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Staff:	Melissa Hetrick
Staff Report:	12/20/06
Hearing Date:	1/10/06

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 4-06-017

APPLICANT: Las Virgenes Municipal Water District

PROJECT LOCATION: Mulholland Hwy from the Cold Canyon Pump Station (Cold Canyon Rd. and Mulholland Hwy) east to the intersection of Mulholland Hwy. and Ladybird Dr. in Calabasas, Los Angeles County.

PROJECT DESCRIPTION: Installation of approximately 7,140 linear feet of potable water pipeline (10" diameter) within the Mulholland Highway right of way.

LOCAL APPROVALS RECEIVED: N/A

SUBSTANTIVE FILE DOCUMENTS: Certified Malibu/Santa Monica Mountains Land Use Plan; "Geotechnical Study, Proposed Mulholland Potable Water Line Improvements Project, Las Virgenes Municipal Water District," Prepared by Fugro West, Inc., November 2005; "Final Mitigated Negative Declaration Las Virgenes Municipal Water District Mulholland Potable Waterlines Improvements Project," prepared by Padre Associates, Inc., November 2005; and "Response to Letter Dated May 9, 2006 Regarding Biological Analysis," prepared by Padre Associates, Inc., May 17, 2006.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends **APPROVAL** of the proposed project with **SIX SPECIAL CONDITIONS** regarding 1) geologic recommendation, 2) assumption of risk, 3) erosion control plans, 4) oak tree protection and monitoring, 5) removal of excess excavated material, and 6) biological monitoring of riparian areas.

The Las Virgenes Municipal Water District (LVMWD) is proposing to construct an approximately 7,140 linear foot potable water pipeline (10 inches in diameter) under Mulholland Highway in the Santa Monica Mountains. The pipeline would extend from the Cold Canyon Pump Station (Cold Canyon Road and Mulholland Highway) east to the intersection of Mulholland Highway and Ladybird Drive. The project would address

deficiencies in water system hydraulics in the area between Warner Tanks and Cold Canyon Pump Station and increase the reliability of the existing water system. The project would serve existing connections and would not expand capacity to new water users.

All pipeline segments would be located within the paved areas of Mulholland Highway or Dry Canyon Road. The pipeline segments would be installed using conventional open trench construction techniques. At stream crossing on Cold Canyon Creek, the pipeline would be installed in fill above existing culverts. The width of the disturbance corridor for the construction of the pipeline would be up to 18 feet wide. Reduced disturbance corridors are planned in areas adjacent to native oak trees and other sensitive resources. The project may require trimming of some oak trees and chaparral vegetation that are currently overhanging into the roadway to clear way for construction equipment. These habitat areas are not considered environmentally sensitive habitat areas as they have been repeatedly trimmed and cleared for maintenance of Mulholland Drive. However, several oak trees overhanging into the road right of way require protection measures, including monitoring, avoidance, and reduced disturbance corridors as conditioned.

The standard of review for the proposed project is the Chapter 3 policies of the Coastal Act. In addition, the policies of the certified Malibu/Santa Monica Mountains Land Use Plan serve as guidance.

I. Staff Recommendation

MOTION: ***I move that the Commission approve Coastal Development Permit No. 4-06-017 pursuant to the staff recommendation.***

Staff Recommendation of Approval:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution to Approve the Permit:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2)

there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. Standard Conditions

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation.** Any questions of intent or interpretation of any term or condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. Special Conditions

1. Plans Conforming to Geologic Recommendations

By acceptance of this permit, the applicant agrees to comply with the recommendations contained in the "Geotechnical Study, Proposed Mulholland Potable Water Line Improvements Project, Las Virgenes Municipal Water District," Prepared by Fugro West, Inc., November 2005. These recommendations shall be incorporated into all final design and construction plans, and the final plans must be reviewed and approved by the consultant prior to commencement of development. The final plans approved by the consultant shall be in substantial conformance with the plans approved by the Commission relative to construction. Any substantial changes in the proposed development approved by the Commission that may be required by the consultant shall require an amendment(s) to this permit or a new Coastal Development Permit.

2. Assumption of Risk, Waiver of Liability and Indemnity Agreement

By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from landslide, erosion, and earth movement; (ii) to assume

the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement.

3. Erosion Control Plans

Prior to issuance of the coastal development permit, the applicant shall submit erosion control plans, prepared by a qualified resource specialist, for review and approval by the Executive Director. The plans shall incorporate the following criteria:

1. The plan shall delineate the areas to be disturbed by grading or construction activities and shall include any temporary pathways, staging areas, and stockpile areas. The natural areas on the sites shall be clearly delineated on the project site with fencing or survey flags.

2. The plan shall specify that grading shall take place only during the dry season (April 1 – October 31). This period may be extended for a limited period of time if the situation warrants such a limited extension, if approved by the Executive Director. The applicant shall install or construct temporary sediment basins (including debris basins, desilting basins, or silt traps), temporary drains and swales, sand bag barriers, silt fencing, and shall stabilize any stockpiled fill with geofabric covers or other appropriate cover, install geotextiles or mats on all cut or fill slopes, and close and stabilize open trenches as soon as possible. These erosion control measures shall be required on the project site prior to or concurrent with the initial excavation operations and maintained throughout the development process to minimize erosion and sediment from runoff waters during construction. All sediment should be retained on-site, unless removed to an appropriate, approved dumping location either outside of the coastal zone or within the coastal zone to a site permitted to receive fill.

3. The plan shall also include temporary erosion control measures should grading or site preparation cease for a period of more than thirty (30) days, including but not limited to: stabilization of all stockpiled fill, access roads, disturbed soils, and cut and fill slopes with geotextiles and/or mats, sand bag barriers, silt fencing; temporary drains and swales and sediment basins. The plans shall also specify that all disturbed areas shall be seeded with native species and include the technical specifications for seeding the disturbed areas. These temporary erosion control measures shall be monitored and maintained until grading or construction operations resume.

4. Any graded and disturbed areas shall be planted and maintained for revegetation and erosion control purposes within thirty (30) days of completion of development. Plantings should be of only native plant species that have been obtained from local Santa Monica Mountains genetic stock, and are consistent with the surrounding chaparral habitat. Native seeds shall be collected from areas as close to the project site as possible. Such planting shall be adequate to provide ninety (90) percent coverage within five (5) years, and shall be repeated if necessary to provide such coverage. This requirement shall apply to all disturbed and graded soils. Invasive, non-indigenous plant species that tend to supplant native species shall not be used. Plantings shall be maintained in good growing condition throughout the life of the project and, whenever necessary, shall be replaced with new plant materials to ensure continued compliance with the revegetation requirements.

4. Oak Tree Protection and Monitoring

To ensure that on-site oak trees are protected during pipeline construction and removal activities, protective barrier fencing shall be installed around the protected zone of all oak trees in proximity to the construction zone during construction operations. Oak trees adjacent to the project area shall be fenced after the required trimming has been carried out.

Prior to commencement of construction, the permittee shall retain the services of a biological consultant or arborist with appropriate qualifications acceptable to the Executive Director. The biological consultant or arborist shall be present on site during grading and construction activities. The biological consultant or arborist shall immediately notify the Executive Director if unpermitted activities occur or if oak trees are removed or impacted beyond the scope of the work allowed by Coastal Development Permit 4-06-017. This biological consultant or arborist shall have the authority to require the applicant to cease work should any breach in permit compliance occur, or if any unforeseen sensitive habitat issues arise.

The biological consultant or arborist shall monitor adjacent to the project area identified in the Final Mitigated Negative Declaration and Biological Report for the project (Padre Associates, November 2005 and May 2006) for a period of ten (10) years minimum. An annual monitoring report shall be submitted for the review and approval of the Executive Director for each of the ten years. Should any of these trees be lost or suffer worsened health or vigor as a result of this project, the permittee shall submit, for the review and approval of the Executive Director, an off-site oak tree replacement planting program, prepared by a qualified biologist, arborist, or other qualified resource specialist, which specifies replacement tree locations, planting specifications, and a monitoring program to ensure that the replacement planting program is successful. Replacement trees shall be provided at a rate of 10:1.

5. Removal of Excess Excavated Material

Prior to the issuance of the Coastal Development Permit, the applicant shall provide evidence to the Executive Director of the location of the disposal site for all excess excavated material from the site. If the disposal site is located in the Coastal Zone, the disposal site must have a valid coastal development permit for the disposal of fill material. If the disposal site does not have a coastal permit, such a permit will be required prior to the disposal of material.

6. Biological Monitoring of Riparian Areas

The permitee shall minimize potential impacts to sensitive birds by avoiding construction activities adjacent to riparian habitats during the breeding season from March 1 through August 15. Should any construction activities be necessary within 300 feet of riparian areas during the breeding season (March 1 through August 15), the permitee shall retain the services of a qualified biologist(s) or environmental resource specialist(s) to conduct raptor surveys and sensitive species surveys in and around the riparian areas. At least two (2) weeks prior to commencement of any project operations near riparian areas, the permitee shall submit the name and qualifications of the biologist or specialist, for the review and approval of the Executive Director. The permittee shall ensure that all project construction and operations shall be carried out consistent with the following:

1. The environmental resource specialist shall conduct a survey of all project areas within 300 feet of the riparian habitats to determine presence and behavior of sensitive species and raptors, no more than 7 days prior to any project operations including construction, grading, excavation, vegetation eradication and trimming, hauling, and maintenance activities.
2. In the event that any sensitive wildlife species or raptors exhibit reproductive or nesting behavior, the environmental specialist shall immediately notify the permitee, the Executive Director and local resource agencies in writing. The permitee shall immediately cease any development activities upon receipt of such notice. Project activities shall resume only upon written approval of the Executive Director.
3. In the event that any sensitive wildlife species are present in the project area but do not exhibit reproductive behavior and are not within the estimated breeding/reproductive cycle of the subject species, the environmental resource specialist shall either: (1) implement a resource avoidance program with sufficient buffer areas to ensure adverse impacts to such resources are avoided, if feasible; or (2) postpone construction activities until the identified sensitive species have moved from the project area. The permitee shall also immediately notify the Executive Director of the presence of such species and which of the above actions are being taken. If the presence of any such sensitive species requires review by the United States Fish and Wildlife Service and/or the California Department of Fish and Game, then no development activities shall be allowed or

continue until any such review and authorizations to proceed are received, subject to the approval of the Executive Director.

4. The environmental resource specialist shall be present during all construction, grading, excavation, vegetation eradication and removal, hauling, and maintenance activities within 300 feet of riparian and creek habitats. The environmental resource specialist shall require the applicant to cease work should any breach in permit compliance occur, or if any unforeseen sensitive habitat issues arise. The environmental resource specialist(s) shall immediately notify the Executive Director if activities outside of the scope of coastal development permit 4-06-017 occur. If significant impacts or damage occur to sensitive habitats or to wildlife species, the applicants shall be required to submit a revised or supplemental program to adequately mitigate such impacts. Any native vegetation which is inadvertently destroyed or damaged during implementation of the project shall be replaced in kind at a 3:1 or greater ratio. The revised, or supplemental, program shall be processed as a new notice of impending development and/or coastal development permit.

IV. Findings and Declarations

The Commission hereby finds and declares:

A. Project Description and Background

The Las Virgenes Municipal Water District (LVMWD) is proposing to construct an approximately 7,140 linear foot potable water pipeline (10 inches in diameter) under Mulholland Highway in the Santa Monica Mountains (**Exhibits 1-4**). The pipeline would extend from the Cold Canyon Pump Station (Cold Canyon Road and Mulholland Highway) east to the intersection of Mulholland Highway and Ladybird Drive in the Santa Monica Mountains. This proposal is part of a larger pipeline installation project that spans intermittently from Cold Canyon Road to Old Topanga Canyon Road along Mulholland Highway. The overall project is divided into three phases, Phase 1A, 1B, and 2. Phase 1B and the "southern" and part of the "central" portions of Phase 2 are located within the coastal zone and are the subject of CDP application 4-06-017.

Las Virgenes Municipal Water District (LVMWD) provides potable water, recycled water, wastewater collection and treatment, and biosolids composting to the cities of Agoura Hills, Calabasas, Hidden Hills, Westlake Village and adjacent unincorporated areas of Los Angeles County. The LVMWD currently operates a 10-inch steel water pipeline within the Mulholland Highway right-of-way, extending from the Cold Canyon Pump Station to the Mulwood Pressure Reducing Station (4.5 miles). The existing pipeline serves users along the pipeline and supplies the Saddle Peak Tank and Oak Ridge Tank. In 1999 LVMWD prepared a Potable Water Master Plan that identified deficiencies in water system hydraulics in the area between Warner Tanks and Cold Canyon Pump Station. Additionally, the report raised concerns over the general

reliability of the system due to the age of the system and hazardous geologic conditions in the area. Phase 1B will involve a new pipeline route that will address hydraulic deficiencies in the existing water system. Phase 2 of the project will involve installation of a new pipeline parallel to an existing water pipeline to improve reliability of the existing water system. The project would serve existing connections and would not expand capacity to new water users.

The project is located within the County of Los Angeles's right of way for Mulholland Road. The applicant has secured approval from the County for the proposed project. Land uses surrounding the project include residential and open space. The project area consists of roadway pavement, an unpaved shoulder, and roadside areas. The unpaved shoulders generally support bare ground, landscaping, disturbed native vegetation, and disturbed weedy areas. Some areas of chamise chaparral, purple sage scrub, California walnut woodland, coast live oak woodland, arroyo willow riparian forest, and annual grassland surround the project area. The pipeline route also crosses the North Fork of Cold Creek near Stunt Road.

The new 10 inch diameter pipeline would be composed of steel, ductile iron, or polyvinyl chloride. All pipeline segments would be located within the paved areas of Mulholland Highway or Dry Canyon Road. The pipeline segments would be installed using conventional open trench construction techniques. Pipe sections would be placed in a trench about three feet wide and five feet deep. Sand (or equivalent) would be placed in the trench as pipe bedding to support the pipeline. Concrete would be placed over the pipe bedding and asphalt concrete would be replaced to form the roadway surface. At the stream crossing on Cold Canyon Creek, the pipeline would be installed in fill above existing culverts. Phase 1B would involve 1,700 cu. yds. of excavation, 1,300 cu yds of imported material (primarily pipe bedding), and 1,300 cu. yds. of export (trench spoils). Phase 2 would involve 1,400 cu. yds. of excavation, 1,00 cu. yds of imported material, and 1,00 cu. yds of export (trench spoils). Following installation of the pipeline, the pipe would be hydrostatically tested with potable water. Used water would be collected and discharged to the nearest sanitary sewer for treatment at district facilities.

The width of the disturbance corridor for the construction of the pipeline would be up to 18 feet wide. Reduced disturbance corridors are planned in areas adjacent to native oak trees and other sensitive resources. The project may require trimming of some oak trees and chaparral vegetation that are currently overhanging into the roadway to clear way for construction equipment. The project would also require periodic closures of traffic lanes on Mulholland Highway. A traffic control plan would be developed for review by the City of Calabasas and Los Angeles County. Open trenches would be covered at the end of the work day with non-skid steel plates. Signage would also be provided in the project area in advance of construction activities to warn motorists of potential delays.

B. Hazards and Geologic Stability

The proposed development is located in the Santa Monica Mountains area, an area that is generally considered to be subject to an unusually high amount of natural hazards. Geologic hazards common to the Santa Monica Mountains area include landslides, erosion, and flooding. In addition, fire is an inherent threat to the indigenous chaparral community of the coastal mountains. Wild fires often denude hillsides in the Santa Monica Mountains of all existing vegetation, thereby contributing to an increased potential for erosion and landslides on property.

Coastal Act Section **30253** states in part:

> **New development shall:**
>
> **(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.**
>
> **(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.**

Section 30253 of the Coastal Act mandates that new development be sited and designed to provide geologic stability and structural integrity, and minimize risks to life and property in areas of high geologic, flood, and fire hazard. As previously described, the proposed project includes construction of a permanent, 7,140-ft. potable water pipeline between the Cold Canyon Road and Ladybird Drive under Mulholland Highway. The District has submitted a geotechnical report for the project prepared by Fugro West, Inc in November 2005. According to this report, the pipeline alignment crosses several mapped faults, none of which appear to be active or potentially active faults. Additionally, the proposed pipeline route is not zoned by the State of California as a Alquist-Priolo fault rupture hazard zone. However, seismic ground-shaking from nearby faults may result in damage to the proposed pipeline over its service life. The alignment also crosses one mapped historic landslide. No areas of documented historic liquefaction are known in the immediate project area. However, according to the geotechnical consultant, the project area may be susceptible to liquefaction in localized areas of saturated sandy soils. The potential for this to occur, though, is low due to the lack of observed groundwater along the alignment. The project site is also not located in an area known to have expansive soils. However, according to the geotechnical consultant, extensive fill material is located that was used to construct Mulholland Highway is located in the project area and may have some expansive properties.

The geotechnical consultant makes no conclusions in the report that ensure that the project will be completely free of geologic hazard. The consultant notes that any project of substantial length within this area would involve similar geologic hazards. The

consultant makes several design recommendations concerning excavation, groundwater, shoring, backfill, pipe zone materials, compaction, and thrust blocks, among other measures, to ensure that the pipeline is protected from geologic hazard to the maximum extent feasible. To ensure that final project design and construction complies with the recommendations of the consulting geologist, the Commission, as specified in **Special Condition No. One (1)**, requires that the applicant submit evidence of the consultant's review and approval of all final plans and that the plans approved by the consultant be in substantial conformance with the plans approved by the Commission. Any substantial changes to the proposed development, as approved by the Commission, which may be recommended by the consultant shall require an amendment to the permit or a new coastal development permit.

While the applicant is not proposing to remove large areas of vegetation, some trimming of vegetation on the road shoulder may be necessary. Should any bare soil areas be created, the Commission finds that these areas should be revegetated with native plant species to minimize erosion of slopes. Additionally, erosion control best management practices should be used to reduce erosion and runoff during construction as further discussed in the following section. **Special Condition Three (3)** requires the applicant to develop and implement erosion control plans for the pipeline site.

The Coastal Act recognizes that certain development, such as the proposed project, may involve the taking of some risk. Coastal Act policies require the Commission to establish the appropriate degree of risk acceptable for the proposed development and to determine who should assume the risk. While the applicant's geotechnical consultants have recommended measures to minimize geologic hazards, the project site area still may be at risk for landslides, seismic ground shaking, erosion from storm flows, liquefaction, and expansive soils. As such, the Commission finds that due to the foreseen possibility of landslide, erosion, and slope failure, the applicant shall assume these risks as a condition of approval. Therefore, **Special Condition Two (2)** requires the applicant to agree, by accepting this permit, that they waive any claim of liability against the Commission for damage to life or property which may occur as a result of the permitted development, and assume the risks to the development and the property that is the subject of this permit of injury and damage from such hazards in connection with the permitted development. The applicant's assumption of risk will show that the applicant is aware of and appreciates the nature of the hazards which exist on the site, and which may adversely affect the stability or safety of the proposed development.

The Commission finds that the proposed project, as conditioned, will serve to minimize potential geologic hazards to life and property and will assure the stability and structural integrity of the project, both on the project site and adjacent properties, consistent with Section 30253 of the Coastal Act.

C. Public Work Facilities

Section **30254** of the Coastal Act provides, in part that:

> **New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division . . . Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.**

Policy 244 of the LUP provides that:

> **New pipelines and booster stations shall be constructed in the Malibu Coastal area to replace deteriorated and undersized facilities to provide adequate domestic water and fire protection service, and reduce potential health hazard problems.**

The proposed project will consist of installation of an approximately 7,140 foot long potable water pipeline under Mulholland Highway that will connect to the existing potable water system in the area. The purpose of the new pipeline is to improve the existing water system between Warner Tanks and the Cold canyon Pump Station. Residential service and fire suppression services are the primary uses for the potable water currently being transmitted. The proposed project will principally serve to increase the reliability of the existing water service and address hydraulic deficiencies for improved domestic and fire protection water service. The project will not expand the capacity for LVMWD to deliver water services.

The Commission therefore finds that the project as proposed is consistent with and adequate to carry out the provisions of Section 30254 of the Coastal Act.

D. Environmentally Sensitive Resources, Water Quality, and Visual Resources

Section **30230** of the Coastal Act states:

> **Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.**

Section **30231** states:

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section **30240** of the Coastal Acts states:

a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Section **30107.5** of the Coastal Act, defines an environmentally sensitive area as:

"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

In addition, Section **30251** of the Coastal Act states that:

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinated to the character of its setting.

Section 30240 of the Coastal Act state that environmentally sensitive habitat areas must be protected against disruption of habitat values. When determining whether any particular habitat in an area, such as the Santa Monica Mountains, should be considered environmentally sensitive habitat area (ESHA), one must focus on three main questions:

1) Is a habitat or species rare or especially valuable?
2) Does the habitat or species have a special nature or role in the ecosystem?
3) Is the habitat or species easily disturbed or degraded by human activities and developments?

The Coastal Commission has found that the Mediterranean Ecosystem in the Santa Mountains is itself rare and valuable because of its relatively pristine character, physical complexity, and resultant biological diversity. Therefore, habitat areas that provide important roles in that ecosystem are especially valuable and meet the second criterion for the ESHA designation. In the Santa Monica Mountains, coastal sage scrub and chaparral have many important roles in the ecosystem, including the provision of critical linkages between riparian corridors, the provision of essential habitat for species that require several habitat types during the course of their life histories, the provision of essential habitat for local endemics, the support of rare species, and the reduction of erosion, thereby protecting the water quality of coastal streams. For the Commission finds that large contiguous, relatively pristine stands of coastal sage scrub and chaparral in the Santa Monica Mountains meet the definition of ESHA. This is consistent with the Commission's past findings on the Malibu LCP[1].

Woodlands that are native to the Santa Monica Mountains, such as oak woodlands, are also important coastal resources. Native trees prevent the erosion of hillsides and stream banks, moderate water temperatures in streams through shading, provide food and habitat, including nesting, roosting, and burrowing to a wide variety of wildlife species, contribute nutrients to watersheds, and are important scenic elements in the landscape. In the Santa Monica Mountains, coast live oak woodland occurs mostly on north slopes, shaded ravines and canyon bottoms. Besides the coast live oak, this plant community includes hollyleaf cherry, California bay laurel, coffeeberry, and poison oak. Coast live oak woodland is more tolerant of salt-laden fog than other oaks and is generally found nearer the coast[2]. Coast live oak also occurs as a riparian corridor species within the Santa Monica Mountains. Valley oaks are endemic to California and reach their southern most extent in the Santa Monica Mountains. Valley oaks were once widely distributed throughout California's perennial grasslands in central and coastal valleys. Individuals of this species may survive 400-600 years. Over the past 150 years, valley oak savanna habitat has been drastically reduced and altered due to agricultural and residential development. The understory is now dominated by annual

[1] Revised Findings for the City of Malibu Local Coastal Program (as adopted on September 13, 2002) adopted on February 6, 2003.
[2] NPS 2000. op. cit.

grasses and recruitment of seedlings is generally poor. This is a very threatened habitat. The important ecosystem functions of oak woodlands and savanna are widely recognized[3]. These habitats support a high diversity of birds[4], and provide refuge for many species of sensitive bats[5]. Typical wildlife in this habitat includes acorn woodpeckers, scrub jays, plain titmice, northern flickers, cooper's hawks, western screech owls, mule deer, gray foxes, ground squirrels, jackrabbits and several species of sensitive bats. Therefore, because of their important ecosystem functions and vulnerability to development, the Commission has consistently found in past permit decisions that oak woodlands and savanna within the Santa Monica Mountains meet the definition of ESHA under the Coastal Act.

