STATUS KEY:

Federal	State	CNPS California Rare Plant Rank
FE - Federally Endangered	SE - State Endangered	Rank 1A - Plants Presumed Extinct in California
FT - Federally Threatened	ST - State Threatened	Rank 1B - Plants Rare, Threatened, or Endangered in California and Elsewhere
FC - Federal Candidate Species	SR - State Rare	Rank 2 - Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
	SC - State Candidate	Rank 3 - Plants About Which We Need More Information - A Review List
		Rank 4 - Plants of Limited Distribution - A Watch List

.1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 - Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 - Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Potential for Occurrence is based on professional experience, what is known about habitat associations and requirements of the species, and known occurrences in the region. Sources of information consisted of the California Natural Diversity Database and California Native Plant Society Inventory of Rare and Endangered Plants.

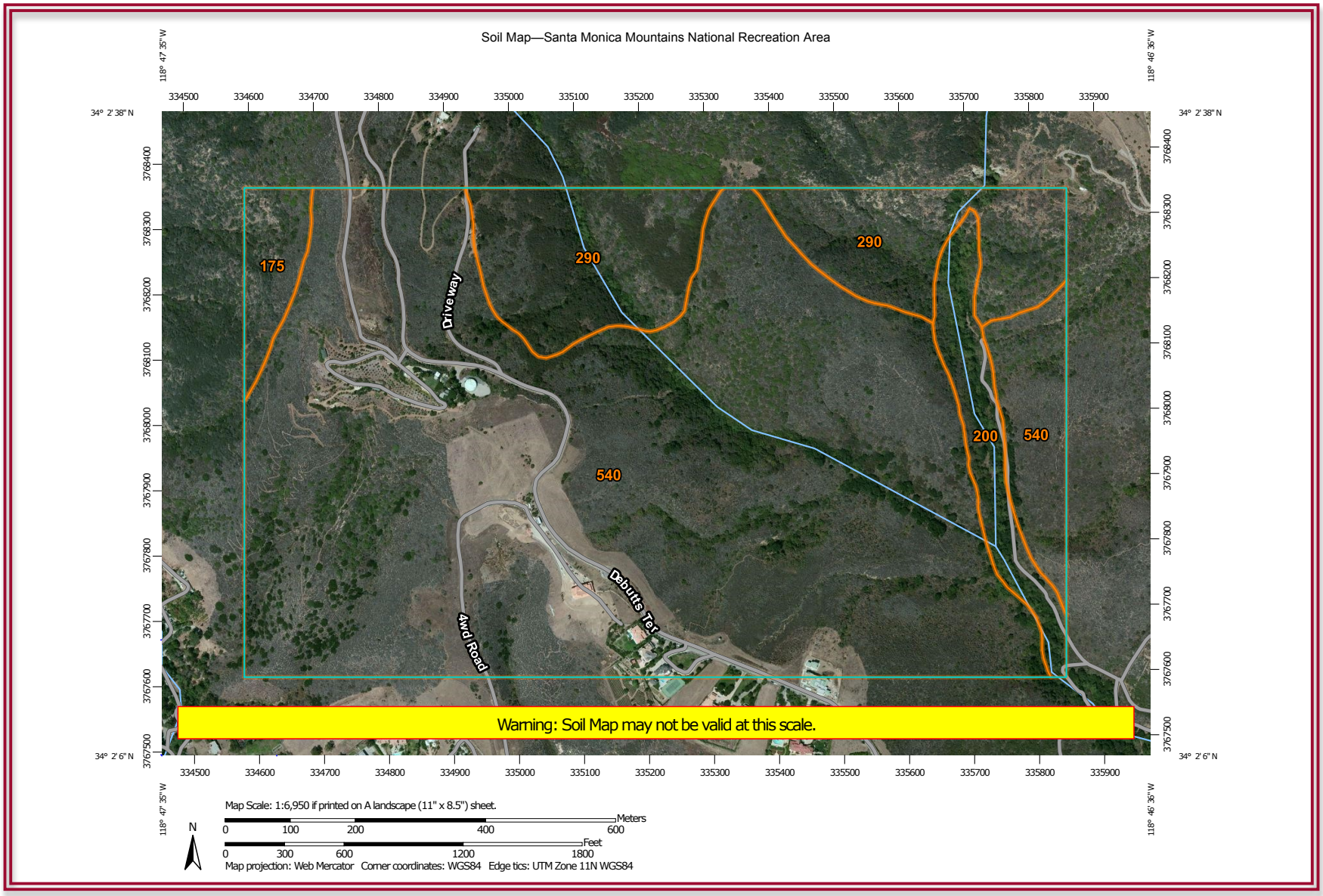
Present = Detected during site visit, known to occur, or recently reported to occur
Expected = Suitable habitat is present and species known to occur in the immediate vicinity
High Potential = Suitable habitat is present and species is known to occur frequently in the region
Moderate Potential = Suitable habitat is limited and species occurs in the region infrequently
Low Potential = Species-specific survey negative or marginal habitat is present or temporary in nature and species known to occur in the immediate vicinity (potential for occurrence cannot be ruled out)
Not Expected = Suitable habitat and substrate absent and/or area of interest is located outside known geographical and elevation ranges.

Global Rank (G Rank) is a reflection of the overall status of an element throughout its global range. Both Global and State ranks represent a letter and number score that reflects a combination of Rarity, Threat, and Trend factors, with weighting being heavier on Rarity than the other two. Taxa that are subspecies or varieties receive a taxon rank (T-rank) attached to their G-rank. Where the G-rank reflects the condition of the entire species, the T-rank reflects the global situation of just the subspecies.

GQ = Questionable Taxonomy - Denotes an element that is very rare, but there are taxonomic questions associated with it.
GX = Presumed Extinct - Species not located despite intensive searches and virtually no likelihood of rediscovery. Ecological community or system eliminated throughout its range, with no restoration potential.
GH = Possibly Extinct - Known from only historical occurrences but some hope of rediscovery. Evidence exists that species may be extinct or ecosystem eliminated throughout its range, but not enough to state this with certainty.
G1 = Critically Imperiled - At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2 = Imperiled - At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3 = Vulnerable - At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4 = Apparently Secure - Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 = Secure - Common; widespread and abundant.
G? = Inexact Numeric Rank
GU = Unrankable
GNR = Unranked
GNA = Not Applicable
C = Captive or Cultivated Only

State Rank (S Rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.

SQ = Questionable Taxonomy - Denotes an element that is very rare, but there are taxonomic questions associated with it.
SX = Presumed Extirpated
SH = Possibly Extirpated
S1 = Critically Imperiled - Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = Imperiled - Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = Vulnerable - Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer) recent and widespread declines, or other factors making it vulnerable to extirpation from the state.
S4 = Apparently Secure - Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors.
S5 = Secure- Common, widespread, and abundant in the state.
S? = Inexact Numeric Rank
SU = Unrankable
SNR = Unranked
SNA = Not Applicable



Forde Biological Consultants

175 - Cotharin-Talepop Association, 30 to 75 percent slopes

Map Unit Setting
General location: High-elevation inland hills and mountains
Landform: Hills and mountains
Elevation: 590 to 2,830 feet (180 to 864 meters)
Mean annual precipitation: 18 to 24 inches (457 to 610 millimeters)
Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 290 to 350 days

Map Unit Composition
Cotharin and similar soils - 70 percent
Talepop and similar soils - 15 percent
Minor components - 15 percent

Major Components

Cotharin
Slope: 30 to 75 percent
Aspect (clockwise): Dominantly northeast to west
Landform: Hills and mountains
Parent material: Colluvium and/or residuum derived from andesite
Typical vegetation: Bigpod chaparral

Selected properties and qualities
Surface pH: 6.0
Surface area covered with coarse fragments: None
Depth to restrictive feature: Bedrock (paralithic) - 4 to 14 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Nonsaline
Sodicity: Nonsodic
Available water capacity to a depth of 60 inches: About 1.2 inches (very low)
Shrink-swell potential: Moderate (LEP 3 to less than 6)
Soil slippage potential: High

Selected hydrologic properties
Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: Not present
Natural drainage class: Well drained
Hydrologic soil group: D

Typical profile
Oe - 0 to 1 inch; slightly decomposed plant material
A - 1 to 9 inches; loam
AC - 9 to 11 inches; loam
Cr - 11 to 21 inches; soft, weathered bedrock

Talepop
Slope: 30 to 75 percent
Aspect (clockwise): Dominantly northeast to west
Landform: Hills and mountains
Parent material: Colluvium and/or residuum derived from andesite
Typical vegetation: Chamise

Selected properties and qualities
Surface pH: 7.2
Surface area covered with coarse fragments: None
Depth to restrictive feature: Bedrock (paralithic) - 4 to 14 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Nonsaline
Sodicity: Nonsodic
Available water capacity to a depth of 60 inches: About 0.6 inch (very low)
Shrink-swell potential: Moderate (LEP 3 to less than 6)
Soil slippage potential: High

Selected hydrologic properties
Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: Not present
Natural drainage class: Somewhat excessively drained
Hydrologic soil group: D

Typical profile
A - 0 to 1 inch; gravelly loam
Bt - 1 to 5 inches; gravelly loam
Cr - 5 to 15 inches; soft, weathered bedrock

Minor Components

Pachic Argixerolls
Percentage of map unit: About 7 percent
Slope: 30 to 75 percent
Landform: Hills

Rock outcrop
Percentage of map unit: About 5 percent
Landform: Hills and mountains

200 - Cumulic Haploxerolls, 0 to 9 percent slopes

Map Unit Setting
General location: Near rivers and streams
Landform: Mountain valleys and canyons
Elevation: 5 to 895 feet (3 to 274 meters)
Mean annual precipitation: 14 to 24 inches (360 to 610 millimeters)
Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 290 to 350 days

Map Unit Composition
Cumulic Haploxerolls - 85 percent
Minor components - 15 percent

Major Component

Cumulic Haploxerolls
Slope: 0 to 9 percent
Aspect (clockwise): Dominantly east to west
Position on landform: Inset fans
Parent material: Alluvium derived from volcanic and sedimentary rock
Typical vegetation: Arroyo willow and California sycamore

Selected properties and qualities
Surface pH: 7.0
Surface area covered with coarse fragments: None
Depth to restrictive feature: Abrupt textural change - 59 to 79 inches
Slowest permeability class: Moderately slow
Salinity: Nonsaline
Sodicity: Nonsodic
Available water capacity to a depth of 60 inches: About 8.5 inches (high)
Shrink-swell potential: Moderate (LEP 3 to less than 6)
Soil slippage potential: Low

Selected hydrologic properties
Present annual flooding: Frequent
Present annual ponding: None
Surface runoff: Medium
Current water table: Not present
Natural drainage class: Well drained
Hydrologic soil group: B

Typical profile
A - 0 to 16 inches; stratified sandy loam
2Bk - 16 to 69 inches; stratified clay loam
3C - 69 to 83 inches; extremely gravelly coarse sand

Minor Components

Cumulic Haploxerolls, clayey
Percentage of map unit: About 6 percent
Slope: 2 to 9 percent
Position on landform: Inset fans

Riverwash
Percentage of map unit: About 5 percent

Position on landform: Drainageways

Danville, coastal
Percentage of map unit: About 2 percent
Slope: 2 to 9 percent
Position on landform: Alluvial fans and fluvial terraces

Typic Argixerolls
Percentage of map unit: About 2 percent
Slope: 9 to 30 percent
Landform: Hills and mountains

290 - Topanga-Mipolomol-Sapwi Association (30% to 75% slopes)

Map Unit Setting
General location: Low-elevation coastal hills and mountains
Landform: Hills and mountains
Elevation: 400 to 2,505 feet (122 to 765 meters)
Mean annual precipitation: 18 to 24 inches (457 to 610 millimeters)
Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 290 to 350 days

Map Unit Composition
Topanga and similar soils - 40 percent
Mipolomol and similar soils - 30 percent
Sapwi and similar soils - 15 percent
Minor components - 15 percent

Major Components

Topanga
Slope: 30 to 75 percent
Landform: Hills and mountains
Parent material: Colluvium and/or residuum derived from sandstone, shale, and slate
Typical vegetation: Bigpod chaparral

Selected Properties and Qualities
Surface pH: 6.5
Surface area covered with coarse fragments: None
Depth to restrictive feature: Bedrock (paralithic) - 10 to 20 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Nonsaline
Sodicity: Nonsodic
Available water capacity to a depth of 60 inches: About 2.1 inches (very low)
Shrink-swell potential: Low (LEP less than 3)
Soil slippage potential: High

Selected Hydrologic Properties
Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: Not present
Natural drainage class: Well drained
Hydrologic soil group: D

Typical Profile
A1 - 0 to 2 inches; gravelly loam
A2 - 2 to 15 inches; gravelly loam
Bt - 15 to 18 inches; gravelly clay loam
Cr - 18 to 27 inches; soft, weathered bedrock

Mipolomol
Slope: 30 to 75 percent
Landform: Hills and mountains
Parent material: Colluvium and/or residuum derived from sandstone, shale, and slate
Typical vegetation: Bigpod chaparral

Selected Properties and Qualities
Surface pH: 6.6
Surface area covered with coarse fragments: None
Depth to restrictive feature: Bedrock (paralithic) - 4 to 14 inches
Slowest permeability class: Moderate above the bedrock
Salinity: Nonsaline
Sodicity: Nonsodic
Available water capacity to a depth of 60 inches: About 1.4 inches (very low)
Shrink-swell potential: Moderate (LEP 3 to less than 6)
Soil slippage potential: High

Selected Hydrologic Properties
Present annual flooding: None
Present annual ponding: None
Surface runoff: Very high
Current water table: Not present
Natural drainage class: Well drained
Hydrologic soil group: D

Typical Profile
A - 0 to 12 inches; channery loam
Cr - 12 to 22 inches; soft, weathered bedrock

Sapwi
Slope: 30 to 75 percent
Landform: Hills and mountains
Parent material: Colluvium and/or residuum derived from sandstone
Typical vegetation: Coast live oak

Selected Properties and Qualities
Surface pH: 6.0
Surface area covered with coarse fragments: None
Depth to restrictive feature: Bedrock (lithic) - 20 to 39 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Nonsaline
Sodicity: Nonsodic
Available water capacity to a depth of 60 inches: About 5.2 inches (moderate)
Shrink-swell potential: Moderate (LEP 3 to less than 6)
Soil slippage potential: High

Selected Hydrologic Properties
Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: Not present
Natural drainage class: Well drained
Hydrologic soil group: C

Typical Profile
Oe - 0 to 1 inch; slightly decomposed plant material
A - 1 to 4 inches; loam
Bt1 - 4 to 24 inches; stony clay loam
Bt2 - 24 to 38 inches; very stony clay loam
R - 38 to 48 inches; unweathered bedrock

Minor Components

Pachic Argixerolls
Percentage of map unit: About 10 percent
Slope: 30 to 75 percent
Landform: Hills

Typic Argixerolls
Percentage of map unit: About 3 percent
Slope: 30 to 75 percent
Landform: Hills

Rock outcrop
Percentage of map unit: About 2 percent
Landform: Hills and mountains

540 - Calcic Argixerolls (30 to 75 percent slopes)

Map Unit Setting
General location: Low-elevation coastal hills and mountains
Landform: Hills
Elevation: 45 to 590 feet (15 to 180 meters)
Mean annual precipitation: 14 to 24 inches (360 to 610 millimeters)
Mean annual air temperature: 60 to 64 degrees F (16 to 18 degrees C)
Frost-free period: 290 to 350 days

Map Unit Composition
Calcic Argixerolls - 85 percent
Minor components - 15 percent

Major Component

Calcic Argixerolls
Slope: 30 to 75 percent
Aspect (clockwise): Dominantly northeast to southwest
Landform: Hills
Parent material: Colluvium and/or residuum derived from calcareous sandstone
Typical vegetation: None assigned

Selected properties and qualities
Surface pH: 6.8
Surface area covered with coarse fragments: None
Depth to restrictive feature: Bedrock (paralithic) 20 to 40 inches
Slowest permeability class: Moderately slow above the bedrock
Salinity: Nonsaline
Sodicity: Nonsodic
Available water capacity to a depth of 60 inches: About 6.3 inches (moderate)
Shrink-swell potential: Moderate (LEP 3 to less than 6)
Soil slippage potential: High

Selected hydrologic properties
Present annual flooding: None
Present annual ponding: None
Surface runoff: High
Current water table: Not present
Natural drainage class: Well drained
Hydrologic soil group: C

Typical profile
A - 0 to 1 inch; silt loam
Btk - 1 to 15 inches; silty clay loam
Bk - 15 to 37 inches; silt loam
Cr - 37 to 47 inches; soft, weathered bedrock

Minor Components

Calcic Haploxerolls
Percentage of map unit: About 8 percent
Slope: 30 to 75 percent
Landform: Hills

Calcic Pachic Haploxerolls
Percentage of map unit: About 7 percent
Slope: 30 to 75 percent
Landform: Hills

