



DEPARTMENT OF PUBLIC WORKS
C O U N T Y O F H U M B O L D T

MAILING ADDRESS: 1106 SECOND STREET, EUREKA, CA 95501-0579
AREA CODE 707

ARCATA-EUREKA AIRPORT TERMINAL
McKINLEYVILLE
FAX 839-3596

PUBLIC WORKS BUILDING
SECOND & L ST., EUREKA
FAX 445-7409

CLARK COMPLEX
HARRIS & H ST., EUREKA
FAX 445-7388

AVIATION 839-5401

ADMINISTRATION 445-7491 NATURAL RESOURCES 445-7741
BUSINESS 445-7652 NATURAL RESOURCES PLANNING 267-9540
ENGINEERING 445-7377 PARKS 445-7651
FACILITY MAINTENANCE 445-7493 ROADS & EQUIPMENT MAINTENANCE 445-7421

LAND USE 445-7205

Memorandum

Date:	April 27, 2017
To:	Steve Werner, Supervising Planner, Planning & Building Department
From:	Hank Seemann, Deputy-Director (Environmental Services) 445-7741 // hseemann@co.humboldt.ca.us
Subject:	BLM's Flood Hazard Evaluation for Proposed Conditional Use Permit, APN 308-041-002

The purpose of this memo is to provide comments on the technical memorandum (dated January 27, 2017) developed by the Bureau of Land Management (BLM) to assess potential changes in flood hazard associated with BLM's proposed conditional use permit for continued removal of non-native vegetation on a County-owned parcel within the South Spit Cooperative Management Area. The affected parcel is Assessor Parcel Number 308-041-002 with Public Recreation zoning.

The Public Works Department regularly provides technical review of flood-related studies that address County-owned property and infrastructure or cover a regional, watershed, or county-wide scale. Public Works has coordinated with the Federal Emergency Management Agency (FEMA) to review periodic updates to the FEMA Flood Insurance Rate Maps, and to review FEMA's coastal flood hazard study for Humboldt County which was conducted from 2013 through 2015. Public Works has also represented Humboldt County on the Humboldt Bay Sea Level Rise Adaptation Planning Project and other sea level rise planning initiatives. Public Works coordinates with the Chief Building Official in the Planning & Building Department who serves as the Floodplain Administrator on behalf of Humboldt County.

On October 27, 2015, FEMA issued preliminary Flood Insurance Rate Maps for the coastal areas of Humboldt County to incorporate the results of their 2013-2015 coastal flood hazard study. These updated maps are expected to become effective on June 21, 2017. Flood Insurance Rate Maps identify the extent of the base flood elevation, which is the water surface elevation with a 1% annual chance of occurrence. The base flood elevation represents a total water level including wave runup, which is the uprush of water on a beach above the still water level. For the project area, the base flood elevation on the updated maps is 19 feet (NAVD88 vertical datum). Along the coast, land with a ground surface elevation below the base flood elevation is designated in the "VE" flood hazard zone. The updated Flood Insurance Rate Map panel for the project area is included in Attachment 1. A set of cross-sections depicting the ground surface elevation in the dunes near the project area relative to the 19-foot base flood elevation is provided in Attachment 2.

In September 2016, the Board of Supervisors amended the flood damage prevention ordinance of the Humboldt County Code (Title III, Division 3, Chapter 5) to include certain provisions required by FEMA. This amendment introduced Section 337-7(e) which specifies that within coastal high hazard areas (zones V,

V1-30 and VE), man-made alteration of sand dunes which would increase potential flood damage is prohibited. The FEMA document entitled "Guidance for Implementing 44 CFR 60.3(e)(7)" (dated November 1, 2010) provides additional information for applying this provision. Section 337-7(e) of the County Code and the FEMA Guidance apply only within the VE zone.

