CALIFORNIA COASTAL COMMISSION
SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 585-1800

Th24b

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ADDENDUM

DATE: October 3, 2016

TO: Commissioners and Interested Parties

FROM: South Central Coast District Staff

SUBJECT: Agenda Item Th24b on Thursday, October 6, 2016
Notice of Impending Development (NOID) UCS-NOID-0003-16 –University of California at Santa Barbara (UCSB)

The purpose of this addendum is to (1) correct an inadvertent error in the text of Special Condition Three (3) of the staff recommendation regarding UCSB Notice of Impending Development No. UCS-NOID-0003-16; and (2) attach and respond to a public comment letter received since publication of the September 22, 2016 staff report.

Note: ~~Strikethrough~~ indicates text to be deleted from the September 22, 2016 staff report and underline indicates text to be added to the staff report.

1. ***Part A (3) of Special Condition Three (3) (entitled "Construction Staging Area and Fencing") found within Section "III. Special Conditions" on pages 6 and 7 of the staff report shall be modified as shown below:***

3. Construction Staging Area and Fencing

A. All construction plans and specifications for the project shall clearly identify all wetlands and ESHA and their associated buffers near the construction zone. Prior to commencement of development, the University shall submit a final construction staging and fencing plan for the review and approval of the Executive Director which indicates that the construction zone, construction staging area(s) and construction corridor(s) avoid impacts to wetlands and other sensitive habitat consistent with this approval. The plan shall include the following requirements and elements:

...

(3) No grading, stockpiling or heavy equipment shall occur within ESHA, wetlands or their designated buffers, with one exception. The construction of ~~the stormwater management system~~ approximately 30 linear feet of new seawater pipeline may occur within the wetland buffer as approved through this notice of impending development.

2. ***Correspondence Received***. Attached to this addendum is a public comment letter in opposition of the subject project received on October 3, 2016. The letter of opposition

expresses concerns and issues regarding water quality. Specifically, the letter states that the proposed project "constitutes an effluent volume increase in their ongoing unpermitted, illegal, discharge into the lagoon" and "the project is designed to increase ongoing dumping into waters of the United States." Although the issues raised in the letter have already been fully addressed in the staff report for the project, Staff notes that the Campus Lagoon has historically been a maintained wetland and the proposed project of directing campus stormwater runoff and excess seawater to the lagoon is a best management practice, and is not considered dumping of wastewater into a wetland. Moreover, the installation of the proposed stormwater and seawater pipelines will facilitate the removal of five discharge outfalls from the east ocean bluffs. Removal of theses outfalls would be beneficial to water quality by reducing the transport of silt and other pollutants to the Pacific Ocean, and will assist with reducing bluff erosion.

Additionally, the comment letter attached photographs of the lagoon's drainage outfalls, which direct water underneath an existing berm and across the beach and into the surf of Campus Point. The letter states the attached photographs depict broken sidewalk and concrete and shows the University's "current method for maintaining their dumping lagoon." However, Staff notes that the unpermitted concrete on the lagoon berm is a separate matter not related to the proposed project and enforcement staff will investigate further and evaluate further action.

Lastly, the comment letter states that "the lagoon is currently impaired with high levels of phosphorous, nitrogen and copper" and therefore is polluted. Staff notes that this issue was addressed on page 20 of the September 22, 2016 staff report. Although Campus Lagoon water quality is currently impaired with high levels of phosphorous, nitrogen and copper and the proposed addition of stormwater from the new stormwater pipelines would carry the same pollutant load; water quality is expected to improve because the proposed stormwater pipelines have been designed to be filtered through an existing bioswale prior to entering the lagoon. In addition, the proposed redirecting of seawater will improve lagoon water quality by diluting the lagoon with water that does not carry the pollutant load of stormwater runoff. Therefore, there are no anticipated adverse impacts to water quality to the Campus Lagoon as a result of the proposed project.

Agenda Number: 24
Oppose
UCS-NOID-0003-16

Peter Neushul
915 Camino Lindo
Goleta, CA 93117

2 October 2016

California Coastal Commission
Ukiah Valley Conference Center
200 South School Street
Ukiah, CA 95482

Dear Commission Members:

I am writing in reference to Item No: Th 24b--UCSB's planned re-direction of storm drainage lines into the Campus Lagoon and drainage of additional "excess seawater" from campus laboratories into the lagoon.

At present UCSB already uses the lagoon as a drainage ditch for their marine laboratory seawater and for runoff from elsewhere on the campus. This practice pre-dates the California Coastal Act and Section 404 of the Clean Water Act.

UCSB's proposed use in Item No: Th 24b, as written, constitutes an effluent volume increase in their ongoing unpermitted, illegal, discharge into the lagoon.

Your staff report includes boilerplate on not allowing the proposed construction from impact wetlands or their environs but ignores the fact that the entire project is designed to increase ongoing dumping into waters of the United States.

No laboratory, public or private, should be allowed to dump wastewater into a wetland. No campus or corporation should be allowed to send the runoff from its parking lots into a wetland without a permit. It is time the CCC called for UCSB to end their illegal dumping and repair the half century of damage the have already inflicted on this coastal wetland.

Attached are photographs of UCSB's current method for maintain their dumping lagoon. Note the barrier of broken sidewalk and concrete (some with transite pipe) to prevent natural exchange with the ocean (attached photos). When did the Coastal Commission or USACE permit this "shoreline protective device"? This haphazard, unregulated, manipulation of the wetland is an additional long-term Section 404 violation.

UCSB's ongoing 50-year abuse of this wetland is reminiscent of the pre-Clean Water Act era when chemical companies dumped waste into on site lagoons or directly into nearby rivers and streams. Your staff report notes that the lagoon is "currently impaired with high levels of phosphorous, nitrogen, and copper." In other words it is polluted—something obvious to anyone walking in the vicinity to Campus Lagoon. The lagoon is a health hazard and a disgrace to an institution that touts itself as a leader in environmental science.

Your staff report draws upon ongoing and proposed scientific studies by the "Cheadle Institute for Biodiversity" to calculate existing water pollution and potential environmental damage caused by the proposed development. This Institute is part of UCSB and hence must not play any role whatsoever in assessing damage inflicted by their owner.

The California Coastal Commission is UCSB's only significant hurdle in perpetrating environmental abuse. It is time your organization stopped taking this applicant at its word and called for a detailed independent environmental impact study that describes how and when UCSB will reverse ongoing illegal damage already done to the Campus Lagoon and restore it to a natural state.

Then and only then should you consider what UCSB should do about dumping "excess seawater" from their laboratories and redirecting runoff from their campus buildings and parking lots into polluted Campus lagoon.

Peter Neushul
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CALIFORNIA COASTAL COMMISSION
SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 585-1800

Th24b

DATE: September 22, 2016

TO: Commissioners and Interested Persons

FROM: Steve Hudson, Deputy Director
Barbara Carey, District Manager
Shana Gray, Planning and Regulation Supervisor
Denise Venegas, Coastal Program Analyst

SUBJECT: **Notice of Impending Development (NOID) UCS-NOID-0003-16** for the Main Campus Infrastructure Renewal Phase 1C Project, for Public Hearing and Commission Action at the October 6, 2016, Commission Meeting in Ukiah, CA.

SUMMARY OF STAFF RECOMMENDATION

Staff is recommending that the Commission, after public hearing, **approve** Notice of Impending Development (NOID) UCS-NOID-0003-16, as conditioned. Staff is recommending seven special conditions for NOID No. UCS-NOID-0003-16 to minimize impacts to water quality and to ensure geological and engineering stability.

The impending development involves the installation of approximately 3,061 linear feet of stormwater pipeline and 1,593 linear feet of seawater pipeline and 14,843 cu. yds. (8,297 cu. yds. of cut, 6,546 cu. yds. of fill) of associated grading for excavation and backfilling of pipeline trenches along Lagoon Road, Channel Islands Road and UCEN Road. The stormwater and seawater drainage project would provide new pipelines that would collect runoff water from the northeastern portion of the Main Campus that is presently discharged over the nearby east-facing bluff by five separate pipelines; the new pipelines would convey runoff to the Campus Lagoon instead. Each of the five existing drainage outfall pipes that discharge runoff water over the campus bluffs would be abandoned in place by capping the pipelines at locations near the proposed pipeline. Specifically, the proposed project includes a 10 and 12-inch diameter seawater drain line along UCen Road and Lagoon Road to drain excess seawater from the Marine Science and Biology II Buildings and for cooling at the Ocean Science Education Building. In most areas, the proposed storm and seawater pipelines will be in a common trench with the previously approved (UCSB NOID 4-09) natural gas and sewer lines along Lagoon and Channel Islands Roads.

The Main Campus Infrastructure Renewal Project is the Campus' comprehensive program for the replacement of existing and installation of new segments of certain natural gas, potable water sewer and storm drain pipelines at various locations throughout the UCSB Main Campus, including those previously approved through UCSB NOID 4-09. The utilities designed for replacement were identified as being in deteriorated condition and/or undersized to adequately serve the existing development located on the Main Campus. Phase 1 was approved by the

Commission on December 9, 2009 under Notice of Impending Development (NOID) No. 4-09. According to the University, due to a lack of funding for the entire Phase 1 project, Phase 1 was split into two phases, Phase 1A and 1B. Phase 1A was funded and constructed in 2010. Phase 1B is now funded and includes installation of natural gas and sewer lines along Lagoon and Channel Island Roads (sewer only along Channel Islands Road near the Chancellor's Residence). Additional funding was available for some additional infrastructure work not previously approved pursuant to NOID No. 4-09 and therefore the University is now proposing to add a third phase "Phase 1C" to the Infrastructure Renewal Project, and of which forms the subject of this staff report.

The primary issue raised by the NOID is the provision of requiring new development to be setback from the bluff and shoreline a sufficient distance to ensure that the structure would not need a bluff stabilization or shoreline protective device for a minimum of 100 years, with setbacks calculated in consideration of anticipated shoreline changes due to sea level rise (LRPD Policy GEO-03). Policy GEO-03 includes provisions that the University will remove or relocate the development if unanticipated bluff erosion occurs that threatens the structure or the safety of the public. The University submitted geological and geotechnical reports for the proposed project estimated bluff erosion rates (based on climate change/sea level rise) which were estimated to be between 30 to 40 cm/yr. The stormwater and seawater pipelines would be installed within Lagoon Road approximately 30 to 100 feet from the bluff edge within the common trench that was previously approved to accommodate other campus utilities. Assuming a bluff retreat rate of 30 to 40 cm/yr, it's estimated the bluff top could encroach upon the project pipelines within a time period of 20 to 25 years. Approximately 1,920 of the 3,061 linear feet of storm drain pipeline and of the 854 of the 1,593 linear feet of sea water pipeline would be within the area calculated as the 100 year bluff erosion zone. This time period is significantly less than 100 years, and therefore the development is not constructed at a sufficient distance to maintain the proposed structure for a minimum of 100 years without the construction of a shoreline protective device as required in Policy GEO-03. However, Policy GEO-4 allows for an exception to the geologic bluff top setback (GEO-03) for utility infrastructure under certain conditions.

Consistent with GEO-04, the University has provided evidence that a California-licensed geotechnical engineer has favorably reviewed the proposed project plans. Additionally, the University has submitted an alternative analysis which evaluated project alternatives that site the pipelines outside the 100 year bluff erosion zone. However because the stormwater system is gravity fed and because of the various elevations between Lagoon Road and the outfall locations, some evaluated alternatives were not feasible because they did not meet the minimum slope requirements for a 10-12 inch gravity line. In addition, the project is proposed in a built-out portion of the Campus and the potential routes are constrained by the presence of mature trees, buildings, and other development. As a result, no feasible alternatives were identified that would accommodate the rerouted stormwater and seawater drainage that would meet the 100 year bluff erosion setback. Moreover, the University acknowledges that proposed pipelines will need to be removed or relocated when threatened by future bluff erosion. In order to ensure that the proposed development is relocated or removed in the future consistent with any threat of bluff erosion, Special Condition Seven (7) requires the University to submit a bluff top edge monitoring plan prepared by a certified engineering geologist and/or geotechnical engineer,

which includes a schedule and methodology for monitoring and reporting on the location of the bluff top edge in relation to the approved development. In addition, the University acknowledges that as a condition of Commission approval for the proposed development, no future bluff stabilization measures shall be installed to protect such development in lieu of removal or relocation. Special Condition Six (6) has been required to ensure that no future bluff stabilization measures will be installed to protect the proposed stormwater or seawater pipelines. Special Condition 6 also requires proactive removal of the pipeline if it any public agency requires it to be removed due to the hazard, if the pipeline is exposed, and if required by a Removal/Relocation Plan that must be submitted when any portion of the stormwater or seawater pipelines is threatened by coastal hazards within the following 5 years.

The University also acknowledges that if this area of Main Campus is remodeled in the future, the entire infrastructure network and road may be realigned, at which time these utilities may also be relocated outside the 100 year bluff erosion zone. Lastly, GEO-04 requires that University accepts as a condition of Commission approval a legal "assumption of risk" condition acceptable to the Executive Director. Special Condition Two (2) requires the University to assume the liability from the associated project risks. Through the assumption of risk condition, the University acknowledges the nature of the site, and the site may be subject to hazards from storm waves, surges, bluff erosion, flooding, tsunami, and sea level rise. Therefore, the Commission finds that the project meets the conditions required in Policy GEO-04.

In addition, to ensure that the recommendations of the consultant have been incorporated into all proposed development, the Commission, as specified in Special Condition One (1), requires the University to comply with and incorporate the recommendations contained in the submitted geologic reports into all final design and construction, and to obtain the approval for the geotechnical consultants prior to commencement of construction. Lastly, Special Conditions Three (3) and Four (4) are necessary to ensure that adequate drainage and erosion control measures are developed and implemented. Furthermore, construction activities and equipment and machinery have the potential to impact coastal resources. As such, Special Condition Four (4) will also ensure that construction activities are managed to prevent any impact to coastal resources.

Staff recommends that the Commission determine that the NOID is consistent with the certified LRDP, only as conditioned to minimize adverse impacts to water quality and to avoid hazards.

The standard of review for the related NOID is consistency with the policies of the certified LRDP. The NOID, subject to seven special conditions, is consistent with the policies of the LRDP.

Additional Information: For further information, please contact Denise Venegas at the South Central Coast District Office of the Coastal Commission at (805) 585-1800. The UCSB Notice of Impending Development No. UCS-NOID-0003-16 is available for review at the Ventura Office of the Coastal Commission.

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University of California, Santa Barbara, 2010 Long Range Development Plan; Addendum Mitigated Negative Declaration UCSB Main Campus Infrastructure Renewal Project Phase 1C, dated December 2015, prepared by Shari Hammond, Office of Campus Planning & Design, UCSB; UCSB Lagoon Hydrology Report, dated August 28, 2008, prepared by Penfield and Smith; Addendum to UCSB Lagoon Hydrology Report, dated March 7, 2011, prepared by Penfield and Smith; Campus Lagoon Water Quality Assessment", dated July 2011, prepared by Lisa Stratton, Cheadle Center for Biodiversity and Ecological Restoration; Geotechnical and Geological Consultation, Response to California Coastal Regarding 100-Year Bluff Setback, UCSB Infrastructure Renewal Phase 1C, dated April 28, 2016, prepared by Fugro Consultants Inc.; Geotechnical Study Prepared in Response to Coastal Commission Comment UCSB Infrastructure Renewal Phase 1C", dated May 6, 2016, prepared by Fugro Consultants, Inc.; Supplemental Geotechnical and Geological Consultation, Potential Impact of Sea Level Rise on Bluff Erosion and Retreat, UCSB Infrastructure Renewal Phase 1C", dated June 16, 2016, prepared by Fugro Consultants, Inc.; and Using Laser Scanning Technology to Monitor Coastal Erosion and Sea-Cliff Retreat in Southern Santa Barbara County, dated June 2013, prepared by Eva E. von Thury.

EXHIBITS

Exhibit 1. Vicinity Map
Exhibit 2. Project Site Aerial Photo
Exhibit 3. Proposed Stormwater & Seawater Project Plans & Grading Plans
Exhibit 4. 100 Year Bluff Erosion Zone Overlay Project Plans

I. PROCEDURAL ISSUES

Section 30606 of the Coastal Act and Title 14, Sections 13547 through 13550 of the California Code of Regulations[1] govern the Coastal Commission's review of specific development projects proposed to be undertaken pursuant to a certified LRDP. Section 13549(b) requires the Executive Director or his designee to review the notice of impending development (or development announcement) within ten days of receipt and determine whether it provides sufficient information to determine if the proposed development is consistent with the certified LRDP. The notice is deemed filed when all necessary supporting information has been received. The items necessary to provide a complete notice of impending development for the project at issue in this report were received in the South Central Coast Office on August 30, 2016, Commission staff reviewed them within 10 days of receiving them, and the notice was filed as complete on September 9, 2016.

Pursuant to Section 13550(b) of the regulations, within thirty days of filing the notice of impending development, the Executive Director is to report to the Commission on the nature of the development and make a recommendation regarding the consistency of the proposed development with the certified LRDP. After a public hearing, by a majority of its members present, the Commission determines whether the development is consistent with the certified LRDP and whether conditions are required to bring the development into conformance with the LRDP. No construction shall commence until after the Commission votes to impose any conditions(s) necessary to render the proposed development consistent with the certified LRDP.

II. MOTION & RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

> *I move that the Commission determine that the development described in the Notice of Impending Development UCS-NOID-0003-16 (Main Campus Infrastructure Renewal Phase 1C Project), as conditioned, is consistent with the certified University of California at Santa Barbara Long Range Development Plan.*

Staff recommends a **YES** vote. Passage of this motion will result in a determination that the development described in the Notice of Impending Development UCS-NOID-0003-16 as conditioned, is consistent with the certified University of California at Santa Barbara Long Range Development Plan, and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

> *The Commission hereby determines that the development described in the Notice of Impending Development UCS-NOID-0003-16, as conditioned, is consistent with the*

[1] All further references to regulations are to Title 14 of the California Code of Regulations

certified University of California at Santa Barbara Long Range Development Plan for the reasons discussed in the findings herein.

III. SPECIAL CONDITIONS

1. Plans Conforming to Geotechnical Engineer's Recommendations

The University agrees to comply with the recommendations contained in all of the geology, geotechnical, and/or soils reports referenced as Substantive File Documents. These recommendations, including recommendations concerning grading, and construction, shall be incorporated into all final design and construction plans, which must be reviewed and approved by the consultant prior to commencement of development. The final construction, grading and drainage plans approved by the consultant shall be in substantial conformance with the plans approved by the Commission relative to construction, grading, and drainage. Any substantial changes in the proposed development approved by the Commission that may be required by the consultant shall require a new Notice of Impending Development, unless the Executive Director determines that no NOID is required.

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

The University acknowledges and agrees (i) that the site may be subject to hazards from storm waves, surges, bluff erosion, flooding, tsunami, and sea level rise; (ii) to assume the risks to the University and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

Prior to the commencement of construction, the University shall submit a written agreement, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition.

3. Construction Staging Area and Fencing

A. All construction plans and specifications for the project shall clearly identify all wetlands and ESHA and their associated buffers near the construction zone. Prior to commencement of development, the University shall submit a final construction staging and fencing plan for the review and approval of the Executive Director which indicates that the construction zone, construction staging area(s) and construction corridor(s) avoid impacts to wetlands and other sensitive habitat consistent with this approval. The plan shall include the following requirements and elements:

(1) Protective fencing shall be used around all ESHA, wetland areas, and their associated buffers that may be disturbed during construction activities.
(2) Construction equipment, materials, or activity shall not be placed/occur within any ESHA, wetlands or their buffers, or in any location which would result in impacts to wetlands or other sensitive habitat.
(3) No grading, stockpiling or heavy equipment shall occur within ESHA, wetlands or their designated buffers, with one exception. The construction of the stormwater management system may occur within the wetland buffer as approved through this notice of impending development.
(4) No construction materials, debris, or waste shall be placed or stored where it may enter sensitive upland habitat or wetlands, storm drain, receiving waters, or be subject to wind erosion and dispersion;
(5) The plan shall include, at a minimum, a site plan that depicts the following components: limits of the staging area(s); construction corridor(s); construction site; location of construction fencing and temporary job trailers with respect to existing wetlands and sensitive habitat; and public access route through/around the site.
(6) The plan shall indicate that construction equipment, materials or activity shall not occur outside the designated staging area(s), construction zone, or corridors identified on the site plan required by this condition.
(7) During construction, washing of concrete trucks, paint, equipment, or similar activities shall occur only in areas where polluted water and materials can be contained for subsequent removal from the site. Wash water shall not be discharged to the storm drains, street, drainage ditches, creeks, or wetlands. Areas designated for washing functions shall be at least 100 feet from any storm drain, water body or sensitive biological resources. The location(s) of the washout area(s) shall be clearly noted at the construction site with signs. In addition, construction materials and waste such as paint, mortar, concrete slurry, fuels, etc. shall be stored, handled, and disposed of in a manner which prevents storm water contamination.

B. The University shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director to determine if a notice of impending development or amendment to the Long Range Development is required to authorize such work.

4. Construction Responsibilities, Debris Removal And Interim Erosion Control Plans

A. The University shall agree to comply with the following construction-related requirements:

1. The University shall not store or place any construction materials or waste where it will be or could potentially be subject to wave erosion and dispersion. In addition, no heavy machinery shall be allowed in the intertidal zone at any time, or be stored or placed in the intertidal zone at any time.
2. Construction equipment shall not be cleaned on the beach or in the adjacent beach parking areas.

3. Construction debris and sediment shall be properly contained and secured on site with best management practices to prevent the unintended transport of sediment and other debris into coastal waters by wind, rain or tracking.
4. Construction debris and sediment shall be removed from construction areas as necessary to prevent the accumulation of sediment and other debris which may be discharged into coastal waters. Any and all debris resulting from construction activities shall be removed from the project site within 24 hours. Debris shall be disposed at a debris disposal site outside of the coastal zone or at a location within the coastal zone authorized to receive such material.
5. During construction activities authorized pursuant to this notice of impending development, the University shall be responsible for removing all unsuitable material or debris within the area of placement should the material be found to be unsuitable for any reason, at any time, when the presence of such unsuitable material/debris can reasonably be attributed to the placement material. Debris shall be disposed at a debris disposal site outside of the coastal zone or at a location within the coastal zone authorized to receive such material.

B. ***Prior to the commencement of construction***, the University shall submit to the Executive Director an Interim Erosion Control and Construction Best Management Practices Plan, prepared by a qualified, licensed professional. The qualified, licensed professional shall certify in writing that the Interim Erosion Control and Construction Best Management Practices (BMPs) plan are in conformance with the following requirements:

1. Erosion Control Plan

(a) The plan shall delineate the areas to be disturbed by grading or construction activities and shall include any temporary access roads, staging areas and stockpile areas. The natural areas on the site shall be clearly delineated on the plan and on-site with fencing or survey flags.

(b) The plan shall include a narrative report describing all temporary run-off and erosion control measures to be used during construction.

(c) The plan shall identify and delineate on a site or grading plan the locations of all temporary erosion control measures.

(d) The plan shall specify that grading shall take place only during the dry season (April 1 – October 31). This period may be extended for a limited period of time if the situation warrants such a limited extension, if approved by the Executive Director. The University shall install or construct temporary sediment basins (including debris basins, desilting basins, or silt traps), temporary drains and swales, sand bag barriers, silt fencing, and shall stabilize any stockpiled fill with geofabric covers or other appropriate cover, install geotextiles or mats on all cut or fill slopes, and close and stabilize open trenches as soon as possible. Basins shall be sized to handle not less than a 10 year, 6 hour duration rainfall intensity event.

(e) The erosion control measures shall be required on the project site prior to or concurrent with the initial grading operations and maintained throughout the development process to minimize erosion and sediment from runoff waters during construction. All sediment

should be retained on-site, unless removed to an appropriate, approved dumping location either outside of the coastal zone or within the coastal zone to a site permitted to receive fill.

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

(g) All temporary, construction related erosion control materials shall be comprised of bio-degradable materials (natural fiber, not photo-degradable plastics) and must be removed when permanent erosion control measures are in place. Bio-degradable erosion control materials may be left in place if they have been incorporated into the permanent landscaping design.

2. Construction Best Management Practices

(a) No demolition or construction materials, debris, or waste shall be placed or stored where it may enter sensitive habitat, receiving waters or a storm drain, or be subject to wave, wind, rain, or tidal erosion and dispersion.

(b) No demolition or construction equipment, materials, or activity shall be placed in or occur in any location that would result in impacts to environmentally sensitive habitat areas, streams, wetlands or their buffers.

(c) Any and all debris resulting from demolition or construction activities shall be removed from the project site within 24 hours of completion of the project.

(d) Demolition or construction debris and sediment shall be removed from work areas each day that demolition or construction occurs to prevent the accumulation of sediment and other debris that may be discharged into coastal waters.

(e) All trash and debris shall be disposed in the proper trash and recycling receptacles at the end of every construction day.

(f) The University shall provide adequate disposal facilities for solid waste, including excess concrete, produced during demolition or construction.

(g) Debris shall be disposed of at a permitted disposal site or recycled at a permitted recycling facility authorized to receive the debris materials. If the disposal site is located in the coastal zone, the disposal site must have a valid coastal development permit, or NOID as applicable, for the disposal of fill material. If the proposed disposal site is not authorized to receive fill, a coastal development permit, or NOID as applicable, will be required prior to the disposal of material.

(h) All stock piles and construction materials shall be covered, enclosed on all sides, shall be located as far away as possible from drain inlets and any waterway, and shall not be stored in contact with the soil.

(i) Machinery and equipment shall be maintained and washed in confined areas specifically designed to control runoff. Thinners or solvents shall not be discharged into sanitary or storm sewer systems.

(j) The discharge of any hazardous materials into any receiving waters shall be prohibited.

(k) Spill prevention and control measures shall be implemented to ensure the proper handling and storage of petroleum products and other construction materials. Measures shall include a designated fueling and vehicle maintenance area with appropriate berms and protection to prevent any spillage of gasoline or related petroleum products or contact with runoff. The area shall be located as far away from the receiving waters and storm drain inlets as possible.

(l) Best Management Practices (BMPs) and Good Housekeeping Practices (GHPs) designed to prevent spillage and/or runoff of demolition or construction-related materials, and to contain sediment or contaminants associated with demolition or construction activity, shall be implemented prior to the on-set of such activity

(m) All BMPs shall be maintained in a functional condition throughout the duration of construction activity.