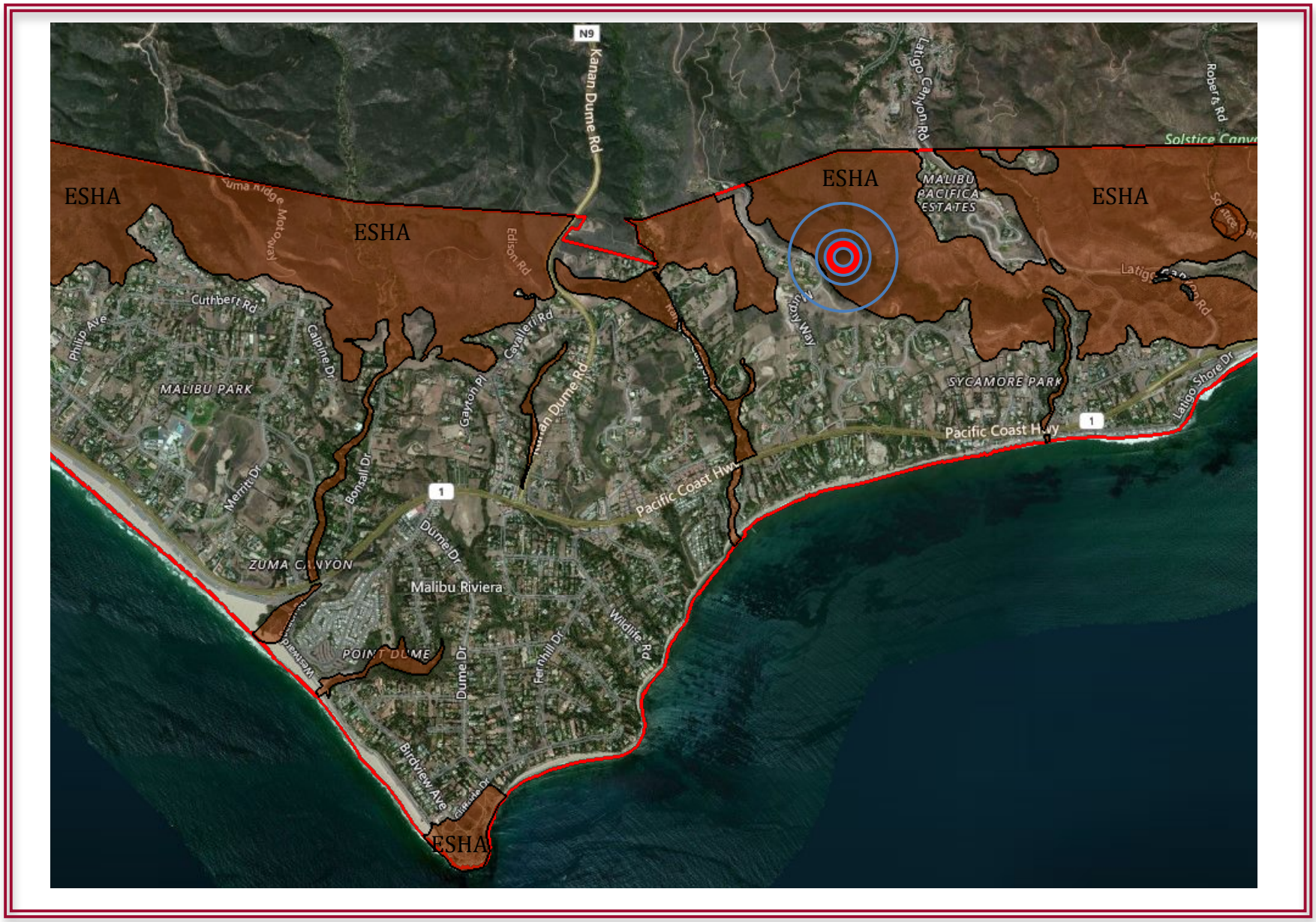


Exhibit L - City of Malibu GIS Biological Resources Overlay (ESHA)

Appendix

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

MALIBU, CALIFORNIA

PROJECT INFORMATION

PROJECT APPLICANT:	MOUNTAINS RECREATION & CONSERVATION AUTHORITY 570 WEST AVENUE 26, SUITE 100 LOS ANGELES, CA 90065
ASSESSOR PARCEL NUMBER:	4467-003-900, AND 4460-002-902
ADDRESS:	5713 MURPHY WAY MALIBU, CA 90265
PROJECT CIVIL ENGINEER:	STANTEC CONSULTING SERVICES INC. 111 E. VICTORIA ST. SANTA BARBARA, CA 805-963-9532
GEOTECHNICAL ENGINEER:	SOUTHWESTERN ENGINEERING GEOLOGY 1119 ORIOLE CIRCLE FILLMORE, CA 93015 805-524-4418

DESIGN INFORMATION:
DESIGN TRAIL LENGTH FROM MURPHY WAY TO THE EXISTING ESCONDIDO FALLS TRAIL BEGINS AT TRAIL CENTERLINE STATION 0+70 AND ENDS AT STATION 39+53, FOR A TOTAL LENGTH OF 3,883.80 FEET. DESIGN GRADED TRAIL AREA IS 15,873.50 SQ FT (0.3644 ACRES). TOTAL AREA INCLUDING EROSION CONTROL, ESTIMATED 8' DISTURBED WIDTH (AVERAGE) IS 23,303 SQ FT (0.5350 ACRES) OF DESIGN TRAIL LENGTH.

EARTHWORK

*NOTE: EARTHWORK IS BEING SUBMITTED UNDER A SEPARATE SET "ROUGH GRADING PLANS". THE EARTHWORK DATA SHOWN HERE IS FOR INFORMATIONAL PURPOSES ONLY.

RAW EARTHWORK QUANTITIES:

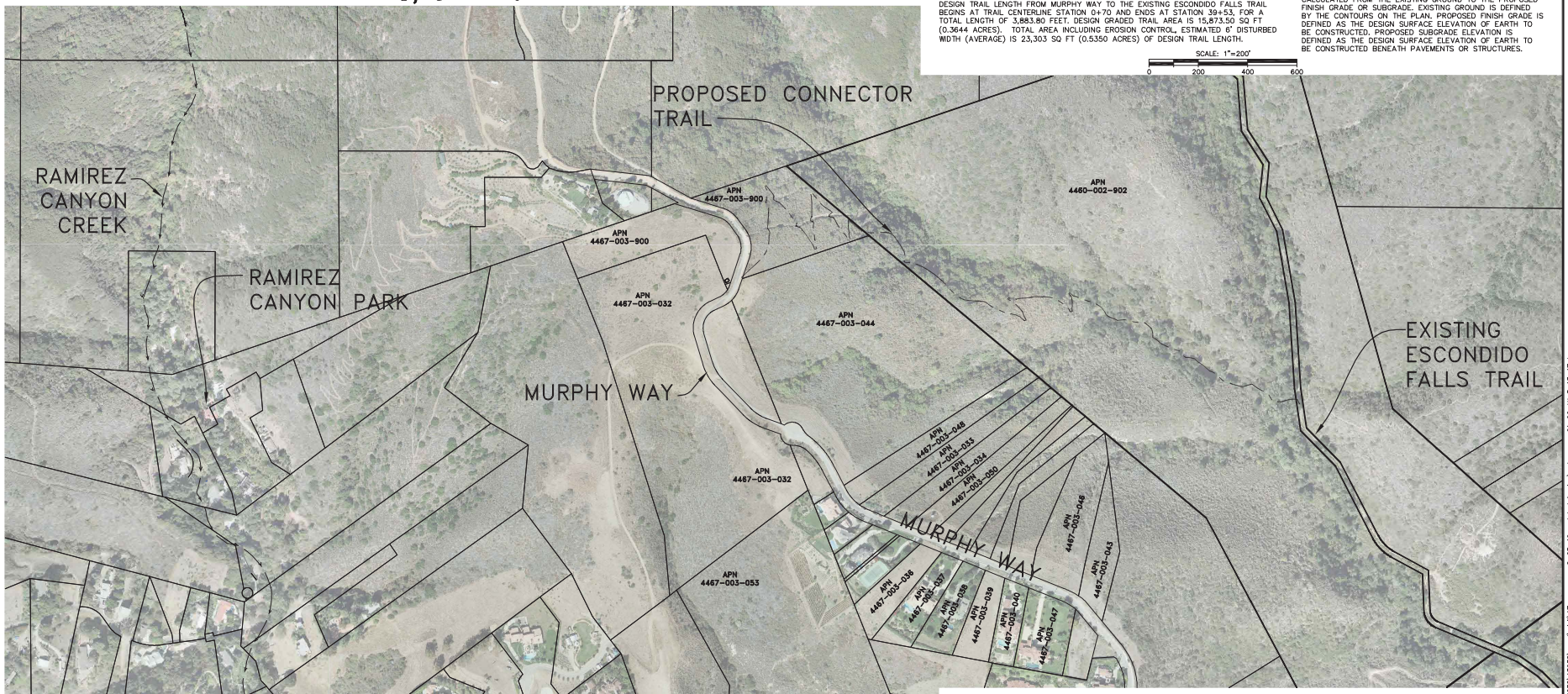
TOTAL ONSITE AREA:
THE OVERALL TOTAL DEVELOPMENT SQUARE FOOTAGE (TDSF) FOR THIS COASTAL SLOPE TRAIL IS 16,931.40 SQ FT (0.3887 ACRES). TRAIL STATIONS 0+00 TO 40+00.

TOTAL ONSITE EARTHWORK:
CUT = 312.42 CY
FILL = 13.69 CY
NET = 289.73 CY (CUT)

EARTHWORK NOTES:

THE ABOVE QUANTITIES ARE APPROXIMATE IN PLACE VOLUMES CALCULATED FROM THE EXISTING GROUND TO THE PROPOSED FINISH GRADE OR SUBGRADE. EXISTING GROUND IS DEFINED BY THE CONTOURS ON THE PLAN. PROPOSED FINISH GRADE IS DEFINED AS THE DESIGN SURFACE ELEVATION OF EARTH TO BE CONSTRUCTED. PROPOSED SUBGRADE ELEVATION IS DEFINED AS THE DESIGN SURFACE ELEVATION OF EARTH TO BE CONSTRUCTED BENEATH PAVEMENTS OR STRUCTURES.

SCALE: 1"=200'
0 200 400 600



FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.

Stantec
111 EAST VICTORIA STREET
SANTA BARBARA, CA
www.stantec.com

DESIGN JHC/KB CHECKED BEF
BRET FOSTER DATE:
PROJECT ENGINEER
R.C.E. 48,267 (EXP. 6-30-18)

REGISTERED PROFESSIONAL ENGINEER
BRET FOSTER
No 48,267
CIVIL
STATE OF CALIFORNIA

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

TITLE SHEET

MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO.
2064119400/13638.05
SHEET
1 OF 16
PLAN DATE
JULY 3, 2018

34-ENG SAVE DATE: 7/3/2018 2:26:00 PM PLOT BY: Foster, Bret PLOT DATE: 7/3/2018 2:27:53 PM PLOT SCALE: 1:200

DRAWING: x:\2064\active\2064013638\record\civil\17-mra.dwg 8-25-10 updated jessica\cat_escon_01-02_tit 3-13-17.dwg

GENERAL CONSTRUCTION NOTES

1. ALL OF THE IMPROVEMENTS PROPOSED IN THIS PLAN SET ARE AT CONCEPT LEVEL ONLY. THE DESIGN SHOWN HEREON IS FOR USE IN THE PERMIT PROCESS. UPON APPROVAL, A FINAL DESIGN SHALL BE PERFORMED. THE FINAL DESIGN SHALL BE BASED ON EXISTING UTILITY AND INFRASTRUCTURE RESEARCH, FIELD SURVEY, FINAL ENGINEERING AND IN ACCORDANCE WITH APPLICABLE CODES, LAWS AND THE PROJECT CONDITIONS OF APPROVAL.
2. ALL REFERENCED SPECIFICATIONS, CODES, DRAWINGS AND DETAILS SHALL BE INCORPORATED INTO THESE PLANS AND MADE A PART HEREOF AS IF SPELLED OUT OR DELINEATED IN THEIR ENTIRETY HEREON.
3. GRADING OR OTHER CONSTRUCTION WORK OFFSITE IS NOT PERMITTED WITHOUT PRIOR WRITTEN PERMISSION OF THE AFFECTED OFFSITE PROPERTY OWNERS.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE PROJECT'S CONDITIONS OF APPROVAL AND ABIDE BY THEIR REQUIREMENTS AS APPLICABLE.
5. GEOTECHNICAL REPORTS AND ANY UPDATES SHALL BE INCORPORATED INTO THESE PLANS AND MADE A PART HEREOF AS IF SPELLED OUT IN THEIR ENTIRETY HEREON. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE APPLICABLE REPORTS AND ABIDE BY THEIR RECOMMENDATIONS. IF THE CONTRACTOR DETERMINES THERE IS A CONFLICT BETWEEN THESE PLANS AND THE REPORTS, HE SHALL PHONE AND NOTIFY IN WRITING BOTH THE PREPARER OF THESE PLANS AND THE REPORT PRIOR TO PROCEEDING. HE WILL WAIT FOR A WRITTEN RESPONSE CLARIFYING THE DISCREPANCY.
6. BEFORE BEGINNING WORK, THE CONTRACTOR SHALL CONTACT THE OWNER, THE APPLICABLE UTILITY COMPANIES, THE SOILS ENGINEER, AND THE PROJECT DESIGN ENGINEER (STANTEC), AND SHALL DETERMINE FROM EACH: (1) SCOPE OF WORK TO BE OBSERVED AND BY WHOM, (2) SCOPE OF TESTING, AND (3) ADVANCE NOTICE REQUIRED (MINIMUM OF 48 HOURS). DURING THE COURSE OF WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR OBSERVATION AND TESTING AS STIPULATED PURSUANT TO ABOVE DETERMINATIONS. WORK NOT OBSERVED AND TESTED WILL BE SUBJECT TO REJECTION.
7. BEFORE BEGINNING WORK, THE CONTRACTOR SHALL DETERMINE OR VERIFY THE LOCATION AND FLOWLINE ELEVATION OF ALL EXISTING WATER, SEWER, AND DRAINAGE STRUCTURES AND/OR CONDUITS TO BE JOINED BY NEW CONSTRUCTION. IF DIFFERENCES ARE OBSERVED THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER BY PHONE AND IN WRITING.
8. EXISTING PERMANENT SURVEY MONUMENTS SHOWN ON THE PLANS, INCLUDING PROPERTY CORNERS AND BENCHMARKS, SHALL BE PRESERVED BY THE CONTRACTOR OR SHALL BE TIED-OUT PRIOR TO CONSTRUCTION AND RE-SET AFTER CONSTRUCTION BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
9. THE ROUGH GRADING CONTRACTOR SHALL GRADE TO SUBGRADE.

GENERAL REQUIREMENTS OF CONTRACTOR

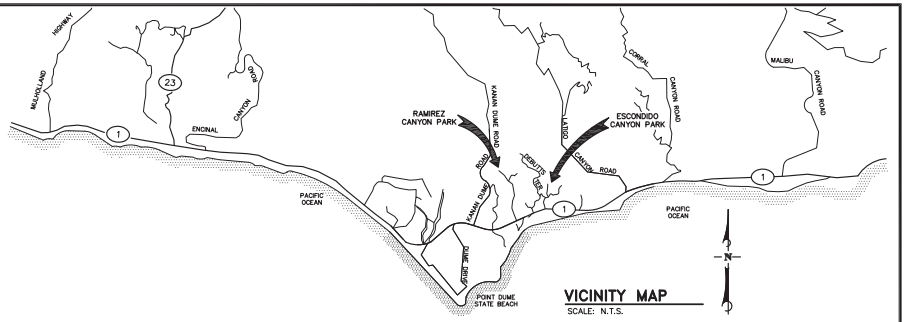
1. THE CONTRACTOR SHALL MAINTAIN A COMPLETE AND ACCURATE RECORD OF ALL CHANGES OF CONSTRUCTION FROM THAT SHOWN IN THESE PLANS AND SPECIFICATIONS FOR THE PURPOSE OF PROVIDING A BASIS FOR CONSTRUCTION RECORD DRAWINGS. NO CHANGES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE PROJECT ENGINEER AND THE AGENCY HAVING JURISDICTION. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL DELIVER THIS RECORD OF ALL CONSTRUCTION CHANGES TO THE ENGINEER ALONG WITH A LETTER WHICH DECLARES THAT THE PROJECT WAS CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS, SPECIFICATIONS AND APPROVED CHANGE ORDERS.
   CAUTION: THE ENGINEER WHO PREPARED THESE PLANS WILL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES OR USES OF THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE APPROVED IN WRITING BY THE PROJECT ENGINEER.
2. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE PROJECT ENGINEER, OWNER: SANTA MONICA MOUNTAINS CONSERVANCY AND MOUNTAINS RECREATION AND CONSERVATION AUTHORITY, BY PHONE AND IN WRITING UPON DISCOVERY OF, AND BEFORE DISTURBING, ANY PHYSICAL CONDITIONS DIFFERING FROM THOSE REPRESENTED BY APPROVED PLANS AND SPECIFICATIONS.
3. THE CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONALS HARMLESS FROM ALL LIABILITY AND CLAIMS, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONALS.
4. THE CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR PROTECTION OF PUBLIC AND PRIVATE PROPERTY IN THE VICINITY OF THE JOB SITE AND FURTHER AGREES TO, AT CONTRACTOR'S EXPENSE, REPAIR OR REPLACE TO THE ORIGINAL CONDITION, ALL EXISTING IMPROVEMENTS WITHIN OR IN THE VICINITY OF THE JOB SITE WHICH ARE NOT DESIGNATED FOR REMOVAL AND WHICH ARE DAMAGED OR REMOVED AS A RESULT OF CONTRACTOR'S OPERATIONS.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL AND SAFETY AND SHALL FURNISH, INSTALL, AND MAINTAIN SUCH FENCING, SIGNS, LIGHTS, TRENCH PLATES, BARRICADES, AND/OR OTHER PROTECTION AS IS NECESSARY FOR SAID CONTROL AND SAFETY.
6. EXISTING BURIED CONDUITS AND STRUCTURES KNOWN TO THE ENGINEER ARE SHOWN ON THESE PLANS. HOWEVER, ALL SUCH CONDUITS AND STRUCTURES MAY NOT BE SHOWN AND THE LOCATIONS OF THOSE SHOWN ARE APPROXIMATE ONLY AND HAVE NOT NECESSARILY BEEN INDEPENDENTLY VERIFIED BY THE PREPARER OF THESE PLANS.
7. THE CONTRACTOR SHALL INDEPENDENTLY VERIFY THE PRESENCE OF BURIED CONDUITS AND STRUCTURES. BOTH ACTIVE AND ABANDONED-IN-PLACE AND, BEFORE COMMENCING WORK, CONTRACTOR SHALL DETERMINE THE EXACT LOCATION INCLUDING DEPTHS OF ALL EXISTING UNDERGROUND UTILITIES, CONDUITS AND STRUCTURES, INCLUDING SERVICE CONNECTIONS, WHICH MAY AFFECT OR BE AFFECTED BY HIS OPERATIONS. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR AS A RESULT OF CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, CONDUITS AND STRUCTURES.

