



Staff Report to the Zoning Administrator

Application Number: **141262**

Applicant: Kevin Crossley, City of Santa Cruz Water Department

Agenda Date: 2/20/15

Owners: California State Department of Parks and Recreation,
Granite Rock Company, Santa Cruz County Regional Transportation
Commission

Agenda Item #: 3

Time: After 9:00 a.m.

APNs: 059-041-30, 059-022-03, 059-022-04, 059-022-05,
059-023-10, 059-131-01, 059-131-05, 059-141-04, 059-181-03

Project Description: Proposal to replace approximately 18,500 linear feet of 16 to 22 inch diameter raw water main along Highway One and to remove approximately 800 linear feet of the existing over-ground pipeline as part of Phase 3 (Coast Segment) of the City of Santa Cruz Water Department's "North Coast System Rehabilitation Project", including the removal of 10 Significant Trees. Requires a Coastal Development Permit.

Location: Project located on the south and west side of Highway 1 from Scaroni Road to the entrance of Wilder Ranch State Park and on the north side of Highway One at the Granite Rock Company.

Supervisory District: 3rd District (District Supervisor: Ryan Coonerty)

Permits Required: Coastal Development Permit

Technical Reviews: Biotic Report Review (REV141022),
Archaeological Report Review (REV141023)

Staff Recommendation:

- Consider the environmental effects of the project as shown in the Mitigated Negative Declaration adopted by the City of Santa Cruz, determine that the mitigations provided adequately address these impacts, and certify this by directing staff to post a Notice of Determination with the Clerk of the Board and the State Clearinghouse.
- Approval of Application 141262, based on the attached findings and conditions.

Exhibits

- | | | | |
|----|-------------------------|----|---|
| A. | Notice of Determination | E. | Assessor's, Location, Zoning and
General Plan Maps |
| B. | Findings | F. | Tree Resource Evaluation Project
Impact Analysis |
| C. | Conditions | | |
| D. | Project plans | | |

Supporting Documents

The following documents are on file with the Planning Department:

- A. Notice of Determination issued by the City of Santa Cruz
- B. Mitigated Negative Declaration adopted by the City of Santa Cruz
- C. Mitigation and Monitoring Plan
- D. Biological Resources Assessment
- E. Cultural Resources Assessment

Parcel Information

Parcels' Sizes: Varies (0.63 acres - 46.7 acres)

Existing Land Use - Parcel: Agriculture/recreational use (Wilder State Park), railroad and quarry (Granite Rock Company)

Existing Land Use - Surrounding: Commercial Agriculture/recreational use (Wilder State Park), Quarry,

Project Access: Highway 1

Planning Area: North Coast

Land Use Designation: O-R, R-M, (Existing Parks and Recreation, Mountain Residential)

Zone District: PR, PF, SU (Parks and Recreation, Public Facility, Special Use)

Coastal Zone: Inside Outside

Appealable to Calif. Coastal Comm.: Yes No

Environmental Information

Geologic Hazards: Not mapped/no physical evidence on site

Soils: N/A

Fire Hazard: Not a mapped constraint

Slopes: Gentle slopes along portions of the pipeline route. No significant impact.

Env. Sen. Habitat: Riparian corridors, wetland habitat, and potential disruption of sensitive species during construction. Biological Resources Assessment on file at the Planning Department.

Grading: No grading proposed

Tree Removal: 10 Significant Trees to be removed. Tree Resource Evaluation Project Impact Analysis, prepared by a licensed Arborist, on file at the Planning Department

Scenic: Designated scenic corridor along Highway 1.

Drainage: No change to existing drainage

Archeology: Mapped archaeological sites. Archaeological Resources Assessment on file at the Planning Department.

Services Information

Urban/Rural Services Line: ___ Inside X Outside
Water Supply: City of Santa Cruz Water Department
Sewage Disposal: N/A
Fire District: Santa Cruz County Fire Protection District
Drainage District: Out

History and Background

The North Coast Water System, which relies entirely on rainfall and emergent groundwater, consists of an 18-mile network, including pipes and stream diversion structures, originally constructed in the 1880’s. The system is currently operated and maintained by the City of Santa Cruz Water Department. Diversion structures direct flows from Liddell, Reggiardo, Laguna, and Majors Creeks into a pipe system, which then conveys water by gravity to the Coast Pump Station within the City of Santa Cruz. From the pump station, water is lifted to a water treatment plant and from there it is distributed to customers.

A significant portion of the 18-miles of transmission pipeline is approaching or has now exceeded its design life and must be replaced. Although the diversion and pipeline facilities have historically provided adequate service, the aging facilities are increasingly prone to leakage and failure and now require increased routine maintenance and emergency repairs. Therefore, the City of Santa Cruz Water Department is currently embarking on a plan that will eventually replace the entire North Coast Water System.

Project Setting

The project area encompasses approximately 30 acres along a 3.3 mile stretch of Highway 1, north of the City of Santa Cruz. The proposed pipeline cuts through an area characterized by agricultural fields, punctuated by riparian vegetation, located along and around coastal drainage channels and lagoons. The proposed pipeline runs through a landscape that is designated within an area of regional public importance for its natural beauty and its rural, agricultural character. Looking to the south, towards the project site from Highway 1, there are open, unobstructed views, mostly over agricultural fields, but also over natural woodlands, wetlands and meadows, toward the cliffs and ocean that lie beyond.

Project Description

The current project represents Phase 3 of the larger project to replace the North Coast Water System. The section of the system to be replaced under this project consists primarily of 16 to 22-inch welded steel pipe that runs along Highway 1 from Scaroni Road to just west of the entrance to Wilder State Park. The proposed alignment will generally follow the alignment of the existing water main, which mostly runs close to Highway 1 within farm roads located along the edge of agricultural fields, and in most locations the proposed pipeline will be within 20 feet of the existing pipeline. However, in one area an alternative alignment has been proposed to avoid difficult construction areas and also sensitive biological and archaeological resource areas. This new alignment will run south of the original pipeline, along the Santa Cruz Branch Line railroad right-of-way, within an existing unpaved roadway that parallels the tracks, and will rejoin to the older alignment via existing farm roads.

The overall new alignment will be approximately 19,800 linear feet long, with around 18,500 linear feet of replaced pipeline, and 1,300 linear feet of existing pipeline that will remain in-situ and connect to the new pipe. Unused sections of old pipe will be abandoned in-place except for around 800 linear feet of over-ground pipeline that will be removed. Approximately 90 percent of the proposed pipeline will be installed within existing unpaved access roads that border agricultural fields, within the Caltrans right-of-way, within the railroad right-of-way or within other existing roads. These sections of the project will be constructed employing standard open trench techniques. For the remainder of the pipeline, where the pipeline crosses coastal drainage channels or passes under the railroad tracks or under Highway 1, open trench methods are impractical or would result in potentially significant environmental impacts. Therefore, in these areas the pipeline will be built using a trenchless construction method such as horizontal directional drilling and jack and bore.

In most locations, once the new pipeline becomes operational, the existing pipe will be abandoned in place. Only those sections of the old pipe that currently run above ground over the coastal drainage channels will be removed. Following completion of the pipeline the entire construction site and areas of disturbance from the removal of existing over-ground facilities will be restored and in addition, areas of sensitive habitat will be re-vegetated.

Zoning & General Plan Consistency

The water main spans parcels that are located in the PR, PF and SU (Parks and Recreation, Public Facility and Special Use) zone districts, designations which all allow public utility uses. The proposed pipeline is an allowed use within each the zone districts and, except for the railroad corridor parcel which is zoned PF, the zoning is consistent with the site's Parks and Recreation and Open Space, and Mountain Residential (O-R and R-M) General Plan designations. This inconsistency appears to have occurred as an oversight when the General Plan and zoning designations were revised to reflect the transfer of ownership of the parcels, not including the railroad right-of-way, to the California State Department of Parks and Recreation to be included in the Wilder State Park.

Although a significant portion of the project site is within the PR zone district and has a General Plan designation of Parks, Recreation and Open Space, other than coastal access trails, the main use of the land is for commercial agriculture and not for recreational purposes. The land therefore has a Type-3, "Viable Agricultural Land within the Coastal Zone" Agricultural Resource designation. Although the placement of water and sewer lines is specifically prohibited on commercial agricultural lands in the Coastal Zone, water transmission lines from the North Coast to the City of Santa Cruz are specifically exempted from this prohibition, as set forth in General Plan section 5.13.10(a).

Special districts are exempt from county building and planning regulations with regard to facilities for the production, generation, storage or transmission of water or electric energy, as provided by section 53091 of the Government Code. However, because the project site lies within the Coastal Zone and requires clearing within a sensitive habitat and the cutting of significant trees, the exemption for water facilities set out in County Code section 13.20.064 does not apply to this project and a Coastal Development Permit is still required.

Local Coastal Program Consistency

The proposed project is in conformance with the County's certified Local Coastal Program, in that the pipeline has been sited and designed to have the least amount of impact on the visual/scenic, agricultural, riparian, biotic and archaeological, resources as well as visitor serving and public beach access requirements that are present in the area through which it will run. Once the construction phase of the project has been completed and all proposed mitigations have been implemented, the new pipeline will be fully integrated into the surrounding landscape and will have a reduced impact on these resources. A complete list of Findings is included as Exhibit B of this report.

Significant Trees

A total of 53 trees are located close to the proposed pipeline site and have been evaluated by the project Arborist. Of these, a total of 16 trees are directly within the construction zone and are therefore required to be removed during the installation of the proposed pipeline. In addition, one group of 6 trees outside the project area, all of which are either dead or in poor condition, has been recommended for removal by the project arborist. Because two trees in this group qualify as Significant Trees, these will be required to be retained for their scenic and habitat value, and only the four smaller trees will be removed. A complete list of all trees along the project site, along with a description of the species, size, health and recommendations for each tree, is included within the Tree Resource Evaluation Project Impact Analysis prepared by the project Arborist. A copy of this document is included as Exhibit F of this staff report.

Significant tree removal is subject to the Coastal Design Criteria under County Code Section 13.20.130. The County's Significant Tree removal ordinance exempts trees from the requirement for a Significant Tree Removal Permit where trees are required to be removed as part of a project that requires a Coastal Development Permit. However, the purpose of 13.20 is to ensure that Significant Trees are retained where feasible. As set out in the Arborist's Report, a total of 10 Significant Trees are required to be removed because the proposed water line trench will be located such that, either a significant portion (more than 50%) of the absorbing root system will be removed, or large structural roots will be damaged or removed to a point where destabilization may occur.

Of the trees that are to be removed, 10 qualify as Significant Trees as set out in County Code. The largest group of Significant Trees to be removed (7 total) constitute a group of Monterey Cypress that is required to be removed since it is within five feet of the proposed pipeline. These trees, located 80 feet southeast of Little Baldwin Creek, are in a generally poor condition and have sparse canopies, dead and broken branching and all have been pruned for utility line clearance. One large, healthy tree behind this grouping will be retained and protected. In addition there is one Monterey Cypress located on the south side of Highway 1 opposite the Granite Rock parcel that is located on a steep rocky slope and is partially uprooted, that will also be destabilized by the proposed pipeline and so will be removed. The remaining two Significant Trees are within the grove of Eucalyptus trees located north of Highway 1 on the Granite rock parcel, APN 059-041-30, and these are located within the trenching zone.

As a condition of approval of this permit, replacement trees will be required at a ratio of 3:1 for each of the Significant Trees that will be removed as a result of this project. This is in addition

to the requirement for the replacement of trees as required by the Mitigated Negative Declaration under TREE-1 which requires only the replacement of trees located in a Riparian Corridor. A five year monitoring and maintenance plan for trees planted in under this provision is also required.

Scenic/Visual Resources

The project site is mapped within the scenic corridor for Highway 1, a designated scenic road. Public vistas from Highway 1 are therefore afforded the highest level of protection and the project is required to maintain public open vistas to the greatest extent possible. As proposed, the project will have only minimal impact on the existing views from Highway 1. The entire replacement pipeline, except for an approximately 12 foot section of pipe that will bridge Little Baldwin Creek, will be located below grade and therefore will not be visible after project completion.

There will be no permanent disruption to any existing landform created by the new pipeline. Natural vegetation along the pipeline route will be preserved to the greatest extent possible and, where disturbance is unavoidable, mitigations that include replanting are proposed. In addition, replacement trees at a ratio of 3:1 are required to replace a total of 10 Significant Trees that are required to be removed by the proposed project. All of the restoration plantings will be done in accordance with the approved mitigation and monitoring plan (on file with the Planning Department) and the approved Tree Planting Plan for the replacement of Significant Trees, required as a condition of approval of this permit, and will incorporate only characteristic or indigenous plant species appropriate for the area.

Riparian Corridors/Sensitive Habitat Protection

The project site runs across a coastal plain that is crossed by several coastal drainage channels and includes a variety of land uses and natural resource areas. Habitats and land cover types within the project consist of: agriculture, coastal scrub, freshwater wetland, mixed evergreen forest, non-native grassland, coastal terrace prairie, riparian forest and scrub, landscaped/ornamental/weedy areas, and developed areas. In addition there are several creek channels, drainages, irrigation ditches, irrigation ponds, and potential seasonal wetlands, in close proximity to the proposed project alignment. These habitat types present provide a suitable environment for many animal and plant species.

The City of Santa Cruz is exempt from planning and zoning ordinances, including the Riparian and Wetland Protection and Sensitive Habitat Protection ordinances, with regard to the location or construction of facilities to carry out any of its governmental functions, in this case the distribution of water, therefore Riparian Exception and Land Clearing Permits are not required. However, because of the potential for impacts to Riparian areas and to Special-Status plant and animal species that are known to inhabit the north coast area, the City of Santa Cruz was required to submit a Biotic Report to the County for review and approval prior to making an application for a Coastal Development Permit. A Biological Resources Assessment, prepared by LSA Associates, Inc. and dated March 2014 was then submitted by the City of Santa Cruz (on file with the Planning Department). The Environmental Coordinator reviewed and accepted the submitted report and the recommendations of this report were subsequently incorporated into the Mitigated Negative Declaration.

While exempt from local ordinances, the City is subject to State and Federal resource protection regulations and will be required to obtain a Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW), a 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a 404 permit from the Army Corps of Engineers (USACE). The project falls under a USACE Nationwide Permit 12 (Utility Line Activities) and the City will prepare a Preconstruction Notification to submit to the USACE. As part of their review, the USACE will conduct both formal and informal Section 7 consultations under the Endangered Species Act with USFWS and NMFS, which will be supported by the Biological Assessment and other supporting documentation.

Agricultural Resources

Portions of the proposed pipeline pass through land that is mapped within the Type-3, "Viable Agricultural Land within the Coastal Zone" Agricultural Resource designation. Therefore commercial agricultural use of the land for the production of food, fiber, ornamental crops and livestock is a priority land use on those parcels. Where the proposed pipeline traverses agricultural land, it will be sited entirely within existing farm roads and will therefore not affect the long-term viability or the productivity of any agricultural land.

Archaeological Resources

Except for that portion of the proposed project that is located on the Granite Rock parcel, APN 059-041-30, the alignment of the proposed pipeline is located within an area that is mapped as being in an archaeologically sensitive area. Therefore, prior to making this application for the reconstruction of the structure, LSA Associates, Inc., was contracted to conduct a Cultural Resources (Archaeological) Assessment of the site and to prepare a report. This report, on file with the Planning Department, was submitted to the County of Santa Cruz for review and has been accepted for the proposed project.

Environmental Review

Environmental review has been required for the proposed project per the requirements of the California Environmental Quality Act (CEQA). As Lead Agency on the project, the City of Santa Cruz Water Department has adopted a Mitigated Negative Declaration that was approved and posted with the State on October 22, 2014.

The environmental review process focused on the potential impacts of the project in the areas of aesthetic/visual; agricultural land, air quality, archaeological/historical; biological resources, Coastal Zone, drainage/absorption; flood plain/flooding, forest land/fire hazard, geologic/seismic; minerals, noise, population/housing balance; public services/facilities; recreation/parks; schools/universities; septic systems; sewer capacity; soil erosion/compaction/grading; solid waste; toxic/hazardous; traffic/circulation; vegetation; water quality; water supply /groundwater; wetland/riparian; growth inducement; land use and cumulative effects. The environmental review process generated mitigation measures that will reduce potential impacts from the proposed development and adequately address these issues.

The Environmental Coordinator for the County of Santa Cruz, being the Responsible Agency, has reviewed the Negative Declaration and all supporting documentation prepared by the Lead Agency (City of Santa Cruz) and concurs with the findings. The Environmental Coordinator therefore recommends that the Zoning Administrator consider the Mitigated Negative Declaration and make a determination that it adequately addresses all potential impacts that may result from the proposed project.

Conclusion

As proposed and conditioned, the project is consistent with all applicable codes and policies of the Zoning Ordinance and General Plan/LCP. Please see Exhibit "B" ("Findings") for a complete listing of findings and evidence related to the above discussion.

Staff Recommendation

- Consider the environmental effects of the project as shown in the Mitigated Negative Declaration adopted by the City of Santa Cruz, determine that the mitigations provided adequately address these impacts, and certify this by directing staff to post a Notice of Determination with the Clerk of the Board and the State Clearinghouse.
- **APPROVAL** of Application Number **141262**, based on the attached findings and conditions.

Supplementary reports and information referred to in this report are on file and available for viewing at the Santa Cruz County Planning Department, and are hereby made a part of the administrative record for the proposed project.

The County Code and General Plan, as well as hearing agendas and additional information are available online at: www.co.santa-cruz.ca.us

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Coastal Development Permit Findings

- 1. That the project is a use allowed in one of the basic zone districts, listed in section 13.10.170(d) as consistent with the General Plan and Local Coastal Program LUP designation.**

This finding can be made in that the water main spans parcels that are located in the PR, PF and SU (Parks and Recreation, Public Facility and Special Use) zone districts, designations which all allow utilities uses. The proposed pipeline is an allowed use within each the zone districts and, except for the railroad corridor parcel which is zoned PF, the zoning is consistent with the site's Parks and Recreation and Open Space, and Mountain Residential (O-R and R-M) General Plan designations. This inconsistency appears to have occurred as an oversight when the General Plan and zoning designations were revised to reflect the transfer of ownership of the parcels, not including the railroad right-of-way, to the California State Department of Parks and Recreation to be included in the Wilder State Park.

Although a significant portion of the project site is within the PR zone district and has a General Plan designation of Parks, Recreation and Open Space, other than coastal access trails, the main use of the land is for commercial agriculture and not for recreational purposes. The land therefore has a Type-3, "Viable Agricultural Land within the Coastal Zone" Agricultural Resource designation. Although the placement of water and sewer lines is specifically prohibited on commercial agricultural lands in the Coastal Zone, water transmission lines from the North Coast to the City of Santa Cruz are specifically exempted from this prohibition, as set out in General Plan section 5.13.10(a).

Special districts are exempt from county building and planning regulations with regard to facilities for the production, generation, storage or transmission of water or electric energy, as provided by section 53091 of the Government Code. However, because the project site lies within the Coastal Zone and requires clearing within a sensitive habitat and the cutting of significant trees, the exemption for water facilities set out in County Code section 13.20.064 does not apply to this project and a Coastal Development Permit is still required.

- 2. That the project does not conflict with any existing easement or development restrictions such as public access, utility, or open space easements.**

This finding can be made in that, based upon preliminary title research on the affected parcels no such easements are known to exist. However, if, prior to or during construction, any legacy easements are discovered that could affect the alignment of the pipeline or any other aspect of the approved project, the City of Santa Cruz Water Department will work with the easement holder to address concerns and, if necessary, make adjustments to the project. Should such an adjustment be necessary then an amendment to this permit may be required.

- 3. That the project is consistent with the design criteria and special use standards and conditions of this chapter pursuant to section 13.20.130 et seq.**

This finding can be made, in that the proposed project is for the replacement of an existing water supply pipeline along substantially the same route as the existing facility that will cause minimal

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disturbance to the existing landscape. Once construction has been completed and all site restoration and the required mitigations have been completed, the pipeline will be fully integrated into its surroundings. Further, because several sections of existing pipeline, located above ground where they cross coastal drainage channels, will be removed and replaced with new underground pipeline, installed using directional drilling techniques, the replacement pipeline will have a reduced impact on visual and scenic resources than the existing pipeline and the integrity of open beaches in the vicinity will be maintained.

4. **That the project conforms with the public access, recreation, and visitor-serving policies, standards and maps of the General Plan and Local Coastal Program land use plan, specifically Chapter 2: figure 2.5 and Chapter 7, and, as to any development between and nearest public road and the sea or the shoreline of any body of water located within the coastal zone, such development is in conformity with the public access and public recreation policies of Chapter 3 of the Coastal Act commencing with section 30200.**

Except for that portion of the proposed project that is located on the Granite Rock parcel, APN 059-041-30, the project site is located between the shoreline and Highway 1, and will bisect two existing coastal access paths known as Four Mile and Three Mile. However, this finding can be made in that, these coastal access points from Highway 1 to the beach and ocean, will remain open to the public throughout the construction period. Where the Four Mile pathway crosses the proposed pipeline adjacent to the railroad, signage, fencing, plates and bridges will be installed as necessary to keep the pathway open at all times. Where the Three Mile path crosses the construction site, the pipeline will be installed using directional drilling methods and therefore there will be no disruption to the coastal access during construction. There are no other recognized coastal access routes that will be affected by the proposed project. Once installed, the underground pipeline will not have any permanent affect on these existing coastal paths. Consequently, the proposed project will not interfere with public access to the beach, ocean, or other nearby body of water. Although the Granite Rock parcel, APN 050-041-30, is identified as a priority acquisition site in the County's Local Coastal Program, the proposed replacement pipeline will not interfere with any future acquisition or with any proposed redevelopment of the site since, as with the existing pipeline, all facilities will be underground.

5. **That the proposed development is in conformity with the certified local coastal program.**

The proposed project is in conformance with the County's certified Local Coastal Program, in that pipeline has been sited and designed to have the least amount of impact on the visual/scenic, agricultural, riparian, biotic and archaeological, resources that are present in the area through which it will run, as follows:

Significant Trees: A total of 10 Significant Trees are required to be removed during the implementation of this project because the proposed water line trench will be located such that, either a significant portion (more than 50%) of the absorbing root system will be removed, or large structural roots, will be damaged or removed to a point where destabilization may occur.

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The largest group of Significant Trees to be removed (7 total) constitute a group of Monterey Cypress that is required to be removed since it is within five feet of the proposed pipeline. These trees, located 80 feet southeast of Little Baldwin Creek, are in a generally poor condition and have sparse canopies, dead and broken branching and all have been pruned for utility line clearance. One large, healthy tree behind this grouping will be retained and protected. The remaining Significant Trees that will be required to be removed include one Monterey Cypress located on the south side of Highway 1 opposite the Granite Rock parcel that is located on a steep rocky slope and is partially uprooted, that will also be destabilized by the proposed pipeline and two Eucalyptus trees located north of Highway 1 on the Granite rock parcel, APN 059-041-30, that are located within the trenching zone.

As a condition of approval of this permit, replacement trees will be required at a ratio of 3:1 for each of the Significant Trees that will be removed as a result of this project. This is in addition to the requirement for the replacement of trees as required by the Mitigated Negative Declaration under TREE-1 which requires only the replacement of trees that are located in a Riparian Corridor. A five year monitoring and maintenance plan for trees planted in under this provision is also required.

The visual and scenic impacts that will likely occur due to the removal of 10 Significant Trees along the proposed pipeline alignment is discussed below.

Visual/Scenic Resources: The project site is mapped within the scenic corridor for Highway 1, a designated scenic road. Public vistas from Highway 1 are therefore afforded the highest level of protection and the project is required to maintain public open vistas to the greatest extent possible. As proposed, the project will have only minimal impact on the existing views from Highway 1. The entire replacement pipeline, except for an approximately 12 foot section of pipe that will bridge Little Baldwin Creek, will be located below grade and therefore will not be visible after project completion. Where this short section of the new pipeline will be above ground, it replaces a similar, existing section of the pipeline that is to be removed. Further, the section of pipeline at Little Baldwin Creek is located approximately 10 -12 feet below the level of the adjacent road and is therefore not visible in public views from the Highway.

There will be no permanent disruption to any existing landform created by the new pipeline. The required site restoration after trenching operations have been completed will include blending the contours of the finished surface with the adjacent natural terrain to achieve a smooth transition and natural appearance. Natural vegetation along the pipeline route will be preserved to the greatest extent possible and, where disturbance is unavoidable, mitigations that include replanting are proposed. All of the restoration plantings will be done in accordance with the approved mitigation and monitoring plan (on file with the Planning Department) and will incorporate only characteristic or indigenous plant species appropriate for the area.

As detailed above, the project proposes the removal of 10 Significant Trees. Where the group of seven Monterey Cypress trees will be removed, the existing views from the Highway will be changed. However, no scenic degradation is expected because all of the trees to be removed are in various stages of decline and offer very little, if any, scenic benefits. Further, a large, healthy, well shaped and spreading tree that is located behind this group will be retained. This tree, which was formerly largely hidden in views from Highway 1, will be pruned and protected therefore offering enhanced scenic benefits in the area. Further, two adjacent Significant Trees

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in this area will also be retained, even though they are dead, for their scenic value and also for habitat conservation. In addition, replacement trees are required to be planted and, over time, these will add to the scenic quality of the coastal vistas in this area.

The remaining three Significant Trees to be removed include one Monterey Cypress that is partially uprooted and two Eucalyptus Trees. The Monterey Cypress is located within a group of trees, including other Monterey Cypress trees, and the removal of this one tree from that group will not have any significant visual impact. Similarly the removal of two Significant Eucalyptus trees on the Granite Rock parcel, APN 059-041-30, will not affect scenic resources because the area is densely forested and the canopy cover will not be significantly modified in views from the Highway.

Riparian Corridors/Sensitive Habitat Protection: The project site runs across a coastal plain that is crossed by several coastal drainage channels and includes a variety of land uses and natural resource areas. Habitats and land cover types within the project consist of: agriculture, coastal scrub, freshwater wetland, mixed evergreen forest, non-native grassland, coastal terrace prairie, riparian forest and scrub, landscaped/ornamental/weedy areas, and developed areas. In addition there are several creek channels, drainages, irrigation ditches, irrigation ponds, and potential seasonal wetlands, in close proximity to the proposed project alignment. These habitat types present provide a suitable environment for many animal and plant species.