The final Interim Erosion Control and Construction Best Management Practices Plan shall be in conformance with the site/ development plans approved by the Coastal Commission. Any necessary changes to the Coastal Commission approved site/development plans required by a qualified, licensed professional shall be reported to the Executive Director. No changes to the approved final plans shall occur without a new notice of impending development unless the Executive Director determines that a new notice of impending development is not legally required.

5. Removal of Excess Material

Prior to commencement of construction, the University shall provide evidence to the Executive Director of the location of the disposal site for all excess excavated material from the site. If the disposal site is located in the Coastal Zone, the disposal site must have a valid NOID for the disposal of fill material. If the disposal site does not have a NOID, such a NOID will be required prior to the disposal of material.

6. No Future Bluff or Shoreline Protective Device

The University agrees, on behalf of itself and all successors and assigns, that no bluff or shoreline protective device(s) shall ever be constructed to protect the development approved pursuant to Notice of Impending Development No. UCS-NOID-0003-16 including, but not limited to, the stormwater and seawater pipelines, including in the event that the development is threatened with damage or destruction from waves, erosion, storm conditions, liquefaction, bluff retreat, landslides, or other coastal hazards in the future, and as may be exacerbated by sea level

rise. The University hereby waives, on behalf of itself and all successors and assigns, any rights to construct such devices that may exist under applicable law.

The University further agrees, on behalf of itself and all successors and assigns, that the University shall remove the development authorized by this Notice of Impending Development, including the stormwater and seawater pipelines, if any government agency has ordered that the structures are not to be used due to any of the hazards identified above, if any public agency requires the structures to be removed, if the development is exposed, or as otherwise required pursuant to the Removal/Relocation Plan described below. The University shall obtain a notice of impending development and/or coastal development permit for removal of approved development unless the Executive Director determines that no notice of impending development and/or coastal development permit is legally required.

In the event that the edge of the bluff top recedes to within 10 feet of the stormwater and seawater pipelines but no government agency has ordered that the structures not be used, a geotechnical investigation shall be prepared by a licensed coastal engineer and geologist, retained by the University, that addresses whether any portions of the stormwater or seawater pipelines are threatened by coastal hazards. The report shall identify all those immediate or potential future measures that could stabilize the stormwater or seawater pipelines without bluff or shoreline protective device(s), including but not limited to removal or relocation of portions of the stormwater or seawater pipelines. The report shall be submitted to the Executive Director. If the geotechnical investigation concludes that any portion of the stormwater or seawater pipelines is threatened by coastal hazards within the following 5 years, the University shall, within 90 days of submitting the investigation, apply for a notice of impending development and/or coastal development permit to remedy the hazard. The Executive Director may extend the 90 days for good cause.

Prior to removal/relocation, the University shall submit two copies of a Removal/Relocation Plan to the Executive Director for the review and written approval. The Removal/Relocation Plan shall clearly describe the manner in which such development is to be removed/relocated and the affected area restored so as to best protect coastal resources, including the Pacific Ocean. In the event that portions of the development fall to the bluffs or ocean before they are removed/relocated, the landowner shall remove all recoverable debris associated with the development from the bluffs and ocean and lawfully dispose of the material in an approved disposal site. Such removal shall require a notice of impending development and/or coastal development permit.

7. Bluff Top Edge Monitoring

Prior to commencement of construction, the University shall submit one printed and on digital copy of a bluff top edge monitoring plan to the Executive Director for review and written approval. The plan shall be prepared by a certified engineering geologist and/or geotechnical engineer familiar and experienced in shoreline processes, and it shall provide for a schedule and methodology for monitoring and reporting on the location of the bluff top edge in relation to the approved development (including but not limited to the stormwater or seawater pipelines). The plan shall include, at a minimum, the following:

A. Reference Points. Provisions for establishing, prior to construction, numbered monuments or surveyed points of measurement (reference points) to be located along the seaward edge of the approved development with a minimum of points at 25-foot increments as well as at the most downcoast and most upcoast portions of the seaward edge of the approved development.

B. Measurement Episodes. Provisions for a licensed surveyor, in coordination with a certified engineering geologist, civil engineer and/or geotechnical engineer familiar and experienced in shoreline processes, to conduct measurements, in feet, of the linear distance (measured perpendicular from the shoreline) between the established reference points and the bluff top edge on the date on which the Commission voted on the notice of impending development or thereabouts every year and immediately after any event that results in the bluff top edge eroding inland 10 feet or more. The plan shall provide for a methodology consistent with standard surveying and bluff top delineation methods for determining the location of the bluff top edge and documenting distances on land.

Each measurement episode shall also be documented through identification of:

1. the date of the measurement;
2. the person making the measurement and their qualifications;
3. tidal and weather details for the times and dates of the measurement episode, including each date/time associated with any photos (see below); and
4. photos (in color, and in both hard copy 8.5" by 11" and electronic jpg formats (or equivalent), and at a scale and resolution that allows for comparison by the naked eye between photos of the same location taken at different times) of:
    a. the area between each reference point and the bluff top edge, providing full photographic coverage of the bluff top area between each reference point and the bluff top edge;
    b. each reference point and the surrounding area; and
    c. the point on the bluff top edge from which each measurement derives and the surrounding area, including photos both from a bluff top and a beach vantage so as to provide full photographic coverage of the bluff face itself and the bluff top edge. The photo documentation shall be accompanied by a site plan that identifies the location and orientation of each photo, each view of which shall be numbered. Measurement episodes shall include photos from the same vantage points each time to the extent possible, and shall include additional vantage points and coverage as necessary to document the required photographic area.

C. Reporting. Provisions for submittal of one printed and one digital copy of a report documenting and analyzing the required monitoring. The report shall be submitted to the Executive Director for review and written approval every five years, starting with the date on which the Commission voted on the notice of impending development and within one month of any event that results in the bluff top edge eroding inland 10 feet or more and within one month if any portion of the stormwater or seawater pipeline is within 10 feet of the bluff edge. The report shall provide a site plan that identifies the bluff top edge extending between

the downcoast and upcoast property boundaries, and that identifies the established reference points. The report shall also include: (1) all of the documentation described in the previous sections; (2) a narrative description of all measurement episode activities; (3) tables showing changes over time between the bluff top edge and the established reference points as compared to all past reports, including in terms of average annual changes, largest change between reports, and any other relevant data that helps identify changes over time; (4) identification and documentation of coastal hazards in the area over the time since the last report, including any significant storm and erosion events; and (5) any additional information relevant to helping understand any changes in the distance between the bluff top edge and the approved development. Should any approved report identify next steps that involve development, such development shall be undertaken within the timeframes identified in the approved report. If the Executive Director determines that a new notice of impending development and/or CDP is legally required to perform such development, the permittee shall immediately submit and complete the required application, and such development shall occur within the timeframes identified in the notice of impending development and/or CDP. The permittee shall undertake development, if any, in accordance with the approved Bluff Top Plan.

IV. FINDINGS FOR APPROVAL OF THE NOTICE OF IMPENDING DEVELOPMENT

The Commission hereby finds and declares:

A. PROJECT DESCRIPTION AND BACKGROUND

1. Overview

The Main Campus Infrastructure Renewal Project is the Campus' comprehensive program for the replacement of existing and installation of new segments of certain natural gas, potable water sewer and storm drain pipelines at various locations throughout the UCSB Main Campus, including those previously approved through UCSB NOID 4-09. The utilities designed for replacement were identified as being in deteriorated condition and/or undersized to adequately serve the existing development located on the Main Campus. These lines have been proposed to increase system reliability by providing looped pipeline systems, or to improve existing service capabilities.

Many of the core infrastructure system facilities serving the Main Campus are 30 to 50 years old, and improvements to the existing utility lines have generally been made on an incremental basis to serve campus development. In addition, there are four storm water outfalls along Lagoon Road and one seawater outfall along Lagoon Road that drain to the Pacific Ocean, which may be contributing to bluff erosion. Furthermore, the University has received recommendations from the Regional Water Quality Control Board recommending the ocean bluff outfalls be removed and storm and sea water be diverted to the Campus Lagoon. To address the aging infrastructure and facilitate abandonment of bluff outfalls, a phased infrastructure renewal program has been developed to address gas, potable water, sewer and storm drainage systems.

Phase 1 was approved by the Commission on December 9, 2009 under Notice of Impending Development (NOID) No. 4-09. According to the University, due to a lack of funding for the entire Phase 1 project, Phase 1 was split into two phases, Phase 1A and 1B. Phase 1A was funded and constructed in 2010, and consisted primarily of the installation of a 48-inch diameter storm drain pipe along Library Mall, a continuous deflection separation (CDS) unit as a water quality treatment device, a bioswale (San Nicolas Restoration project), and a drain outfall system. The drain outfall was constructed with several rock lined pools that flow to a willow area before discharging to the Campus Lagoon. Main flows through the new 48-inch storm drain pipe enter a concrete box that dissipates energy of the stormwater flows before entering the lagoon. In anticipation of additional storm drains, the CDS unit and outfall structures to the Campus Lagoon were designed for additional storm water flows.

Phase 1B (approved pursuant to NOID 4-09) is now funded and includes installation of natural gas and sewer lines along Lagoon and Channel Island Roads (sewer only along Channel Islands Road near the Chancellor's Residence). Additional funding was available for some additional infrastructure work not previously approved pursuant to NOID No. 4-09 and therefore the University is now proposing to add a third phase "Phase 1C" to the Infrastructure Renewal Project, and of which forms the subject of this staff report. Phase 1C includes the installation of storm and seawater pipelines along Lagoon Road and Channel Island Road. Since in some areas of the proposed storm and sea water drains will be in a common trench with the proposed utilities along Lagoon and Channel Island Road previously approved pursuant to NOID 4-09, installation of the stormwater and seawater pipelines concurrently would result in fewer impacts than if the stormwater and seawater pipelines were constructed as a separate project.

2. Project Description

The proposed project "Phase 1C" involves the installation of approximately 3,061 linear feet of stormwater pipeline and 1,593 linear feet of seawater pipeline and 14,843 cu. yds. (8,297 cu. yds. of cut, 6,546 cu. yds. of fill) of associated grading for excavation and backfilling of pipeline trenches along Lagoon Road, Channel Islands Road and UCEN Road. The stormwater drainage project would provide a new pipeline that would collect runoff water from the northeastern portion of the Main Campus that is presently discharged over the nearby east-facing bluff by four separate pipelines; the new stormwater pipeline would convey runoff to the Campus Lagoon instead. The proposed stormwater and seawater pipelines would be constructed of high-density polyethylene (HDPE) and would be buried at various depths depending upon site conditions and engineering requirements to attain adequate pipe gradient. The trench for the storm and sea water drain lines would be between 14 feet and 22 feet deep. The proposed stormwater and seawater pipelines are proposed within a common trench that was previously approved by the Commission, pursuant to UCSB NOID 4-09, for sewer and gas lines that would be located approximately two to three feet deep. As part of the proposed project, the University will conduct preconstruction bird surveys to ensure that potential impacts to nesting bird species are avoided during construction activities. Additionally, the University will follow all Best Management Practices (BMPs) during construction activities for the protection of water quality.

Starting at a location near Main Campus east entrance, the new stormwater pipeline would extend southward beneath Lagoon Road to the intersection of Channel Islands Road (See Exhibit 2). At the intersection, the proposed stormwater drainage pipeline would turn to the west and follow the alignment of Channel Islands Road. The new stormwater pipeline would terminate at an existing continuous deflective separator (CDS) water treatment unit that was installed in conjunction with Phase 1A of the Main Campus Infrastructure Renewal Project. Low flow runoff from the CDS unit, which is comprised primarily of non-storm discharge (runoff from irrigation), is conveyed to the existing bioswale, which provides an infiltration basin located along the northern side of the Campus Lagoon. High flow runoff from the CDS unit is discharged directly to the Campus Lagoon through a discharge structure that was also constructed as part of Phase 1A.

In addition, the project includes a 10 and 12-inch diameter seawater drain line in a common trench with a sewer line along UCen Road and Lagoon Road to drain excess seawater from the Marine Science and Biology II Buildings and for cooling at the Ocean Science Education Building. The proposed seawater line would start on UCen Road, continue south on Lagoon Road along with the previously approved sewer line into a new trench and would terminate at an existing outfall at Pearl Chase Garden. Both storm and seawater lines would drain into existing stormwater outfall structures which drain to the Campus Lagoon. In addition, some areas of the proposed stormwater pipelines will be in a common trench with the previously approved natural gas and sewer lines along Lagoon and Channel Islands Roads. Major segments of the proposed drainage system and associated grading are described in further detail below and the general locations of proposed pipeline installation corridors are shown in Exhibit 3 and depict the location or pipelines included in the proposed project.

Stormwater Pipeline Lagoon and Channel Islands Road Segments
The Lagoon Road segment of the proposed stormwater pipeline would be 2,211 feet in length, and would extend beneath Lagoon Road between a manhole located in Lagoon Road east of Elings Hall to the north and the intersection of Lagoon Road and Channel Islands Road to the south. The new drainage pipeline would be 24 to 42 inches in diameter, and would be installed approximately seven to 12 feet below the ground surface. At various locations along this segment of the pipeline route, six new or reconstructed manholes would be installed. Each of the four existing stormwater drainage pipes that discharge runoff water over the campus bluffs would be abandoned in place by capping the pipelines at locations near the proposed pipeline. The portions of the existing drainage pipes that extend beyond the face of the campus bluffs would be removed. The four stormwater overhanging pipelines would be removed during a low tide and by using a mechanical lift to provide access to the existing pipe. Beach access for the mechanical lift would be provided from Campus Point. Only the portions of the existing drainage pipelines that extend away from the bluff face would be removed to minimize disturbance of the bluff and the bluff face.

The Channel Islands Road segment of the proposed stormwater pipeline would be approximately 840 feet in length and would extend between Lagoon Road and an existing CDS unit located within the Channel Islands Road roadway near the southwest corner of the De La Guerra Commons building. The pipeline installed in this project segment would be located near the

southern edge of Channel Islands Road, would be 42 inches in diameter, and the new pipeline would be approximately 14 feet below the ground surface increasing to 22 feet as the pipeline approaches the CDS unit. Two new manholes would be constructed along the Channel Islands Road segment of the new pipeline.

Seawater Pipeline

Seawater is used for research purposes in the Marine Science Building and Biology II, and for cooling at the Ocean Science Education Building. This seawater is pumped from the ocean at Campus Point and discharged into pipes for use. The proposed seawater pipeline would collect excess seawater that is presently discharged over the east-facing bluff. The excess seawater would instead be conveyed and discharged into the Campus Lagoon. The proposed seawater drainage pipeline would be constructed of 10-12 inch diameter pipeline, have a total length of approximately 1,593 feet, and would require the construction or reconstruction of six manholes. In addition, some areas of the proposed seawater pipelines will be in a common trench with the previously approved natural gas and sewer lines along Lagoon Road. The existing seawater drainage outfall pipes would be abandoned in place and the portions of the pipes that extend beyond the face of the campus bluff would be removed. The seawater discharge pipes to be removed from the bluff face include two four-inch pipes that are no longer actively used, and a corrugated plastic “drop structure” pipe that hangs down the cliff face.

Seawater Pipeline Road Segments and Pearl Chase Garden Discharge

The proposed seawater pipeline route would start by connecting to an existing seawater discharge pipeline located in UCen Road near the southwest corner of the Ocean Science Education Building. The seawater is pumped from the Pacific Ocean through a pipeline and pump house located on Campus Point to tanks located within Biology 1 and Ocean Science Education buildings. The seawater is used for research and discharged through a pipeline to the ocean bluff. This new pipeline would extend eastward beneath UCen Road approximately 186 feet to a new manhole in Lagoon Road. At Lagoon Road, the new seawater pipeline would follow the same route as the proposed stormwater drainage pipeline. This segment would be approximately 904 feet in length and would include the construction of two new manholes. Lastly, starting at a new manhole in Lagoon Road, the seawater pipeline would turn west and extend approximately 130 feet along the southern edge of Channel Islands Road in a landscaped area. This segment of the new pipeline would terminate at a new manhole. From this manhole the seawater pipeline would extend to the south, and then turn to the southwest at another new manhole. In total, this pipeline segment would be approximately 360 feet in length and would terminate at an existing 15-inch storm drain that discharges to the Campus Lagoon. The connection to the existing drainage people would occur at a point that is approximately 15 feet north of the Campus Lagoon.

Grading Earthwork Quantities

The project includes approximately 14,843 cu. yds. of associated grading for excavation and backfilling of pipeline trenches. There would be a total, between the two lines (stormwater and seawater), of 8,297 cu. yds. of cut (excavation) and 6,546 cu. yds. of fill (including native soil and imported sand bedding). Approximately 2,819 cu. yds. of sand bedding would be imported and 3,809 cu. yds. of native soils and 761 cu. yds. of asphalt/concrete and aggregate base would

be exported. Since in some areas of the proposed storm and sea water drains will be in a common trench with the previously approved utilities along Lagoon and Channel Island Road, installation of the stormwater and seawater pipelines concurrently would minimize landform alterations than if the stormwater and seawater pipelines were constructed as a separate project. See table below for the approximate earthwork quantities breakdown:

Pipeline Type	Linear Feet	Cut (Native Soils) Cu. Yds.	Cut (A/C & Aggregate Base) Cu. Yds.	Fill (Native Soil Backfill) Cu. Yds.	Import (Sand Bedding) Cu. Yds.	Export (Native Soils) Cu. Yds.	Export (A/C & Aggregate Base) Cu. Yds.
Stormwater	3,061	6,860	582	3,468	2,434	3,392	582
Seawater	1,593	676	179	259	385	417	179

There are no wetlands or environmentally sensitive habitat area within the proposed project area although the adjacent Campus Lagoon itself is designated as environmentally sensitive habitat area in the certified 2010 LRDP. No construction activities are required along the Campus Lagoon's shoreline because proposed storm and seawater pipelines would be connected to existing pipelines and Lagoon discharge facilities. Proposed construction activities to connect the proposed stormwater pipeline to the CDS unit would occur approximately 250 feet from wetland areas located along the Lagoon shoreline. Furthermore, the proposed seawater pipeline would be connected to an existing pipeline located within Pearl Chase Garden that discharges to the Lagoon. Approximately 30 linear feet of new seawater pipeline would be required to intrude within the 100-foot buffer of Campus Lagoon to be able to connect to the existing Pearl Chase Garden discharge. The repair and maintenance of existing utilities is an allowed use within the buffer areas from environmentally sensitive habitat areas (Campus Lagoon) pursuant to LRDP Policy ESH-22, and therefore this short segment of proposed seawater pipeline is consistent with the certified LRDP. Moreover, the proposed project will not result in the removal of any native vegetation and will not adversely impact any environmentally sensitive habitat areas.

Additionally, since the project involves utilities to be constructed and buried underground, the project will not result in any adverse impacts to scenic resources. The project will not result in any potential significant impacts to public access. The proposed improvements to the Main Campus storm drain infrastructure systems have been identified based on assessments of existing conditions and the identification of existing operations deficiencies. The proposed project would provide improved operations for the existing storm and sea water drains by eliminating pipeline bottlenecks and improving flow capacities. In accordance with Coastal Act Section 30254, all proposed infrastructure improvements would be located on the Main Campus and the project is designed to manage existing Campus stormwater and seawater outflows and is designed and limited to accommodate the needs generated by permitted Campus development consistent with the certified 2010 LRDP.

The proposed stormwater and seawater pipeline segments are located within existing roadways and Pearl Chase Garden. The land use designation for the proposed project is Academic and Support (roadway) and Open Space (Pearl Chase Garden). The proposed pipelines are for

underground utility purposes, and are uses consistent with the uses allowed under the Academic and Support and Open Space land use designations within the certified 2010 LRDP.

B. CONSISTENCY ANALYSIS

The standard of review for a Notice of Impending Development is consistency with the certified Long Range Development Plan (LRDP). UCSB's LRDP was certified by the Commission in 2014 and contains policies and provisions that identify areas for campus development while protecting coastal resources including environmental sensitive habitat areas, water quality, geologic stability and public access.

Water Quality

The Commission recognizes that new development has the potential to adversely impact coastal water quality thought the removal of vegetation, increase of impervious surfaces, increase of runoff, erosion, and sedimentation, introduction of pollutant such as chemicals, petroleum, cleaning products, pesticides, and other pollutant sources. These impacts reduce the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes and reduce optimum populations of marine organisms and have adverse impacts on human health. The University's certified LRDP incorporated by reference Coastal Act Sections 30230 and 30231 of the Coastal Act which mandate that marine resources and coastal water quality shall be maintained and where feasible restored, protection shall be given to areas and species of special significance, and that uses of the marine environment shall be carried out in a manner that will sustain biological productivity of coastal waters. Coastal Act Section 30253, also incorporated into the certified LRDP, requires among other things that erosion be minimized and site stability ensured.

To further protect water quality, the 2010 Long Range Development Plan includes a comprehensive Water Quality (WQ) Program that consists of water quality protection policies (Policies WQ-01 – WQ-17 of the related LRDP Amendment) and implementation standards (Appendix 3 Water Quality Protection Program). The LRDP policies address water quality protection measures during the siting and design phase, the construction phase, and the post-development phase. Specifically, Policy WQ-01 requires new development to be sited, designed, and managed to prevent adverse impacts from stormwater or dry weather runoff to coastal waters and environmentally sensitive habitat areas. Sources of inflow to coastal wetlands shall be maintained so that the quality, volume and duration of flows do not diminish wetland hydrology. Furthermore, Policy WQ-10 requires grading operations, which have the potential to deliver sediments to wetlands, environmentally sensitive habitat areas, or coastal waters shall be scheduled during the dry months of the year (May through October). However Policy WQ-10 allows for the construction timeline to be extended into the rainy season for a specific limited length of time, based on an inspection of the site, and a determination that conditions at the project site are suitable for. Continuation of work may be allowed if appropriate erosion and sedimentation control measures are in place and will be maintained during the activity. In this case, the proposed stormwater and seawater pipeline segments are located within existing roadways and Pearl Chase Garden open space area. Therefore, the Commission believes grading that is extended into the rainy season will not result in any adverse impacts to water quality

resulting from grading during construction, as long as all appropriate erosion and sedimentation control measures are implemented during construction activities. To ensure these erosion control measure are implemented and impacts to water quality are minimized, Special Condition Four (4), requires a final erosion control plan that incorporates protective measures that shall be used to prevent runoff and siltation during the rainy season.

In addition to ensure that runoff is conveyed from the site in a non-erosive manner, Policy WQ-13 requires stormwater outfalls to be sited, designed and managed to minimize the adverse impacts of discharging concentrated flows of stormwater or dry weather runoff into coastal waters, intertidal areas, beaches, bluffs, or stream banks. Additionally, Policy WQ-16 states that the siltation of the Campus Lagoon shall be minimized. Chemical wastes, sewage effluent or wastewaters shall be prohibited from entering the Lagoon. The quality of water entering the Lagoon shall be monitored and measures taken to remediate the source(s) contributing to the water quality threshold.

As previously described, the proposed development consists of the installation of approximately 3,061 linear feet of stormwater pipeline, 1,593 linear feet of seawater pipeline and 14,843 cu. yds. (8,297 cu. yds. of cut, 6,546 cu. yds. of fill) of associated grading for excavation and backfilling of pipeline trenches along roadways. The stormwater drainage project would provide a new pipeline that would collect runoff water from the northeastern portion of the Main Campus, which is presently discharging over the east-facing bluff by four separate pipelines, and the new stormwater pipeline would convey runoff to the Campus Lagoon instead. In addition, the project includes a new 10 and 12-inch diameter seawater drain line. The proposed seawater line would terminate at an existing outfall at Pearl Chase Garden which in then drains into the Campus Lagoon. Lastly, some areas of the proposed storm and sea water drains will be in a common trench with the previously approved utilities along Lagoon and Channel Island Road, installation of the stormwater and seawater pipelines concurrently would minimize landform alterations than if the stormwater and seawater pipelines were constructed as a separate project.

The flows from the proposed stormwater pipeline would drain to the existing continuous deflection separation (CDS) unit, dry season low flows (irrigation runoff) would be directed to an existing bioswale. Higher runoff flows from storm events would be discharged directly to Campus Lagoon through an existing discharge structure. Low runoff flows, such as those that occur during the dry season, are discharged to the infiltration basin because these flows generally have the highest concentration of pollutants, and the biofiltration capabilities provided by the basin improve the quality of the runoff water before it enters the Campus Lagoon. In anticipation of the Lagoon Road stormwater drains, the CDS unit and outfall structures to the Campus Lagoon were designed for the additional storm water flows. Additionally, the seawater pipeline would terminate at an existing 15-inch storm drain that discharges to the Campus Lagoon. Therefore, stormwater drainage would have the new benefit of draining through the CDS bioswale for improved water quality filtering prior to entering the Lagoon. Moreover, the installation of the Lagoon Road stormwater and seawater pipelines will facilitate the removal of five discharge outfalls from the east ocean bluffs. Removal of these outfalls would be beneficial to water quality by reducing the transport of silt and other pollutants to the Pacific Ocean.

The University has submitted a Lagoon Hydrology Study ("UCSB Lagoon Hydrology Report", dated August 28, 2008, prepared by Penfield and Smith, and "Addendum to UCSB Lagoon Hydrology Report", dated March 7, 2011, prepared by Penfield and Smith) to analyze the hydrologic impacts that campus LRDP development may have on the Campus Lagoon. the study evaluated the potential watershed impacts of the proposed stormwater and seawater diversions to the campus lagoon by installing a storm drain pipe in Lagoon Road to capture and direct stormwater. In addition, the UCSB Cheadle Center for Biodiversity and Ecological Restoration conducted a water quality study of the Campus Lagoon ("Campus Lagoon Water Quality Assessment", dated July 2011, prepared by Lisa Stratton, Cheadle Center for Biodiversity and Ecological Restoration). The hydrology study concluded that the additional stormwater and seawater directed to the Campus Lagoon would not result in a substantial increase in water levels in the Lagoon during major storm events. Water levels in the Campus Lagoon are controlled by various drain pipes to the beach. During large storms, water would overtop a berm/access road along the southern perimeter of the lagoon and allow water to drain to the adjacent beach and ocean. Impacts from flooding would be less than significant because the project's contribution to increased water levels would be cumulatively minor.