GRADING AND BACKFILLING

1. ALL GRADING AND BACKFILL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS.
2. WATER ENCOUNTERED IN THE EXCAVATION SHALL BE REMOVED BY THE CONTRACTOR TO THE SATISFACTION OF THE SOILS ENGINEER TO PROVIDE DRY CONDITIONS DURING CONSTRUCTION.
3. WET OR UNSTABLE SOIL ENCOUNTERED IN THE BOTTOM OF THE EXCAVATION AND DEEMED BY THE SOILS ENGINEER TO BE INCAPABLE OF PROPERLY SUPPORTING THE FILL BEING CONSTRUCTED, SHALL BE REMOVED TO THE DEPTH RECOMMENDED BY THE SOILS ENGINEER AND BACKFILLED WITH SUITABLE MATERIAL RECOMMENDED BY THE SOILS ENGINEER.
4. BACKFILL COMPACTION SHALL BE IN ACCORDANCE WITH ASTM STANDARD D-1557, LATEST REVISION.
5. COMPACTION BY FLOODING OR JETTING IS NOT PERMITTED UNLESS SPECIFICALLY APPROVED BY THE SOILS ENGINEER.
6. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH APPLICABLE HEALTH AND SAFETY LAWS, ORDINANCES, REGULATIONS, RULES, AND STANDARDS INCLUDING ALL REQUIREMENTS OF THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY AND OF CAL-OSHA.

GENERAL GRADING & DRAINAGE NOTES

1. UNDERGROUND SERVICE ALERT (U.S.A.) SHALL BE CONTACTED AT (800) 422-4133, FORTY-EIGHT (48) HOURS PRIOR TO START OF ANY GRADING OPERATIONS.
2. NOISE GENERATING CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE HOURS OF 7:00 AM TO 5:00 PM, MONDAY THROUGH FRIDAY. CONSTRUCTION EQUIPMENT MAINTENANCE SHALL BE LIMITED TO THE SAME HOURS. STATIONARY CONSTRUCTION EQUIPMENT THAT GENERATES NOISE WHICH EXCEEDS 65 dBA AT THE PROJECT BOUNDARIES SHALL BE SHIELDED AND SHALL BE LOCATED AT A MINIMUM OF 50 FEET FROM OCCUPIED RESIDENCES.
3. ALL GRADING SHALL CONFORM TO THESE CONSTRUCTION DOCUMENTS, ANY CONSTRUCTION RECOMMENDATIONS BY THE PROJECT SOILS ENGINEER OR ENGINEERING GEOLOGIST, THE CONDITIONS OF APPROVAL AND THE PERMIT CONDITIONS.
4. THE CONTRACTOR SHALL EMPLOY ALL LABOR, EQUIPMENT AND METHODS REQUIRED TO PREVENT HIS OPERATIONS FROM PRODUCING DUST IN AMOUNTS DAMAGING TO ADJACENT PROPERTY, CULTIVATED VEGETATION AND DOMESTIC ANIMALS OR CAUSING A NUISANCE TO PERSONS OCCUPYING BUILDINGS IN THE VICINITY OF THE JOB SITE. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST RESULTING FROM GRADING OPERATIONS.
5. A THOROUGH SEARCH SHALL BE MADE FOR ALL ABANDONED MAN-MADE FACILITIES SUCH AS SEPTIC TANK SYSTEMS, FUEL OR WATER STORAGE TANKS, AND PIPELINES OR CONDUITS. ANY SUCH FACILITIES ENCOUNTERED SHALL BE REMOVED UNLESS OTHERWISE ALLOWED BY THE PROJECT ENGINEER AND THE SOILS ENGINEER.
6. AREAS WITH EXISTING SLOPES WHICH ARE TO RECEIVE FILL MATERIAL SHALL BE KEYED AND BENCHED. THE DESIGN AND INSTALLATION OF THE KEYWAY SHALL BE PER THE DETAILS PROVIDED IN THESE PLANS AS MODIFIED BY THE GEOTECHNICAL ENGINEER.
7. FILL MATERIAL SHALL BE SPREAD IN LIFTS NOT EXCEEDING 8-INCHES IN COMPACTED THICKNESS, MOISTENED OR DRIED AS NECESSARY TO NEAR OPTIMUM MOISTURE CONTENT AND COMPACTED BY AN APPROVED METHOD. FILL MATERIAL NEAR OR BELOW STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DRY DENSITY AS DETERMINED BY A.S.T.M. D-1557-91 MODIFIED PROCTOR (AASHTO) TEST OR SIMILAR APPROVED METHODS. SOME FILL AREAS MAY REQUIRE COMPACTION TO A GREATER DENSITY AS CALLED FOR IN CONSTRUCTION DOCUMENTS.
8. ALL TREES NOT DESIGNATED TO BE REMOVED AND TO REMAIN ON SITE SHALL BE PROTECTED FROM DAMAGE BY TEMPORARY FENCING AROUND THE DRIPLINE DURING GRADING OPERATION.
9. STONES LARGER THAN 6 INCHES IN DIAMETER SHALL NOT BE PLACED IN THE FILL, AND NO STONES LARGER THAN 3 INCHES IN DIAMETER BEING PLACED IN THE UPPER THREE FEET OF FILL. STONES LESS THAN 6 INCHES IN DIAMETER SHALL BE THOROUGHLY MIXED WITH THE SOIL, IN SUCH A MANNER THAT NO VOIDS IN THE FILL ARE CREATED.
10. EARTH MOVING AND WORKING OPERATIONS SHALL BE CONTROLLED TO PREVENT WATER FROM RUNNING INTO EXCAVATED AREAS. EXCESS WATER SHALL BE PROMPTLY REMOVED AND THE SITE KEPT DRY. FILL MATERIAL SHALL NOT BE PLACED, SPREAD, OR ROLLED DURING UNFAVORABLE WEATHER CONDITIONS. WHEN THE WORK IS INTERRUPTED BY HEAVY RAIN, FILL OPERATIONS SHALL NOT BE RESUMED UNTIL FIELD TESTS BY THE SOILS ENGINEER INDICATE THAT THE MOISTURE CONTENT AND DENSITY OF THE FILL ARE ABLE TO BE PLACED AND MEET THE REQUIRED COMPACTION.
11. FILL SLOPES SHALL BE OVERFILLED AND TRIMMED BACK TO EXPOSE A COMPACTED CORE IN ORDER TO ENSURE PROPER COMPACTION AT THE FACE OF THE SLOPE. ALTERNATIVELY, THE SLOPE FACES MAY BE COMPACTED BY SHEEPSFOOT, OR OTHER APPROPRIATE METHOD TO ACHIEVE 90% RELATIVE COMPACTION AT THE EXPOSED SLOPE FACE.
12. WHEN THE MOISTURE CONTENT OF THE FILL MATERIAL IS NOT SUFFICIENT TO ACHIEVE REQUIRED COMPACTION, WATER SHALL BE ADDED UNTIL THE SOILS ATTAIN A MOISTURE CONTENT SO THAT THOROUGH BONDING IS ACHIEVED DURING THE COMPACTING PROCESS. WHEN THE MOISTURE CONTENT OF THE FILL MATERIAL IS EXCESSIVE, THE FILL MATERIAL SHALL BE AERATED BY BLADING OR OTHER SATISFACTORY METHODS UNTIL THE MOISTURE CONTENT IS REDUCED TO AN ACCEPTABLE CONTENT TO ACHIEVE PROPER COMPACTION.
13. THE COMPACTION STANDARD SHALL BE THE ASTM D 1557 METHOD OF COMPACTION.
14. REMOVED SOIL, IF FREE FROM DELETERIOUS MATERIAL, MAY BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES IN DEPTH, BROUGHT TO NEAR OPTIMUM MOISTURE CONTENT AND COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION.



VICINITY MAP
SCALE: N.T.S.

SURVEY NOTES

TOPOGRAPHIC INFORMATION SHOWN IN THESE PLANS IS BASED ON AN AERIAL SURVEY PREPARED BY HJW GEOSPATIAL, INC. THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM NAD83 ZONE 5 (EPOCH 2004.0) AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS) AND/OR CONTINUOUS OPERATING REFERENCE STATIONS (CORS) SPK1 & AOA1 BEING S56°56'34"E AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE CALIFORNIA SPATIAL REFERENCE CENTER (CSRC) AND/OR THE NATIONAL GEODETIC SURVEY (NGS), RESPECTIVELY.

VERTICAL DATUM: NAVD88, EPOCH 2004.0 PER GPS TIES & GEOID MODELING (GEOID03) TO L.A. CO BENCHMARKS Y 5415 (2003 ADJ.) & Y 10346 (2003 ADJ.)

GRADING & DRAINAGE SUPERVISION NOTES

GRADING SUPERVISION REQUIREMENTS SHALL BE COMPLIED WITH AS FOLLOWS:

1. THE PROJECT ENGINEER SHALL BE A REPRESENTATIVE OF STANTEC.
2. LINE AND GRADE STAKES SHALL BE SET BY SURVEYORS UNDER THE GENERAL SUPERVISION OF THE PROJECT ENGINEER. THE PROJECT ENGINEER SHALL PROVIDE GENERAL CONSTRUCTION REVIEW.
3. THE SOILS ENGINEER SHALL PROVIDE GENERAL REVIEW OF THE GRADING AND SUBGRADE PREPARATION AND PERFORM COMPACTION TESTING AS NECESSARY TO ENSURE QUALITY CONSTRUCTION AND COMPLY WITH THE GRADING ORDINANCE.
4. UPON COMPLETION OF CONSTRUCTION, THE PROJECT ENGINEER SHALL PREPARE RECORD DRAWINGS BASED UPON THE CONTRACTORS REDLINE DRAWINGS. ENGINEER SHALL SUBMIT A REPORT INDICATING THAT THE IMPROVEMENTS HAVE BEEN COMPLETED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
5. THE SOILS ENGINEER SHALL PROVIDE GENERAL REVIEW OF THE GRADING AND SUBGRADE PREPARATION, PERFORM COMPACTION TESTING, AND PERFORM SPECIAL INSPECTIONS. CERTIFICATIONS BY THE PROJECT SOILS ENGINEER SHALL BE REQUIRED DURING THE PLACEMENT OF ENGINEERED FILL MATERIAL AND CONSTRUCTION OF ANY RETAINING STRUCTURES. ENGINEERED FILL SHALL BE TESTED FOR COMPACTION AT THE MINIMUM RATE OF (1) TEST PER 250 CUBIC YARDS OF MATERIAL PLACED OR EVERY 18 VERTICAL INCHES OF COMPACTED FILL PLACED, WHICHEVER IS LESS. THE SOILS ENGINEER SHALL HAVE THE DISCRETION TO INCREASE COMPACTION TESTING AS DEEMED NECESSARY.

INDEX TO SHEETS

City of Malibu
23825 Stuart Ranch Road · Malibu, California · 90265-4861
Phone (310) 456-2489 · Fax (310) 456-7650 · www.malibucity.org

TOTAL GRADING YARDAGE VERIFICATION CERTIFICATE
PLANNING DEPARTMENT REVIEW LEVEL

PROJECT NUMBER: APR 16-050
PROJECT ADDRESS: 5713 Murphy Way

All projects proposing land form alteration which involves more than 100 cubic yards of grading shall complete this form. The completed form must be provided at the time of Planning Department application for grading approval. All applicable cubic yardages shall be completed in the table. **All calculations utilized to estimate the cubic yardages indicated shall be attached to this form.** This form and the required calculations must be prepared by a State of California Licensed Civil Engineer. The form and the calculations shall be stamped and wet signed by the preparing party.

	Exempt			Non-Exempt	Remedial	Total
	R&R	Understructure	Safety			
Cut				312		312
Fill				14		14
Total				326		326
Import						
Export				298		298

All quantities indicated shall be in cubic yards only.
R&R = Removal and Reconstruction – R&R must be balanced.
Earth Grading is required grading for L.A. County Fire Department access approval beyond the 15 foot minimum access and may include turnouts, hammerheads, turnarounds, and access roadway widening.
Remedial grading is grading recommended by a full site geotechnical or soils report prepared by a licensed geologist or soils engineer which is necessary to correct physical deficiencies on the site for the construction of a primary residential structure or access to the lot.
Imported means soil that is brought on to the site. Exported means soil that is leaving the site. This information will be used to calculate the number of truck trips required for site preparation.

PREPARED BY: Bret Foster
DATE: November 11, 2016

REGISTERED PROFESSIONAL ENGINEER · BRET FOSTER · NO. 48,267 · CIVIL · STATE OF CALIFORNIA

Page 1 of 1

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.

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BRET FOSTER DATE:
PROJECT ENGINEER
R.C.E. 48,267 (EXP. 6-30-18)

GENERAL CONSTRUCTION NOTES

MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 2 OF 16
PLAN DATE JULY 3, 2018

34-ENG SAVE DATE:7/3/2018 2:31:50 PM PLOT BY:Foster, Bret PLOT DATE:7/3/2018 2:32:20 PM PLOT SCALE:1:200

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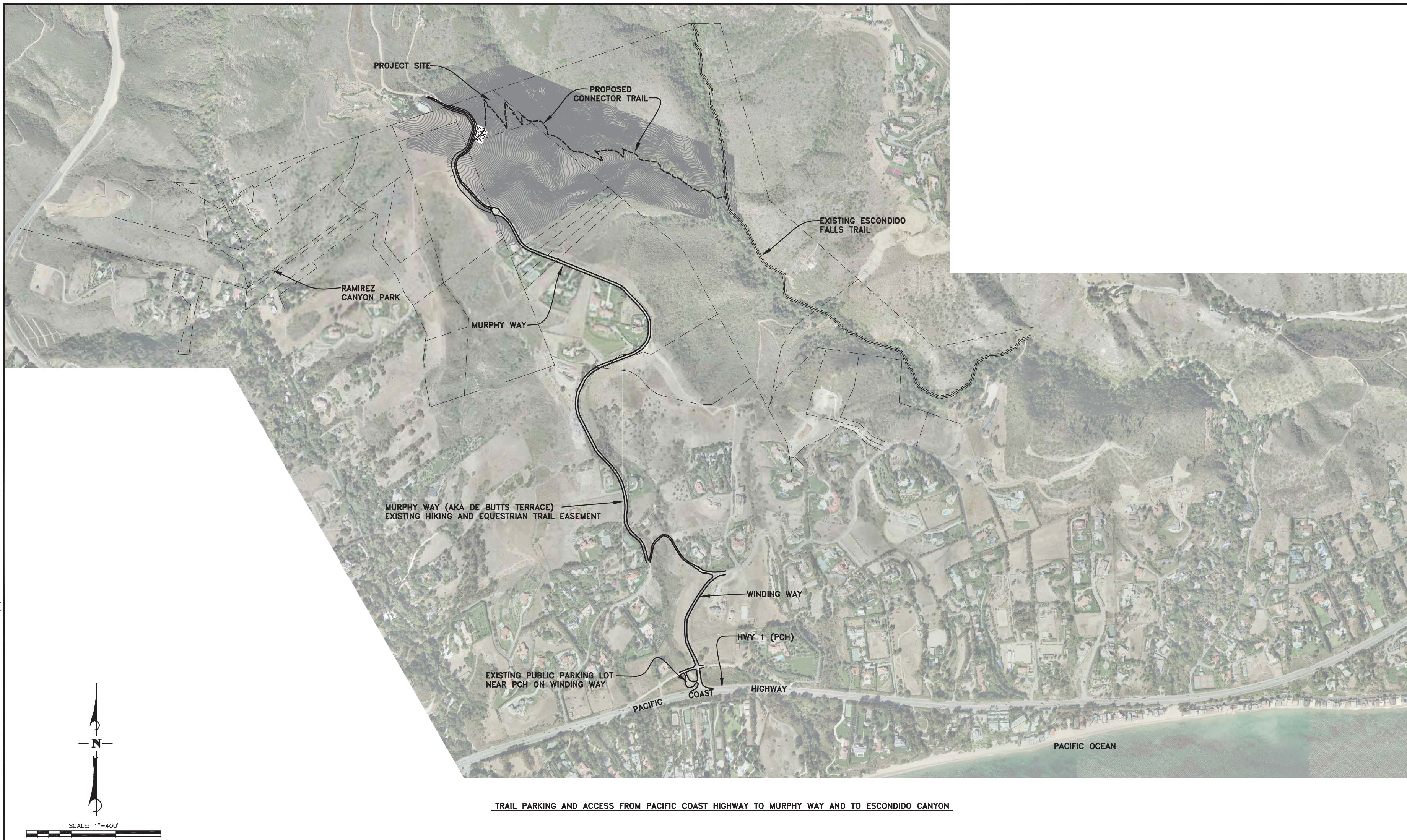

TRAIL PARKING AND ACCESS FROM PACIFIC COAST HIGHWAY TO MURPHY WAY AND TO ESCONDIDO CANYON

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing – any errors or omissions shall be reported to Stantec without delay.

NO.	DATE	REVISIONS	APPD.