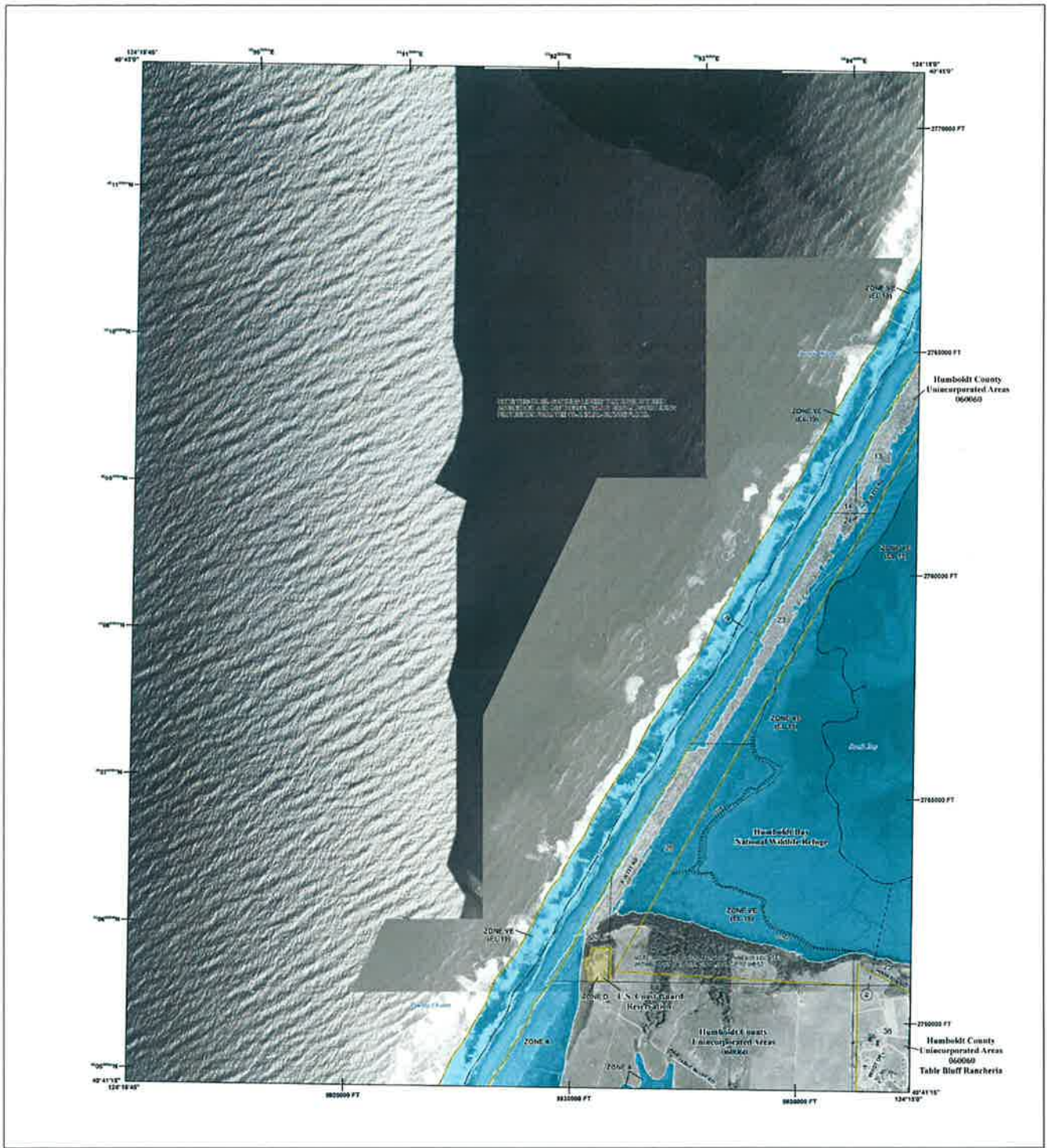
BLM's memorandum provides a technically sound analysis of the flood hazard effects of the proposed work. I concur with BLM's conclusion that "hand pulling small patches of invading non-native vegetation will not increase potential flood damages" (page 11). My review identified the following key points:

1. The South Spit Cooperative Management Area is managed for multiple uses include public recreation and natural resource conservation. The only structure (defined as a walled and roofed building above ground) in the vicinity of the area is a small restroom with a vault toilet. There are no occupied structures in the vicinity. The restroom is located outside the VE flood hazard area depicted on the updated Flood Insurance Rate Map.
2. The VE flood hazard area does not extend to South Jetty Road or the parking area at the bottom of Table Bluff Road. The easterly extent of the VE flood hazard area is approximately 75 to 190 feet from the edge of the road and parking area. The portions of the dunes outside the VE flood hazard area are at least four to five feet higher than the base flood elevation.
3. The magnitude of the vegetation maintenance work is very limited. The work does not involve grading or heavy equipment. The work is designed to remove non-native vegetation while retaining native vegetation. The work is expected to have little or no effect on ground surface elevations. The effect, if any, may be positive for flood protection by allowing more wind-blown sand to be transported eastward to replenish the backdunes (this hypothesis is being tested through technical studies currently in progress).
4. The FEMA Guidance provides a framework for performing a risk-based analysis on a case-by-case basis. BLM's technical memorandum is consistent with this approach.

