DWR's property rights are superior to those of the Applicant, DWR will NOT repair, replace, or pay for damages to the encroaching improvement(s) that may be a consequence of DWR's construction, repair, replacement, operations, or maintenance of SWP facilities.

When applying for an Encroachment Permit within DWR right of way, the Applicant is advised to conduct a thorough title search of the affected property, focusing on the instrument by which DWR obtained its right of way. A reservation in favor of the original grantor and their successors or assigns may allow for certain improvements. If such a

reservation exists, the cost for repair or replacement of DWR damage to or removal of those same improvements constructed under an Encroachment Permit may be the responsibility of DWR.

PERMIT PROCEDURE

A flowchart showing the permit procedure is shown on Page 7.

Applicants are required to complete an Encroachment Permit Application Form and submit it to Division of Engineering, Real Estate Branch, along with six sets of drawings, a cash deposit, and evidence that CEQA compliance has been met. Please refer to DWR Contacts on Page 6 of these Guidelines.

The application form can be downloaded from DWR's website at:
www.dlrw.water.ca.gov/encroach/index.cfm

DEPOSIT

Applicants are required to post a deposit of \$500 when submitting plans for review. This deposit will be applied against the total cost of review, which ranges from a \$500 to \$15,000 depending on the magnitude of encroachment activity and complexity of the project. An additional cost will be charged for any on-site inspections required by DWR. On-site inspection costs are an estimate of time required for DWR inspectors to inspect the construction of the encroachment activity. DWR inspectors ensure that plans approved for the Encroachment Permit are being followed and that the integrity of the SWP facilities is being maintained. These costs can range from one thousand to several thousand dollars. All costs must be paid in full prior to permit issuance.

COMPLETION OF THE ENCROACHMENT ACTIVITY

The Applicant shall provide DWR with a copy of the As-Built drawings within 60 days from completion of the encroachment activity.

DWR CONTACTS

Listed below are the addresses and telephone numbers of DWR contacts, pursuant to the instructions contained herein.

PRIMARY CONTACT: Department of Water Resources
Division of Engineering, Real Estate Branch
1416 9th Street
P.O. Box 942836
Sacramento, California 94236-0001
(800) 600-4397 (toll free)

DWR FIELD DIVISIONS:

Oroville Field Division 460 Glen Drive (530) 534-2323
Oroville, California 95966

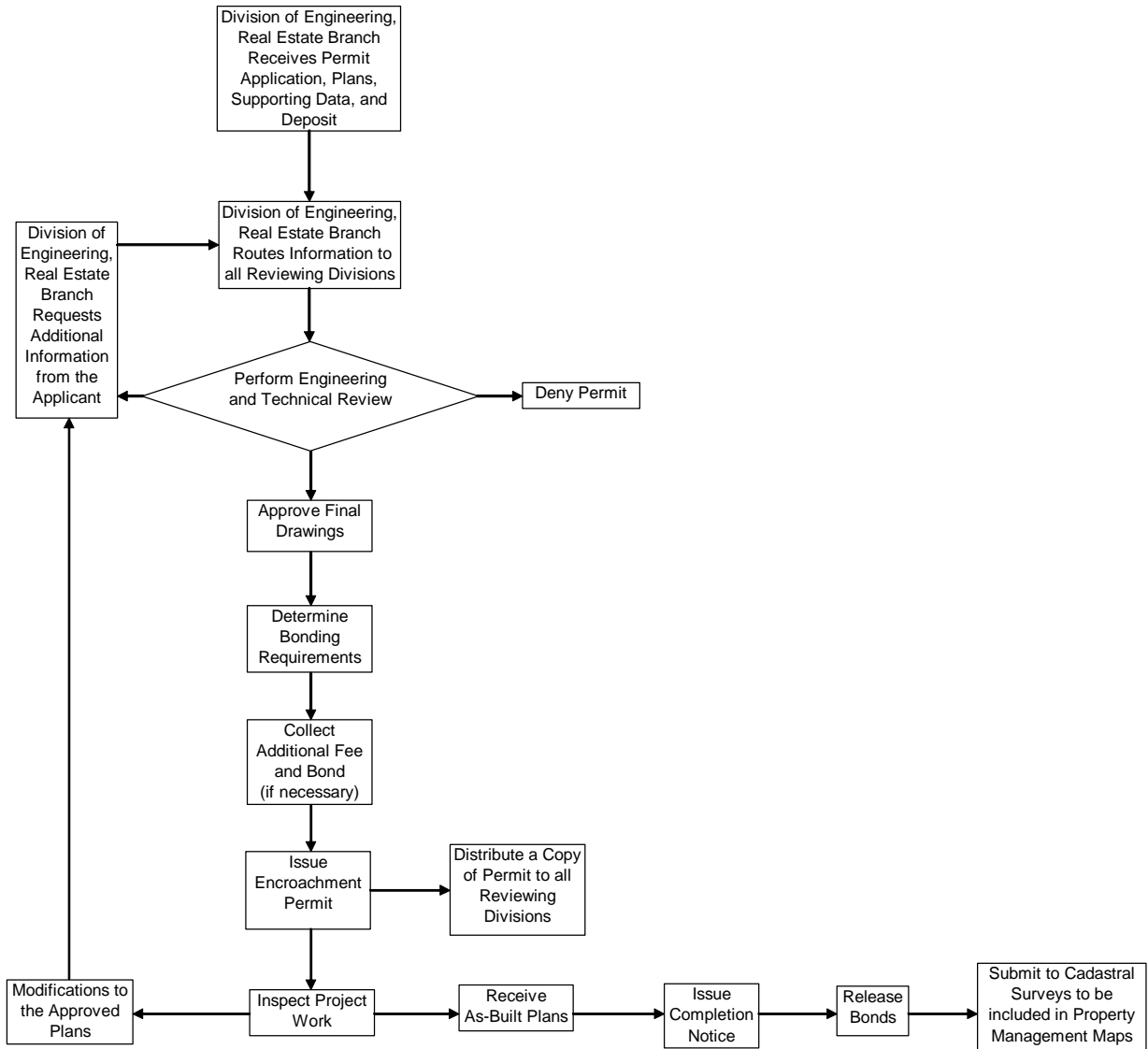
Delta Field Division 5280 Bruns Avenue (209) 833-2082
Byron, California 94514-1915

San Luis Field Division 31770 Gonzaga Road (209) 826-0718
Gustine, California 95322-9737

San Joaquin Field Division 4201 Sabodan Street (661) 858-5513
Bakersfield, California 93313

Southern Field Division 34534 116th Street (661) 944-8500
Pearblossom, California 93553

ENCROACHMENT PERMIT PROCEDURE FLOW CHART



GENERAL ENCROACHMENT PERMIT GUIDELINES

1. An Encroachment Permit issued by DWR must be obtained prior to entering upon or crossing DWR right of way for any activity, except for visual inspections, ground and aerial surveys, or potholing, where a Temporary Permit is required.