The water quality study determined that the Campus Lagoon water quality is currently impaired with high levels of phosphorous, nitrogen and cooper. The study determined that the proposed addition of storm water would carry the same pollutant load; however water quality would improve if it were to be filtered through a bioswale. As proposed, the new stormwater pipelines will be filtered through the existing bioswale as previously noted above to maintain water quality of the Campus Lagoon. In addition, the study concluded that the addition of seawater to the lagoon may improve water quality by diluting the lagoon with water that does not carry the pollutant load of stormwater runoff.

However, the project will convey additional storm and seawater to the Campus Lagoon and which may still result in potential adverse impacts to water quality due to increased erosion and sedimentation if all necessary best management practices are not implemented during construction. Furthermore, the proposed notice of impending development would involve approximately 14,843 cu. yds. (8,297 cu. yds. of cut, 6,546 cu. yds. of fill) of associated grading for excavation and backfilling of pipeline trenches along roadways. Grading activities during construction have the potential to adversely impact coastal waters quality. Specifically, the disturbed areas could lead to a potential increase in the volume and velocity of stormwater runoff and sediment load that can be expected to leave the site and eventually be discharged into the Lagoon and coastal waters. Therefore, interim erosion control measures and best management practices implemented during construction activities will serve to further minimize the potential for adverse impacts to water quality resulting from drainage runoff during construction. To ensure that proposed erosion control measures are properly implemented and in order to ensure that adverse effects to coastal water quality do not result from the proposed project, Special Condition Four (4), requires the University to submitted final erosion control plans. Additionally, to ensure that the potential for demolition activities on the beach (for the removal and capping of the existing outfalls along east bluff) to adversely affect the marine environment are minimized, Special Condition Four (4), requires the applicant to ensure that stockpiling of materials shall not occur on the beach area, that no machinery will be allowed in the intertidal zone at any time, all

debris resulting from the construction or demolition is promptly removed from the beach area, all grading shall be properly covered, and that sand bags and/or other protective measures shall be used to prevent runoff and siltation.

Moreover, LRDP Policy WQ-11 prohibits the storage or deposition of excavated materials on campus where such material will be subject to storm runoff in order to minimize soil erosion and sedimentation of coastal waters. Therefore, consistent with Policy WQ-11, in order to ensure that excavated material will not be stockpiled on site and that landform alteration and site erosion is minimized, Special Condition Five (5) requires the University to remove all excavated material, including debris resulting from the demolition of existing structures, from the site to an appropriate location permitted to receive such material. Should the disposal site be located in the Coastal Zone a separate coastal development permit or notice of impending development may be required. Lastly, although the proposed development activities are not proposed to occur in the Campus Lagoon (wetland) or ESHA, the project may still result in temporary adverse impacts to ESHA and wetland areas due to construction and staging activities. To ensure that such temporary impacts to the adjacent wetland/ESHA areas on site are minimized, Special Condition Three (3), requires the University to submit a final construction staging and fencing plan indicating that the construction zone, construction staffing area(s) and construction corridor(s) shall avoid any encroachment into the 100 ft. buffer area of the Campus Lagoon (wetland) or ESHA.

For the above reasons, the Commission finds that the notice of impending development, as conditioned, is consistent with the applicable policies of the certified 2010 LRDP with regards to water quality.

Hazards and Geological Stability

Section 30253 of the Coastal Act, incorporated by reference into the University's certified 2010 LRDP, requires the design and siting of any new buildings to assure stability and structural integrity and to not create or contribute to erosion, instability, or destruction of the site or surrounding areas. Additionally, the certified 2010 LRDP includes hazard policies which emphasize the avoidance of geologic hazards to minimize the risks to life and property, including setbacks from seismic hazards and along bluff tops. Policy GEO-01, states that new development proposals shall be supported by geotechnical and soil studies conducted by a geologist or geotechnical engineer, as appropriate, to determine technical requirements for adequate building foundation and infrastructure designs; such studies shall include an appropriate building foundation and infrastructure designs; such studies shall include an appropriate evaluation of seismic or liquefaction hazards that may affect the subject site. For instance, Policy GEO-03 requires new development to be setback from the bluff and shoreline a sufficient distance to ensure that the structure would not need a bluff stabilization or shoreline protective device for a minimum of 100 years, with setbacks calculated in consideration of anticipated shoreline changes due to sea level rise.

Policy GEO-03 includes provisions that the University will remove or relocate the development if unanticipated bluff erosion occurs that threatens the structure or the safety of the public.

Specifically, Policy GEO-03 states:

> *Policy GEO-03 – New development shall be constructed at a sufficient distance to maintain the proposed structure for a minimum of 100 years without the construction of a shoreline protection device. The 100-year bluff-top setback shall be determined based on a report by a California-registered engineering geologist or other qualified professional, with substantial experience evaluating shoreline erosion, evaluating the effects of sea level rise and consequent bluff or shoreline changes expected to affect the site within a minimum of 100 years following the completion of the proposed project. The report shall consider multiple sea level rise scenarios consistent with the additional requirements in Policy SH-04. The report shall include a recommendation for the minimum setback necessary to ensure the safety of the proposed development, including the safety of the public utilizing the nearby bluffs and/or shoreline area, for a minimum of 100 years, without construction of a bluff stabilization or shoreline armoring device. The NOID submittal shall include written evidence of the University's commitment to remove or relocate such development pursuant to a future NOID submittal should bluff erosion threaten the stability of the structure, or the safety of the public.*

Policy GEO-4 of the LRDP allows for some exceptions to the geologic bluff top setback, such as public access stairways, pathways, fences or parks. Utility infrastructure shall also be exempted from the bluff top setback under certain conditions, provided that the new development minimizes risks to life and property and does not contribute to erosion or geologic instability.

> *Policy GEO-04 –*
> *A. The geological bluff-top setback in Policy GEO-03 shall not apply to the development of public access stairways, pathways, fences, or parks. Utility infrastructure or the replacement or expansion of existing structures shall be subject to the geological bluff-top setback unless the Commission determines that:*
>
> *1) An appropriate, California-licensed geologist or geotechnical engineer has favorably reviewed the subject plans as described below;*
> *2) That no feasible alternative exists;*
> *3) That the subject structure has been designed to facilitate removal or relocation in the future as bluff erosion advances;*
> *4) That the University acknowledges as a condition of Commission approval of such development that no future bluff stabilization measures shall be installed to protect such development in lieu of removal or relocation; and*
> *5) The University accepts as a condition of Commission approval a legal "assumption of risk" condition acceptable to the Executive Director.*
>
> *B. If the University proposes development that does not comply with the geologic bluff-top setback requirements, the Notice of Impending Development for the development shall include evidence that a California-licensed geologist or geotechnical engineer, as appropriate, has determined that the development will assure stability and structural integrity, and neither create nor contribute significantly to erosion, geological instability, or destruction of the site or surroundings, for the expected life of the development.*

Policy GEO-09 of the LRDP states that drainage devices shall be sited and designed to prevent bluff erosion, and new drainage devices shall not extend over or through coastal bluffs. Additionally, GEO-09 states stormwater and dry weather flows that are conveyed through existing storm drains or other outfalls that discharge to the bluffs shall be re-routed to the maximum extent feasible, and the drainage device removed as feasible.

> *Policy GEO-09 –Drainage devices shall be sited and designed to prevent bluff erosion. New drainage devices shall not extend over or through coastal bluffs. Stormwater and dry weather flows that are conveyed through existing storm drains or other outfalls that discharge to the bluffs shall be re-routed to the maximum extent feasible, and the drainage device removed as feasible.*

The proposed project "Phase 1C" involves the installation of approximately 3,061 linear feet of stormwater pipeline and 1,593 linear feet of seawater pipeline. The stormwater drainage project would provide a new pipeline that would collect runoff water from the northeastern portion of the Main Campus that is presently discharged over the nearby east-facing bluff by four separate pipelines. The new stormwater pipeline would convey runoff to the Campus Lagoon instead. The proposed stormwater and seawater pipelines would be buried at various depths depending upon site conditions and engineering requirements to attain adequate pipe gradient. The trench for the storm and sea water drain lines would be between 14 feet and 22 feet deep. The proposed stormwater and seawater pipelines are proposed within a common trench that was previously approved by the Commission, pursuant to UCSB NOID 4-09, for sewer and gas lines that would be located approximately two to three feet deep. There is no anticipated impact related to potential fault rupture impacts because there are no active faults located on or near the Main Campus. Construction operations in Lagoon Road would be setback from the bluff edge by at least 30 feet to more than 100 feet and would not result in the disturbance of the bluff edge or bluff face.

Most of the UCSB campus is relatively level, which minimizes the potential for slope stability-related impacts. There is abundant evidence, however, of slope failures associated with the ocean bluff located along the east and south sides of the Main Campus. As a result of natural processes, the bluff erodes landward. In accordance with Policy GEO-01 and GEO-03, the University submitted the following geological and geotechnical reports for the proposed project: (1) "Geotechnical and Geological Consultation, Response to California Coastal Regarding 100-Year Bluff Setback, UCSB Infrastructure Renewal Phase 1C", dated April 28, 2016, prepared by Fugro Consultants, Inc., (2) "Geotechnical Study Prepared in Response to Coastal Commission Comment UCSB Infrastructure Renewal Phase 1C", dated May 6, 2016, prepared by Fugro Consultants, Inc.; and (3) "Supplemental Geotechnical and Geological Consultation, Potential Impact of Sea Level Rise on Bluff Erosion and Retreat, UCSB Infrastructure Renewal Phase 1C", dated June 16, 2016, prepared by Fugro Consultants, Inc.

These reports address the geologic conditions on the site, including drainage, subsurface condition, groundwater, landslides, faulting, and seismicity. The geologic consultants have found the geology of the proposed project site to be suitable for the construction of the proposed

pipelines. In addition, in accordance with GEO-03, the estimated bluff erosion rates (based on climate change/sea level rise) were estimated to be between 30 to 40 cm/yr. The stormwater and seawater pipelines would be installed within Lagoon Road approximately 30 to 100 feet from the bluff edge within a common trench that was previously approved by the Commission pursuant to NOID 4-09 to accommodate other campus utilities. Assuming a bluff retreat rate of 30 to 40 cm/yr, it's estimated the bluff top could encroach upon the project pipelines within a time period of 20 to 25 years. Approximately 1,920 of the 3,061 linear feet of storm drain pipeline and of the 854 of the 1,593 linear feet of sea water pipeline would be within the area calculated as the 100 year bluff erosion zone (Exhibit 4). This time period is significantly less than 100 years, and therefore the development is not constructed at a sufficient distance to maintain the proposed structure for a minimum of 100 years without the construction of a shoreline protective device as required in Policy GEO-03. However, Policy GEO-4 allows for an exception to the geologic bluff top setback for utility infrastructure under certain conditions (see GEO-04 above for required conditions).

Consistent with GEO-04, the University has provided evidence that a California-licensed geotechnical engineer has favorably reviewed the proposed project plans and has determined that the development will assure stability and structural integrity, and neither creates nor contributes significantly to erosion, geologic instability, or destruction of the site or surrounding, for the expected life of the development. Additionally, the University has submitted an alternative analysis which evaluated project alternatives that site the pipelines outside the 100 year bluff erosion zone. However because the stormwater system is gravity fed and because of the various elevations between Lagoon Road and the outfall locations, some evaluated alternatives were not feasible because they did not meet the minimum slope requirements for a 10-12 inch gravity line. In addition, the project is proposed in a built-out portion of the Campus and the potential routes are constrained by the presence of mature trees, buildings, and other development. As a result, the bends in the route were found not to be conducive to alternative route configurations. Further, the alternative that considered utilizing existing routes was constrained by the ability to provide the correct slope for the new pipelines in proximity to the existing pipelines. As a result, no feasible alternatives were identified that would accommodate the rerouted stormwater and seawater drainage that would meet the 100 year bluff erosion setback. However, as proposed the project will use a common trench with a previously-approved Campus utility project (NOID 4-09) that has not yet been fully implemented. As a result, there is minimal additional hazard associated with the alignment and the project can meet its objective to reroute the drainage from the bluff outfalls to the Campus Lagoon. The rerouting of drainage from these outfalls is supported by the LRDP policies and is intended to improve water quality and protect the bluff outfall locations from further erosion.

Moreover, the University acknowledges that proposed pipelines will need to be removed or relocated when threatened by future bluff erosion. In order to ensure that the proposed development is relocated or removed in the future consistent with any threat of bluff erosion, Special Condition Seven (7) Bluff Top Edge Monitoring requires the University to submit a bluff top edge monitoring plan prepared by a certified engineering geologist and/or geotechnical engineer, which includes a schedule and methodology for monitoring and reporting on the location of the bluff top edge in relation to the approved development. Special Condition 7 also

requires monitoring reports to be submitted to the Executive Director every five years, or sooner if bluff erosion hazards advance episodically or as threats to the pipeline are anticipated within a 5-year time period.

In addition, the University acknowledges that as a condition of Commission approval for the proposed development, no future bluff stabilization measures shall be installed to protect such development in lieu of removal or relocation. Special Condition Six (6) has been required to ensure that no future bluff stabilization measures will be installed to protect the proposed stormwater or seawater pipelines. Special Condition 6 also requires proactive removal of the pipeline if it any public agency requires it to be removed due to the hazard, if the pipeline is exposed, and if required by a Removal/Relocation Plan that must be submitted when any portion of the stormwater or seawater pipelines is threatened by coastal hazards within the following 5 years. A geotechnical evaluation is triggered when the edge of the bluff recedes to within 10 feet of any portion of the stormwater or seawater pipelines. The purpose of the geotechnical report is to evaluate the hazard and identify any potential future measures that could stabilize the stormwater or seawater pipelines without bluff or shoreline protective devices, including removal or relocation of portions of the pipelines. Any such removal or relocation shall require a Notice of Impending Development.

The University also acknowledges that if this area of Main Campus is remodeled in the future, the entire infrastructure network and road may be realigned, at which time these utilities may also be relocated outside the 100 year bluff erosion zone. Lastly, GEO-04 requires that University accepts as a condition of Commission approval a legal “assumption of risk” condition acceptable to the Executive Director. Consistent with GEO-04, Special Condition Two (2) requires the University to assume the liability from the associated project risks. Through the assumption of risk condition, the University acknowledges the nature of the site, and the site may be subject to hazards from storm waves, surges, bluff erosion, flooding, tsunami, and sea level rise. Therefore, the Commission finds that the project meets the conditions required in Policy GEO-04.

Lastly, to ensure that the recommendations of the consultant have been incorporated into all proposed development, the Commission, as specified in Special Condition One (1), requires the University to comply with and incorporate the recommendations contained in the submitted geologic reports into all final design and construction, and to obtain the approval for the geotechnical consultants prior to commencement of construction.

Therefore, the Commission finds that the notice of impending development, as conditioned, is consistent with the certified 2010 LRDP policies with regards to geologic stability and hazards.

C. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Pursuant to Section 21080.9 of the California Environmental Quality Act (“CEQA”), the Coastal Commission is the lead agency responsible for reviewing Long Range Development Plans and Notices of Impending Development for compliance with CEQA. In addition, Section 13096 of the Commission's administrative regulations requires Commission approval of Notices of Impending Development to be supported by a finding showing the application, as modified by

any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). The Secretary of Resources Agency has determined that the Commission's program of reviewing and certifying LRDPs qualifies for certification under Section 21080.5 of CEQA.

Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment. Section 21080.5(d) of CEQA and Section 13540(d) and (f) of the California Code of Regulations require that the Commission not approve or adopt a LRDP, "…if there are feasible alternative or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment." For the reasons discussed in this report, the project, as submitted, is inconsistent with the governing LRDP and its coastal zone protection policies, and feasible alternatives are available which would substantially lessen any significant adverse effect which the approval would have on the environment.

The Commission has, therefore, conditioned the proposed NOID to include such feasible measures adequate to ensure that such environmental impacts of new development are minimized. As discussed in the preceding section, the Commission's conditions bring the proposed project into conformity with the LRDP, and therefore the Coastal Act. Accordingly, the Commission finds that the project, as conditioned, is consistent with CEQA.

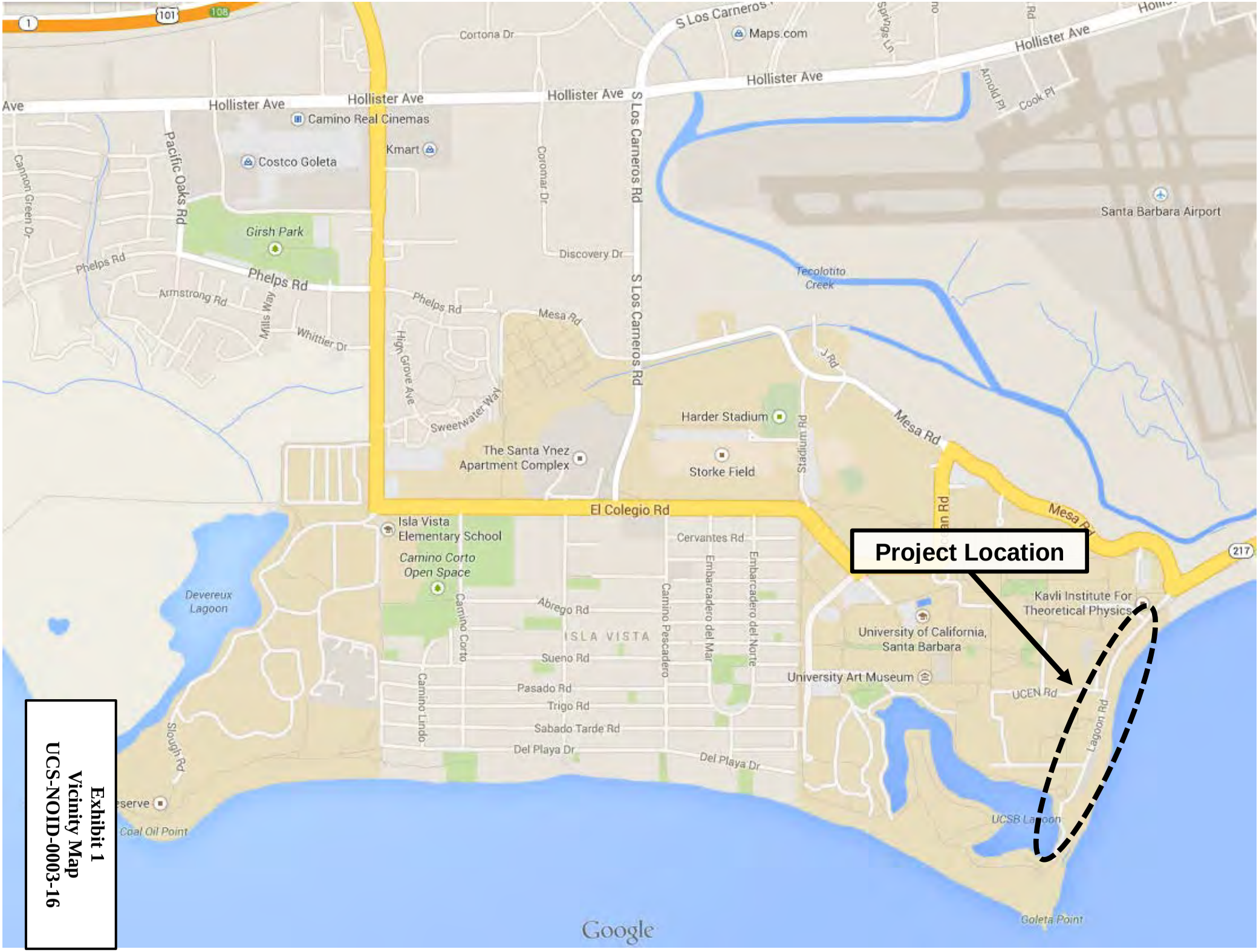


Exhibit 1
Vicinity Map
UCS-NOID-0003-16

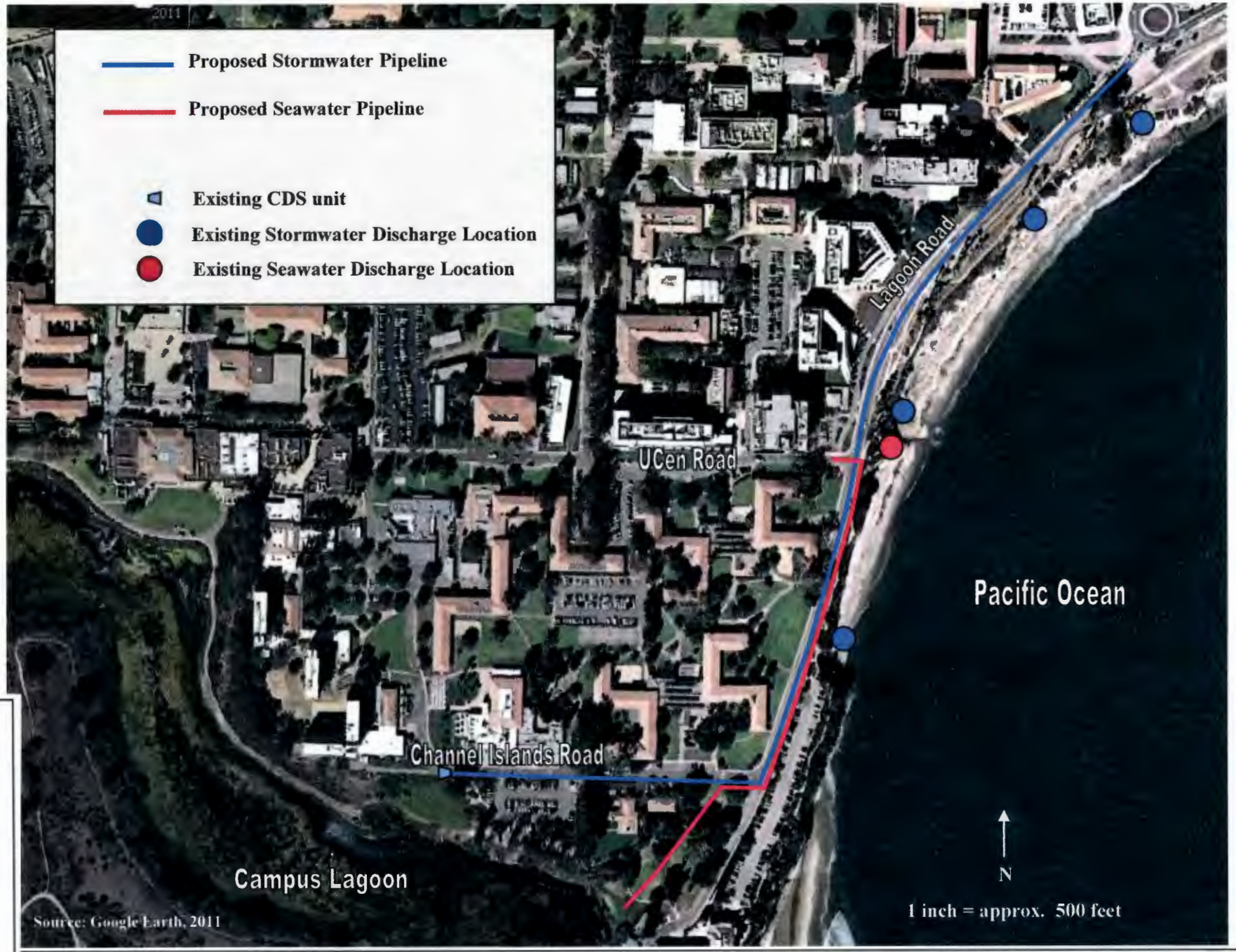


Exhibit 2
Project Site Aerial Photo
UCS-NOID-0003-16

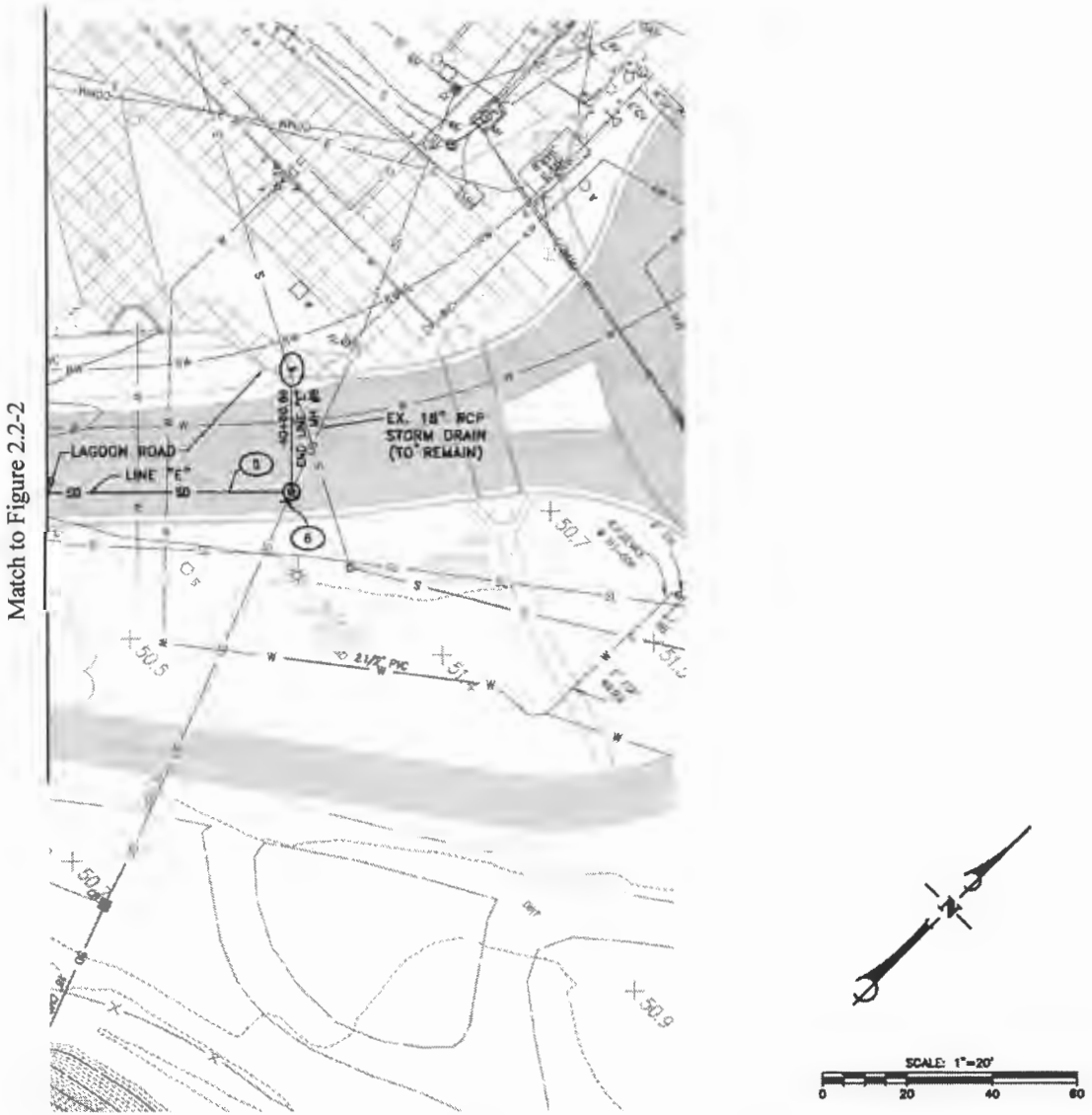
University of California, Santa Barbara

Lagoon Road Stormwater and Seawater Drainage Project

Figure 2

Proposed Pipeline Locations– Lagoon Road Area

Exhibit 3
Proposed Stormwater & Seawater
Project Plans & Grading Plans
UCS-NOID-0003-16