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R.C.E. 48,267 (EXP. 6-30-18)

REGISTERED PROFESSIONAL ENGINEER
BRET FOSTER
NO 48,267
CIVIL
STATE OF CALIFORNIA

OVERVIEW

MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO.
2064119400/13638.05
SHEET
3 OF 16
PLAN DATE
JULY 3, 2018

34-ENG SAVE DATE: 7/3/2018 2:43:47 PM PLOT BY: Foster, Bret PLOT DATE: 7/3/2018 2:44:33 PM PLOT SCALE: 1:10

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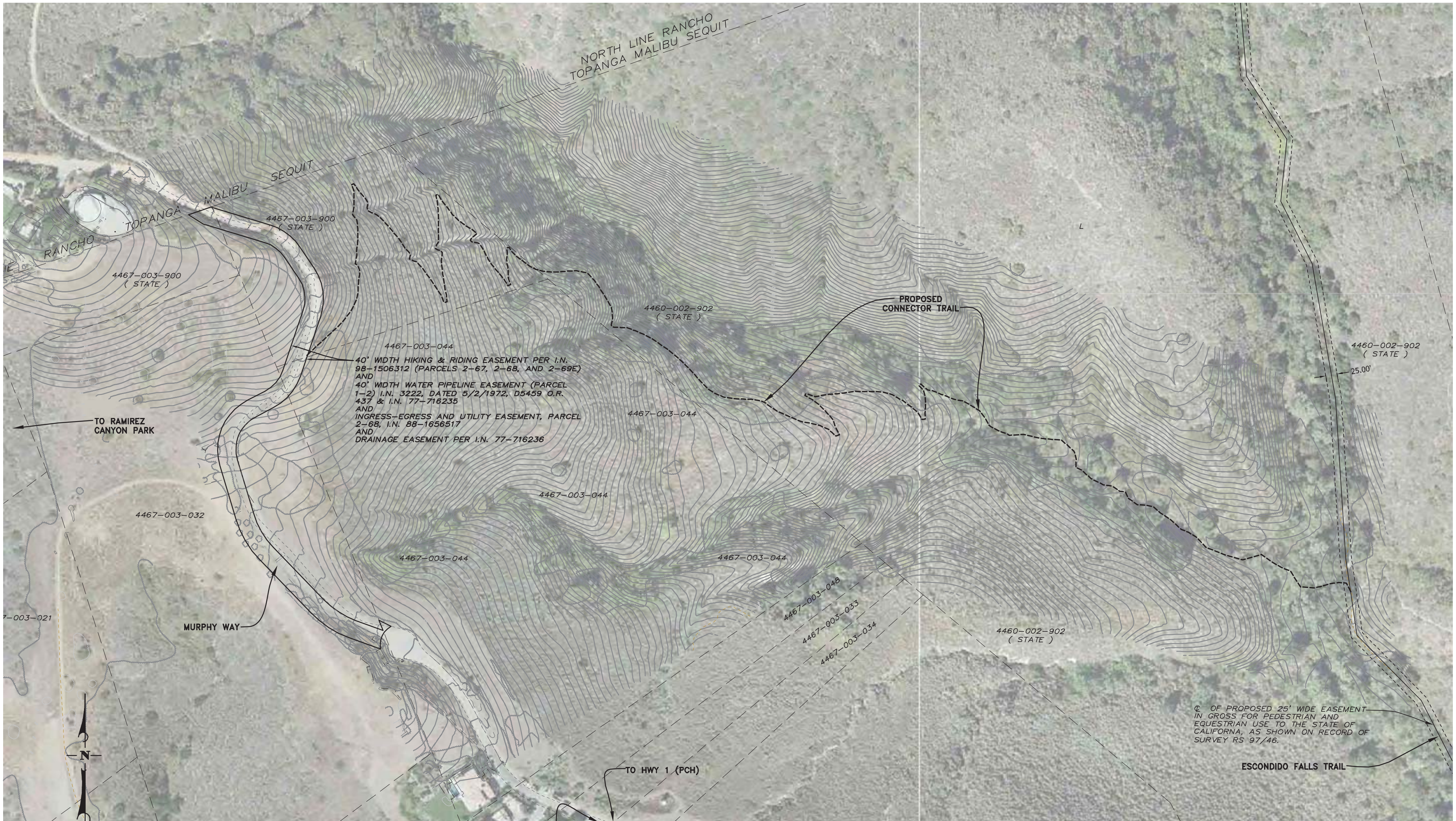

SCALE: 1"=100'
0 100 200 300

FOR PARKING AREA NEAR PCH ON WINDING WAY, SEE PARKING INSET DETAIL THIS SHEET

OVERVIEW – ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

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REGISTERED PROFESSIONAL ENGINEER
BRET FOSTER
NO 48,267
CIVIL
STATE OF CALIFORNIA

SITE OVERVIEW

MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 4 OF 16
PLAN DATE JULY 3, 2018

PLOT SCALE:1:10
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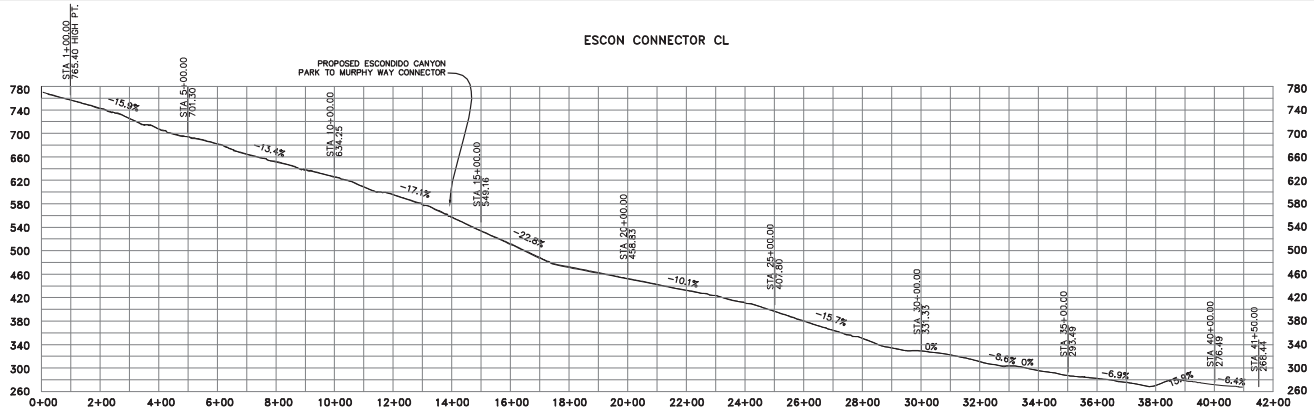
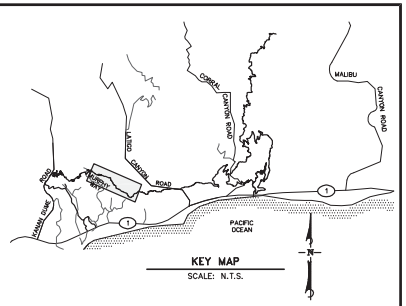


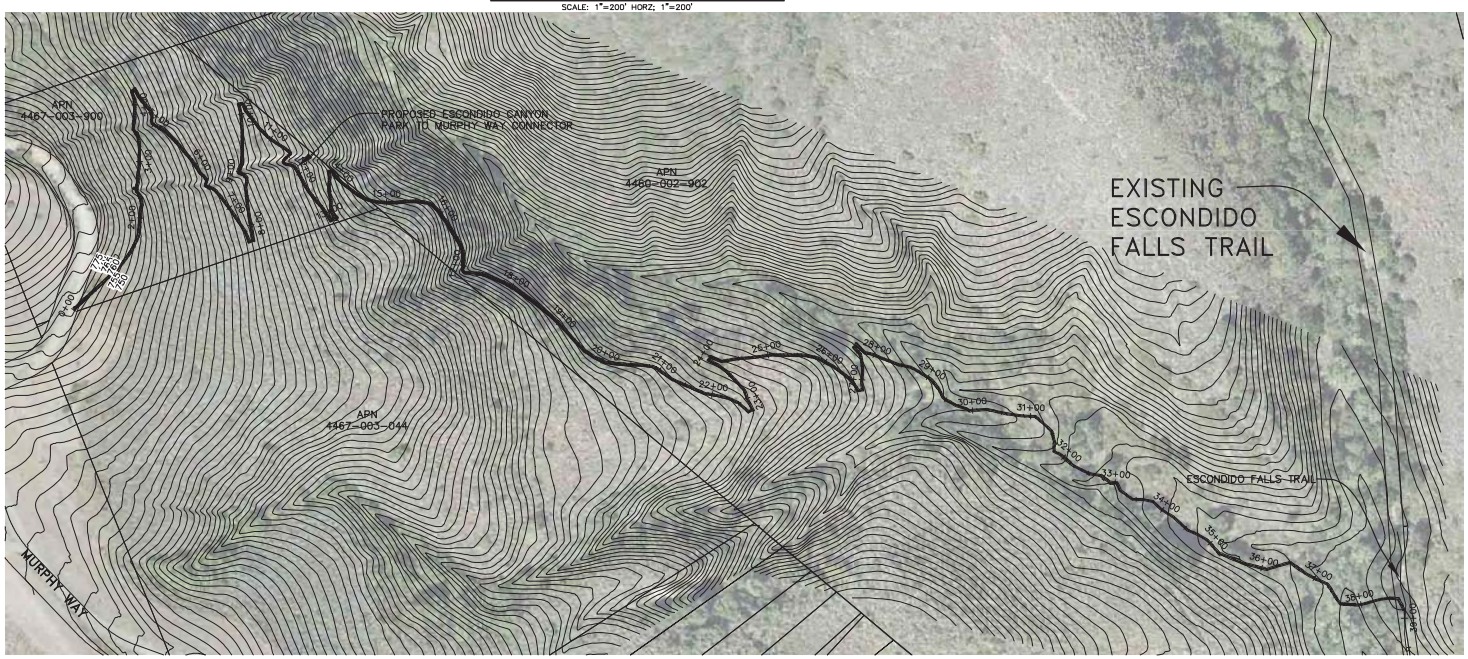
MURPHY WAY TO ESCONDIDO CANYON – PROFILE

SCALE: 1"=200' HORZ; 1"=200'

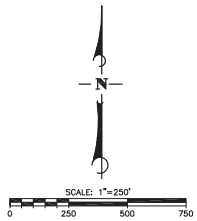


KEY MAP

SCALE: N.T.S.



MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW



ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

PLAN AND PROFILE – MURPHY WAY

MOUNTAINS RECREATION & CONSERVATION AUTHORITY

MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05

SHEET 5 OF 16

PLAN DATE JULY 3, 2018

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES

0 1 2 3

NO.	DATE	REVISIONS	APPD.

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PROJECT ENGINEER

R.C.E. 48,267 (EXP. 6-30-18)

REGISTERED PROFESSIONAL ENGINEER BRET FOSTER NO 48,267 CIVIL STATE OF CALIFORNIA

PLOT BY:Foster, Bret PLOT DATE:7/3/2018 3:06:06 PM PLOT SCALE:1:10

34-ENG SAVE DATE: 7/3/2018 3:03:59 PM

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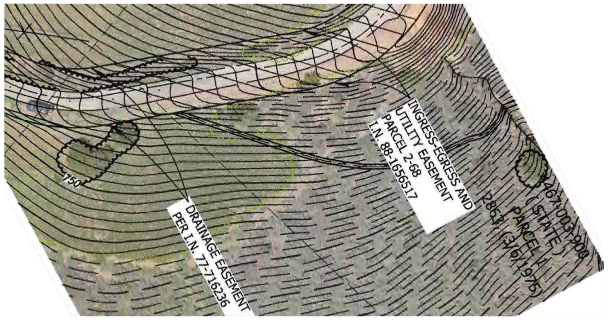


TRAIL HEAD AT MURPHY WAY – SURVEY PLAN
SCALE: 1"=40'

EROSION CONTROL CONSTRUCTION NOTES

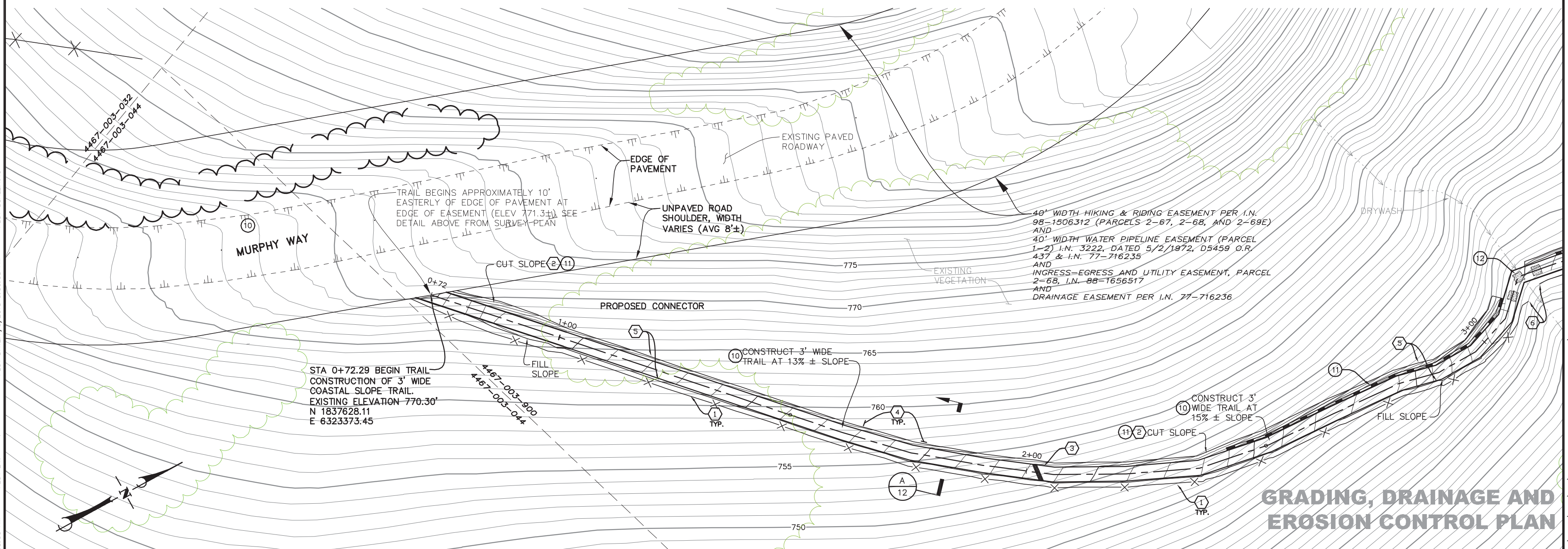
1. CONSTRUCT SILT FENCE AT APPROXIMATE LOCATIONS SHOWN, PER DETAIL "M", SHEET 15, SEE ALSO BMP SE–1 "SILT FENCE".
2. CONSTRUCT EROSION CONTROL BLANKET OVER CUT SLOPES. SCATTER NATIVE SEED MIX ON SOIL PRIOR TO INSTALLATION OF BLANKET, SEE BMP EC–7 "GEOTEXTILES & MATS". EROSION CONTROL BLANKET SHALL BE TENSAR NORTH AMERICAN GREEN BIONET C125BN OR ERONET SC150 OR APPROVED EQUIVALENT. INSTALL EROSION CONTROL BLANKET IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
3. AT APPROXIMATELY 200–FOOT INTERVALS ALONG THE TRAIL, CONSTRUCT ROLLING DIP AND BIODEGRADABLE SEDIMENT CONTROL "LOG" (COIR ROLL) APPROXIMATELY PERPENDICULAR TO THE TRAIL SUCH THAT THE TOP OF THE COIR ROLL IS AT A CONSTANT ELEVATION AND SECURE IN PLACE. HALF THE DIAMETER OF THE COIR ROLL SHALL BE EMBEDDED INTO THE TRAIL AND SECURED WITH STEEL PINS AND WASHERS. SEE DETAIL D, SHEET 13. SIMILAR TO BMP SE–5 "FIBER ROLLS". SEDIMENT CONTROL COIR ROLL SHALL BE TENSAR NORTH AMERICAN GREEN SEDIMAX–FR 9" DIAMETER OR FILTREXX SILTSOXX 8" DIAMETER OR APPROVED EQUIVALENT. INSTALL SEDIMENT CONTROL COIR ROLL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
4. WHEN CONSTRUCTING TRAIL, CONTRACTOR SHALL PRESERVE EXISTING VEGETATION TO THE EXTENT FEASIBLE THAT IS ADJACENT TO THE AREA TO BE GRADED, SEE BMP EC–2 "PRESERVATION OF EXISTING VEGETATION".
5. AT THE CONCLUSION OF GRADING OPERATIONS CONSTRUCT EROSION CONTROL BY APPLYING NATIVE SEED MIX TO THE DISTURBED AREA.
6. OMIT SILT FENCE AT FLOW LINE OF DRAINAGE CHANNEL.

CONSTRUCTION NOTES

10. CONSTRUCT TRAIL OR IMPROVE EXISTING TRAIL TO MINIMUM 3' WIDE PER DETAIL "A" ON SHEET 13.
11. CONSTRUCT CUT SLOPE PROTECTION AT 0.5' (HORIZONTAL) TO 1.0 (VERTICAL). FOR CUT SLOPES UP TO 1' HIGH, PROTECT WITH EROSION CONTROL BLANKET IN ACCORDANCE WITH EROSION CONTROL NOTE #2 HEREIN. FOR CUT SLOPES UP TO 2' HIGH, COVER SLOPE WITH FILTER FABRIC AND CONSTRUCT TIMBER OR LOG TRAIL WALL IN ACCORDANCE WITH DETAILS F AND G, SHEET 14. FOR CUT SLOPES UP TO 3' HIGH, COVER SLOPE WITH FILTER FABRIC AND CONSTRUCT STACKED ROCK TRAIL WALL IN ACCORDANCE WITH DETAIL H, SHEET 14. SEE ALSO TYPICAL TRAIL DETAILS E, SHEET 13, AND J, SHEET 14.
12. CONSTRUCT STEPPING STONE CROSSING AT EXISTING DRAINAGE IN ACCORDANCE WITH DETAIL B, SHEET 13.
13. CONSTRUCT RAIL ROAD TIE STEPS AT STEEP SWITCHBACK PER DETAIL K, SHEET 14.

TREE LEGEND

OAK TREE | NON–NATIVE TREE | NATIVE TREE TRUNK (NON–OAK) | NATIVE TREE CANOPY



GRADING, DRAINAGE AND EROSION CONTROL PLAN

SCALE: 1"=10'
0 10 20 30 40

MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing – any errors or omissions shall be reported to Stantec without delay.