If you are unsure as to the need for obtaining an Encroachment Permit from DWR, call the telephone numbers listed in DWR Contacts of these Guidelines.

2. A Temporary Permit for visual inspections, ground and aerial surveys, or potholing can be obtained directly from the appropriate Field Division office, as listed in DWR Contacts of these Guidelines. Construction activities are not permitted under a Temporary Permit.
3. Construction work shall be completed within a one-year period, or as otherwise specified by DWR at the date of permit issuance. Applicant shall be responsible for the operations and maintenance of all features of their project. DWR is not responsible for any failure of any portion of the constructed work by reason of approval of the submitted plans and specifications, or the inspection during construction of the project by DWR personnel.
4. The Applicant shall provide written confirmation that Federal, State, and local environmental requirements have been fully addressed prior to issuance of an Encroachment Permit. Throughout construction activities, the Applicant shall fulfill all identified environmental issues/requirements.
5. Submittals for an Encroachment Permit shall include calculations, specifications, and detailed construction plans showing plan views, profiles, and sections of proposed work within DWR right of way.
6. A minimum of six (6) sets of calculations, specifications, and plans shall be submitted to DWR for review and approval.
7. Every drawing submitted or resubmitted for DWR approval shall contain the appropriate registered engineer's stamp and signature.
8. Drawings shall show an accurate and easily recognizable boundary of DWR right of way and a North arrow. The right of way shall be clearly labeled with arrows pointing to the boundaries. Applicant's drawings must clearly show the limits of all proposed construction. All SWP facilities, including pipelines, appurtenances, canals, operating roads, fences, communication and control cables, drainage structures, etc., shall be shown on the drawings.

9. The following note shall be placed on each plan sheet where work will be performed within DWR right of way:

A SEVEN (7) DAY ADVANCE NOTIFICATION IS REQUIRED PRIOR TO STARTING WORK WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY. CONTACT THE DEPARTMENT OF WATER RESOURCES, DIVISION OF ENGINEERING, ENCROACHMENT PERMIT SECTION, SACRAMENTO, CALIFORNIA AT (800) 600-4397. THE APPROPRIATE DWR FIELD DIVISION SHALL BE SIMULTANEOUSLY NOTIFIED AT **(fill in telephone number listed in DWR Contacts of these Guidelines)**.

10. SWP facilities and appurtenances (i.e. existing blow-offs, air valves, vents, manholes, and/or cathodic protection test stations) shall be protected in place prior to and during construction. Upon request, DWR personnel familiar with SWP facilities, such as cathodic protection systems, will be made available to identify such locations.

The following note shall be placed on each plan sheet where work will be performed within DWR right of way:

EXCEPT AS OTHERWISE PROVIDED HEREIN, MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT IN PLACE ALL SWP FACILITIES AND APPURTENANCES, INCLUDING BUT NOT LIMITED TO COMMUNICATION AND CONTROL CABLES AND CATHODIC PROTECTION TEST STATIONS. THE PERMITTEE AND CONTRACTOR WILL BE LIABLE FOR ALL DAMAGES TO SWP FACILITIES AND APPURTENANCES AS A RESULT OF THE CONSTRUCTION, AND FOR ANY OTHER DAMAGES OR LOSSES SUFFERED BY DWR OR ITS WATER CONTRACTORS, INCLUDING POWER, IRRIGATION, MUNICIPAL AND INDUSTRIAL WATER SUPPLY, AND COMMUNICATION LOSSES.

11. DWR's communication and control cables shall be located and exposed by potholing prior to DWR issuing an Encroachment Permit. All work within 3 feet of the cable(s) shall be done using hand-held tools only. The Applicant shall contact UNDERGROUND SERVICE ALERT (USA) at (800) 422-4133 for Southern CA or (800) 642-2444 for Northern CA and MCI TELECOMMUNICATIONS CORPORATION at (800) 624- 9675 for information regarding the location of the communication and control cables. **The presence of a DWR inspector will be required throughout the cable exposure process.** Please call the appropriate Field Division, as listed in DWR Contacts of these Guidelines, for a Temporary Permit and appointment to perform the exposure of the cable(s).

The resultant elevation information shall be delineated on the profile view and labeled as:

CABLE POTHOLED ELEVATION XX.X
Surface Elevation XX.X

Where xx.x is the elevation in feet to the nearest tenth.

The following note shall be placed on each plan sheet that shows DWR's communication and control cables:

COMMUNICATION AND CONTROL CABLES CONNECTED WITH THE OPERATION OF THE STATE WATER PROJECT ARE BURIED ALONG EITHER OR BOTH SIDES OF THE AQUEDUCT/PIPELINE WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY, AS APPROXIMATELY DEPICTED ON THIS DRAWING. PRIOR TO ANY EXCAVATION IN THIS AREA, THE CABLE(S) SHALL BE LOCATED AND EXPOSED BY POTHOLING IN THE PRESENCE OF A DEPARTMENT OF WATER RESOURCES FIELD DIVISION REPRESENTATIVE. CALL (fill in telephone number for the appropriate DWR Field Division listed in DWR Contacts of these Guidelines.) AT LEAST SEVEN (7) DAYS IN ADVANCE FOR AN APPOINTMENT. ALL EXCAVATIONS WITHIN THREE (3) FEET OF THE CABLE(S) SHALL BE DONE USING HAND-HELD TOOLS ONLY.

12. If trench excavation is a part of the proposed encroachment, the following note shall be placed on each plan sheet where work will be performed within DWR right of way:

ALL TRENCH EXCAVATION SHALL COMPLY WITH THE MOST CURRENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. TRENCH BACKFILL SHALL BE PLACED IN NO GREATER THAN 4-INCH LIFTS IF HAND COMPACTED OR NO GREATER THAN 8-INCH LIFTS IF POWER COMPACTED. TRENCH BACKFILL WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION (ASTM D1557).

13. Proposed modifications to the existing cover over SWP pipelines shall be subject to review and approval. Temporary or permanent placement of excavated materials within the right of way shall be subject to review and approval. A grading plan showing the top of DWR pipeline elevation shall be submitted for review.
14. If existing drainage features are to be modified during construction, detailed drawings showing the proposed drainage replacement/restoration shall be submitted for review and approval.
15. If construction alters the hillsides and slopes, the following erosion control measures shall apply after completion of the construction:

- a. All disturbed slopes shall be groomed to a smooth surface.
 - b. Two tons of oat straw per acre shall be rolled into the groomed slope with a California Straw Roller.
 - c. A mixture of seed, fertilizer, fiber, and water shall be blown over the layer of oat straw. The mixture shall be mutually agreed upon by a DWR biologist and the Applicant.
 - d. After the mixture, two additional tons of oat straw per acre shall be rolled into the groomed slope with a California Straw Roller.
 - e. Timely seasonal seeding shall be taken into account so that the seed species used shall have a high percentage of germination and survivability.
 - f. The Applicant shall be responsible for subsequent slope repair costs and for removing any soil sediments deposited in drainage ditches as a result of improper site preparation and seeding.
16. Embankments are not permitted within DWR right of way where SWP underground pipeline exists, unless DWR determines that the embankment does not pose a hazard to the integrity of the pipeline or impedes pipeline maintenance.
17. If existing road embankments are to be widened, the work shall be conducted in accordance with the provisions of embankment construction in the CALTRANS Standard Specifications.
18. When utilities cross under SWP roads, the Applicant shall adhere to the following:
- a. Pavement or road surfaces shall not be cut unless approved by DWR.
 - b. Conduits with diameters up to 5 inches shall be jacked or bored underneath pavements. Larger conduits shall be considered on an individual basis.
 - c. The cover over the conduit(s) shall be a minimum of 36 inches.
19. Roads crossing the open SWP canal shall be perpendicular to the centerline of the canal and at locations approved by DWR. Exceptions to this policy may be considered on an individual basis.