In my opinion, BLM has provided sufficient evidence to demonstrate that the proposed vegetation removal will not increase flood damages, and issuance of the conditional use permit would be consistent with Section 337-7(e) of the Humboldt County Code.

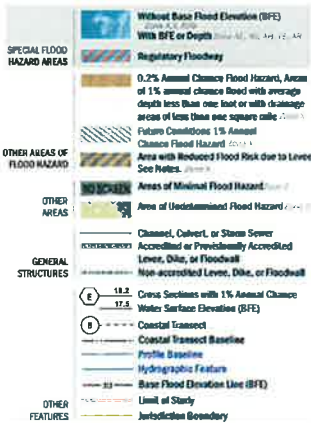
ATTACHMENT 1

FEMA Flood Insurance Rate Map Panel No. 985
(pending to become effective on June 21, 2017)



FLOOD HAZARD INFORMATION

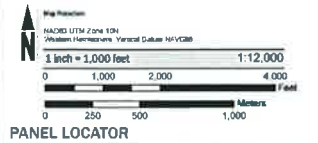
SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP. THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)



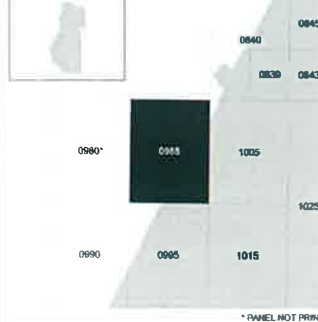
NOTES TO USERS

For information and guidance about this map, visit the website provided with this FIS including online versions of the FIS, maps and other materials on the National Flood Insurance Program or contact the FEMA Risk Assessment Unit at 1-877-FEMA-6677 or call the FEMA Risk Services Center website at www.fema.gov. The information on this map is for informational purposes only and does not constitute a contract. The information on this map is for informational purposes only and does not constitute a contract. The information on this map is for informational purposes only and does not constitute a contract.

SCALE



PANEL LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM
FEDERAL GOVERNMENT
HUMBOLDT COUNTY, CALIFORNIA
 map: 985 or 2050

COMMUNITY: HUMBOLDT COUNTY
 NUMBER: 98509
 PANEL: 0845
 SHEET: 12

YEAR NUMBER: 2.3.2.0
 MAP NUMBER: 0623-CO9850
 MAP REVISED: June 21, 2017

ATTACHMENT 2

Table Bluff Cross Sections
(GHD, March 17, 2017)



- LEGEND**
- Cross Section Locations
 - Roads
 - Approx. Parcel Boundaries
 - FEMA Flood Risk Zone (2016)
 - A (Stream / River)
 - VE (Sea / Ocean)

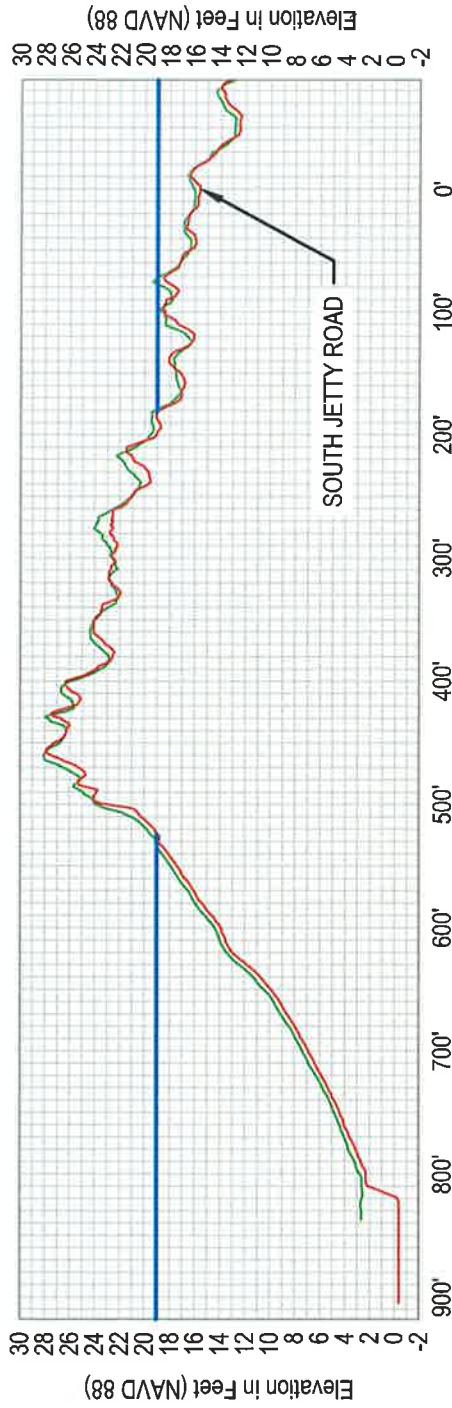
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 Feet
 Map Projection: Lambert Conformal Conic
 Horizontal Datum: North American 1983
 Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