For any specific property within the Santa Monica Mountains, it is necessary to meet three tests in order to assign the ESHA designation. First, is the habitat properly identified, for example as coastal sage scrub or oak woodland? Second, is the habitat undeveloped and otherwise relatively pristine? Third, is the habitat part of a large, contiguous block of relatively pristine native vegetation? The applicant has submitted a biological analysis of the proposed project conducted by Padre Associates in 2005 and 2006. The proposed water pipeline would be constructed under the paved portions of Mulholland Road and Dry Canyon Creek Road. All construction activities will occur within the right of ways of these roads. Construction of the pipeline, however, will require trimming of vegetation in some areas on the road shoulder to provide sufficient width to accommodate the construction equipment, pipe trench, and one lane of traffic. While the majority of the road shoulder is dominated by bare ground and disturbed non-native grasses and weeds, several coast live oak trees occur within or adjacent to the Mulholland Highway right of way and have grown to overhang into the road shoulder. Additionally, some chaparral and coastal sage scrub habitat occurs within or adjacent to the Mulholland Highway right of way and have grown into the road shoulder. However, these native habitats have been repeatedly cleared and trimmed in order to maintain safe conditions along the road shoulder. The oak woodland, chaparral, and coastal sage scrub habitats that may be disturbed in and adjacent to the road right of way as a result of the project would, therefore, not be considered ESHA due to the fact that they have been repeatedly disturbed since the construction of Mulholland Highway.

However, in past permit actions in the Santa Monica Mountains the Commission has found that native oak trees are an important coastal resource, even if the overall woodland would not be considered ESHA. Native trees prevent the erosion of hillsides

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[3] Block, W.M., M.L. Morrison, and J. Verner. 1990. Wildlife and oak-woodland interdependency. *Fremontia* 18(3):72–76. Pavlik, B.M., P.C. Muick, S. Johnson, and M. Popper. 1991. *Oaks of California*. Cachuma Press and California Oak Foundation, Los Olivos, California. 184 pp.

[4] Cody, M.L. 1977. Birds. Pp. 223–231 *in* Thrower, N.J.W., and D.E. Bradbury (eds.). *Chile-California Mediterranean scrub atlas*. US/IBP Synthesis Series 2. Dowden, Hutchinson & Ross, Stroudsburg, Pennsylvania. National Park Service. 1993. A checklist of the birds of the Santa Monica Mountains National Recreation Area. Southwest Parks and Monuments Assoc., 221 N. Court, Tucson, AZ. 85701

[5] Miner, K.L., and D.C. Stokes. 2000. Status, conservation issues, and research needs for bats in the south coast bioregion. Paper presented at *Planning for biodiversity: bringing research and management together*, February 29, California State University, Pomona, California.

and stream banks, moderate water temperatures in streams through shading, provide food and habitat, including nesting, roosting, and burrowing to a wide variety of wildlife. Native trees that are not part of a larger, intact habitat may nonetheless provide nesting or roosting habitat for raptors and other birds that are rare, threatened, endangered, fully protected, or species of special concern. Furthermore, individual oak trees such as those on the subject site do provide some habitat for a wide variety of wildlife species and are considered to be an important part of the character and scenic quality of the area.

Oaks are easily damaged and are very sensitive to disturbances that occur to the tree or the surrounding environment. Their root system is extensive, but surprisingly shallow, radiating out as much as 50 feet beyond the spread of the tree leaves, or canopy. The ground area at the outside edge of the canopy, referred to as the dripline, is especially important: the tree obtains most of its surface water and nutrients here, as well as conducts an important exchange of air and other gases (Los Angeles County Regional Planning Oak Tree Ordinance).

Oak trees are a part of the California native plant community and need special attention to maintain and protect their health. Oak trees in residentially landscaped areas often suffer decline and early death due to conditions that are preventable. Damage can often take years to become evident and by the time the tree shows obvious signs of disease it is usually too late to restore the health of the tree. Oak trees provide important habitat and shading for other animal species, such as deer and bees. Oak trees are very long lived, some up to 250 years old, relatively slow growing, becoming large trees between 30 to 70 feet high, and are sensitive to surrounding land uses, grading or excavation at or near the roots and irrigation of the root area particularly during the summer dormancy. Improper watering, especially during the hot summer months when the tree is dormant and disturbance to root areas are the most common causes of tree loss.

Encroachments into the protected zone of an oak tree can result in significant adverse impacts. The article entitled “Oak Trees: Care and Maintenance” prepared by the Forestry Department of the County of Los Angeles states:

> ***Oaks are easily damaged and very sensitive to disturbances that occur to the tree or in the surrounding environment. The root system is extensive but surprisingly shallow, radiating out as much as 50 feet beyond the spread of the tree leaves, or canopy. The ground area at the outside edge of the canopy, referred to as the dripline, is especially important: the tree obtains most of its surface water and nutrients here, as well as conducts an important exchange of air and other gases.***

This publication goes on to state:

> ***Any change in the level of soil around an oak tree can have a negative impact. The most critical area lies within 6’ to 10’ of the trunk: no soil should be added or scraped away. . . . Construction activities outside the protected zone***

> ***can have damaging impacts on existing trees. . . . Digging of trenches in the root zone should be avoided. Roots may be cut or severely damaged, and the tree can be killed. . . . Any roots exposed during this work should be covered with wet burlap and kept moist until the soil can be replaced. The roots depend on an important exchange of both water and air through the soil within the protected zone. Any kind of activity which compacts the soil in this area blocks this exchange and can have serious long term negative effects on the trees. If paving material must be used, some recommended surfaces include brick paving with sand joints, or ground coverings such as wood chips . . .***

Given the importance of oak woodlands and individual oak trees, even those that have been disturbed or fragmented by development, the Commission has consistently required, through past permit actions, that new development avoid the removal of oak trees, unless there is no feasible alternative for siting or designing the structures. Further, given the sensitivity of oak trees to disturbance or encroachment of development into the root zone, the Commission has required that encroachments within the protected zone (5 feet beyond the dripline, or 15 feet from the trunk, whichever is greater) be avoided unless there is no feasible alternative for the siting of development. If encroachments cannot be avoided, then the Commission requires that encroachments be minimized to the maximum extent feasible. If encroachments extend a minimal distance within the protected zone of an oak tree, the Commission has required the affected tree to be monitored for a period of ten years, to identify if the tree has been harmed by the encroachment. If it is determined that the tree has been adversely affected, then mitigation is required. In the case of significant encroachments within the protected zones of oak trees, the Commission has determined that the affected trees are likely to suffer worsened health as a result and mitigation has been required. The oak tree mitigation that the Commission has required is the planting of replacement trees, at a ratio of at least ten seedlings for every tree impacted. If there is suitable area on the project site, replacement trees should be provided on-site. The Commission has found, through permit actions, that replacement trees, particularly oak trees, are most successfully established when the trees are seedlings or acorns. Many factors, over the life of the restoration, can result in the death of the replacement trees. In order to ensure that adequate replacement is eventually reached, it is necessary to provide a replacement ratio of at least ten replacement trees for every tree removed or impacted to account for the mortality of some of the replacement trees.

In this case, the proposed project could potentially require trimming and/or excavation under and near the canopies of approximately six coast live oak trees, as identified in the Final Mitigated Negative Declaration and Biological Report for the project (Padre Associates, November 2005 and May 2006). The trimming would be necessary in order to provide the vertical clearance necessary for the construction equipment that will be used to trench and place the pipeline. The LVMWD has proposed to avoid encroachment and trimming of these oaks to the extent feasible through routing and reduced construction corridors in these areas. Additionally, they have proposed to 1) flag and fence all oak trees in close proximity to construction activities to avoid inadvertent damage, 2) hire a qualified arborist to conduct any needed trimming of oak

trees, and 3) replace any oak trees damaged by the project. Commission staff have explored alternatives for the project that could minimize potential disturbance to these oak trees. Given that the pipeline is currently proposed under Mulholland Highway, a highly disturbed area, other options for routing would entail moving the pipeline from the road right-of-way into adjacent natural areas that contain environmentally sensitive habitat areas. This would likely cause more damage to ESHA and individual oak trees. It is not feasible to site or design the development to completely avoid trimming or encroachment into the protected zone of all oak trees in the project area.

The potential impacts of such encroachments include the disturbance of oak roots through trenching, removal or trimming of branches, and incidental damage caused by construction equipment. As described above, the applicant is proposing measures to minimize such impacts by reducing the width of the construction corridor in the area adjacent to oak trees, by employing a qualified arborist to carry out any trimming, and by identifying and fencing oak trees in order to prevent accidental damage from equipment. In order to further reduce the impacts of trimming and encroachment into the protected zone of a maximum of six oak trees, the Commission finds it necessary to impose **Special Condition Four (4)**, which requires the applicant to retain the services of a qualified biological consultant or arborist, who shall be present on site during grading operations, and during excavation and installation of the pipeline. The consultant shall immediately notify the Executive Director if unpermitted activities occur or if any oak trees are damaged, removed, or impacted beyond the scope of the work allowed by this permit. This monitor shall have the authority to require the applicants to cease work should any breach in permit compliance occur, or if any unforeseen sensitive habitat issues arise. To ensure that oak trees are protected during grading and construction activities, **Special Condition Four (4)** also requires the applicant to install protective barrier fencing around the dripline of on-site and adjacent off-site oak trees during construction operations. Further, the condition requires the applicant to monitor the condition of oak trees on the pipeline route for a period of 10 years. If within that time any of the trimmed or impacted oaks is lost or suffers worsened health or vigor as a result of the project, the District will be required to submit, for the review and approval of the Executive Director, an off-site oak tree replacement planting program prepared by a qualified biologist or arborist. The replacement trees shall be provided at a ratio of 10 replacement trees for every impacted tree.

Sections 30230 and 30231 of the Coastal Act require that the biological productivity and the quality of coastal waters and streams be maintained and, where feasible, restored through, among other means, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flows, maintaining natural buffer areas that protect riparian habitats, and minimizing alteration of natural streams. Additionally, Section 30240 protects against disruption to environmentally sensitive habitat areas, including riparian and stream habitats.

As stated previously, the proposed project entails the construction of a permanent potable water transmission pipeline (10-inch) between Cold Canyon Road and Ladybird Drive under Mulholland Highway. The primary uses of the potable water being

transmitted are residential and fire suppression services. The proposed pipeline alignment is situated in an LUP-designated Significant Watershed area. In addition, the pipeline would cross Cold Canyon Creek, a blueline stream. At the stream crossings, the pipeline would be installed in fill above existing culverts. No construction activities will therefore occur within any stream.

However, the Commission notes that riparian areas in the vicinity of Cold Canyon Creek provide habitat for a number of sensitive bird species, including Cooper's hawks and yellow warbler. The Final Mitigated Negative Declaration (Padre 2005) submitted for the project identifies potential project impacts on these bird species as a result of construction activities during the breeding season. The negative declaration recommends that all construction activities in the vicinity of riparian habitats in the project area either occur outside the breeding season for these birds (March 1 through August 15) or, if project activities must occur during the breeding season, that a biologist conduct biological surveys for nesting birds in the project area prior to initiation of construction activities. **Special Condition Five (5),** therefore, requires LVMWD to implement this recommendation. If any nesting bird species are found within 300 feet of project sites, the district is required to stop work, notify the Executive Director, and modify the project design and schedule to prevent impacts on any sensitive species.

The Commission also recognizes that the proposed project may result in adverse effects to the value and quality of coastal water, including Cold Canyon Creek, as a result of erosion and sedimentation during construction. Uncontrolled erosion leads to sediment pollution of down gradient water bodies. Surface soil erosion has been established by the United States Department of Agriculture, Natural Resources Conservation Service, as a principal cause of downstream sedimentation known to adversely affect riparian and marine habitats. Suspended sediments have been shown to absorb nutrients and metals, in addition to other contaminants, and transport them from their source throughout a watershed and ultimately into the Pacific Ocean.

As proposed, the project involves trenching along the pipeline route. The Commission notes that stockpiling of excavated soil could result in erosion and sedimentation impacts to quality of adjacent waters. To minimize adverse effects to coastal waters resulting from either contamination or increased sedimentation, the Commission finds it necessary to require the applicant, as described in **Special Condition Three (3)** to submit erosion control plans which provides for the stabilization of disturbed areas and all temporary stockpiled fill on site and to utilize best management practices including, but not limited to, the installation of temporary sediment basins (including debris basins, desilting basins or silt traps), temporary drains and swales, sand bag barriers, silt fencing during construction activity to minimize erosion on the project site.

Section 30251 also requires that development be sited and designed to protect views of scenic areas, minimize alteration of landforms, and be visually compatible with the surrounding area. The grading proposed for the project is only for the trenching of a corridor to install the pipeline. No additional grading is required. While the project is adjacent to parkland and other public viewing locations, including Mulholland Highway,

once constructed the proposed pipeline will be located under the highway and will not be visible from these public locations. However excess materials and soils excavated during construction could contribute to unnecessary landform alteration and erosion and sedimentation if not properly removed from the construction site. Therefore, the Commission requires **Special Condition Five (5)** which requires that the applicant dispose of excess excavated materials at an appropriate disposal site or to a site that has been approved to accept fill material.

For the above reasons, the Commission finds that the proposed project as conditioned is consistent with Sections 30230, 30231, 30240, and 30251 of the Coastal Act.

E. Local Coastal Program

Section 30604(a) of the Coastal Act states:

> **Prior to certification of the local coastal program, a coastal development permit shall be issued if the issuing agency, or the Commission on appeal, finds that the proposed development is in conformity with the provisions of Chapter 3 (commencing with Section 30200) of this division and that the permitted development will not prejudice the ability of the local government to prepare a local program that is in conformity with the provisions of Chapter 3 (commencing with Section 30200).**

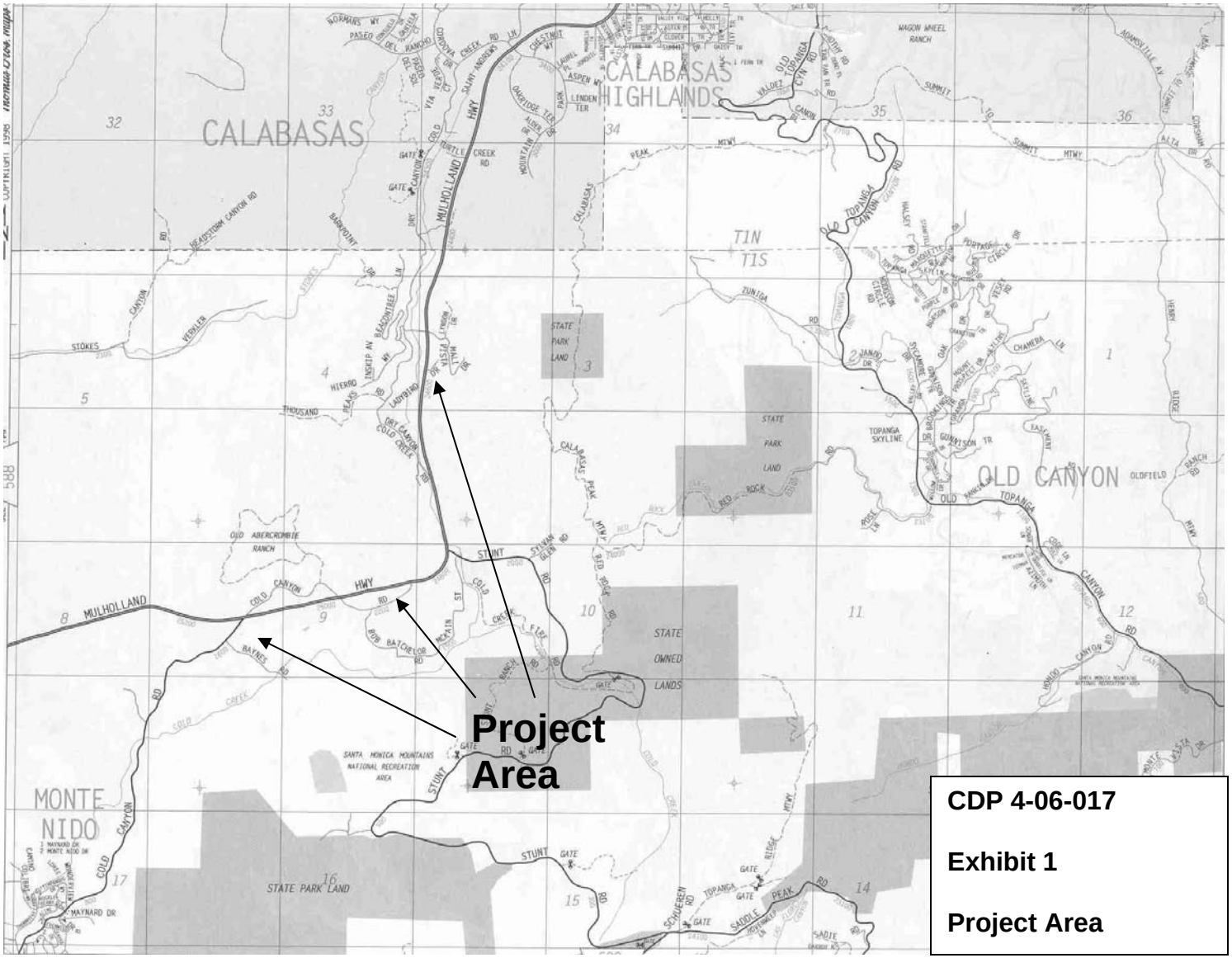
Section 30604(a) of the Coastal Act provides that the Commission shall issue a coastal permit only if the project will not prejudice the ability of the local government having jurisdiction to prepare a Local Coastal Program which conforms with Chapter 3 policies of the Coastal Act. The preceding sections provide findings that the proposed project will be in conformity with the provisions of Chapter 3 if certain conditions are incorporated into the project and accepted by the applicant. As conditioned, the proposed project will not create adverse impacts and is found to be consistent with the applicable policies contained in Chapter 3 of the Coastal Act. Therefore, the Commission finds that approval of the proposed development, as conditioned, will not prejudice the County's ability to prepare a Local Coastal Program for the Santa Monica Mountains which is consistent with the policies of Chapter 3 of the Coastal Act as required by §30604(a).

F. California Environmental Quality Act

Section 13096(a) of the Commission's administrative regulations requires Commission approval of a Coastal Development Permit application to be supported by a finding showing the application, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmentally Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being

approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the proposed development, as conditioned, is consistent with the policies of the Coastal Act. Feasible mitigation measures which will minimize all adverse environmental effects have been required as special conditions. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found to be consistent with the requirements of the Coastal Act to conform to CEQA.



CDP 4-06-017

Exhibit 1

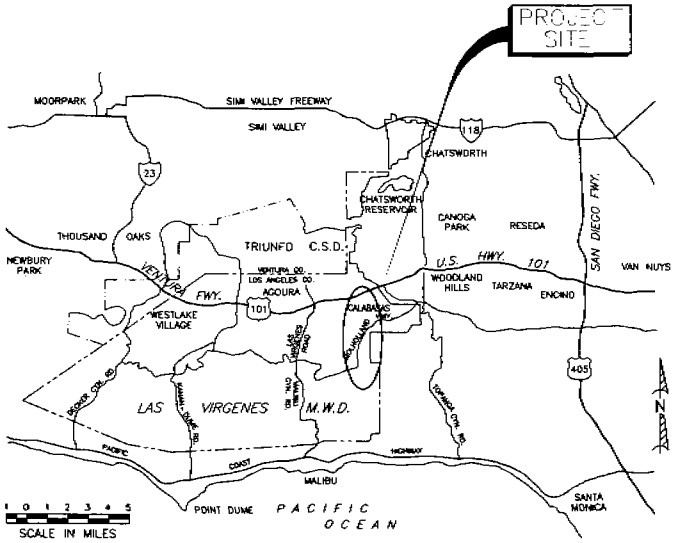
Project Area

LAS VIRGENES MUNICIPAL WATER DISTRICT

LOS ANGELES COUNTY, CALIFORNIA

CONSTRUCTION PLANS FOR

MULHOLLAND POTABLE WATER LINE IMPROVEMENTS



VICINITY MAP

CDP 4-06-017
Exhibit 3
Project Plans

PPROVED FOR LAS VIRGENES MUNICIPAL WATER DISTRICT

JOHN MUNDY – GENERAL MANAGER DATE

PLANS PREPARED BY:
BOYLE ENGINEERING CORPORATION

ROBERT D. ELLISON DATE
PROJECT MANAGER

DESCRIPTION	APPR
ERCENT SUBMITTAL	RDE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY	ADC
DRAWN BY	JDC
CHECKED BY	RDE
DATE	4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38094 EXP. DATE: 03/31/07
PROJECT NUMBER: 16257.01
CADD STANDARDS: BOYLE

REGISTERED PROFESSIONAL ENGINEER ROBERT D. ELLISON No. 38094 Exp. 03/31/07 STATE OF CALIFORNIA

BOYLE ENGINEERING CORPORATION
5851 Thille Street, Suite 201, Ventura, California 93003 805-644-6704
WWW.BOYLEENGINEERING.COM

LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

TITLE SHEET

DRAWING G-1
SHEET 1 OF 22 SHEETS

ABBREVIATIONS

AC – ASBESTOS CEMENT PIPE
APPROX – APPROXIMATE
ASPH – ASPHALT CONCRETE PAVEMENT
AVAR – AIR/VACUUM RELEASE
AVG – AVERAGE
BC – BEGIN CURVE
BVC – BEGIN VERTICAL CURVE
BFV – BUTTERFLY VALVE
BO – BLOW OFF
CJ – CONSTRUCTION JOINT
CL – CENTERLINE
CL – PIPE PRESSURE CLASS
CML&C – CEMENT MORTAR LINED AND COATED
CMP – CORRUGATED METAL PIPE
CONC – CONCRETE
CP – CATHODIC PROTECTION
Δ – DELTA
DWG – DRAWING
EC – END CURVE
EVC – END VERTICAL CURVE
EWEF – EACH WAY EACH FACE
EL, ELEV – ELEVATION
EXST – EXISTING
FDTN – FOUNDATION
FG – FINISHED GRADE
FLG – FLANGE
FS – FIRE SERVICE
GALV – GALVANIZED
HGL – HYDRAULIC GRADE LINE
L – LENGTH
LT – LEFT
LVMWD – LAS VIRGENES MUNICIPAL WATER DISTRICT
LF – LINEAR FEET
MH – MANHOLE
ML – MECHANICAL JOINT
OD – OUTSIDE DIAMETER
PCC – POINT OF COMPOUND CURVATURE
PSI – POUNDS PER SQUARE INCH
PT – POINT
PL – PROPERTY LINE
R – RADIUS
RAD – RADIAL
RCP – REINFORCED CONCRETE PIPE
REINF – REINFORCEMENT
RO – ROUGH OPENING
RT – RIGHT
R/W – RIGHT OF WAY
RW – RAW WATER
SIM – SIMILAR
SSPWC – STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
STA – STATION
STD – STANDARD
STL – STEEL
SWR – SEWER
T – TANGENT LENGTH
TCE – TEMPORARY CONSTRUCTION EQUIPMENT
TOP – TOP OF PIPE
TS – TOP OF SLAB
TW – TOP OF WALL
TYP – TYPICAL
UNK – UNKNOWN
UNO – UNLESS NOTED OTHERWISE
VCP – VITRIFIED CLAY PIPE
W/ – WITH
WP – WORKING PRESSURE
WS – WATER SERVICE
WT – WEIGHT
WTR – WATER

REFERENCE

NUMBER REFERENCE
SHEET OR DRAWING REFERENCE
DETAIL OR SECTION

NEW FACILITIES

WATER MAIN APPURTENANCES
BUTTERFLY VALVE
GATE VALVE
BLOW OFF ASSEMBLY
AIR/VAC ASSSEMBLY

MATERIALS

A.C. PAVEMENT, EXISTING
A.C. PAVEMENT, NEW
CONCRETE
EARTH

EXISTING FACILITIES

EXST PROPERTY FENCE
EXST STORM DRAIN
EXST WATERLINE
EXST WATER SERVICE
EXST WATER VALVE
EXST SEWER
EXST GAS
EXST ELECTRIC
EXST TELEPHONE
EXST POLE
EXST FIRE HYDRANT

UTILITY CONTACTS

COMPANY	CONTACT	PHONE NUMBER
PACIFIC BELL	LUCY MENDOZA	(818) 373-5921
ADELPHIA	STEVEN WATERS	(805) 477-4425
SHELL PIPELINE	VINCENT D. ECCLESTON	(310) 816-2063
SOUTHERN CALIFORNIA EDISON	ARLAN AVERYT	(714) 796-9920
SOUTHERN CALIF. GAS COMPANY	JIM HAMMEL	(818) 701-3324
AT&T	RUBEN MARTINEZ	(909) 776-3914
VERIZON	GENE HEAPE	(805) 384-5856
LVMWD	BRETT DINGMAN	(818) 251-2142
UNDERGROUND SERVICE ALERT		(800) 422-4133

GENERAL SHEET INDEX ("G" DRAWINGS)

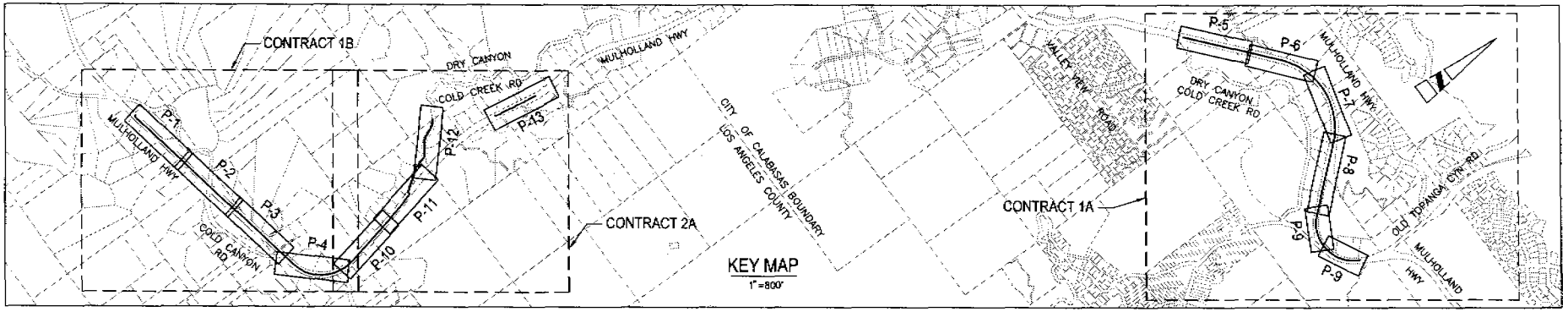
CONTRACT	SHEET	DRAWING	DESCRIPTION
1A, 1B & 2A	1	G-1	TITLE SHEET
1A, 1B & 2A	2	G-2	SHEET INDEX
1A, 1B & 2A	3	G-3	GENERAL NOTES

PIPELINE SHEET INDEX ("P" DRAWINGS)

CONTRACT	SHEET	DRAWING	DESCRIPTION
1B	4	P-1	PLAN AND PROFILE STA 10+00 TO STA 20+00
1B	5	P-2	PLAN AND PROFILE STA 20+00 TO STA 30+00
1B	6	P-3	PLAN AND PROFILE STA 30+00 TO STA 39+50
1B	7	P-4	PLAN AND PROFILE STA 39+50 TO STA 50+40.20
1A	8	P-5	PLAN AND PROFILE STA 60+00 TO STA 70+00
1A	9	P-6	PLAN AND PROFILE STA 70+00 TO STA 80+00
1A	10	P-7	PLAN AND PROFILE STA 80+00 TO STA 90+00
1A	11	P-8	PLAN AND PROFILE STA 90+00 TO STA 101+00
1A	12	P-9	PLAN AND PROFILE STA 101+00 TO STA 112+83.52
2A	13	P-10	PLAN AND PROFILE STA 120+06 TO STA 129+00
2A	14	P-11	PLAN AND PROFILE STA 129+00 TO STA 137+50
2A	15	P-12	PLAN AND PROFILE STA 137+50 TO STA 146+83.15
2A	16	P-13	PLAN AND PROFILE STA xxx+xx TO STA xxx+xx
1A & 1B	17	P-14	CONNECTION DETAILS
1B & 2A	18	P-15	CONNECTION DETAILS
1A, 1B & 2A	19	P-16	MISCELLANEOUS DETAILS

TRAFFIC CONTROL SHEET INDEX ("TC" DRAWINGS)

CONTRACT	SHEET	DRAWING	DESCRIPTION
1A, 1B & 2A	20	TC-1	TRAFFIC CONTROL PLAN MULHOLLAND HIGHWAY
1A, 1B & 2A	21	TC-2	TRAFFIC CONTROL PLAN MULHOLLAND HIGHWAY
1A, 1B & 2A	22	TC-3	TRAFFIC CONTROL GENERAL NOTES



REV	DATE	DESCRIPTION	APPR
4	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY: ADC
DRAWN BY: JOC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38094 EXP. DATE: 03/31/07
PROJECT NUMBER: 16257.01
CADD STANDARDS: BOYLE

REGISTERED PROFESSIONAL ENGINEER ROBERT D. ELLISON No. 38094 Exp. 03/31/07 STATE OF CALIFORNIA CIVIL

BOYLE ENGINEERING CORPORATION
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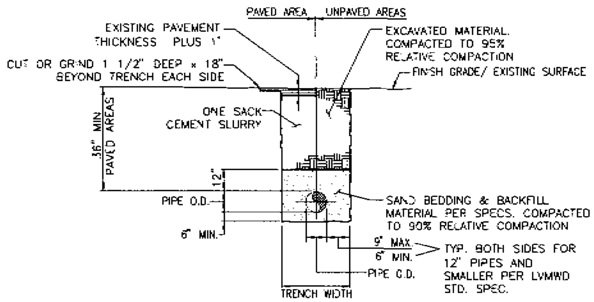
LAS VIRGENES MUNICIPAL WATER DISTRICT

LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

SHEET INDEX

DRAWING: G-2
SHEET: 2 OF 22 SHEETS



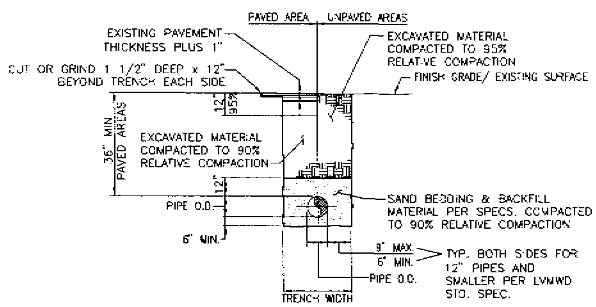
NOTE:

1. ANY CONFLICTING PROJECT PERMIT REQUIREMENTS SHALL SUPERCEDE THIS DETAIL.

TYPICAL MINIMUM TRENCH REQUIREMENTS WITHIN CITY OF CALABASAS (CONTRACT 1A)

1 / -

NO SCALE



NOTE:

1. ANY CONFLICTING PROJECT PERMIT REQUIREMENTS SHALL SUPERCEDE THIS DETAIL.

TYPICAL MINIMUM TRENCH REQUIREMENTS WITHIN LOS ANGELES COUNTY (CONTRACTS 1B & 2A)

2 / -

NO SCALE

BEST MANAGEMENT PRACTICES FOR CONSTRUCTION ACTIVITIES

1. THE FOLLOWING IS INTENDED AS AN ATTACHMENT FOR CONSTRUCTION AND GRADING PLANS AND REPRESENTS THE MINIMUM STANDARDS OF GOOD HOUSEKEEPING WHICH MUST BE IMPLEMENTED ON ALL CONSTRUCTION SITES, REGARDLESS OF SIZE.
2. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ON-SITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET-FLOW, SWALES, AREA DRAINS, NATURAL COURSES OR WIND.
3. STOCKPILES OR EARTH AND OTHER CONSTRUCTION RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
4. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOILS AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
5. EXCESS OR WASTE CONCRETE MAY NOT BE WASHED INTO THE PUBLIC WAY OR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON-SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
6. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
7. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
8. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.

PIPELINE CONSTRUCTION NOTES

1. CONSTRUCTION IN ROADWAYS SHALL COMPLY WITH THE REQUIREMENTS OF CITY OF CALABASAS ENCROACHMENT PERMIT AND LOS ANGELES COUNTY ROADS DEPARTMENT EXCAVATION PERMIT.
2. PROGRAMMABLE MESSAGE SIGNS AND TURNOUTS SHALL BE SET UP TWO WEEKS PRIOR TO THE START OF WORK, WARNING OF TRAFFIC DELAYS.
3. OPEN TRENCHES AND POTHOLING SHALL BE PLATED OVERNIGHT WITH NON SKID STEEL PLATES.
4. SEE GEOTECHNICAL REPORT BY FUGRO WEST DATED NOVEMBER 2005 FOR FURTHER DETAILS ON EXISTING SOIL CONDITIONS.
5. FOR AIR/VAC ASSEMBLIES, REFER TO LVMWD STANDARD PW 115 AND AIR/VAC VALVE CONNECTION DETAIL TO STL MAIN.
6. FOR BLOW-OFFS, REFER TO LVMWD DETAIL PW 116.
7. FOR VALVE RESTRAINT, REFER TO LVMWD DETAIL PW 117.
8. FOR VALVE BOX REFER TO LVMWD DETAIL PW 118.
9. FOR CATHODIC TEST STATION REFER TO LVMWD DETAILS PW 122 AND PW 124.
10. UNLESS OTHERWISE NOTED, STATION ON PLANS REFERS TO CENTERLINE OF PIPELINE AND IS BASED ON HORIZONTAL DISTANCES.
11. UNLESS OTHERWISE NOTED, THE PROFILE GRADE FOR THE PIPE IS THE TOP OF PIPE.
12. VERIFY DIMENSIONS AND CONDITIONS AT THE SITE BEFORE STARTING WORK. CONFLICTS BETWEEN DETAILS OR DIMENSIONS ON THE DRAWINGS SHALL BE REPORTED PROMPTLY TO THE ENGINEER, WHO WILL DETERMINE THE INTENT OF THE DESIGN.
13. EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND BASED ON RECORD DRAWINGS. POT-HOLE AND SURVEY ALL EXISTING UTILITIES PRIOR TO ORDERING ANY MATERIALS. POTHOLE AND SURVEY DATA SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW. POTHOLE DATA SHALL INCLUDE EXISTING UTILITY HORIZONTAL LOCATION, PIPE ELEVATION, SIZE, PIPE ANGULAR CONFIGURATION, AND MATERIALS OF CONSTRUCTION. IDENTIFY POTENTIAL CONFLICTS WITH THE NEW PIPE LOCATION. PIPE ALIGNMENT ADJUSTMENTS THAT DO NOT INCREASE OVERALL PIPE OR FITTING QUANTITIES SHALL BE MADE AT NO ADDITIONAL COST TO THE DISTRICT.
14. FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION, DIAMETER, AND ORIENTATION AT ALL CONNECTION POINTS AND COORDINATE WITH THE DISTRICT PRIOR TO CONSTRUCTION. PROVIDE ALL PIPE MATERIALS AND FITTINGS AS REQUIRED TO MEET EXISTING FIELD CONDITIONS FOR A COMPLETE INSTALLATION.
15. VIDEO TAPE AND DOCUMENT THE EXISTING CONDITION OF PROPERTIES AND SUBMIT THE TAPE AND DOCUMENT TO THE DISTRICT PRIOR TO THE START OF CONSTRUCTION. REPAIR DAMAGE TO LANDSCAPING, PAVING, CURBS, GUTTERS, IRRIGATION, STRUCTURES, ETC., CAUSED BY THE WORK.
16. PAVEMENT CUTS SHALL BE PERFORMED BY SAW CUTTING OR GRINDING. RECUT PAVEMENT PRIOR TO REPAVING WHERE UNDERMINING HAS OCCURRED.
17. REPLACE TRAFFIC STRIPING OR STENCILING THAT IS OBLITERATED BY CONSTRUCTION TO THE SATISFACTION OF LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS OR CITY OF CALABASAS.
18. SCHEDULE WITH THE OWNER SYSTEM SHUTDOWNS NOT LESS THAN TWO WEEKS IN ADVANCE. SERVICE SHALL NOT BE INHIBITED FOR MORE THAN 6 HOURS.
19. REFER TO THE GEOTECHNICAL REPORT FOR THE THICKNESS OF EXISTING PAVEMENT AND BASE.
20. EXCEPT WHERE NOTED, ALL PIPELINES, BLOW-OFFS, AND APPURTENANCES SHALL BE MARKED FOR POTABLE WATER PER LVMWD STANDARDS.
21. DESIGN FOR ALTERNATIVE PIPELINE MATERIALS WILL NEED AN ALTERNATIVE ALIGNMENT DESIGN.
22. MAINTAIN A COMPLETE AND ACCURATE RECORD OF ALL CHANGES IN PLANS AND SPECIFICATIONS THAT OCCUR DURING CONSTRUCTION. NO CHANGES SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
23. FURNISH AND MAINTAIN A CHEMICAL TOILET AT EACH WORK LOCATION.
24. A SWPP PLAN IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATION (JULY 2002) 7-1.019 SHALL BE PROVIDED.
25. TREE LIMBS ON OAK AND SYCAMORE TREES WHICH INTERFERE WITH CONSTRUCTION SHALL BE CUT AND SEALED BY A CERTIFIED ARBORIST PRIOR TO START OF WORK. LARGE ROOTS (4-INCH DIAMETER OR LARGER) WHICH ARE SEVERED BY TRENCHING OPERATIONS SHALL BE SEALED WITH AN APPROVED MATERIAL.
26. MAINTAIN 36" MINIMUM PIPELINE COVER UNLESS OTHERWISE DIRECTED ON THE PLANS OR UNLESS REDUCED DEPTH IS SPECIFICALLY APPROVED BY THE ENGINEER.
27. SEE SUGGESTED CONSTRUCTION SEQUENCE ON DWG P-11.
28. AT LOCATIONS WHERE THE NEW PIPELINE MUST CROSS UNDER AN EXISTING CMP STORM DRAIN, CONTRACTOR SHALL BE AWARE THAT THE STORM DRAIN MAY NEED TO BE REPLACED WITHIN THE TRENCH LIMITS. CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO REPLACING EXISTING STORM DRAINS.
29. OAK TREES ADJACENT TO THE PIPELINE ALIGNMENT SHALL BE PROTECTED IN PLACE USING TEMPORARY FENCING WHEN FEASIBLE, GIVEN ACCESS CONSTRAINTS. EXCAVATION UNDER THE TREE CANOPY AND TRIMMING OF MAJOR LIMBS (GREATER THAN 2-INCH DIAMETER) SHALL BE MONITORED BY A QUALIFIED ARBORIST AND RECOMMENDATIONS PROVIDED BY THE ARBORIST SHALL BE FULLY IMPLEMENTED TO ENSURE LONG-TERM SURVIVAL OF AFFECTED OAK TREES.

BENCHMARKS

MALIBU (2003)

RDBM TAG IN CTR HDWL CULV 15FT E/O C/L MULHOLLAND HWY & 43FT S/O C/L OLD TOPANGA CYN RD (FR THE N) 2FT E/O MI MKR 29.57 8FT N/O PP#44C03823E
ELEV FOOT 1,045.106
BM NUMBER Y5333

DPW BM TAG IN N EDGE SLY CONC DRWY TO HSE #1746 COLD CYN RD (TO S) 18FT E/O C/L & 161FT S/O C/L MULHOLLAND HWY (2.8 M E/O STOKES CYN RD)
ELEV FOOT 966.296
BM NUMBER Y10448

BASIS OF BEARINGS

BEARINGS ARE GRID

BASIS OF STATIONING

ANGLE PT AT STA 10+21.34 (NEAR CONNECTION TO EXST 10" MAIN) = N 1858932.47 E 6358227.70

CONNECTION TO EXST 8" MAIN AT STA 60+00 = N 1872153.49 E 6366504.56

REV	DATE	DESCRIPTION	APPR
△	4/21/06	100 PERCENT SUBMITTAL	RDE

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DESIGNED BY: ADC | DRAWN BY: JDC | CHECKED BY: RDE | DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON | REG NUMBER: 38094 | EXP DATE: 03/31/07 | PROJECT NUMBER: 16257.01 | CADD STANDARDS: BOYLE

REGISTERED PROFESSIONAL ENGINEER ROBERT D. ELLISON No. 38094 Exp. 03/31/07 CIVIL STATE OF CALIFORNIA

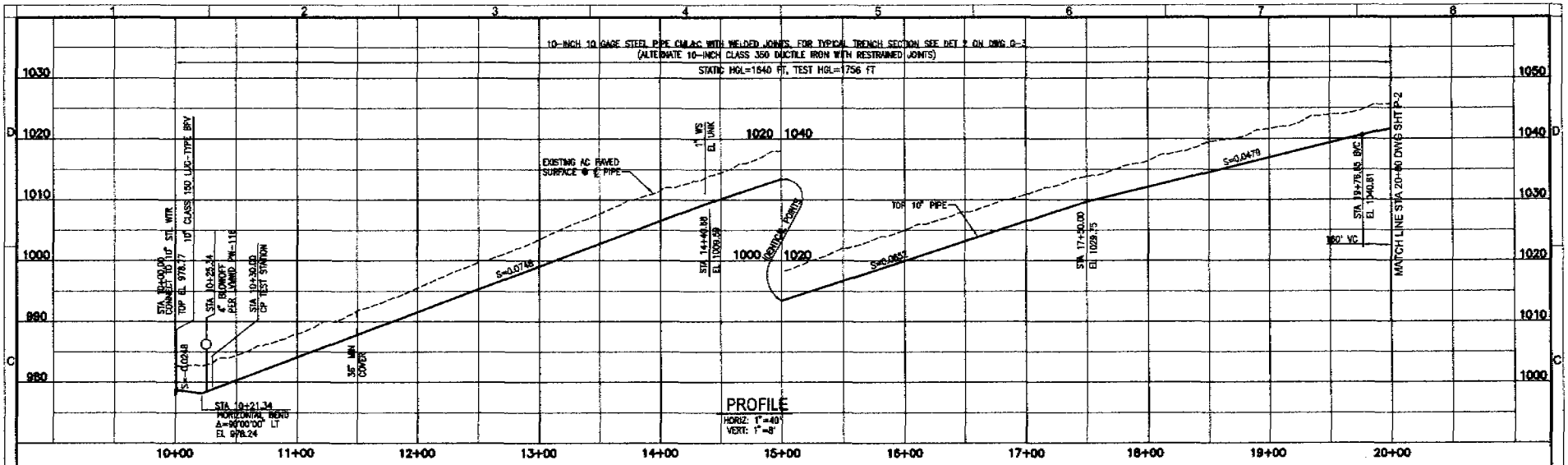
BOYLE ENGINEERING CORPORATION
5851 Thille Street, Suite 201 Ventura, California 93003 805-644-9704
WWW.BOYLEENGINEERING.COM

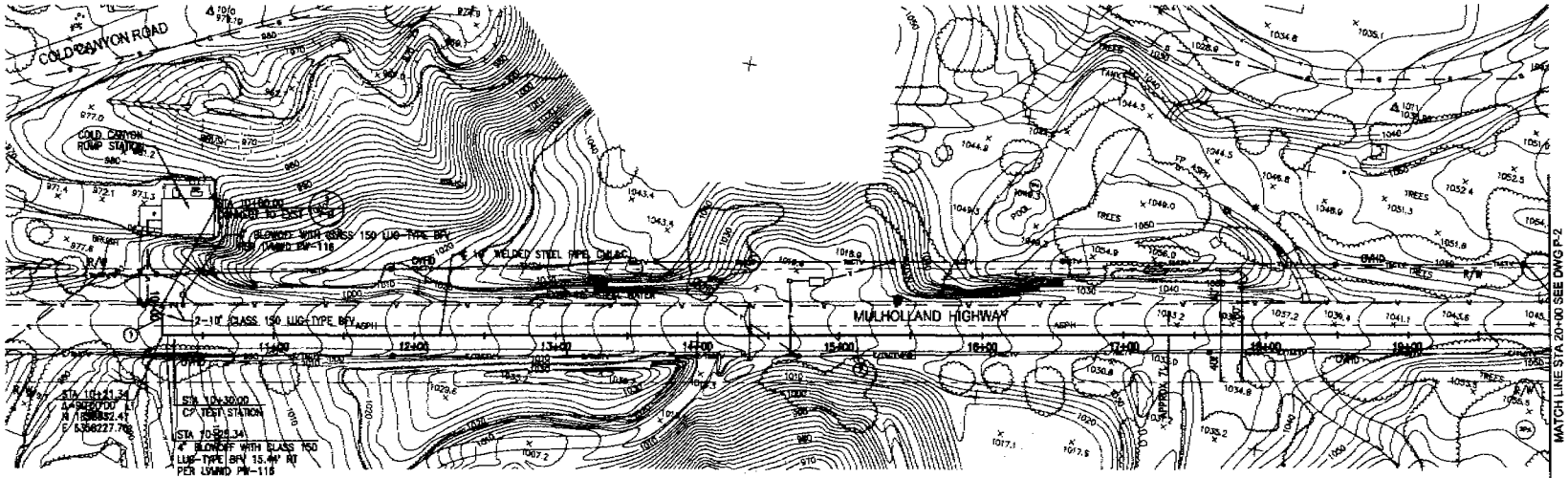
LAS VIRGENES MUNICIPAL WATER DISTRICT

LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

GENERAL NOTES

DRAWING G-3 | SHEET 3 OF 22 SHEETS





PLAN
1"=40'