20. The full width of DWR right of way, where SWP underground pipelines exist, may be used for proposed improvements such as roads, parking areas, or greenbelts upon approval.
21. Depressed curbs or driveways shall be provided for DWR vehicular access when new roads cross DWR right of way where SWP underground pipeline exists. Trails and maintenance roads shall be gated, except when the right of way is used as a greenbelt. In the event a fence is allowed within DWR right of way, the fence shall be of materials approved by DWR. Any gates allowed within DWR right of way shall be at least 16 feet wide. If DWR right of way is to be used as a greenbelt, the landscaped area shall be secured to allow only authorized vehicular and pedestrian access.
22. Detectable warning tape is required over all trenched utilities and shall be a minimum of 18 inches above the utility situated within DWR right of way. Subsequent repair or maintenance of the utility shall require replacement of the detectable warning tape.

Warning tapes shall conform to the following:

- a. For potable waterlines, the warning tape shall be a 3-inch-wide blue detectable tape imprinted with "**CAUTION BURIED POTABLE WATERLINE.**"
 - b. For non-potable waterlines, the warning tape shall be a 3-inch-wide purple detectable tape imprinted with "**CAUTION BURIED NON-POTABLE WATERLINE.**"
 - c. For sewer and storm drain lines, the warning tape shall be a 3-inch-wide green detectable tape imprinted with "**CAUTION BURIED (type) LINE.**"
 - d. For gas, oil, and steam chemical lines, the warning tape shall be a 3-inch-wide yellow detectable tape imprinted with "**CAUTION BURIED (type) LINE.**"
 - e. For telecommunications, telephone, and television conduit(s), the warning tape shall be a 3-inch-wide orange detectable tape imprinted with "**CAUTION BURIED (type) CONDUIT.**"
 - f. For electrical, street lighting, and traffic signal conduit(s), the warning tape shall be a 3-inch-wide red detectable tape imprinted with "**CAUTION BURIED (type) CONDUIT.**"
23. Permanent structures are not permitted within DWR right of way.

24. Prior to construction, the condition of DWR's roads, fences, and adjacent land areas shall be jointly inspected and noted by the Applicant and DWR personnel. Upon completion of the proposed construction activities, the condition of these features shall be jointly re-inspected. The Applicant shall be liable for all costs associated with returning these features to pre-construction conditions.
25. DWR's ongoing operations and maintenance activities shall not be disrupted during construction. The primary or secondary operating road along open canals must be kept available for DWR use at all times.
26. Provisions shall be made to prevent contamination of canal water during construction.
27. Upon completion of the work under the Encroachment Permit, all waste material, debris, etc., shall be removed from DWR right of way. The Applicant shall be liable for all costs associated with returning the site to pre-construction conditions.
28. Type and weight of the construction equipment crossing SWP pipelines, roads, and bridges, as well as the crossing locations, shall be submitted for review and approval.
29. Storage and placement of construction equipment and materials is not allowed within DWR right of way. Exceptions to this requirement will be on an individual basis, and are subject to DWR review and approval.

SPECIFIC ENCROACHMENT PERMIT GUIDELINES

1. BRIDGE ENCROACHMENTS

1. New bridge crossings shall be perpendicular to the centerline of the Aqueduct and at locations approved by DWR. Exceptions to the policy may be considered on an individual basis.
2. New bridge crossings shall be free span design. The minimum vertical clearance between the bottom of the girders and the top of the canal lining shall be three feet. For box girder bridges, the vertical clearance shall be five feet. The minimum horizontal clearance from the face of the abutment to the top of the canal lining shall be five feet.
3. Driving sheet piles are not permitted. The piles shall be cast-in-place.
4. The drawings for the bridge shall contain the following information:
 - a. Superstructure, abutments, railings, embankments, and drainage, including details and sections.
 - b. Type of concrete used for different members.
 - c. Details of cast-in-place piles, if any, on both sides of the Aqueduct.
 - d. The elevation of the bottom of the girders and the clearance between the top of the canal lining to the girders.
5. The calculations and specifications for the bridge shall be submitted for DWR approval.
6. The right turn radius from the new road onto DWR operating road shall comply with the provisions of the truck and bus turning template in the CALTRANS Highway Design Manual for an 80-foot long vehicle.
7. Details of any existing or proposed utilities attached to the bridge shall be shown on the drawing or referenced.
8. Specific requirements for attaching utilities to bridges are as follows:
 - a. Anchor bolt locations shall not intercept the critical reinforcing steel of the bridge.

- b. Utilities shall be placed and anchored under bridge decks between girders and through utility openings, if they are present. The utility shall be placed off center in the utility opening, if possible, to allow for future utility additions.
 - c. If an expansion joint is used in the pipeline, it shall be placed near the bridge deck expansion joint.
 - d. Holes through bridge concrete or abutment and retaining walls for passage of utilities shall be allowed by core drilling. Core drilling through reinforcement bars is not permitted. Coring locations shall be approved by DWR prior to drilling. The annular space between the utility and core hole surface shall be completely filled with an elastomeric sealant to prevent loss of material or water piping from behind the wingwalls and abutments.
 - e. No drilling, shooting, grinding, or chipping of any kind is permitted on prestressed concrete girders.
 - f. The total weight of all added utilities shall not exceed 10 percent of the weight of adjacent supporting girders and the slab.
 - g. Casings shall extend a minimum of 10 feet beyond each end of the bridge.
 - h. Lateral supports for the utility shall withstand a seismic loading of 0.5g.
 - i. All support hardware shall be galvanized steel.
 - j. The casings or utilities shall be coated with a DWR approved protective coating and maintained as directed by DWR.
9. A construction schedule outlining the anticipated duration of the construction shall be submitted.
10. Provisions shall be made to prevent contamination of the water in the Aqueduct during construction.
11. DWR's ongoing operations and maintenance activities shall not be disrupted during construction. The primary or secondary operating road along open canals must be kept available for DWR use at all times.