County of Humboldt
 Job Number
 Revision A
 Date 17 Mar 2017

Table Bluff
 Cross Section Locations Figure 1

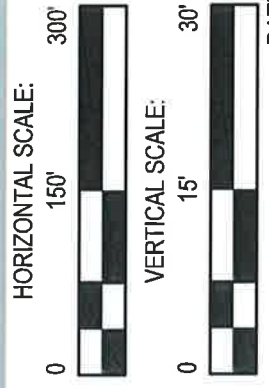
NAUSEureka\Projects\11111125126 Coastal Dune Vulnerability & Adaption Study\08-GIS\TEMP_TableBluff\Maps\Deliverables\TableBluff.mxd
 © 2017. Whilst every care has been taken to prepare this map, GHD (and DATA CUSTODIAN) make no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and cannot accept liability and responsibility of any kind (whether in contract, tort or otherwise) for any expenses, losses, damages and/or costs (including indirect or consequential damage) which are or may be incurred by any party as a result of the map being inaccurate, incomplete or unsuitable in any way and for any reason.
 Data source: Humboldt County Parcel Boundaries, 2017 Humboldt County Roads, 2008 FEMA Flood Risk Zones, 2016 NAIP Orthoimagery 2016.



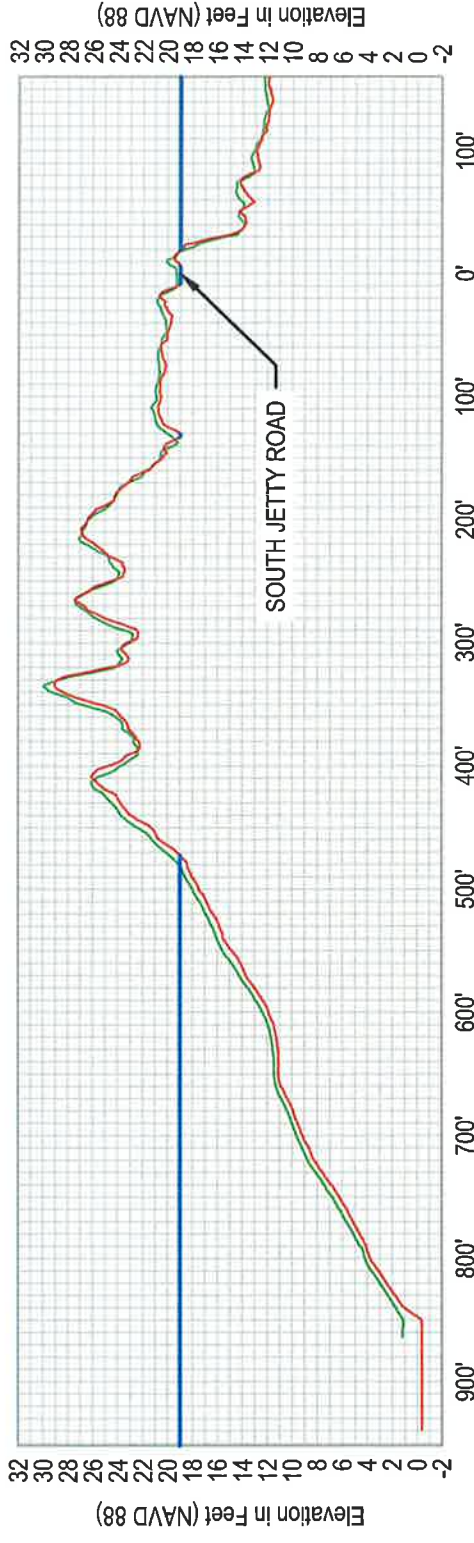
CROSS SECTION 1

NOTE: CROSS SECTION VIEW FACING NORTH