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BRET FOSTER DATE:
PROJECT ENGINEER
R.C.E. 48,267 (EXP. 06–30–18)

REGISTERED PROFESSIONAL ENGINEER BRET FOSTER NO 48,267 CIVIL STATE OF CALIFORNIA

EC, GRADING AND DRAINAGE PLAN
TRAIL – STA 0+72 TO 3+00
MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 6 OF 16
PLAN DATE JULY 3, 2018

34–ENG SAVE DATE: 7/5/2018 9:55:30 AM PLOT DATE: 7/5/2018 9:56:05 AM PLOT BY: Foster, Bret PLOT SCALE: 1:10

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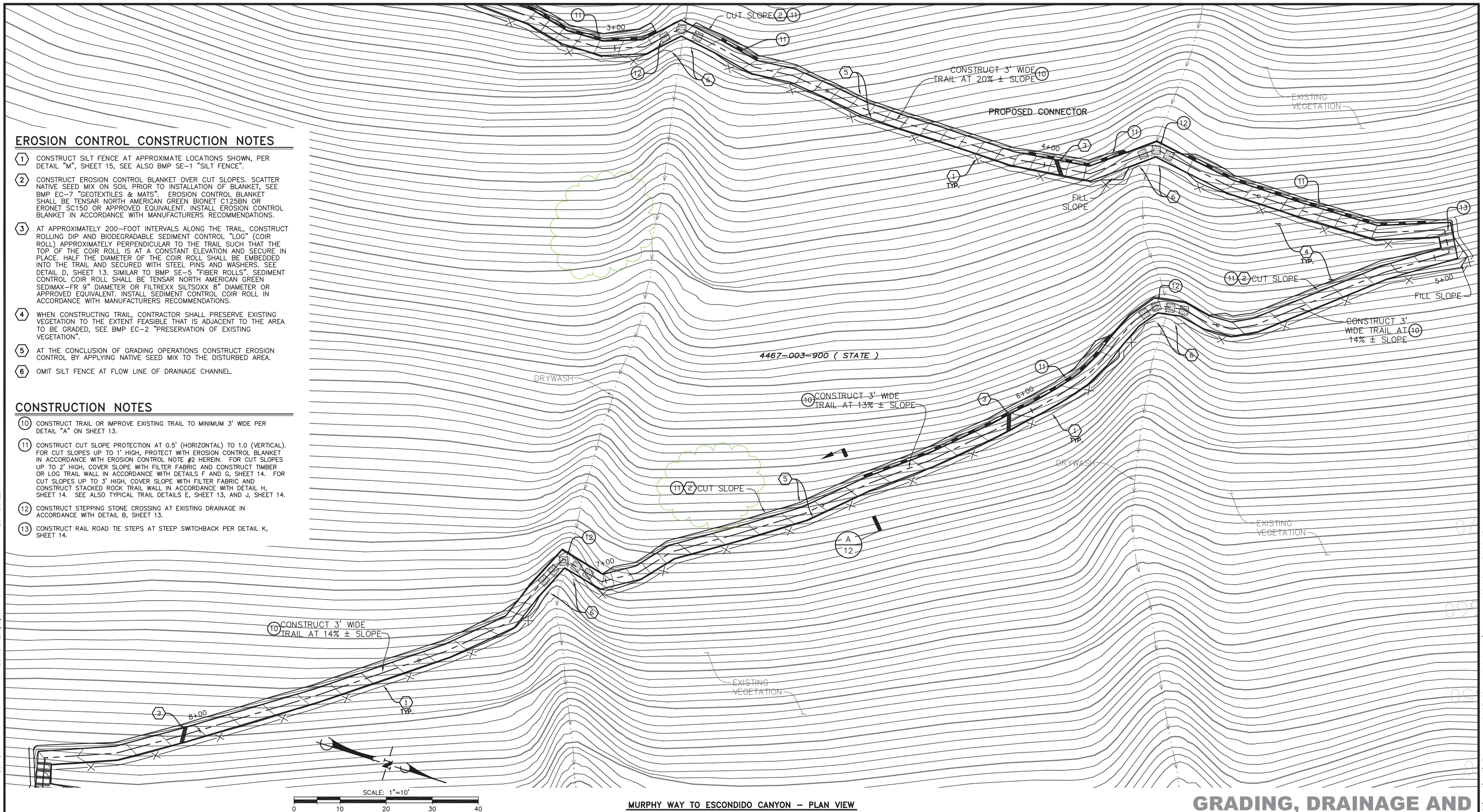

EROSION CONTROL CONSTRUCTION NOTES

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MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW

GRADING, DRAINAGE AND EROSION CONTROL PLAN

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

PLOT SCALE:1:10 PLOT DATE:7/5/2018 9:54:56 AM PLOT BY:Foster, Bret

34-ENG SAVE DATE: 7/5/2018 9:43:12 AM

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.

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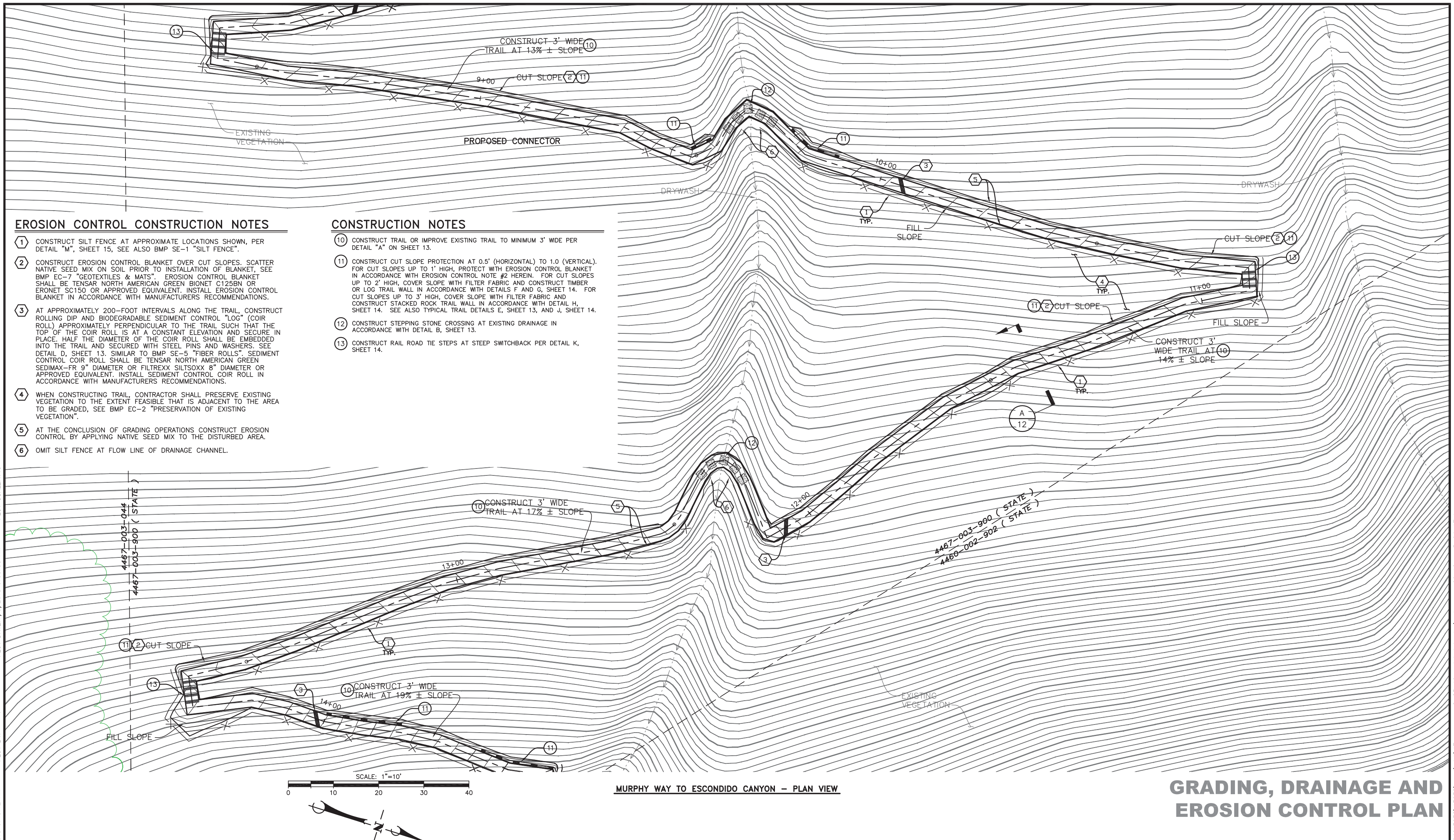
BRET FOSTER DATE:
PROJECT ENGINEER
R.C.E. 48,267 (EXP. 06-30-18)

REGISTERED PROFESSIONAL ENGINEER BRET FOSTER NO 48,267 CIVIL STATE OF CALIFORNIA

EC, GRADING AND DRAINAGE PLAN
TRAIL – STA 3+00 TO 8+00
MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 7 OF 16
PLAN DATE JULY 3, 2018

DRAWING: v: \2064\active\2064013638\13638\acad\civil\17-mrca_pwp 8-25-10 updated jessica\cst_escon_06-12_gp 5-04-17.dwg



EROSION CONTROL CONSTRUCTION NOTES

1. CONSTRUCT SILT FENCE AT APPROXIMATE LOCATIONS SHOWN, PER DETAIL "M", SHEET 15, SEE ALSO BMP SE-1 "SILT FENCE".
2. CONSTRUCT EROSION CONTROL BLANKET OVER CUT SLOPES. SCATTER NATIVE SEED MIX ON SOIL PRIOR TO INSTALLATION OF BLANKET, SEE BMP EC-7 "GEOTEXTILES & MATS". EROSION CONTROL BLANKET SHALL BE TENSAR NORTH AMERICAN GREEN BIONET C125BN OR ERONET SC150 OR APPROVED EQUIVALENT. INSTALL EROSION CONTROL BLANKET IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
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MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW

GRADING, DRAINAGE AND EROSION CONTROL PLAN

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

NO.	DATE	REVISIONS	APPD.

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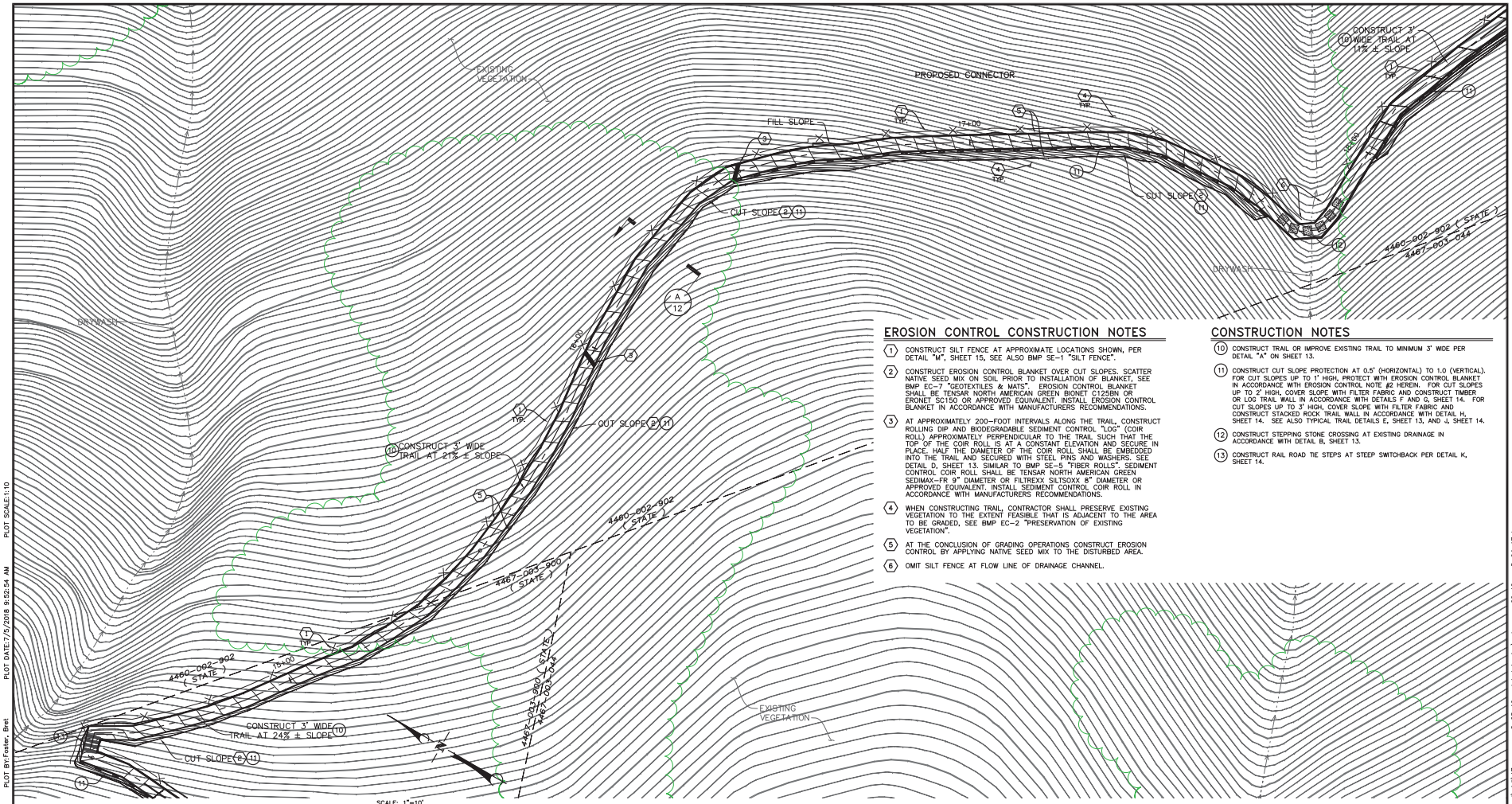
BRET FOSTER DATE:
PROJECT ENGINEER
R.C.E. 48,267 (EXP. 06-30-18)

REGISTERED PROFESSIONAL ENGINEER
BRET FOSTER
NO 48,267
CIVIL
STATE OF CALIFORNIA

EC, GRADING AND DRAINAGE PLAN
TRAIL – STA 8+00 TO 14+00
MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 8 OF 16
PLAN DATE JULY 3, 2018

34-ENG SAVE DATE: 7/5/2018 9:43:12 AM PLOT BY: Foster, Bret PLOT DATE: 7/5/2018 9:53:58 AM PLOT SCALE: 1:10
DRAWING: v:\2064\active\2064013638\13638\acad\civil\17-mra_pwp 8-25-10 updated jessica\cd_escon_06-12_gp 5-04-17.dwg



MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW

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GRADING, DRAINAGE AND EROSION CONTROL PLAN

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

PLOT SCALE:1:10
PLOT DATE:7/5/2018 9:52:54 AM
PLOT BY:Foster, Bret
34-ENG SAVE DATE: 7/5/2018 9:43:12 AM

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0 1 2 3

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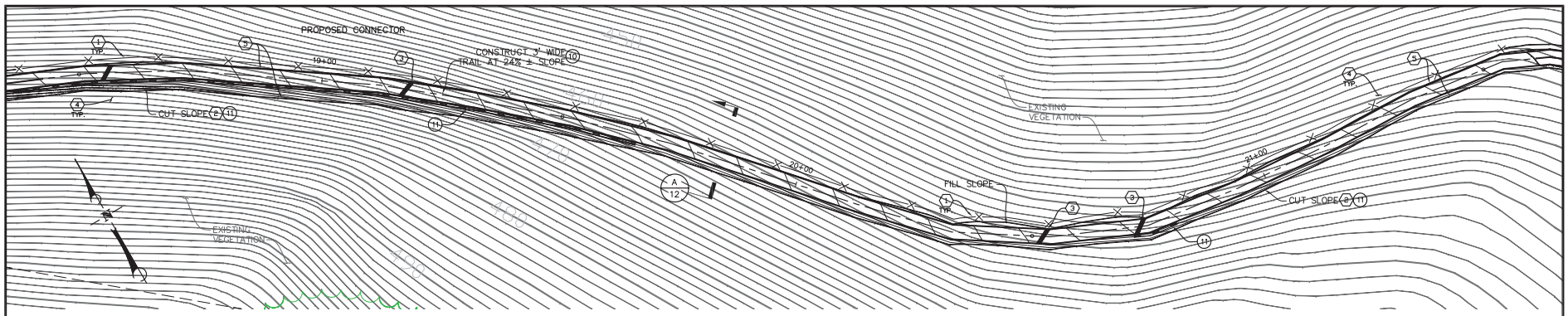
REGISTERED PROFESSIONAL ENGINEER BRET FOSTER NO. 48,267 CIVIL STATE OF CALIFORNIA

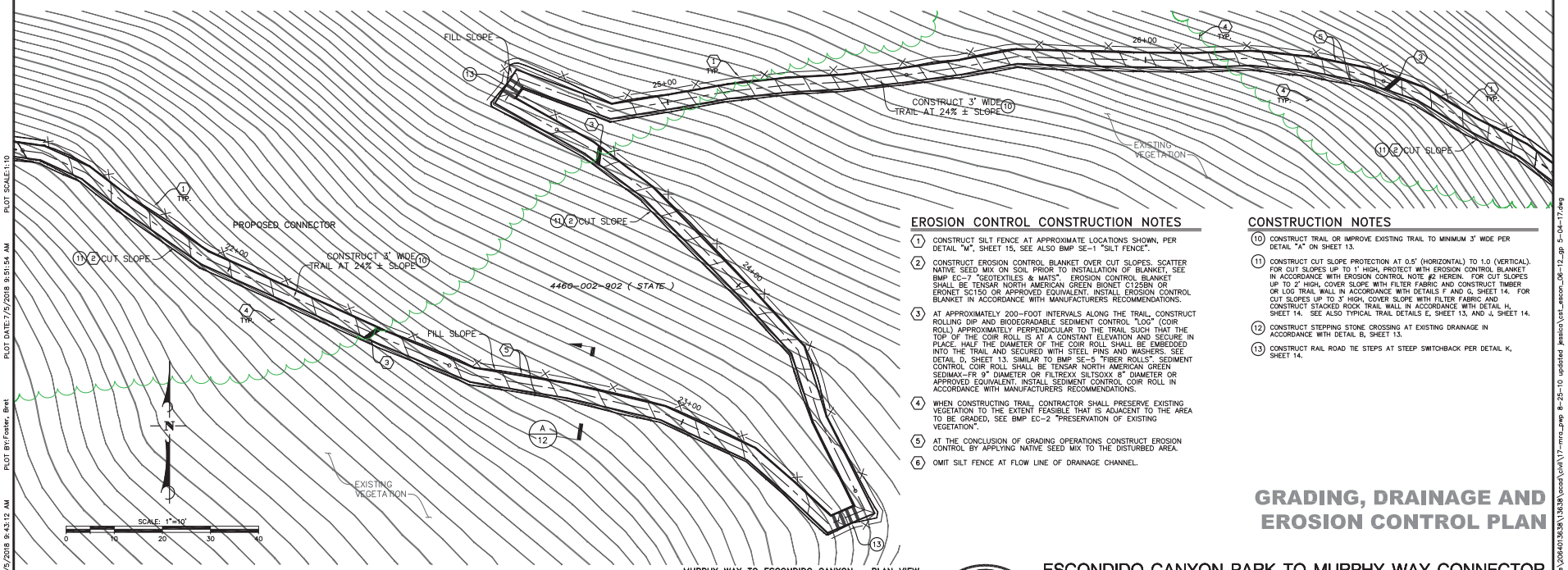
EC, GRADING AND DRAINAGE PLAN
TRAIL – STA 14+00 TO 18+00
MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 9 OF 16
PLAN DATE JULY 3, 2018