2. LANDSCAPING ENCROACHMENTS

1. Landscaping encroachments within DWR fee-owned right of way shall not be permitted.
2. The following requirements shall apply within DWR easement where SWP underground pipeline exists:
 - a. The full width of the right of way may be used as green belt upon DWR approval.
 - b. Ground cover and shrubs are permitted upon DWR approval.
 - c. Trees and vines are not allowed.
 - d. A plant legend showing common plant names shall be included on the submitted drawings.
 - e. Only plants shown on approved landscape drawings shall be allowed. Substitutions or additions of plants not shown on the approved landscape drawings shall be removed at the Applicant's expense.
3. Permanent structures are not allowed within DWR right of way.
4. Landscape and irrigation plans shall show an easily recognizable boundary and designation of DWR right of way. All SWP facilities shall be shown and labeled; e.g., "Centerline of xx-inch SWP Pipeline," "SWP Communication and Control Cable," etc.
5. Pressurized irrigation lines which run parallel to a SWP pipeline shall be installed at least 15 feet from the edge of the SWP pipeline.
6. Major valves shall be installed at least 15 feet from the edge of the SWP pipeline.
7. Detectable warning tape is required over all buried pressurized irrigation line(s) and shall be a minimum of 18 inches above the waterlines the entire distance within DWR right of way. Subsequent repair or maintenance of the irrigation lines shall require replacement of the warning tape.

Warning tapes shall conform to the following:

- a. For potable waterlines, the warning tape shall be a 3-inch-wide blue detectable tape imprinted with "**CAUTION BURIED POTABLE WATERLINE.**"

- b. For non-potable waterlines, the warning tape shall be 3-inch-wide purple detectable tape imprinted with "**CAUTION BURIED NON-POTABLE WATERLINE.**"
- 8. Proposed modifications to the existing cover over SWP pipeline shall be subject to review and approval. Temporary or permanent placement of excavated materials within DWR right of way shall be subject to review and approval. A grading plan shall be submitted.
- 9. Open space with natural hiking trails and walkways is permitted if access to SWP pipeline and appurtenant facilities for patrol and maintenance is provided.

3. LONGITUDINAL ENCROACHMENTS

1. For encroachment activities within DWR fee-owned right of way:
 - a. Longitudinal encroachments that do not serve DWR or water agencies receiving water from the SWP shall be avoided.
 - b. Where unavoidable, longitudinal encroachments are only allowed within 10 feet of the right-of-way boundary line, usually on the downhill side of the open canal.
2. For encroachment activities within DWR easement, the following criteria shall apply:
 - a. Use of SWP underground pipeline easements as part of subdivision lots shall be avoided.
 - b. Trees or vines are not allowed where SWP underground pipeline exists.
 - c. Open space with natural hiking trails and vegetation is allowable if access to SWP pipeline and appurtenant facilities for patrol and maintenance is provided.
 - d. Streets, roads, or parking areas using the full width of DWR right of way are permissible.
 - e. All streets, roads, and parking surfaces are to be asphalt or other flexible pavement.
 - f. Pressurized irrigation lines which run parallel to a SWP pipeline shall be installed at least 15 feet from the edge of the SWP pipeline.
 - g. Pipelines containing sewer, oil, gas, natural gas, or hazardous materials shall only cross perpendicular to the SWP pipeline.
 - h. Electroliers, posts, etc., shall be installed at the maximum distance possible from the edge of the pipeline.
 - i. Embankments shall not be permitted where SWP pipeline exists, unless DWR determines that the embankment does not pose a hazard to the integrity of the pipeline or impede pipeline maintenance.
 - j. Proposed modifications to the existing cover over SWP pipelines shall be subject to review and approval. Temporary or permanent placement of

excavated materials within the right of way shall be subject to review and approval. A grading plan showing the top of DWR pipeline elevation shall be submitted for review.

4. ROAD ENCROACHMENTS

NOTE: This type of encroachment also includes parking areas and recreational trails.

1. The Applicant shall submit a grading plan.
2. Proposed modifications to the existing cover over SWP pipelines shall be subject to review and approval. Temporary or permanent placement of excavated materials within DWR right of way shall be subject to review and approval.
3. If existing drainage features are to be modified during construction by the Applicant, detailed drawings showing the proposed drainage replacement/restoration shall be submitted for review and approval.
4. It is recommended the median or the shoulder of the proposed road be located as near as possible over the centerline of the pipeline.
5. If the proposed road includes a bridge crossing over SWP pipelines, the vertical clearance and location of the abutments are subject to review and approval by DWR.
6. Streets, roads, or parking areas using the full width of DWR right of way are permissible.
7. All streets, roads, and parking surfaces are to be asphalt or other flexible pavement.
8. Depressed curbs or driveways shall be provided for DWR vehicular access when new roads cross SWP aqueduct/pipeline.
9. Trails and maintenance roads shall be fenced, except when DWR right of way is used as a greenbelt. In the event a fence is allowed within DWR right of way, the fence shall be of materials approved by DWR. Any gates allowed within DWR right of way shall be at least 16 feet wide.
10. Type and weight of the construction equipment and the crossing locations shall be submitted for review and approval.
11. DWR's ongoing operations and maintenance activities shall not be disrupted during construction. The primary or secondary operating road along open canals must be kept available for DWR use at all times.

5. SUBDIVISION ENCROACHMENTS

1. Permanent structures are not permitted within DWR right of way.
2. The Applicant shall not divert the concentrated surface run off toward DWR open canal embankments. The surface run off shall be stored in retention basins outside of DWR fee-owned right of way. Lined drainage channels shall be designed to transfer flow from the retention basins to the existing DWR cross drainage facilities.
3. Use of DWR pipeline easements as part of a residential subdivision lot is not allowed
4. An unimproved portion of individual subdivision lots may be allowed within DWR easements, depending on subdivision layout to SWP facilities. If the proposed improvements, such as streets, sidewalks, and utility corridors, are to be dedicated to the local agencies, the Applicant shall be responsible for securing all executed agreements, i.e., Consent to Common Use, Cooperative Agreement, with the appropriate Municipalities, and Utility Company(ies), etc., prior to DWR permit issuance. The agreements shall contain language stating that any public street/sidewalk dedication to a municipality, or a utility corridor dedication to a utility company(s), and which are accepted by the appropriate entities, will be subjected to the following conditions:
 - a. DWR shall be indemnified and held harmless from all costs associated with the replacement of improved street surfaces, landscaping, sidewalks, and temporary utility relocations which may be damaged, destroyed, or moved during DWR's normal and/or emergency operations and maintenance of SWP facility(s). Said DWR operations and maintenance include the construction, reconstruction, repair, enlargement, and improvement of the SWP facility and any appurtenances.
 - b. If streets and other improvements are to be retained by the developer, the developer/owner shall be required to enter into an agreement with DWR whereby the developer/owner shall indemnify and hold DWR harmless from all costs as stated above in Item "a." A bond may be required from the developer/owner prior to permit issuance depending on the size and location of the proposed improvements.
5. Drawings shall include all proposed improvements (i.e. street, utilities, landscaping, etc.) within DWR right of way.
6. Prior to construction, the condition of DWR's roads, fences, and adjacent land areas shall be jointly inspected and noted by the Applicant and DWR personnel.