- DATA SOURCE: 2014 LIDAR, 1 METER RESOLUTION, NOAA / CALIFORNIA STATE COASTAL CONSERVANCY
- DATA SOURCE: 2011 LIDAR, 6 FOOT RESOLUTION, NOAA / CALIFORNIA STATE COASTAL CONSERVANCY
- FEMA BASE FLOOD ELEVATION (BFE) 19 FT (NAVD88) PER FEMA MAP NUMBER 06023C0985G (PRELIMINARY OCTOBER 2015)



DATE: 3/16/2017



CROSS SECTION 2

NOTE: CROSS SECTION VIEW FACING NORTH

- DATA SOURCE: 2014 LIDAR, 1 METER RESOLUTION, NOAA / CALIFORNIA STATE COASTAL CONSERVANCY
- DATA SOURCE: 2011 LIDAR, 6 FOOT RESOLUTION, NOAA / CALIFORNIA STATE COASTAL CONSERVANCY
- FEMA BASE FLOOD ELEVATION (BFE) 19 FT (NAVD88) PER FEMA MAP NUMBER 06023C0985G (PRELIMINARY OCTOBER 2015)

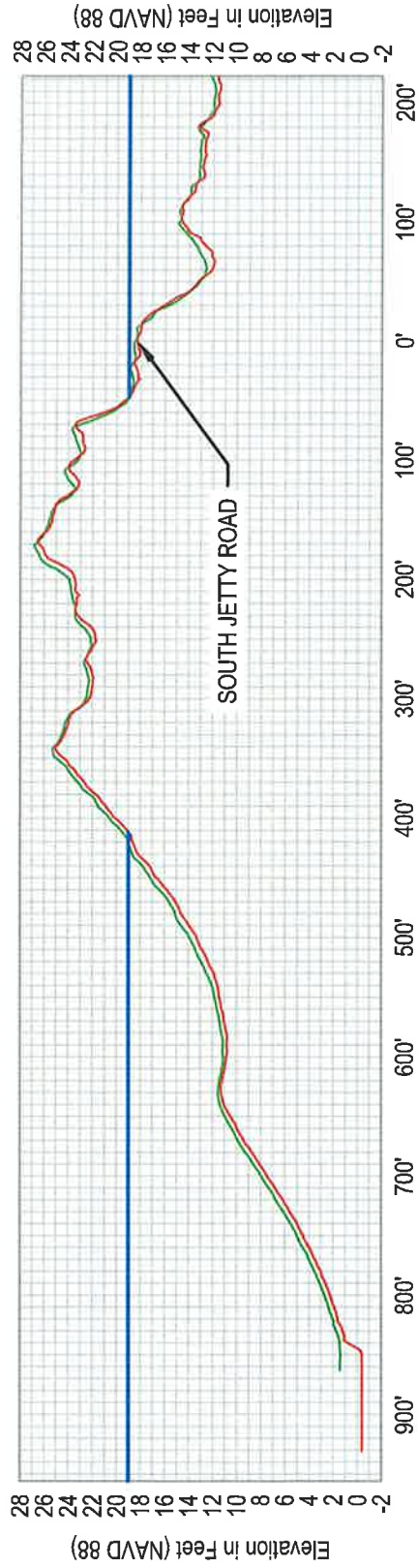
HORIZONTAL SCALE:



VERTICAL SCALE:



DATE: 3/16/2017



CROSS SECTION 3

NOTE: CROSS SECTION VIEW FACING NORTH

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— DATA SOURCE: 2011 LIDAR, 6 FOOT RESOLUTION, NOAA / CALIFORNIA STATE COASTAL CONSERVANCY

— FEMA BASE FLOOD ELEVATION (BFE) 19 FT (NAVD88) PER FEMA MAP NUMBER 06023C0985G (PRELIMINARY OCTOBER 2015)