REV	DATE	DESCRIPTION	APPR.
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES
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DRAWN BY JBC
CHECKED BY RDE
DATE 4/21/06

PROJECT ENGINEER ROBERT D. ELLISON
REG. NUMBER 38094 EXP. DATE 03/31/07
PROJECT MANAGER 18257.01
CHIEF SURVEYOR BOYLE

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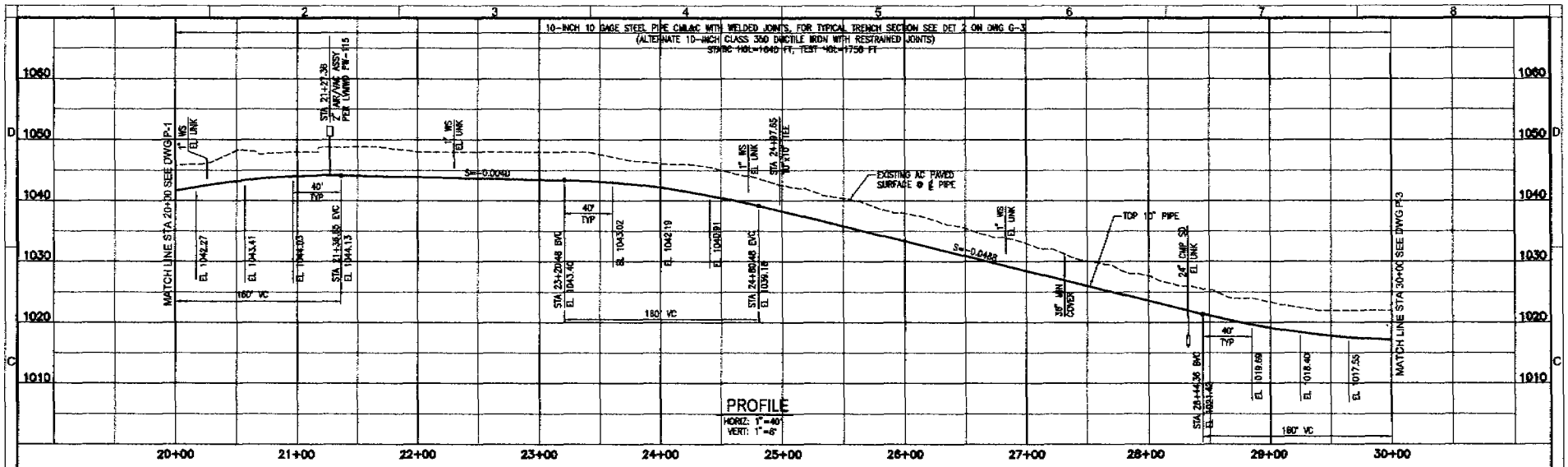
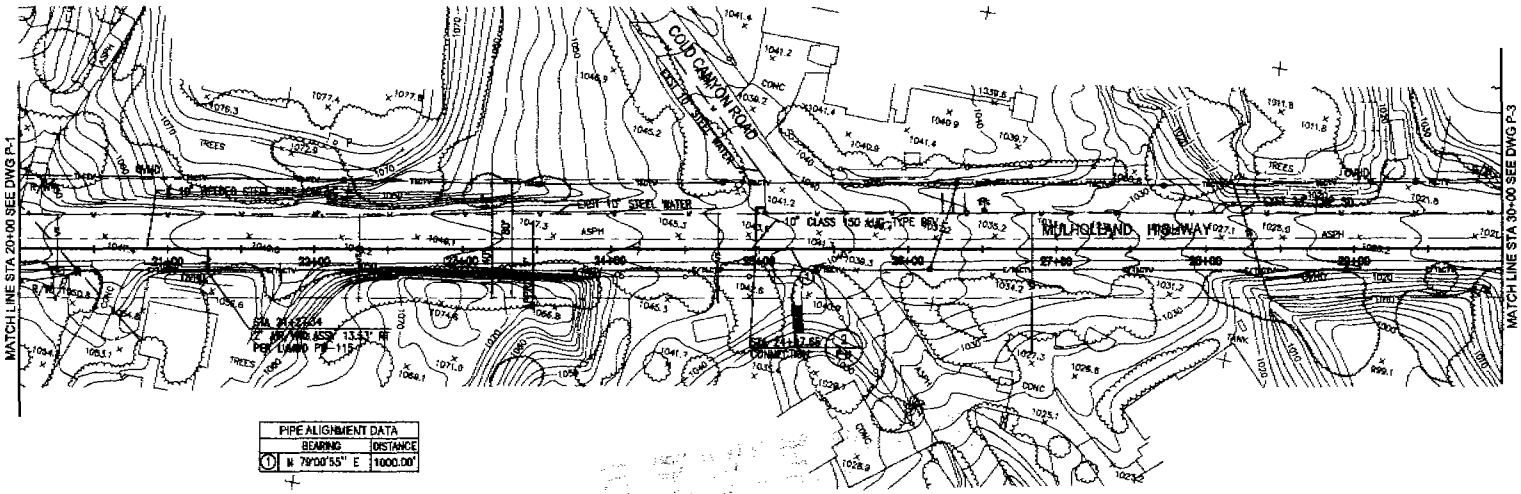
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 10+00 TO STA 20+00
CONTRACT 1B

DRAWING P-1
SHEET 4
OF 22 SHEETS





PIPE ALIGNMENT DATA		
	BEARING	DISTANCE
①	N 79°00'55" E	1000.00'

PLAN
1"=40'

SCALE IN FEET

REV	DATE	DESCRIPTION	APP
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG NUMBER: 38084
EXP DATE: 03/31/07
PROJECT NUMBER: 16257.01
CADD STANDARDS: BOYLE

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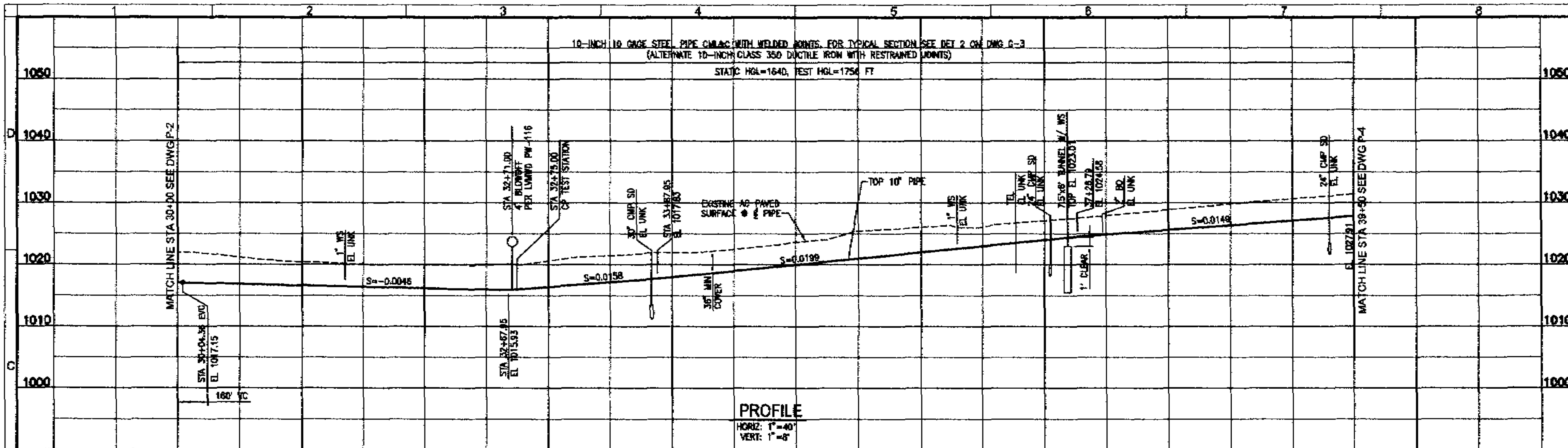
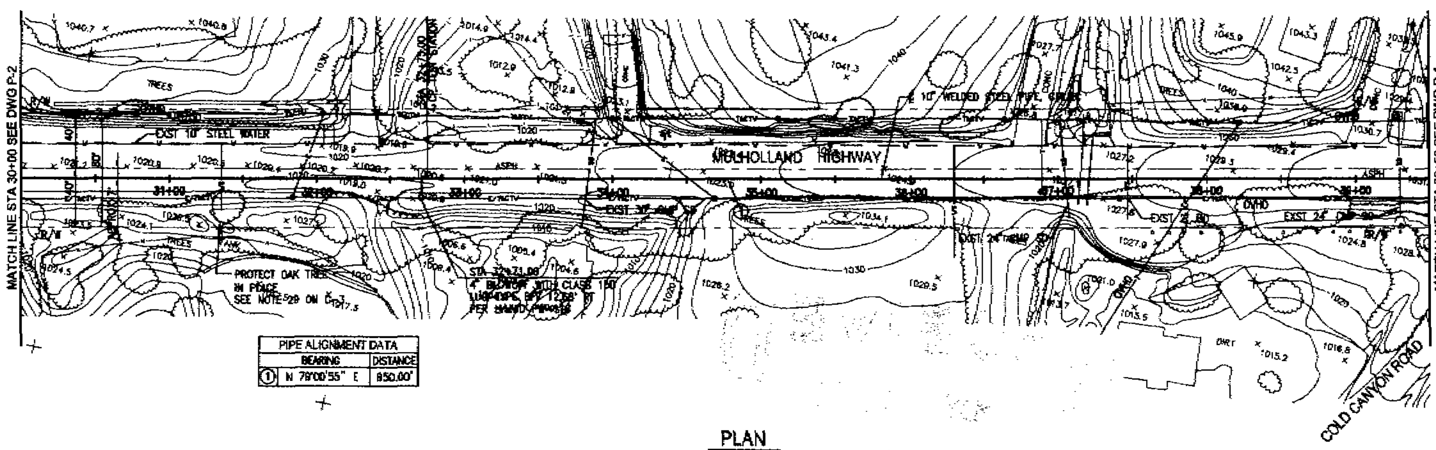
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 20+00 TO STA 30+00
CONTRACT 18

DRAWING: P-2
SHEET: 5
OF 22 SHEETS


10-INCH 10 GAGE STEEL PIPE CML&C WITH WELDED JOINTS. FOR TYPICAL SECTION SEE DET 2 ON DWG G-3
(ALTERNATE 10-INCH CLASS 350 DUCTILE IRON WITH RESTRAINED JOINTS)
STATIC HGL=1640, TEST HGL=1756 FT
MATCH LINE STA 30+00 SEE DWG P-2
MATCH LINE STA 39+50 SEE DWG P-4
STA 30+04.36 EVC
EL 1017.15
160' VC
S=-0.0046
S=0.0158
S=0.0199
S=0.0149
STA 32+71.00
4" BLOWOFF
PER LVMWD PW-116
STA 32+75.00
CP TEST STATION
STA 32+67.95
EL 1015.93
30" CMP SD
EL UNK
STA 33+87.95
EL 1017.83
36" MIN
COVER
EXISTING AC PAVED
SURFACE @ ℄ PIPE
TOP 10" PIPE
1" WS
EL UNK
TEL
24" CMP SD
7.5'x6' TUNNEL W/ WS
TOP EL 1023.01
37+28.79
EL 1024.58
4" BO
1' CLEAR
EL 1027.91
PROFILE
HORIZ: 1"=40'
VERT: 1"=8'
30+00
31+00
32+00
33+00
34+00
35+00
36+00
37+00
38+00
39+00
40+00



PIPE ALIGNMENT DATA		
	BEARING	DISTANCE
1	N 79°00'55" E	850.00'

PLAN
1"=40'

SCALE IN FEET

REV	DATE	DESCRIPTION	APPR
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES

DESIGNED BY ADC
DRAWN BY JDC
CHECKED BY RDE
DATE 4/21/06

PROJECT ENGINEER ROBERT D. ELLISON
RCE NUMBER 38094 EXP DATE 03/31/07
PROJECT NUMBER 16257.01
CADD STANDARDS BOYLE

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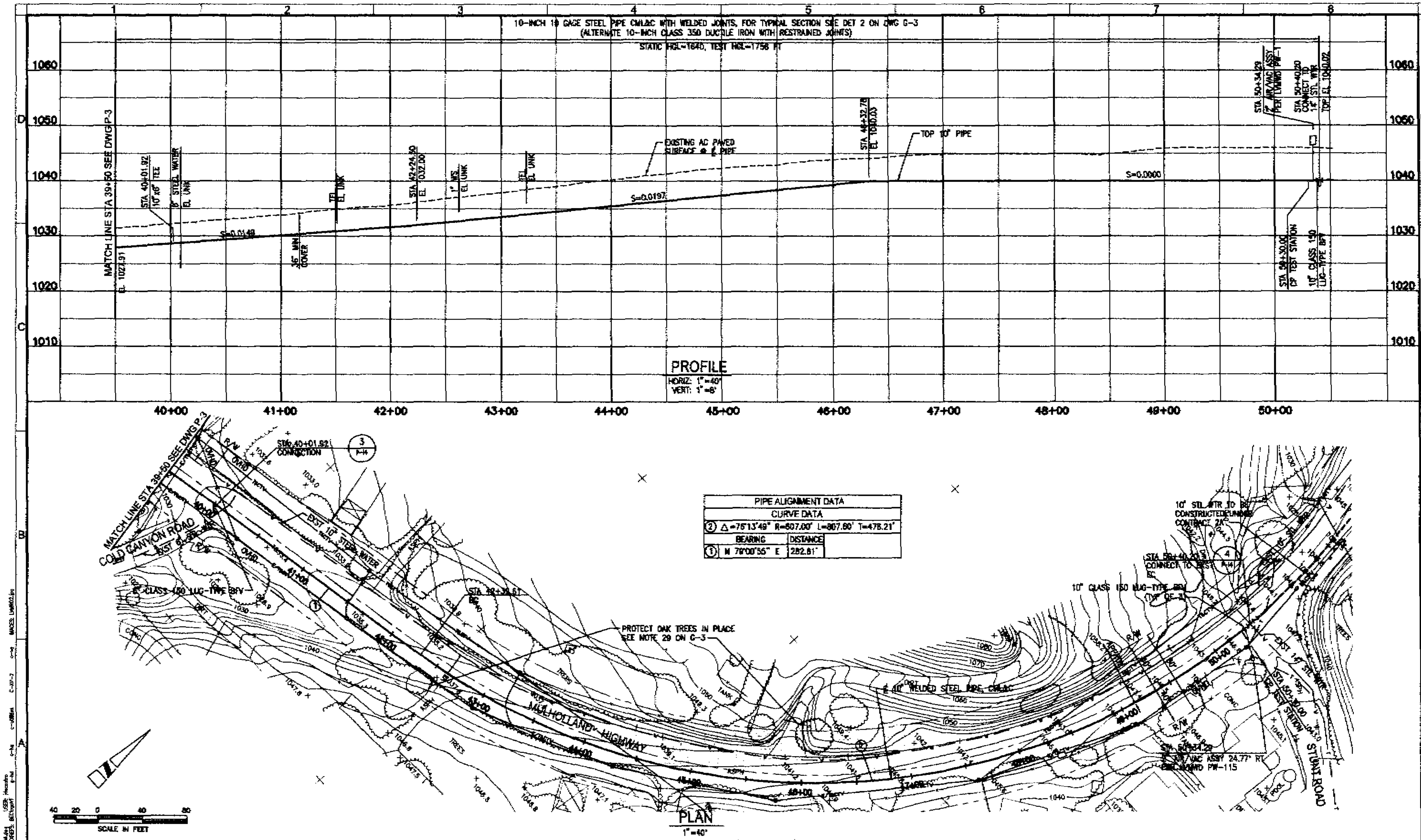
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 30+00 TO STA 39+50
CONTRACT 1B

DRAWING P-3
SHEET 6 OF 22 SHEETS


10-INCH 10 GAGE STEEL PIPE CML&C WITH WELDED JOINTS, FOR TYPICAL SECTION SEE DET 2 ON DWG G-3
(ALTERNATE 10-INCH CLASS 350 DUCTILE IRON WITH RESTRAINED JOINTS)
STATIC HGL=1640, TEST HGL=1756 FT
MATCH LINE STA 39+50 SEE DWG P-3
EL 1027.91
STA 40+01.92
10"x8" TEE
8" STEEL WATER
EL UNK
S=0.0148
36" MIN COVER
TEL
EL UNK
STA 42+24.50
EL 1032.00
1" WS
EL UNK
EXISTING AC PAVED SURFACE @ ℄ PIPE
S=0.0197
STA 46+32.78
EL 1040.03
TOP 10" PIPE
S=0.0000
STA 50+34.29
2" AIR/VAC ASSY PER LVMWD PW-1
STA 50+40.20
CONNECT TO 14" STL WTR
TOP EL 1040.02
STA 50+30.00
CP TEST STATION
10" CLASS 150 LUG-TYPE BFV
PROFILE
HORIZ: 1"=40'
VERT: 1"=8'
40+00
41+00
42+00
43+00
44+00
45+00
46+00
47+00
48+00
49+00
50+00
MATCH LINE STA 39+50 SEE DWG P-3
COLD CANYON ROAD
STA 40+01.92 CONNECTION
EXST 10" STEEL WATER
PIPE ALIGNMENT DATA
CURVE DATA
2 Δ=75°13'49" R=607.00' L=807.60' T=476.21'
BEARING | DISTANCE
1 N 79°00'55" E 282.81'
PROTECT OAK TREES IN PLACE SEE NOTE 29 ON G-3
MULHOLLAND HIGHWAY
10" WELDED STEEL PIPE, CML&C
10" STL WTR TO BE CONSTRUCTED UNDER CONTRACT 2A
STA 50+40.20
CONNECT TO EXIST
10" CLASS 150 LUG-TYPE BFV
STA 50+34.29
2" AIR/VAC ASSY 24.77' RT
PER LVMWD PW-115
STUNT ROAD
PLAN
1"=40'
SCALE IN FEET

REV	DATE	DESCRIPTION	APPR
1	4/21/06	100 PERCENT SUBMITTAL	RDE

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DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38094 EXP. DATE: 03/31/07
PROJECT NUMBER: 16257.01
CAD SUBMITTED: BOYLE

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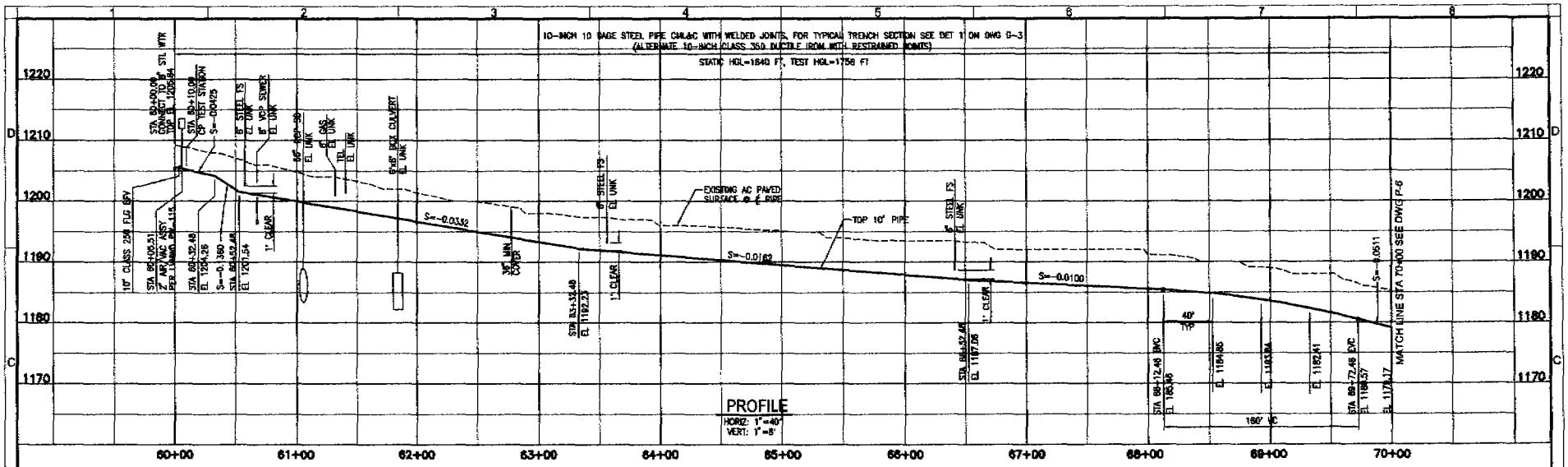
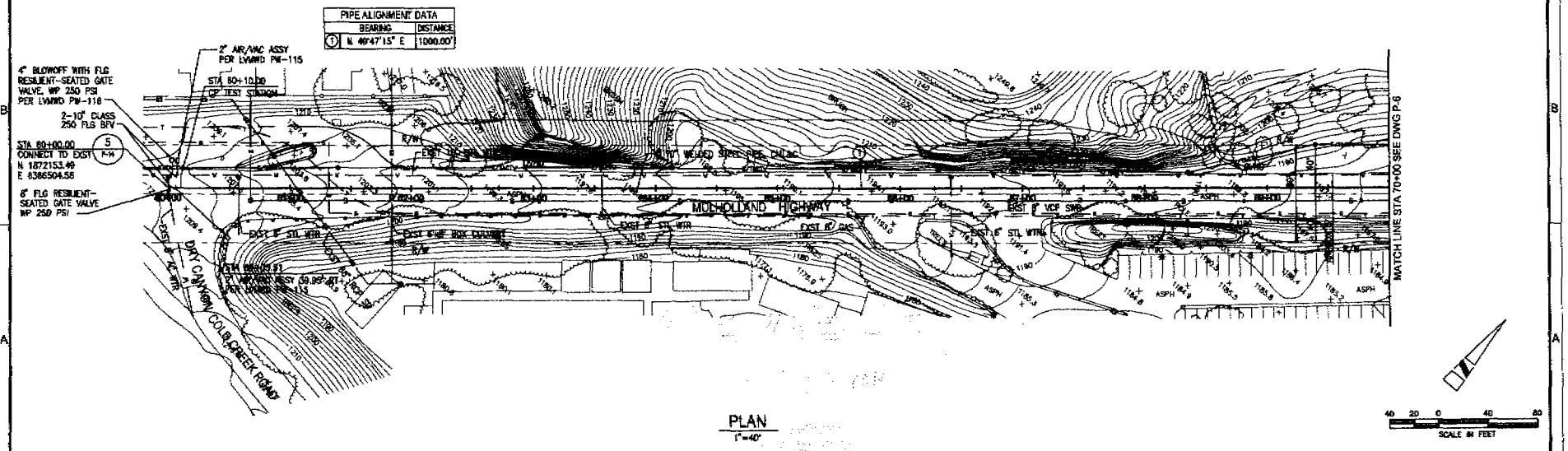
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 39+50 TO STA 50+40.20
CONTRACT 1B