Upon completion of the proposed construction, the condition of these features shall be jointly re-inspected. The Applicant shall be liable for all costs associated with returning these features to the pre-construction conditions.

7. Trees or vines are not allowed where SWP pipeline exists.
8. Open space with natural hiking trails and vegetation is allowable if access to SWP pipeline and appurtenant facilities for patrol and maintenance is provided.
9. Streets, roads, and parking surfaces are to be asphalt or other flexible pavement.
10. Streets, roads, or parking areas using the full width of right of way are permissible.
11. If streets, roads, or parking areas do not encompass the full width of SWP pipeline right of way, then a setback provision restricting buildings, fences, trees, etc., within the SWP pipeline right of way shall be included in the Encroachment Permit.
12. Depressed curbs or driveways shall be provided for DWR vehicular access when new roads cross SWP aqueduct/pipeline.
13. Where fencing is proposed within DWR easements, a 16-foot-wide gate shall be provided for DWR access.
14. Pipelines containing sewer, oil, gas, natural gas, or hazardous materials shall only cross perpendicular to the SWP pipeline and be installed with the necessary casings, safety measures, and separation clearance as determined by DWR engineering staff.
15. Electroliers, posts, etc., shall be installed at the maximum distance possible from the edge of the pipeline.
16. Embankments shall not be permitted where SWP pipeline exists, unless DWR determines that the embankment does not pose a hazard to the integrity of the pipeline or impedes pipeline maintenance.
17. Proposed modifications to the existing cover over SWP pipelines shall be subject to review and approval. Temporary or permanent placement of excavated materials within the right of way shall be subject to review and approval. A grading plan showing the top of DWR pipeline elevation shall be submitted for review.

6. UTILITY ENCROACHMENTS

NOTE: All encroaching pipelines and conduits are referred to as utilities in these Guidelines.

I. UTILITY CROSSING SWP OPEN AQUEDUCT (Canal)

A. General Requirements:

1. Minimum overhead electrical conductor and communication line clearances shall equal or exceed the California State Public Utilities Commission's General Order 95.
2. The following additional DWR requirements shall apply to overhead electrical/communication installations across SWP canals:
 - a. Twenty-five (25) feet **minimum** clearance above operating roads and berms.
 - b. Twenty (20) feet **minimum** clearance above existing ground surfaces within full cut sections and finished spoil or protective embankments.
3. DWR requires the following items for overhead crossing:
 - a. Poles or towers are not allowed within DWR right of way.
 - b. Overhead electrical and communication lines shall cross perpendicularly to the centerline of the SWP facility.
4. A marker warning sign shall be provided, showing the clearance and line voltage. The warning sign shall face oncoming traffic and state "**DANGER HIGH VOLTAGE OVERHEAD.**"
5. Utilities crossing the SWP canals shall be designed to cross perpendicular to the SWP canals.
6. Pier construction in the canal for new utility crossing(s) is not allowed. New utility crossings shall be free span design or attached to existing structures.
7. The attached utilities shall not impede the hydraulics of the canal or cross drainage structures.
8. Clearance between encroaching utilities and the top of the existing or future Aqueduct lining shall be a minimum of 12 inches. If this minimum clearance is

reduced by subsidence or by future DWR modifications to the canal lining, the required minimum clearance shall be re-established at Applicant's cost.

9. Boring and/or jacking of a utility through protective dikes or Aqueduct embankments are not permitted.
10. Directional drilling under open canal shall be considered if a minimum clearance of 25 feet is maintained between the casing and the bottom of the canal lining for casings up to 5 inches outside diameter. Larger casings shall be considered on an individual basis and may require additional clearance from the bottom of the canal lining. A geotechnical report shall be submitted for review prior to approval of the proposed utility crossing.
11. Utilities under DWR operating roads shall have a minimum cover of 36 inches.
12. DWR's ongoing operations and maintenance activities shall not be disrupted during construction. The primary or secondary operating road must be kept available for DWR use at all times.
13. Berms shall be rebuilt or repaired with materials and standards equal to those or better than the existing berms.
14. Drawings must contain the following information:
 - a. Aqueduct Milepost at each crossing, utility size and location, and type of material transported.
 - b. Maximum operating pressure, type of pipe, joints, wall thickness, maximum test pressure, and description of test procedures.
 - c. Type of sleeve/casing including diameter, joints, and wall thickness.
 - d. For utilities attached to a bridge or an overchute, details showing the structure name, superstructure, abutments, embankments, protective dikes, method of attachment, spacing of utility supports on the structure, location of other attached utilities, and structural calculations.
 - e. Protective coatings and corrosion control measures.
 - f. Method of handling pipeline expansion and contraction.
 - g. Location of nearest shutoff valve on each side of the crossing.
 - h. Location and details of thrust blocks.
 - i. Code(s) used for design.

- j. Location, including depth, of the buried aqueduct communication and control cables.
 - k. Other existing utility easements or encroachments in the immediate vicinity.
15. Unless otherwise approved, anchor bolts shall be hot-dipped galvanized double wedge conforming to Federal Specification FF-S-325 Amendment No. 3, Group II, Type 4, Class 1 (Wej-it Anchor or equivalent); and shall be installed according to the manufacturer's instructions.

B. Casing Requirements:

- 1. Pipelines carrying hazardous material or pollutants (oils, gasoline, sewage, contaminated waters, non-potable waters, etc.) shall be encased. Pipelines transporting potable water do not require casings.
- 2. Pipelines attached to a bridge or an overchute shall be sleeved through the Aqueduct embankment and protective dikes.
- 3. The Applicant shall provide a 5/16-inch minimum thickness steel casing pipe. The inside diameter of the casing pipe shall be a minimum of 4 inches larger than the maximum outside joint diameter of the carrier pipe. The ends of casing pipes shall be sealed with casing end seals (LINK SEAL or an equivalent approved by DWR). The casing shall be leak tested in the presence of a DWR inspector to verify that it is sealed. For more information, see Cathodic Protection Requirements on Page 34 of these Guidelines.
- 4. Mortar-coated steel pipe without cathodic protection can be used only in benign soil environments as determined by DWR with sufficient soil corrosivity analysis provided by the Applicant.
- 5. For applicable wheel load requirements on the primary and secondary operating roads, the buried casing or sleeve shall be fully concrete encased through the canal embankments.
- 6. A minimum 2-inch inner diameter drain line shall be provided at the low end of the casing pipe and drain away from the Aqueduct. **The drain line shall terminate in a valve protected from vandalism.** A 3-inch galvanized steel guard posts (Schedule 80 or better) shall be installed adjacent to each drain line. The posts shall extend 5 feet above the ground and 18 inches below ground. The bottom of the posts shall be embedded in at least 1 cubic foot of concrete. A sign shall be installed containing the name of the owner/operator, contents of the pipeline, utility identification, and emergency contact telephone number.