4 New/Reconstructed Manhole

5 Proposed 24-inch Storm Drain

6 Abandon Existing Storm Drain

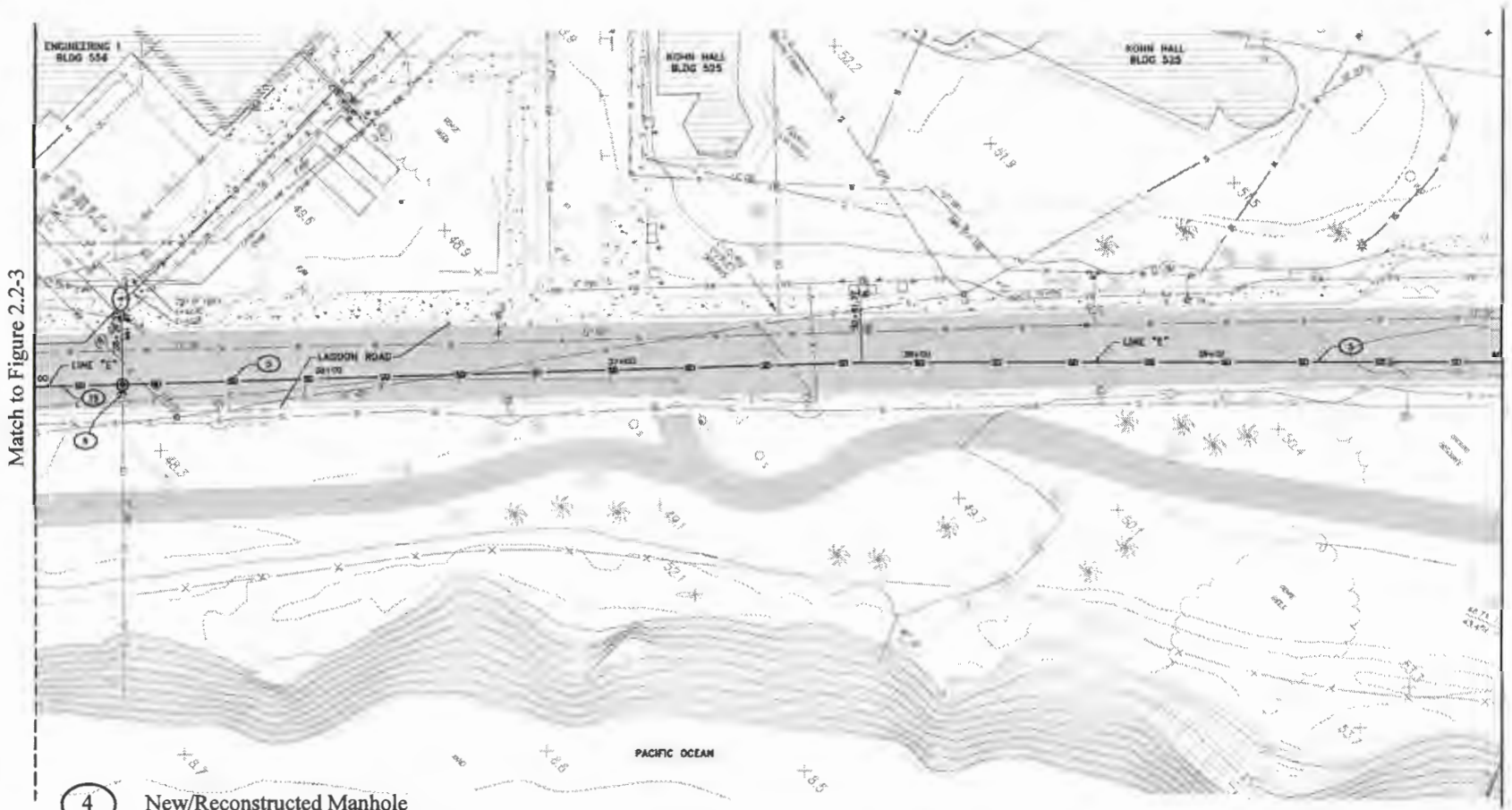
Source: Penfield and Smith, 2011

Figure 3

University of California, Santa Barbara

Lagoon Road and Ocean Road Drainage Project

Lagoon Road Project Plans - East Main Campus Entrance Area



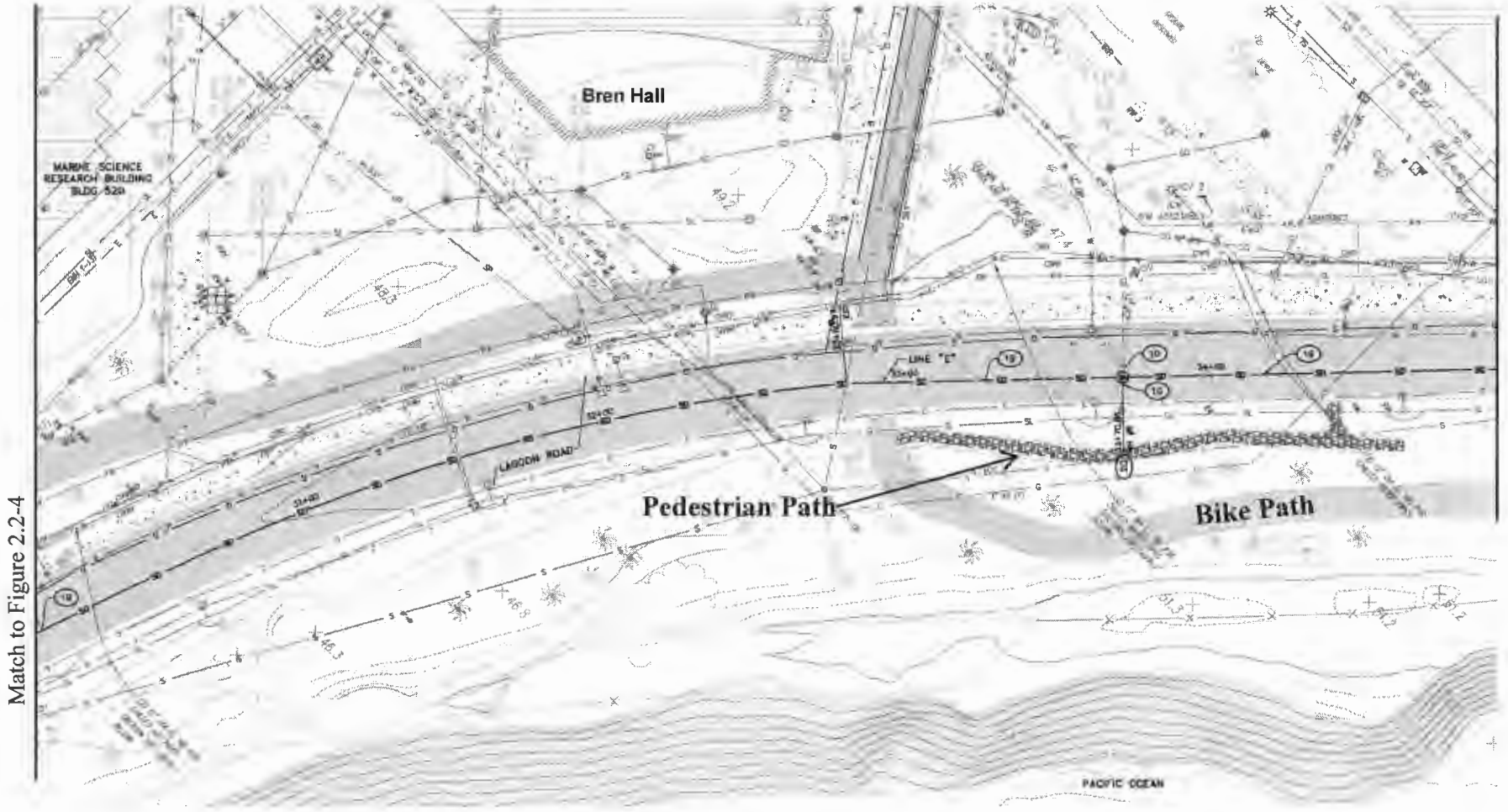
Source: Penfield and Smith, 2011

University of California, Santa Barbara

Lagoon Road and Ocean Road Drainage Project

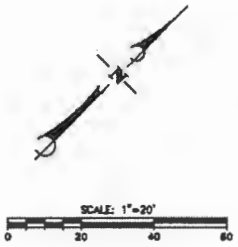
Figure 4

Lagoon Road Project Plans - Kohn Hall Area



(10) Connect Proposed Drain Line to Existing Drain Line

(19) Proposed 36-inch Storm Drain



Source: Penfield and Smith, 2011

University of California, Santa Barbara

Lagoon Road and Ocean Road Drainage Project

Figure 5

Lagoon Road Project Plans - Bren Hall Area

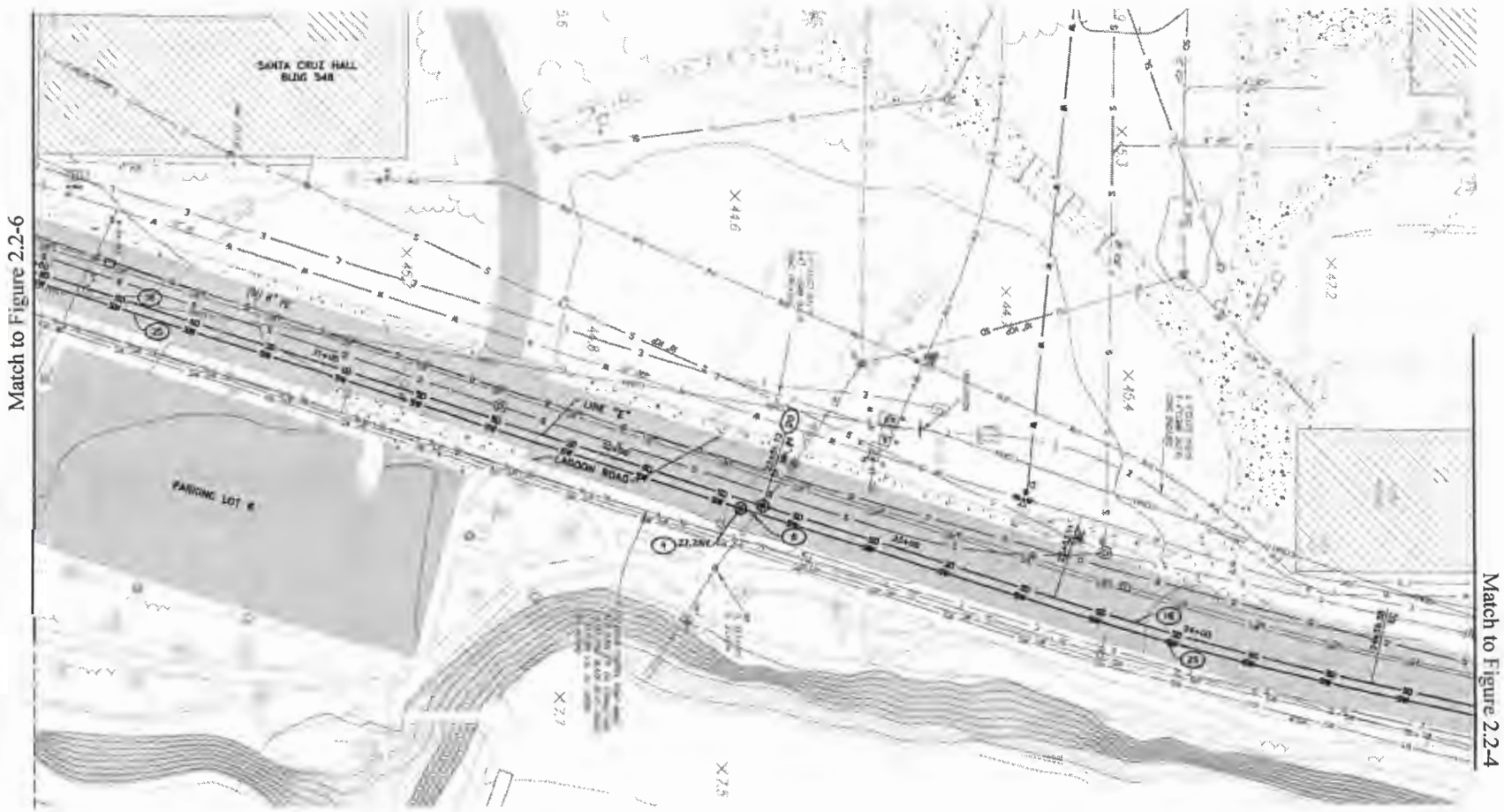
Source: Penfield and Smith, 2011

Figure 6

University of California, Santa Barbara

Lagoon Road and Ocean Road Drainage Project

Lagoon Road Project Plans - UCen Road Area



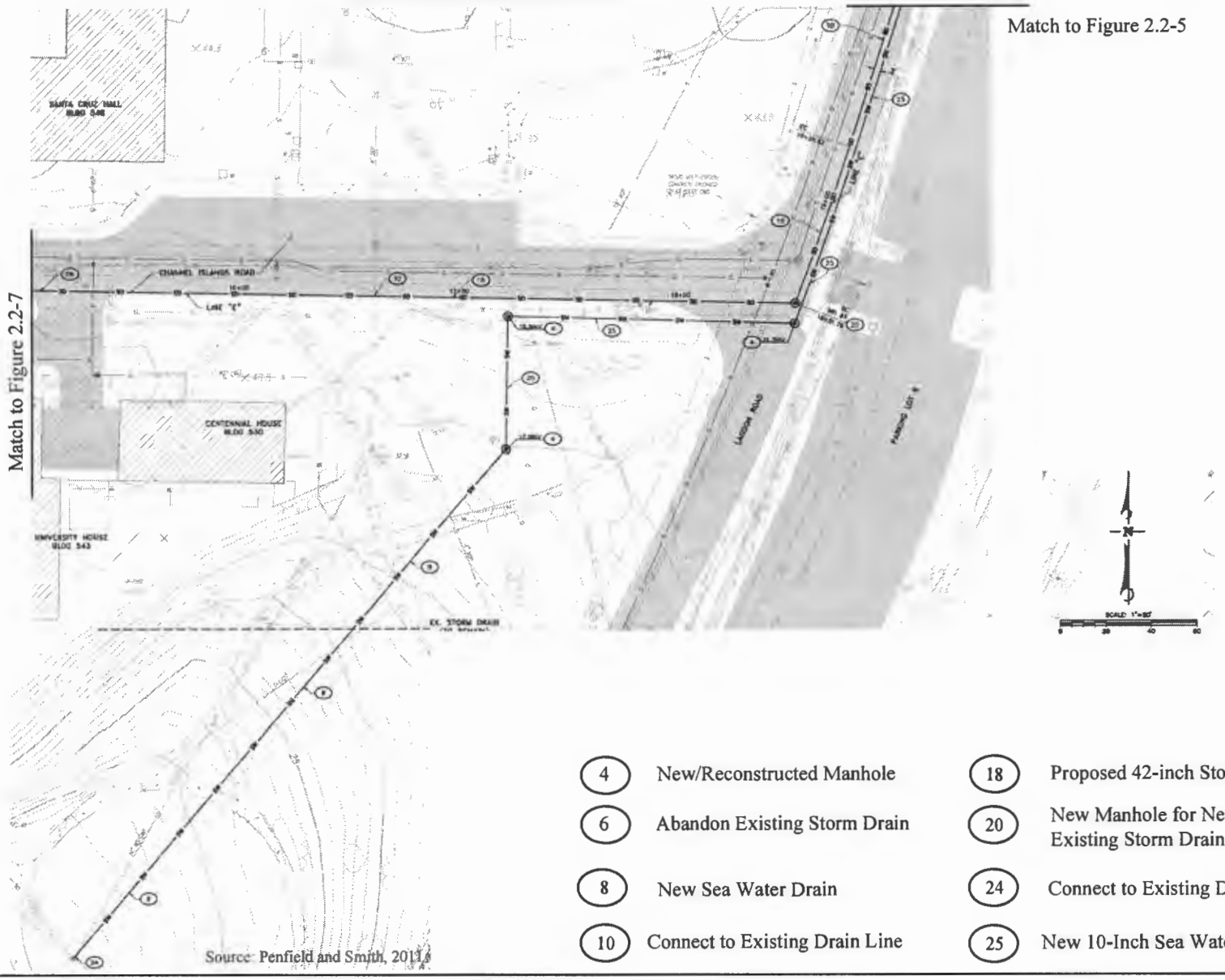
Source: Penfield and Smith, 2011

Figure 7

University of California, Santa Barbara

Lagoon Road and Ocean Road Drainage Project

Lagoon Road Project Plans - Santa Cruz Hall Area



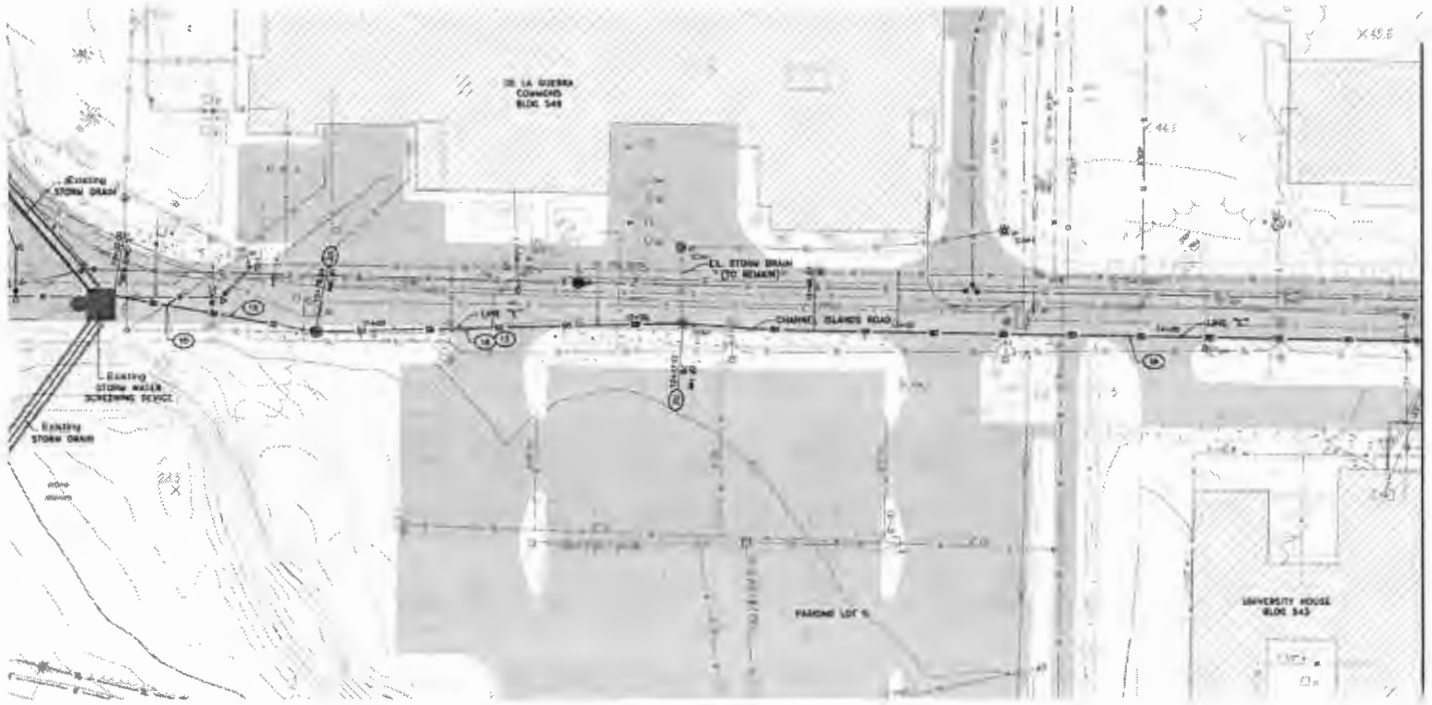
Source: Penfield and Smith, 2011a

Figure 8

University of California, Santa Barbara

Lagoon Road and Ocean Road Drainage Project

Lagoon Road Project Plans - Channel Islands Road Area



(10) Connect to Existing Drain Line

(13) Remove Existing Drain Line

(18) Proposed 42-inch Storm Drain

(20) New Manhole for New and Existing Storm Drains

Source: Penfield and Smith, 2011

Figure 9

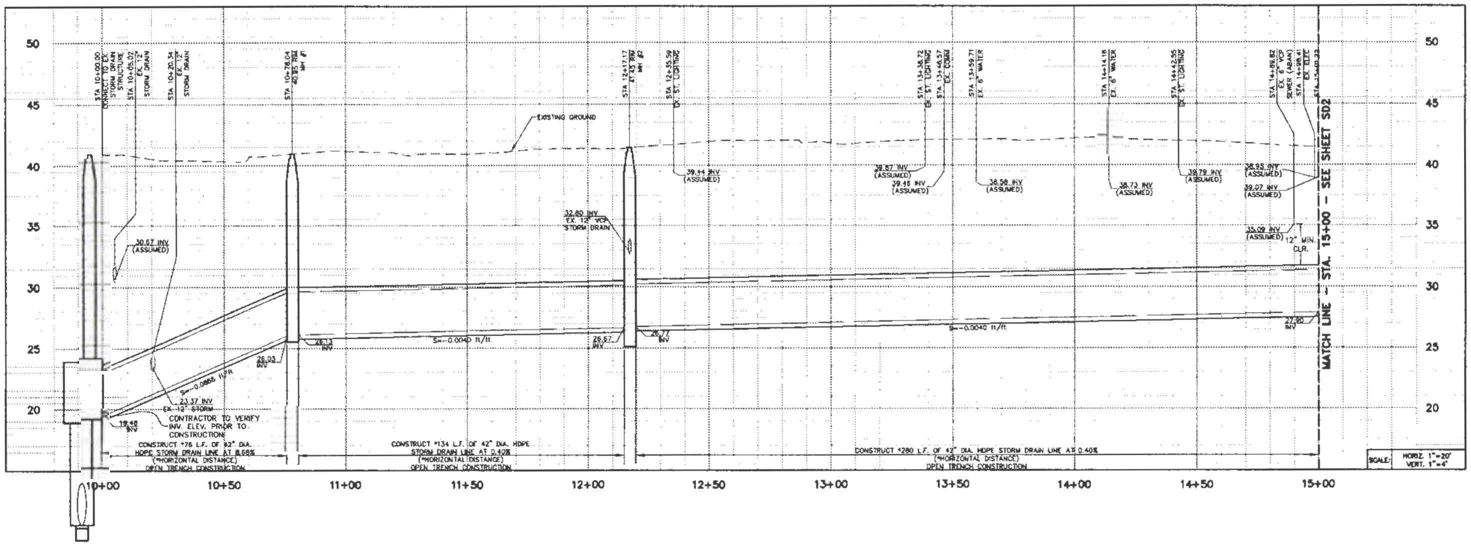
University of California, Santa Barbara

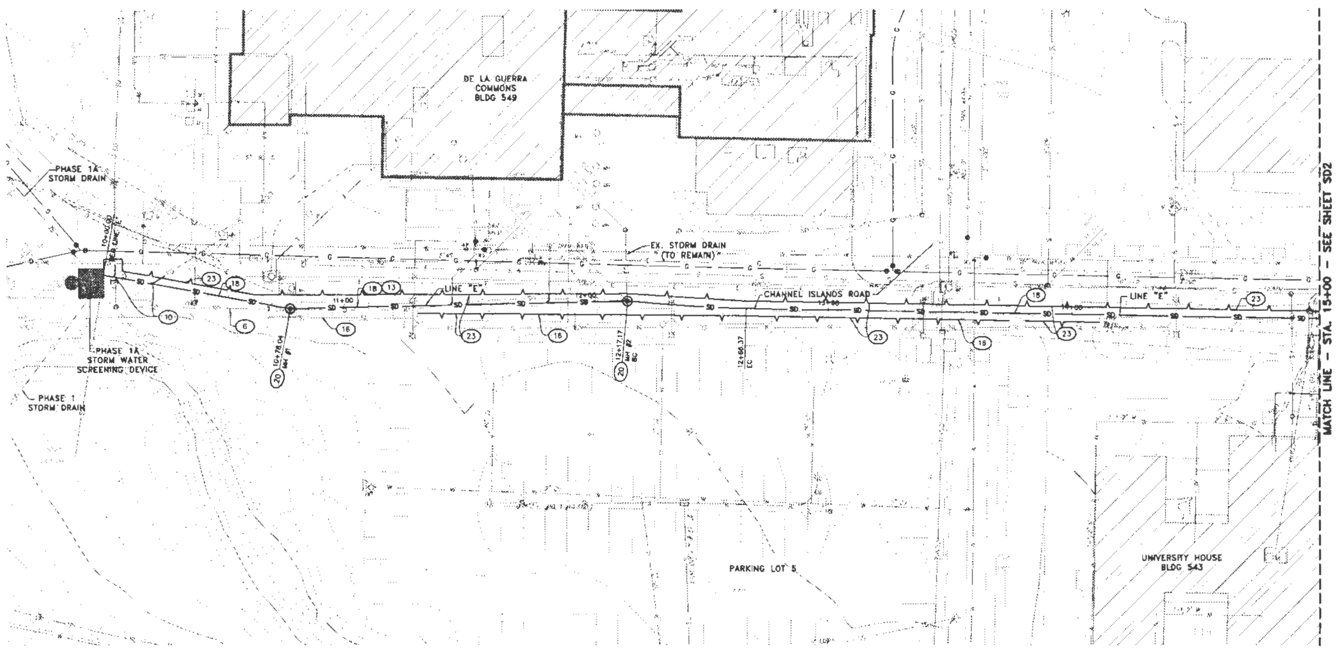
Lagoon Road and Ocean Road Drainage Project