DRAWING: P-4
SHEET: 7 OF 22 SHEETS





REV	DATE	DESCRIPTION	APP
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES
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DESIGNED BY ADC
DRAWN BY JDC
CHECKED BY RDE
DATE 4/21/06

PROJECT ENGINEER ROBERT D. ELLISON
RCE NUMBER 38094 EXP DATE 03/31/07
PROJECT NUMBER 16257.01
CAD/D FILE NO. BOYLE

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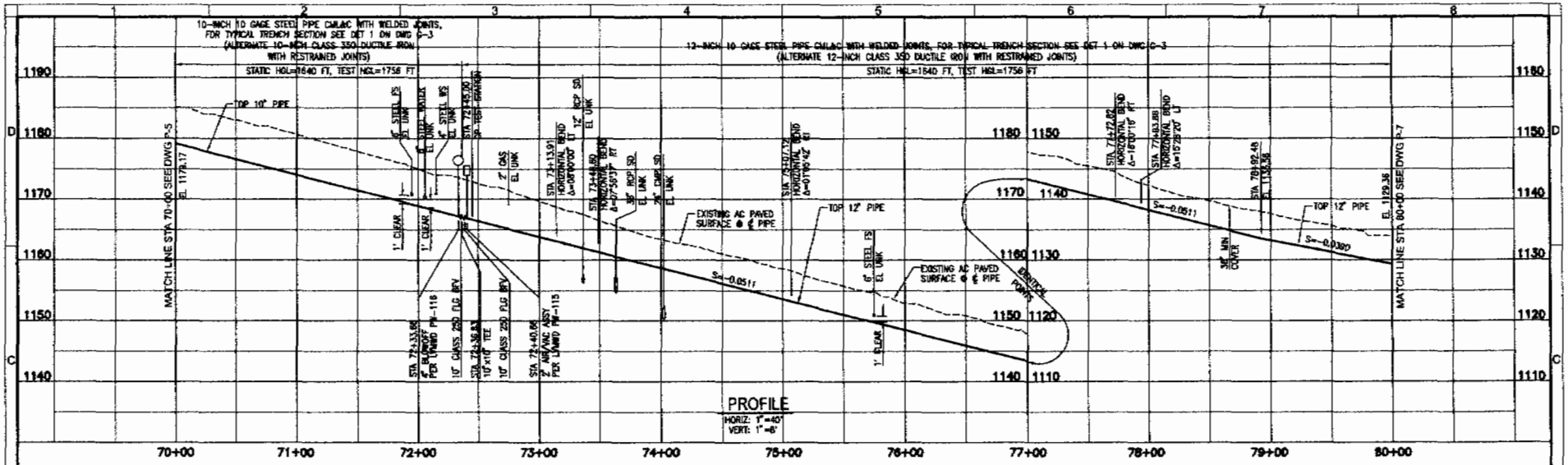
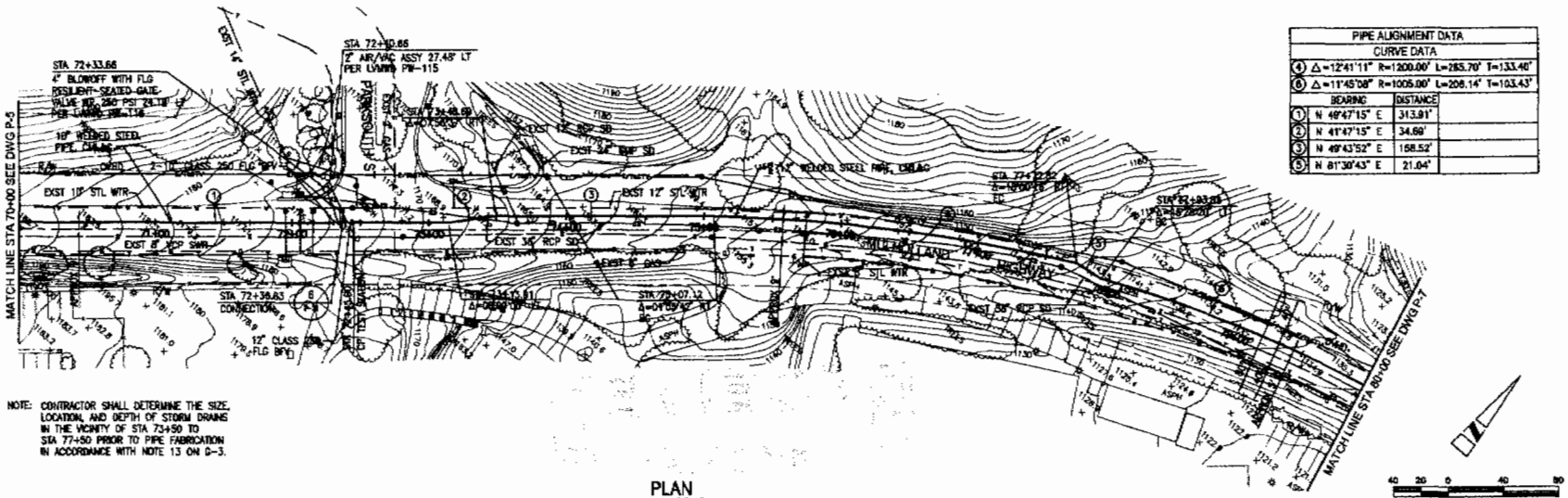
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 60+00 TO STA 70+00
CONTRACT 1A

DRAWING P-5
SHEET 8 OF 22 SHEETS





NOTE: CONTRACTOR SHALL DETERMINE THE SIZE, LOCATION, AND DEPTH OF STORM DRAINS IN THE VICINITY OF STA 72+50 TO STA 77+50 PRIOR TO PIPE FABRICATION IN ACCORDANCE WITH NOTE 13 ON D-3.

PLAN
1"=40'

REV	DATE	DESCRIPTION	
1	4/21/06	100 PERCENT SUBMITTAL	RBE

VERIFY SCALES
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DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG NUMBER: 38094
EXP DATE: 03/31/07
PROJECT NUMBER: 16257.01
CAD STANDARDS: BOYLE

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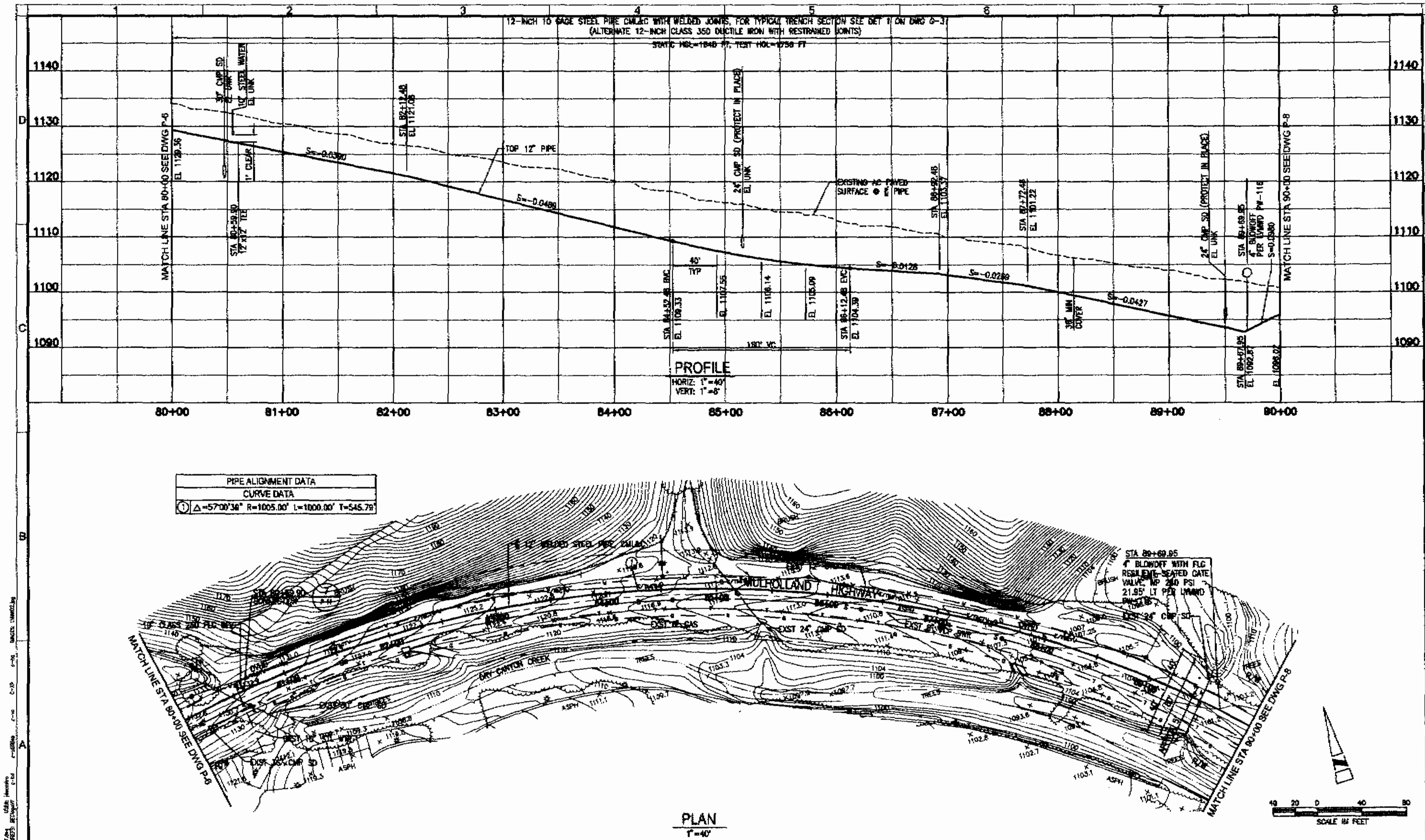
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 70+00 TO STA 80+00
CONTRACT 1A

DRAWING P-6
SHEET 9 OF 22 SHEETS


12-INCH 10 GAGE STEEL PIPE CML&C WITH WELDED JOINTS, FOR TYPICAL TRENCH SECTION SEE DET 1 ON DWG G-3
(ALTERNATE 12-INCH CLASS 350 DUCTILE IRON WITH RESTRAINED JOINTS)
STATIC HGL=1840 FT, TEST HGL=1758 FT
MATCH LINE STA 80+00 SEE DWG P-6
EL 1129.36
STA 80+39.90
12"X12" TEE
1' CLEAR
30" CMP SD
EL UNK
10" STEEL WATER
EL UNK
STA 82+12.48
EL 1121.08
TOP 12" PIPE
S=-0.0390
S=-0.0486
STA 84+52.48 BVC
EL 1108.33
40' TYP
EL 1107.55
EL 1106.14
EL 1105.09
180' VC
STA 86+12.48 EVC
EL 1104.39
24" CMP SD (PROTECT IN PLACE)
EL UNK
EXISTING AC PAVED SURFACE @ ℄ PIPE
S=-0.0128
STA 86+92.48
EL 1103.37
STA 87+72.48
EL 1101.22
S=-0.0289
36" MIN COVER
S=-0.0427
24" CMP SD (PROTECT IN PLACE)
EL UNK
STA 89+69.95
4" BLOWOFF
PER LVMWD PW-118
S=0.0980
STA 89+67.95
EL 1092.87
EL 1096.02
MATCH LINE STA 90+00 SEE DWG P-8
PROFILE
HORIZ: 1"=40'
VERT: 1"=8'
80+00
81+00
82+00
83+00
84+00
85+00
86+00
87+00
88+00
89+00
90+00
PIPE ALIGNMENT DATA
CURVE DATA
1 Δ=57°00'38" R=1005.00' L=1000.00' T=545.79'
12" WELDED STEEL PIPE CML&C
MULHOLLAND HIGHWAY
DRY CANYON CREEK
EXST 24" CMP SD
STA 89+69.95
4" BLOWOFF WITH FLG RESILIENT-SEATED GATE VALVE, MP 250 PSI 21.95' LT PER LVMWD PW-118
MATCH LINE STA 80+00 SEE DWG P-6
MATCH LINE STA 90+00 SEE DWG P-8
SCALE IN FEET
PLAN
1"=40'

4/21/06	100 PERCENT SUBMITTAL	RDE	
DATE	DESCRIPTION	APPR	

VERIFY SCALES

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DRAWN BY JDC
CHECKED BY RDE
DATE 4/21/06

PROJECT ENGINEER ROBERT D. ELLISON
RCE NUMBER 38094 EXP DATE 03/31/07
PROJECT NUMBER 16257.01
CADD STANDARDS BOYLE

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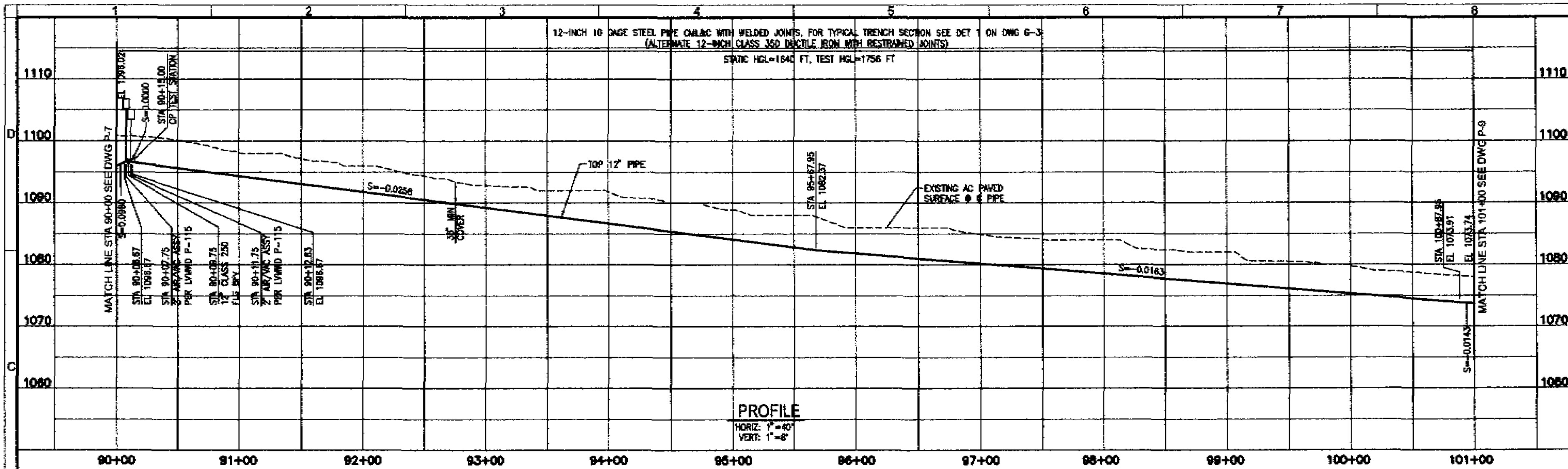
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

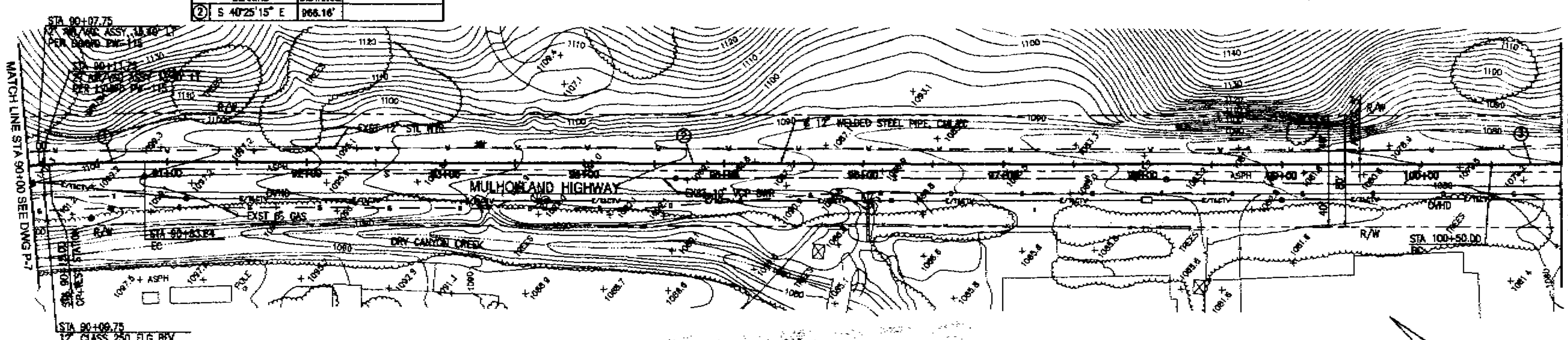
PLAN AND PROFILE
STA 80+00 TO STA 90+00
CONTRACT 1A

DRAWING P-7
SHEET 10 OF 22 SHEETS


12-INCH 10 GAGE STEEL PIPE CML&C WITH WELDED JOINTS, FOR TYPICAL TRENCH SECTION SEE DET 1 ON DWG G-3
(ALTERNATE 12-INCH CLASS 350 DUCTILE IRON WITH RESTRAINED JOINTS)
STATIC HGL=1640 FT, TEST HGL=1756 FT
MATCH LINE STA 90+00 SEE DWG P-7
MATCH LINE STA 101+00 SEE DWG P-9
TOP 12" PIPE
S=-0.0256
S=-0.0163
EXISTING AC PAVED SURFACE @ ℄ PIPE
STA 95+67.95
EL 1082.37
STA 100+87.95
EL 1073.91
EL 1073.74
S=-0.0143
STA 90+15.00
CP TEST STATION
S=0.0000
EL 1098.02
S=0.0980
STA 90+08.67
EL 1098.67
STA 90+07.75
2" AIR/VAC ASSY
PER LVMWD P-115
STA 90+09.75
12" CLASS 250
FLG BFV
STA 90+11.75
2" AIR/VAC ASSY
PER LVMWD P-115
STA 90+12.83
EL 1098.67
3.5' MIN COVER
1110
1100
1090
1080
1070
1060
90+00
91+00
92+00
93+00
94+00
95+00
96+00
97+00
98+00
99+00
100+00
101+00

PROFILE
HORIZ: 1"=40'
VERT: 1"=8'

PIPE ALIGNMENT DATA	
CURVE DATA	
① Δ=04°46'48" R=1005.00' L=83.84' T=41.95'	
③ Δ=01°25'57" R=2000.00' L=50.00' T=25.00'	
BEARING	DISTANCE
② S 40°25'15" E	966.16'


MULHOLLAND HIGHWAY
12" WELDED STEEL PIPE CML&C
EXIST 12" STL WTR
EXIST 10" VCP SWR
EXST 6" GAS
DRY CANYON CREEK
STA 90+83.84
STA 100+50.00
STA 90+07.75
STA 90+09.75
12" CLASS 250 FLG BFV
MATCH LINE STA 90+00 SEE DWG P-7
MATCH LINE STA 101+00 SEE DWG P-9
R/W
ASPH
SCALE IN FEET

PLAN
1"=40'

REV	DATE	DESCRIPTION	APPR
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES — BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT O. ELLISON
REG NUMBER: 38094 EXP DATE: 03/31/07
PROJECT NUMBER: 16257.01
CADD STANDARDS: BOYLE

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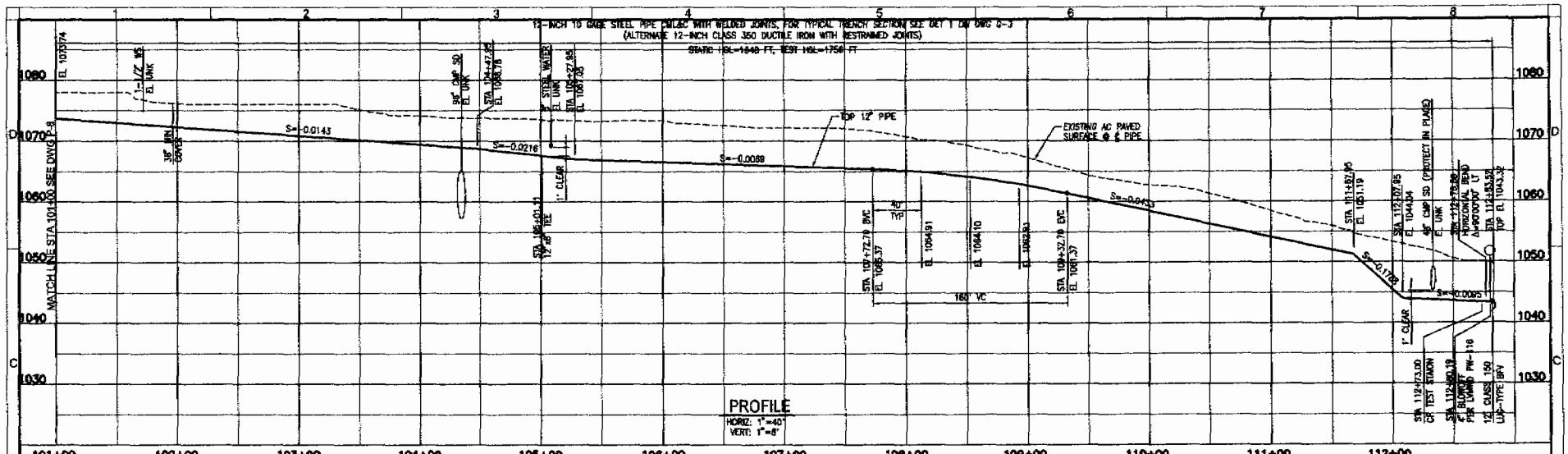
LAS VIRGENES MUNICIPAL WATER DISTRICT