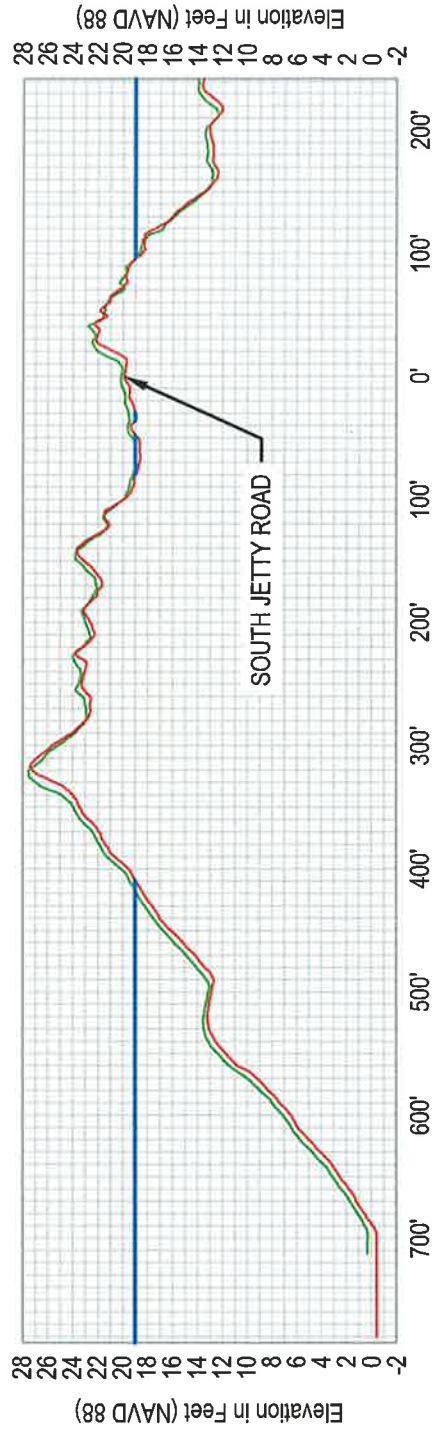
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VERTICAL SCALE:



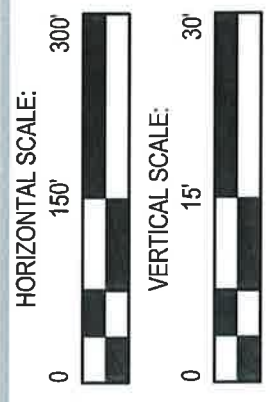
DATE: 3/16/2017



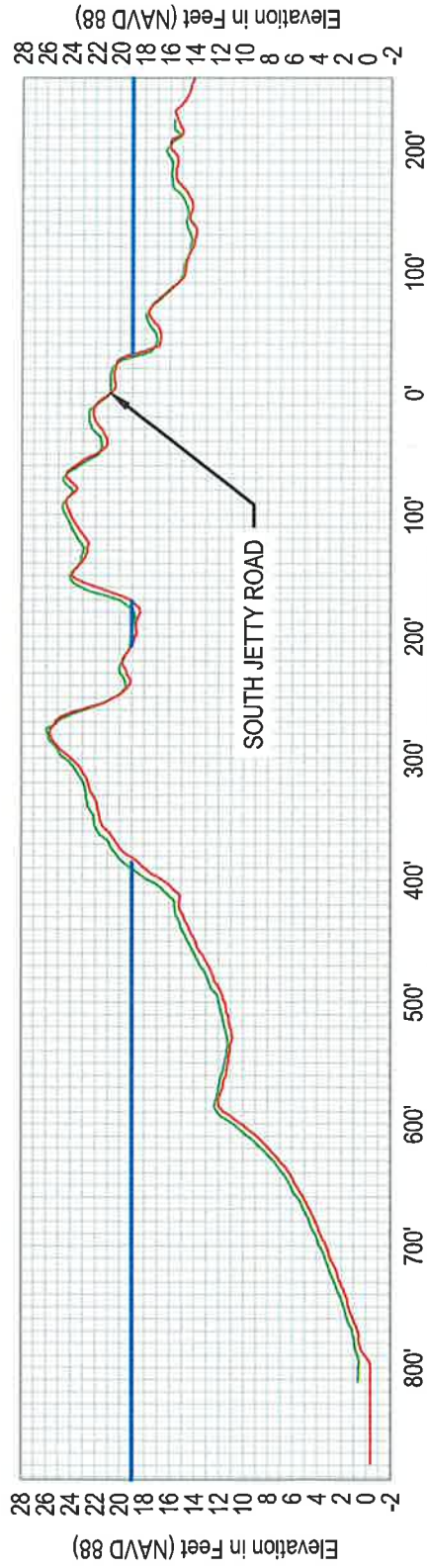
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- FEMA BASE FLOOD ELEVATION (BFE) 19 FT (NAVD88) PER FEMA MAP NUMBER 06023C0985G (PRELIMINARY OCTOBER 2015)