Lagoon Road Project Plans - Carrillo Commons Area

STORM DRAIN CONSTRUCTION NOTES

1. REMOVE PORTION OF EXISTING 24" DIA. STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 30" DIA. HIGH DENSITY POLYETHYLENE (HDPE) STORM DRAIN PIPE, AND CONNECT 30" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS OF PIPES AND INLETS PRIOR TO CONSTRUCTION (TYP. FOR ENTIRE PROJECT).
2. CONSTRUCT TRANSITION STRUCTURE PIPE TO PIPE PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (S.P.P.W.C.) (2012 EDITION) STANDARD PLAN 340-2, SEE DETAIL "A" ON SHEET SD-D1, TO CONNECT EXISTING 24" DIA. STORM DRAIN TO 30" DIA. STORM DRAIN.
3. CONSTRUCT 30-INCH DIAMETER HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-D1.
4. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 33" DIA. OR SMALLER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 321-2, SEE DETAIL "C" ON SHEET SD-D1, CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. REMOVE EXISTING MANHOLE AS REQUIRED AND BACKFILL COMPLETE, AS REQUIRED.
5. CONSTRUCT 24" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-D1.
6. REMOVE PORTION OF EXISTING STORM DRAIN PIPE AS NECESSARY FOR CONSTRUCTION AND ABANDON EXISTING STORM DRAIN PIPE IN PLACE. CAP END AND FILL END OF PIPE (MIN. 2' DEEP INTO PIPE) WITH 1-SACK CEMENT SLURRY.
7. REMOVE PORTION OF EXISTING 12" DIA. STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 12" DIA. HDPE STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT 12" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
8. CONSTRUCT 12" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-D1.
9. CONSTRUCT WYE CONNECTION BETWEEN STORM DRAIN PIPES PER MANUFACTURER'S SPECIFICATIONS.
10. REMOVE ADEQUATE LENGTH OF EXISTING STORM DRAIN PIPE TO ADJUST GRADE AND CONNECT WITH WYE CONNECTION TO PROPOSED STORM DRAIN PER DETAIL "D" ON SHEET SD-D1.
11. CONSTRUCT 18" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-D1.
12. REMODEL BASE OF STRUCTURE TO SLOPE TO NEW OPENING. GROUT ABANDONED PIPE OPENING WITH CONCRETE AND #4 REBAR AT 18" OC BW AND DOWELED MIN. 12" INTO EXISTING CONCRETE.
13. REMOVE EXISTING STORM DRAIN AND LEGALLY DISPOSE OF OFF-CAMPUS, AND BACKFILL TRENCH.
14. CONSTRUCT 5'X10' ROCK RIP-RAP (MIN. 12" DIA. ROCKS) IN TWO LAYERS WITH NO GROUT AT OUTLET OF STORM DRAIN.
15. CONSTRUCT 8-INCH HIGH CONCRETE CURB AND 18-INCH CONCRETE GUTTER PER DETAIL "E" SHEET SD-D1.
16. SAW CUT AND REMOVE EXISTING CONCRETE SIDEWALK AT SCORE LINE AND HAUL OFF CAMPUS. CONSTRUCT MIN. 8" THICK REINFORCED CONCRETE PAVEMENT OVER MIN. 4" THICK CLASS 2 AGGREGATE BASE PER DETAIL "F", SHEET SD-D1.
17. REMOVE EXISTING STORM DRAIN PIPE AND DISPOSE OF LEGALLY OFF-CAMPUS. PROVIDE TEMPORARY STORM DRAIN LINE DURING CONSTRUCTION AS REQUIRED.
18. CONSTRUCT 42" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-D1.
19. CONSTRUCT 36" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-D1.
20. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 36" DIA. OR LARGER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 320-2, SEE DETAIL "E" ON SHEET SD-D2. CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
21. REMOVE EXISTING CATCH BASIN AND CONSTRUCT 24"X24" GRATED PRECAST CONCRETE CATCH BASIN BY MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
22. CONSTRUCT 18"X18" GRATED PRECAST CONCRETE CATCH BASIN, MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
23. SAW CUT AND REMOVE EXISTING ASPHALT CONCRETE PAVEMENT AND SUBGRADE FOR STORM DRAIN TRENCH AND HAUL OFF CAMPUS. AFTER STORM DRAIN CONSTRUCTION IS COMPLETE REPAIR PAVEMENT PER TRENCH SECTION "A", SHEET SD-1. CONTRACTOR TO APPLY A HOT RUBBERIZED CRACK FILLER ON CONSTRUCTION JOINT AND APPLY COAT GUARD TOP SEALER WITH 6 POUNDS SAND PER GALLON POST-CONSTRUCTION.
24. REMOVE PORTION OF EXISTING STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE PROPOSED STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT PROPOSED STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
25. CONSTRUCT 10" DIA. HDPE SEAWATER WASTE PER TRENCH DETAIL "B" ON SHEET SD-D1.
26. REMOVE EXISTING END CAP AND CONNECT 10" DIA. HDPE SEAWATER WASTE TO EXISTING 10" DIA. SEAWATER WASTE.





FOR REDUCED PLANS ORIGINAL SCALE IN INCHES

NO.	DATE	REVISIONS	APPD.
1	2/19/16	PHASE 1C SUBMITTAL	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

DESIGN: CEP CHECKED: SCW
STEPHEN C. WANG DATE: 02/2016
PROJECT ENGINEER
R.C.E. 44,256

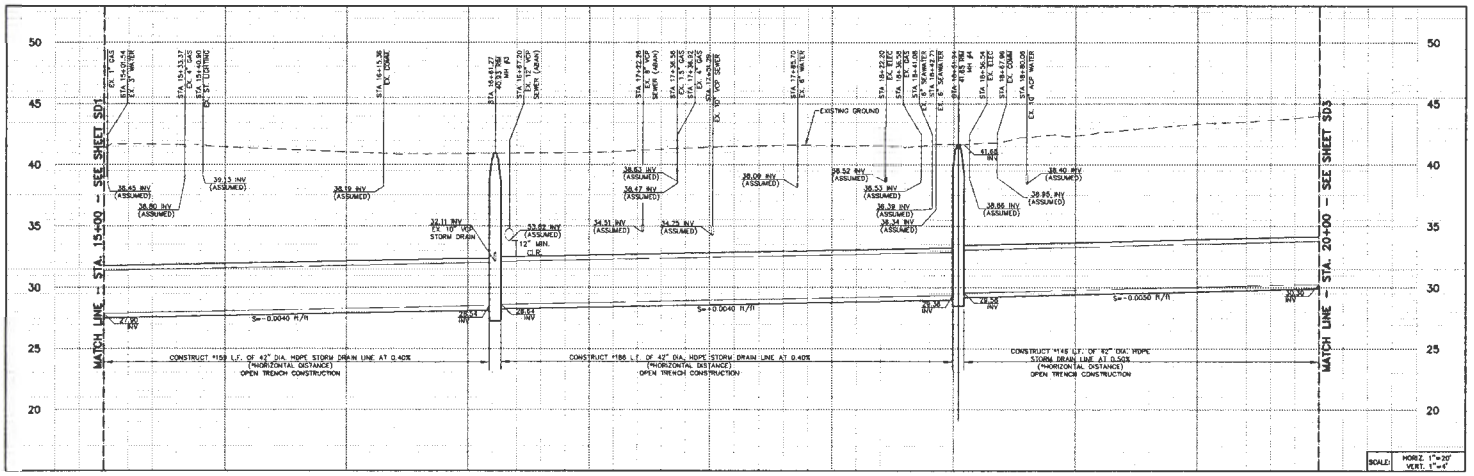
REGISTERED PROFESSIONAL ENGINEER STEPHEN C. WANG NO 44256 CIVIL STATE OF CALIFORNIA

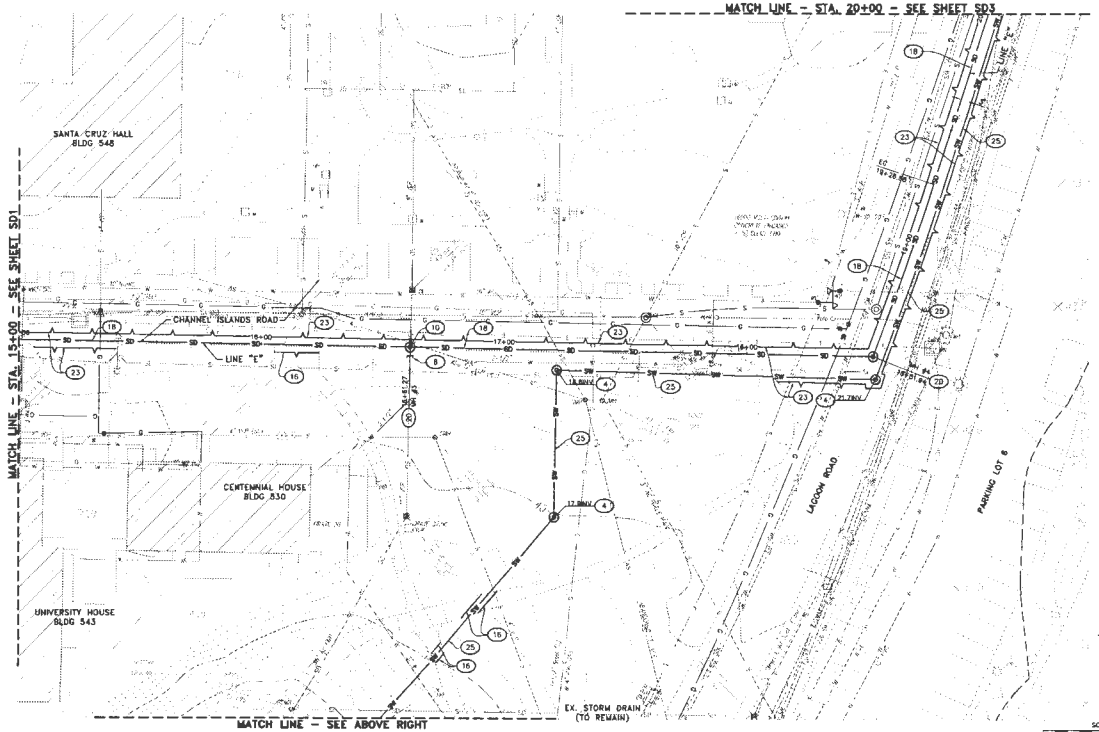
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

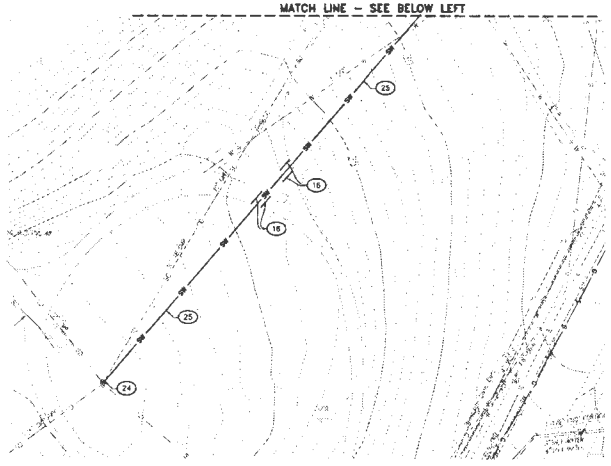
LINE "E" STA 10+00 TO STA 15+00
STORM DRAIN PLAN AND PROFILE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2064017271
SHEET SD1
U.C.S.B. DWG NO. 10-192

FM 150512L/986080







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17. REMOVE EXISTING STORM DRAIN PIPE AND DISPOSE OF LEGALLY OFF-CAMPUS. PROVIDE TEMPORARY STORM DRAIN LINE DURING CONSTRUCTION AS REQUIRED.
18. CONSTRUCT 42" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-D1.
19. CONSTRUCT 36" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-D1.
20. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 36" DIA. OR LARGER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 320-2, SEE DETAIL "E" ON SHEET SD-D2, CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
21. REMOVE EXISTING CATCH BASIN AND CONSTRUCT 24"X24" GRATED PRECAST CONCRETE CATCH BASIN BY MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
22. CONSTRUCT 18"X18" GRATED PRECAST CONCRETE CATCH BASIN, MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
23. SAW CUT AND REMOVE EXISTING ASPHALT CONCRETE PAVEMENT AND SUBGRADE FOR STORM DRAIN TRENCH AND HAUL OFF CAMPUS. AFTER STORM DRAIN CONSTRUCTION IS COMPLETE REPAIR PAVEMENT PER TRENCH SECTION "A", SHEET SD-1. CONTRACTOR TO APPLY A HOT RUBBERIZED CRACK FILLER ON CONSTRUCTION JOINT AND APPLY COAT GUARD TOP SEALER WITH 6 POUNDS SAND PER GALLON POST-CONSTRUCTION.
24. REMOVE PORTION OF EXISTING STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE PROPOSED STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT PROPOSED STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
25. CONSTRUCT 10" DIA. HDPE SEAWATER WASTE PER TRENCH DETAIL "B" ON SHEET SD-D1.
26. REMOVE EXISTING END CAP AND CONNECT 10" DIA. HDPE SEAWATER WASTE TO EXISTING 10" DIA. SEAWATER WASTE.

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.
1	2/19/16	PHASE 1C SUBMITTAL	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-4001

DESIGN CEP CHECKED SCW
STEPHEN C. WANG DATE 02/2016
PROJECT ENGINEER
R.C.E. 44,256

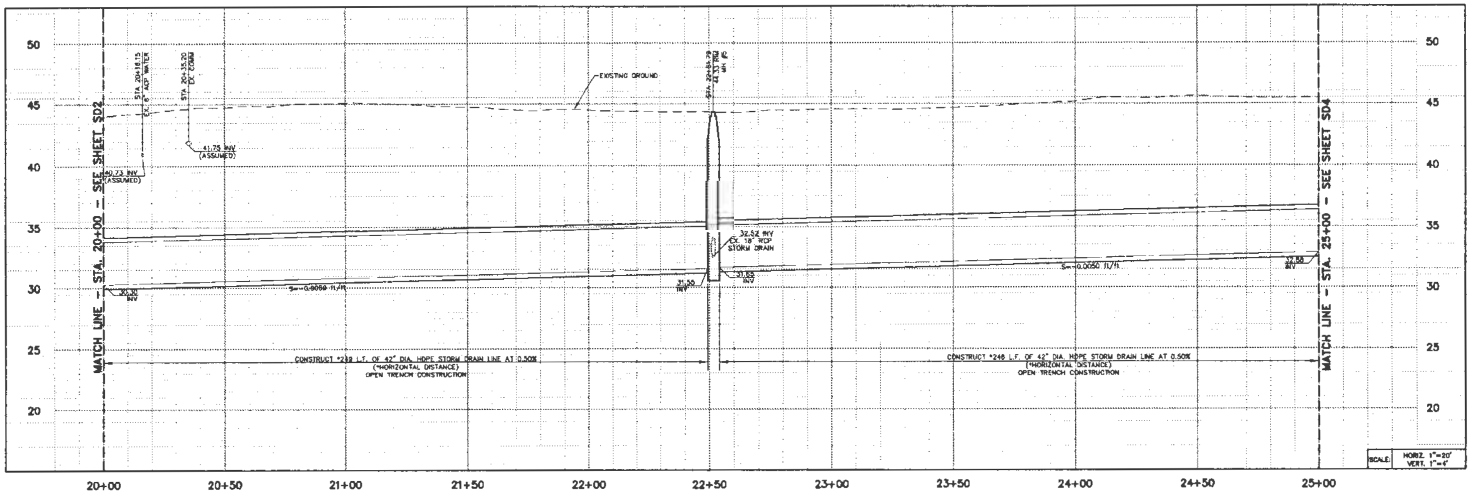
REGISTERED PROFESSIONAL ENGINEER STEPHEN C. WANG NO 44256 CIVIL STATE OF CALIFORNIA

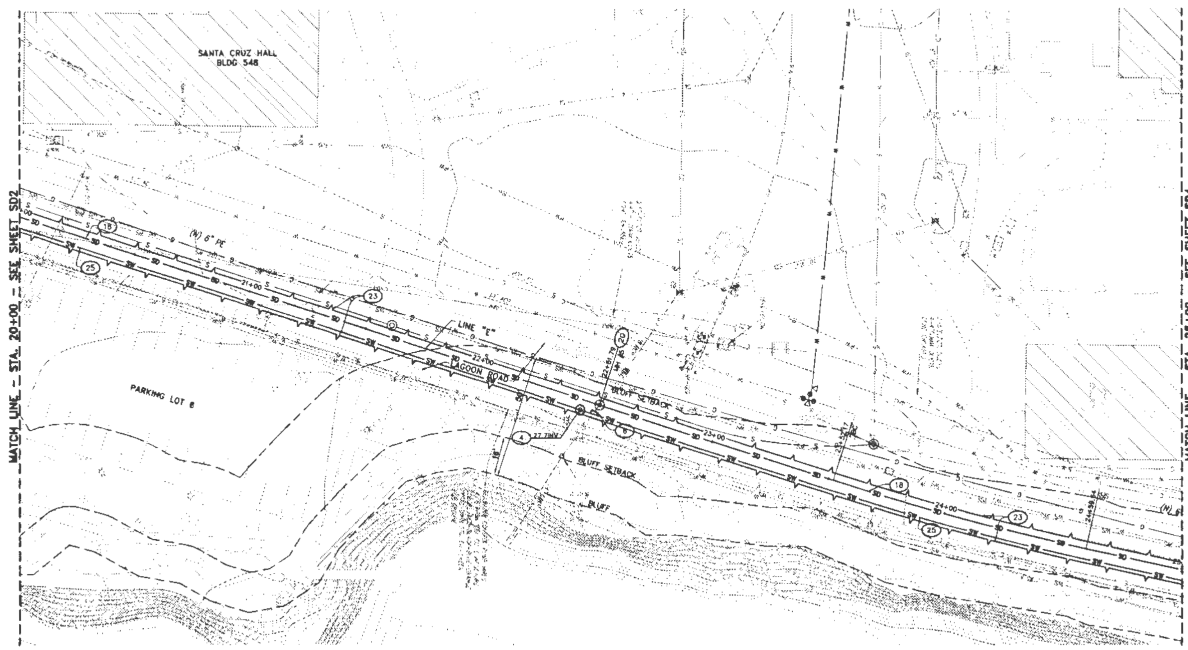
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

LINE "E" STA 15+00 TO STA 20+00
STORM DRAIN AND SEAWATER WASTE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2084017271
SHEET SD2
U.C.S.B. DWG NO. 10-192

FM 150512L/986080





STORM DRAIN CONSTRUCTION NOTES

1. REMOVE PORTION OF EXISTING 24" DIA. STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 30" DIA. HIGH DENSITY POLYETHYLENE (HDPE) STORM DRAIN PIPE, AND CONNECT 30" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS OF PIPES AND INLETS PRIOR TO CONSTRUCTION (TYP. FOR ENTIRE PROJECT).
2. CONSTRUCT TRANSITION STRUCTURE PIPE TO PIPE PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (S.P.P.W.C.) (2012 EDITION) STANDARD PLAN 340-2. SEE DETAIL "A" ON SHEET SD-01, TO CONNECT EXISTING 24" DIA. STORM DRAIN TO 30" DIA. STORM DRAIN.
3. CONSTRUCT 30-INCH DIAMETER HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-01.
4. (circled) CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 33" DIA. OR SMALLER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 321-2, SEE DETAIL "C" ON SHEET SD-01. CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. REMOVE EXISTING MANHOLE AS REQUIRED AND BACKFILL COMPLETE, AS REQUIRED.
5. CONSTRUCT 24" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-01.
6. (circled) REMOVE PORTION OF EXISTING STORM DRAIN PIPE AS NECESSARY FOR CONSTRUCTION AND ABANDON EXISTING STORM DRAIN PIPE IN PLACE. CAP END AND FILL END OF PIPE (MIN. 2' DEEP INTO PIPE) WITH 1-SACK CEMENT SLURRY.
7. REMOVE PORTION OF EXISTING 12" DIA. STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 12" DIA. HDPE STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT 12" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
8. CONSTRUCT 12" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-01.
9. CONSTRUCT WYE CONNECTION BETWEEN STORM DRAIN PIPES PER MANUFACTURER'S SPECIFICATIONS.
10. REMOVE ADEQUATE LENGTH OF EXISTING STORM DRAIN PIPE TO ADJUST GRADE AND CONNECT WITH WYE CONNECTION TO PROPOSED STORM DRAIN PER DETAIL "D" ON SHEET SD-01.
11. CONSTRUCT 18" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-01.
12. REMODEL BASE OF STRUCTURE TO SLOPE TO NEW OPENING. GROUT ABANDONED PIPE OPENING WITH CONCRETE AND #4 REBAR AT 18" OC BW AND DOWELED MIN. 12" INTO EXISTING CONCRETE.
13. REMOVE EXISTING STORM DRAIN AND LEGALLY DISPOSE OF OFF-CAMPUS, AND BACKFILL TRENCH.
14. CONSTRUCT 5'X10' ROCK RIP-RAP (MIN. 12" DIA. ROCKS) IN TWO LAYERS WITH NO GROUT AT OUTLET OF STORM DRAIN.
15. CONSTRUCT 8-INCH HIGH CONCRETE CURB AND 18-INCH CONCRETE GUTTER PER DETAIL "E" SHEET SD-01.
16. SAW CUT AND REMOVE EXISTING CONCRETE SIDEWALK AT SCORE LINE AND HAUL OFF CAMPUS. CONSTRUCT MIN. 6" THICK REINFORCED CONCRETE PAVEMENT OVER MIN. 4" THICK CLASS 2 AGGREGATE BASE PER DETAIL "F", SHEET SD-01.
17. REMOVE EXISTING STORM DRAIN PIPE AND DISPOSE OF LEGALLY OFF-CAMPUS. PROVIDE TEMPORARY STORM DRAIN LINE DURING CONSTRUCTION AS REQUIRED.
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20. (circled) CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 36" DIA. OR LARGER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 320-2, SEE DETAIL "E" ON SHEET SD-02. CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
21. REMOVE EXISTING CATCH BASIN AND CONSTRUCT 24"X24" GRATED PRECAST CONCRETE CATCH BASIN BY MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
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24. REMOVE PORTION OF EXISTING STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE PROPOSED STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT PROPOSED STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
25. (circled) CONSTRUCT 10" DIA. HDPE SEAWATER WASTE PER TRENCH DETAIL "B" ON SHEET SD-01.
26. REMOVE EXISTING END CAP AND CONNECT 10" DIA. HDPE SEAWATER WASTE TO EXISTING 10" DIA. SEAWATER WASTE.