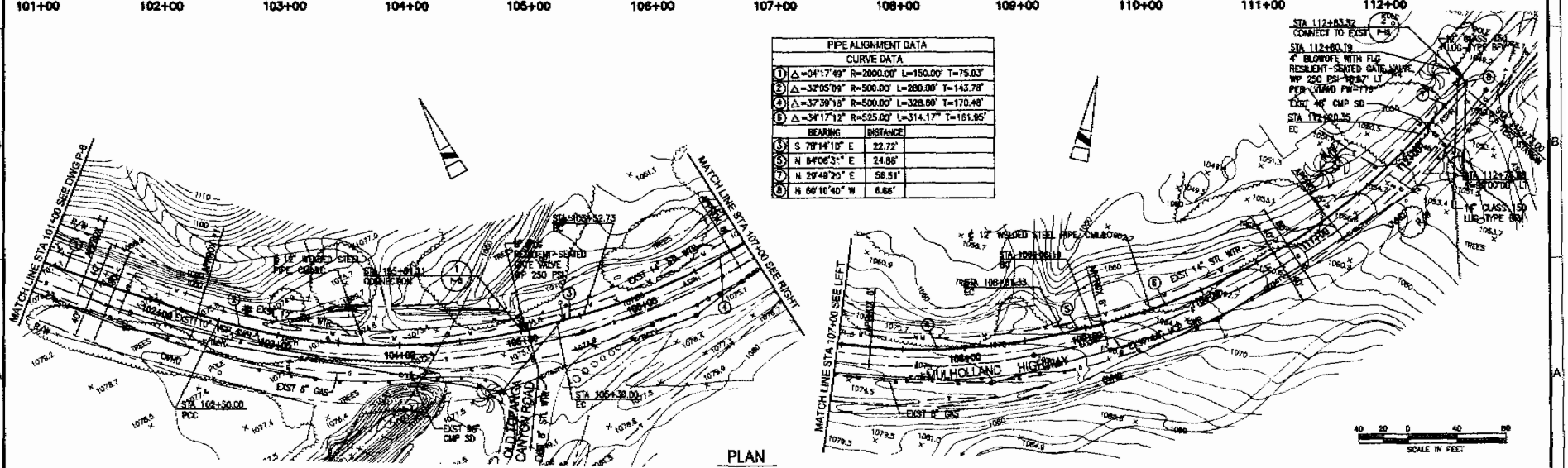
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 90+00TO STA 101+00
CONTRACT 1A

DRAWING P-8
SHEET 11 OF 22 SHEETS



PIPE ALIGNMENT DATA		
CURVE DATA		
①	Δ=04°17'49" R=2000.00' L=150.00' T=75.03'	
②	Δ=32°05'09" R=500.00' L=280.00' T=143.78'	
④	Δ=37°39'18" R=500.00' L=328.80' T=170.48'	
⑥	Δ=34°17'12" R=525.00' L=314.17'' T=161.95'	
	BEARING	DISTANCE
③	S 78°14'10" E	22.72'
⑤	N 84°06'31" E	24.86'
⑦	N 29°49'20" E	58.51'
⑧	N 60°10'40" W	6.68'



PLAN
1"=40'

REV	DATE	DESCRIPTION	BY
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38094
EXP. DATE: 03/31/07
PROJECT NUMBER: 18257.01
CAD STANDARD: BOYLE

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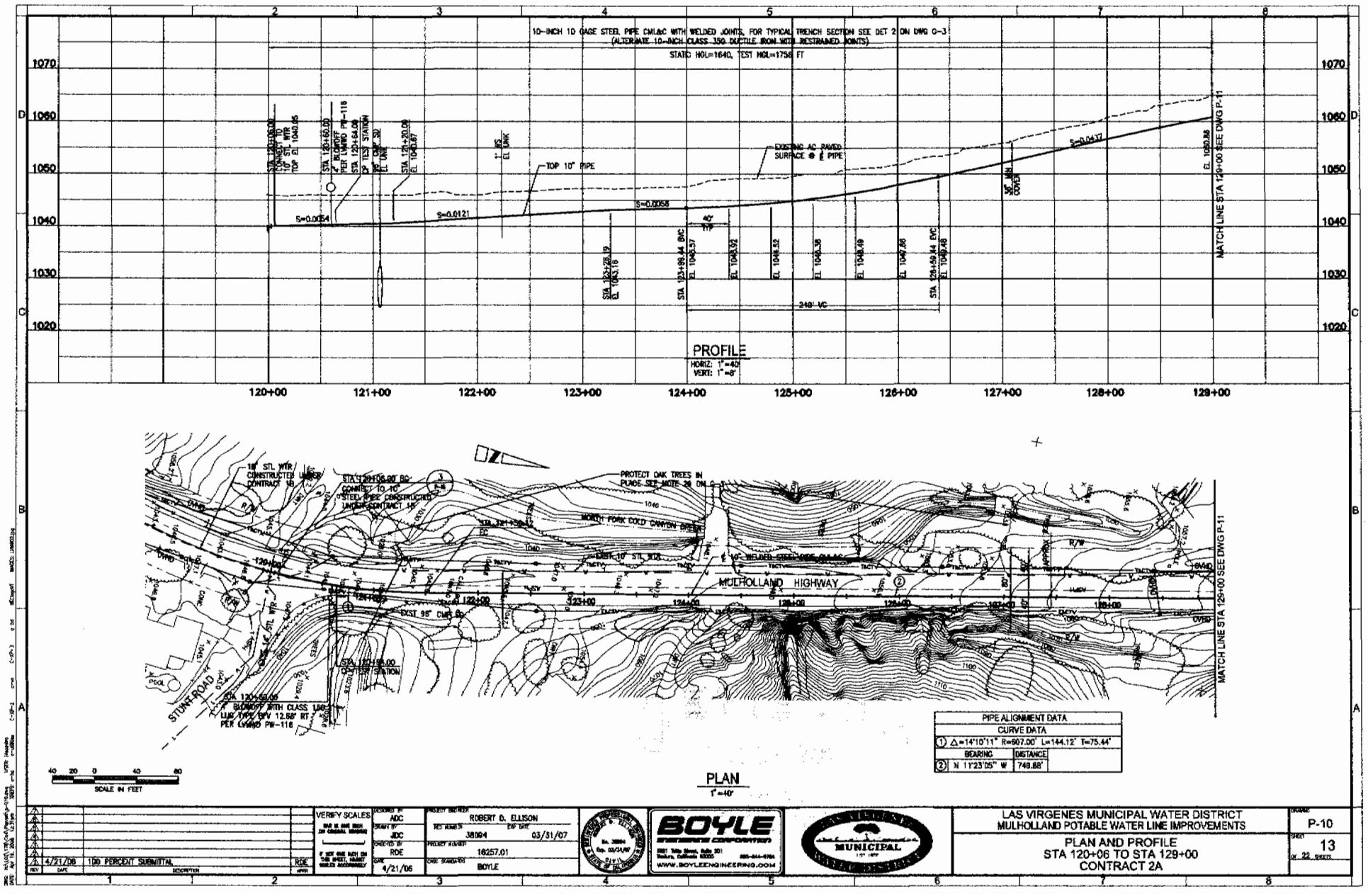
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 101+00 TO STA 112+83.52
CONTRACT 1A

DRAWING: P-9
SHEET: 12 OF 22 SHEETS



REV	DATE	DESCRIPTION	BY
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF BAR IS NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38064
EXP. DATE: 03/31/07
PROJECT NUMBER: 16257.01
CASE SCANNING: BOYLE

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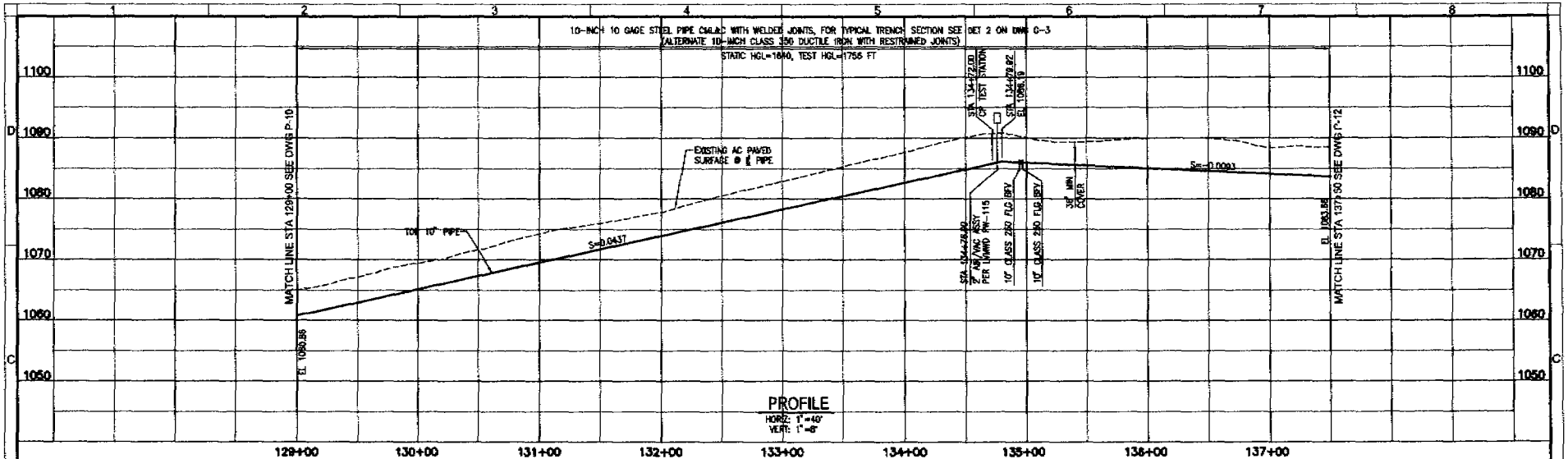
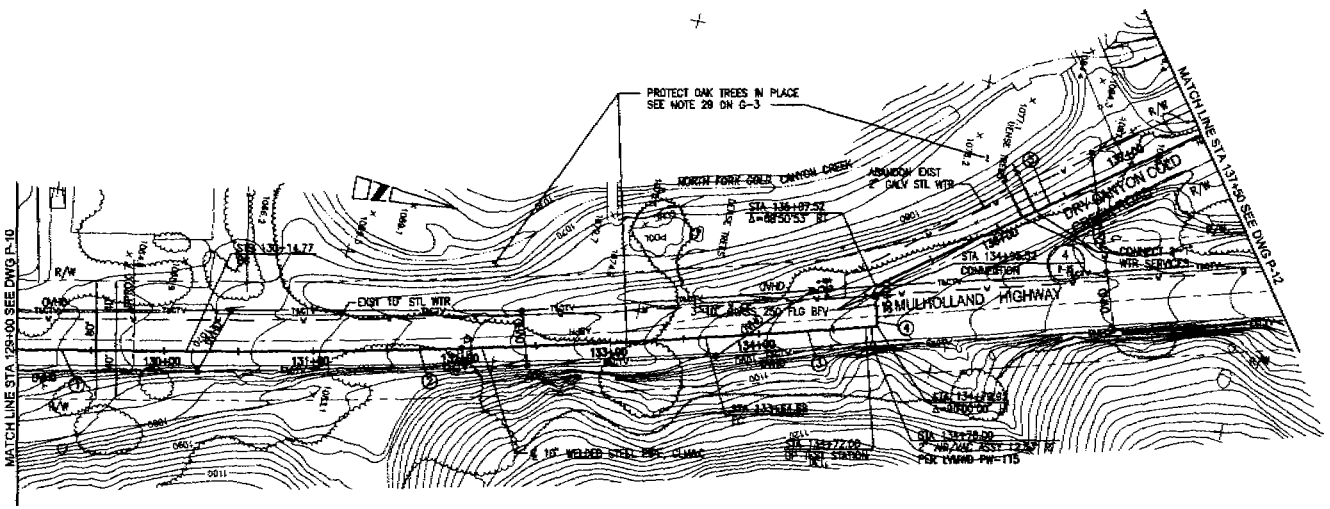
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 120+06 TO STA 129+00
CONTRACT 2A

DRAWING: P-10
SHEET: 13 OF 22 SHEETS





PLAN
1"=40'

PIPE ALIGNMENT DATA		
CURVE DATA		
② Δ=04°00'15" R=5007.00' L=349.92' T=175.03'		
	BEARING	DISTANCE
①	N 11°23'05" W	114.77'
③	N 15°23'20" W	115.24'
④	S 74°37'21" W	27.80'
⑤	N 36°31'47" W	242.46'

40 20 0 40 80
SCALE IN FEET

REV	DATE	DESCRIPTION
1	4/21/06	100 PERCENT SUBMITTAL

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
RCE NUMBER: 38094
EXP DATE: 03/31/07
PROJECT NUMBER: 16257.01
CAD STANDARDS: BOYLE

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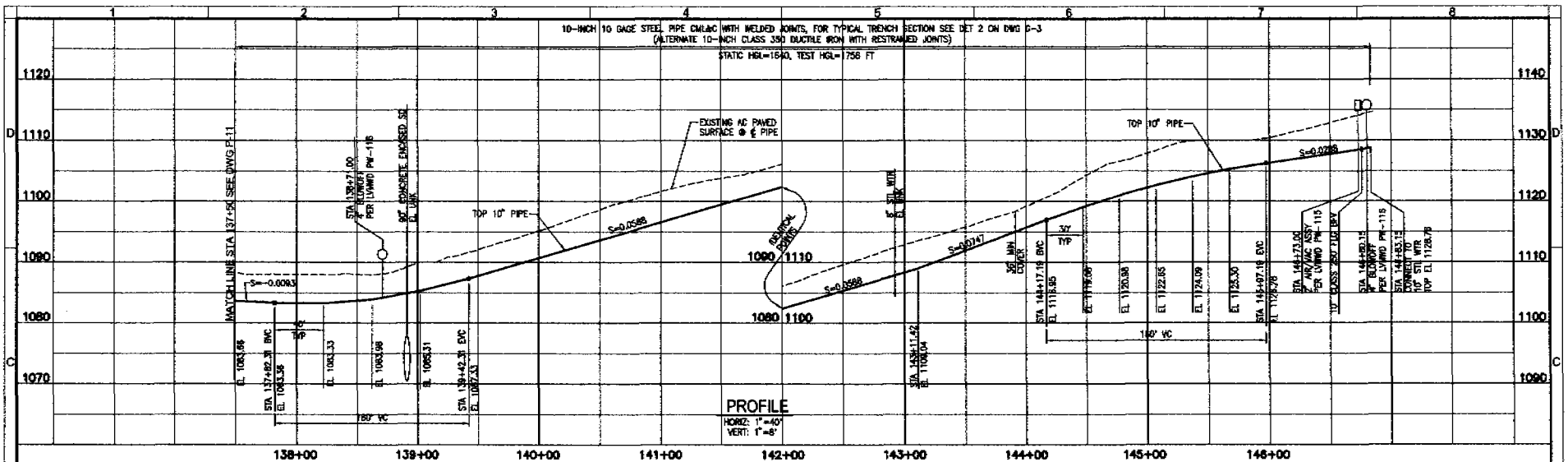
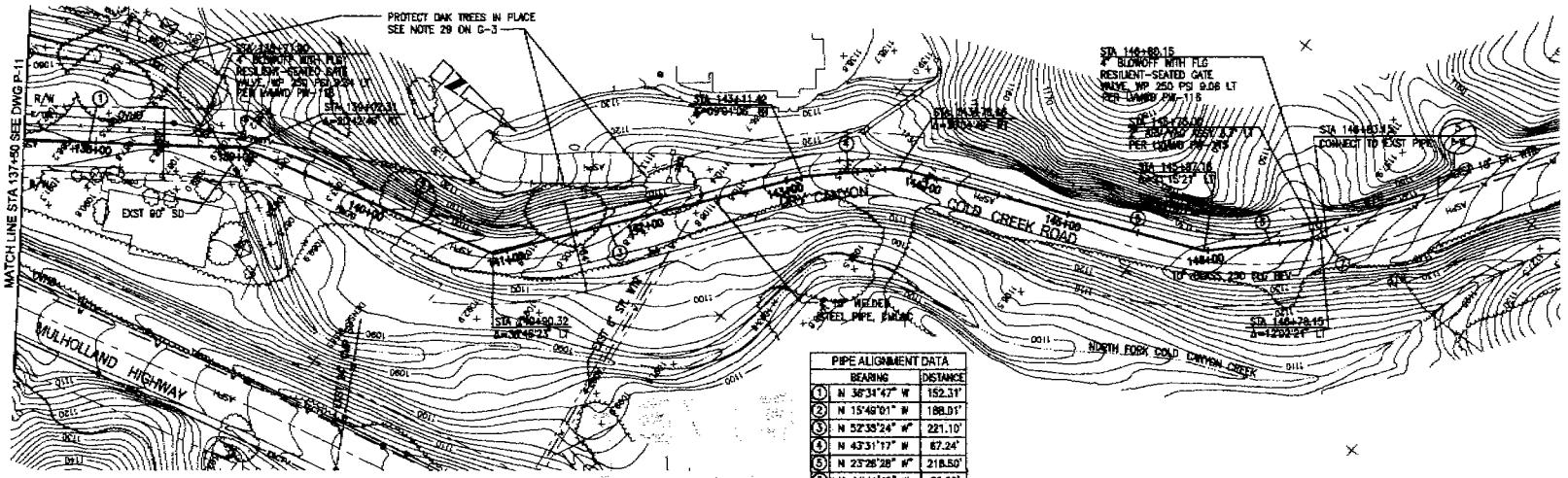
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 129+00 TO STA 137+50
CONTRACT 2A

DRAWING: P-11
SHEET: 14 OF 22 SHEETS





PLAN
1"=40'

SCALE IN FEET

REV	DATE	DESCRIPTION
1	4/21/06	100 PERCENT SUBMITTAL

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38094
EXP. DATE: 03/31/07
PROJECT NUMBER: 16257.01
CAD STANDARDS: BOYLE

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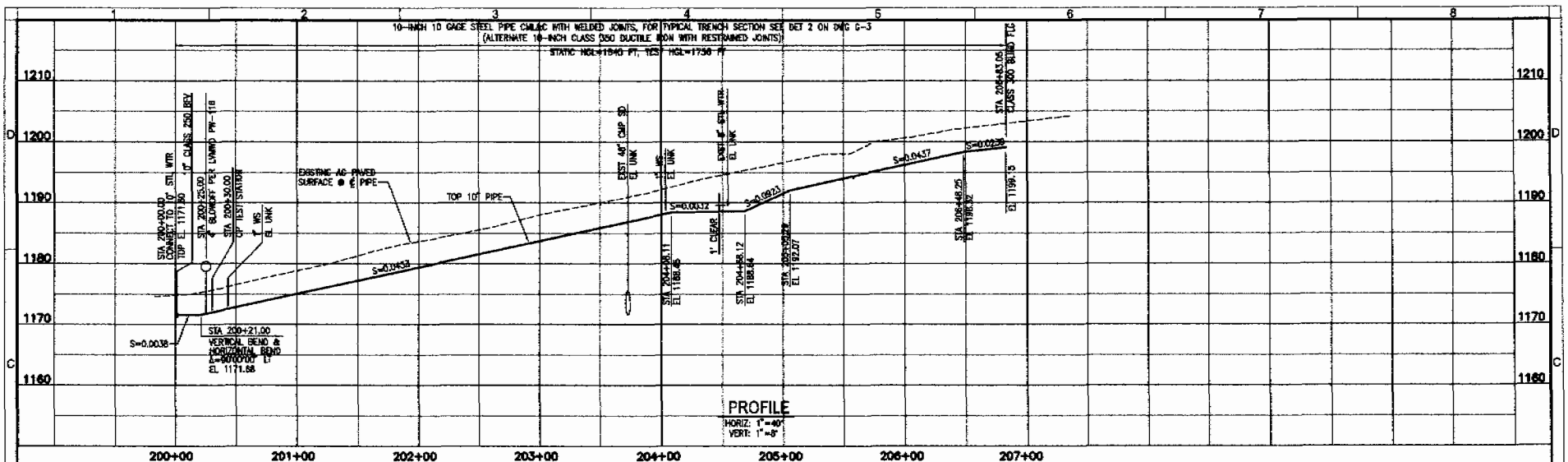
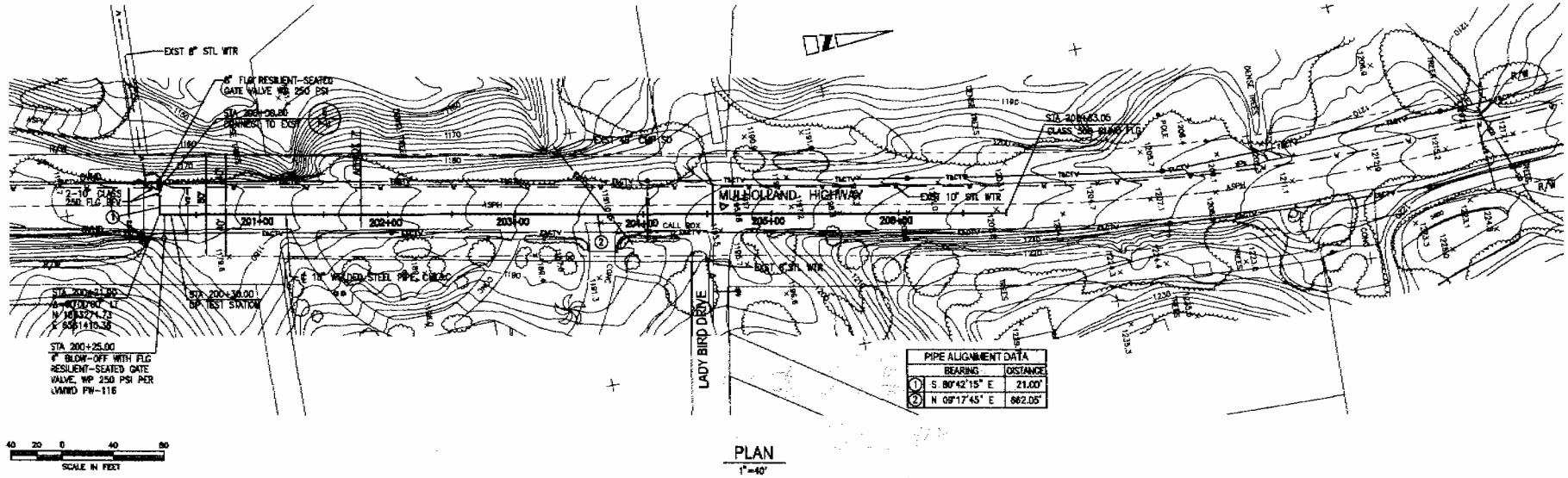
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 137+50 TO STA 146+83.15
CONTRACT 2A

DRAWING P-12
SHEET 15 OF 22 SHEETS





PLAN
1"=40'

REV	DATE	DESCRIPTION	APPR
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

DESIGNED BY: ADC
DRAWN BY: JBC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
RCE NUMBER: 38094
EXP DATE: 03/31/07
PROJECT NUMBER: 16257.01
CADD STANDARDS: BOYLE

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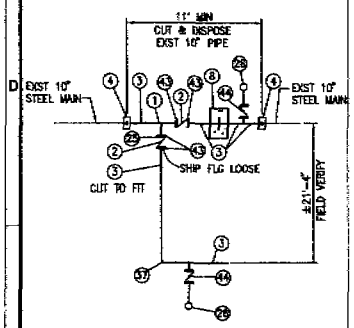
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

PLAN AND PROFILE
STA 200+00 TO STA 207+35.24
CONTRACT 2A

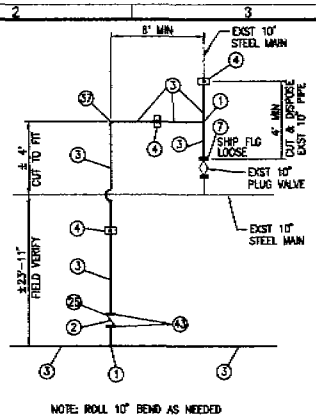
DRAWING: P-13
SHEET: 16
OF 22 SHEETS



CONNECTION AT STA 10+00.00 (CONTRACT 1B)

NO SCALE

1

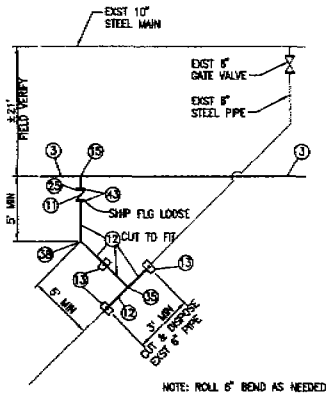


NOTE: ROLL 10" BEND AS NEEDED

CONNECTION AT STA 24+97.65 (CONTRACT 1B)

NO SCALE

2



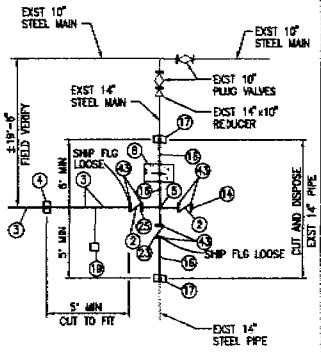
NOTE: ROLL 6" BEND AS NEEDED

CONNECTION AT STA 40+01.92 (CONTRACT 1B)

NO SCALE

3

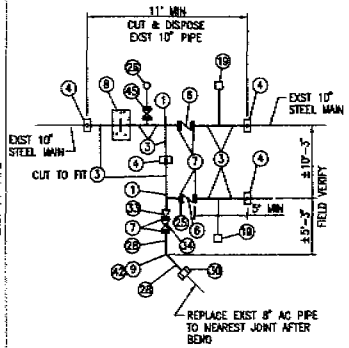
NOTE:
BID ITEMS FOR CONNECTIONS DO NOT INCLUDE COST OF VALVES. VALVES ARE PAID BY BID ITEMS FOR VALVES.