DATE: 3/16/2017



CROSS SECTION 5

NOTE: CROSS SECTION VIEW FACING NORTH

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— DATA SOURCE: 2011 LIDAR, 6 FOOT RESOLUTION, NOAA / CALIFORNIA STATE COASTAL CONSERVANCY

— FEMA BASE FLOOD ELEVATION (BFE) 19 FT (NAVD88) PER FEMA MAP NUMBER 06023C0985G (PRELIMINARY OCTOBER 2015)

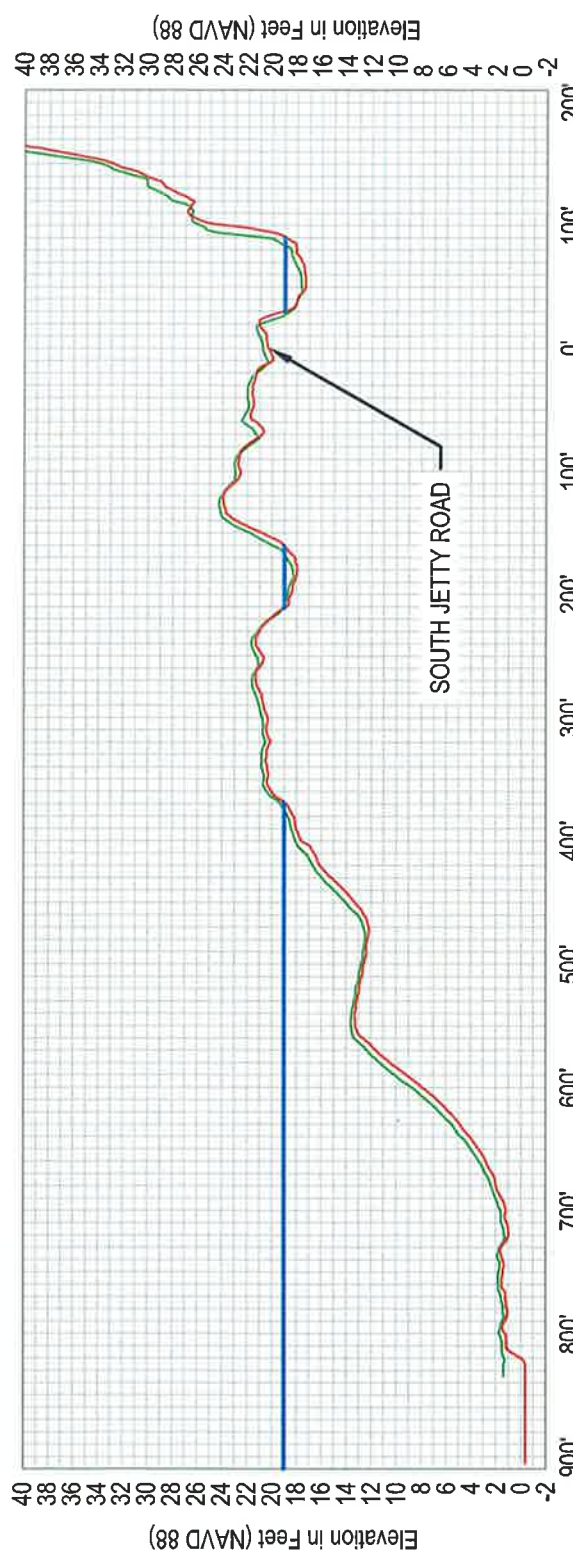
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VERTICAL SCALE:



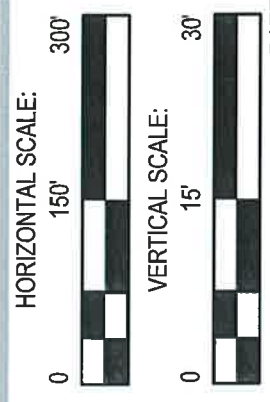
DATE: 3/16/2017



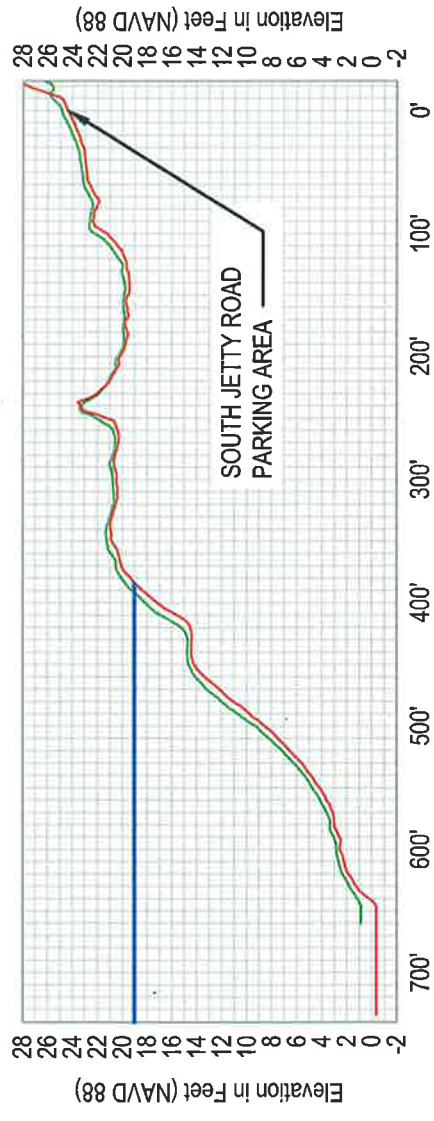
CROSS SECTION 6

NOTE: CROSS SECTION VIEW FACING NORTH

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- FEMA BASE FLOOD ELEVATION (BFE) 19 FT (NAVD88), PER FEMA MAP NUMBER 06023C0985G (PRELIMINARY OCTOBER 2015)






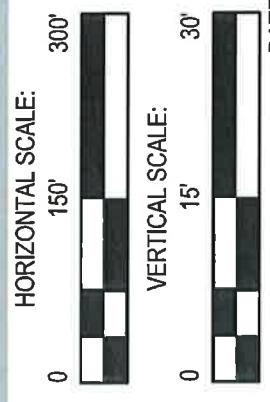
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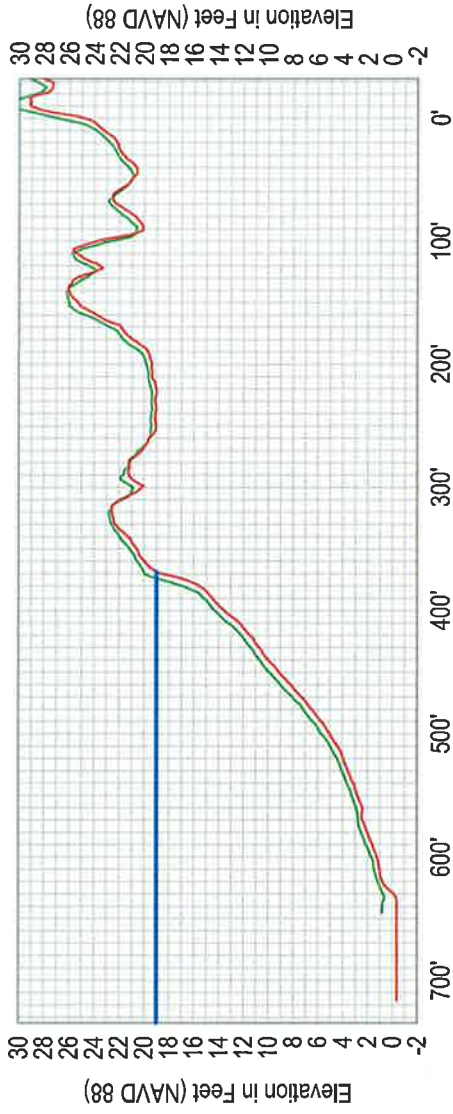
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-  FEMA BASE FLOOD ELEVATION (BFE) 19 FT (NAVD88) PER FEMA MAP NUMBER 06023C0985G (PRELIMINARY OCTOBER 2015)



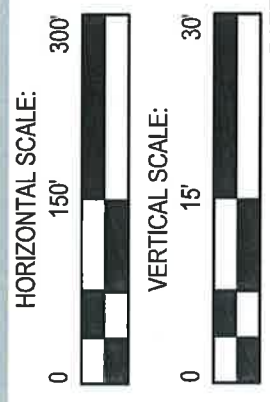
DATE: 3/16/2017



CROSS SECTION 8

NOTE: CROSS SECTION VIEW FACING NORTH

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DATE: 3/16/2017