SCALE: 1"=20'
0 20 40 60

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.
1	2/19/18	PHASE 1C SUBMITTAL	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

DESIGN: CEP CHECKED: SCW
STEPHEN C. WANG DATE: 02/2016
PROJECT ENGINEER
R.C.E. 44,256

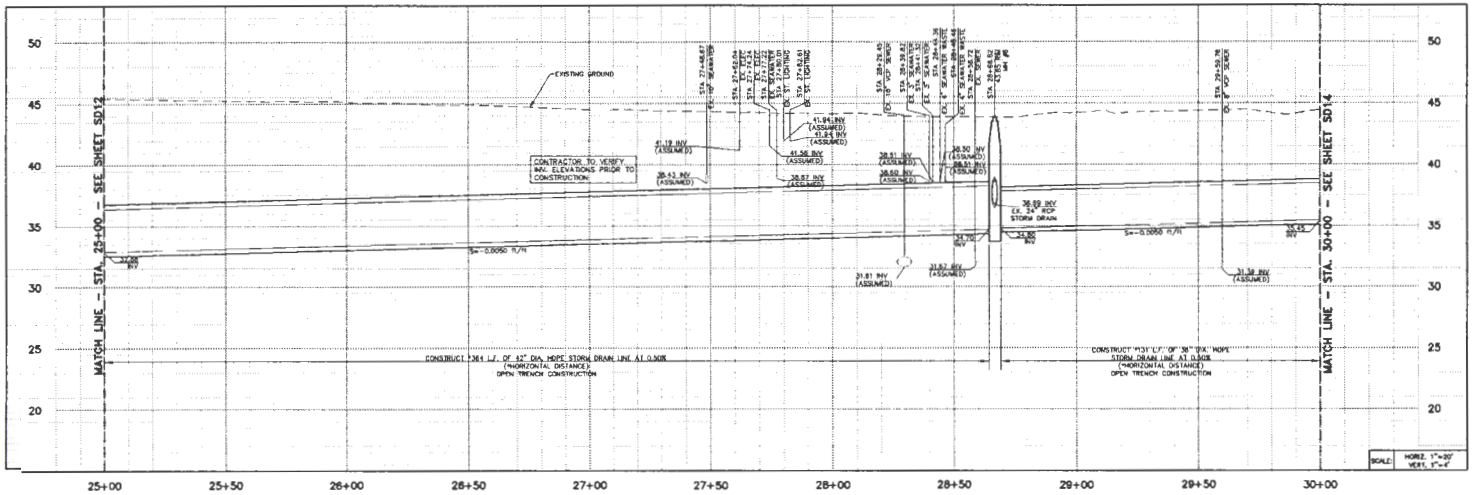
REGISTERED PROFESSIONAL ENGINEER STEPHEN C. WANG NO 44256 CIVIL STATE OF CALIFORNIA

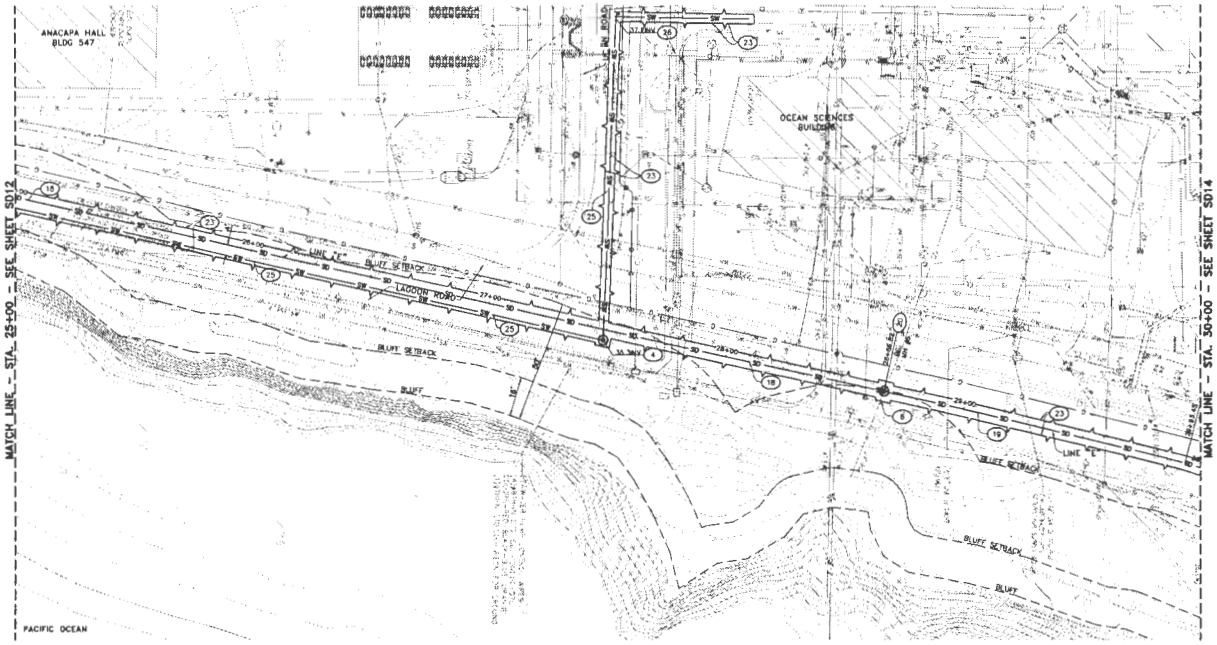
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

LINE "E" STA 20+00 TO STA 25+00
STORM DRAIN AND SEAWATER WASTE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2064017271
SHEET SD3
U.C.S.B. DWG NO. 10-192

FM 150512L/986080





STORM DRAIN CONSTRUCTION NOTES

1. REMOVE PORTION OF EXISTING 24" DIA. STORM DRAIN PIPE, CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 30" DIA. HIGH DENSITY POLYETHYLENE (HDPE) STORM DRAIN PIPE, AND CONNECT 30" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS OF PIPES AND INLETS PRIOR TO CONSTRUCTION (TYP. FOR ENTIRE PROJECT).
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3. CONSTRUCT 30-INCH DIAMETER HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-D1.
4. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 33" DIA. OR SMALLER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 321-2, SEE DETAIL "C" ON SHEET SD-D1, CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. REMOVE EXISTING MANHOLE AS REQUIRED AND BACKFILL COMPLETE, AS REQUIRED.
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7. REMOVE PORTION OF EXISTING 12" DIA. STORM DRAIN PIPE, CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 12" DIA. HDPE STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT 12" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
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9. CONSTRUCT WYE CONNECTION BETWEEN STORM DRAIN PIPES PER MANUFACTURER'S SPECIFICATIONS.
10. REMOVE ADEQUATE LENGTH OF EXISTING STORM DRAIN PIPE TO ADJUST GRADE AND CONNECT WITH WYE CONNECTION TO PROPOSED STORM DRAIN PER DETAIL "D" ON SHEET SD-D1.
11. CONSTRUCT 18" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-D1
12. REMODEL BASE OF STRUCTURE TO SLOPE TO NEW OPENING. GROUT ABANDONED PIPE OPENING WITH CONCRETE AND #4 REBAR AT 18" OC EW AND DOWELED MIN. 12" INTO EXISTING CONCRETE.
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16. SAW CUT AND REMOVE EXISTING CONCRETE SIDEWALK AT SCORE LINE AND HAUL OFF CAMPUS. CONSTRUCT MIN. 6" THICK REINFORCED CONCRETE PAVEMENT OVER MIN. 4" THICK CLASS 2 AGGREGATE BASE PER DETAIL "F", SHEET SD-D1
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20. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 36" DIA. OR LARGER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 320-2, SEE DETAIL "E" ON SHEET SD-D2, CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
21. REMOVE EXISTING CATCH BASIN AND CONSTRUCT 24"X24" GRATED PRECAST CONCRETE CATCH BASIN BY MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
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25. CONSTRUCT 10" DIA. HDPE SEAWATER WASTE PER TRENCH DETAIL "B" ON SHEET SD-D1.
26. REMOVE EXISTING END CAP AND CONNECT 10" DIA. HDPE SEAWATER WASTE TO EXISTING 10" DIA. SEAWATER WASTE.

PLOT SCALE 1:1

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

NO	DATE	REVISIONS	APPD
1	2/18/16	PHASE 1C SUBMITTAL	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

DESIGN: CEP CHECKED: SCW
STEPHEN C. WARD DATE: 02/2015
PROJECT ENGINEER
R.C.E. 44,255

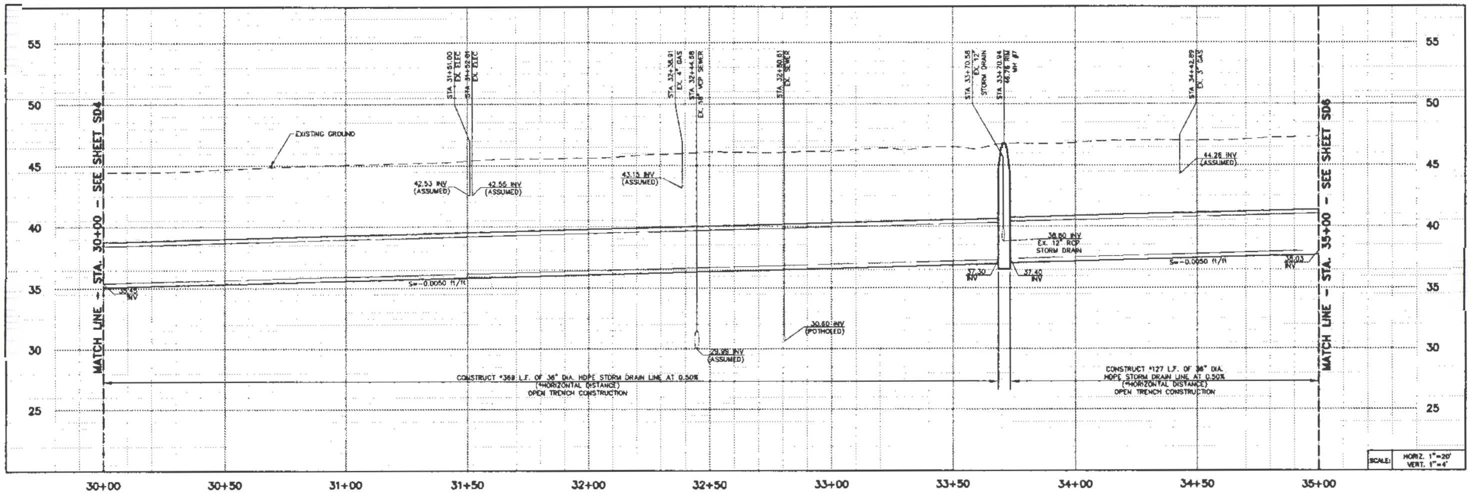
STEPHEN C. WARD NO 44255 CIVIL STATE OF CALIFORNIA

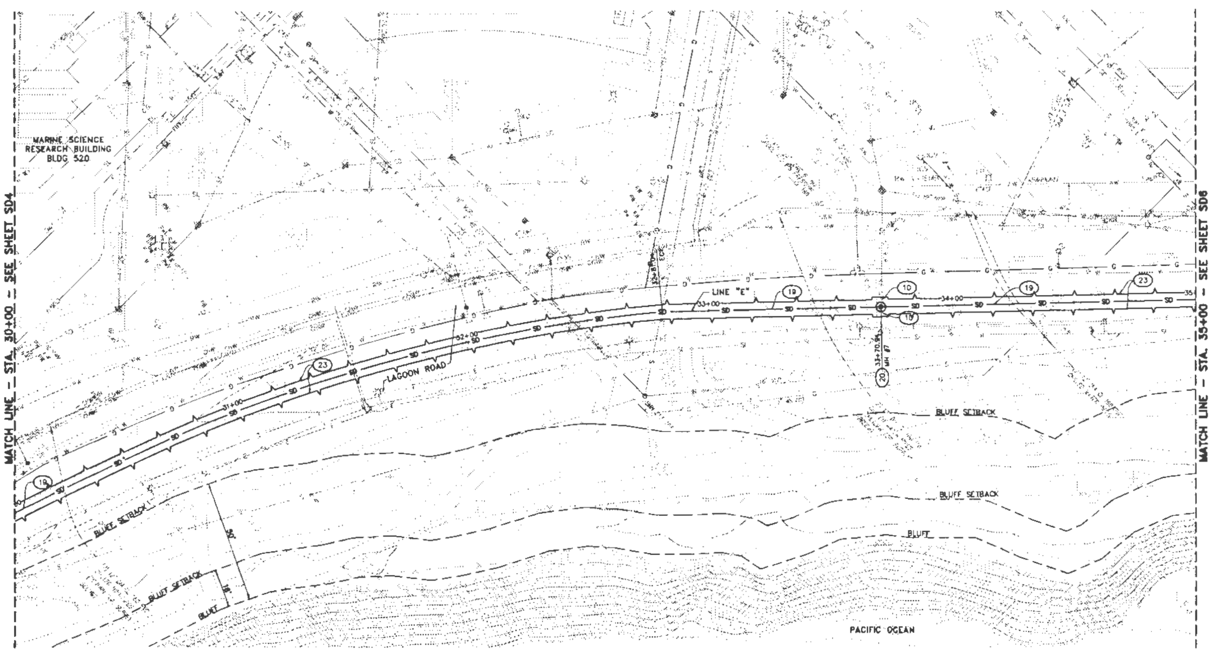
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
RE: VENCO BY:
SIGNATURE DATE

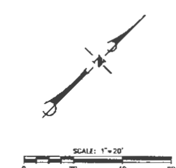
LINE "E" STA 25+00 TO STA 30+00
STORM DRAIN AND SEAWATER WASTE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2084017271
SHEET SD4
U.C.S.B. DWG NO. 10-192

FM 150512L/986080







STORM DRAIN CONSTRUCTION NOTES

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FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.
1	2/19/18	PHASE 1C SUBMITTAL	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone (805) 963-9532 Fax (805) 966-9801

DESIGN CEP CHECKED SCW
STEPHEN C. WANG DATE: 02/2018
PROJECT ENGINEER
R.C.E. 44,256

REGISTERED PROFESSIONAL ENGINEER — STEPHEN C. WANG — NO 44256 — CIVIL — STATE OF CALIFORNIA

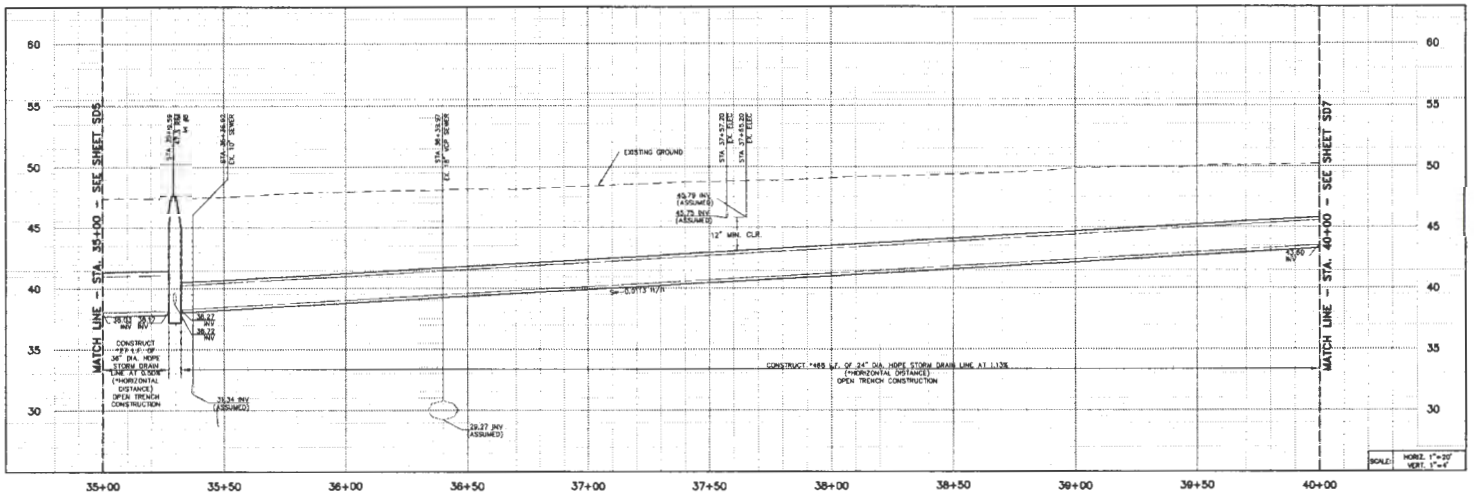
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

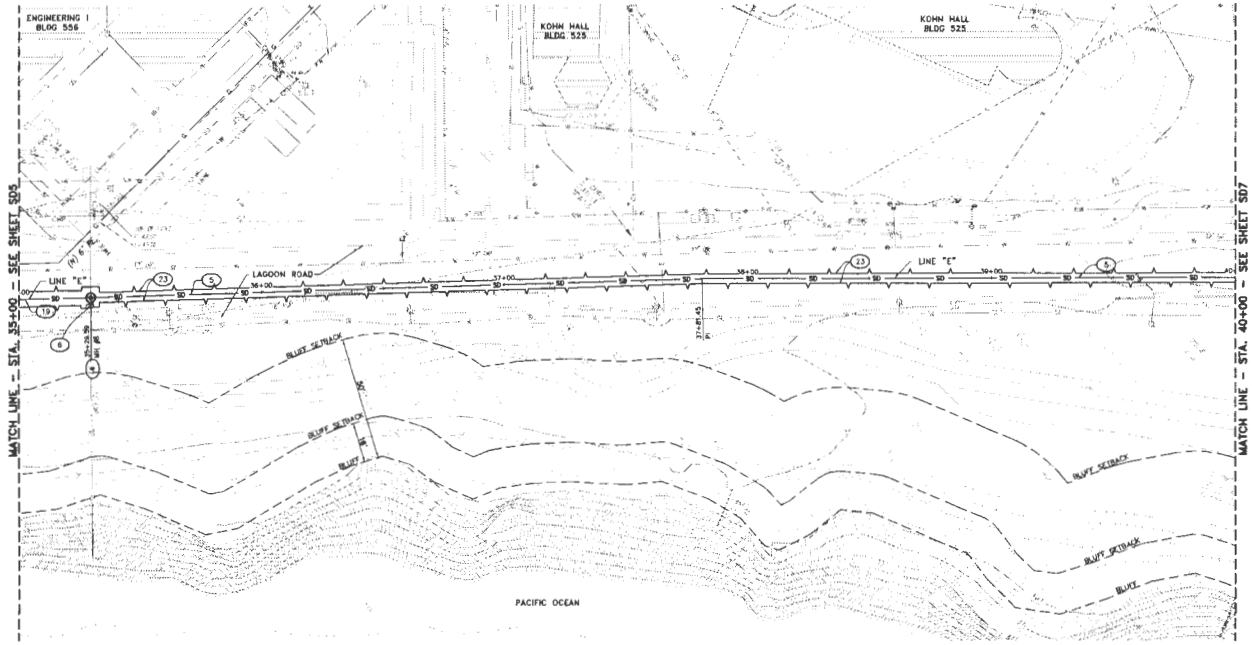
LINE "E" STA 30+00 TO STA 35+00
STORM DRAIN PLAN AND PROFILE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2084017271
SHEET SD5
U.C.S.B. DWG NO. 10-192

FM 150512L/986080

PLOT SCALE:1:1
42-ENG





STORM DRAIN CONSTRUCTION NOTES

1. REMOVE PORTION OF EXISTING 24" DIA. STORM DRAIN PIPE, CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 30" DIA. HIGH DENSITY POLYETHYLENE (HDPE) STORM DRAIN PIPE, AND CONNECT 30" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS OF PIPES AND INLETS PRIOR TO CONSTRUCTION (TYP. FOR ENTIRE PROJECT).
2. CONSTRUCT TRANSITION STRUCTURE PIPE TO PIPE PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (S.P.P.W.C.) (2012 EDITION) STANDARD PLAN 340-2, SEE DETAIL "A" ON SHEET SD-01, TO CONNECT EXISTING 24" DIA. STORM DRAIN TO 30" DIA. STORM DRAIN.
3. CONSTRUCT 30-INCH DIAMETER HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-01.
4. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 33" DIA. OR SMALLER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 321-2, SEE DETAIL "C" ON SHEET SD-01. CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. REMOVE EXISTING MANHOLE AS REQUIRED AND BACKFILL COMPLETE, AS REQUIRED.
5. CONSTRUCT 24" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-01.
6. REMOVE PORTION OF EXISTING STORM DRAIN PIPE AS NECESSARY FOR CONSTRUCTION AND ABANDON EXISTING STORM DRAIN PIPE IN PLACE. CAP END AND FILL END OF PIPE (MIN. 2' DEEP INTO PIPE) WITH 1-SACK CEMENT SLURRY.
7. REMOVE PORTION OF EXISTING 12" DIA. STORM DRAIN PIPE, CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 12" DIA. HDPE STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT 12" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
8. CONSTRUCT 12" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-01.
9. CONSTRUCT WYE CONNECTION BETWEEN STORM DRAIN PIPES PER MANUFACTURER'S SPECIFICATIONS.
10. REMOVE ADEQUATE LENGTH OF EXISTING STORM DRAIN PIPE TO ADJUST GRADE AND CONNECT WITH WYE CONNECTION TO PROPOSED STORM DRAIN PER DETAIL "D" ON SHEET SD-01.
11. CONSTRUCT 18" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-01.
12. REWORK BASE OF STRUCTURE TO SLOPE TO NEW OPENING. GROUT ABANDONED PIPE OPENING WITH CONCRETE AND #4 REBAR AT 18" OC BW AND DOWELED MIN. 12" INTO EXISTING CONCRETE.
13. REMOVE EXISTING STORM DRAIN AND LEGALLY DISPOSE OF OFF-CAMPUS, AND BACKFILL TRENCH.
14. CONSTRUCT 5'X10' ROCK RIP-RAP (MIN. 12" DIA. ROCKS) IN TWO LAYERS WITH NO GROUT AT OUTLET OF STORM DRAIN.
15. CONSTRUCT 6-INCH HIGH CONCRETE CURB AND 18-INCH CONCRETE GUTTER PER DETAIL "E" SHEET SD-01.
16. SAW CUT AND REMOVE EXISTING CONCRETE SIDEWALK AT SCORE LINE AND HAUL OFF CAMPUS. CONSTRUCT MIN. 6" THICK REINFORCED CONCRETE PAVEMENT OVER MIN. 4" THICK CLASS 2 AGGREGATE BASE PER DETAIL "F", SHEET SD-01
17. REMOVE EXISTING STORM DRAIN PIPE AND DISPOSE OF LEGALLY OFF-CAMPUS. PROVIDE TEMPORARY STORM DRAIN LINE DURING CONSTRUCTION AS REQUIRED.
18. CONSTRUCT 42" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-01.
19. CONSTRUCT 36" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-01.
20. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 36" DIA. OR LARGER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 320-2. SEE DETAIL "C" ON SHEET SD-02. CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
21. REMOVE EXISTING CATCH BASIN AND CONSTRUCT 24"X24" GRATED PRECAST CONCRETE CATCH BASIN BY MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
22. CONSTRUCT 18"X18" GRATED PRECAST CONCRETE CATCH BASIN, MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
23. SAW CUT AND REMOVE EXISTING ASPHALT CONCRETE PAVEMENT AND SUBGRADE FOR STORM DRAIN TRENCH AND HAUL OFF CAMPUS. AFTER STORM DRAIN CONSTRUCTION IS COMPLETE REPAIR PAVEMENT PER TRENCH SECTION "A", SHEET SD-1. CONTRACTOR TO APPLY A HOT RUBBERIZED CRACK FILLER ON CONSTRUCTION JOINT AND APPLY CONT GUARD TOP SEALER WITH 6 POUNDS SAND PER GALLON POST-CONSTRUCTION.
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25. CONSTRUCT 10" DIA. HDPE SEAWATER WASTE PER TRENCH DETAIL "B" ON SHEET SD-01.
26. REMOVE EXISTING END CAP AND CONNECT 10" DIA. HDPE SEAWATER WASTE TO EXISTING 10" DIA. SEAWATER WASTE.

SCALE: 1"=20'
0 20 40 60

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD
1	2/19/16	PHASE 1C SUBMITTAL	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 898-1201

DESIGN SEP CHECKED SCW
STEPHEN C. WANG DATE 02/2016
PROJECT ENGINEER
P.C.E. 44356

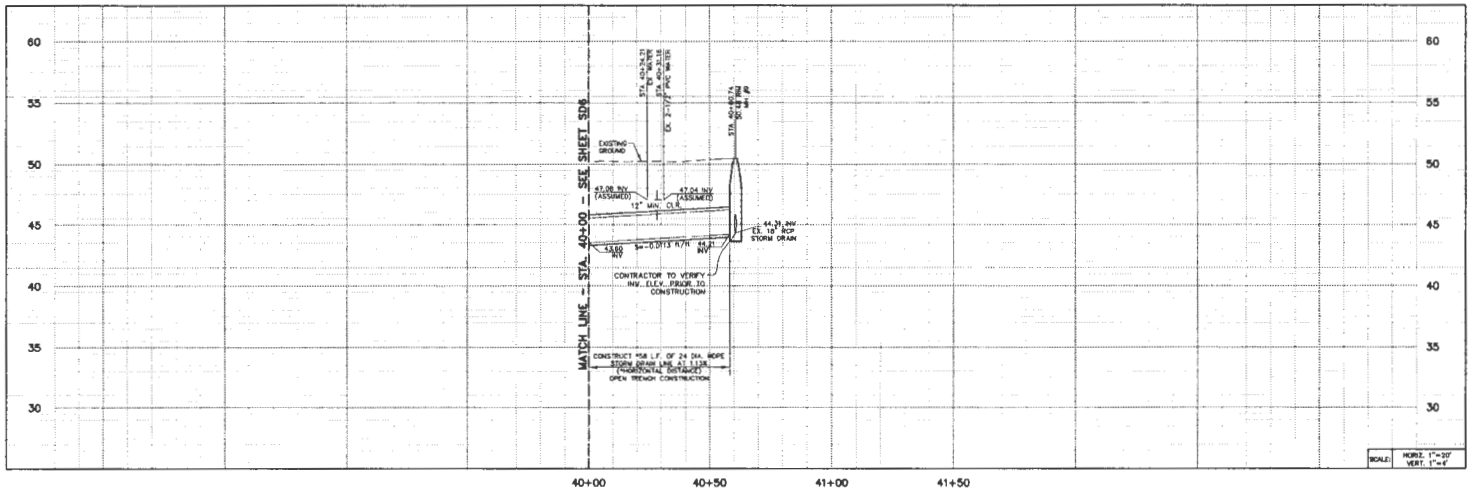
STEPHEN C. WANG NO 44356 CIVIL STATE OF CALIFORNIA

UNIVERSITY OF CALIFORNIA, SANTA BARBARA
RE VIEWED BY:
SIGNATURE DATE

LINE "E" STA 35+00 TO STA 40+00
STORM DRAIN PLAN AND PROFILE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2064017271
SHEET SD6
U.C.S.B. DWG NO. 10-192

FM 150512L/986080



STORM DRAIN CONSTRUCTION NOTES

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3. CONSTRUCT 30-INCH DIAMETER HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-01.
4. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 33" DIA. OR SMALLER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 321-2. SEE DETAIL "C" ON SHEET SD-01. CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. REMOVE EXISTING MANHOLE AS REQUIRED AND BACKFILL COMPLETE, AS REQUIRED.
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12. REMODEL BASE OF STRUCTURE TO SLOPE TO NEW OPENING. GROUT ABANDONED PIPE OPENING WITH CONCRETE AND #4 REBAR AT 18" OC EW AND DOWELED MIN. 12" INTO EXISTING CONCRETE.
13. REMOVE EXISTING STORM DRAIN AND LEGALLY DISPOSE OF OFF-CAMPUS, AND BACKFILL TRENCH.
14. CONSTRUCT 5'X10' ROCK RIP-RAP (MIN. 12" DIA. ROCKS) IN TWO LAYERS WITH NO GROUT AT OUTLET OF STORM DRAIN.
15. CONSTRUCT 8-INCH HIGH CONCRETE CURB AND 18-INCH CONCRETE GUTTER PER DETAIL "E" SHEET SD-01.
16. SAW CUT AND REMOVE EXISTING CONCRETE SIDEWALK AT SCORE LINE AND HAUL OFF CAMPUS. CONSTRUCT MIN. 8" THICK REINFORCED CONCRETE PAVEMENT OVER MIN. 4" THICK CLASS 2 AGGREGATE BASE PER DETAIL "F", SHEET SD-01.
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PLOT SCALE: 1

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.
1	2/19/16	PHASE 1C SUBMITTAL	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9001