DRAWING: x:\2064\active\206401638\13638\cad\civil\7-mrra_pwp 8-25-10 updated jessica\set_jessica_06-12.dgn 5-04-17.dwg



MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW



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GRADING, DRAINAGE AND EROSION CONTROL PLAN

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

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REGISTERED PROFESSIONAL ENGINEER BRET FOSTER NO. 48,267 CIVIL STATE OF CALIFORNIA

EC, GRADING AND DRAINAGE PLAN
TRAIL – STA 18+00 TO 27+00
MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 10 OF 16
PLAN DATE JULY 3, 2018

PLOT SCALE:1:10 PLOT DATE:7/5/2018 9:51:54 AM PLOT BY:Foster, Bret 34-ENG SAVE DATE: 7/5/2018 9:43:12 AM
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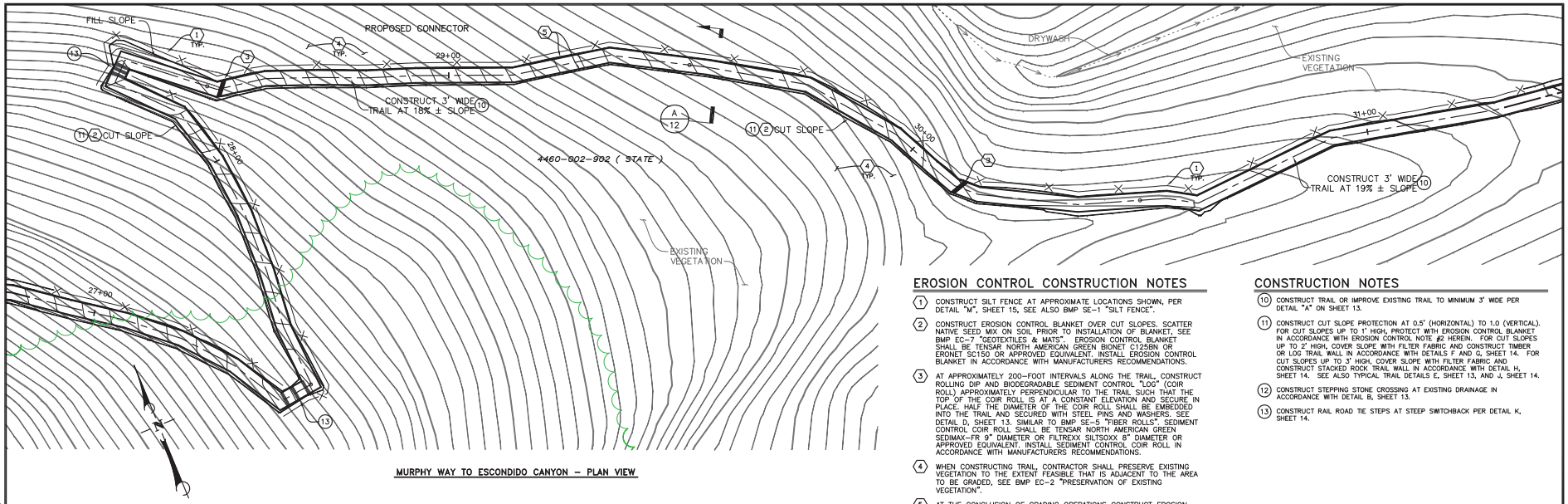

MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW

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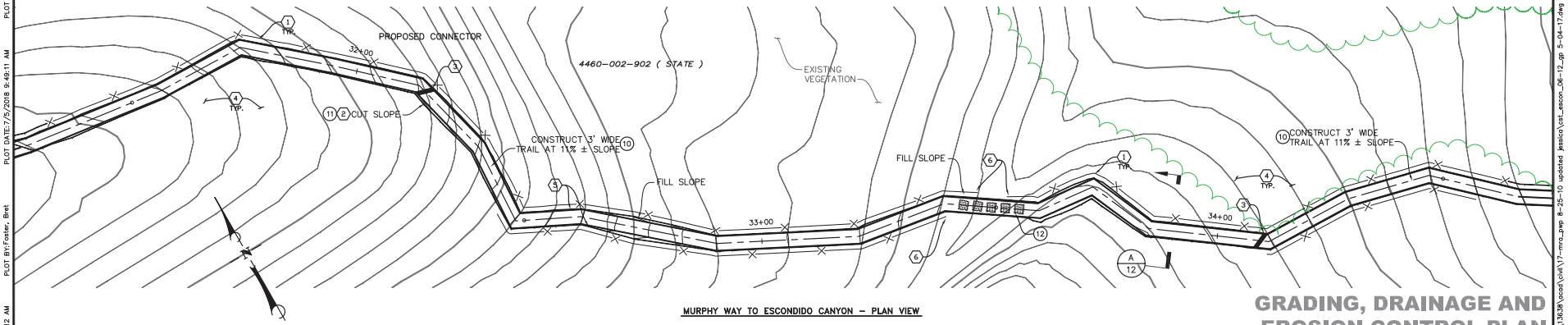

MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW

SCALE: 1"=10'
0 10 20 30 40

GRADING, DRAINAGE AND EROSION CONTROL PLAN

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

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REGISTERED PROFESSIONAL ENGINEER BRET FOSTER NO 48,267 CIVIL STATE OF CALIFORNIA

EC, GRADING AND DRAINAGE PLAN
TRAIL – STA 27+00 TO 34+00
MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 11 OF 16
PLAN DATE JULY 3, 2018

34-ENG SAVE DATE: 7/5/2018 9:43:12 AM PLOT BY: Foster, Bret PLOT DATE: 7/5/2018 9:49:11 AM PLOT SCALE: 1:10

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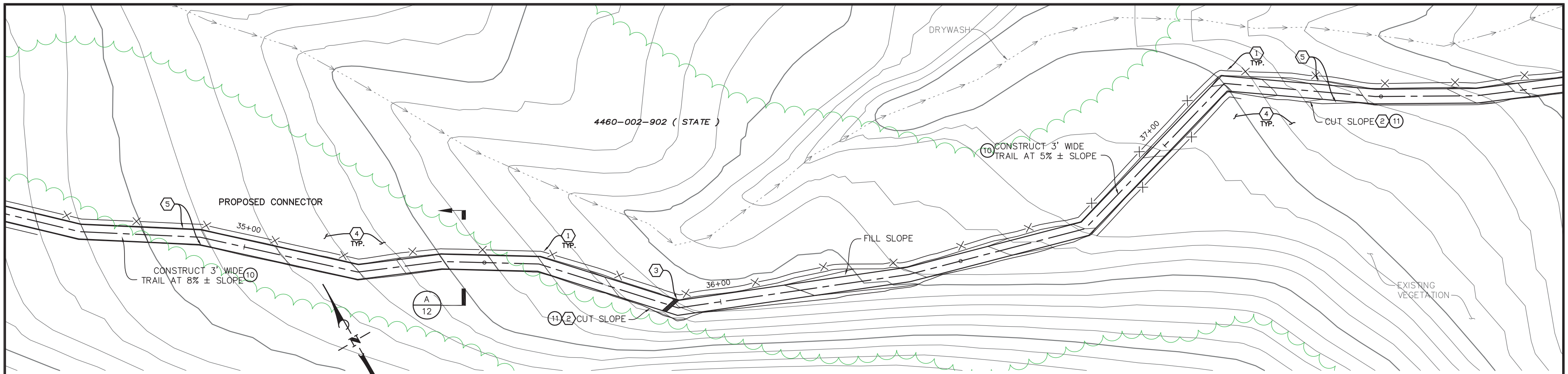

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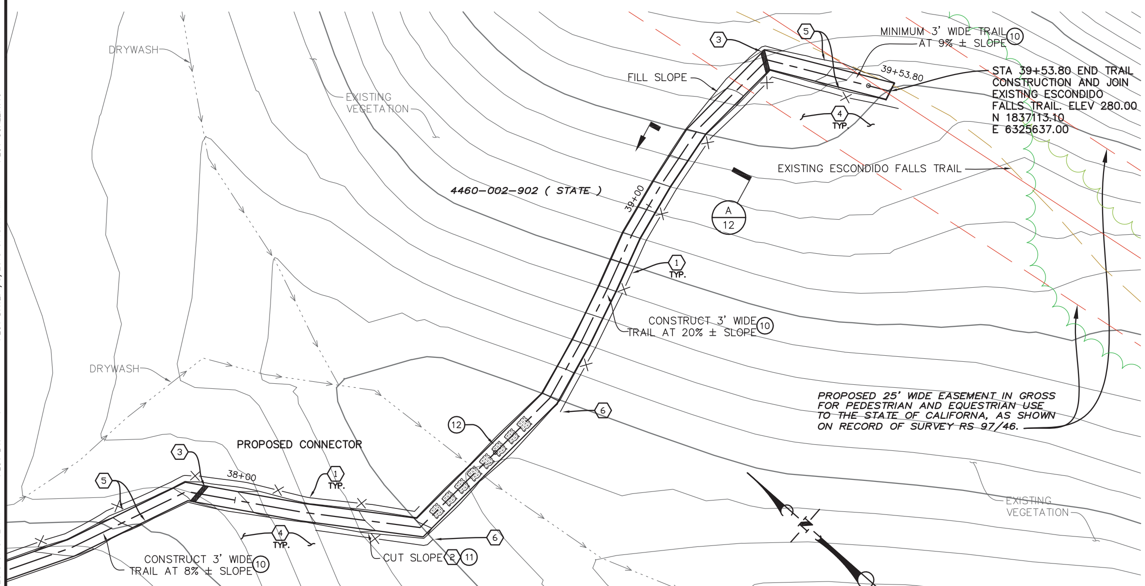

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PLOT SCALE:1:10
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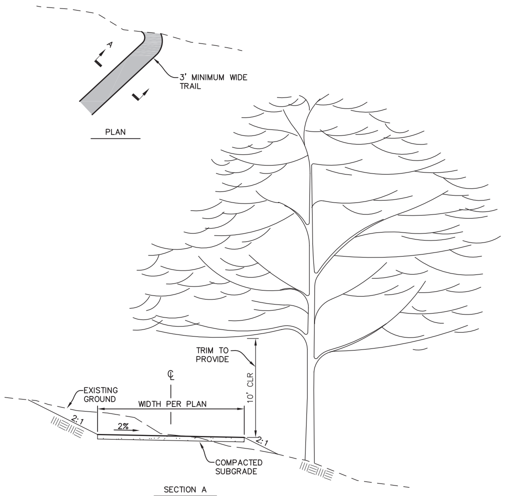
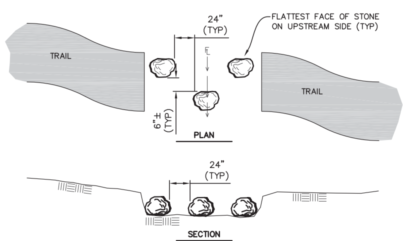
P&S PROJECT NO. 2064119400/13638.05
SHEET 12 OF 16
PLAN DATE JULY 3, 2018

DRAWING: v:\2064\active\2064013638\13638\acad\civil\17–mrca_pwp 8–25–10 updated jessica\cst_escon_06–12_gp 5–04–17.dwg

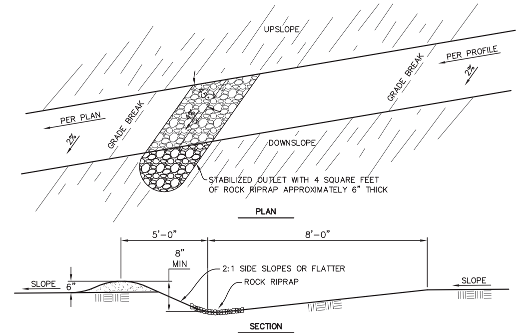


TYPICAL TRAIL (A)
SCALE: 1" = 2'



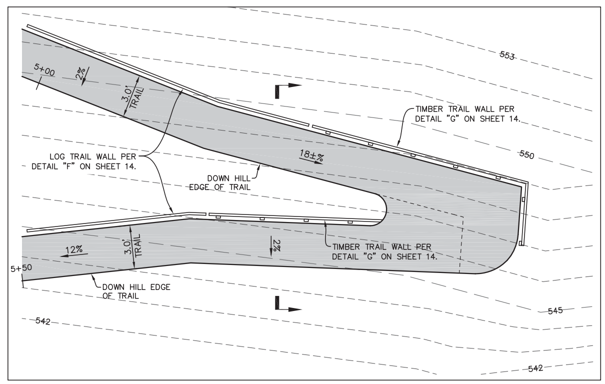
NOTE: HAND SELECTED STONES USED FOR CREEK CROSSINGS SHALL BE APPROXIMATELY 14" TO 18" IN DIAMETER AND PLACED DIAGONALLY ACROSS THE CREEK WITH 24" GAP BETWEEN STONES AND STAGGERED ACROSS THE CREEK. FLATTEST FACE OF STONE SHALL BE PLACED SUCH THAT THE FACE IS ON THE UPSTREAM SIDE. STONES SHALL BE EMBEDDED INTO CREEK MATERIALS TO PROVIDE A LEVEL STABLE STEPPING PLATFORM. STONES SHALL BE SELECTED AND PLACED SUCH THAT THE INTENDED PURPOSE IS ACHIEVED.

STEPPING STONE CROSSING (B)
N.T.S



NOTE: ROLLING GRADE DIPS SHALL BE MINIMUM 200'± ON CENTER. ROLLING GRADE DIPS SHALL ALSO BE LOCATED AT NATURAL DRAINAGE FEATURES TO ALLOW UNIMPEDED FLOW ACROSS THE TRAIL AND ALLOW THE NATURAL FLOW TO CROSS THE TRAIL AND RETURN INTO THE NATURAL CHANNEL.

ROLLING GRADE DIP (D)
N.T.S



PLAN
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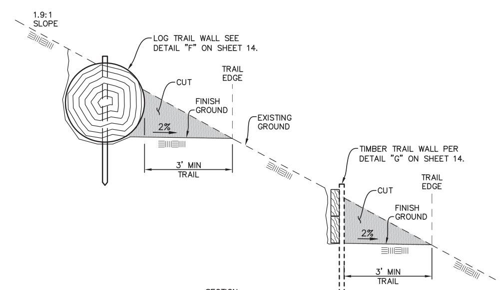

SECTION
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TYPICAL SWITCHBACK DETAIL (E)

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PLOT DATE:7/5/2018 9:47:09 AM
PLOT BY:Foster, Bret
34-ENG SAVE DATE: 7/5/2018 9:46:39 AM

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

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TRAIL AND GRADING DETAILS

MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 13 OF 16
PLAN DATE JULY 3, 2018

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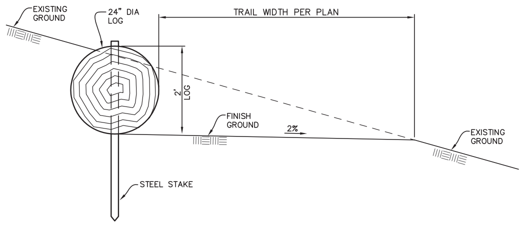

LOG TRAIL WALL F
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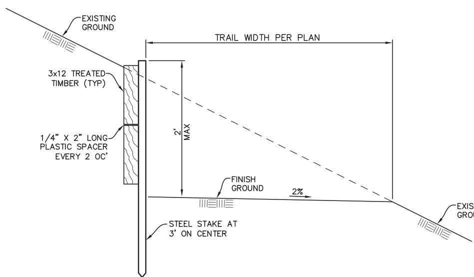

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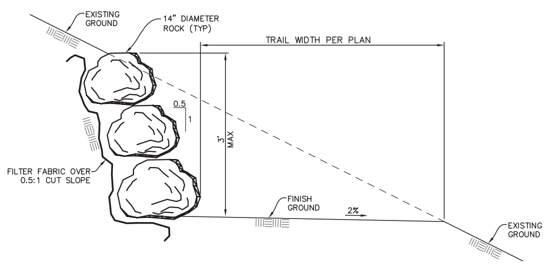

STACKED ROCK TRAIL WALL H
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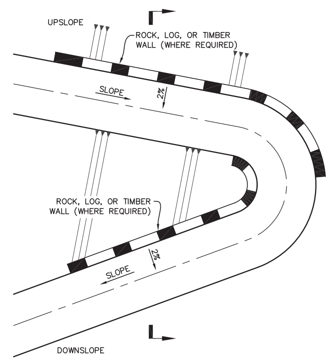

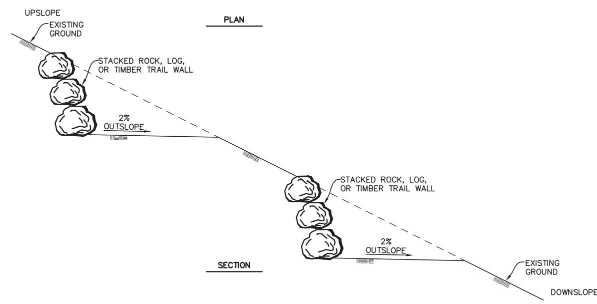

SECTION

TYPICAL CLIMBING TURN J
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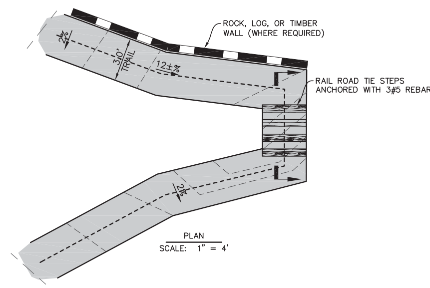