The City of Santa Cruz is exempt from planning and zoning ordinances, including the Riparian and Wetland Protection and Sensitive Habitat Protection ordinances, with regard to the location or construction of facilities to carry out any of its governmental functions, in this case the distribution of water, therefore Riparian Exception and Land Clearing Permits are not required. However, because of the potential for impacts to Riparian areas and to Special-Status plant and animal species that are known to inhabit the north coast area, the City of Santa Cruz was required to submit a Biotic Report to the County for review and approval prior to making an application for a Coastal Development Permit. A Biological Resources Assessment, prepared by LSA Associates, Inc. and dated March 2014 was then submitted by the City of Santa Cruz (on file with the Planning Department). The Environmental Coordinator reviewed and accepted the submitted report and the recommendations of this report were subsequently incorporated into the Mitigated Negative Declaration.

While exempt from local ordinances, the City is subject to State and Federal resource protection regulations and will be required to obtain a Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW), a 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), and a 404 permit from the Army Corps of Engineers (USACE). The project falls under a USACE Nationwide Permit 12 (Utility Line Activities) and the City will prepare a Preconstruction Notification to submit to the USACE. As part of their review, the USACE will conduct both formal and informal Section 7 consultations under the Endangered Species Act with USFWS and NMFS, which will be supported by the Biological Assessment and other supporting documentation.

Agricultural Resources: Portions of the proposed pipeline pass through land that is mapped within the Type-3, "Viable Agricultural Land within the Coastal Zone" Agricultural Resource designation. Therefore commercial agricultural use of the land for the production of food, fiber,

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ornamental crops and livestock is a priority land use on those parcels. As proposed, where the proposed pipeline traverses agricultural land, it will be sited entirely within existing farm roads and will therefore not affect the long-term viability or the productivity of any agricultural land.

Archaeological Resources: Except for that portion of the proposed project that is located on the Granite Rock parcel, APN 059-041-30, the alignment of the proposed pipeline is located within an area that is mapped as being in an archaeologically sensitive area. Therefore, prior to making this application for the reconstruction of the structure, LSA Associates, Inc., was contracted to conduct a Cultural Resources (Archaeological) Assessment of the site and to prepare a report. This report, on file with the Planning Department, was submitted to the County of Santa Cruz for review and has been accepted for the proposed project.

LSA's investigation indicates that the project area encompasses three recorded cultural resources, including a pre-historic archaeological site, originally recorded in 1950, remnant alignments and associated features of the pre-1940's Highway 1, recorded in 1999, and an extensive shell midden deposit and associated flaked stone and ground-stone artifact scatter, recorded in 1993. Further, the site investigation by LSA staff and monitoring of soil augering activities, showed the presence of shell midden soils, other shell deposits, lithic scatter, chert flakes and a bone fragment. Therefore it has been determined that it is highly likely that the proposed project is within a culturally significant Native American site.

Full details of the Cultural Resources found to be within the project area, along with a complete list of recommendations for mitigation measures, that include protective fencing to prevent damage by construction personnel and equipment, training programs for all construction personnel and a requirement for Archaeological Monitoring of the site during all ground disturbance, are detailed in the Cultural Resources Assessment.

Conclusion: Once the construction phase of the project has been completed and all proposed mitigations have been implemented, the new pipeline will be fully integrated into the surrounding landscape and will have a reduced impact on these resources than the existing pipeline.

Conditions of Approval

Exhibit D: 24 sheets prepared by the City of Santa Cruz Water Department, 19 sheets drawn in November 2014 and 5 sheets drawn in October 2014.

- I. This permit authorizes the replacement of approximately 19,000 feet of 16 to 22 inch diameter raw water main as Phase 3 (coast segment) of the City of Santa Cruz Water Departments North Coast System Rehabilitation Project, and the removal of 10 Significant Trees. This approval does not confer legal status on any existing structure(s) or existing use(s) on the subject properties that are not specifically authorized by this permit. Prior to exercising any rights granted by this permit including, without limitation, any construction or site disturbance, the applicant shall:
 - A. Sign, date, and return to the Planning Department one copy of the approval to indicate acceptance and agreement with the conditions thereof.
 - B. Obtain an Encroachment Permit from the California Department of Transportation (CALTRANS) for all work performed in the Highway 1 right-of-way.
 - C. Obtain all State and Federal approvals and/or permits as detailed in the Mitigated Negative Declaration for the project.
 - D. Submit for approval a Planting Plan for the replacement of the 10 Significant Trees that are required to be removed during the implementation of this project. Replacement trees shall be provided at a ratio of 3:1 (minimum 30 trees). All replacement trees shall be species that are native to the area and well suited to the open coastal environment in the project area. Replacement trees may be placed along the project route in suitable locations that will not interfere with overhead or underground utilities, existing agricultural uses, public pedestrian access to the beach and ocean or any other existing use of the land.
 - E. Submit for approval a Monitoring and Maintenance Plan for the replacement trees, effective for 5 years from the date of planting. The plan shall include provisions for the replacement of any trees that fail during the 5 year monitoring and maintenance period, and an extended monitoring and maintenance period for any such replacement trees.
- II. All construction shall be performed according to the approved plans and all mitigations as set out in the adopted Mitigations and Monitoring Plan shall be carried out. In addition:
 - A. All trees required to replace Significant Trees removed with this project shall be planted in accordance with the approved Planting Plan, and all such trees shall be maintained for a period of 5 years from the date of planting, in accordance with the Monitoring and Maintenance Plan.

- B. All mitigations recommended in the Biological Resources Assessment, prepared by LSA Associates, Inc. and dated March 2014, shall be implemented during the construction phase of this project.
 - C. All recommendations of the Tree Resource Evaluation Project Analysis, prepared by Maureen Hamb and dated March 2014, shall be followed, with regard to the removal of trees along the route of the pipeline and for the pruning and protection of all trees to be retained, with the following exception: Two Significant Trees, tree # 6 and #7 shall be retained for their scenic and habitat value. The remaining trees in the group (trees #8 -#11) that have been recommended for removal due to the trees being either dead or displaying serious structural weakness may be removed. An exclusion area as a buffer between workers and trees #6 and #7 shall be provided to protect construction crews during the installation of the pipeline.
 - D. All mitigations recommended in the Cultural Resources Assessment, prepared by LSA Associates, Inc. and dated March 2014, shall be implemented during the construction phase of this project.
 - E. Pursuant to Sections 16.40.040 and 16.42.080 of the County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this development, any artifact or other evidence of an historic archaeological resource or a Native American cultural site is discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner if the discovery contains human remains, or the Planning Director if the discovery contains no human remains. The procedures established in Sections 16.40.040 and 16.42.080, shall be observed.
- III. As a condition of this development approval, the holder of this development approval (“Development Approval Holder”), is required to defend, indemnify, and hold harmless the COUNTY, its officers, employees, and agents, from and against any claim (including attorneys’ fees), against the COUNTY, its officers, employees, and agents to attack, set aside, void, or annul this development approval of the COUNTY or any subsequent amendment of this development approval which is requested by the Development Approval Holder.
- A. COUNTY shall promptly notify the Development Approval Holder of any claim, action, or proceeding against which the COUNTY seeks to be defended, indemnified, or held harmless. COUNTY shall cooperate fully in such defense. If COUNTY fails to notify the Development Approval Holder within sixty (60) days of any such claim, action, or proceeding, or fails to cooperate fully in the defense thereof, the Development Approval Holder shall not thereafter be responsible to defend, indemnify, or hold harmless the COUNTY if such failure to notify or cooperate was significantly prejudicial to the Development Approval Holder.
 - B. Nothing contained herein shall prohibit the COUNTY from participating in the defense of any claim, action, or proceeding if both of the following occur:

Application #: 141262

APN: 05904130, 059-022-03, 059-022-04, 059-022-05, 059-023-10, 059-131-01, 059-131-05, 059-141-04, 059-181-03

Owner: California State Department of Parks and Recreation, Granite Rock company, Santa Cruz County Regional Transportation Commission

1. COUNTY bears its own attorney's fees and costs; and
 2. COUNTY defends the action in good faith.
- C. Settlement. The Development Approval Holder shall not be required to pay or perform any settlement unless such Development Approval Holder has approved the settlement. When representing the County, the Development Approval Holder shall not enter into any stipulation or settlement modifying or affecting the interpretation or validity of any of the terms or conditions of the development approval without the prior written consent of the County.
- D. Successors Bound. "Development Approval Holder" shall include the applicant and the successor(s) in interest, transferee(s), and assign(s) of the applicant.

Minor variations to this permit which do not affect the overall concept or density may be approved by the Planning Director at the request of the applicant or staff in accordance with Chapter 18.10 of the County Code.

Please note: This permit expires three years from the effective date listed below unless the conditions of approval are complied with and the use commences before the expiration date.

Approval Date: _____

Effective Date: _____

Expiration Date: _____

Wanda Williams
Deputy Zoning Administrator

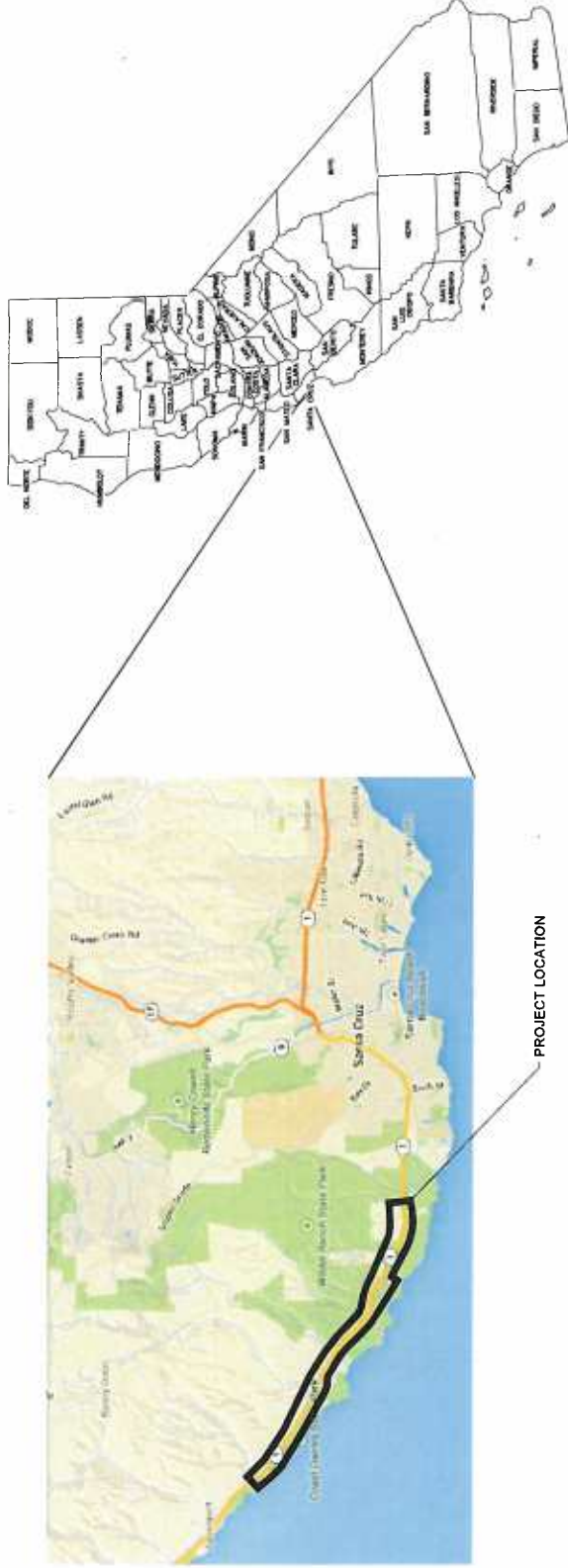
Lezanne Jeffs
Project Planner

Appeals: Any property owner, or other person aggrieved, or any other person whose interests are adversely affected by any act or determination of the Zoning Administrator, may appeal the act or determination to the Planning Commission in accordance with chapter 18.10 of the Santa Cruz County Code.



WATER DEPARTMENT

NORTH COAST SYSTEM REHABILITATION PROJECT PHASE 3 - COAST SEGMENT



PROJECT LOCATION

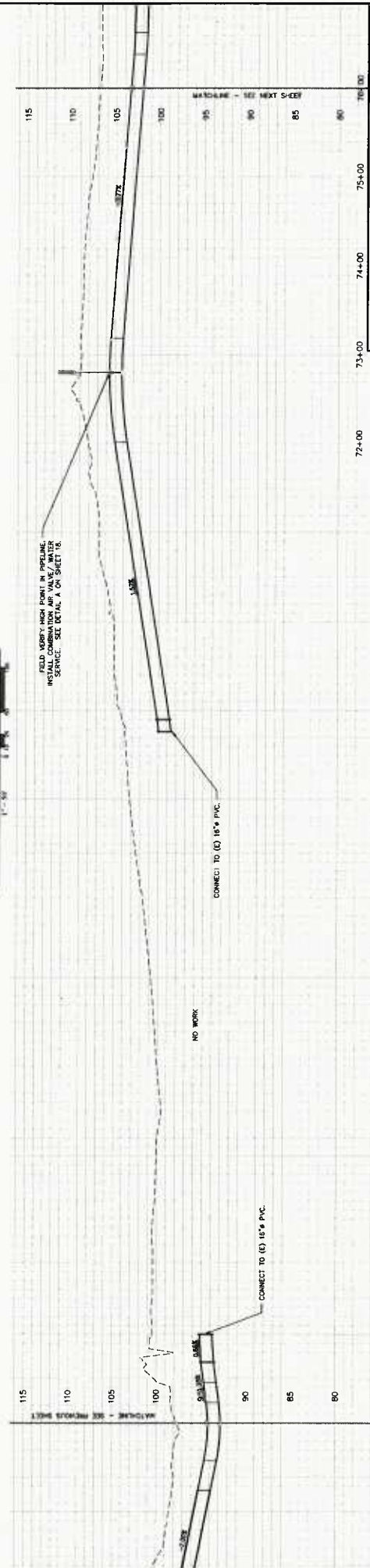
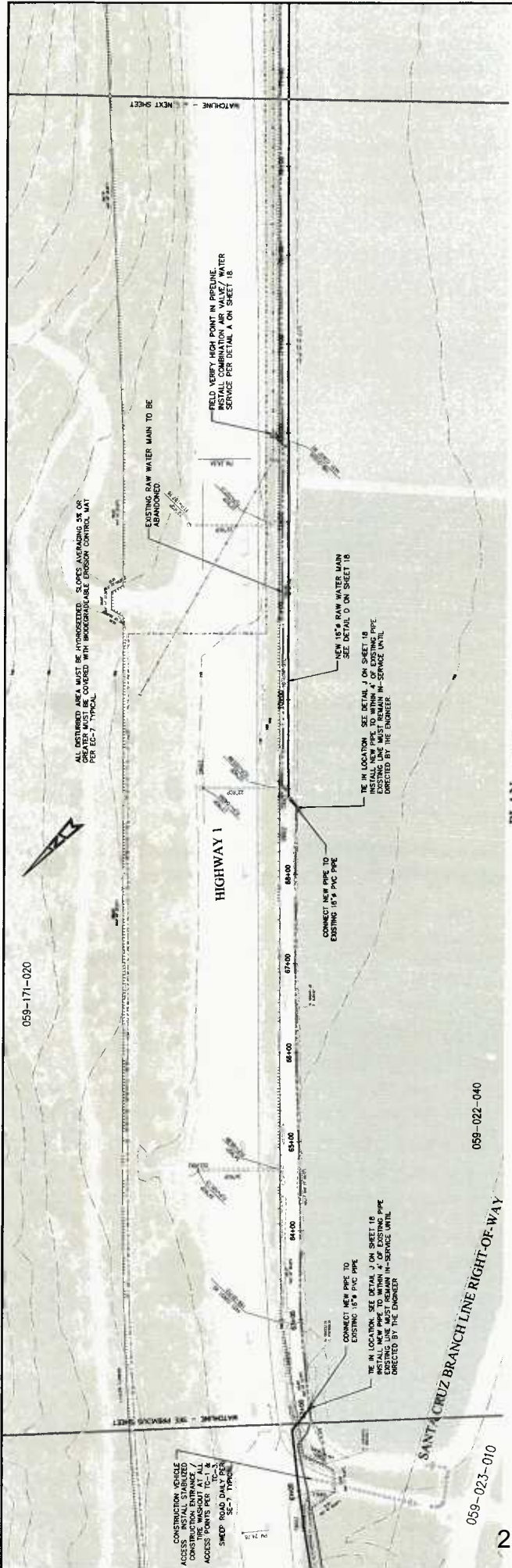
AUTHORIZED

HEDI LUCKENBACH, RCE No. C58091
DEPUTY DIRECTOR / ENGINEERING MANAGER

DATE

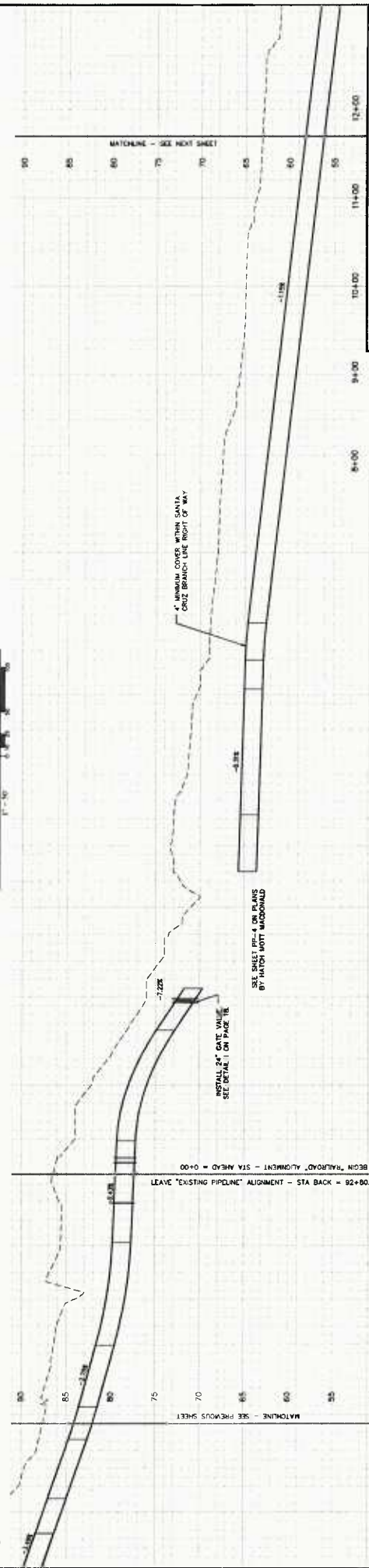
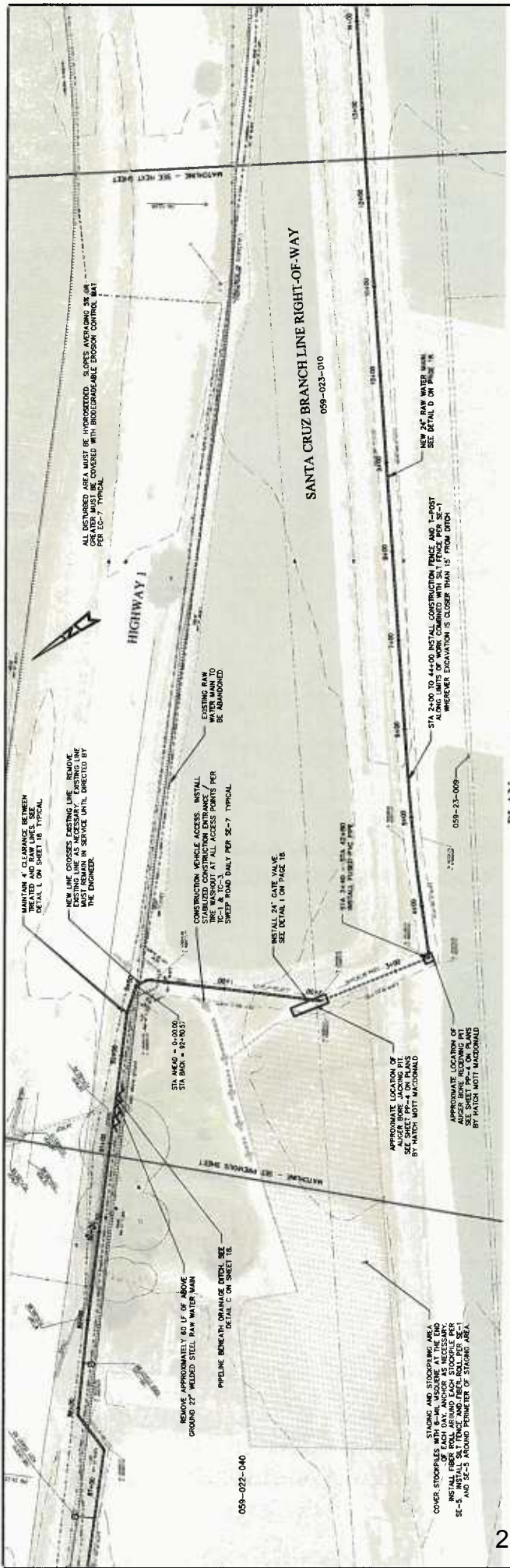
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		SCALE: NIS SHEET 1 OF 19
DATE: 1/2015 DRAWN: KMD CHECK: KUC	NORTH COAST SYSTEM REHAB PHASE 3 - COAST SEGMENT	DRAWING NO. 3738D
CITY OF SANTA CRUZ WATER DEPARTMENT Santa Cruz, CA 95062		TITLE SHEET



	PLAN		PROFILE						
DATE: 1/20/18	DRAWN: KWD	CHECK: KJC	CWD NO.: 2018-02	SCALE: AS SHOWN	SHEET: 4 OF 19	DRAWING NO.: 3738D			
SANTA CRUZ WATER DEPARTMENT <small>SANTA CRUZ, CA 95060</small>				NORTH COAST SYSTEM REHAB PHASE 3 - COAST SEGMENT <small>EXISTING PIPELINE ALIGNMENT</small> <small>STATION 61600 TO 78600</small>					
HORIZONTAL: 1" = 50' VERTICAL: 1" = 5'									
REV	DESCRIPTION	ENGR	DATE	60+00	61+00	62+00	63+00		
				64+00	65+00	66+00	67+00		
				68+00	69+00	70+00	71+00		
				72+00	73+00	74+00	75+00		

EXHIBIT D



SANTA CRUZ
WATER DEPARTMENT
SANTA CRUZ, CALIFORNIA

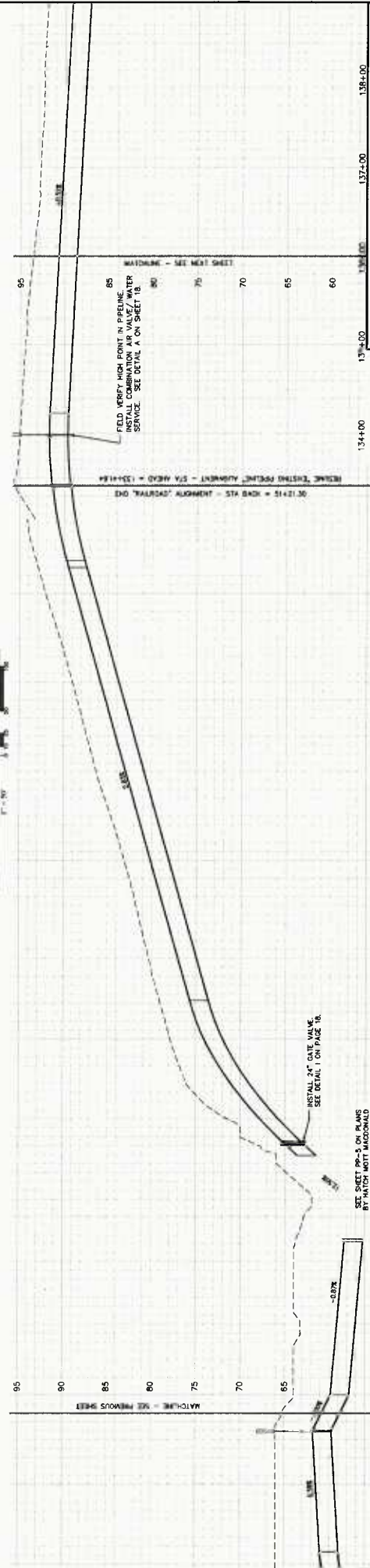
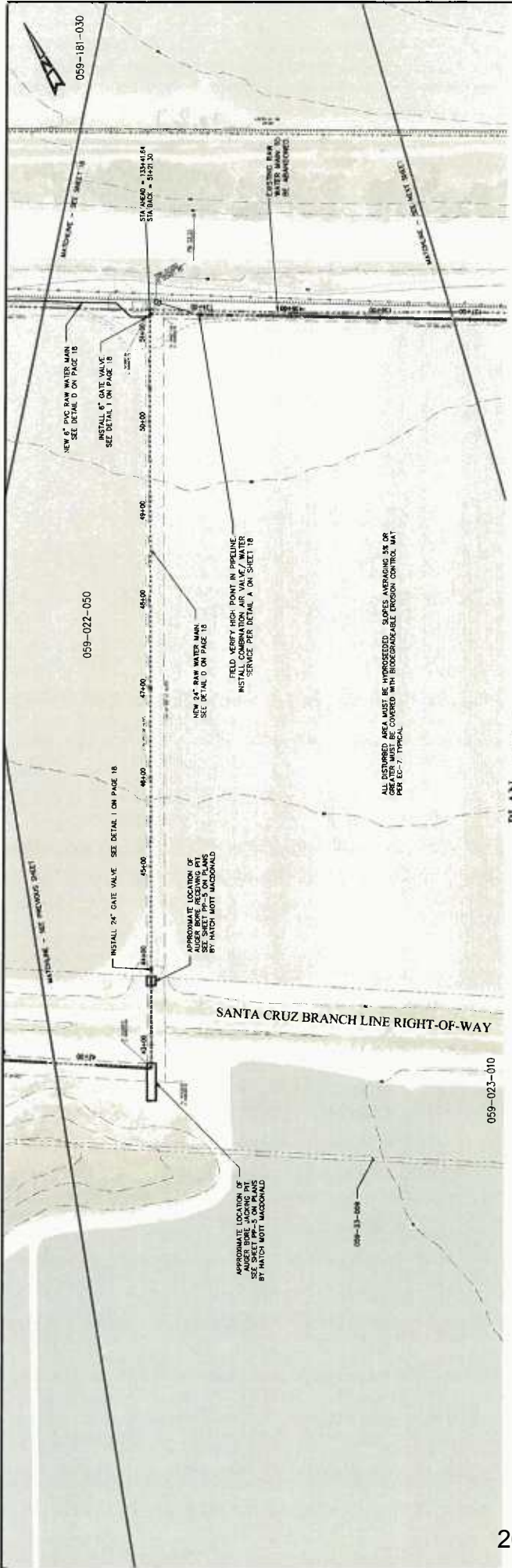
NORTH COAST SYSTEM REHAB
PHASE 3 - COAST SEGMENT