DESIGN: DEP CHECKED: SCW
STEPHEN C. WANE DATE: 02/2016
PROJECT ENGINEER
R.C.E. 44,256

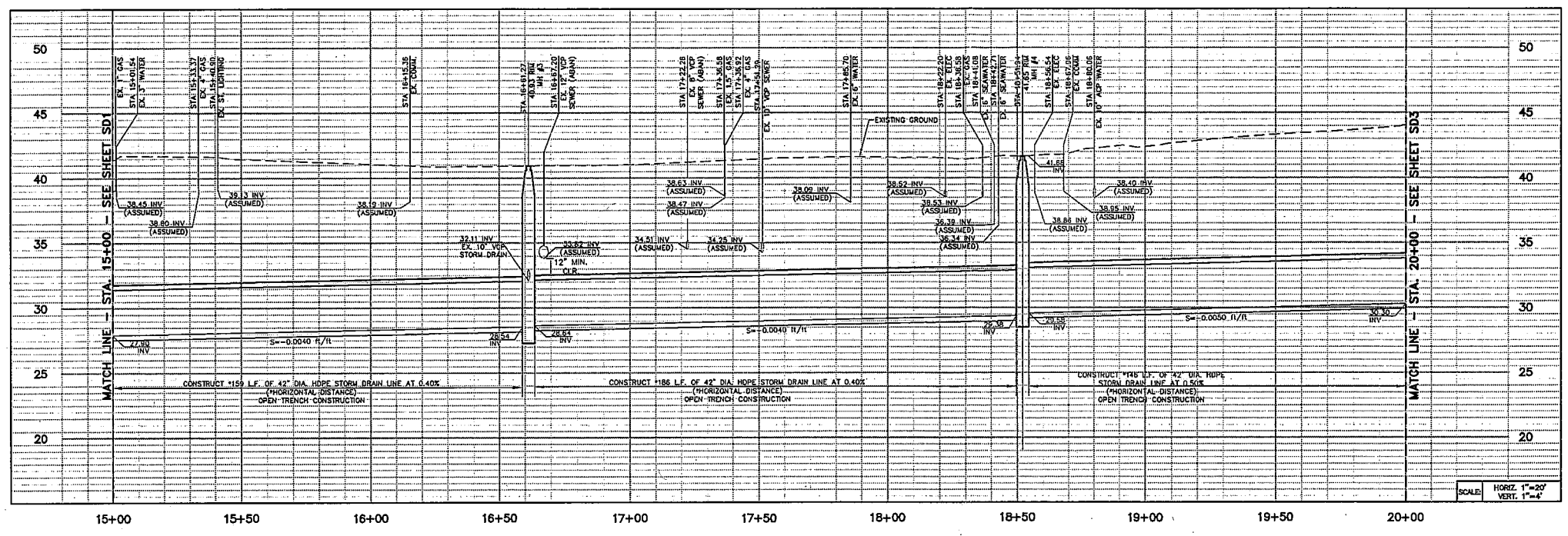
REGISTERED PROFESSIONAL ENGINEER STEPHEN C. WANE NO 44256 CIVIL STATE OF CALIFORNIA

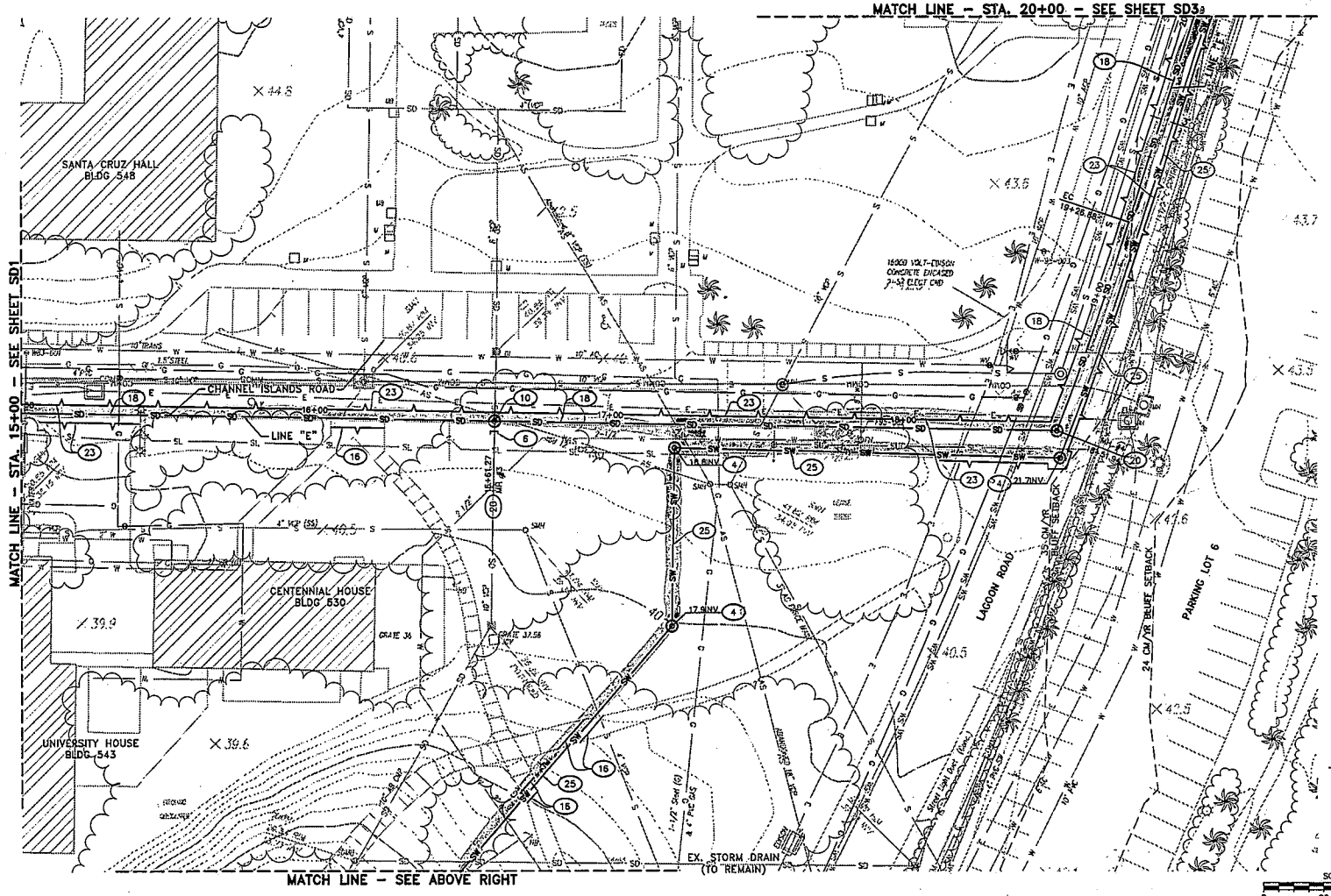
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

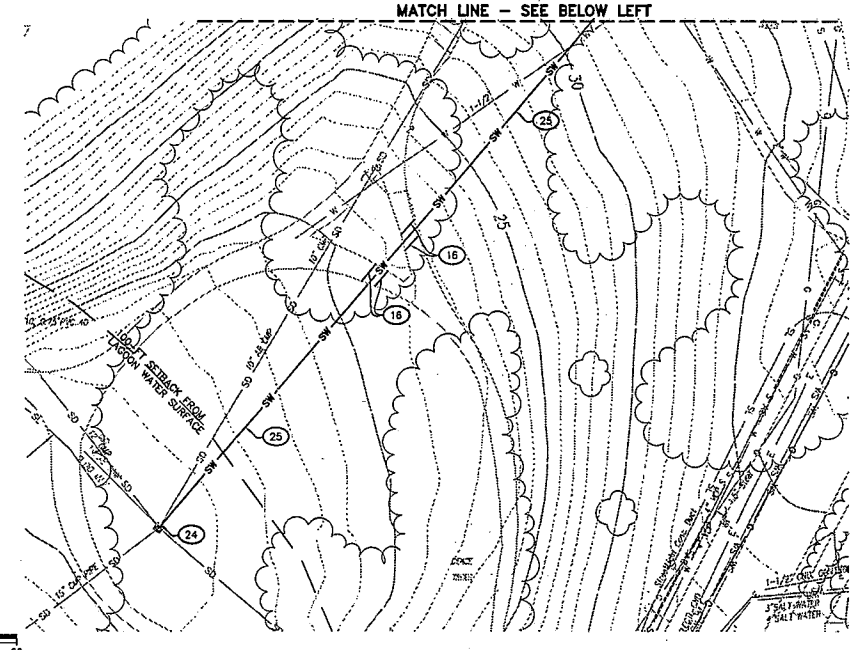
LINE "E" STA 40+00 TO STA 40+60.74
STORM DRAIN PLAN AND PROFILE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2084017271
SHEET SD7
U.C.S.B. DWG NO. 10-192

FM 150512L/986080







STORM DRAIN CONSTRUCTION NOTES

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10. REMOVE ADEQUATE LENGTH OF EXISTING STORM DRAIN PIPE TO ADJUST GRADE AND CONNECT WITH WYE CONNECTION TO PROPOSED STORM DRAIN PER DETAIL "D" ON SHEET SD-D1.
11. CONSTRUCT 18" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-D1.
12. REMODEL BASE OF STRUCTURE TO SLOPE TO NEW OPENING. GROUT ABANDONED PIPE OPENING WITH CONCRETE AND #4 REBAR AT 18" OC EW AND DOWELED MIN. 12" INTO EXISTING CONCRETE.
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14. CONSTRUCT 5'X10' ROCK RIP-RAP (MIN. 12" DIA. ROCKS) IN TWO LAYERS WITH NO GROUT AT OUTLET OF STORM DRAIN.
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17. REMOVE EXISTING STORM DRAIN PIPE AND DISPOSE OF LEGALLY OFF-CAMPUS. PROVIDE TEMPORARY STORM DRAIN LINE DURING CONSTRUCTION AS REQUIRED.
18. CONSTRUCT 42" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-D1.
19. CONSTRUCT 36" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD-D1.
20. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 36" DIA. OR LARGER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 321D-2, SEE DETAIL "E" ON SHEET SD-D2, CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
21. REMOVE EXISTING CATCH BASIN AND CONSTRUCT 24"X24" GRATED PRECAST CONCRETE CATCH BASIN BY MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
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26. REMOVE EXISTING END CAP AND CONNECT 10" DIA. HDPE SEAWATER WASTE TO EXISTING 10" DIA. SEAWATER WASTE.

Exhibit 4
100 Year Bluff Erosion Zone
Overlay Project Plans
UCS-NOID-0003-16

PLOT SCALE 1:1

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.
1	2/19/16	PHASE 1C SUBMITTAL	
2	4/15/16	ADDED LAGOON SETBACK	
3	8/29/16	REVISED BLUFF SETBACKS	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 965-5532 Fax: (805) 965-8801

DESIGN CEP CHECKED SCW
STEPHEN C. WANG DATE: 08/2016
PROJECT ENGINEER
R.C.E. 44,255

REGISTERED PROFESSIONAL ENGINEER STEPHEN C. WANG NO 44255 CIVIL STATE OF CALIFORNIA

UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

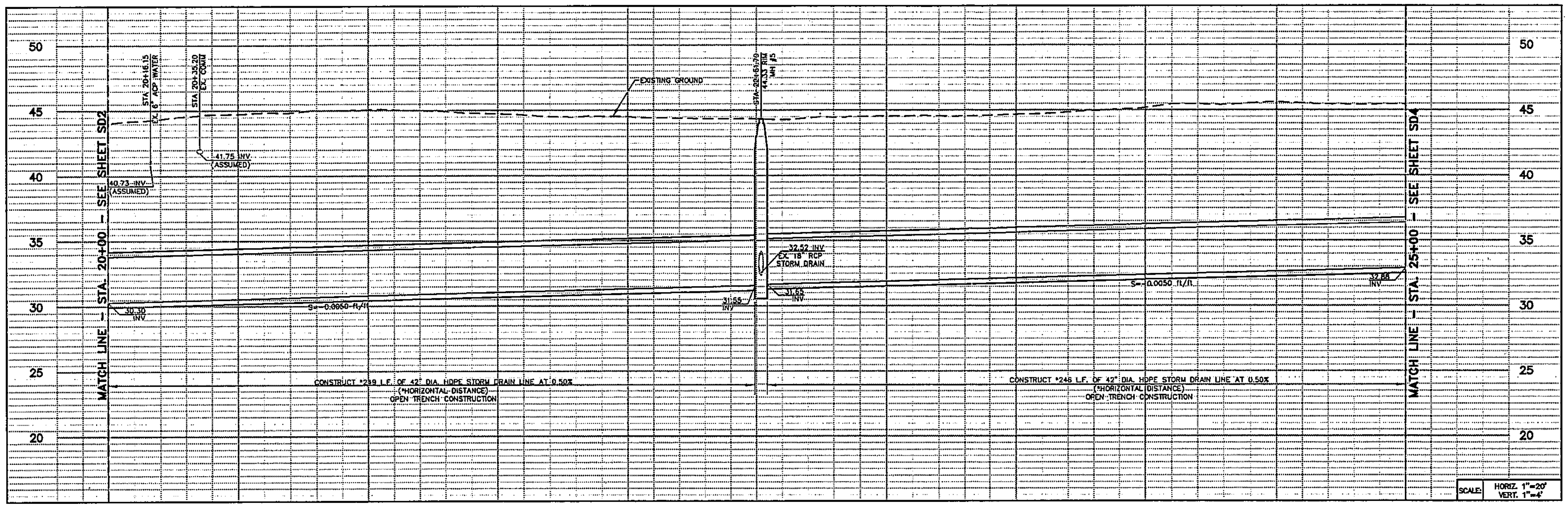
LINE "E" STA 15+00 TO STA 20+00
STORM DRAIN AND SEAWATER WASTE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

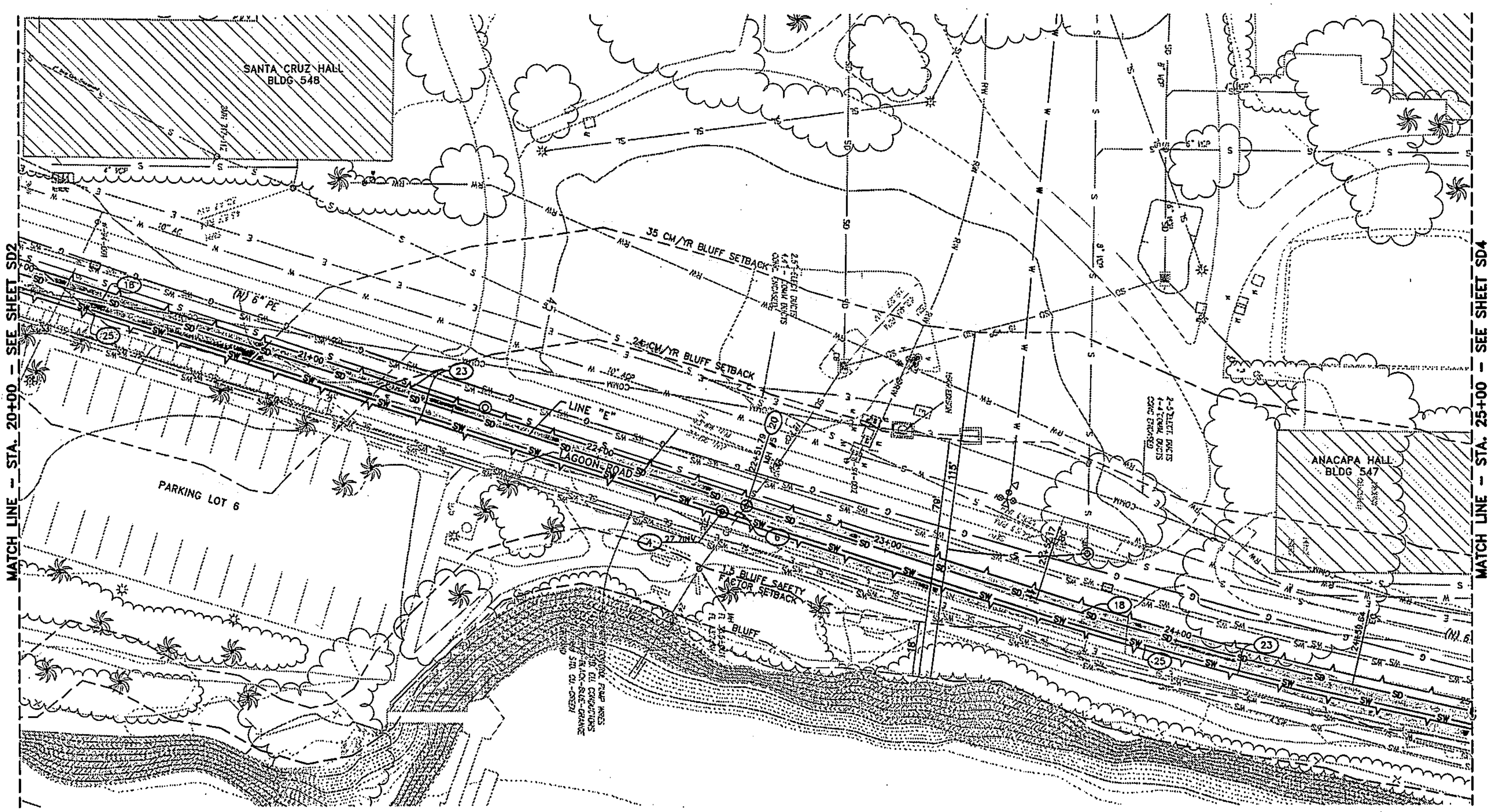
STANTEC PROJECT NO. 2064017271
SHEET SD2
U.C.S.B. DWG NO. 10-192

42-DNG

DRAWING is: \2064\active\2064017271\2721\cad\2721 phase 1c cal\storm drain line e.dwg

FM 150512L/986080





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10. REMOVE ADEQUATE LENGTH OF EXISTING STORM DRAIN PIPE TO ADJUST GRADE AND CONNECT WITH WYE CONNECTION TO PROPOSED STORM DRAIN PER DETAIL "D" ON SHEET SD-D1.
11. CONSTRUCT 18" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD-D1.
12. REMODEL BASE OF STRUCTURE TO SLOPE TO NEW OPENING. GROUT ABANDONED PIPE OPENING WITH CONCRETE AND #4 REBAR AT 18" OC BW AND DOWELED MIN. 12" INTO EXISTING CONCRETE.
13. REMOVE EXISTING STORM DRAIN AND LEGALLY DISPOSE OF OFF-CAMPUS, AND BACKFILL TRENCH.
14. CONSTRUCT 5'X10' ROCK RIP-RAP (MIN. 12" DIA. ROCKS) IN TWO LAYERS WITH NO GROUT AT OUTLET OF STORM DRAIN.
15. CONSTRUCT 6-INCH HIGH CONCRETE CURB AND 18-INCH CONCRETE GUTTER PER DETAIL "E" SHEET SD-D1.
16. SAW CUT AND REMOVE EXISTING CONCRETE SIDEWALK AT SCORE LINE AND HAUL OFF CAMPUS. CONSTRUCT MIN. 6" THICK REINFORCED CONCRETE PAVEMENT OVER MIN. 4" THICK CLASS 2 AGGREGATE BASE PER DETAIL "F", SHEET SD-D1.
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20. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 36" DIA. OR LARGER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 320-2, SEE DETAIL "E" ON SHEET SD-D2, CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
21. REMOVE EXISTING CATCH BASIN AND CONSTRUCT 24"X24" GRATED PRECAST CONCRETE CATCH BASIN BY MID-STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
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26. REMOVE EXISTING END CAP AND CONNECT 10" DIA. HDPE SEAWATER WASTE TO EXISTING 10" DIA. SEAWATER WASTE.

Received
AUG 30 2016
California Coastal Commision
South Central Coast District

SCALE: 1"=20'
0 20 40 60

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.
1	2/19/16	PHASE 1C SUBMITTAL	
2	8/29/16	REVISED BLUFF SETBACKS	

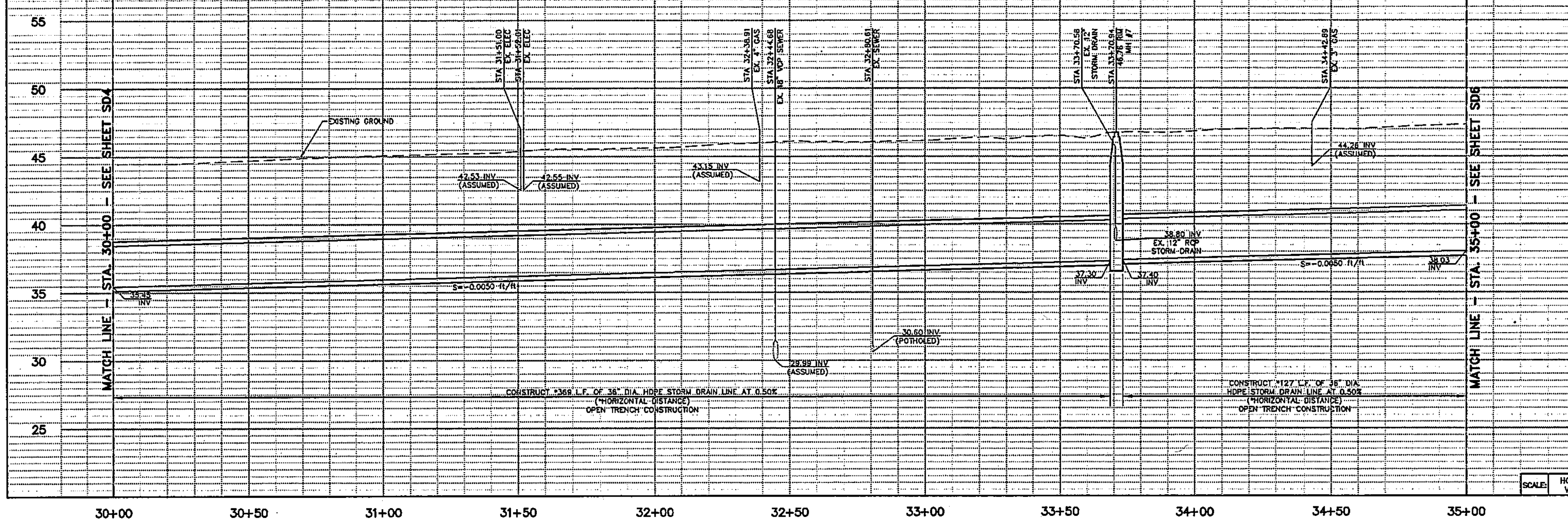
Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801
DESIGN CEP CHECKED SCW
STEPHEN C. WANG DATE: 08/2016
PROJECT ENGINEER
R.C.E. 44,255
REGISTERED PROFESSIONAL ENGINEER STEPHEN C. WANG NO 44255 CIVIL STATE OF CALIFORNIA

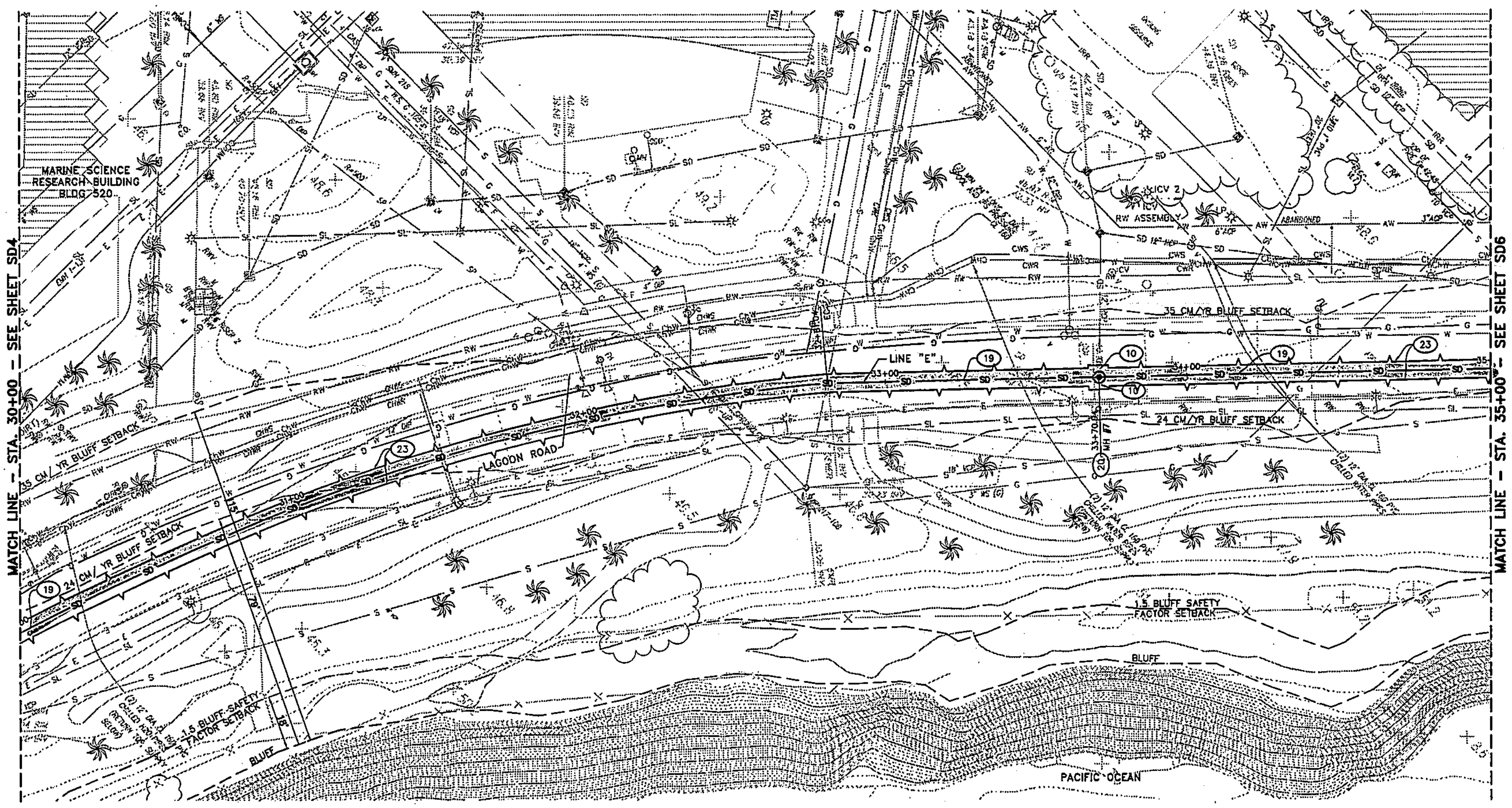
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

LINE "E" STA 20+00 TO STA 25+00
STORM DRAIN AND SEAWATER WASTE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2084017271
SHEET SD3
U.C.S.B. DWG NO. 10-192

FM 150512L/986080





Received

AUG 30 2016

California Coastal Co
South Central Coast

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SCALE: 1"=20'
0 20 40 60

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.
1	2/19/16	PHASE 1C SUBMITTAL	
2	8/29/16	REVISED BLUFF SETBACKS	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