CONNECTION AT STA 50+40.20 (CONTRACT 1B)

NO SCALE

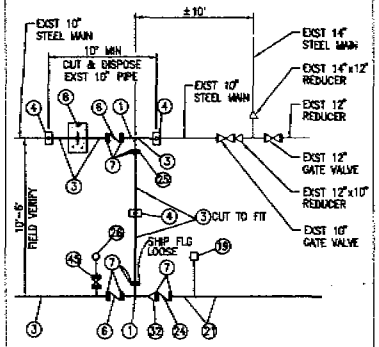
4



CONNECTION AT STA 60+00.00 (CONTRACT 1A)

NO SCALE

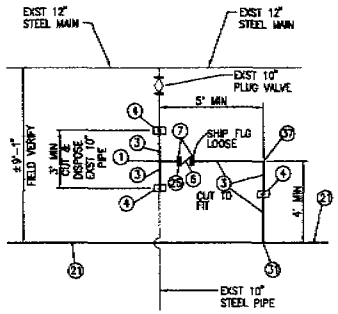
5



CONNECTION AT STA 72+36.83 (CONTRACT 1A)

NO SCALE

6



CONNECTION AT STA 80+59.90 (CONTRACT 1A)

NO SCALE

7

MATERIAL SCHEDULE:

1. 10" 10 GAGE STL TEE CML&C
2. 10" LUG-TYPE RUBBER-SEATED BUTTERFLY VALVE CLASS 150 WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX WITH COVER PER LVMWD STD DWG NO. PW-118
3. 10" 10 GAGE STL PIPE CML&C
4. 10" BUTT STRAP, FIELD WELD PER LVMWD STD DWG PW-132
5. 14"x14"x10"x10" 10 GAGE STL CROSS CML&C
6. 10" RUBBER-SEATED BUTTERFLY VALVE CLASS 250 FLANGED WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX WITH COVER PER LVMWD STD DWG NO. PW-118
7. ANSI 816.5 CLASS 300 FLANGE
8. ANCHOR BLOCK PER DET 1 ON DWG P-15
9. 8" 10 GAGE STL BEND CML&C (FIELD VERIFY ANGLE PRIOR TO FABRICATION)
10. 10"x6" 10 GAGE STL REDUCER CLM&C
11. 6" LUG-TYPE RUBBER-SEATED BUTTERFLY VALVE CLASS 150 WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX WITH COVER PER LVMWD STD DWG NO. PW-118
12. 6" 10 GAGE STL PIPE CML&C
13. 6" BUTT STRAP, FIELD WELD PER LVMWD STD DWG PW-132
14. CLASS 300 BLIND FLANGE CLM&C
15. 10" 10 GAGE STL TEE WITH 6" 10 GAGE OUTLET CML&C
16. 14" 10 GAGE STL PIPE CML&C
17. 14" BUTT STRAP, FIELD WELD PER LVMWD STD DWG PW-132
18. 14" 10 GAGE STL TEE WITH 12" 10 GAGE OUTLET CML&C
19. 2" AIR/VAC ASSEMBLY PER PLAN AND LVMWD PW-115
20. 12" LUG-TYPE RUBBER-SEATED BUTTERFLY VALVE CLASS 150 WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX WITH COVER PER LVMWD STD DWG NO. PW-118
21. 12" 10 GAGE STL PIPE CML&C
22. 12" 10 GAGE STL TEE WITH 8" 10 GAGE OUTLET CML&C
23. 14" LUG-TYPE RUBBER-SEATED BUTTERFLY VALVE CLASS 150 WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX WITH COVER PER LVMWD STD DWG NO. PW-118
24. 12" RUBBER-SEATED BUTTERFLY VALVE CLASS 250 FLANGED WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX WITH COVER PER LVMWD STD DWG NO. PW-118
25. INSULATING FLANGE KIT
26. 4" BLOW-OFF PER PLAN AND LVMWD PW-116
27. 8" 10 GAGE STL TEE CML&C
28. 8" 10 GAGE STL PIPE CML&C
29. 8" BUTT STRAP, FIELD WELD PER LVMWD STD DWG PW-132
30. 8" STEEL TO AC TRANSITION COUPLING, CHIP AWAY MORTAR AND COAT STL PIPE PER SECTION 09900, SYSTEM NO. 7
31. 12" 10 GAGE TEE WITH 10" 10 GAGE OUTLET CML&C
32. 12"x10" 10 GAGE STL REDUCER CML&C
33. 10"x8" 10 GAGE STL REDUCER CML&C
34. 8" FLG RESILIENT-SEATED GATE VALVE FOR WORKING PRESSURE OF 250 PSI WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX WITH COVER PER LVMWD STD DWG NO. PW-118
35. 6" 10 GAGE STL TEE CML&C
36. 10"x10"x10" 10 GAGE STL CROSS CML&C
37. 10" 10 GAGE STL 90° 5-PIECE BEND CML&C (FIELD VERIFY ANGLE PRIOR TO FABRICATION)
38. 6" 10 GAGE STL BEND CML&C
39. 12" 10 GAGE STL BEND CML&C
40. 12" BUTT STRAP, FIELD WELD PER LVMWD STD DWG P-132
41. 8" 10 GAGE STL 90° 5-PIECE BEND CML&C (FIELD VERIFY ANGLE PRIOR TO FABRICATION)
42. THRUST BLOCK PER LVMWD STD DWG P-133, 9.8 SF MIN BEARING AREA
43. ANSI 816.5 CLASS 150 FLANGE
44. 4" LUG-TYPE RUBBER-SEATED BUTTERFLY VALVE CLASS 150 WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX PER LVMWD STD DWG NO. PW-118.
45. 4" FLG RESILIENT-SEATED GATED VALVE FOR WORKING PRESSURE OF 250 PSI WITH 2" SQUARE NUT ACTUATOR AND VALVE BOX PER LVMWD STD DWG NO. PW-118.
46. 10" 10 GAGE STL BEND CML&C (FIELD VERIFY ANGLE PRIOR TO FABRICATION)
47. 8" 10 GAGE STL 45° 3-PIECE BEND CML&C

MARK	DATE	DESCRIPTION	APPR
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES

DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROFESSIONAL ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38094
EXP. DATE: 03/31/07
PROJECT MANAGER: 18257.01
CADD STANDARD: BOYLE

BOYLE ENGINEERING CORPORATION
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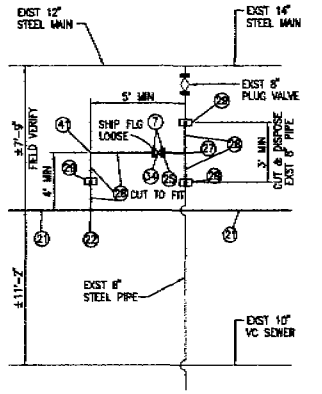
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

CONNECTION DETAILS

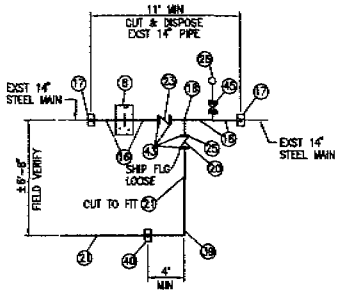
DRAWING: P-14
SHEET: 17
OF 22 SHEETS



CONNECTION AT STA 105+01.11
(CONTRACT 1A)

NO SCALE

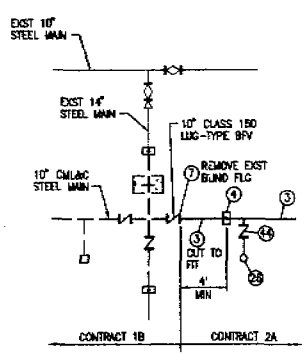
1



CONNECTION AT STA 112+83.52
(CONTRACT 1A)

NO SCALE

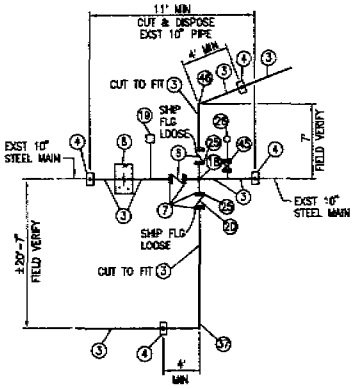
2



CONNECTION AT STA 120+06.00
(CONTRACT 2A)

NO SCALE

3

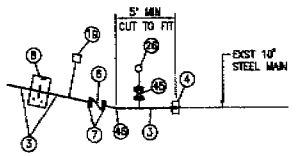


NOTE:
ROLL 10° BEND AS NEEDED

CONNECTION AT STA 134+95.52
(CONTRACT 2A)

NO SCALE

4

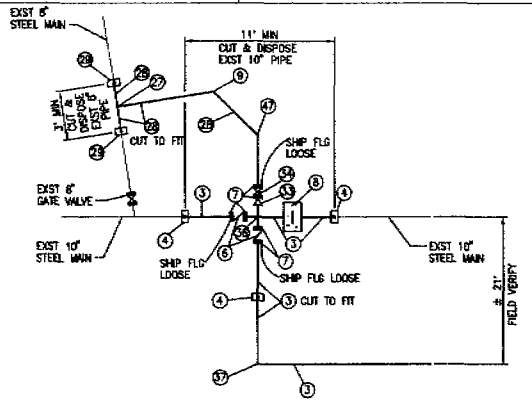


NOTE:
ROLL 10° BEND AS NEEDED

CONNECTION AT STA 146+83.15
(CONTRACT 2A)

NO SCALE

5



CONNECTION AT STA 150+00.00
(CONTRACT 2A)

NO SCALE

6

NOTE:
SEE DWG P-13 FOR MATERIAL SCHEDULE

REV	DATE	DESCRIPTION	APP'D
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES

DESIGNED BY: ADC
DRAWN BY: JDC
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38094
EXP. DATE: 03/31/07
PROJECT NUMBER: 16257.01
CADD STANDARDS: BOYLE

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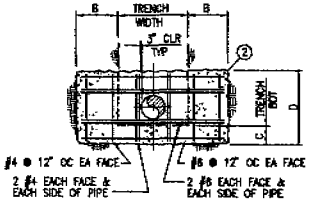
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

CONNECTION DETAILS

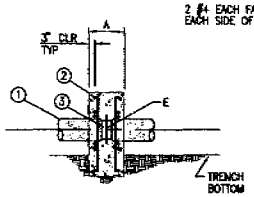
DRAWING: P-15
SHEET: 18 OF 22 SHEETS

PIPE SIZE	WKG PRESS	A	B	C	D	E ANNULAR RING
10"	200–300	18"	30"	12"	32"	1" THK x 1-7/8" HIGH
14"	200–300	21"	36"	12"	42"	1" THK x 2-3/8" HIGH

NOTE: BASED ON SOIL BEARING CAPACITY OF 2000 LBS/SF. SPECIAL DESIGN REQUIRED IF SOIL BEARING CAPACITY IS LESS THAN 2000 LBS/SF. PLACE CONCRETE AGAINST UNDISTURBED GROUND IN TRENCH BOTTOM AND SIDES.



TRENCH SECTION

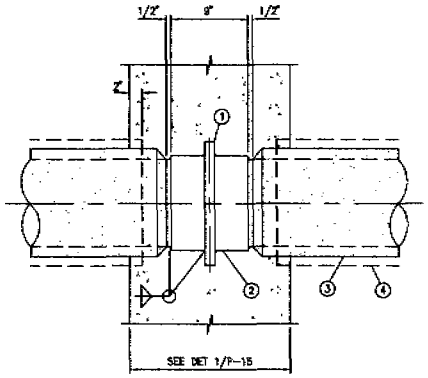


TRENCH ELEVATIONS

CONCRETE ANCHOR BLOCK DETAIL (1)

NO SCALE

ITEM	DESCRIPTION
1	STEEL PIPE, CML&C
2	CONCRETE ANCHOR BLOCK WITH REINFORCING STEEL
3	1/4" THK x 9" LONG WRAPPER PLATE WITH ANNULAR RING PLATE, SEE DET 4/P-11



ANCHOR PLATE DETAIL (2)

NO SCALE

ITEM	DESCRIPTION
1	ANNULAR RING PLATE (SEE DET 1/P-15)
2	1/4" THK x 9" LONG WRAPPER PLATE
3	STEEL PIPE, CML&C
4	POLYETHYLENE ENCASEMENT

SUGGESTED CONSTRUCTION SEQUENCE FOR CONTRACT 1A:

THE FOLLOWING STEPS DEFINE THE SUGGESTED SEQUENCE OF WORK TO BE USED FOR THE INSTALLATION OF THE NEW 10-INCH AND 12-INCH PIPELINE IN MULHOLLAND HIGHWAY TO BE COMPLETED UNDER CONTRACT 1A.

CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SEQUENCING PLAN, NOT LESS THAN 14 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION OPERATIONS, TO LVMWD FOR REVIEW. THE PLAN SHALL INCLUDE ESTIMATED SHUTDOWN DURATIONS FOR COMPLETING CONNECTIONS TO THE EXISTING SYSTEM. SERVICE SHALL NOT BE INHIBITED FOR MORE THAN 6 HOURS TO COMPLETE A CONNECTION. CONTRACTOR SHALL SCHEDULE SYSTEM SHUTDOWNS WITH LVMWD NOT LESS THAN TWO WEEKS IN ADVANCE.

1. IN MULHOLLAND HIGHWAY, BEGIN CONSTRUCTION OF THE NEW 10" AND 12" PIPELINE AT APPROX STA 60+05.00 AND INSTALL TO APPROX STA 112+74.00. INSTALL TEMPORARY CAP/BULKHEADS AT BOTH ENDS.
2. PRESSURE TEST AND DISINFECT THE PIPELINE AND FACILITIES CONSTRUCTED IN STEP 1 UNTIL SATISFACTORY RESULTS ARE OBTAINED.
3. MAKE CONNECTION TO THE EXISTING 10" PIPE AT STA 60+00.00. NEW 10" VALVE ON NEW 10" PIPELINE TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 10" AND 8" PIPES BACK INTO SERVICE.
4. MAKE CONNECTION TO THE EXISTING 10" PIPE AT STA 72+36.83. NEW 10" AND 12" VALVES ON NEW 10" AND 12" PIPELINES TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 10" PIPE BACK INTO SERVICE.
5. MAKE CONNECTION TO THE EXISTING 10" PIPE AT STA 80+59.90. NEW 10" BRANCH VALVE TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 10" PIPE BACK INTO SERVICE.
6. MAKE CONNECTION TO THE EXISTING 8" PIPE AT STA 105+01.11. NEW 8" BRANCH VALVE TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 8" PIPE BACK INTO SERVICE.
7. MAKE CONNECTION TO THE EXISTING 14" PIPE AT STA 112+83.52. NEW 12" BRANCH VALVE TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 14" PIPE BACK INTO SERVICE.

SUGGESTED CONSTRUCTION SEQUENCE FOR CONTRACT 1B:

THE FOLLOWING STEPS DEFINE THE SUGGESTED SEQUENCE OF WORK TO BE USED FOR THE INSTALLATION OF THE NEW 10-INCH PIPELINE IN MULHOLLAND HIGHWAY TO BE COMPLETED UNDER CONTRACT 1B.

CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SEQUENCING PLAN, NOT LESS THAN 14 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION OPERATIONS, TO LVMWD FOR REVIEW. THE PLAN SHALL INCLUDE ESTIMATED SHUTDOWN DURATIONS FOR COMPLETING CONNECTIONS TO THE EXISTING SYSTEM. SERVICE SHALL NOT BE INHIBITED FOR MORE THAN 6 HOURS TO COMPLETE A CONNECTION. CONTRACTOR SHALL SCHEDULE SYSTEM SHUTDOWNS WITH LVMWD NOT LESS THAN TWO WEEKS IN ADVANCE.

1. IN MULHOLLAND HIGHWAY, BEGIN CONSTRUCTION OF THE NEW 10" PIPELINE AT APPROX STA 10+21.34 AND INSTALL TO APPROX STA 50+35.00. INSTALL TEMPORARY CAP/BULKHEADS AT BOTH ENDS.
2. PRESSURE TEST AND DISINFECT THE PIPELINE AND FACILITIES CONSTRUCTED IN STEP 1 UNTIL SATISFACTORY RESULTS ARE OBTAINED.
3. MAKE CONNECTION TO THE EXISTING 10" PIPE AT STA 10+00.00. NEW 10" BRANCH VALVE ON NEW 10" PIPELINE TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 10" PIPE BACK INTO SERVICE.
4. MAKE CONNECTION TO THE EXISTING 10" PIPE AT STA 24+97.85. NEW 10" BRANCH VALVE TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 10" PIPE BACK INTO SERVICE.
5. MAKE CONNECTION TO THE EXISTING 8" PIPE AT STA 40+01.92. NEW 8" BRANCH VALVE TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 8" PIPE BACK INTO SERVICE.
6. MAKE CONNECTION TO THE EXISTING 14" PIPE AT STA 50+40.20. NEW 10" VALVES TO BE PLACED IN THE CLOSED POSITION. PLACE THE EXISTING 14" PIPE BACK INTO SERVICE.

SUGGESTED CONSTRUCTION SEQUENCE FOR CONTRACT 2A:

THE FOLLOWING STEPS DEFINE THE SUGGESTED SEQUENCE OF WORK TO BE USED FOR THE INSTALLATION OF THE NEW 10-INCH PIPELINE IN MULHOLLAND HIGHWAY TO BE COMPLETED UNDER CONTRACT 2A.

CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SEQUENCING PLAN, NOT LESS THAN 14 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION OPERATIONS, TO LVMWD FOR REVIEW. THE PLAN SHALL INCLUDE ESTIMATED SHUTDOWN DURATIONS FOR COMPLETING CONNECTIONS TO THE EXISTING SYSTEM. SERVICE SHALL NOT BE INHIBITED FOR MORE THAN 6 HOURS TO COMPLETE A CONNECTION. CONTRACTOR SHALL SCHEDULE SYSTEM SHUTDOWNS WITH LVMWD NOT LESS THAN TWO WEEKS IN ADVANCE.

1. IN MULHOLLAND HIGHWAY, BEGIN CONSTRUCTION OF THE NEW 10" PIPELINE AT APPROX STA 120+05.00 AND INSTALL TO APPROX STA 146+76.00. INSTALL TEMPORARY CAP/BULKHEADS AT BOTH ENDS.
2. PRESSURE TEST AND DISINFECT THE PIPELINE AND FACILITIES CONSTRUCTED IN STEP 1 UNTIL SATISFACTORY RESULTS ARE OBTAINED.
3. MAKE CONNECTION TO THE EXISTING 10" VALVE CONSTRUCTED UNDER CONTRACT 1B AT STA 120+00.00.
4. MAKE CONNECTION TO THE EXISTING 10" PIPE AT STA 146+80.15. NEW 10" VALVE ON NEW 10" PIPELINE TO BE PLACED IN THE OPEN POSITION. PLACE THE EXISTING 10" PIPE BACK INTO SERVICE.

NO	DATE	DESCRIPTION	APP'D
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY ADC
DRAWN BY JDC
CHECKED BY RDE
DATE 4/21/06

PROJECT ENGINEER ROBERT D. ELLISON
REG NUMBER 38084 EXP DATE 03/31/07
PROJECT NUMBER 16257.01
DATA STANDARDS BOYLE

BOYLE ENGINEERING CORPORATION
WWW.BOYLEENGINEERING.COM

LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

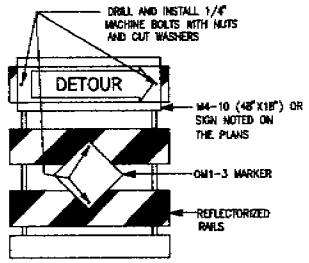
MISCELLANEOUS DETAILS

DRAWING P-16
SHEET 19 OF 22 SHEETS

TRAFFIC CONTROL NOTES

1. ALL TRAFFIC CONTROL WORK SHALL BE IN CONFORMANCE WITH THE CITY OF CALABASAS ENCROACHMENT/CONSTRUCTION PERMIT PROVISIONS AND THE COUNTY OF LOS ANGELES REQUIREMENTS. THE REFERENCE IN THE CITY PERMIT TO THE CALTRANS MANUAL OR TRAFFIC CONTROLS IS TO BE REPLACED WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED BY THE MUTCD 2003 CALIFORNIA SUPPLEMENT
2. WORK HOURS TO BE RESTRICTED TO HOURS INDICATED IN THE SPECIFICATIONS UNLESS APPROVED OTHERWISE.
3. PEDESTRIANS SHALL BE PROTECTED FROM ENTERING THE EXCAVATION (WORK ZONE) BY PHYSICAL BARRIERS DESIGNED, INSTALLED, AND MAINTAINED TO THE SATISFACTION OF CITY OF CALABASAS AND THE COUNTY OF LOS ANGELES.
4. TEMPORARY "NO PARKING/TOW AWAY" SIGNS STATING THE DATE AND TIME OF PROHIBITION WILL BE POSTED 72 HOURS PRIOR TO COMMENCING WORK. CALL CITY OF CALABASAS AND COUNTY OF LOS ANGELES ENFORCEMENT AGENCIES TO VALIDATE POSTING.
5. ACCESS WILL BE MAINTAINED TO ALL DRIVEWAYS AT ALL TIMES EXCEPT DURING ACTUAL WORK IN THE DRIVEWAY AREA. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AFFECTED PROPERTY OWNERS A MINIMUM OF 24 HOURS IN ADVANCE.
6. TRENCHES MUST BE BACKFILLED OR PLATED DURING NON-WORKING HOURS. PLATES SHALL HAVE CLEATS AND COLD MIX AT THE EDGES.
7. STRIPING AND MARKINGS DAMAGED BY CONSTRUCTION ACTIVITY WILL BE REPLACED BY THE CONTRACTOR WITHIN 24 HOURS.
8. FLAGGERS SHALL BE EQUIPPED WITH A WHITE HARD HAT, AN ORANGE VEST, AND A "STOP/SLOW" PADDLE ON A 5 FOOT STAFF.
9. ALL TRAFFIC CONTROL DEVICES MUST BE MAINTAINED 24 HOURS A DAY, 7 DAYS PER WEEK, BY THE CONTRACTOR.
10. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED FROM VIEW WHEN NOT IN USE.
11. THE CITY ENGINEER FOR THE CITY OF CALABASAS AND THE PUBLIC WORKS DIRECTOR OF THE COUNTY OF LOS ANGELES OR THEIR REPRESENTATIVES HAVE THE AUTHORITY TO INITIATE FIELD CHANGES TO INSURE PUBLIC SAFETY.
12. SEE SHEET TC-3 FOR CITY OF CALABASAS TRAFFIC CONTROL REQUIREMENTS.