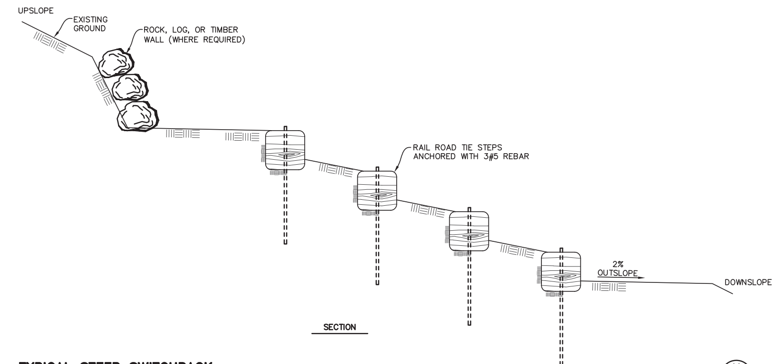

SECTION

TYPICAL STEEP SWITCHBACK K
N.T.S

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MALIBU, CALIFORNIA

P&S PROJECT NO. 13638.05
SHEET 14 OF 16
PLAN DATE JULY 3, 2018

PLOT SCALE:1:2.73 PLOT DATE:7/5/2018 9:46:14 AM PLOT BY:Foster, Bret SAVE DATE: 7/5/2018 9:44:56 AM 34-ENG

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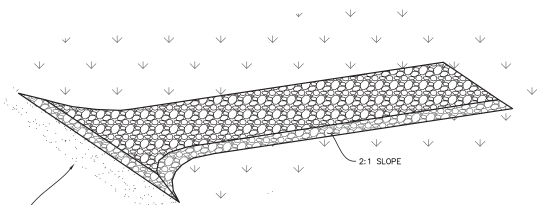

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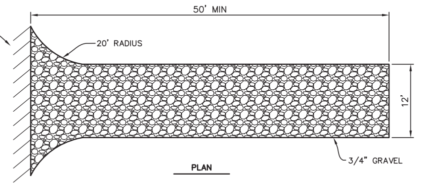
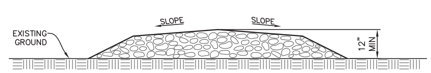


PLAN



SECTION

STABILIZED CONSTRUCTION ENTRANCE
N.T.S

L
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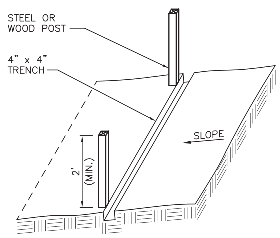

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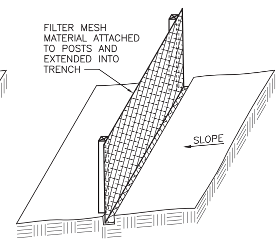
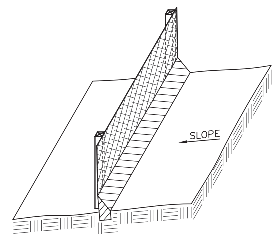
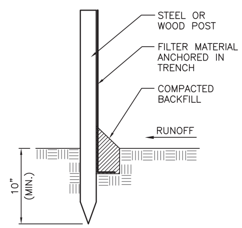


2 – INSTALL FILTER FABRIC



3 – BACKFILL TRENCH



4 – CROSS SECTION OF INSTALLED FILTER FABRIC

SILT FENCE GENERAL NOTES

SILT FENCE SHALL BE INSTALLED:

- WHERE NON-CONCENTRATED SHEET FLOW WILL OCCUR DOWNHILL FROM EARTH DISTURBING CONSTRUCTION
- WHERE PROTECTION OF ADJACENT PROPERTY OR "WATERS OF THE UNITED STATES" IS REQUIRED
- SUCH THAT THE SIZE OF THE DRAINAGE AREA IS NO MORE THAN 1/4 ACRE PER 100 LINEAR FEET OF SILT FENCE
- SUCH THAT THE MAXIMUM FLOW PATH LENGTH ABOVE THE BARRIER IS 100 FEET
- SUCH THAT THE MAXIMUM FLOW GRADIENT ABOVE THE BARRIER IS 2:1

INSTALLED SILT FENCE

SILT FENCE INSTALLATION
N.T.S

M

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES
0 1 2 3

The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing – any errors or omissions shall be reported to Stantec without delay.

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TRAIL AND GRADING DETAILS
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MALIBU, CALIFORNIA

P&S PROJECT NO. 13638.05
SHEET 15 OF 16
PLAN DATE JULY 3, 2018

PLOT SCALE:1:2.73 PLOT DATE:7/5/2018 9:45:06 AM PLOT BY:Foster, Bret SAVE DATE: 7/5/2018 9:44:56 AM 34-ENG

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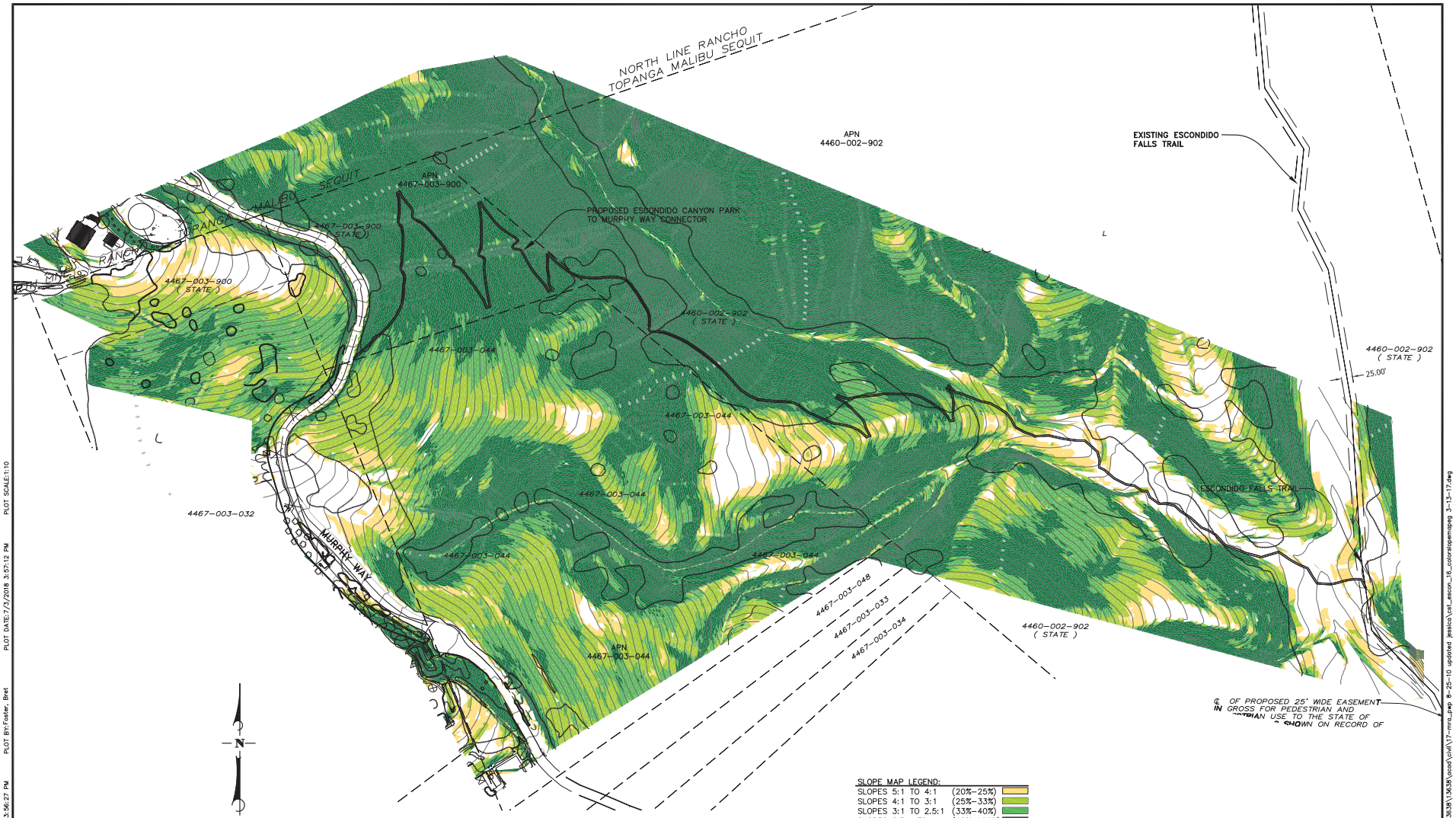

MURPHY WAY TO ESCONDIDO CANYON – PLAN VIEW

ESCONDIDO CANYON PARK TO MURPHY WAY CONNECTOR

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
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SLOPE MAP

MOUNTAINS RECREATION & CONSERVATION AUTHORITY
MALIBU, CALIFORNIA

P&S PROJECT NO. 2064119400/13638.05
SHEET 16 OF 16
PLAN DATE JULY 3, 2018

34-ENG SAVE DATE: 7/3/2018 3:56:27 PM PLOT BY:Foster, Bret PLOT DATE:7/3/2018 3:57:12 PM PLOT SCALE:1:10

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Andrew Forde

Wildlife Biologist

Mr. Forde has a research degree in wildlife biology read for at the University of St Andrews, Scotland and has a higher national certificate in biology read for at Stow College, Scotland. He has more than 14 years consulting experience in southern California primarily as a wildlife biologist. He has participated in research projects with the United States Geological Service, United States Fish and Wildlife Service, and California Department of Fish and Wildlife (CDFW), and has worked at University of California, Davis, Raptor Center. He has conducted countless surveys for special-status, threatened, and endangered species, written numerous biological reports and assessments, prepared and reviewed sections for CEQA documents, edited scientific papers for the United States Geological Survey, and has written communications for press release. He has also conducted botanical surveys, delineated wetlands, prepared reports, Section 404 and 401 applications, and Section 1600 Streambed Alteration Agreements.

He has held permits authorizing take of more than 10 threatened and endangered species. His current 10(a)(1)(A) Federal Fish and Wildlife Permit, TE-062907-8, authorizes take of quino checkerspot butterfly, southwestern willow flycatcher, least Bells vireo, and California gnatcatcher throughout their range. Federal Bird Marking Permit 23529 authorizes capture, banding, and marking of willow flycatcher. CDFW Memorandum of Understanding (MOU) 3-6-2012 and Scientific Collectors Permit (SCP) SCP-3750 authorize the above activities and authorization to take willow flycatcher and trap and sacrifice brown-headed cowbirds for the purpose of enhancing the survival of threatened and endangered species. CDFW SCP-3750 also authorizes survey and capture of invertebrates, reptiles, amphibians, birds, and mammals using a variety of techniques, including pitfall. CDFW MOU also authorizes capture of bats using mist nets, hand-held nets, and harp traps. He also uses acoustical equipment and sophisticated software to identify bats.

Forde
BIOLOGICAL CONSULTANTS

Education

Bachelor of Science, Honors, Biology, St Andrews University, Scotland, 1997

Higher National Certificate, Biology, Stow College, Scotland, 1993

Permits

10(a)(1)(A) Federal Fish and Wildlife Permit, TE-062907-6, authorizes take of quino checkerspot, southwestern willow flycatcher, least Bells vireo, and California gnatcatcher throughout their ranges.

CDFW Memoranda of Understanding, dated March 2012, authorizes take of willow flycatcher, least Bells vireo, and California gnatcatcher throughout the state.

Federal Bird Marking Permit, 23529, authorizes capture, banding, and marking of southwestern willow flycatcher.

CDFW Memoranda of Understanding, dated March 2012, authorizes take of bats throughout California.

CDFW Memorandum of Understanding, dated March 2012, authorizes trapping and sacrifice of brown-headed cowbirds.

CDFW Scientific Collectors Permit, SCP-3750, authorizes activities listed in the above permits and MOU and includes authorizations to survey and capture invertebrates, reptiles, amphibians, and mammals for the purpose of identification.

Special Training

Flat-tailed Horned Lizard, Bureau of Land Management, 2014

Bat Capture & Handling, National Trust Scotland, August 2012

Bat Ecology, Survey Techniques, & Guidelines, National Trust Scotland, August 2012

Yellow-Billed Cuckoo, Southern Sierra Research Station, June 2012

Bat Conservation and Management, Bat Conservation International, May 2012

Raptor Research Conference (Scotland), Raptor Research Foundation, October 2009

Bat Ecology & Identification, The Wildlife Society, August 2004

Bat Ecology, Identification, & ANABAT, Michael O'Farrell & Chris Corben, June 2004

Ecology of Vernal Pool Grasslands, University of California, Davis, 2004

Southwestern Willow Flycatcher, The Southern Sierra Research Group, May 2004

Sensitive Butterflies of San Diego County, Faulkner & Klein, 2003

California Branchiopod, Mary Belk, 2003

Sensitive Reptiles & Amphibians, The Wildlife Society, 2003

Invertebrates

Mr. Forde has held permits authorizing take of at least 8 threatened and endangered invertebrates. His primary focus is butterflies. He has attended workshops hosted by the San Diego Natural History Museum and by Faulkner and Klein, studied specimens at museums, and has taken and passed the US Fish and Wildlife Service quino checkerspot butterfly exam on all three occasions that he has taken it. The exam requires the taker to be able to identify approximately 40 species of co-occurring butterfly. He has also passed the services branchiopod exam on multiple occasions, which requires the taker to be able to identify all 27 species that occur in California. He has conducted surveys for threatened and endangered invertebrates in San Diego, Riverside, San Bernardino, and Ventura counties, and has assisted the USFWS in support of their long-term monitoring efforts of endangered and threatened species.

Reptiles & Amphibians

Mr. Forde has attended several workshops that focused upon ecology, life history, and distribution of reptiles and amphibians. His SCP authorizes take of numerous reptiles and amphibians for the purpose of identification. He has conducted surveys for reptiles in Imperial, San Diego, Orange, Riverside, San Bernardino, Ventura, Los Angeles, Santa Barbra, Kern, and other counties. He has detected numerous special-status species during these surveys including southwestern pond turtle, San Diegan tiger whiptail (100s of individuals), southern California legless lizard (100 of individuals), coast-horned lizard, San Bernardino ringneck snake, San Diego Mountain kingsnake, two-striped garter snake, south coast garter snake, western spadefoot, arroyo toad, and California red-legged frog.

Birds

Mr. Forde's Federal Fish and Wildlife Permit, CDFW MOU, and SCP authorize take (survey, locate nests, monitor nests, and remove brown-headed cowbird eggs and chicks from parasitized nests) of southwestern willow flycatcher, least Bell's vireo, and California gnatcatcher. Federal Bird Marking Permit, 23259, authorizes him to capture, band, and mark southwestern willow flycatcher. He has conducted surveys for flycatcher on Castaic Creek, Santa Clara River, San Francisquito Creek, San Gabriel River, Santa Ana River, Rio Hondo, Whittier Narrows, Salinas River,

Lower Colorado River, the Bill Williams River, the Gila River, the All American Canal, Imperial National Wildlife Area, Mittry Lake Wildlife Area, Bill Williams River National Wildlife Refuge, and Havasu National Wildlife Refuge among numerous smaller rivers, creeks, and wetlands. He has monitored their nests to determine reproductive success and collect other pertinent data and has captured individuals using calls and mist nets for the purpose of banding them, and collecting blood and feather samples for DNA analysis. He has conducted surveys for least Bell's vireo on Castaic Creek, the Santa Clara River, San Francisquito Creek, San Gabriel River, Santa Ana River, Rio Hondo, Whiitier Narrows, and Salinas River among numerous smaller rivers and creeks. He has conducted surveys for California gnatcatcher throughout San Diego, Orange, Riverside, San Bernardino, Ventura, and Los Angeles counties. He has found at least one nest in every territory established by these species in the areas that he has surveyed. His SCP also authorizes take (survey, locate nests, monitor nests) of burrowing owl. He has conducted surveys for burrowing owl in Imperial, San Diego, Orange, Riverside, San Bernardino, Ventura, and Los Angeles counties. He has observed hundreds of individuals and nest burrows.

Small Mammals

Mr. Forde has attended workshops hosted by Bat Conservation International, Michael O'Farrell, Chris Corben, The Wildlife Society, The Desert Institute, and the National Trust for Scotland that focused upon the ecology and identification of small mammals. He has conducted surveys for small mammals throughout southern California using a variety of methods to identify them including trapping, spotlighting, scent/track stations, and camera stations. He has also conducted surveys in Arizona, Nevada, Utah, and the west coast of Scotland using mist-nets, hand-held nets, harp traps, to capture and identify bats. He has captured and identified numerous special-status species including western small-footed myotis, long-eared myotis, fringed myotis, long-legged myotis, silver-haired bat, western red bat, pallid bat, greater bonneted bat, and state candidate, Townsend's big-eared bat. He also uses acoustical equipment and analytical software to identify bats using full spectrum, heterodyne, frequency-division, and time-expansion, and conducts emergence surveys using spotlights, infrared lights (IRLamp6), and night-vision cameras (Sony Night Shot, Samsung Nite Lite).