7. Thermal elongation of the casing is a concern for utilities being attached to bridges or overchutes. Flexible single and expansion type coupling (such as Smith Blair Type 611 or Dresser Style 63) for the casing should be utilized to account for differential temperature range of 140 degrees. The casing shall be mounted to the bridge or overchute by placing Teflon pads around the casing between the wall hanger brackets and U-bolts. The U-bolts should be tightened only to a loose fit to permit movement, with lock nuts at the top of the bracket and below the top angle.

C. Hazardous Material Carrier Requirements:

1. A final hazardous material spill contingency plan and an emergency response plan shall be approved by DWR prior to start of construction.
2. To minimize the amount of any hazardous material entering into the open Aqueduct, DWR requires the installations of a block (gate) valve and or a check valve on either side of the Aqueduct between the right-of-way boundary and the embankment. The type of the valves shall take into the account the flow direction and the terrain.

D. Attaching Utilities to Bridges and Overchutes:

Note: DWR does not guarantee the long-term availability of bridges or overchutes as support devices for utility crossings because they may require structural modifications or alterations to accommodate widening, repairs, subsidence offsets, etc, to such an extent that service interruption of utility crossings may occur. In that event, the owner/operator of each utility attached to a bridge or an overchute may be required to relocate or permanently remove their utility at their own expense.

1. Specific requirements for attaching utilities to bridges are as follows:
 - a. Utilities shall not be placed on the bridge deck.
 - b. Anchor bolt locations shall not intercept the critical reinforcing steel of the bridge.
 - c. Utilities shall be placed and anchored under bridge decks between girders and through utility openings, if they are present. The utility shall be placed off center in the utility opening, if possible, to allow for future utility additions.
 - d. If an expansion joint is used in the pipeline, it shall be placed near the bridge deck expansion joint.

- e. Holes through bridge concrete or abutment and retaining walls for passage of utilities shall be allowed by core drilling. Core drilling through reinforcement bars is not permitted. Coring locations shall be approved by DWR prior to drilling. The annular space between the utility and core hole surface shall be completely filled with an elastomeric sealant to prevent loss of material or water piping from behind the wingwalls and abutments.
 - f. No drilling, shooting, grinding, or chipping of any kind is allowed on prestressed concrete girders.
 - g. The total weight of all added utilities shall not exceed 10 percent of the weight of adjacent supporting girders and the slab.
 - h. Casing shall extend a minimum of 10 feet beyond each end of the bridge.
 - i. Lateral supports for the utility shall withstand a seismic loading of 0.5g. Spacing of supports shall not exceed 12 feet.
 - j. All support hardware shall be galvanized steel.
 - k. The casings or utilities shall be coated with a DWR approved protective coating, and maintained as directed by DWR.
2. Specific requirements for attaching utilities to overchutes are as follows:
- a. Anchor bolt locations shall not intercept the critical reinforcing steel of the overchute.
 - b. After installation, exposed metal surfaces shall be cleaned and primed with paint of the same quality as that used for shop coat.
 - c. Utilities are not permitted to be installed inside the overchute.
 - d. Lateral supports for the utility shall withstand a seismic loading of 0.5g. Spacing of supports shall not exceed 12 feet.

II. UTILITY CROSSING SWP UNDERGROUND PIPELINES

- 1. The Applicant shall submit the procedures, excavation plans, schedules, and type and weight of the construction equipments to be used for crossing the SWP pipeline.
- 2. Where possible, all utilities carrying anything other than potable water shall be perpendicular to centerline of the SWP pipeline.

3. All utilities crossing a SWP pipeline shall be in a corrosion-protected and self-supported casing at least 4 inches larger than the carrier pipe. For more information, see Cathodic Protection Requirements on Page 34 of these Guidelines.
4. In areas where open excavation may be used to expose the SWP pipeline, as determined by DWR, the casing must be able to span over the limits of the open excavation plus the length required by the UBC and for bearing on each side of the pipeline.
5. In areas as determined by DWR where shoring may be used to expose the SWP pipeline, the casing must be able to span over the pipeline plus a minimum of six feet and the length required by the UBC and for bearing on each side of the pipeline, measured perpendicularly to the pipeline.
6. All utility crossings under the SWP pipeline shall be performed by using boring/jacking method. The gap between the borehole and the casing shall be filled with cement grout. The annular space between the casing and the utility shall be filled with cement slurry.
7. For utilities crossing above or under the SWP pipeline, the minimum vertical clearance between the casing of the utility and SWP pipeline shall be 3 feet.
8. The points where the proposed utilities enter and exit DWR right of way shall be plainly and permanently marked by sign posts extending 5 feet above grade. Applicant shall provide sign posts directly above its utility at all angle points within DWR right of way. The distance between adjacent sign posts shall not exceed 500 feet. Sign posts shall contain the name of owner/operator, contents of the pipeline, utility identification, and emergency contact telephone number. Sign posts for angle points that lie in roads shall be offset and have a reference noted. The location of the sign posts shall be shown on the plans.
9. The location of the SWP pipeline and communication and control cables shall be shown on the plans throughout the area of the proposed construction. Prior to DWR issuing an Encroachment Permit, the pipeline and the cable(s) shall be located and exposed by potholing. All work within 3 feet of the pipeline and the cable(s) shall be done using hand-held tools only. The Applicant shall contact UNDERGROUND SERVICE ALERT (USA) at (800) 422-4133 for Southern CA or (800) 642-2444 for Northern CA and MCI TELECOMMUNICATIONS CORPORATION at (800) 624- 9675 for information regarding the location of the pipeline and the communication and control cables. **The presence of a DWR inspector will be required throughout the exposure process.** Please call the appropriate Field Division, from the Contact list of these Guidelines for a Temporary Permit and appointment to perform the exposure of the pipeline and the cable(s).

The resultant elevation information shall be delineated on the profile view and labeled as

SWP T.O.P. POTHOLED ELEVATION XX.X
Surface Elevation XX.X

CABLE POTHOLED ELEVATION XX.X
Surface Elevation XX.X

Where xx.x is the elevation in feet to the nearest tenth.

10. The following note shall be placed on each plan sheet that shows DWR's communication and control cables:

COMMUNICATION AND CONTROL CABLES CONNECTED WITH THE OPERATION OF THE STATE WATER PROJECT ARE BURIED ALONG EITHER OR BOTH SIDES OF THE AQUEDUCT/PIPELINE WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY, AS APPROXIMATELY DEPICTED ON THIS DRAWING. PRIOR TO ANY EXCAVATION IN THIS AREA, THE CABLE(S) SHALL BE LOCATED AND EXPOSED BY POTHOLING IN THE PRESENCE OF A DEPARTMENT OF WATER RESOURCES FIELD DIVISION REPRESENTATIVE. CALL (fill in telephone number for the appropriate DWR Field Division listed in DWR Contact of these Guidelines) AT LEAST SEVEN (7) DAYS IN ADVANCE FOR AN APPOINTMENT. ALL EXCAVATIONS WITHIN THREE (3) FEET OF THE CABLE(S) SHALL BE DONE USING HAND-HELD TOOLS ONLY.