DATE: 1/2015
DRAWN: NVD
CHECK: JLC
CWD NO.: 201202

SCALE: AS SHOWN
SHEET 6 OF 19
DRAWING NO.: 3789D

REV	DESCRIPTION	ENGR	DATE

REV	DESCRIPTION	ENGR	DATE



REV	DESCRIPTION	ENGR	DATE

DATE: 1/2015
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 CHECK: KJC
 CADD NO.: 2012-002

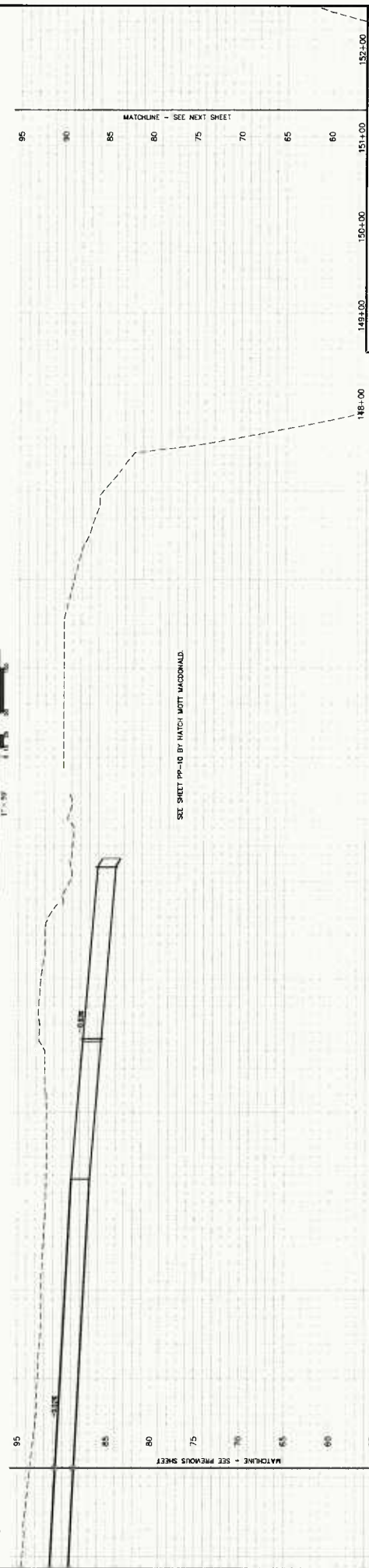
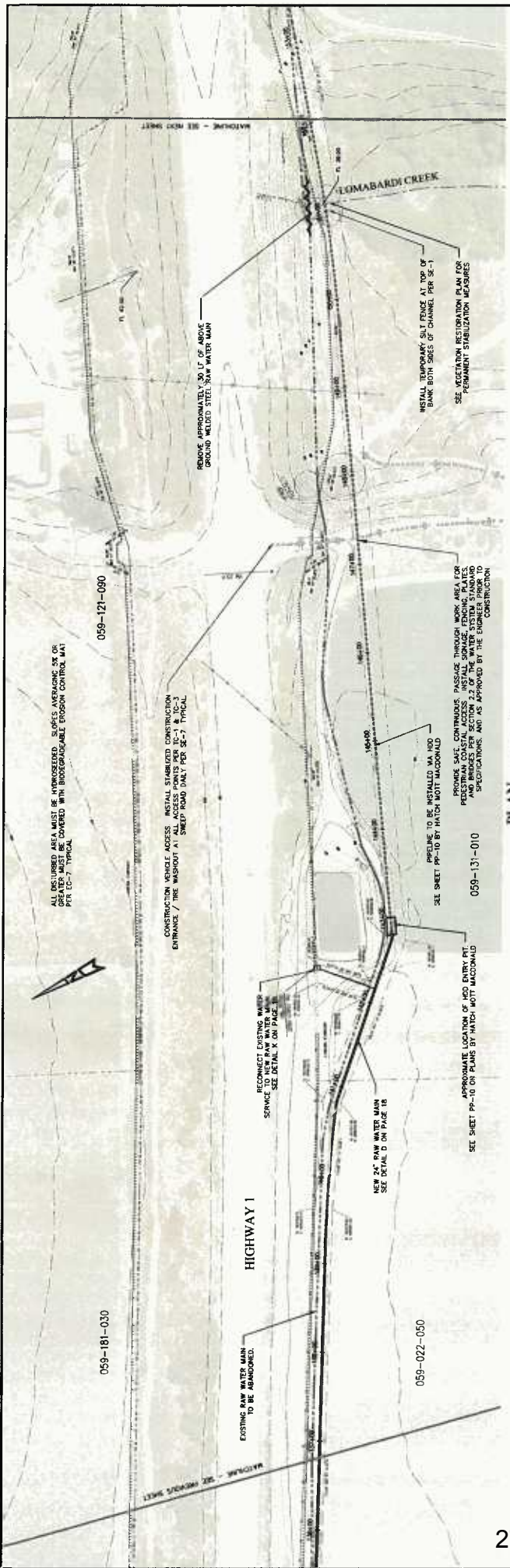
SANTA CRUZ
 WATER DEPARTMENT
 1155 N. ZEEB RD.
 SANTA CRUZ, CA 95060

SANTA CRUZ
 WATER DEPARTMENT
 1155 N. ZEEB RD.
 SANTA CRUZ, CA 95060

SCALE: AS SHOWN
 SHEET 9 OF 19
 DRAWING NO. 3738D
 EXISTING PIPELINE ALIGNMENT STATION 156+00 TO 158+00

NORTH COAST SYSTEM REHAB
PHASE 3 - COAST SEGMENT
 "RAILROAD" ALIGNMENT STATION 4+00 TO 51+00

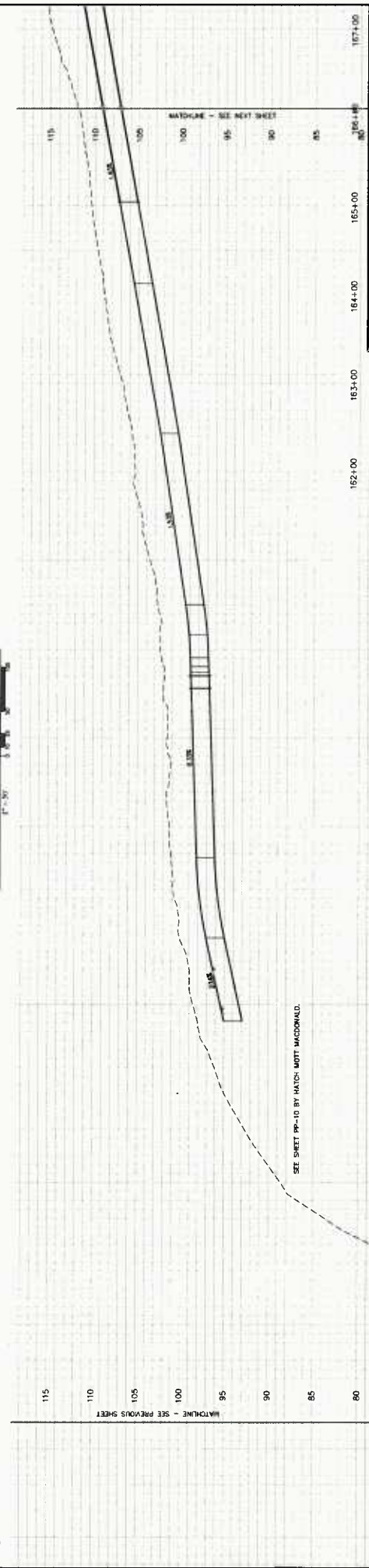
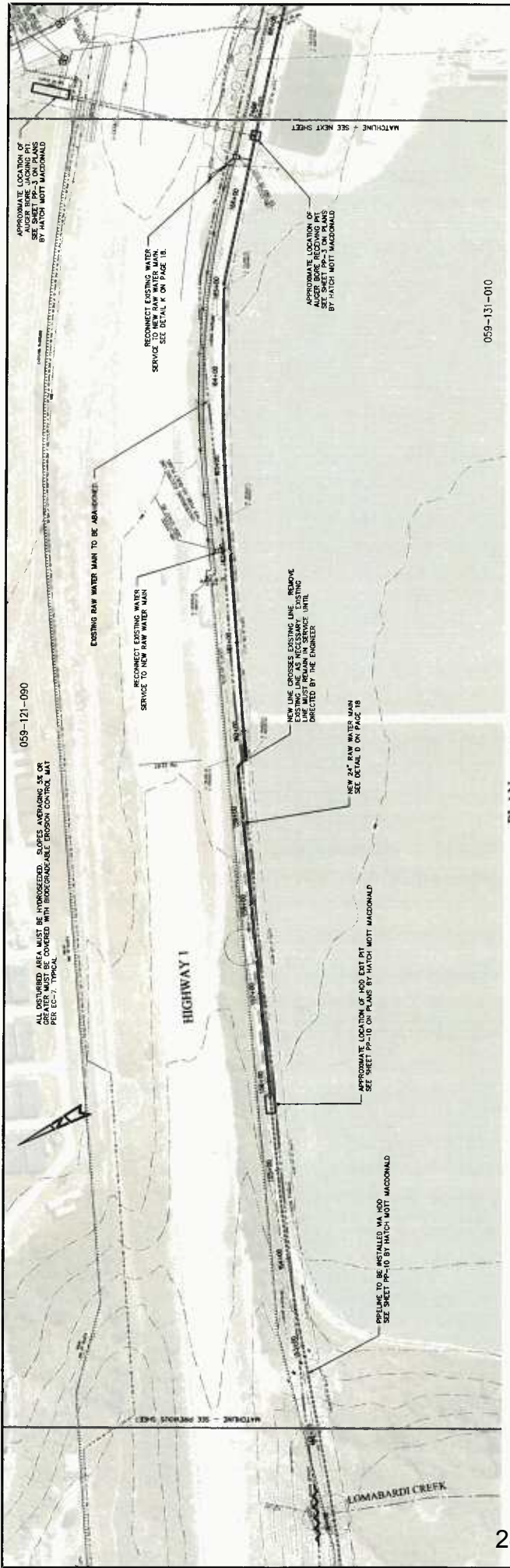
PROJECT: EXISTING PIPELINE ALIGNMENT STATION 156+00 TO 158+00



REV	DESCRIPTION	ENGR	DATE

DATE: 1/2015 SCALE: AS SHOWN
 DRAWN: KMG SHEET: 10 OF 19
 CHECK: KJC SHEET: PHASE 3 - COAST SEGMENT
 CADD NO.: 2013-002 EXISTING PIPELINE ALIGNMENT
 STATION: 138+00 TO 151+00 DRAWING NO.: 3750

SANTACRUZ
 WATER DEPARTMENT
 Santa Cruz, CA 95060



PLAN
1" = 50'

PROFILE
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

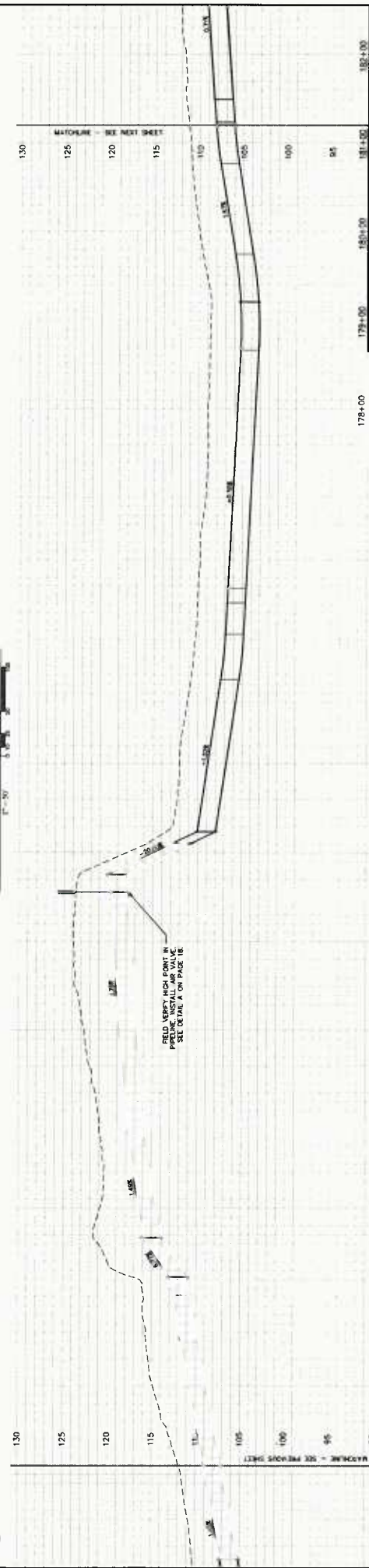
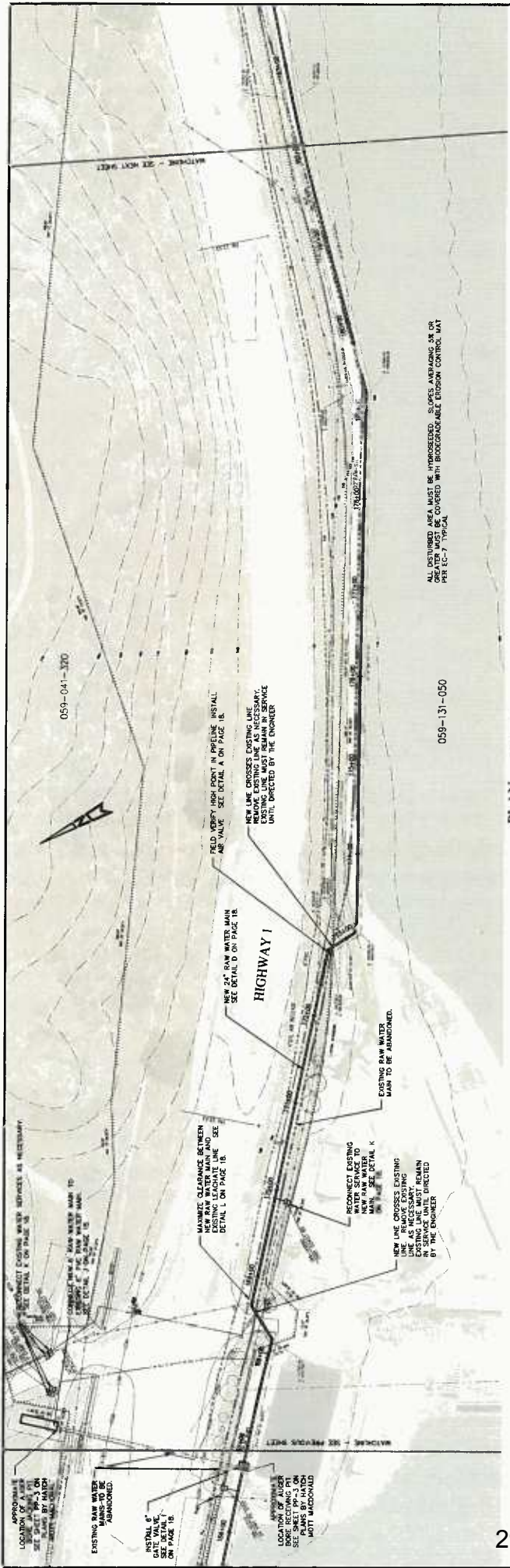
SANTACRUZ
WATER DEPARTMENT
SANTA CRUZ WATER SERVICES GROUP

DATE: 1/2015
DRAWN: SWD
CHECK: JUC
CWD NO.: 2012202

SCALE: AS SHOWN
SHEET 11 OF 19
DRAWING NO.: 3729D

NORTH COAST SYSTEM REHAB
PHASE 3 - COAST SEGMENT
*EXISTING PIPELINE ALIGNMENT
STATION 151+00 TO 169+00

REV	DESCRIPTION	ENGR	DATE

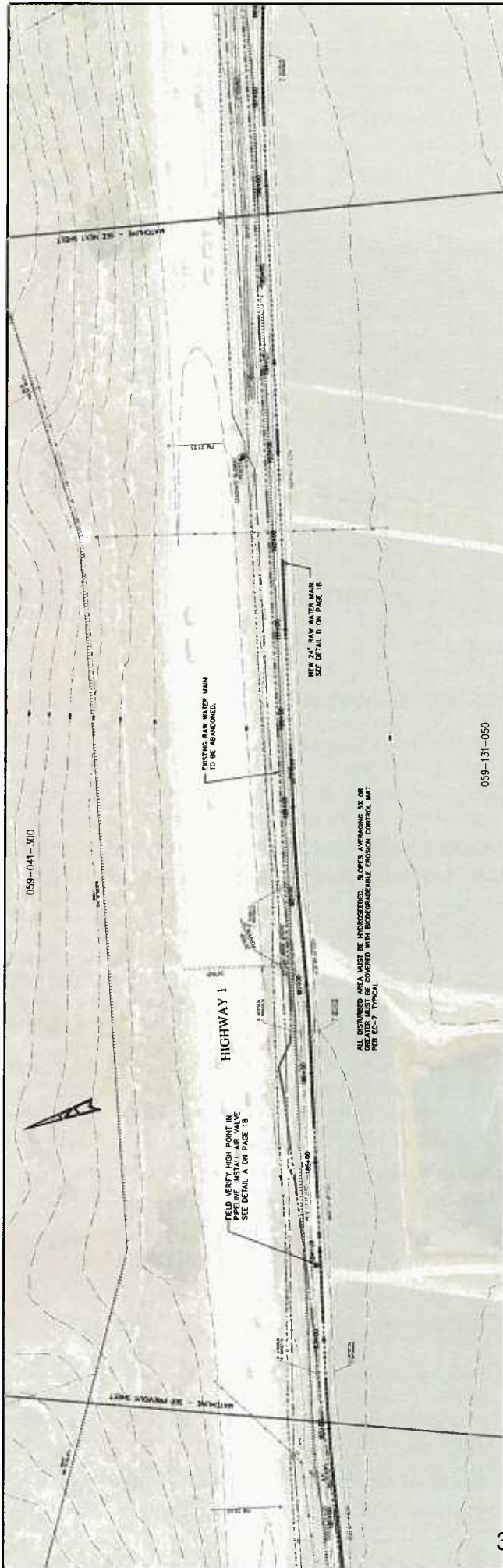


DATE	11/20/02	SCALE	AS SHOWN
DRAWN	NWD	SHEET	12 OF 18
CHECK	JLC	DRAWING NO.	3739D
CMD NO.	207-0002	NORTH COAST SYSTEM REHAB PHASE 3 - COAST SEGMENT EXISTING PIPELINE ALIGNMENT STATION 168+00 TO 181+00	

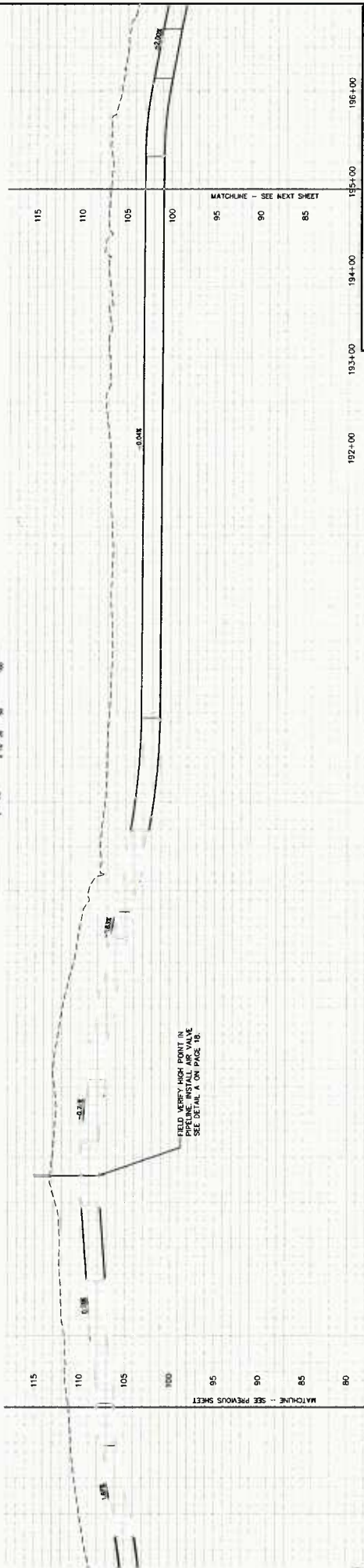
SANTA CRUZ
 WATER DEPARTMENT
 2000 SANTA CRUZ AVENUE
 SANTA CRUZ, CALIFORNIA 95060

PROFILE
 HORIZONTAL 1" = 50'
 VERTICAL 1" = 5'

REV	DESCRIPTION	ENGR	DATE



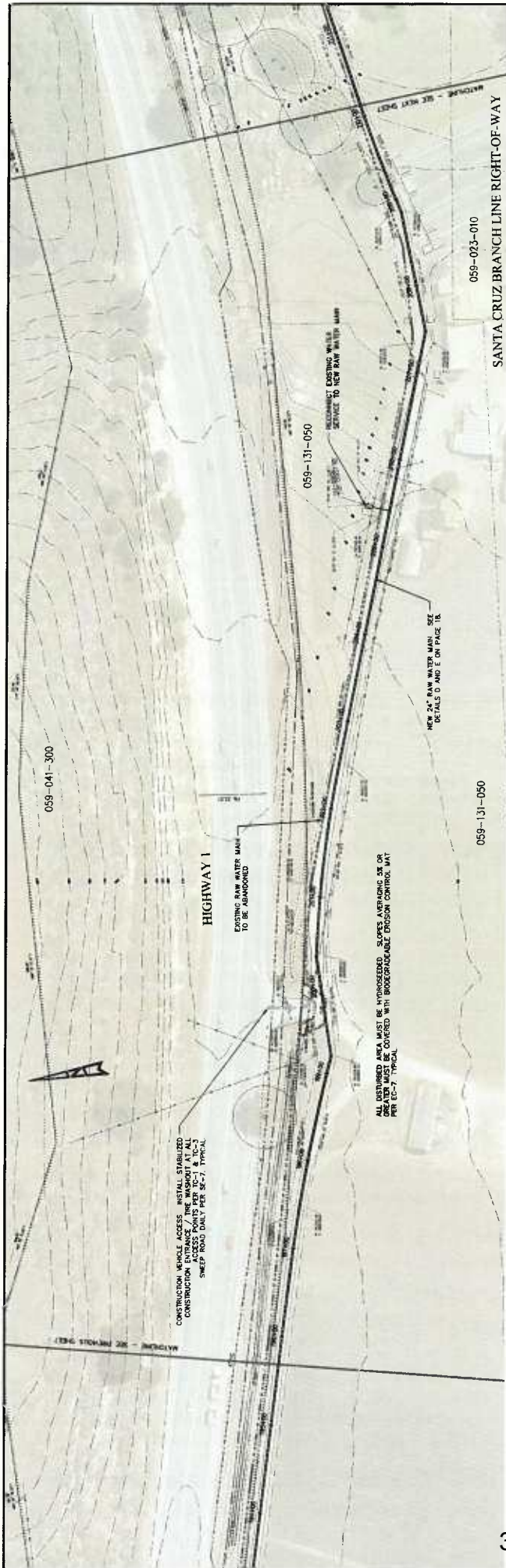
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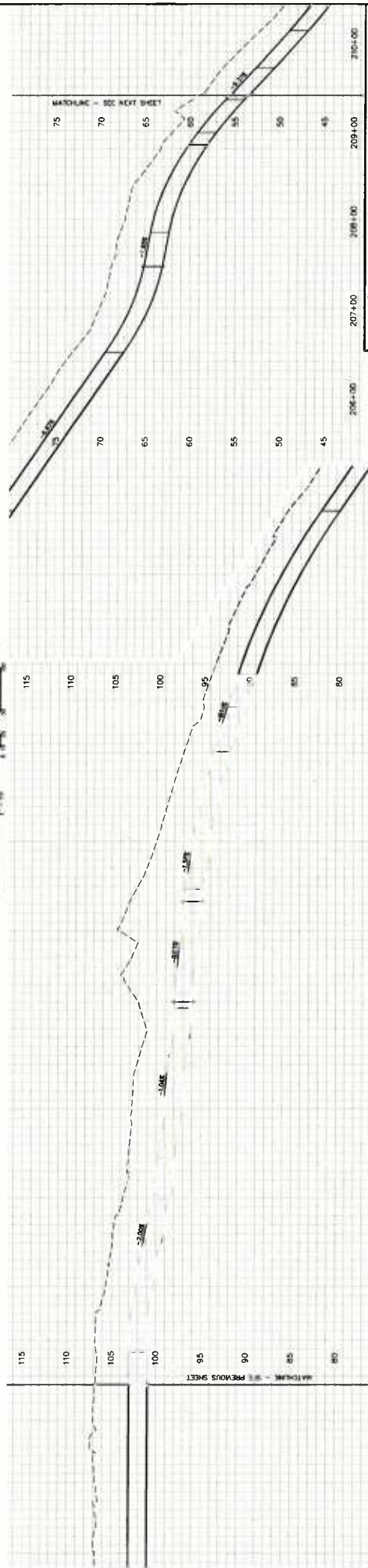
REV	DESCRIPTION	ENGR	DATE				

DATE: 1/2015	SCALE: AS SHOWN	SHEET 13 OF 19	DRAWING NO. 3780
DRAWN: SWD	CHECK: KJC	SANTACRUZ WATER DEPARTMENT <small>Santa Cruz, CA 95060</small>	
CHECK: KJC	CHECK: KJC		
PROJECT: NORTH COAST SYSTEM REHAB		PHASE 3 - COAST SEGMENT	
CADD NO.: 2072502		STATION: 181+00 TO 196+00	