DETAIL "A"

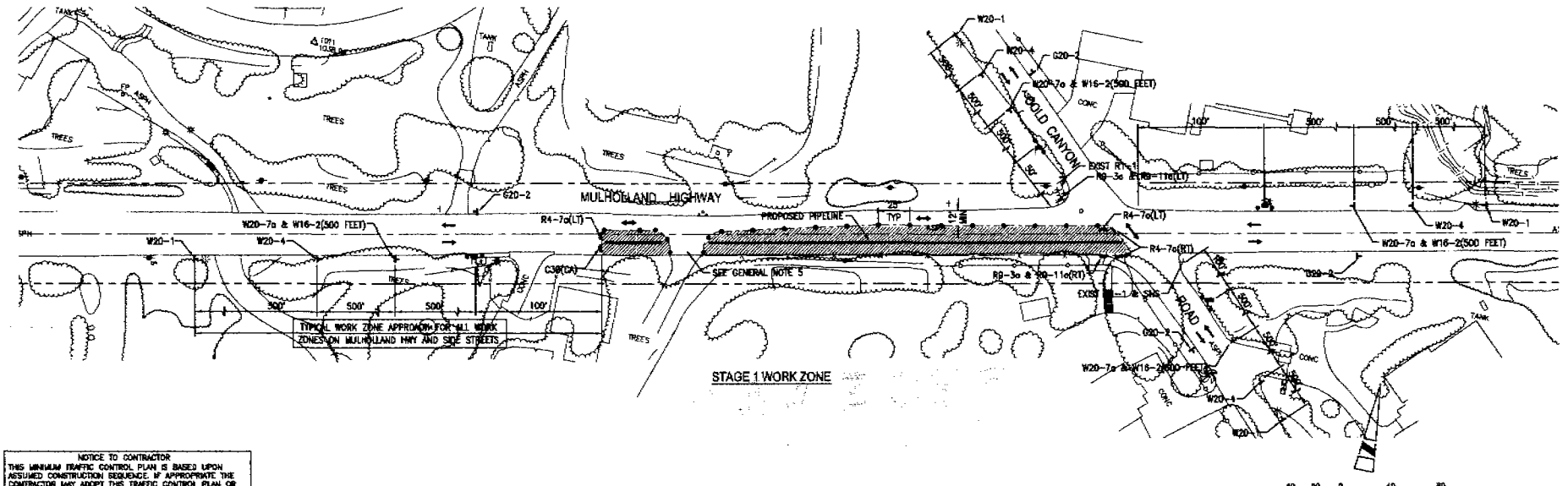


TYPICAL SIGN ATTACHMENT TO TYPE III BARRICADE

N.T.S.

LEGEND

DESCRIPTION	SYMBOL
GRAPHIC SYMBOLS TO SHOW FLOW OF TRAFFIC NOT A PAVEMENT MARKING	
EXISTING PAVEMENT ARROW MARKING	
SIGN (ONE POST)	
SIGN (LIGHT POLE MOUNTED)	
SIGN (TWO POST)	
EXISTING SIGN	
TYPE III BARRICADE	
SIGN ON TYPE III BARRICADE (SEE DETAIL "A")	
TRAFFIC CONE OR DELINEATOR	
FLAGMAN	
FLASHING BEACON	
PEDESTRIAN RAILING OR FENCE	
STREET NAME SIGN	SNS
WORK ZONE	



NOTICE TO CONTRACTOR
THIS MINIMUM TRAFFIC CONTROL PLAN IS BASED UPON ASSUMED CONSTRUCTION SEQUENCE. IF APPROPRIATE THE CONTRACTOR MAY ADOPT THIS TRAFFIC CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN PREPARED, SIGNED AND SEALED BY A CALIFORNIA LICENSED CIVIL OR TRAFFIC ENGINEER FOR APPROVAL TO THE AGENCY HAVING JURISDICTION.

REV	DATE	DESCRIPTION	APPR
1	4/21/06	100 PERCENT SUBMITTAL	RDE

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

DESIGNED BY: T Z
DRAWN BY: K T
CHECKED BY: RDE
DATE: 4/21/06

PREPARED UNDER THE SUPERVISION OF: ROBERT D. ELLISON
REG. NUMBER: 38094
EXP. DATE: 03/31/07
PROJECT MANAGER: 16257.01
CADD SYSTEM FILES: BOYLE

BOYLE ENGINEERING CORPORATION
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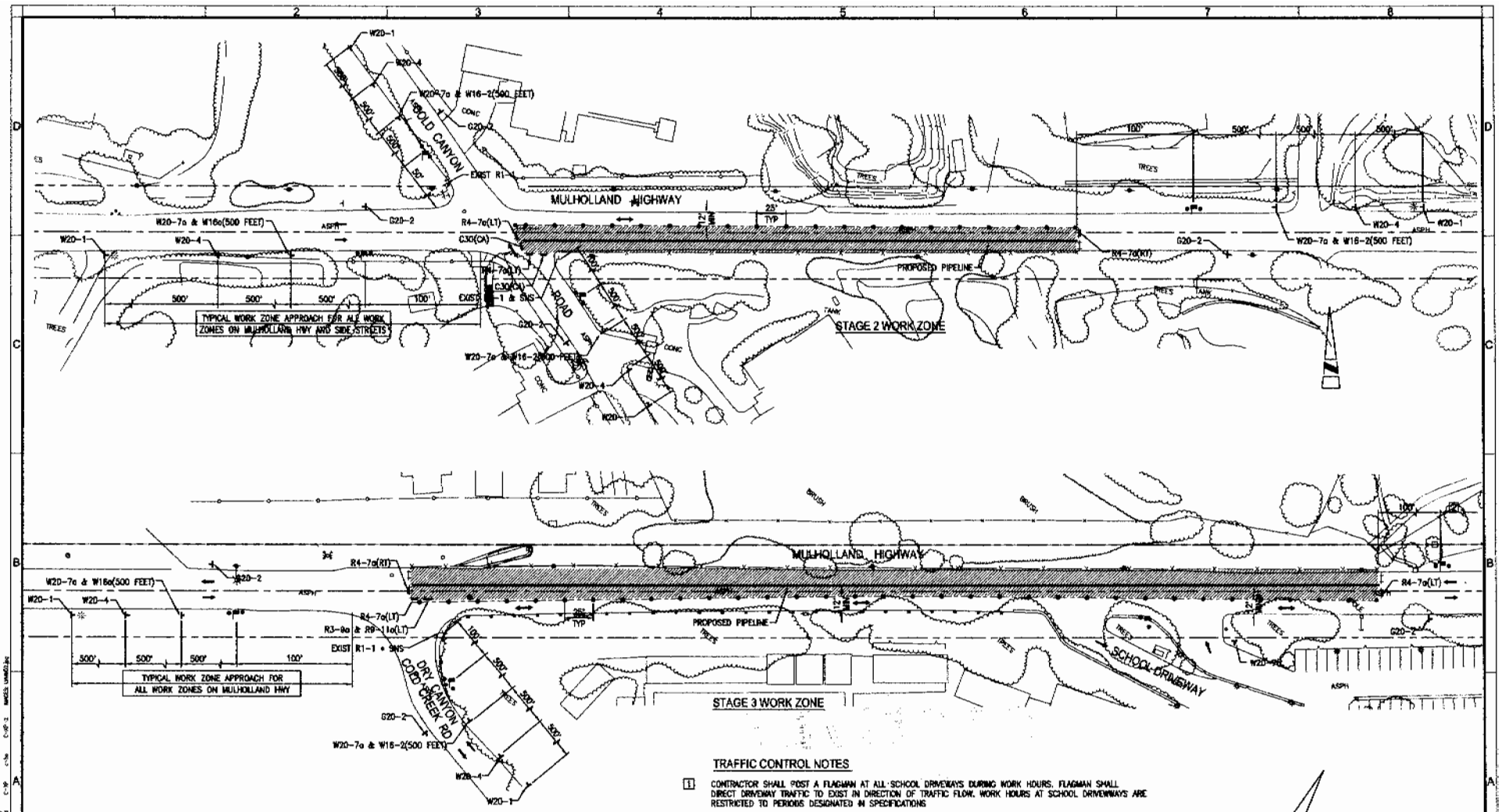
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

TRAFFIC CONTROL PLAN
MULHOLLAND HIGHWAY

DRAWING: TC-1
SHEET: 20
OF 22 SHEETS



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THIS MINIMUM TRAFFIC CONTROL PLAN IS BASED UPON ASSUMED CONSTRUCTION SEQUENCE. IF APPROPRIATE THE CONTRACTOR MAY ADOPT THIS TRAFFIC CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN PREPARED, SIGNED AND SEALED BY A CALIFORNIA LICENSED CIVIL OR TRAFFIC ENGINEER FOR APPROVAL TO THE AGENCY HAVING JURISDICTION.

TRAFFIC CONTROL NOTES

1. CONTRACTOR SHALL POST A FLAGMAN AT ALL SCHOOL DRIVEWAYS DURING WORK HOURS. FLAGMAN SHALL DIRECT DRIVEWAY TRAFFIC TO EXIST IN DIRECTION OF TRAFFIC FLOW. WORK HOURS AT SCHOOL DRIVEWAYS ARE RESTRICTED TO PERIODS DESIGNATED IN SPECIFICATIONS
2. ADVANCE SIGNAGE ON ALL APPROACHES TO WORK ZONE TO BE PER TYPICAL LAYOUTS SHOWN HEREON. THE CONTRACTOR MAY REDUCE SPACING OF SIGNS TO 200' ON CENTER ON SIDE STREETS WITH LOW SPEEDS

40 20 0 40 80
SCALE IN FEET
1"=40'

REV	DATE	DESCRIPTION	APPR
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DESIGNED BY: T Z
DRAWN BY: K T
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG NUMBER: 38094
EXP DATE: 03/31/07
PROJECT NUMBER: 18257.01
CADD STANDARDS: BOYLE

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LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

TRAFFIC CONTROL PLAN
MULHOLLAND HIGHWAY

DRAWING: TC-2
SHEET: 21 OF 22 SHEETS

CITY OF CALABASAS TRAFFIC CONTROL - GENERAL NOTES

1. CONSTRUCTION SIGNS, BARRICADES, DELINEATORS, WARNING LIGHTS, AND ALL OTHER DEVICES USED TO IMPLEMENT THE PLAN SHALL COMPLY WITH THE STATE OF CALIFORNIA MANUAL OF TRAFFIC CONTROLS.

2. ALL STRIPING AND MARKING SHALL CONFORM TO SECTION 310-5.6 OF THE STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION. TEMPORARY REMOVABLE STRIPING TAPE (DETOUR GRADE) MAY BE USED IN LIEU OF PAINTED STRIPING UPON APPROVAL BY THE DIRECTOR OF TRANSPORTATION.

3. THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO ALL ADJACENT PROPERTIES DURING WORK HOURS. CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ABUTTING PROPERTY OWNERS/OPERATORS.

4. FLASHING YELLOW BEACONS SHALL BE USED ON ALL C16 SIGNS AND ALL TYPE II BARRICADES GUARDING THE WORK AREA OVERNIGHT.

5. ALL SIGNS SHALL BE HIGH-INTENSITY, REFLECTORIZED AND STANDARD SIZE.

6. ALL DELINEATORS SHALL BE 28" MINIMUM PORTABLE, REFLECTORIZED AND MAINTAINED ERECT IN INDICATED POSITION AT ALL TIMES, AND SHALL BE REPAIRED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY.

7. THE CONTRACTOR SHALL MAINTAIN ON A 24-HOUR/7-DAYS (INCLUDING HOLIDAYS) BASIS ALL SIGNS, DELINEATORS, BARRICADES, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC.

8. THE CONTRACTOR SHALL HAVE ALL SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.

9. ADDITIONAL TRAFFIC CONTROLS, SIGNS, DELINEATORS OR BARRICADES ARE REQUIRED IN THE FIELD PER THE DIRECTION OF THE CITY ENGINEER OR TRAFFIC ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE SAFETY TO THE PUBLIC AT ALL TIMES DURING CONSTRUCTION.

10. WORK HOURS ARE LIMITED BETWEEN 8:00 AM AND 5:00 PM.
    THE FOLLOWING RESTRICTIONS APPLY TO THAT PORTION OF THE WORK THAT OCCURS IN THE VICINITY OF VIEWPOINT SCHOOL BETWEEN STA 80+00 AND STA 72+75 :
    A. TWO-WAY TRAFFIC SHALL BE MAINTAINED BETWEEN THE HOURS OF 8:00 AM AND 9:00 AM, EXCEPT ON NON-SCHOOL DAYS.
    B. TWO-WAY TRAFFIC SHALL BE MAINTAINED BETWEEN THE HOURS OF 2:30 PM AND 3:30 PM, EXCEPT ON NON-SCHOOL DAYS.

11. THE CONTRACTOR SHALL PROVIDE FOR SAFE PEDESTRIAN ACCESS AT ALL TIMES

12. POST "TEMPORARY NO PARKING TOW AWAY" SIGNS DEFINING THE TIME AND DATE OF ANY SUCH RESTRICTION 72 HOURS PRIOR TO WORK.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION AND PROTECTION OF TRAFFIC SIGNAL LOOP-SENSORS, SIGNAL, AND INTERCONNECT CONDUITS. WHERE DAMAGE IS CAUSED BY THE CONTRACTOR'S OPERATION, THE CONTRACTOR SHALL REPLACE DAMAGED CITY FACILITY AT NO COST TO THE CITY OF CALABASAS WITHIN _____ DAYS.

14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING WORK ON A CITY STREET TO INSTALL AND MAINTAIN THE TRAFFIC CONTROL DEVICES AS SHOWN HEREIN, AS WELL AS ANY SUCH ADDITIONAL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY THE CITY TO ENSURE THE SAFE MOVEMENT OF VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH OR AROUND THE CONSTRUCTION AREA, AND TO PROVIDE MAXIMUM PROTECTION AND SAFETY.

15. THE CITY RESERVES THE RIGHT TO OBSERVE THESE TRAFFIC CONTROL/DETOUR PLANS IN USE AND TO MAKE ANY CHANGES NECESSITATED BY FIELD CONDITIONS. ALL SUCH CHANGES SHALL SUPERCEDE THESE PLANS AND WILL BE DONE SOLELY AT THE CONTRACTOR'S EXPENSE.

16. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY STRIPING AND TRAFFIC CONTROL DEVICES, AND RESTORE THE PERMANENT STRIPING AND TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE APPROVED SIGNING AND STRIPING MODIFICATION PLAN AND TRAFFIC SIGNAL MODIFICATION PLAN FOR THIS PROJECT.

17. FIVE FOOT CLEARANCE SHALL BE MAINTAINED BETWEEN OPEN EXCAVATION AND ADJACENT MOVING TRAFFIC LANE. OPEN TRENCHES LESS THAN FIVE FEET OF CLEARANCE SHALL BE STEEL-PLATED OR BACKFILLED IMMEDIATELY AFTER EXCAVATION.

18. FIVE FOOT CLEARANCE SHALL BE MAINTAINED BETWEEN OPEN EXCAVATION AND ADJACENT MOVING TRAFFIC LANE. OPEN TRENCHES LESS THAN FIVE FEET OF CLEARANCE SHALL BE STEEL-PLATED OR BACKFILLED IMMEDIATELY AFTER EXCAVATION.

19. ALL CONFLICTING PAVEMENT MARKINGS AND LEGENDS OF THE TRAFFIC CONTROL PLAN SHALL BE REMOVED USING THE WET SANDBLASTING METHOD. EXISTING MARKINGS AND LEGENDS SHALL NOT BE PAINTED OVER.

20. THE CONTRACTOR SHALL NOTIFY, AS APPROPRIATE, THE CITY TRANSPORTATION DEPARTMENT, CITY INSPECTORS AND RELEVANT PUBLIC WORKS OFFICIALS, AND TRANSIT COMPANIES/PROVIDERS (IF RELOCATION OF BUS STOPS ARE NECESSARY), FIVE (5) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

21. THE FOLLOWING AGENCIES SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF ANY DETOUR AND/OR CONSTRUCTION ACTIVITIES:

    CITY OF CALABASAS PUBLIC WORKS AND TRANSPORTATION DEPARTMENTS: (818) 878-4225
    COUNTY OF LOS ANGELES SHERIFF'S DEPARTMENT MALIBU/LOST HILLS STATION: (818) 878-1808
    LOS ANGELES COUNTY FIRE DEPARTMENT: (818) 880-4415 (#125) / (818) 222-1107 (#68)

REV	DATE	DESCRIPTION	BY
1	4/21/06	100 PERCENT SUBMITTAL	RDE

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DRAWN BY: K T
CHECKED BY: RDE
DATE: 4/21/06

PROJECT ENGINEER: ROBERT D. ELLISON
REG. NUMBER: 38084 EXP. DATE: 03/31/07
PROJECT NUMBER: 16257.01
CADD STANDARDS: BOYLE

BOYLE ENGINEERING CORPORATION
9981 Villa Street, Suite 204, Ventura, California 93003 805-644-4700
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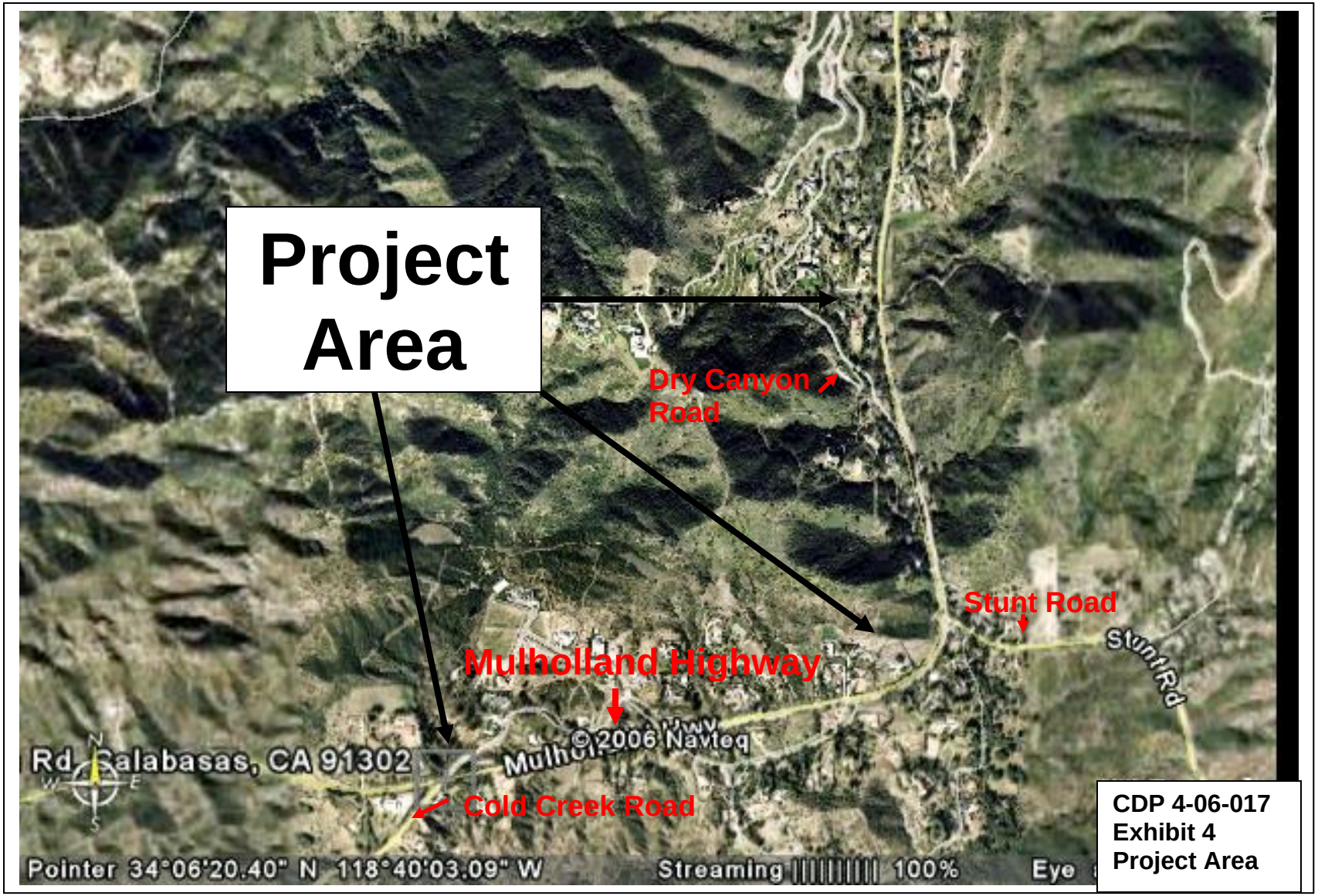
LAS VIRGENES MUNICIPAL WATER DISTRICT
MULHOLLAND POTABLE WATER LINE IMPROVEMENTS

TRAFFIC CONTROL
GENERAL NOTES

DRAWING: TC-3
SHEET: 22
OF 22 SHEETS

CDP 4-06-017
Exhibit 2
Overall Project



CDP 4-06-017
Exhibit 4
Project Area