11. The pothole locations shall be shown on the drawings. The pothole elevations shall be referenced to SWP stationing or Milepost.
12. The following note shall be placed on each plan sheet where trench excavation will be performed within DWR right of way:

ALL TRENCH EXCAVATION SHALL COMPLY WITH THE MOST CURRENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. TRENCH BACKFILL SHALL BE PLACED IN NO GREATER THAN 4-INCH LIFTS IF HAND COMPACTED OR NO GREATER THAN 8-INCH LIFTS IF POWER COMPACTED. TRENCH BACKFILL WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION (ASTM D1557).

13. Drawings must contain the following information:
 - a. SWP Milepost at each crossing, pipeline size and location, and type of material transported.
 - b. Maximum operating pressure, type of pipe and joints, maximum test pressure and description of test procedures, wall thickness, and carrier pipe classification.
 - c. Type of sleeve/casing pipe including diameter, joints, and wall thickness.
 - d. Protective coatings and corrosion control measures.
 - e. Location of nearest shutoff valve on each side of the crossing.
 - f. Location and details of thrust blocks.
 - g. Code(s) used for design.
 - h. Location including depth of the SWP pipeline and the communication and control cables.
 - i. Other existing utility easements or encroachments in the immediate vicinity.

14. Detectable warning tape is required over all trenched utilities and shall be a minimum of 18 inches above the utility situated within DWR right of way. Subsequent repair or maintenance of the utility shall require replacement of the detectable warning tape.

Warning tapes shall conform to the following:

- a. For potable waterlines, the warning tape shall be a 3-inch-wide blue detectable tape imprinted with "**CAUTION BURIED POTABLE WATERLINE.**"
- b. For non-potable waterlines, the warning tape shall be a 3-inch-wide purple detectable tape imprinted with "**CAUTION BURIED NON-POTABLE WATERLINE.**"
- c. For sewer and storm drain lines, the warning tape shall be a 3-inch-wide green detectable tape imprinted with "**CAUTION BURIED (type) LINE.**"
- d. For gas, oil, and steam chemical lines, the warning tape shall be a 3-inch-wide yellow detectable tape imprinted with "**CAUTION BURIED (type) LINE.**"

- e. For telecommunications, telephone, and television conduit(s), the warning tape shall be a 3-inch-wide orange detectable tape imprinted with **"CAUTION BURIED (type) CONDUIT."**
 - f. For electrical, street lighting, and traffic signal conduit(s), the warning tape shall be a 3-inch-wide red detectable tape imprinted with **"CAUTION BURIED (type) CONDUIT."**
15. Electrical conduits installed within DWR right of way shall be overlaid with 3 inches of red-dyed concrete, in addition to detectable warning tape as described in Item 14.f. above.
 16. The utility owner/operator shall maintain the pipeline, casing seal, and identification signs in good condition. Failure to repair problems after notification may lead to encroachment permit revocation.

III. UTILITY CROSSING UNDER SWP ROADS

1. Applicant shall supply typical cross sections which show existing ground surface elevations, utility trench invert elevations, and utility details.
2. The following note shall be placed on each plan sheet where trench excavation will be performed within DWR right of way:

ALL TRENCH EXCAVATION SHALL COMPLY WITH THE MOST CURRENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. TRENCH BACKFILL SHALL BE PLACED IN NO GREATER THAN 4-INCH LIFTS IF HAND COMPACTED OR NO GREATER THAN 8-INCH LIFTS IF POWER COMPACTED. TRENCH BACKFILL WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION (ASTM D1557).

3. Conduits with diameters up to 5 inches shall be jacked or bored underneath pavements. Larger conduits shall be considered on an individual basis.
4. The cover over the conduit(s) shall be a minimum of 36 inches.
5. Pavement or road surfaces shall not be cut unless approved by DWR.
6. Unless otherwise approved, the Applicant shall replace existing DWR road and parking surfaces that are removed or damaged by the Applicant's construction activities in accordance with provisions in the latest edition of CALTRANS Standard Specifications.

- a. A 6-inch thick aggregate base shall be used conforming to the provisions of CALTRANS Standard Specifications for Class 2 Aggregate Base, 3/4-inch maximum grading. The aggregate base shall be spread and the relative compaction shall not be less than 95 percent in conformance with ASTM D1557.
 - b. Areas to be seal coated shall have a prime coat applied over compacted aggregate base. Prime coat shall conform to the provisions of CALTRANS Standard Specifications. Liquid asphalt for prime coat shall be Grade SC250 or equivalent as approved by DWR.
 - c. Areas requiring asphalt concrete shall conform to the provisions of CALTRANS Standard Specifications to Section 39-4.01 in the CALTRANS Standard Specifications.
7. If existing road embankments are to be widened, the work shall be conducted in accordance with the provisions of embankment construction in the CALTRANS Standard Specifications.
8. Detectable warning tape is required over all trenched utilities and shall be a minimum of 18 inches above the utility situated within DWR right of way. Subsequent repair or maintenance of the utility shall require replacement of the detectable warning tapes.

Warning tapes shall conform to the following:

- a. For potable waterlines, the warning tape shall be a 3-inch-wide blue detectable tape imprinted with "**CAUTION BURIED POTABLE WATERLINE.**"
- b. For non-potable waterlines, the warning tape shall be a 3-inch-wide purple detectable tape imprinted with "**CAUTION BURIED NON-POTABLE WATERLINE.**"
- c. For sewer and storm drain lines, the warning tape shall be a 3-inch-wide green detectable tape imprinted with "**CAUTION BURIED (type) LINE.**"
- d. For gas, oil, and steam chemical lines, the warning tape shall be a 3-inch-wide yellow detectable tape imprinted with "**CAUTION BURIED (type) LINE.**"
- e. For telecommunications, telephone, and television conduit(s), the warning tape shall be a 3-inch-wide orange detectable tape imprinted with "**CAUTION BURIED (type) CONDUIT.**"

- f. For electrical, street lighting, and traffic signal conduit(s), the warning tape shall be a 3-inch-wide red detectable tape imprinted with "**CAUTION BURIED (type) CONDUIT.**"
9. DWR's ongoing operations and maintenance activities shall not be disrupted during construction. The primary or secondary operating roads along open canals must be kept available for DWR use at all times.