EXHIBIT D



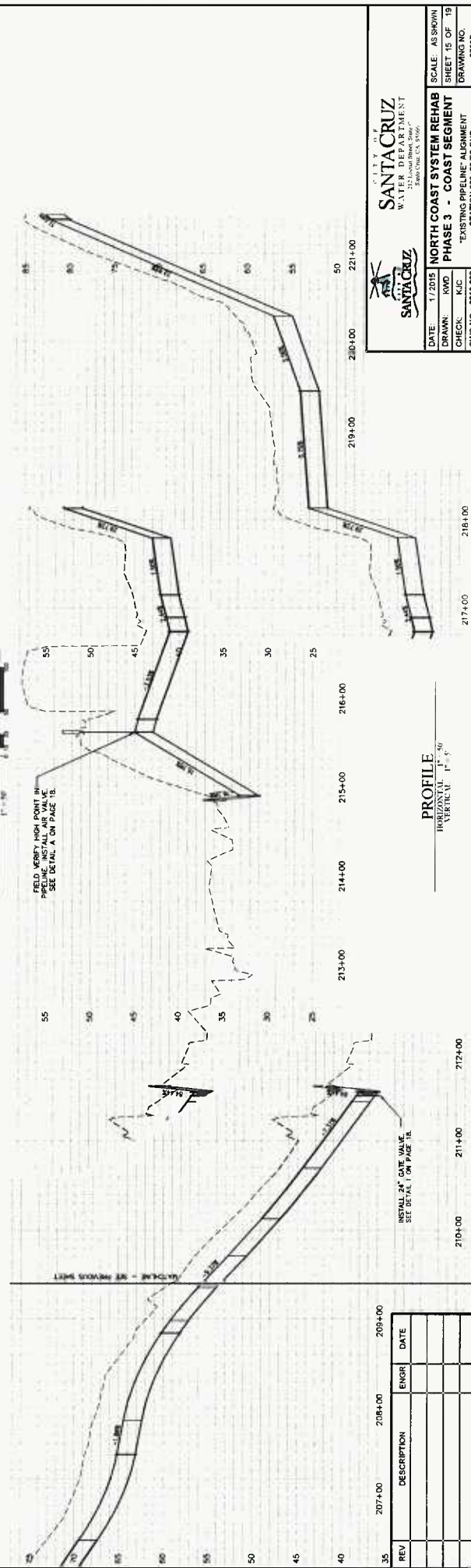
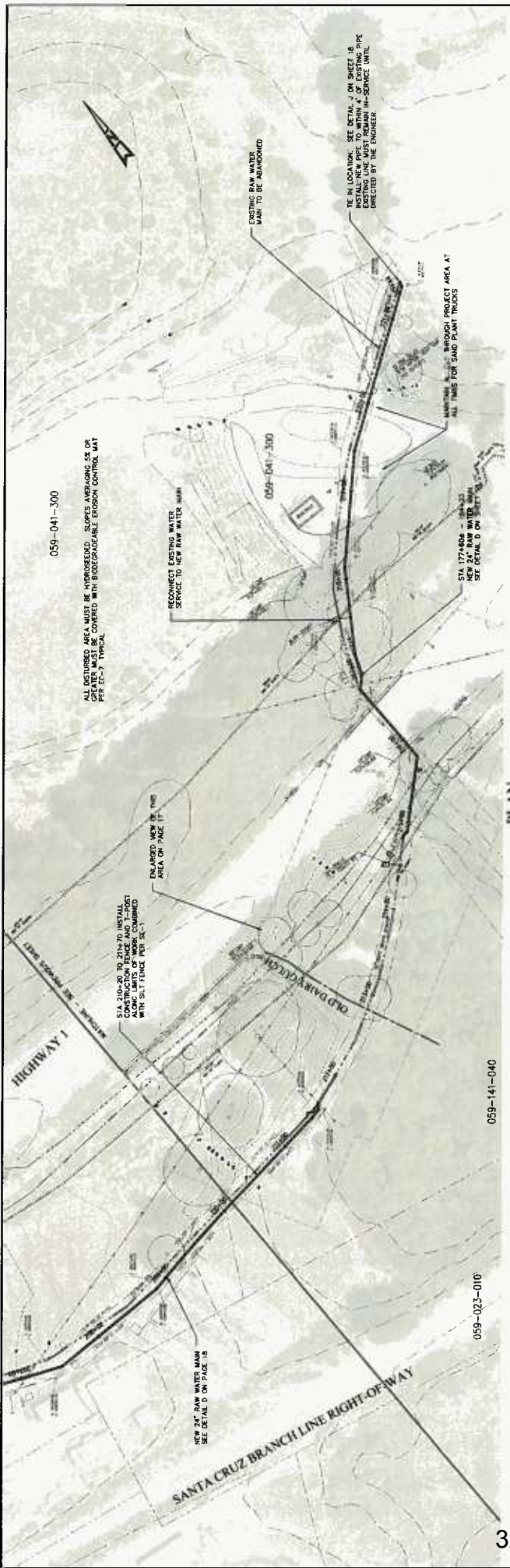
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DATE	1/2015	SCALE	AS SHOWN
DRAWN	BMD	SHEET	14 OF 18
CHECKED	KLC	PHASE	3 - COAST SEGMENT
CMO NO.	2012-002	REVISIONS	PER LINE ALIGNMENT
		STATION	193+00 TO 209+00

SANTACRUZ WATER DEPARTMENT

EXHIBIT D



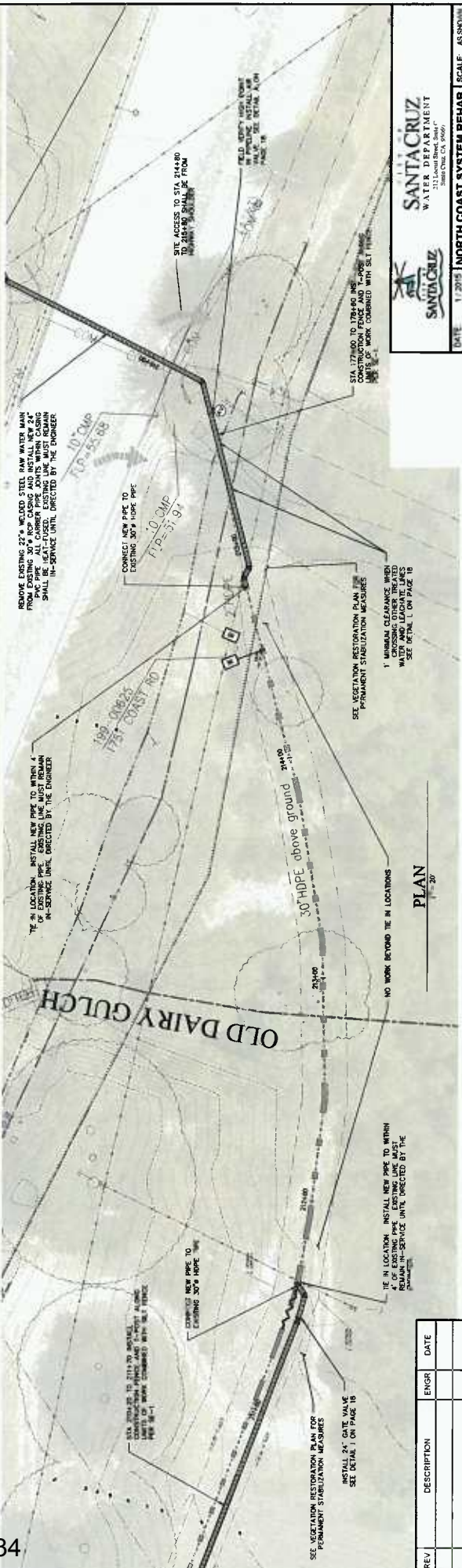
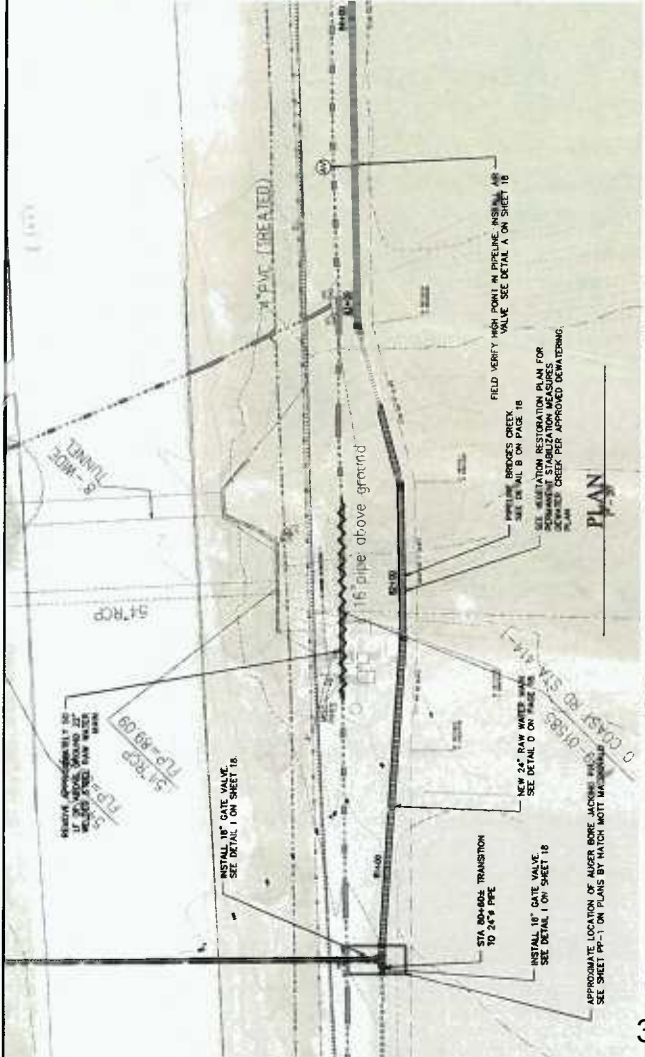
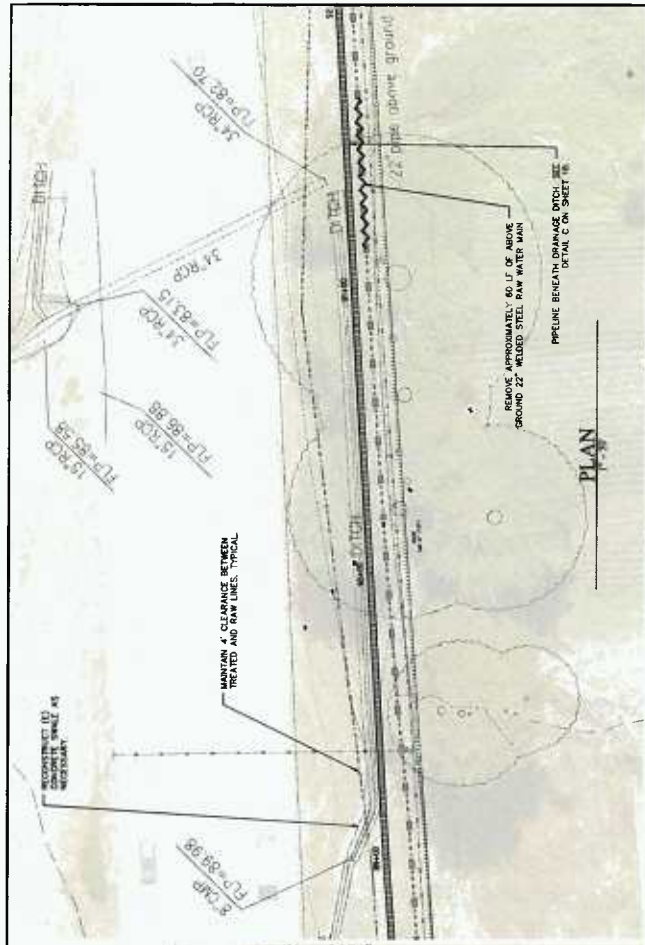
SANTA CRUZ WATER DEPARTMENT
 2000 COLLEEN AVENUE
 SANTA CRUZ, CA 95060

SANTA CRUZ WATER DEPARTMENT
 2000 COLLEEN AVENUE
 SANTA CRUZ, CA 95060

DATE: 1/2015 SCALE: AS SHOWN
 DRAWN: KMG SHEET 15 OF 19
 CHECK: KJC DRAWING NO. 059-041-040
 CWO NO. 2013-002 *EXISTING PIPELINE ALIGNMENT
 STATION 209+00 TO END 212+00

PROFILE
 HORIZONTAL: 1" = 50'
 VERTICAL: 1" = 5'

REV	DESCRIPTION	ENGR	DATE



SANTACRUZ
WATER DEPARTMENT
2000 ONE CA 80699

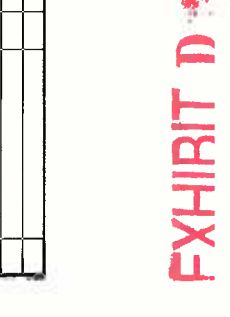
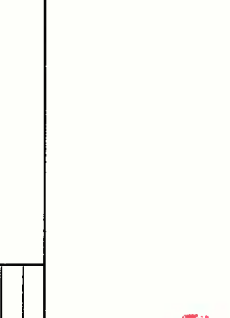
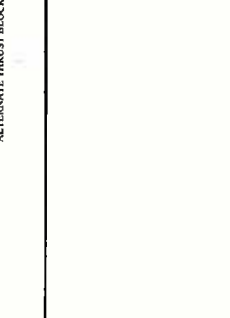
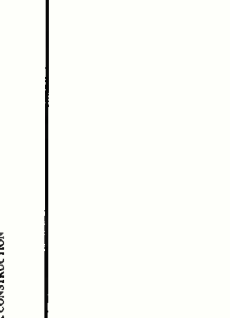
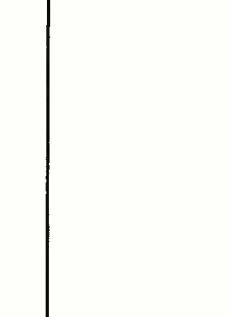
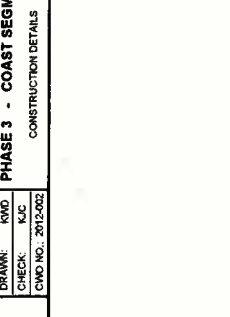
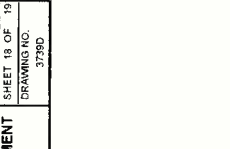
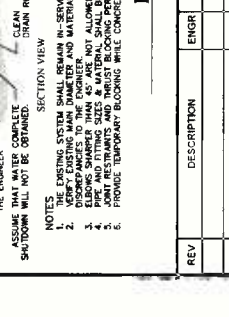
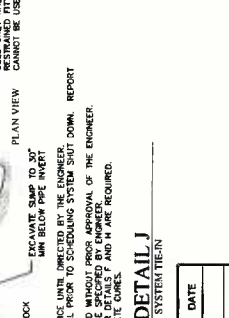
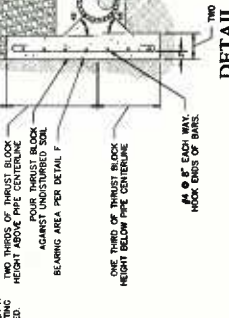
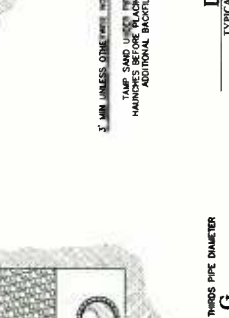
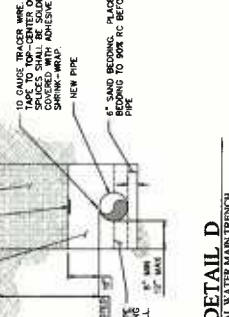
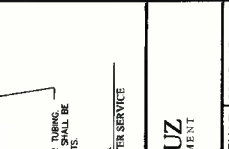
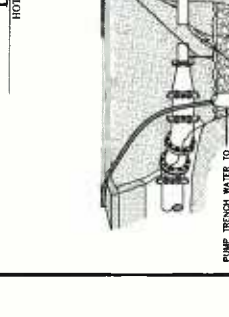
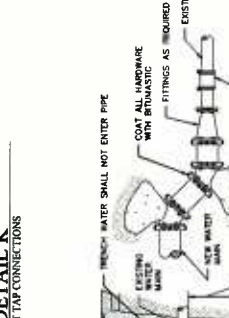
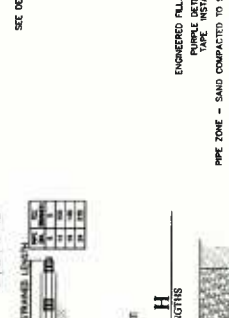
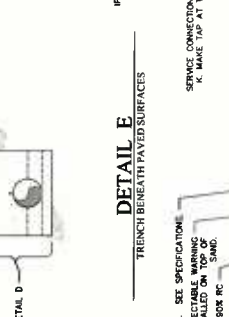
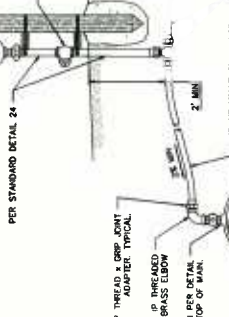
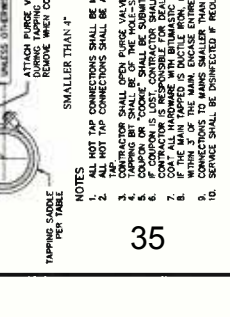
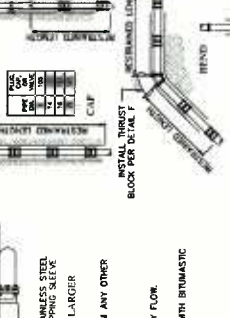
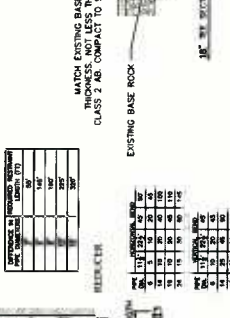
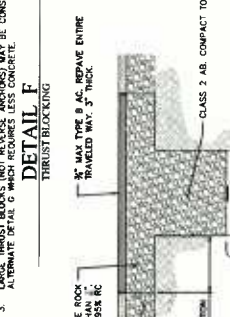
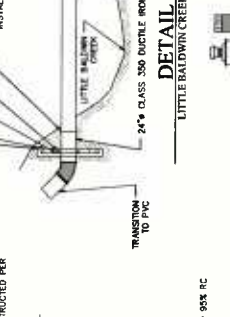
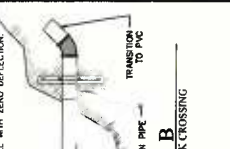
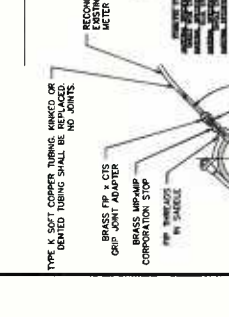
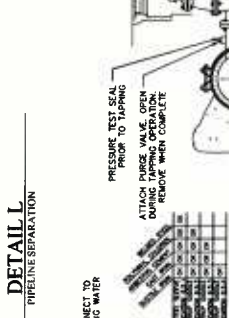
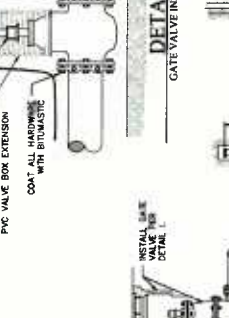
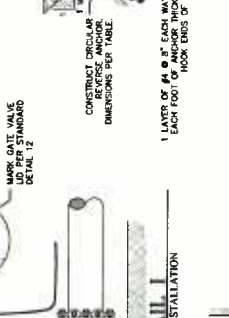
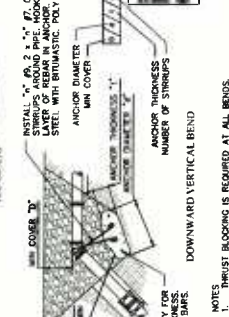
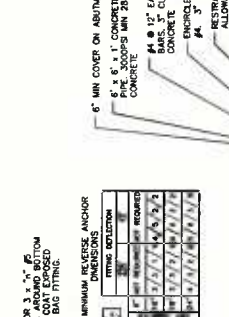
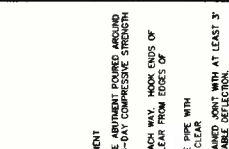
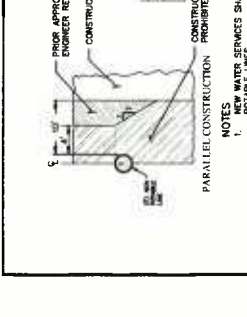
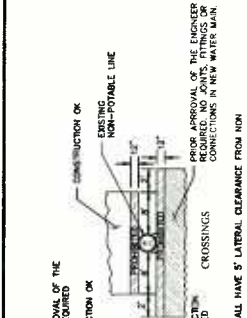
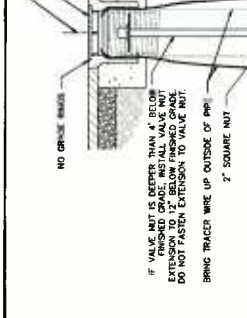
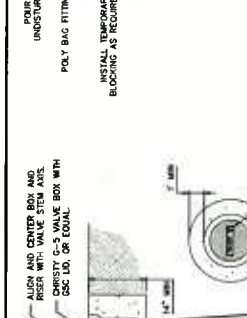
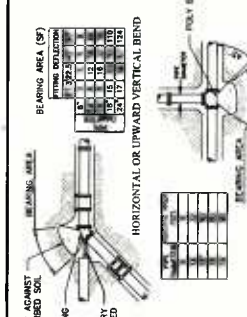
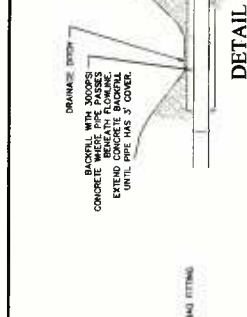
**NORTH COAST SYSTEM REHAB
PHASE 3 - COAST SEGMENT**

DATE: 1.2018
DRAWN: JMD
CHECK: JAC
CWO NO: 2017402

SCALE: AS SHOWN
SHEET 17 OF 19
DRAWING NO.: 3789D

DETAILED VIEWS

REV	DESCRIPTION	ENGR	DATE

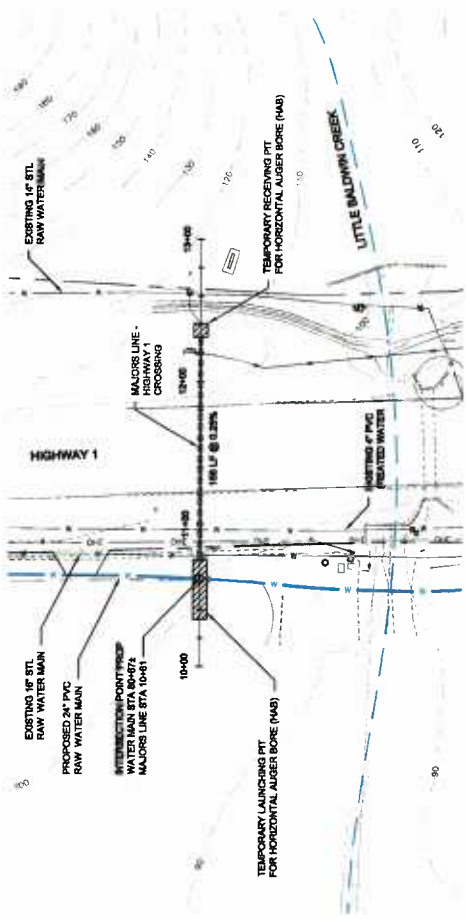


BEARING AREA (SQ FT)	STIRRED	UNSTIRRED
1.0	1.0	1.0
1.5	1.5	1.5
2.0	2.0	2.0
2.5	2.5	2.5
3.0	3.0	3.0
3.5	3.5	3.5
4.0	4.0	4.0
4.5	4.5	4.5
5.0	5.0	5.0
5.5	5.5	5.5
6.0	6.0	6.0
6.5	6.5	6.5
7.0	7.0	7.0
7.5	7.5	7.5
8.0	8.0	8.0
8.5	8.5	8.5
9.0	9.0	9.0
9.5	9.5	9.5
10.0	10.0	10.0