DESIGN CEP CHECKED SCW
STEPHEN C. WANG DATE: 08/2016
PROJECT ENGINEER
R.C.E. 44,255

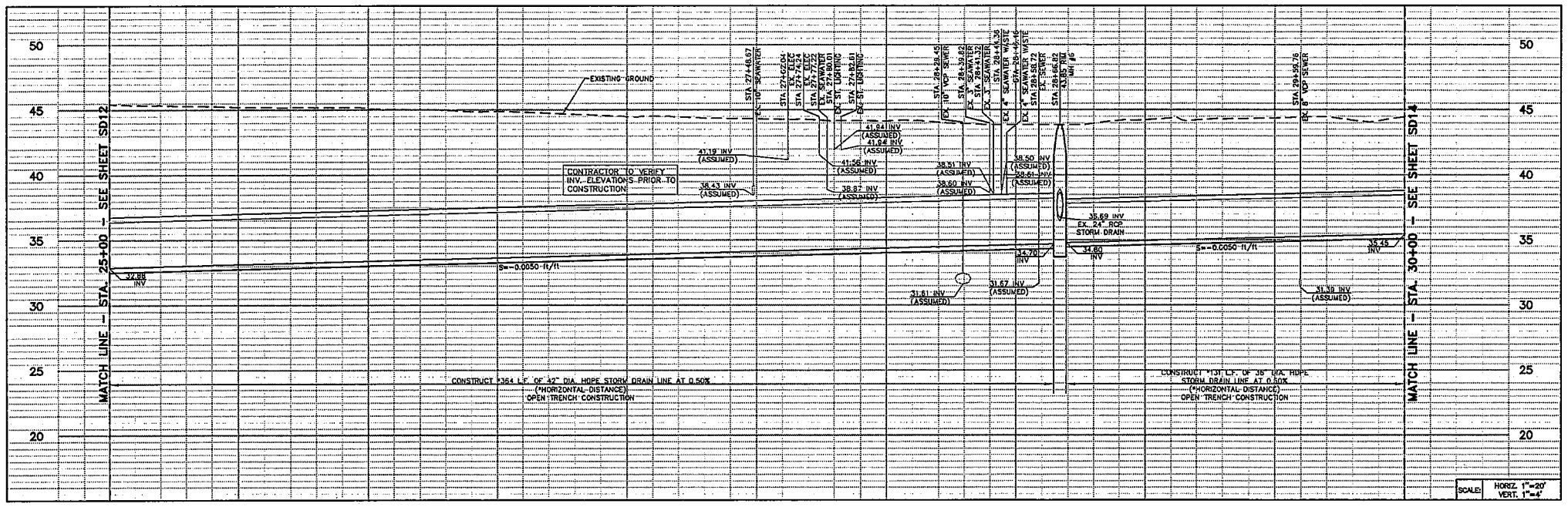
REGISTERED PROFESSIONAL ENGINEER STEPHEN C. WANG NO 44255 CIVIL STATE OF CALIFORNIA

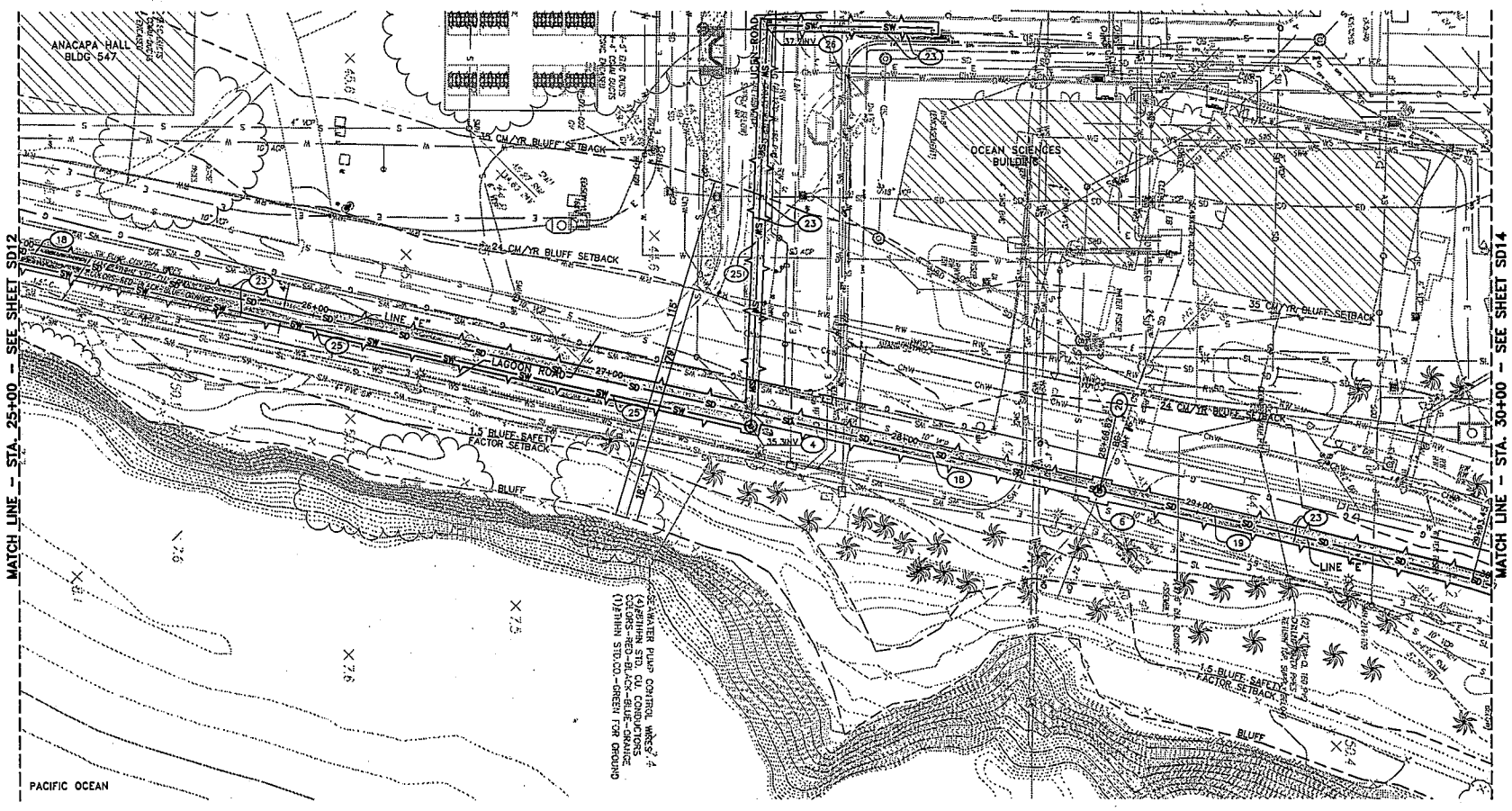
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

LINE "E" STA 30+00 TO STA 35+00
STORM DRAIN PLAN AND PROFILE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2064017271
SHEET SD5
U.C.S.B. DWG NO. 10-192

FM 150512L/986080





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NO.	DATE	REVISIONS	APPD.
1	2/19/16	PHASE 1C SUBMITTAL	
2	8/29/16	REVISED BLUFF SETBACKS	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963–9532 Fax: (805) 966–3801

DESIGN CEP CHECKED SCW
STEPHEN C. WANG DATE: 08/2016
PROJECT ENGINEER
R.C.E. 44,255

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UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
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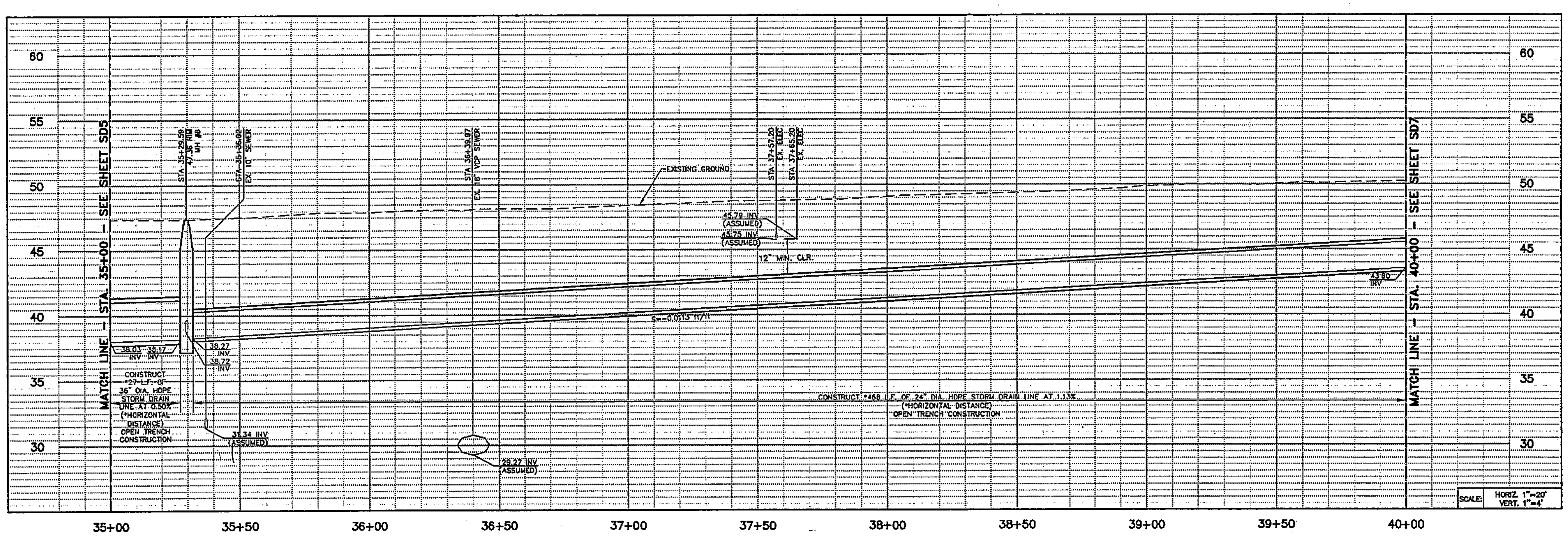
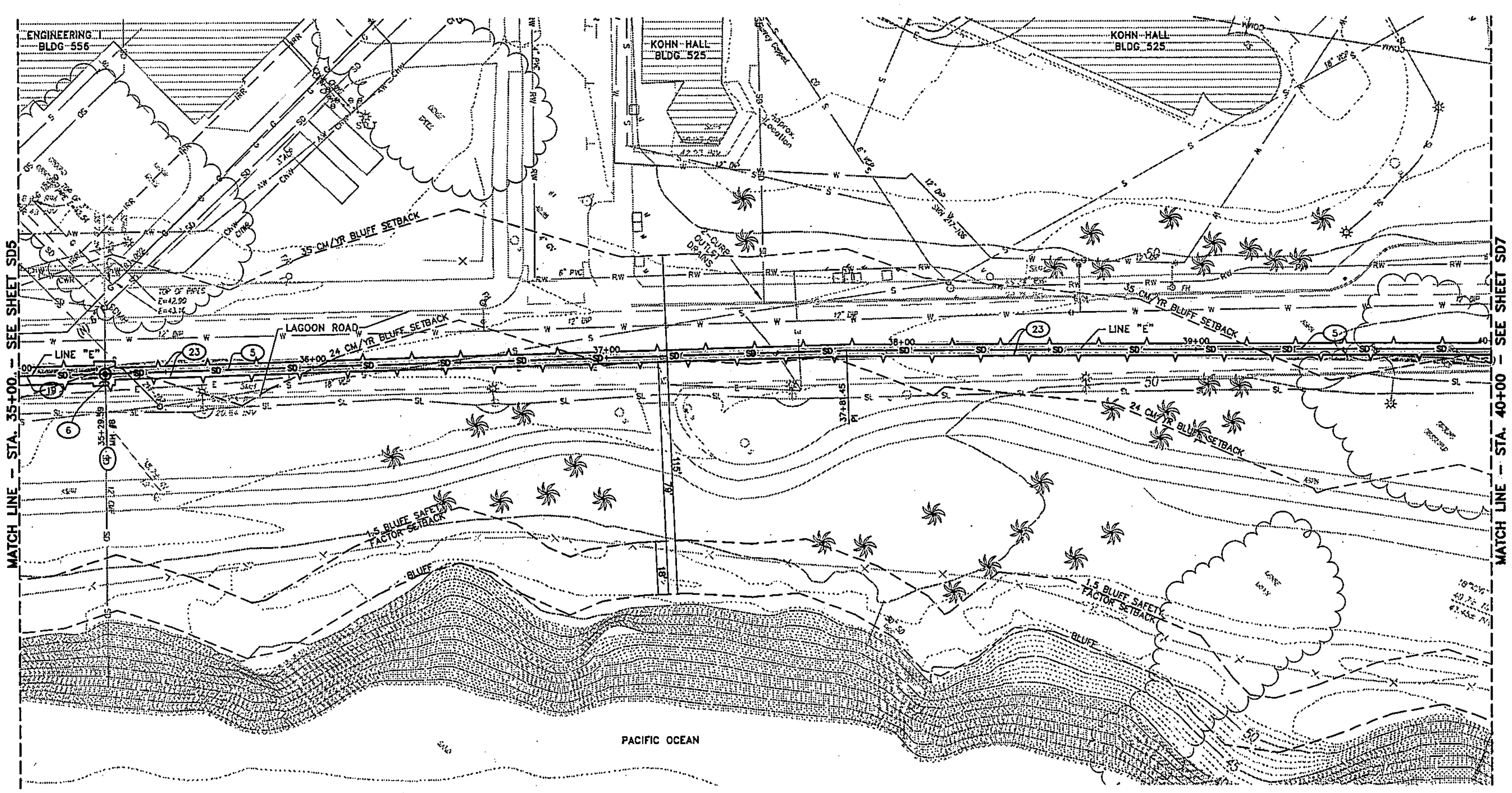
LINE "E" STA 25+00 TO STA 30+00
STORM DRAIN AND SEAWATER WASTE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2064017271
SHEET SD4
U.C.S.B. DWG NO. 10–192

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

PLOT SCALE=1:1
42–D90





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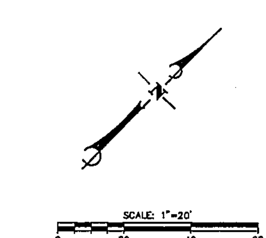
24. REMOVE PORTION OF EXISTING STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE PROPOSED STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT PROPOSED STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
25. CONSTRUCT 10" DIA. HDPE SEAWATER WASTE PER TRENCH DETAIL "B" ON SHEET SD-D1.
26. REMOVE EXISTING END CAP AND CONNECT 10" DIA. HDPE SEAWATER WASTE TO EXISTING 10" DIA. SEAWATER WASTE.

Received

AUG 30 2016

California Coastal Commision
South Central Coast District



FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.
1	2/19/16	PHASE 1C SUBMITTAL	
2	8/29/16	REVISED BLUFF SETBACKS	

Stantec
111 East Victoria Street, Santa Barbara, CA 93101
Phone: (805) 963-9532 Fax: (805) 966-9801

DESIGN CEP CHECKED SCW
STEPHEN C. WANG DATE: 08/2016
PROJECT ENGINEER
R.C.E. 44,255

REGISTERED PROFESSIONAL ENGINEER STEPHEN C. WANG NO 44255 CIVIL STATE OF CALIFORNIA

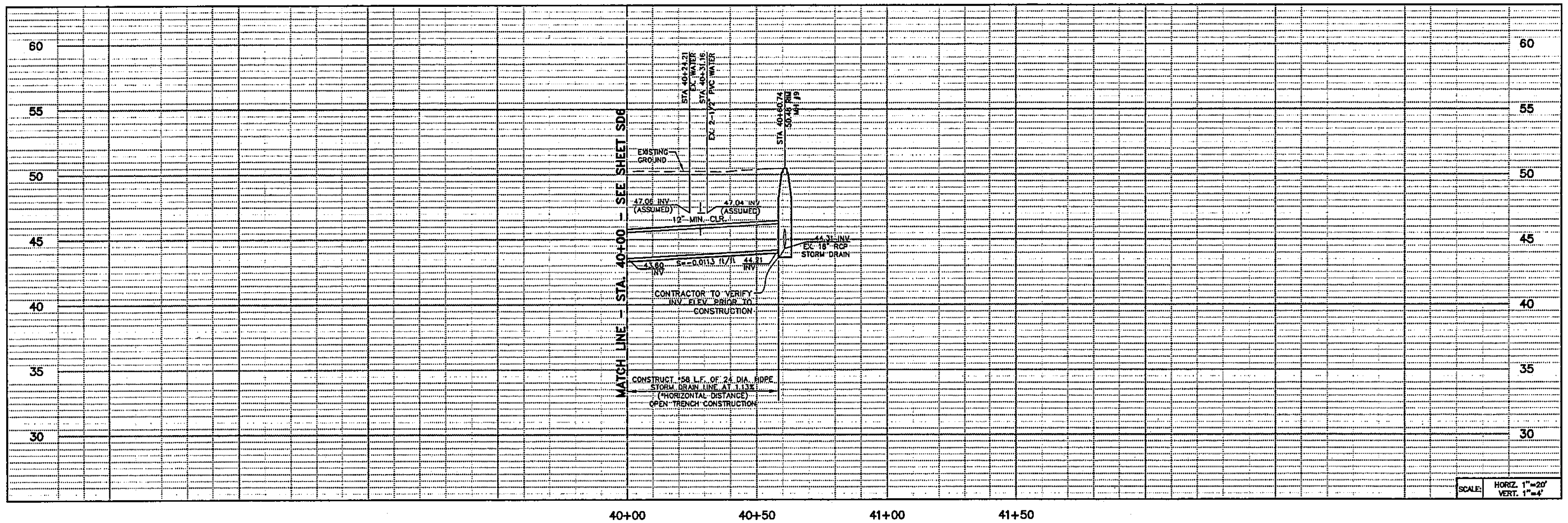
UNIVERSITY OF CALIFORNIA, SANTA BARBARA
REVIEWED BY:
SIGNATURE DATE

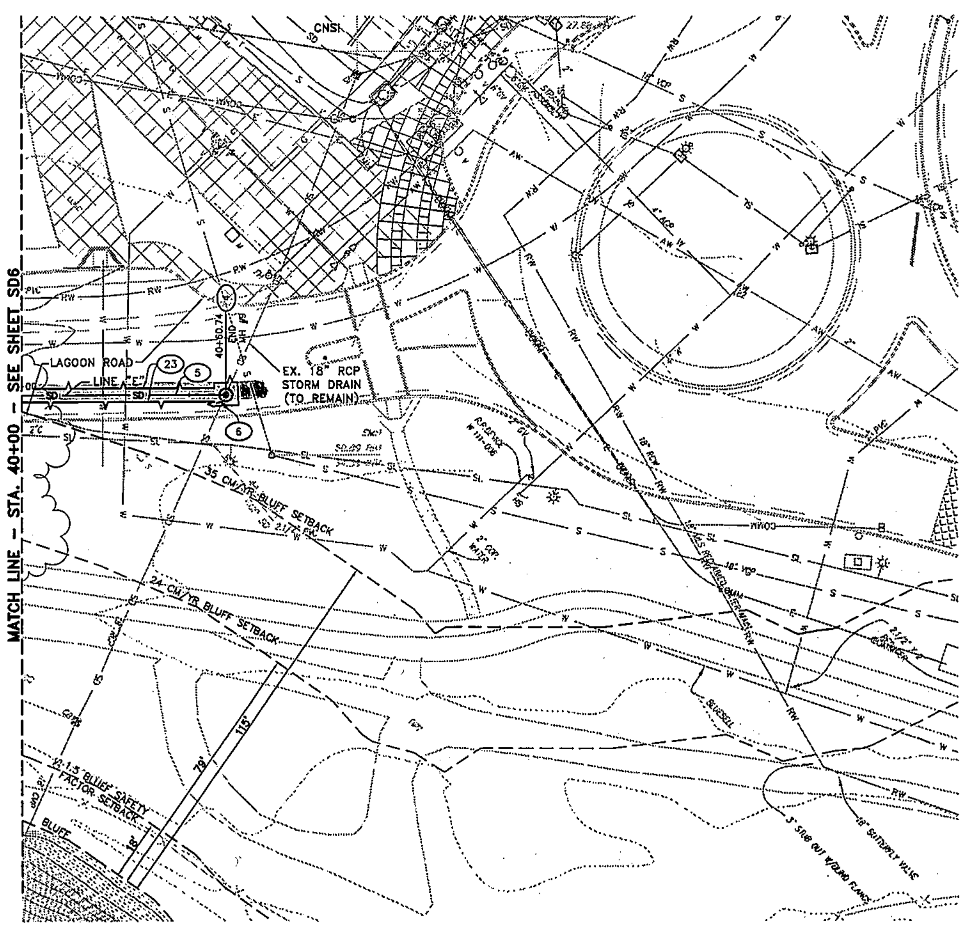
LINE "E" STA 35+00 TO STA 40+00
STORM DRAIN PLAN AND PROFILE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2064017271
SHEET SD6
U.C.S.B. DWG NO. 10-192

FM 150512L/986080

PLOT SCALE:1:1
42-ENG





STORM DRAIN CONSTRUCTION NOTES

1. REMOVE PORTION OF EXISTING 24" DIA. STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 30" DIA. HIGH DENSITY POLYETHYLENE (HDPE) STORM DRAIN PIPE, AND CONNECT 30" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS OF PIPES AND INLETS PRIOR TO CONSTRUCTION (TYP. FOR ENTIRE PROJECT).
2. CONSTRUCT TRANSITION STRUCTURE PIPE TO PIPE PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (S.P.P.W.C.) (2012 EDITION) STANDARD PLAN 340–2, SEE DETAIL "A" ON SHEET SD–D1, TO CONNECT EXISTING 24" DIA. STORM DRAIN TO 30" DIA. STORM DRAIN.
3. CONSTRUCT 30–INCH DIAMETER HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD–D1.
4. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 33" DIA. OR SMALLER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 321–2, SEE DETAIL "C" ON SHEET SD–D1, CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION. REMOVE EXISTING MANHOLE AS REQUIRED AND BACKFILL COMPLETE, AS REQUIRED.
5. CONSTRUCT 24" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD–D1.
6. REMOVE PORTION OF EXISTING STORM DRAIN PIPE AS NECESSARY FOR CONSTRUCTION AND ABANDON EXISTING STORM DRAIN PIPE IN PLACE. CAP END AND FILL END OF PIPE (MIN. 2' DEEP INTO PIPE) WITH 1–SACK CEMENT SLURRY.
7. REMOVE PORTION OF EXISTING 12" DIA. STORM DRAIN PIPE. CORE LARGER HOLE IN EXISTING CONCRETE STRUCTURE TO ACCOMMODATE 12" DIA. HDPE STORM DRAIN PIPE AT ANGLE SHOWN ON PLAN, AND CONNECT 12" DIA. STORM DRAIN AND GROUT AROUND PIPE AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
8. CONSTRUCT 12" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD–D1.
9. CONSTRUCT WYE CONNECTION BETWEEN STORM DRAIN PIPES PER MANUFACTURER'S SPECIFICATIONS.
10. REMOVE ADEQUATE LENGTH OF EXISTING STORM DRAIN PIPE TO ADJUST GRADE AND CONNECT WITH WYE CONNECTION TO PROPOSED STORM DRAIN PER DETAIL "D" ON SHEET SD–D1.
11. CONSTRUCT 18" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B", SHEET SD–D1.
12. REMODEL BASE OF STRUCTURE TO SLOPE TO NEW OPENING. GROUT ABANDONED PIPE OPENING WITH CONCRETE AND #4 REBAR AT 18" OC BW AND DOWELED MIN. 12" INTO EXISTING CONCRETE.
13. REMOVE EXISTING STORM DRAIN AND LEGALLY DISPOSE OF OFF–CAMPUS, AND BACKFILL TRENCH.
14. CONSTRUCT 5'X10' ROCK RIP–RAP (MIN. 12" DIA. ROCKS) IN TWO LAYERS WITH NO GROUT AT OUTLET OF STORM DRAIN.
15. CONSTRUCT 6–INCH HIGH CONCRETE CURB AND 18–INCH CONCRETE GUTTER PER DETAIL "E" SHEET SD–D1.
16. SAW CUT AND REMOVE EXISTING CONCRETE SIDEWALK AT SCORE LINE AND HAUL OFF CAMPUS. CONSTRUCT MIN. 6" THICK REINFORCED CONCRETE PAVEMENT OVER MIN. 4" THICK CLASS 2 AGGREGATE BASE PER DETAIL "F", SHEET SD–D1.
17. REMOVE EXISTING STORM DRAIN PIPE AND DISPOSE OF LEGALLY OFF–CAMPUS. PROVIDE TEMPORARY STORM DRAIN LINE DURING CONSTRUCTION AS REQUIRED.
18. CONSTRUCT 42" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD–D1.
19. CONSTRUCT 36" DIA. HDPE STORM DRAIN PER TRENCH DETAIL "B" ON SHEET SD–D1.
20. CONSTRUCT CONCRETE STORM DRAIN MANHOLE FOR PIPES 36" DIA. OR LARGER PER S.P.P.W.C. (2012 EDITION) STANDARD PLAN 320–2, SEE DETAIL "E" ON SHEET SD–D2, CONNECT ALL EXISTING AND PROPOSED STORM DRAIN PIPES AND CONSTRUCT ELASTOMERIC SEAL (ASTM F477) AROUND PIPE AT CONNECTION.
21. REMOVE EXISTING CATCH BASIN AND CONSTRUCT 24"X24" GRATED PRECAST CONCRETE CATCH BASIN BY MID–STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
22. CONSTRUCT 18"X18" GRATED PRECAST CONCRETE CATCH BASIN, MID–STATE CONCRETE PRODUCTS OR EQUAL. CONNECT EXISTING LATERALS (IF ANY) AND OUTLET TO PROPOSED STORM DRAIN.
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UNIVERSITY OF CALIFORNIA, SANTA BARBARA
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LINE "E" STA 40+00 TO STA 40+60.74
STORM DRAIN PLAN AND PROFILE
INFRASTRUCTURE RENEWAL PHASE 1C
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

STANTEC PROJECT NO. 2064017271
SHEET SD7
U.C.S.B. DWG NO. 10-192

FM 150512L/98608

PLOT SCALE:1:1
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