CATHODIC PROTECTION REQUIREMENTS

A. CATHODICALLY PROTECTED METALLIC PIPELINES

Pipelines installed within DWR right of way shall be cathodically protected in such a manner to ensure that the installation is electrically continuous and dielectrically isolated from grounded SWP structures and Applicant's supplied equipment. Impressed current cathodic protection rectifiers and deep-well anode are not permitted. All submittals shall include details of the cathodic protection system (CPS) and its appurtenances.

1. All existing SWP cathodic protection test stations shall be located prior to any grading or excavation. The test stations shall be staked and flagged. The test stations shall be suitably enclosed or protected during construction to prevent damage. Any relocation or modification of the test stations is not allowed without prior approval from the DWR Corrosion Engineering Section.
2. Nonwelded mechanical, stab, or gasketed pipe joints shall be continuity bonded with one #8 AWG HMWPE cable attached by thermite weld process or inductive weld stud process. The weld area and exposed cable shall be coated with a 100 percent solids epoxy or covered with a butyl-rubber weld cap specifically designed for this purpose.
3. Insulating flange kits, insulating unions, and insulating fittings shall be used at locations where there is contact with grounded structures (i.e. pumps, electric valves, telemetering systems, vault penetrations, etc.)
4. Cathodic protection shall be provided by the use of sacrificial anodes, unless the proposed installation is a continuation of an existing pipeline where impressed current cathodic protection is presently in use. Additional impressed current cathodic protection equipment shall not be installed within DWR right of way without approval from the DWR Corrosion Engineering Section.
5. A means of monitoring the effectiveness of the CPS shall be provided within DWR right of way. A typical CPS with test station drawings can be provided for guidance in designing the Applicant's system. The number of anodes and test stations will differ with each project. The application and monitoring of the CPS shall conform to Title 49 of the Code of Federal Regulations, Part 195, Department of Transportation.
6. The following note shall be placed on all plan sheets that show SWP test stations and depict grading and/or earth movement within 10 feet of any test stations:

A SEVEN (7) DAY ADVANCE NOTIFICATION TO DWR IS REQUIRED PRIOR TO ANY GRADING, EARTH MOVEMENT, OR CONSTRUCTION AROUND SWP CATHODIC PROTECTION TEST STATION(S). CONTACT THE APPROPRIATE DWR FIELD DIVISION LISTED IN DWR CONTACTS OF THESE GUIDELINES.

B. STEEL CASING PIPES

This section only applies to pipelines crossing above SWP open canal and pipelines, not to directional-drilled crossings. Cathodic protection to buried steel casing pipe is NOT the preferred method of corrosion control. If cathodic protection is required, it shall be provided by sacrificial magnesium anodes. Cathodic protection to casing pipe can be waived if:

1. The space between the casing and the carrier pipe has a full grout seal, unless precluded by Federal Regulations.
2. Full concrete encasement of the buried casing pipe designed for applicable wheel load requirements on the primary and secondary roads.
3. Mortar-coated steel pipe without cathodic protection is used only in benign soil environments as determined by DWR with sufficient soil corrosivity analysis provided by the Applicant.
4. Non-metallic casing pipe with concrete encasement is used.

C. PROTECTIVE COATINGS FOR CORROSION CONTROL

1. Exposed Pipeline and Casing Pipe

The coating shall be a high build modified aluminum epoxy mastic primer and top coated with a high build aliphatic urethane. The finish color shall be a type of beige, similar to the Sherwin Williams Bungalow Beige SW2032. If an alternative coating system is preferred, the Applicant shall submit data sheets and details for approval. The type of coating shall be listed in the submitted plans and specifications. Information shall include the surface preparation and the thickness of the coating to be applied.

2. Buried Pipeline and Casing Pipe

The type of coating may vary from project to project and shall be considered on an individual basis. The type of coating shall be listed in the submitted plans and specifications. Information shall include the surface preparation and the thickness of the coating to be applied.

STANDARD DWR NOTES
FOR CONSTRUCTION PLANS/DRAWINGS

1. The following notes shall be placed on each plan sheet where work will be performed within DWR right of way:

A SEVEN (7) DAY ADVANCE NOTIFICATION IS REQUIRED PRIOR TO STARTING WORK WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY. CONTACT THE DEPARTMENT OF WATER RESOURCES, DIVISION OF ENGINEERING, ENCROACHMENT PERMIT SECTION, SACRAMENTO, CALIFORNIA AT (800) 600-4397. THE APPROPRIATE DWR FIELD DIVISION SHALL BE SIMULTANEOUSLY NOTIFIED AT **(fill in telephone number listed in DWR Contacts of these Guidelines)**.

EXCEPT AS OTHERWISE PROVIDED HEREIN, MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT IN PLACE ALL SWP FACILITIES AND APPURTENANCES, INCLUDING BUT NOT LIMITED TO COMMUNICATION AND CONTROL CABLES AND CATHODIC PROTECTION TEST STATIONS. THE PERMITTEE AND CONTRACTOR WILL BE LIABLE FOR ALL DAMAGES TO SWP FACILITIES AND APPURTENANCES AS A RESULT OF THE CONSTRUCTION, AND FOR ANY OTHER DAMAGES OR LOSSES SUFFERED BY DWR OR ITS WATER CONTRACTORS, INCLUDING POWER, IRRIGATION, MUNICIPAL AND INDUSTRIAL WATER SUPPLY, AND COMMUNICATION LOSSES.

2. The following note shall be placed on each plan sheet that shows DWR's communication and control cables:

COMMUNICATION AND CONTROL CABLES CONNECTED WITH THE OPERATION OF THE STATE WATER PROJECT ARE BURIED ALONG EITHER OR BOTH SIDES OF THE AQUEDUCT/PIPELINE WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY, AS APPROXIMATELY DEPICTED ON THIS DRAWING. PRIOR TO ANY EXCAVATION IN THIS AREA, THE CABLE(S) SHALL BE LOCATED AND EXPOSED BY POTHOLING IN THE PRESENCE OF A DEPARTMENT OF WATER RESOURCES FIELD DIVISION REPRESENTATIVE. CALL **(fill in telephone number for the appropriate DWR Field Division listed in DWR Contacts of these Guidelines.)** AT LEAST SEVEN (7) DAYS IN ADVANCE FOR AN APPOINTMENT. ALL EXCAVATIONS WITHIN THREE (3) FEET OF THE CABLE(S) SHALL BE DONE USING HAND-HELD TOOLS ONLY.

3. The following note shall be placed on each plan sheet where trench excavation will be performed with DWR right of way:

ALL TRENCH EXCAVATION SHALL COMPLY WITH THE MOST CURRENT OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION STANDARDS. TRENCH BACKFILL SHALL BE PLACED IN NO GREATER THAN 4-INCH LIFTS IF HAND COMPACTED OR NO GREATER THAN 8-INCH LIFTS IF POWER COMPACTED. TRENCH BACKFILL WITHIN DEPARTMENT OF WATER RESOURCES RIGHT OF WAY SHALL BE COMPACTED TO 95 PERCENT RELATIVE COMPACTION (ASTM D1557).