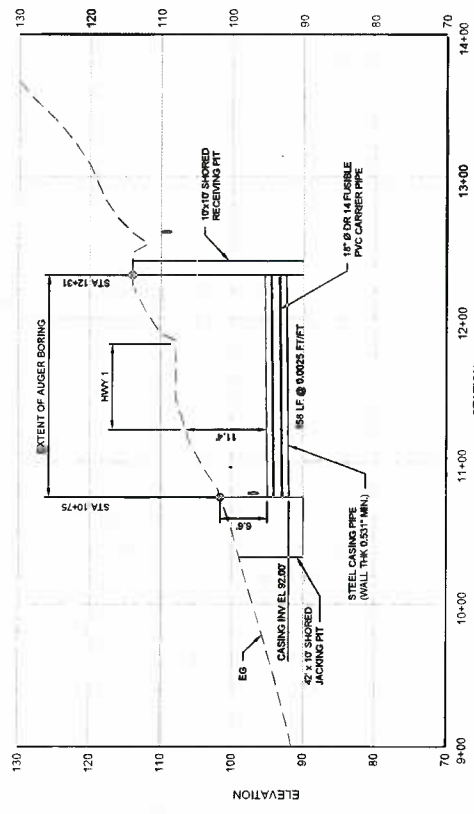
ANCHOR DIAMETER	ANCHOR THICKNESS	NUMBER OF STRIPS
1/2"	1/2"	1
3/4"	3/4"	1
1"	1"	1
1 1/4"	1 1/4"	1
1 1/2"	1 1/2"	1
1 3/4"	1 3/4"	1
2"	2"	1
2 1/4"	2 1/4"	1
2 1/2"	2 1/2"	1
2 3/4"	2 3/4"	1
3"	3"	1
3 1/4"	3 1/4"	1
3 1/2"	3 1/2"	1
3 3/4"	3 3/4"	1
4"	4"	1
4 1/4"	4 1/4"	1
4 1/2"	4 1/2"	1
4 3/4"	4 3/4"	1
5"	5"	1
5 1/4"	5 1/4"	1
5 1/2"	5 1/2"	1
5 3/4"	5 3/4"	1
6"	6"	1
6 1/4"	6 1/4"	1
6 1/2"	6 1/2"	1
6 3/4"	6 3/4"	1
7"	7"	1
7 1/4"	7 1/4"	1
7 1/2"	7 1/2"	1
7 3/4"	7 3/4"	1
8"	8"	1
8 1/4"	8 1/4"	1
8 1/2"	8 1/2"	1
8 3/4"	8 3/4"	1
9"	9"	1
9 1/4"	9 1/4"	1
9 1/2"	9 1/2"	1
9 3/4"	9 3/4"	1
10"	10"	1
10 1/4"	10 1/4"	1
10 1/2"	10 1/2"	1
10 3/4"	10 3/4"	1
11"	11"	1
11 1/4"	11 1/4"	1
11 1/2"	11 1/2"	1
11 3/4"	11 3/4"	1
12"	12"	1
12 1/4"	12 1/4"	1
12 1/2"	12 1/2"	1
12 3/4"	12 3/4"	1
13"	13"	1
13 1/4"	13 1/4"	1
13 1/2"	13 1/2"	1
13 3/4"	13 3/4"	1
14"	14"	1
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14 1/2"	14 1/2"	1
14 3/4"	14 3/4"	1
15"	15"	1
15 1/4"	15 1/4"	1
15 1/2"	15 1/2"	1
15 3/4"	15 3/4"	1
16"	16"	1
16 1/4"	16 1/4"	1
16 1/2"	16 1/2"	1
16 3/4"	16 3/4"	1
17"	17"	1
17 1/4"	17 1/4"	1
17 1/2"	17 1/2"	1
17 3/4"	17 3/4"	1
18"	18"	1
18 1/4"	18 1/4"	1
18 1/2"	18 1/2"	1
18 3/4"	18 3/4"	1
19"	19"	1
19 1/4"	19 1/4"	1
19 1/2"	19 1/2"	1
19 3/4"	19 3/4"	1
20"	20"	1
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21 1/2"	21 1/2"	1
21 3/4"	21 3/4"	1
22"	22"	1
22 1/4"	22 1/4"	1
22 1/2"	22 1/2"	1
22 3/4"	22 3/4"	1
23"	23"	1
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23 1/2"	23 1/2"	1
23 3/4"	23 3/4"	1
24"	24"	1
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24 1/2"	24 1/2"	1
24 3/4"	24 3/4"	1
25"	25"	1
25 1/4"	25 1/4"	1
25 1/2"	25 1/2"	1
25 3/4"	25 3/4"	1
26"	26"	1
26 1/4"	26 1/4"	1
26 1/2"	26 1/2"	1
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27"	27"	1
27 1/4"	27 1/4"	1
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27 3/4"	27 3/4"	1
28"	28"	1
28 1/4"	28 1/4"	1
28 1/2"	28 1/2"	1
28 3/4"	28 3/4"	1
29"	29"	1
29 1/4"	29 1/4"	1
29 1/2"	29 1/2"	1
29 3/4"	29 3/4"	1
30"	30"	1

PIPE SIZE (IN)	THRUST BLOKING (IN)
1/2"	1/2"
3/4"	3/4"
1"	1"
1 1/4"	1 1/4"
1 1/2"	1 1/2"
1 3/4"	1 3/4"
2"	2"
2 1/4"	2 1/4"
2 1/2"	2 1/2"
2 3/4"	2 3/4"
3"	3"
3 1/4"	3 1/4"
3 1/2"	3 1/2"
3 3/4"	3 3/4"
4"	4"
4 1/4"	4 1/4"
4 1/2"	4 1/2"
4 3/4"	4 3/4"
5"	5"
5 1/4"	5 1/4"
5 1/2"	5 1/2"
5 3/4"	5 3/4"
6"	6"
6 1/4"	6 1/4"
6 1/2"	6 1/2"</

NOTES:
 1. THE CARRIER PIPE LENGTH SHALL EXTEND 12 INCHES INSIDE THE LAUNCHING AND RECEIVING PITS



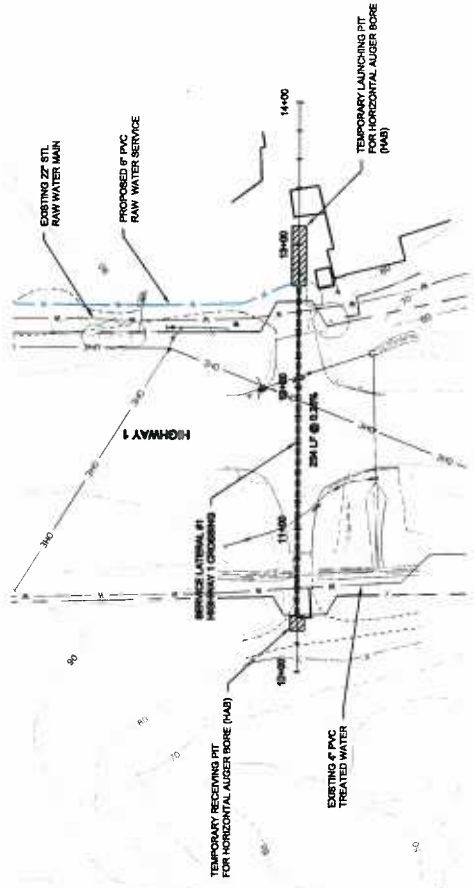
PLAN
 SCALE 1" = 40'



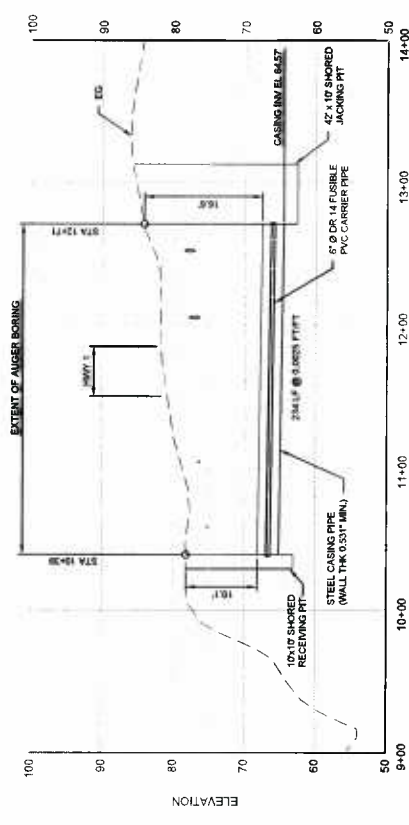
PROFILE
 1" = 40' HORIZ
 1" = 8' VERT

DRAWING NO. PP-1	
CITY OF SANTA CRUZ WATER DEPARTMENT NORTH COAST SYSTEM REHABILITATION HIGHWAY 1 PHASE 3 - COAST SEGMENT MAJORS LINE HIGHWAY 1 CROSSING PLAN & PROFILE	
SCALE NOTES PARADE: 317335-MCS-HR001 CONTRACT NO. DATE: 10/17/2014	CITY OF SANTA CRUZ WATER DEPARTMENT 273 LOCUST STREET SANTA CRUZ, CA 95060 (511) 425-7466
PERMIT REVIEW PLANS 10-17-2014 (NOT FOR CONSTRUCTION)	
THIS IS A SEPARATE DRAWING FULL SIZE DRAWING (SIZE D 34"x22") IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY	
DESIGNED BY: L. ABRAMSON	CHECKED BY: M. WHITE
DRAWN BY: M. WHITE	APPROVED BY:
DATE:	DESCRIPTION:

NOTES:
 1. FOR NOTES SEE DRAWING NUMBER PP-1



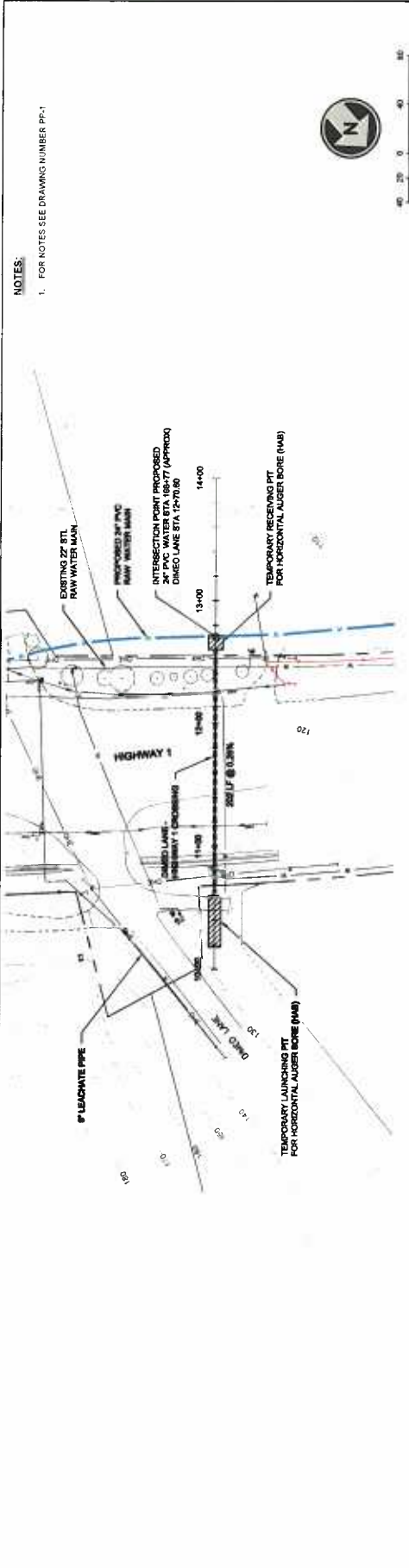
PLAN
 SCALE: 1" = 40'



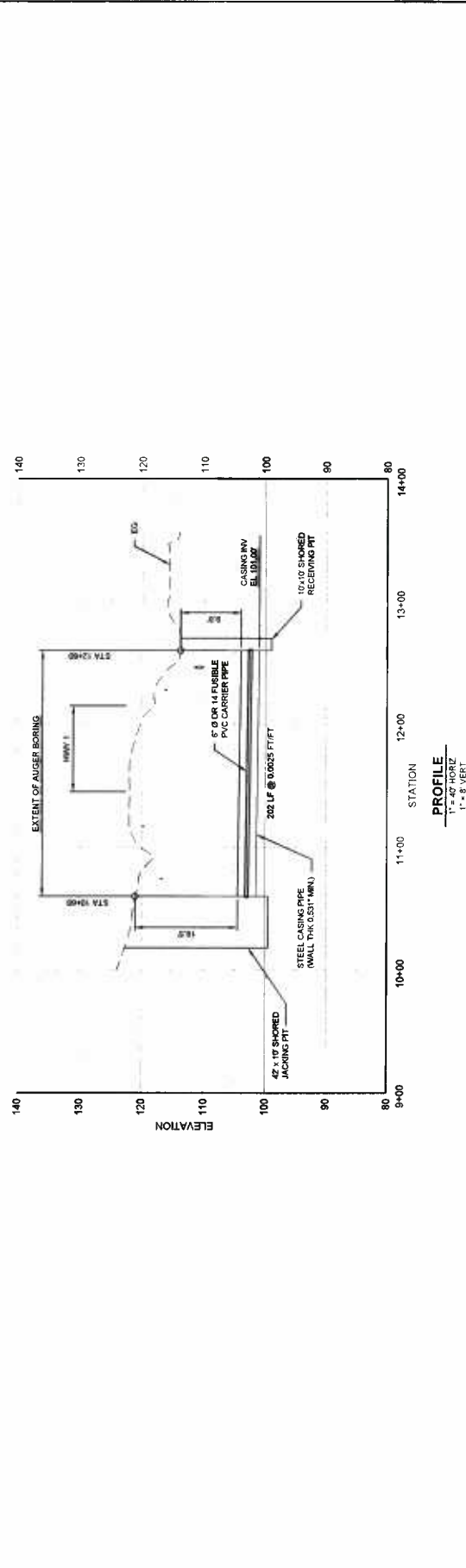
PROFILE
 SCALE: 1" = 4' VERT
 1" = 40' HORIZ

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 File: \\m-hq\projects\17135\Drawings\17135-HR02-1.dwg
 User: [unreadable]
 Plot: [unreadable]

<p>APPROVED BY: L. ABRAMSON</p> <p>DRAWN BY: M. WHITE</p> <p>CHECKED BY:</p> <p>APPROVED BY:</p>		<p>Check: [unreadable] Scale: [unreadable] Date: [unreadable]</p>	<p>PERMIT REVIEW PLANS 10-17-2014 NOT FOR CONSTRUCTION!</p>			<p>CITY OF SANTA CRUZ WATER DEPARTMENT 212 AUGUST STREET SANTA CRUZ, CA 95060 (571) 400-3186</p>	<p>SCALE AS NOTED DRAWING NO. PP-2 CONTRACT NO. 317335-NCS-HB02 DATE: 10/17/2014</p>	<p>CITY OF SANTA CRUZ WATER DEPARTMENT NORTH COAST SYSTEM REHABILITATION HIGHWAY 1 PHASE 3 - COAST SEGMENT SERVICE LATERAL #1 - HIGHWAY 1 CROSSING PLAN & PROFILE</p>
--	--	---	---	--	--	--	---	---



PLAN
SCALE 1" = 40'



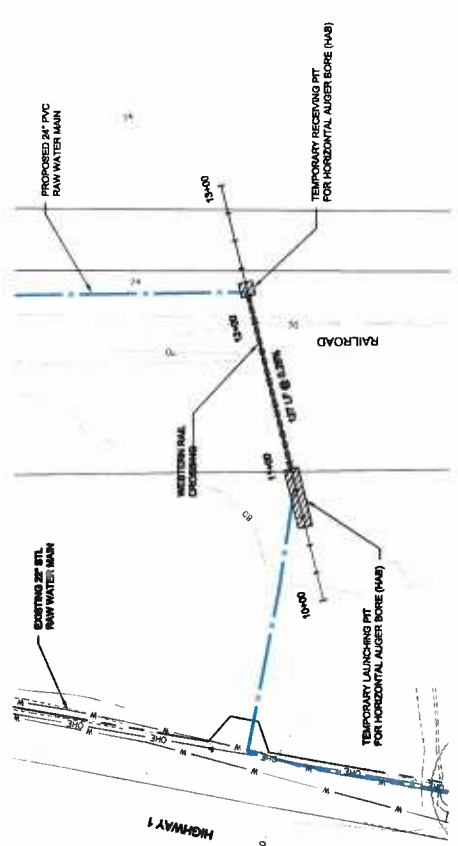
PROFILE
SCALE 1" = 8' VERT
1" = 8' HORIZ

NOTES:
1. FOR NOTES SEE DRAWING NUMBER PP-1

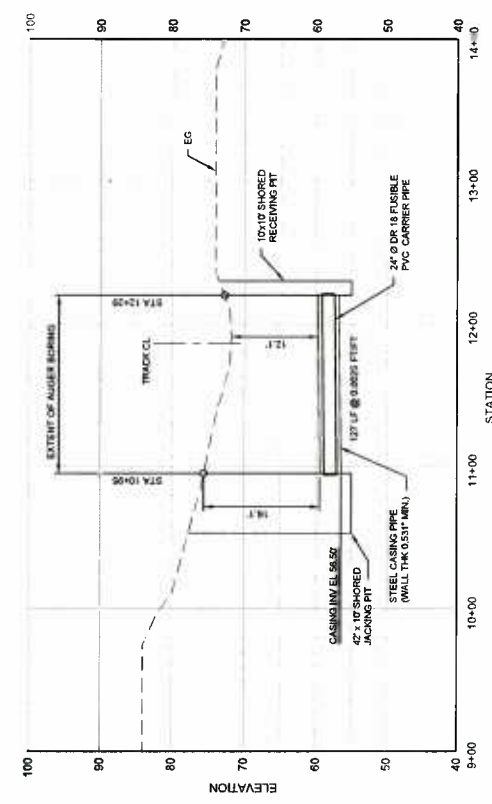


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DATE	DESCRIPTION																							
DESIGNED BY	L. ABRAMSON																							
DRAWN BY	M. WHITE																							
CHECKED BY																								
APPROVED BY																								

NOTES:
1. FOR NOTES SEE DRAWING NUMBER PP-1



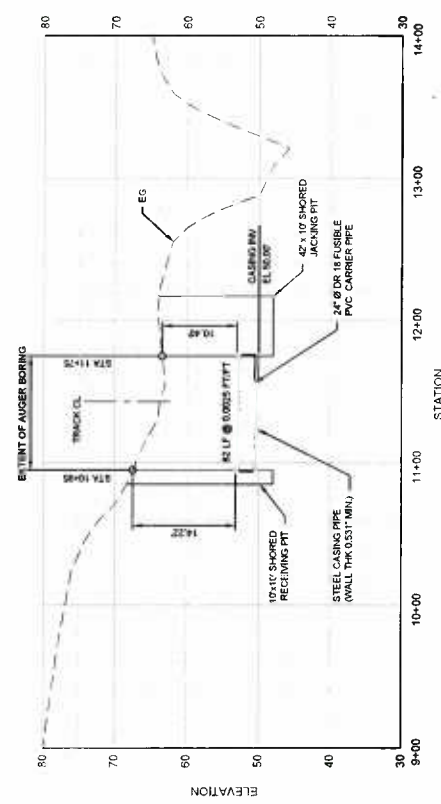
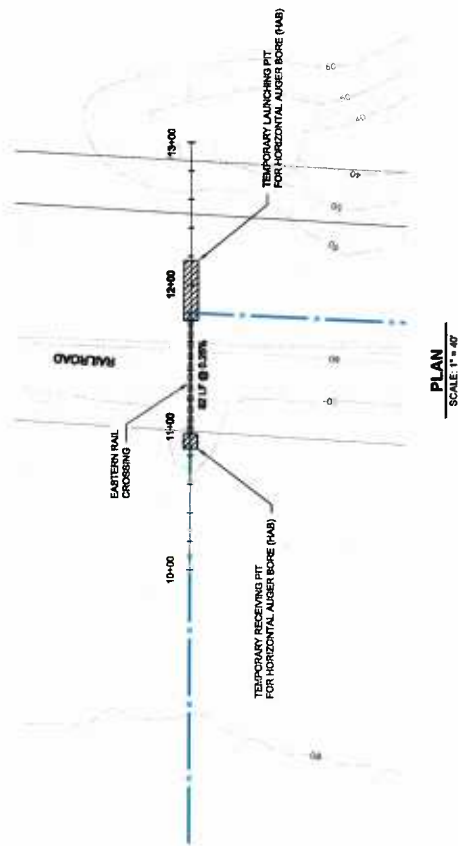
PLAN
SCALE: 1" = 40'



PROFILE
SCALE: 1" = 40' HORIZ
1" = 5' VERT

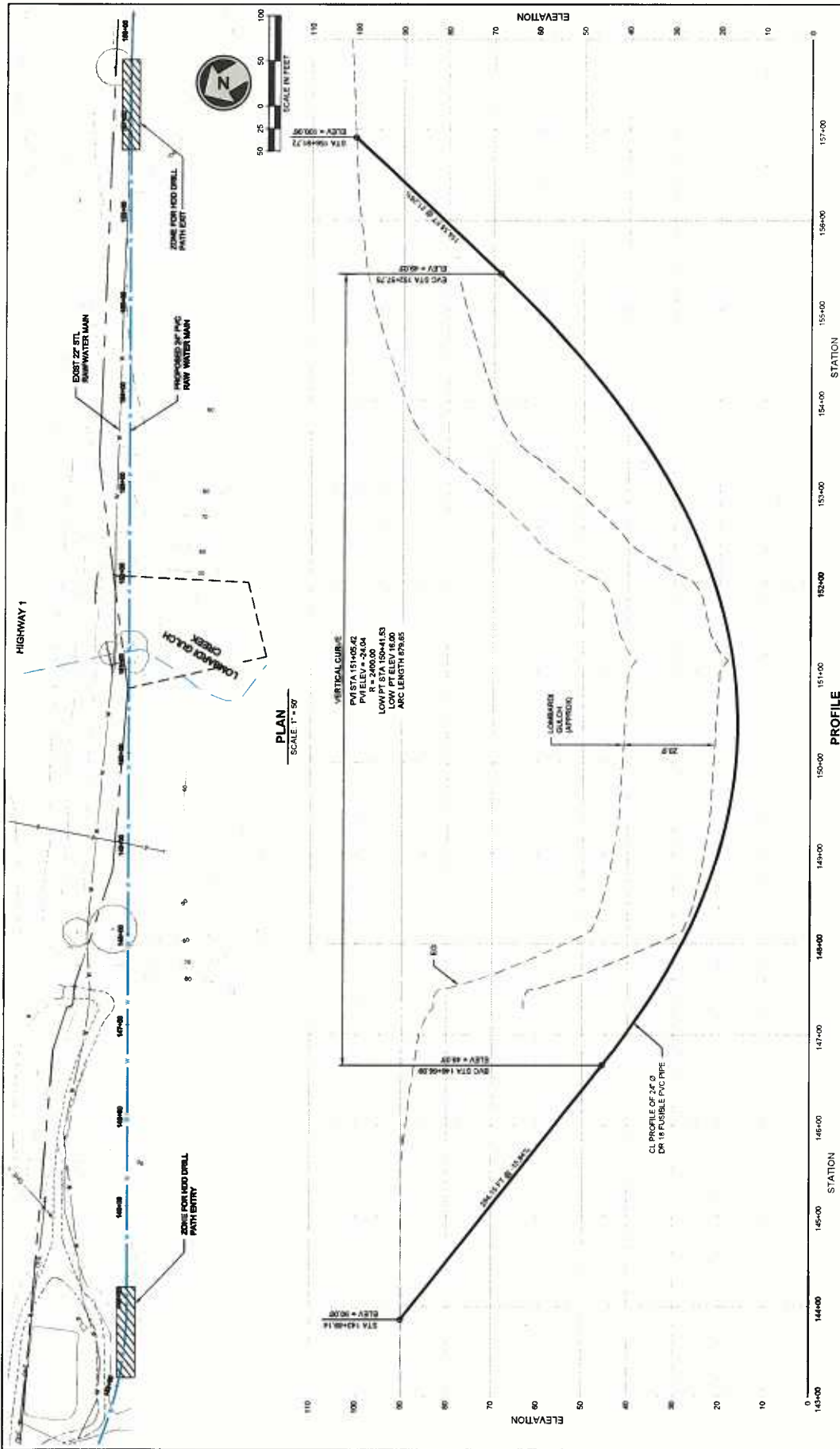
	CHECKED BY: L. ABRAMSON	CITY OF SANTA CRUZ WATER DEPARTMENT NORTH COAST SYSTEM REHABILITATION HIGHWAY 1 PHASE 3 - COAST SEGMENT WESTERN TRACK CROSSING - ALTERNATIVE PLAN & PROFILE	DRAWING NO. PP-4
	DRAWN BY: M. WHITE		
PERMIT REVIEW PLANS 10-17-2014 (NOT FOR CONSTRUCTION)			
REVISIONS NO. DATE DESCRIPTION	APPROVED BY: DATE:	CITY OF SANTA CRUZ WATER DEPARTMENT NORTH COAST SYSTEM REHABILITATION HIGHWAY 1 PHASE 3 - COAST SEGMENT WESTERN TRACK CROSSING - ALTERNATIVE PLAN & PROFILE	DRAWING NO. PP-4

NOTES:
1. FOR NOTES SEE DRAWING NUMBER PP-1



<p>REVISIONS:</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		NO.	DATE	DESCRIPTION													<p>DESIGNED BY: L. ABRAMSON</p> <p>DRAWN BY: M. WHITE</p> <p>CHECKED BY:</p> <p>APPROVED BY:</p>	<p>SCALE NOTED</p> <p>PLANS: 1" = 40' HORIZ</p> <p>PROFILE: 1" = 8' VERT</p>	<p>CITY OF SANTA CRUZ WATER DEPARTMENT</p> <p>NORTH COAST SYSTEM REHABILITATION</p> <p>HIGHWAY 1 PHASE 3 - COAST SEGMENT</p> <p>EASTERN TRACK CROSSING</p> <p>PLAN & PROFILE</p>	<p>DRAWING NO.: PP-5</p> <p>SHEET NO. OF 1</p>
NO.	DATE	DESCRIPTION																		
<p>PERMIT REVIEW PLANS 10-17-2014 (NOT FOR CONSTRUCTION)</p>		<p>Hatch Mott MacDonald</p>	<p>CITY OF SANTA CRUZ WATER DEPARTMENT</p> <p>213 LOCUST STREET</p> <p>SANTA CRUZ, CA 95060</p> <p>(520) 428-5100</p>	<p>CITY OF SANTA CRUZ WATER DEPARTMENT</p> <p>NORTH COAST SYSTEM REHABILITATION</p> <p>HIGHWAY 1 PHASE 3 - COAST SEGMENT</p> <p>EASTERN TRACK CROSSING</p> <p>PLAN & PROFILE</p>	<p>DATE: 10/17/2014</p>															
<p>Check & Seal: I am a duly Licensed Professional Engineer in the State of California and I certify that I am the author of this drawing and that I am a duly Licensed Professional Engineer in the State of California.</p>		<p>City of Santa Cruz Water Department</p>	<p>City of Santa Cruz Water Department</p>	<p>City of Santa Cruz Water Department</p>	<p>City of Santa Cruz Water Department</p>															

Plot Date: 09/28/2014 4:58pm by: ams050
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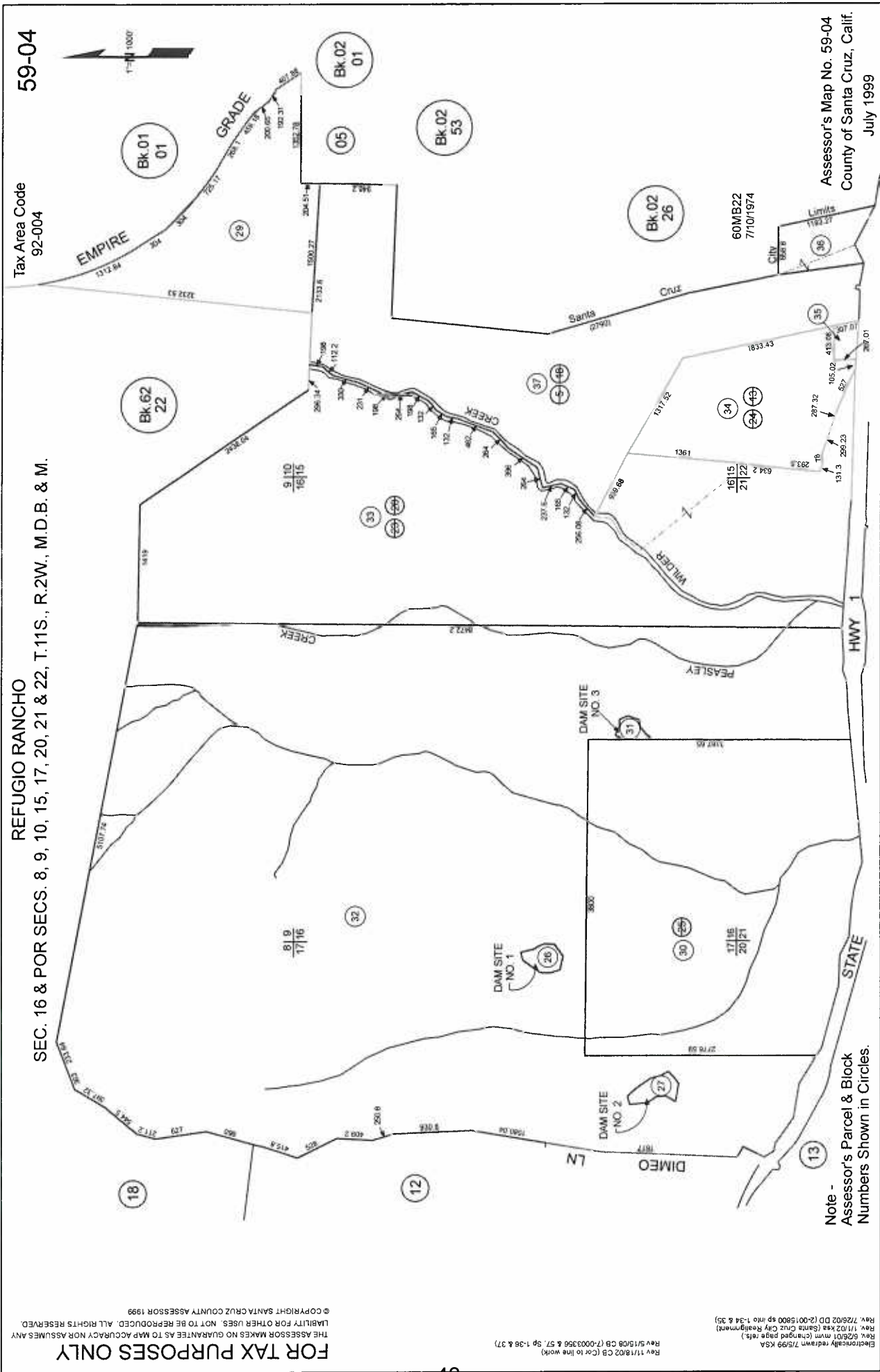
DRAWING NO. PP-10	
CITY OF SANTA CRUZ WATER DEPARTMENT NORTH COAST SYSTEM REHABILITATION HIGHWAY 1 PHASE 3 - COAST SEGMENT LOMARDI GULCH CROSSING PLAN & PROFILE	
SCALE AS NOTED PERMITS 317335-MIS-HR001 CONTRACT NO. DATE: 10/17/2014	CITY OF SANTA CRUZ WATER DEPARTMENT 232 LOCUST STREET SANTA CRUZ, CA 95060 (408) 426-3100
Hatch Mott MacDonald	
PERMIT REVIEW PLANS 10-17-2014 [NOT FOR CONSTRUCTION]	
Verify Scale on FULL SIZE DRAWING (SIZE D 34"X42") IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	
DESIGNED BY L. ABRAMSON	CHECKED BY M. WHITE
DATE 	APPROVED BY
DESCRIPTION 	

REFUGIO RANCHO

SEC. 16 & POR SECS. 8, 9, 10, 15, 17, 20, 21 & 22, T. 11S., R. 2W., M.D.B. & M.

Tax Area Code
92-004

59-04



FOR TAX PURPOSES ONLY

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Revised 1/18/02 CB (Cor to line work)
Rev 5/15/08 CB (7-0003356 & 57, Sp 1-38 & 37)
Rev 1/10/04 (Santa Cruz City Realignmt)
Rev 7/25/02 DD (2-0015800 sp r/o 1-34 & 35)
Electrically redrawn 7/5/99 KSA
Rev 5/25/01 mvm (changed page refs.)
Rev 5/25/01 mvm (changed page refs.)

Note -
Assessor's Parcel & Block
Numbers Shown in Circles.

Assessor's Map No. 59-04
County of Santa Cruz, Calif.
July 1999

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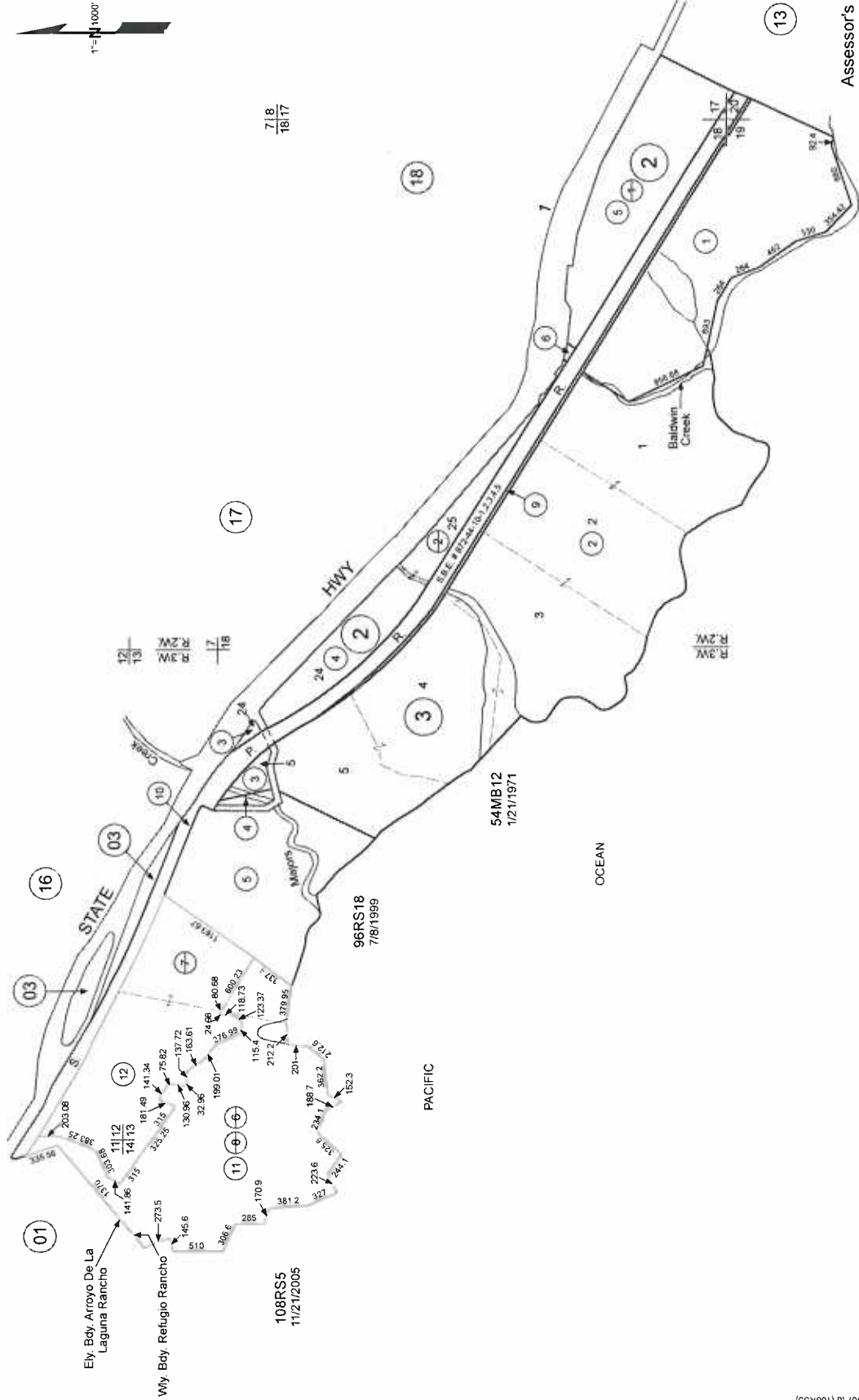
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 POR. SECS. 11, 12, 13, & 14, R. 3W., M.D.B. & M.

Tax Area Code
 92-007

59-02



Note - Assessor's Parcel & Block
 Numbers Shown in Circles.

Assessor's Map No. 59-02
 County of Santa Cruz, Calif.
 July 1999

Electronically redrawn 7/199 KSA
 Rev. 7/199 KSA (Por. to Pgs. 16, 17 & 18)
 Rev. 8/599 CA (96RS18)
 Rev. 10/21/05 mvm (S-0026813 & 16, LBA 2-11 & 12)
 Rev. 7/11/07 id (108RS5)

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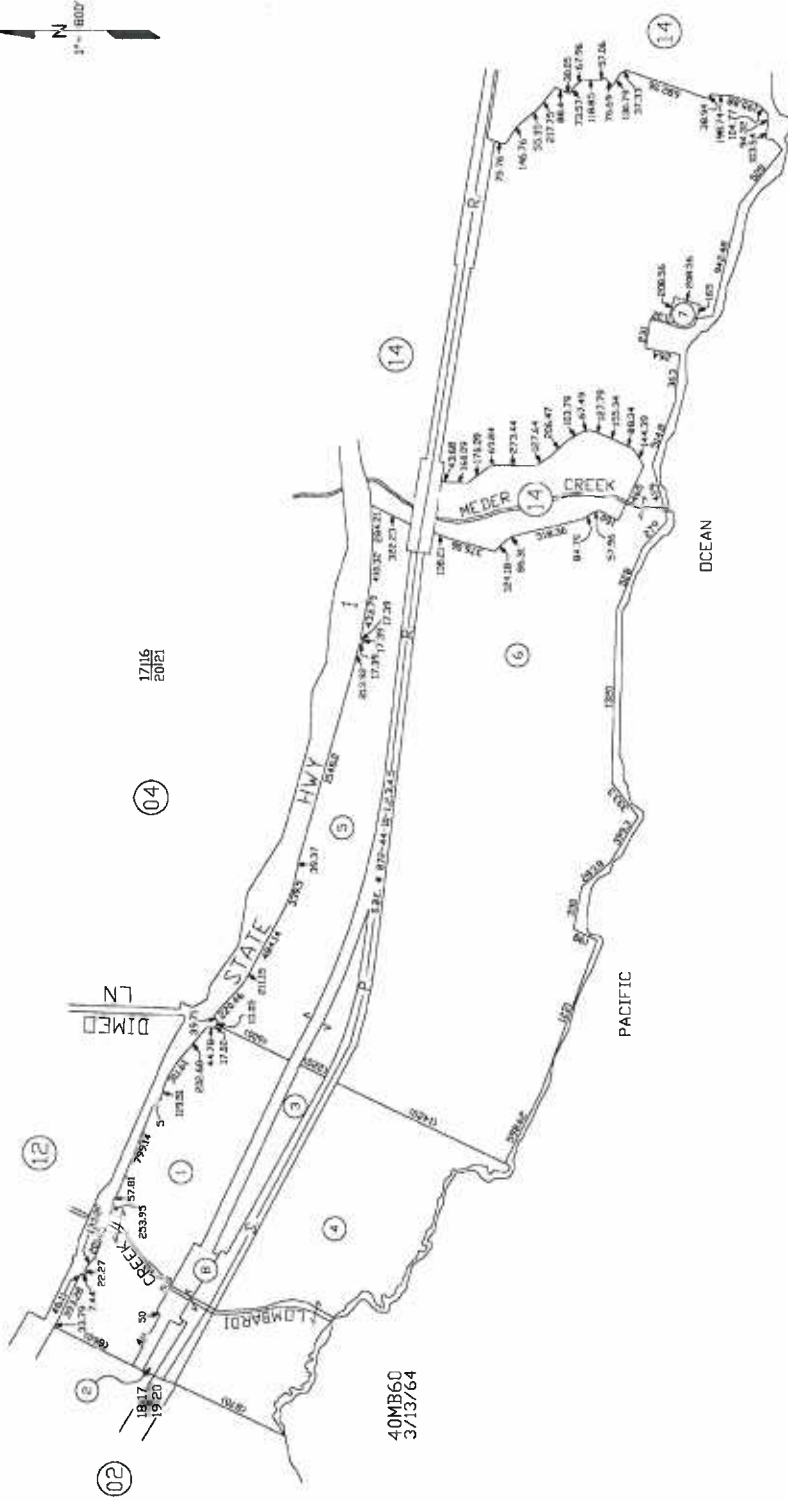
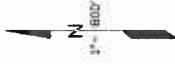
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59-13

Tax Area Code
92-004



40MB60
3/13/64

Note - Assessor's Parcel Block &
Lot Numbers Shown in Circles.

Assessor's Map No. 59-13
County of Santa Cruz, Calif.
July 1999

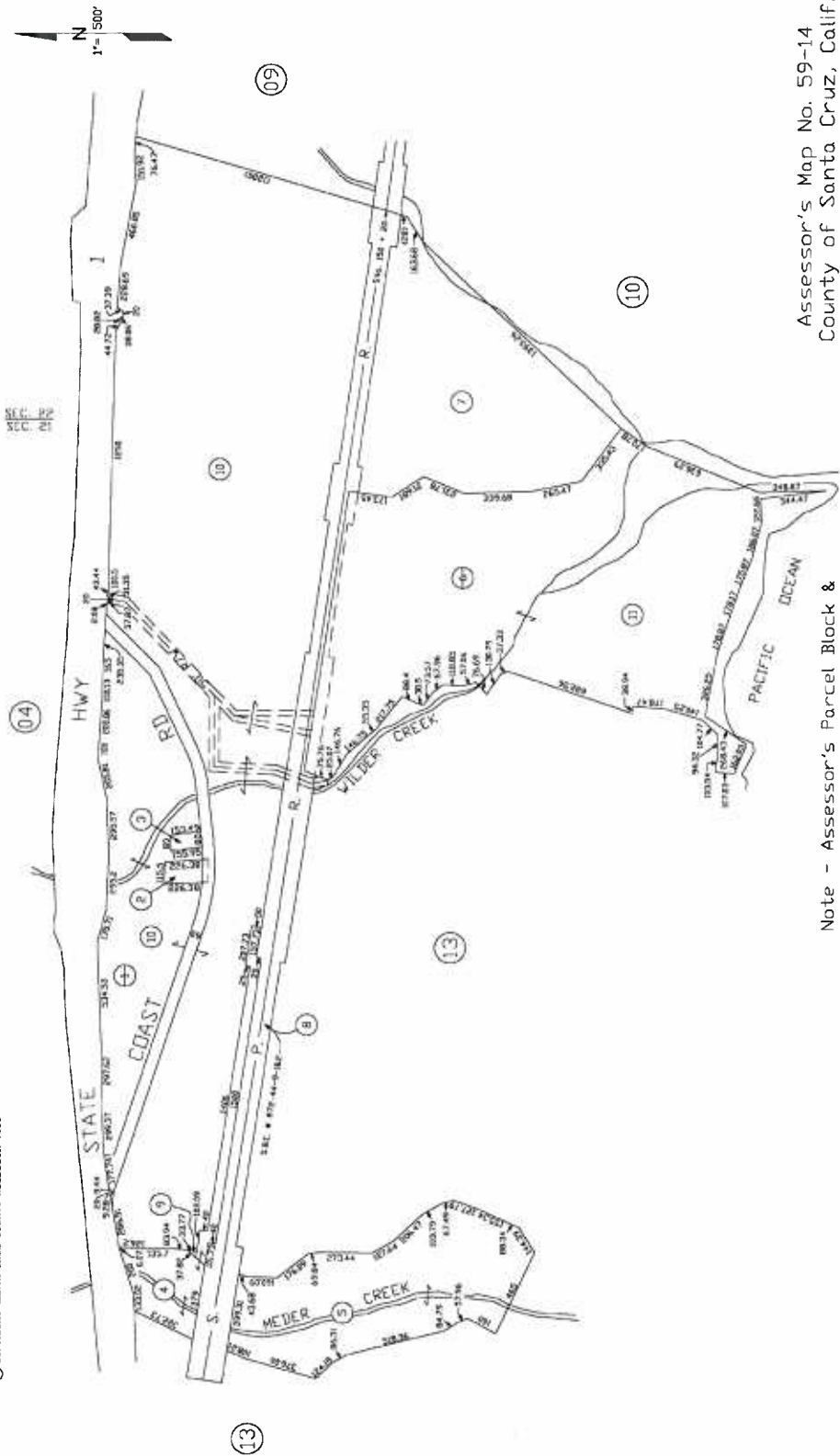
Electronically redrawn 7/8/99 KSA

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Tax Area Code
 92-004

59-14



Note - Assessor's Parcel Block &
 Lot Numbers Shown in Circles.

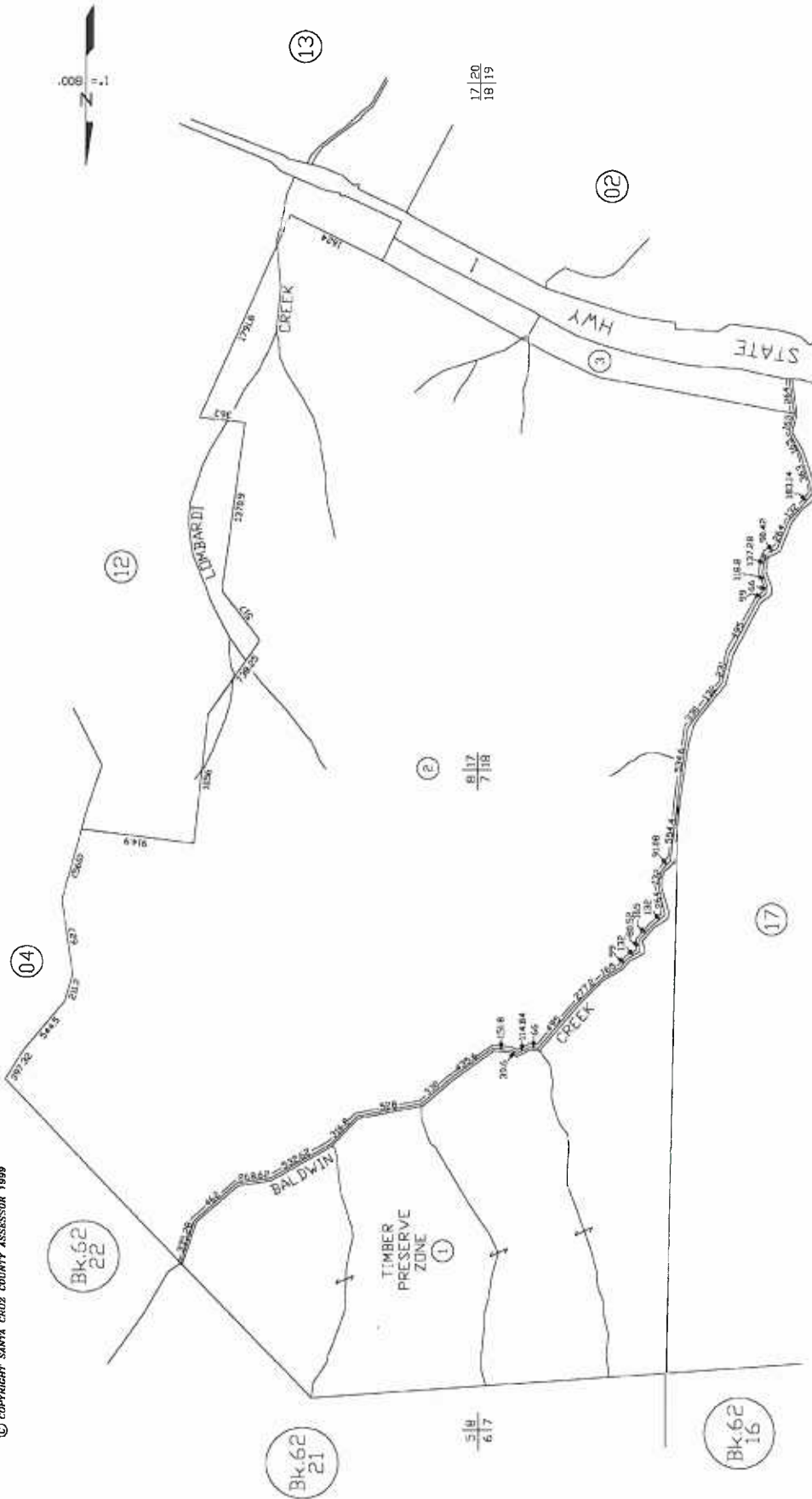
Assessor's Map No. 59-14
 County of Santa Cruz, Calif.
 July 1999

Electronically redrawn 7/9/99 KSA

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 POR. SECS. 7, 8, 17 & 18, T.11S., R.2W., M.D.B. & M.

Tax Area Code 59-18
 92-004



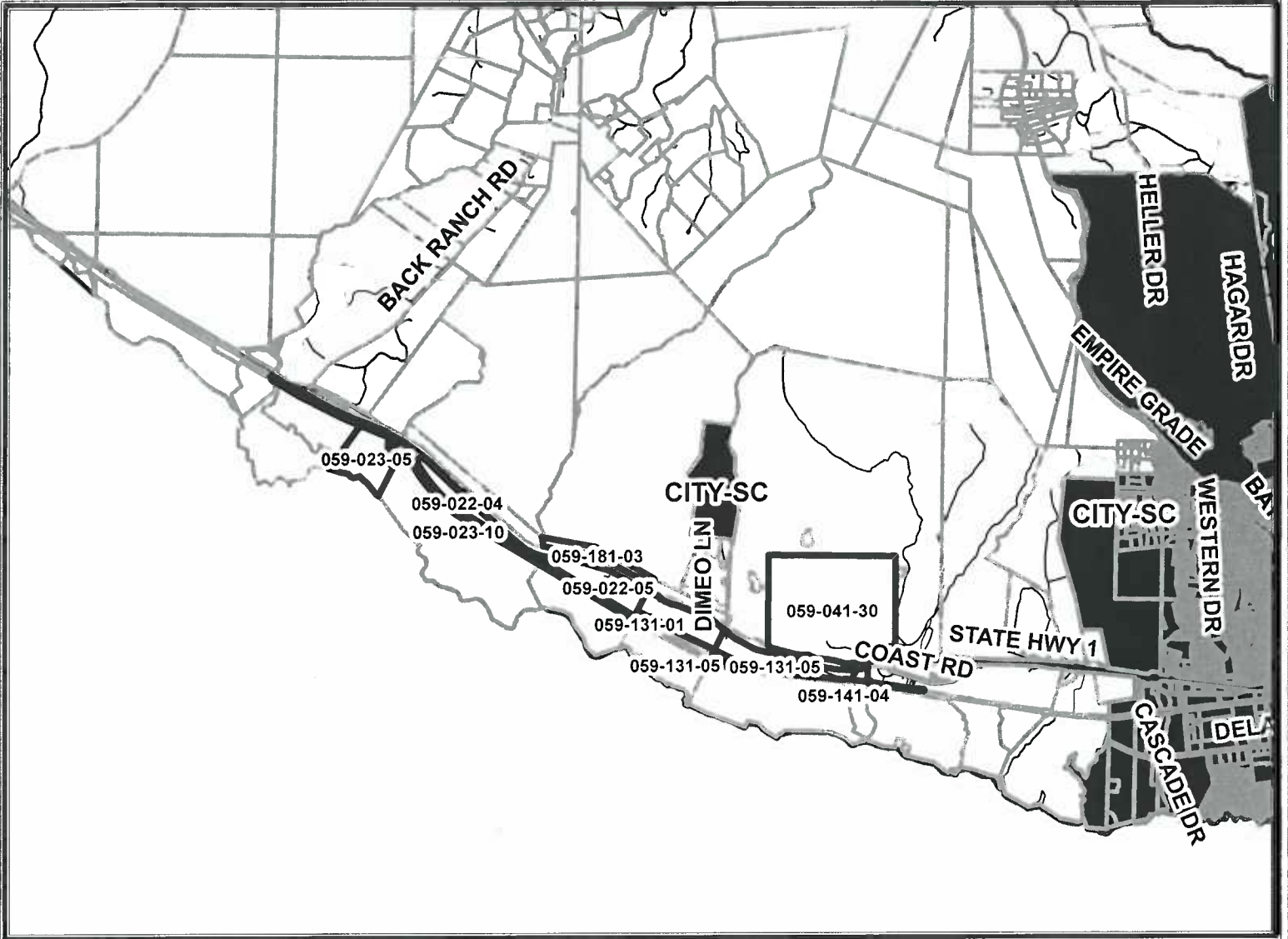
Assessor's Map No. 59-18
 County of Santa Cruz, Calif.
 July 1999

Note - Assessor's Parcel Block &
 Lot Numbers Shown in Circles.

Electronically redrawn 7/3/99 KSA
 Rev. 7/3/99 KSA (For. From Pg. 2)

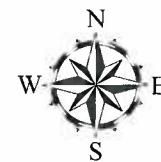


Location Map



LEGEND

- APN: 059-141-04
- APN: 059-181-03
- APN: 059-131-05
- APN: 059-131-01
- APN: 059-023-10
- APN: 059-023-05
- APN: 059-022-05
- APN: 059-022-04
- APN: 059-041-30
- Assessors Parcels
- Street
- State Highways
- CITY OF SANTA CRUZ
- County Boundary

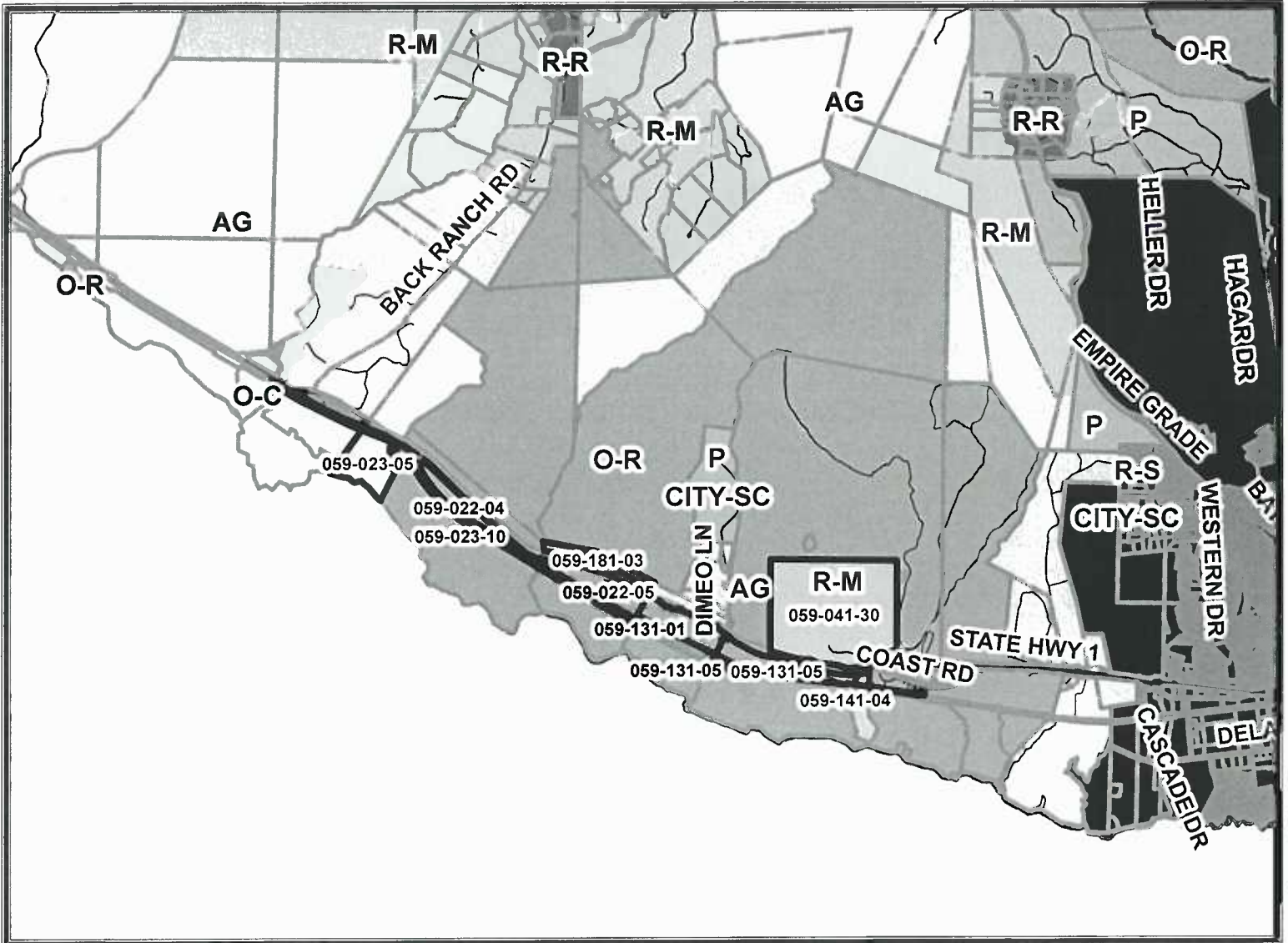


Map Created by
County of Santa Cruz
Planning Department
December 2014

EXHIBIT E



General Plan Designation Map



LEGEND

	APN: 059-141-04		County Boundary
	APN: 059-181-03		Resource Conservation
	APN: 059-131-05		Agriculture
	APN: 059-131-01		Residential-Mountain
	APN: 059-023-10		Public Facilities
	APN: 059-023-05		Parks and Recreation
	APN: 059-022-05		Residential-Suburban
	APN: 059-022-04		Residential-Rural
	APN: 059-041-30		Assessors Parcels
	Street		
	State Highways		
	CITY OF SANTA CRUZ		

Map Created by
 County of Santa Cruz
 Planning Department
 December 2014

EXHIBIT E

*Maureen Hamb- Certified Arborist WE2280
Professional Consulting Services*



TREE RESOURCE EVALUATION
PROJECT IMPACT ANALYSIS
NORTH COAST SYSTEM REHABILITATION PHASE 3
COAST SEGMENT

PREPARED FOR
CITY OF SANTA CRUZ
WATER DEPARTMENT
212 LOCUST STREET, SUITE C
SANTA CRUZ CA 95060

NOVEMBER 2014
(UPDATE)

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INTRODUCTION

This arboricultural resource assessment includes an evaluation of the condition of trees and potential impacts related to a proposed water line rehabilitation project. In addition, recommendations for tree removal, tree preservation, and methods for reducing impacts are included.

PROJECT DESCRIPTION AND LOCATION

The City of Santa Cruz Water Department is proposing the replacement of a water pipeline that runs approximately three miles along Highway 1 in Santa Cruz, California. The project is Phase 3 of the North Coast System Rehabilitation Project. The rehabilitation will include the installation and replacement of pipe, retention of a portion of the existing pipe and the removal of outdated above ground pipe.

The three-mile project is located within the California Coastal Zone and will commence south of Scaroni Road and end at the Granite Rock Sand Plant. The updated water line will essentially follow the alignment of the existing pipeline. Work areas will range from 20 to 40 feet in width; staging areas will be located in areas that are absent of valuable habitat.

ASSIGNMENT/SCOPE OF SERVICES

In April of this year, I was contacted by the City of Santa Cruz Water Department to prepare an arborist report for Phase 3 of the North Coast System Rehabilitation Project.

I completed a visit to the project site with Kevin Crossley, the Associate Civil Engineer for the Water Department. We walked several sections of the three-mile work area including the beginning point just south of Scaroni Road, several farm properties and the end of the project boundaries at the Granite Rock Sand Plant.

The City of Santa Cruz Water Department provided a set of plans showing tree locations. The plans were utilized to document tree locations and evaluate potential impacts to the resources.

The following scope of services was completed to prepare this report.

- Complete an inventory of all trees six inches and greater within the boundaries of the project.
- Identify tree species and measure trunk diameter at a point 54 inches above grade (DBH) to determine “Significant Tree” status.

- Affix a numbered metal tag to each tree and document location on site plan provided by the City of Santa Cruz Water Department
- Complete a Visual Tree Assessment to determine tree health and structural integrity.
- Determine the Critical Root Zone (CRZ) radius for each tree based on trunk diameter and species tolerances.
- Review plans to evaluate potential impacts to trees.
- Provide recommendations for tree retention/tree removal based on impacts and tree condition.
- Provide recommendations for reducing impacts to retained trees that include creating a fenced exclusionary zone, tree pruning to provide clearance, proper root pruning and monitoring during construction.

SITE PLAN OVERVIEW

In May of this year the City of Santa Cruz Water Department provided an overall site plan of the proposed project. Tree locations, along with water lines, topography and spot elevations were indicated. While completing the site work I located six trees that were not shown on the plans. The trees were field located and added to the site plan.

A tree location plan was created using the base plan provided by the City of Santa Cruz Water Department. Trees selected for retention are noted in green, those that require removal are noted in red.

Due to the large size of the project, the map has been divided into panels that indicate the location in relation to the station indicators on the site plan. An overview plan of the entire project is also included.

TREE INVENTORY OVERVIEW

To complete the inventory and assessment of trees on the North Coast Rehabilitation Project I visited the site in April and May of this year. For purposes of identification, numbered metal tags have been affixed to the tree trunks, with corresponding locations documented on the attached site map. The inventory includes the following information for 53 trees growing within the project boundaries:

Tree Number

Each tree or tree group has been identified by number; locations are documented on an attached site plan provided by the City of Santa Cruz Water Department.

Tree Species

The inventory indicates the “common” name for each tree. Although clumps of willow tree growth were observed, they are not included in the inventory. The influence and growing conditions of this species has been addressed in the Biological Resources Assessment.

The botanical names of the trees in the project boundaries are listed here:

Coast live oak- *Quercus agrifolia*
Monterey cypress-*Hesperocyparis macrocarpa*
Douglas Fir-*Pseudotsuga menziesii*
Monterey pine-*Pinus radiata*
Eucalyptus-*Eucalyptus globulus*

Trunk Diameter

The diameter of each trunk/trunks was measured at a point 54 inches above natural grade (DBH) using a diameter tape. Trunk diameter is the measurement required to determine “Significant Tree” status in Santa Cruz County. A “Significant Tree” is protected by several sections of County ordinances.

The Significant Tree Protection ordinance seeks to preserve significant trees and forests communities and to protect and enhance the County’s natural beauty, property values, and tourist industry (Section 16.34.010).

Within the urban and rural services line, significant trees are any tree which is equal to or greater than 20 inches diameter at breast height (DBH) (approximately 5 feet in circumference); any sprout clump of five or more stems each of which is greater than 12 inches DBH (approximately 3 feet in circumference); or any group consisting of five or more trees on one parcel, each of which is greater than 12 inches DBH (approximately 3 feet in circumference) (Section 16.34.030[A]). Additionally, any tree located in a sensitive habitat as defined in Chapter [16.32](#), is also categorized as a significant tree (Section 16.34.030[C]).

Tree Health

Tree health and tree structure are evaluated separately. A “healthy” tree can be weakly structured and represent a risk, a well-structured tree can be “unhealthy” or in poor vigor.

The determination of tree health is made during a Visual Tree Inspection. This analysis includes an evaluation of the biology of each tree using procedures developed by Claus Mattheck and published in [The Body Language of Trees](#). The health of the tree is then rated as “good”, “fair”, or “poor” in the inventory.

The biological assessment determines health status and includes an evaluation of the following:

- Vitality of the leaves, bark and twigs
- Presence of fungi or decay
- Percentage and size of dead branching
- Status of old wounds or cavities.

Healthy trees rated as “good” display dense full canopies with dark green foliage. Dead branching is limited to small twigs and branches less than one inch in diameter. No evidence of disease, significant decay or insect activity is visible. Vigorous, healthy trees are much better able to tolerate site alteration and invasive construction impacts than less vigorous trees of the same species.

Trees in “fair” health have 10-30% foliar dieback, small areas of dead branching greater than one inch in diameter and minor evidence of disease, decay, or insect activity.

Trees in “poor” health display greater than 30% foliar dieback, dead branches greater than two inches in diameter and/or areas of decay, disease or insect activity.

Tree Structure

As with tree health, the structural integrity of each tree is determined using the Visual Tree Inspection methods. This mechanical assessment includes an evaluation of the following:

- Integrity of the framework of the tree (supporting trunk and major branches)
- External symptoms (bulges, ribs or cracks) that can indicate internal defects
- Lean of main trunk and canopy configuration
- Development of root buttress

Trees with “good” structure are well rooted with visible taper in the lower trunk leading to buttress root development. These qualities indicate that the tree is solidly rooted in its growing site. No significant structural defects such as codominant stems (two stems of similar size that emerge from the same point on the trunk), weakly attached branches, cavities or decay are present.

Trees with “fair” structural integrity may have defects such as poor taper in the trunk, inadequate root development or growing site limitations. They may have multiple trunks, included bark (where bark turns inward at an attachment point), or suppressed canopies. Small areas of decay or evidence of small limb loss may be present in these trees. The condition of these trees can be improved using common maintenance procedures.

Poorly structured trees display one or more serious structural defects that may lead to the failure of branches, trunk or the whole tree due to uprooting. Trees in this condition may have had root loss due to decay or site conditions. The supporting trunk or large stems could be compromised by decay or structural defect (large codominant stems with included bark). Trees in this condition represent a risk. In some situations maintenance including cable support systems, props or severe pruning can reduce, but not eliminate the potential hazard.

CRZ Radius

The **Critical Root Zone (CRZ)** is the area around a single tree or group of trees in which no grading or construction activity should occur. The critical root zone should be large enough to retain sufficient root and crown area to maintain tree health and stability. The size of this zone depends on a number of factors (Matheny, Clark & Harris 1999).

Tree species and their specific documented sensitivities are taken into account when calculating the root zone. Some oak species, for example have shown to have a “good” tolerance to root pruning, but are intolerant of modifications to natural grade under the canopy. (Matheny & Clark 1998)

The current health of the tree is also an important factor. A tree in high vigor will be more tolerant of site disturbance or loss of a portion of the absorbing root zone, reducing the size of the CRZ.

Trees that have significant structural defects where branch failure or uprooting could be a factor require a much larger CRZ to reduce the risk of property damage or injury.

Significant Tree Y/N

The trunk diameter of each tree has been measured to determine the protected status and noted in the inventory.

Comments

This section summarizes observations that may include to but not be limited to:

- Specific tree characteristics
- Tree location in relationship to impacts
- Size or configuration of tree canopy
- Tolerances to potential impacts

Action Items & Descriptions

Recommendations for each tree are listed as Action Items that include the following:

- Action Item #1: Protect with exclusionary fencing and straw bale barricades.
- Action Item #2: Remove due to impacts

- Action Item #3: Provide pruning for equipment clearance
- Action Item #4 Provide proper root pruning during excavation
- Action Item #5: “At risk” tree, growing outside the immediate project boundaries. Retention can be considered for habitat value

Map Panel Reference/Station Number

Due to the expansive site plan, the tree location plan has been divided into 11 separate panels. An overview plan of the project boundaries is also included. Station numbers correspond with the proposed pipe locations.

OBSERVATIONS

The project encompasses approximately 3 miles along the Highway One corridor. It is bordered by lands that are dominated by agricultural uses with very few structures.

Tree growth along the corridor is sparse with no contiguous forest system. The area is historically agricultural with coastal vegetation influences. Forest stand development is uncommon in this type of environment.

Fifty-three trees were inventoried within the project boundaries. The species found are native to California but not indigenous to the site.

The dominant species is Monterey cypress (*Hesperocyparis macrocarpa*); both immature and mature trees are present. They have been planted to provide screening, wind protection or to define property boundaries.

Trees #6-#12 are growing in a windrow configuration along with trees #14-#19 growing under the electrical supply lines along the Highway One frontage.



This group of trees is in poor condition. Tree #13, pictured below is the best example of the species in this group. It is located behind the windrow and has developed as a single tree sheltered by the surrounding group.



Branch and large stem failure has occurred in the past. Two trees have limited live foliage covering less than 10% of the canopy. The other trees are standing dead and will continue to fail. Five of the trees have been topped to provide the required clearance for the electrical lines.

A grouping of mature cypress are growing several miles south on the Jacob's Farm site. They are in good health with structural form that is typical to the species. The canopies are broad and spreading, dead and broken branching is visible throughout the canopies. This condition commonly found in trees that are exposed to high coastal winds.

Small groups of young Monterey pines (*Pinus radiata*) and Monterey cypress (*Hesperocyparis macrocarpa*) have been planted along the highway. They provide moderate screening for several residential units and agricultural buildings.

A group of eucalyptus trees of varying trunk diameters is growing on the Granite Rock Sand Plant property. Several have multiple trunk systems that are weak and prone to failure. The stand is dense, a condition that has limited the development of lower branching and trunk taper.

RESOURCE IMPACTS/RECOMMENDATIONS

The proposed project may affect trees that are protected by the County of Santa Cruz Significant Tree Ordinance. Twenty-two of the 53 trees adjacent to the project boundaries meet these criteria.

The most significant potential impact to trees is related to the trenching for installation and removal of the proposed pipeline. The construction corridor may need to be as much as 40 feet wide to accommodate the width of the trench (five feet), excavators, and other equipment along with the spoils resulting from trench excavation. Work areas can be reduced to less than 40 feet in areas where retained trees or other resources are located.

Low Impacts

The potential impacts to the tree resources range from low to high. Trees with a low impact potential are outside the immediate development area but require the protection provided by exclusionary fencing (trees #34 -#39). Fencing will alert equipment operators and discourage storage of materials, equipment, and spoils within the CRZ.

Trees #6-11 are standing dead with failed stems and large branches. They are outside the general construction area and can be retained if they have habitat value. Although they are at risk of continued failure the site has no current uses, which reduces the potential for injury or property damage.

Moderate Impacts

Trees with a moderate impact potential are within 5-10 feet of either excavation or staging of materials. Younger, vigorous trees with small canopy sizes and root zones have considerably smaller CRZ's than mature trees with spreading canopies.

Mature trees need a larger root zone to accommodate both the absorbing and structural root systems. The absorbing root layer is located in the top 6-12 inches of soil and is responsible for supplying trees with moisture and nutrients. The woody root structure that emerges from the root crown (where the trunk meets the ground) is responsible for anchoring the tree in the growing site. The removal or damage to either of these systems can affect tree health and stability.

Recommendations for trees with moderate impacts can include, but not be limited to the following:



Exclusionary fencing bordered by straw bales as barricades (as pictured above).

Canopy modifications to provide clearance for equipment.

Minor pruning has been recommended for several trees. All pruning should be performed by a qualified arborist using the most current versions of the following industry guidelines and monitored by the project arborist.

- American National Standards Institute, *A300 for Tree Care Operations-Tree, Shrub and Other Woody Plant Maintenance-Standard Practices*.
- International Society of Arboriculture: *Best Management Practices*

Root pruning may be needed on several trees located less than 10 feet from the proposed trench. This procedure is performed by skilled labor under the supervision of the project arborist. Roots are to be pruned cleanly. Bark should adhere to the wood without tearing. The following tools are appropriate for this procedure and should be available to the work crew:

- Hand pruners
- Loppers
- Handsaw
- Reciprocating saw
- Chainsaw

When completed, the pruned portions should be covered with burlap or similar material and kept moist until backfill.

High Impacts

Trees with a high impact potential have excavation that will remove a significant percentage of the absorbing root system (more than 50%) or damage/remove large structural roots to a point where destabilization may occur.

TREE REMOVAL

Twenty-four trees have been evaluated as having high impacts and removal is recommended. Twelve qualify as significant based on the County of Santa Cruz criteria.

Trees #6-#11 are Monterey cypress growing in a row perpendicular to trees #12-#19. They are either standing dead or display serious structural weaknesses. Although they are not directly in the pipeline route, I have included these trees as removals as they represent a risk to those working in the area. If it is determined, that they provide habitat value then they can be retained with large exclusion areas as a buffer between workers and trees.

Trees #12 and #14-19 are “Significant” Monterey cypress. They are directly in the path of the proposed pipeline. They are generally in poor condition. The canopies contain sparse foliar development, dead and broken branching; all have been pruned for utility line clearance.

There are no arboricultural treatments (pruning, cabling, or site improvements) available that would improve the condition of these trees. The pipeline is less than five feet from the trees and excavation would remove or damage structural roots to the point of destabilization.

Tree #40 is a “Significant” Monterey cypress growing on a rocky steep slope. The pipeline is within the CRZ. The tree is growing in an unstable site and has partially uprooted. The pruning that would be needed for equipment access in conjunction with trenching would further destabilize the tree and affect tree health.

Trees #41-#53 are a group of eucalyptus and Monterey cypress growing on the Granite Rock Sand Plant site. Nine trees in this group will require removal to install the proposed pipeline. Three trees meet the criteria as “Significant”. Trees in this area are weakly structured and intolerant of the root impacts related to excavation.

CONCLUSION

Twenty-four trees will require removal to complete the pipeline rehabilitation project proposed by the City of Santa Cruz Water Department.

Twelve of the trees are “Significant” based on the criteria established by the County of Santa Cruz ordinances.

The tree removal does not include trees that are native to the site; although they are native species that have been planted to provide screening, wind buffering and property boundary delineation.

There will be no fragmentation of an existing forest stand and negative impacts to the surrounding environment are not anticipated.

No degradation of existing scenic resources is expected. The large group of Monterey cypress (trees #12, #14-19) growing on the Highway frontage are in various stages of decline and offer very little, if any scenic benefits. Tree #13, growing behind this group will be retained and will offer improved scenic benefits.

The removal of the eucalyptus trees on the Granite Rock site will not affect scenic resources as the area is densely forested and the canopy cover will not be significantly modified.

All retained trees will be protected by the recommendations outlined in this report. Please call my office with any questions or concerns regarding the trees on this project site.

Respectfully submitted,

Maureen Hamb-Certified Arborist WE2280

North Coast Tree Inventory
November 2014 (update)

Tree #	Species	Diameter	Health	Structure	CRZ Radius in feet	Significant Tree: Y/N	Comments	Action Item # & Description	Map Panel & Station Number
1	coast live oak	multiple stems 4"-6"	fair	fair	6	N	Adjacent to possible staging area	Item #1: Protect with fencing and barricades	#1/No station
2	Monterey cypress	multiple stems 2"-13"	good	fair	10	N	Adjacent to possible staging area	Item #1: Protect with fencing and barricades	#1/No station
3	coast live oak	10 & 7	fair	fair	10	N	Young tree, 9 feet from center of waterline	Item #1: Protect with fencing and barricades	#2/Station 55+00 & 56+00
4	Douglas fir	11	good	good	10	N	Growing on slope between highway and pipeline area. Canopy extends into work area. Clearance pruning (3 branches)	Item #1 & #3: Prune, protect with fencing and barricades	#2/Station 55+00 & 56+00
5	Douglas fir	15	good	fair	15	N	Growing on slope between highway and pipeline area. Canopy extends into work area.	Item #1 & #3: Prune, protect with fencing and barricades	#2/Station 55+00 & 56+00
6	Monterey cypress	21	poor	poor	20	Y	Standing dead. Not within construction zone, represents a risk of failure	Item #5: Consider retention for habitat value	#3/Station 89+00-92+00
7	Monterey cypress	29 & 29	poor	poor	30	Y	No live foliage, upper canopy has been removed for utility clearance, not within construction zone, represents risk of failure	Item #5: Consider retention for habitat value	#3/Station 89+00-92+00

North Coast Tree Inventory
November 2014 (update)

Tree #	Species	Diameter	Health	Structure	CRZ Radius in feet	Significant Tree: Y/N	Comments	Action Item # & Description	Map Panel & Station Number
8	Monterey cypress	19	poor	poor	20	N	Standing dead, represents risk of failure/Retain if provides habitat value	Item #5: Consider retention for habitat value	#3/Station 89+00-92+00
9	Monterey cypress	11 & 7	poor	poor	15	N	Standing dead, represents risk of failure/Retain if provides habitat value	Item #5: Consider retention for habitat value	#3/Station 89+00-92+00
10	Monterey cypress	15 & 17	poor	poor	25	N	Less than 10% live foliage	Item #5: Consider retention for habitat value	#3/Station 89+00-92+00
11	Monterey cypress	18	poor	poor	18	N	failed	Item #5: Consider retention for habitat value	#3/Station 89+00-92+00
12	Monterey cypress	25	poor	poor	25	Y	Large diameter dead and decayed branching thin foliar canopy. Within water line	Item #2: Remove	#3/Station 89+00-92+00
13	Monterey cypress	59	fair	fair	35	Y	Large tree with spreading canopy. May require pruning for equipment access (2 branches).	Item #1 & #3: Prune, protect with fencing and barricades	#3/Station 89+00-92+00
14	Monterey cypress	49	fair	poor	45	Y	Pruned for utility clearance- significant broken and failed branching. Within proximity to proposed trenching for pipeline.	Item #2: Remove	#3/Station 89+00-92+00

North Coast Tree Inventory
November 2014 (update)

Tree #	Species	Diameter	Health	Structure	CRZ Radius in feet	Significant Tree: Y/N	Comments	Action Item # & Description	Map Panel & Station Number
15	Monterey cypress	22	poor	poor	20	Y	Main stem decayed, upper canopy pruned for utility clearance. 10% live foliage/Within pipeline trench	Item #2: Remove	#3/Station 89+00-92+00
16	Monterey cypress	26	fair	poor	20	Y	Large diameter dead branching, pruned for utility line clearance/Within pipeline trench	Item #2: Remove	#3/Station 89+00-92+00
17	Monterey cypress	54	fair	poor	35	Y	Large diameter dead and broken branching/within pipeline trench	Item #2: Remove	#3/Station 89+00-92+00
18	Monterey cypress	24	poor	poor	20	Y	10% live foliage concentrated at tree top, main stem decayed/within pipeline trench	Item #2: Remove	#3/Station 89+00-92+00
19	Monterey cypress	multiple stems	fair	poor	40	Y	Uprooted and laying on the ground. Large diameter multiple stems, up to 60 inches/Within pipeline trench	Item #2: Remove	#3/Station 89+00-92+00
20	Monterey cypress	17, 29 & 23	good	fair	40	Y	No impacts anticipated	N/A	N/A
21	Monterey cypress	Hedge 6"-9"	fair	fair	5	N	Adjacent to proposed 6" pipe	Item #1: Protect with fencing and barricades	#5/No station

North Coast Tree Inventory
November 2014 (update)

Tree #	Species	Diameter	Health	Structure	CRZ Radius in feet	Significant Tree: Y/N	Comments	Action Item # & Description	Map Panel & Station Number
22	Monterey cypress	7	good	fair	5	N	Young tree with leaning structure, part of group at edge of highway	Item #1: Protect with fencing and barricades	#6/Station 166+00-168+00
23	Monterey cypress	8	good	fair	5	N	Part of tree grouping (row) at edge of highway, partially uprooted	Item #1: Protect with fencing and barricades	#6/Station 166+00-168+00
24	Monterey pine	7	good	good	5	N	Part of tree grouping (row) at edge of highway	Item #1: Protect with fencing and barricades	#6/Station 166+00-168+00
25	Monterey pine	6.5	good	good	5	N	Young tree, part of group at edge of highway	Item #1: Protect with fencing and barricades	#6/Station 166+00-168+00
26	Monterey pine	11	good	fair	7	N	Young tree, part of group at edge of highway	Item #1: Protect with fencing and barricades	#6/Station 166+00-168+00
27	Monterey pine	13	good	good	10	N	Young tree, part of group at edge of highway	Item #1: Protect with fencing and barricades	#6/Station 166+00-168+00
28	Monterey pine	7	good	good	5	N	Young tree with leaning structure, part of group at edge of highway	Item #1: Protect with fencing and barricades	#6/Station 166+00-168+00

North Coast Tree Inventory
November 2014 (update)

Tree #	Species	Diameter	Health	Structure	CRZ Radius in feet	Significant Tree: Y/N	Comments	Action Item # & Description	Map Panel & Station Number
29	Monterey pine	9 & 9	good	fair	8	N	Two main stems, part of group growing at edge of highway	Item #1: Protect with fencing and barricades	#6/Station 166+00-168+00
30	Monterey pine	24	good	good	15	Y	May require pruning for equipment access (4-2 inch branches)	Item #1 & #3: Prune, protect with fencing and barricades	#6/Station 166+00-168+00
31	Monterey cypress	11	good	good	8	N	Growing below edge of highway	Item #1: Protect with fencing and barricades	#7/Near Station 171+00
32	Monterey cypress	8	good	good	5	N	Growing below edge of highway	Item #1: Protect with fencing and barricades	#7/Near Station 171+00
33	Monterey cypress	12	good	good	6	N	Growing below edge of highway	Item #1: Protect with fencing and barricades	#7/Near Station 171+00
34	eucalyptus	40 & 35	good	fair	35	Y	Large tree with two main stems	Item #1: Protect with fencing and barricades	#8/ Station 198+00-200+00
35	Douglas fir	18	good	fair	9	N	Pipeline within CRZ	Item #2: Remove	#8/ Station 198+00-200+00

North Coast Tree Inventory
November 2014 (update)

Tree #	Species	Diameter	Health	Structure	CRZ Radius in feet	Significant Tree: Y/N	Comments	Action Item # & Description	Map Panel & Station Number
36	Monterey cypress	41.6	fair	fair	30	Y	Prune large broken branch, Remove 2 lower branches for equipment clearance. Pipeline within CRZ	Items #1 #3 #4: Protect, prune & root pruning	#9/Stations 209+00-211+00
37	Monterey cypress	32.4	fair	fair	30	Y	Leaning structure, prune 2 lower branches for equipment clearance	Item #1 & #3: Prune, protect with fencing and barricades	#9/Stations 209+00-211+00
38	Monterey cypress	51.4	fair	fair	30	Y	Uprooted, remove small diameter branching for equipment clearance	Item #1 & #3: Prune, protect with fencing and barricades	#9/Stations 209+00-211+00
39	Monterey cypress	26	fair	poor	25	Y	Partially uprooted, retain and protect	Item #1: Protect with fencing and barricades	#9/Stations 209+00-211+00
40	Monterey cypress	27.8	good	fair	20	Y	Partial uprooted, growing site is eroded tree is unstable/Removal due to impacts and tree stability.	Item #2: Remove	#10/Station 215+00-216+00
41	Monterey cypress	26.3	fair	poor	25	Y	Lower branching is dead and broken, proposed pipeline is approximately 12 feet from trunk/	Item #1: Protect with fencing and barricades	#11/Station 218+00
42	Monterey cypress	14	fair	fair	9	N	Main trunk leans	Item #1: Protect with fencing and barricades	#11/Station 218+00

North Coast Tree Inventory
November 2014 (update)

Tree #	Species	Diameter	Health	Structure	CRZ Radius in feet	Significant Tree: Y/N	Comments	Action Item # & Description	Map Panel & Station Number
43	eucalyptus	multiple stems 6-9"	fair	poor	15	N	Weakly structured, not tolerant of root disturbance	Item #2: Remove	#11/Station 218+00
44	eucalyptus	multiple stems 8-10"	fair	poor	15	N	Weakly structured, not tolerant of root disturbance	Item #2: Remove	#11/Station 218+00
45	eucalyptus	10	fair	fair	8	N	Cannot tolerate impacts	Item #2: Remove	#11/Station 218+00
46	eucalyptus	6	fair	fair	5	N	Cannot tolerate impacts	Item #2: Remove	#11/Station 218+00
47	Monterey cypress	multi	fair	fair	7	N	No impacts anticipated	N/A	N/A
48	Monterey cypress	7.4	fair	fair	5	N	Outside 20' work area	Item #1: Protect with fencing and barricades	#11/Station 218+00
49	Monterey cypress	10.8	fair	fair	6	N	Outside 20' work area	Item #1: Protect with fencing and barricades	#11/Station 218+00

North Coast Tree Inventory
November 2014 (update)

Tree #	Species	Diameter	Health	Structure	CRZ Radius in feet	Significant Tree: Y/N	Comments	Action Item # & Description	Map Panel & Station Number
50	Monterey cypress	23.2	fair	fair	14	Y	Outside 20' work area	Item #1: Protect with fencing and barricades	#11/Station 218+00
51	Monterey cypress	multi	fair	fair	10	N	Within trenching zone	Item #2: Remove	#11/Station 218+00
52	eucalyptus	29.4	fair	fair	20	Y	Within trenching zone	Item #2: Remove	#11/Station 218+00
53	eucalyptus	42.9	fair	fair	35	Y	Within trenching zone	Item #2: Remove	#11/Station 218+00

Legend

- #1 Tree Tag Number
- Retain and Protect (green outline)
- Remove (red outline)

CITY OF SANTA CRUZ WATER
DEPARTMENT
NORTH COAST SYSTEM
REHABILITATION PHASE 3
COAST SEGMENT
Tree Location Plan
NOVEMBER 2014

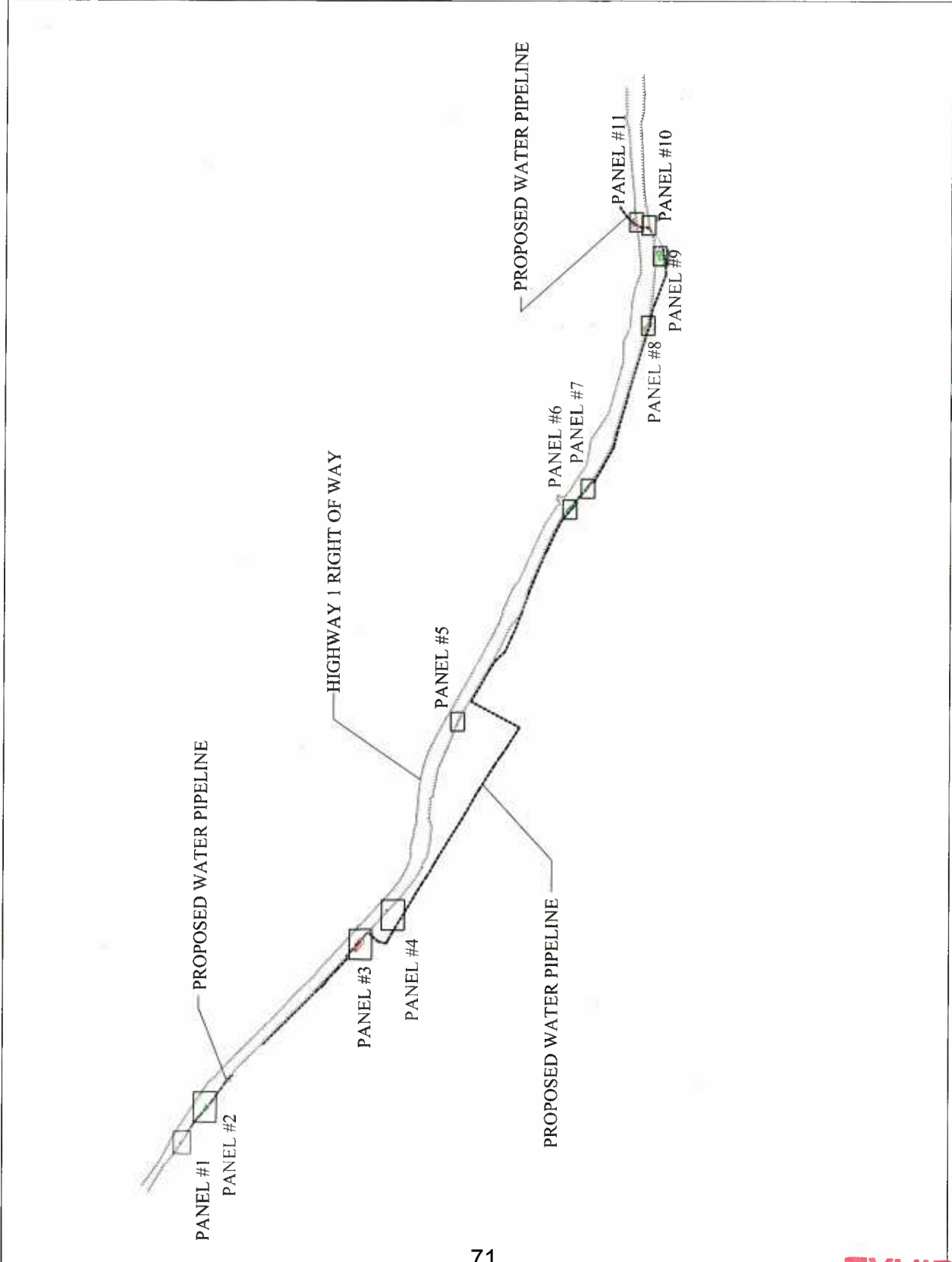
PROJECT OVERVIEW

PLAN



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1 | 4

Date: 10/25/14
Revision: 1/1/14



Legend

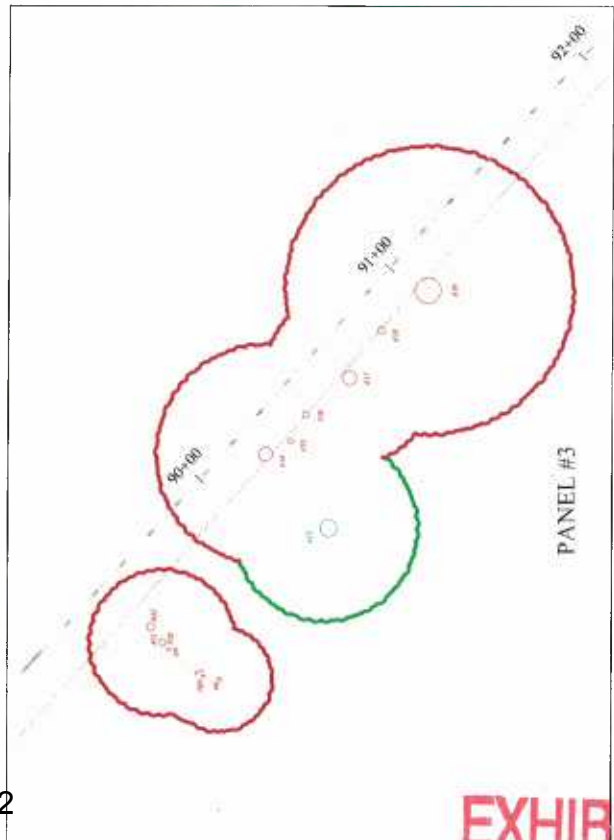
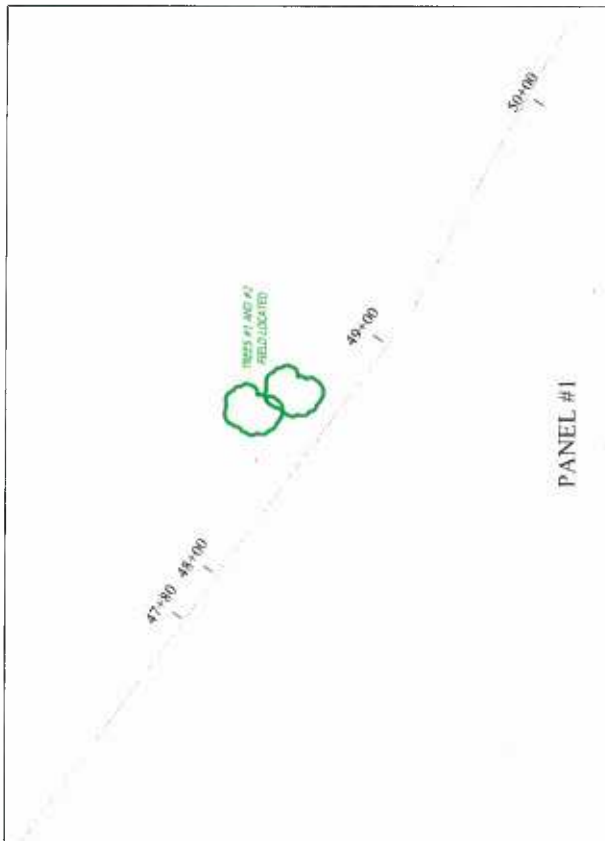
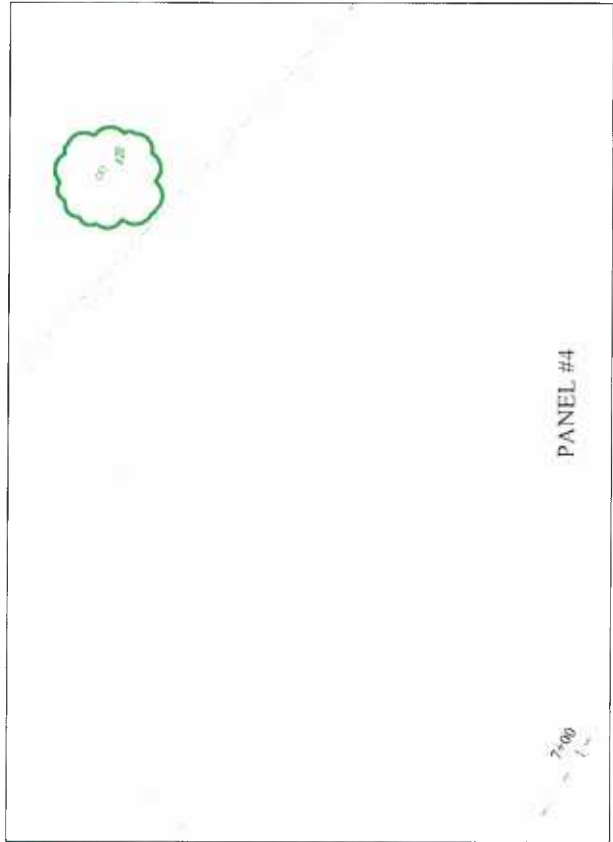
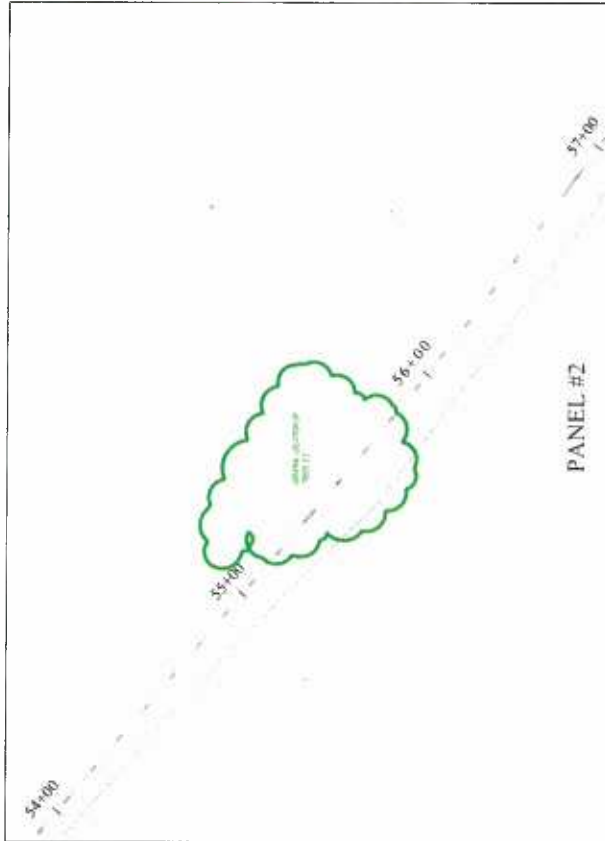
- #1 Tree Tag Number
-  Retain and Protect
-  Remove

Panel 1: South of Scaroni Road Trees #1 & #2, No Station

Panel 2: Between Stations 55+00 & 56+00, Trees #3-#5

Panel 3: Station 89+00 & 92+00 Trees #6-#19

Panel 4: Tree #20 no station, no impacts anticipated



CITY OF SANTA CRUZ WATER
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Tree Location Plan
NOVEMBER 2014

Panels #1-4

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Legend

#1 Tree Tag Number



Retain and Protect



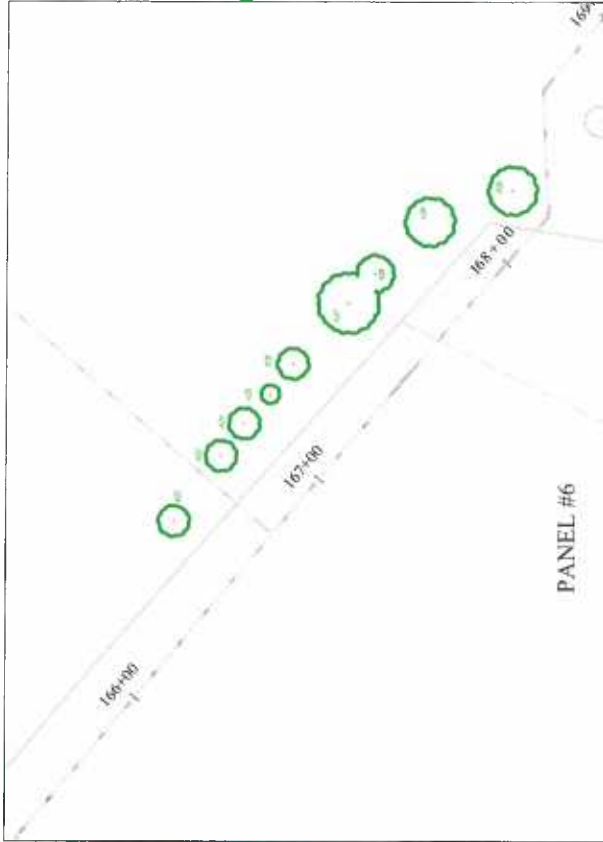
Remove

Panel 5: Tree Group 21 and Tree #47
No station-5" pipe proposed

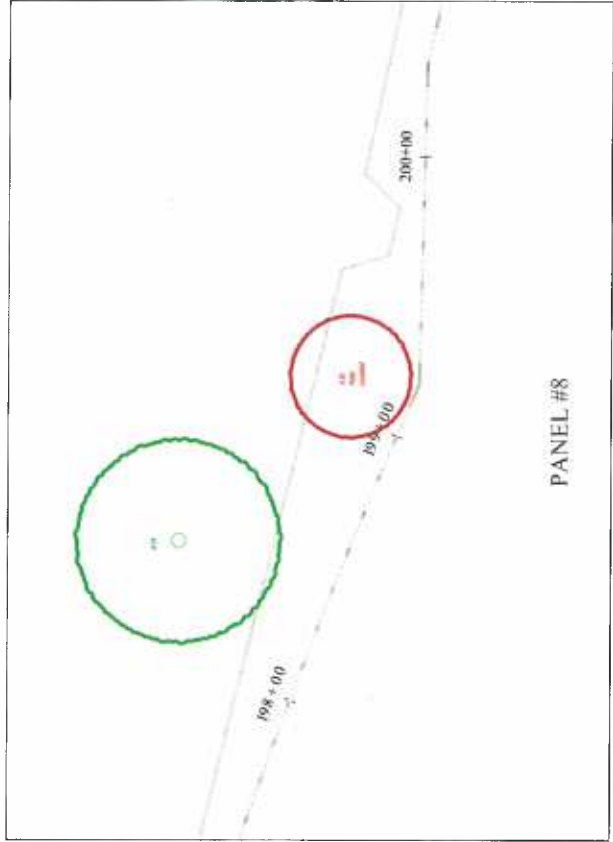
Panel 6: Between Station 167+00 and
168+00 Trees #22-#30

Panel 7: Trees #31-#33 Station 171+00

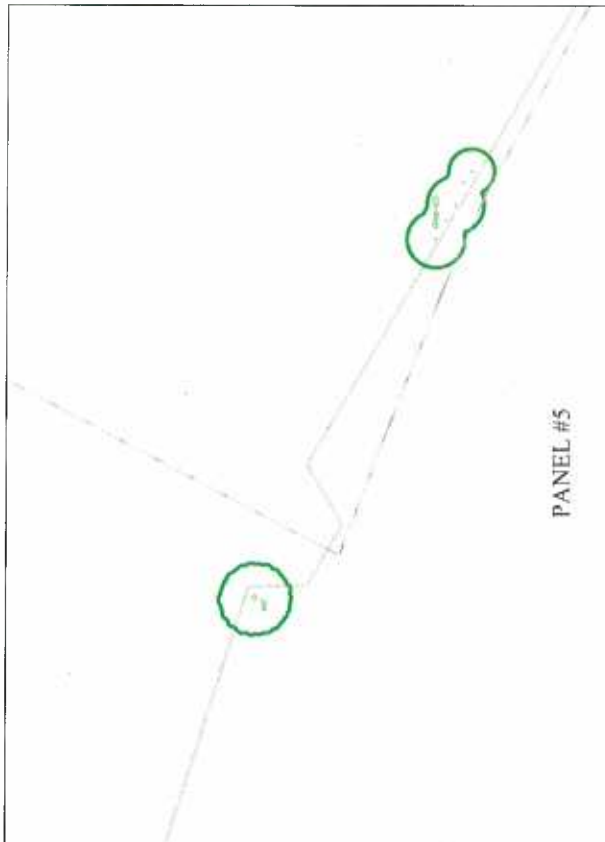
Panel 8: Tree #34 & Tree #35 between
Station 198+00 & 200+00



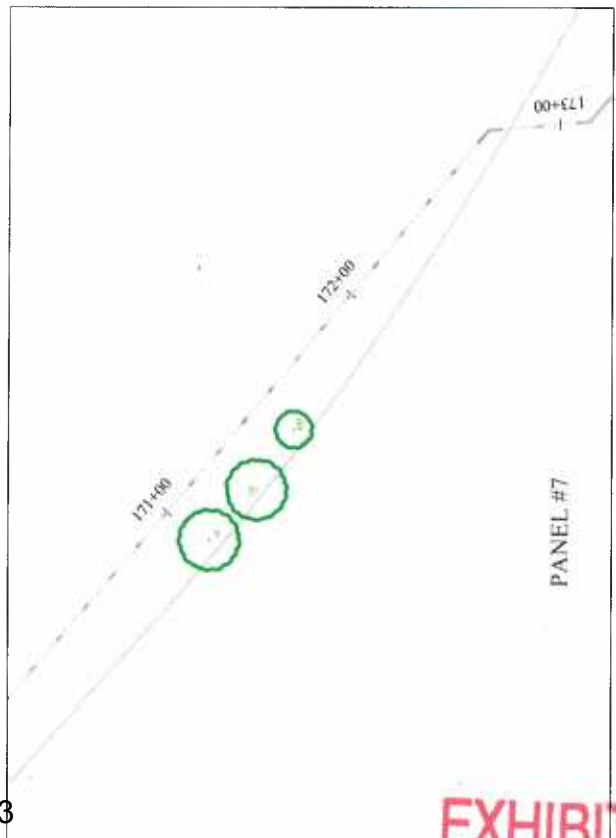
PANEL #6



PANEL #8



PANEL #5



PANEL #7

CITY OF SANTA CRUZ WATER
DEPARTMENT
NORTH COAST SYSTEM
REHABILITATION PHASE 3
COAST SEGMENT

Tree Location Plan
NOVEMBER 2014

Panels #5-8

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Legend

#1 Tree Tag Number



Retain and Protect

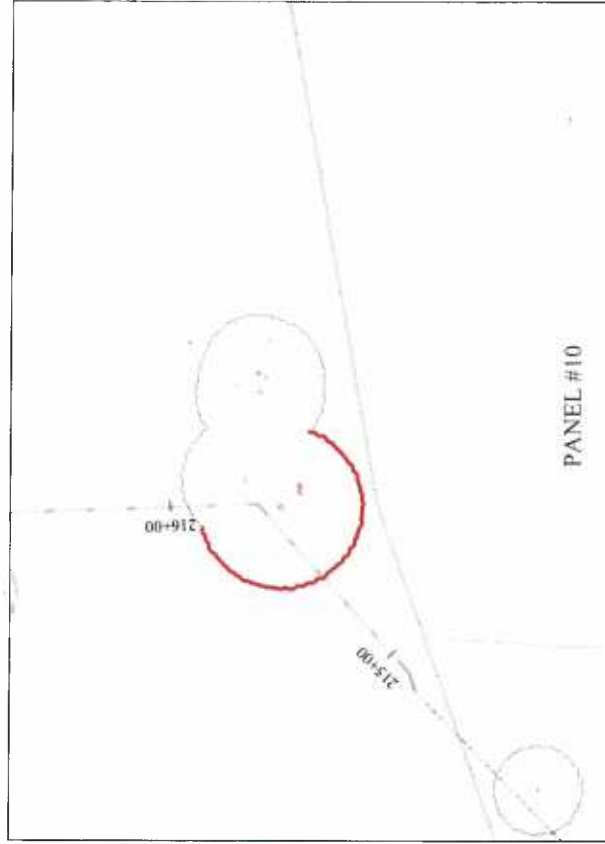
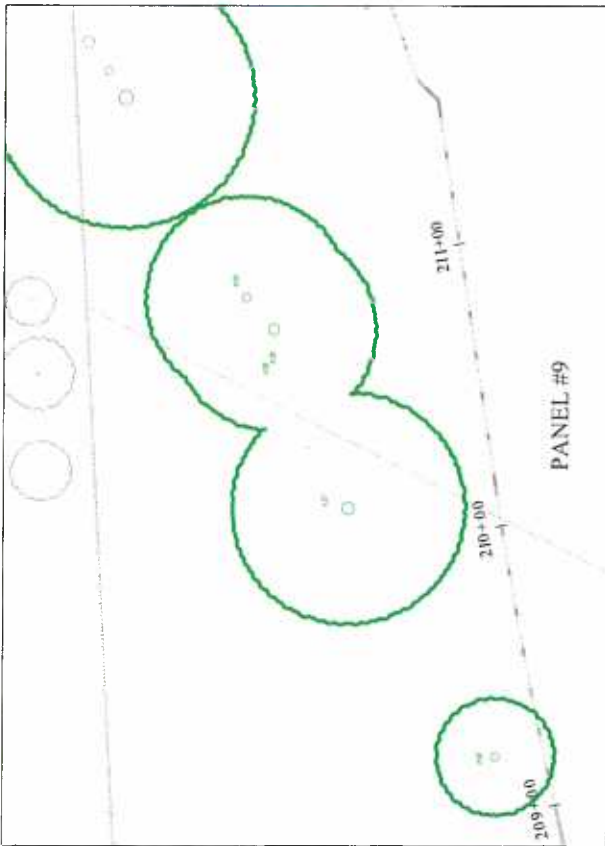


Remove

Panel 9: Between Stations 209+00 and 211+00 Trees #36-#39

Panel 10: Station 215+00 & 216+00 Tree #40

Panel 11: Station 218+00 Trees #41-#53



CITY OF SANTA CRUZ WATER
DEPARTMENT
NORTH COAST SYSTEM
REHABILITATION PHASE 3
COAST SEGMENT

Tree Location Plan
NOVEMBER 2014

Panels #9, 10 & 11

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