Special Training

Giant Garter Snake, The Wildlife Society, 2003

Blunt-Nosed Leopard Lizard Survey Technique & Identification, The Wildlife Society, 2003

Owl Survey Techniques, Kern River Preserve, 2002

Desert Tortoise Survey and Handling Workshop, The Desert Tortoise Council, November 2002

Desert Mammals, The Desert Institute, 2002

Desert Birds, The Desert Institute, 2002

Desert Reptiles & Amphibians, The Desert Institute, 2002

Springtime Desert Butterflies, San Diego Natural History Museum, 2002

Flat-tailed Horned Lizard, Bureau of Land Management, 2001

Arroyo Toad Handling Techniques, Authorized by U.S. Fish and Wildlife Service, 2001

Burrowing Owl Ecology, University California Davis, Raptor Center, 1999

Raptor Capture & Handling Techniques, University California Davis, Raptor Center, 1999

Bird Banding & Species Identification, Ventana Wilderness Sanctuary, 1998

Special Training

Environmental Law Conference, The State Bar of California, October 2014

Environmental Law Conference, The State Bar of California, October 2006

Advanced Wetland Delineation, Richard Chinn Environmental, 2003

Navigating Federal & State Permits for Developments in Waters of California, University of California Los Angeles, 2002

Wetland Delineation & Management, Richard Chinn Environmental, 2002

The Basics of the California Environmental Quality Act, Association of Environmental Professionals, 2002

Botanical Surveys

Mr. Forde has held CDFW State-Listed Plant Collection Permits authorizing him to collect state listed endangered, threatened, and rare plants in California. He has conducted botanical surveys in Imperial, San Diego, Orange, Riverside, San Bernardino, Los Angeles, Ventura, and Santa Barbra counties. He has observed numerous special-status, rare, threatened, and endangered species including Catalina mariposa lily, slender mariposa lily, Plummer's mariposa lily, Lewis's evening primrose, southern tarplant, San Fernando spineflower, Parry's spine-flower, Santa Susana tarplant, Agoura Hills dudleya, Santa Monica Mountains dudleya, Conejo dudleya, Conejo buckwheat, and Lyon's pentachaeta,

Wetland Delineation

Mr. Forde has attended basic and advanced wetland delineation workshops and attended courses hosted by the University of California, Los Angeles that focused on federal and state permitting for development in waters of California. The workshops focused on the application of the 1987 Wetland Delineation Manual and Regional Supplements used by the Army Corps of Engineers. During the workshops and courses, he gained valuable knowledge and experience of technical guidelines for wetland delineation, regional supplement field indicators for hydrophytic vegetation, hydric soils, and wetland hydrology, methods for making jurisdictional determinations, and the permitting process. Since that time, he has delineated streams and wetlands in Orange, Riverside, San Bernardino, Ventura, and Los Angeles counties including major portions of the Santa Clara River and the Ballona Wetlands. He has also prepared Section 404 (US Army Corp of Engineers), Section 401 (Regional Water Quality Control Board), and Section 1600 Streambed Alteration Agreement (CDFW) applications.

Research Experience

Central Valley Habitat Joint Venture, California Department of Fish and Wildlife, Sacramento County, CA, 1999-2001

Participated in research that sought to identify habitat use by a range of waterfowl species including northern pintail, green-winged teal, mallard, and white-fronted geese. Responsibilities included capture using rocket-fired nets and box traps, age and sex classification, attaching transmitters, and tracking movements using aerial and land based telemetry techniques.

United States Geological Survey, Yolo County, CA and California Department of Fish and Wildlife, Sacramento County, CA 1999 - 2001

Participated in research specifically aimed at developing a reliable methodology to index the Pacific Coast population of band-tailed pigeons and to document behavior associated with mineral gravelling and its relationship to nest site selection and nest success. Responsibilities included capture using rocket-fired nets and box traps, age and sex classification, attaching transmitters, tracking movements, and locating nests using aerial and land based telemetry techniques. Location data was determined by triangulation and by the use of Remote Data Systems, Global Positioning Systems, and Geographic Information Systems.

Big Sur Ornithology Laboratory & California Condor Recovery Program, Monterey County, CA, 1997-1998

Collected data related to demographic parameters, reproductive success, survival, and migration of riparian birds. Responsibilities included capture using mist-nets, species identification, age and sex classification, measuring morphological characteristics, behavioral observations, point counts, territory mapping, and habitat assessment. Responsibilities to the condor program included pre-release conditioning, release, tracking movements using land based telemetry techniques, trapping and handling for replacement of radio transmitters, and collecting blood samples, and assisting with the supplemental feeding program.

Forde
BIOLOGICAL CONSULTANTS

Jessica Nguyen
Mountains Recreation and Conservation Authority
5810 Ramirez Canyon Road
Malibu, California 90265

May 10, 2016

RE - Raptor Survey - Ramirez Canyon Park to Escondido Falls Trail, Malibu, California

Andrew McGinn Forde of Forde Biological Consultants conducted a raptor survey along the proposed Ramirez Canyon Park to Escondido Falls Trail (see Exhibit A) on April 28, 2016 between 7:00 am and 1:00 pm. Amy Plesetz conducted a follow up survey on April 29, 2016 between 8:00 am and 2:00 pm. The biologists conducted the raptor survey using binocular and spotting scopes from vantage points along Murphy Way and then by dropping down into Ramirez Canyon Park and into Escondido Canyon Park. The vantage points along Murphy Way provided the best opportunities to observe raptors flying in the vicinity of the trail and their behaviors. The biologists observed 4 large stick nests during the survey (see table and narrative below).

On April 28, 2016, Andrew McGinn Forde observed a pair of red-tailed hawks (*Buteo jamaicensis*) flying approximately 1500 feet north of the trail near three transmission towers owned by Southern California Edison. The biologist observed a large stick nest and two ravens (*Corvus corax*) on one of the towers. Both ravens took flight and chased the hawks to the north and then returned to the tower. One of the individuals landed on the edge of the nest, entered it, and assumed a posture indicative of incubating eggs or brooding nestlings. Amy Plesetz conducted additional observations on April 29, 2016 and confirmed that the ravens were either incubating or brooding. It is likely that red-tailed hawks have occupied this nest in previous years. The nest is located approximately 1800 feet from the proposed trail at UTM 334985E, 3768746N. On April 28, 2016, Andrew McGinn Forde also observed a red-tailed hawk land on a wooden power pole on Murphy Way, approximately 1000 feet from the proposed trail. The hawk carried nest material. After approximately 5 minutes the hawk took flight, heading northwest. It flew over the proposed trail and then turned northeast directly toward Escondido Falls; however, the biologist lost sight of the individual due to being distracted by inquisitive hikers. The hawk returned some time later and landed on the same power pole. After about 30

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minutes it took flight and headed straight toward Escondido Falls. Based on the observations and the availability of suitable ledges located at the falls, the biologist predicted that the individual was either building a nest or adding fresh material to an existing nest at or near the falls. On April 28, 2016, Amy Plesetz descended from Murphy Way into Escondido Canyon and followed Escondido Falls Trail to the falls. The biologist observed a red-tailed hawk sitting on a large stick nest on the west side of the falls and appeared to be either incubating eggs or brooding nestlings. The nest is located approximately 1750 feet from the proposed trails intersection with Escondido Falls Trail at UTM 335684E, 3768359N. On April 28, 2016, Andrew McGinn Forde also observed an old stick nest within Ramirez Canyon Park in a pine tree that appears to be dead. Based on location, position, size of the nest, and the materials used in its construction, it is likely that hawks built it. The nest appeared disheveled. Given the presence of duff, cobwebs, lack of fresh nest materials, and other indicators, it is likely that it has not been used for some time. The nest is located approximately 150 feet from the proposed trail at UTM 334384E, 3767864N. The biologist also observed a red-tailed hawk near the entrance of the park; ravens were chasing it. It is likely that at least one pair of red-tailed hawks nest in the lower parts of Ramirez Canyon. On April 29, 2016, Amy Plesetz also observed a large stick nest near the proposed trails intersection with Escondido Falls Trail. Based on location, position, and size of the nest, and materials used in its construction, it was likely built by Cooper's hawk (*Accipiter cooperii*); however, the biologist did not observe any activity at the nest after a 30-minute period of observation. The nest is located approximately 100 feet from the proposed trail at UTM 335783E, 3767782N.

Date	Species	Easting	Northing	Observers
April 28, 2016	Common Raven	334985E	3768746N	Andrew McGinn Forde, Amy Plesetz
April 28, 2016	Old & Abandoned (?)	334384E	3767864N	Andrew McGinn Forde
April 29, 2016	Cooper's hawk (?)	335783E	3767782N	Amy Plesetz
April 29, 2016	Red-Tailed Hawk	335684E	3768359N	Amy Plesetz

It is unlikely that cutting of the proposed trail would have a direct affect upon raptors or their nests; however, its construction and use of the trail could indirectly affect them. Cooper's hawks are very territorial and will attack humans within 100 feet of their nests (personal experience) keeping them from their normal duties, which could ultimately affect the outcome of a nest. It is our opinion that a biologist should monitor the proposed trail cutting activities occurring near the woodland areas particularly in areas with known raptor nests. Monitoring should be conducted regardless of the timing of the proposed trail cutting activities. Increased traffic along Escondido Falls Trail may also affect raptor nests including the red-tailed hawk nest located on the west side of the falls particularly by hikers that like to climb. A fence should be installed at he base of the falls that reduces/limits the potential for hikers to climb them and disturb the nest. It is likely that red-tailed hawks have a historical use of the falls. The biologists also observed numerous passerines carrying nest material, food items, fecal sacs, and behaviors indicative of nesting along the majority of the proposed trail. The proposed project has potential to directly affect passerine nests.

The Migratory Bird Treaty Act protects the majority of migratory birds breeding in the US. The Act specifically states that it is illegal "… for anyone to take … any migratory bird … nests, or eggs."[1] "Take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.[2] The California Fish & Game Code protects the nest or eggs of all birds and specifically states, "that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird."[3] The Code defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."[4]

The California Department of Fish and Wildlife recognizes the breeding season in southern California as generally occurring between February and September; however, a number of species can nest outside this timeframe.[5] For example, Anna's hummingbird (*Calypte anna*) nests mid-December to mid-August, barn owl (*Tyto alba*) nests from January through November, great-horned owl (*Bubo virginianus*) nests mid-January through June, and mourning dove (*Zenaida macroura*) typically nests February to September but can nest year round.[6] These species were detected by the biologists during the survey or are expected to occur. In addition to Cooper's hawk, other special-status species detected during the survey with potential to nest along the proposed trail include Allan's hummingbird (*Selasphorus sasin*), which typically nests February - August, oak titmouse (*Baeolophus inornatus*), which typically nests March to July, Nuttall's woodpecker (*Picoides nuttallii*), which typically nests March - July, and southern California rufous-crowned sparrow (*Aimophila ruficeps*), which typically nests March - September. Long-eared owl (*Asio otus*), which typically nests March - July also has potential to occur.

It is the biologist's opinions that the trail should be cut between October and January when the potential for nesting birds is much less likely. Cutting the trail at any other time will undoubtedly affect the outcome of nests because it is highly likely that even a repetitive pre-construction nesting bird survey by the most qualified of biologists would fail to detect all nests; the habitat is just to dense.

Sincerely,

Andrew McGinn Forde

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1 16 U.S.C. §§ 703-712, Migratory Bird Treaty Act of 1918 as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989
2 50 C.F.R. § 10.12
3 CAL. Fish & Game Code § 3503
4 CAL. Fish & Game Code § 86
5 CAL. Fish & Wildlife, Personal Communication, 2012
6 CAL. Fish & Game, Wildlife & Habitat Data Analysis Branch, California's Wildlife, Volume II: Birds, 1988 – 1990, Paul J. Baicich and J. O. Harrison. A Guide to the Nests, Eggs, and Nestlings of North American Birds, 1997. Harrison, C. A Field Guide to the Nests, Eggs and Nestlings of North American birds, 1978

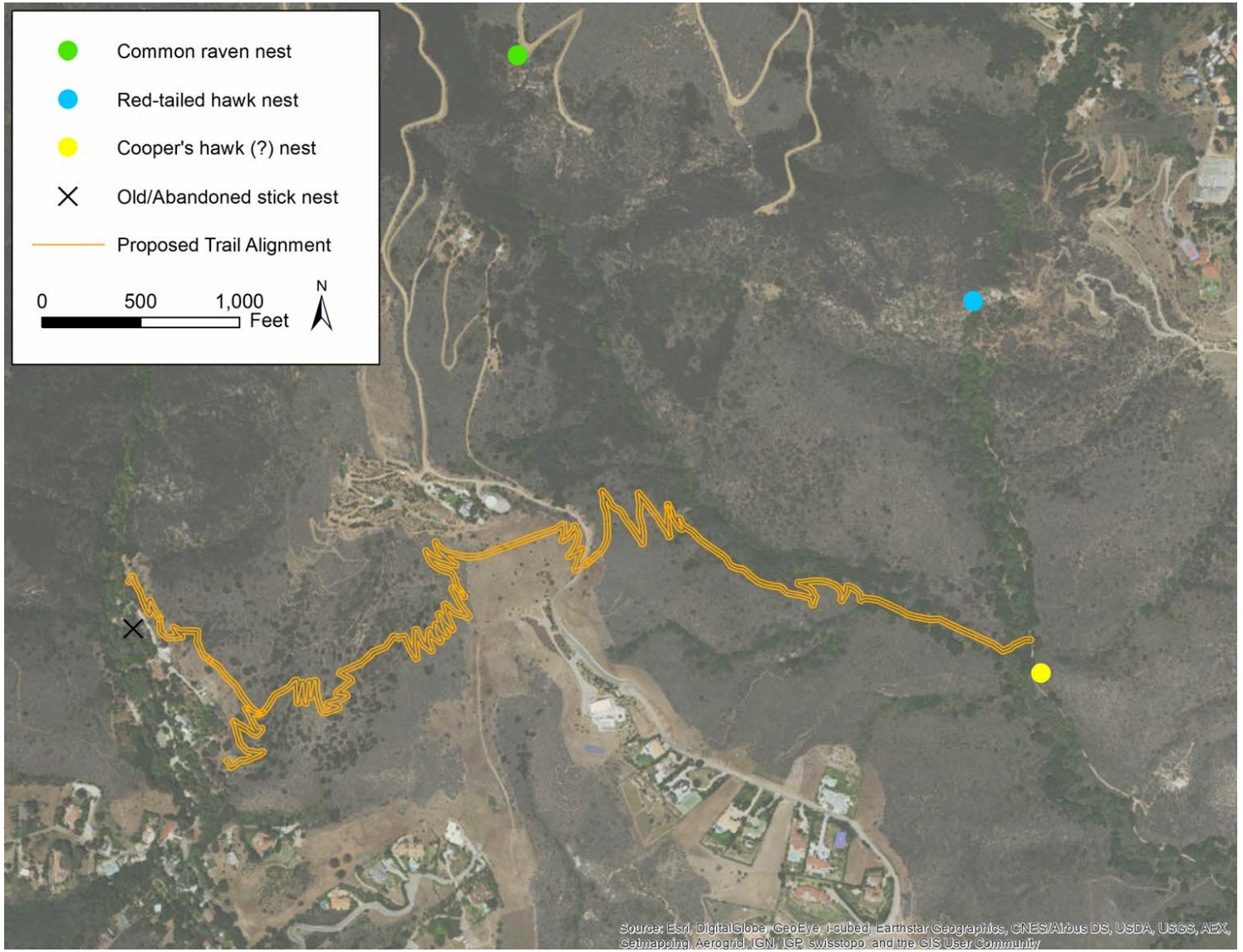

Exhibit A - Proposed Trail Alignment & Raptor Nest Locations

Forde
BIOLOGICAL CONSULTANTS

Jessica Nguyen
Mountains Recreation and Conservation Authority
5810 Ramirez Canyon Road
Malibu, California 90265

June 3, 2016

RE - Rare Plant Survey - Ramirez Canyon Park to Escondido Falls Trail, Malibu, California

LOCATION

The Mountains Recreation and Conservation Agency (MRCA) proposes construction of a recreational trail between Ramirez Canyon Park and Escondido Falls Trail and requested that Forde Biological Consultants conduct a rare plant survey. Exhibit A depicts the location of the proposed trail.

DESKTOP REVIEW

Before conducting the survey, biologist, Dr. Edith Read reviewed maps, documents, and a number of other resources including -

1. Aerial photographs, topographic maps, and excerpts from reports documenting biological resources within the general area that were provided by the MRCA,

2. The California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (IREP) to identify special-status plant species known to occur at, adjacent, or near the trail and to identify those that could potentially occur,[1]

3. The California Natural Diversity Database (CNDDB), Rarefind 5, and the Biogeographic and Observation System (BIOS) to identify special-status species known to occur at or near the property and to identify those that could potentially occur.[2]

1 California Native Plant Society, 2016, Inventory of Rare and Endangered Plants
2 CAL. Fish & Wildlife, Wildlife & Habitat Data Analysis Branch, California Natural Diversity Database, Accessed April 2016

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4. The list of "Special Vascular Plants, Bryophytes, and Lichens",[3]

5. The list of "State and Federally Listed Endangered, Threatened, and Rare Plants of California",[4] and

6. The USFWS, Sacramento Office's "Proposed and Candidate Species" system.[5]

The CNPS IREP tracks the status of hundreds of plant species and includes information on the distribution, ecology, and conservation status of California's rare, threatened, and endangered plants. The CNPS data are widely accepted as the standard for information on the status of the flora of California. The CNPS recognizes more than 1600 plant taxa (species, subspecies and varieties) as rare, threatened, or endangered in California, more than 500 additional species that have limited distribution, and approximately 55 additional species for which the CNPS needs more information.

The IREP also contains information on approximately 25 species presumed to have become extinct in California in the last 100 years. The CNDDB is part of a nationwide network overseen by NatureServe. The CNDDB includes Rarefind 5 and BIOS, which include locations and natural history information on special-status plants species and natural communities throughout California. The data help drive conservation decisions, aid in the environmental review of projects and land use changes, and provide baseline data helpful in recovering rare, threatened, and endangered species. The goal of the CNDDB is to provide the most current information available on the state's most imperiled elements of natural diversity and to provide tools to analyze these data.

The species included on the CNPS IREP, CNDDB, and the above referenced lists are considered to be those of greatest conservation need and are commonly referred to as special-status species and include those protected by the State Endangered Species Act,[6] the Federal Endangered Species Act,[7] the California Fish and Game Code,[8] and fully protected species.[9] The biologist conducted the CNDDB, Rarefind 5, BIOS, and IREP reviews by searching the U.S. Geological Service's 7.5-minute quadrangles of Beverly Hills, Calabasas, Camarillo, Canoga Park, Malibu Beach, Moorpark, Newbury Park, Oak Mountain, Point Dume, Point Mugu, San Fernando, Santa Paula, Santa Susana, Simi, Thousand Oaks, Topanga, Triunfo Pass, and Van Nuys to determine special-status species known to occur in the region. These 16 quadrangles cover the entire Santa Monica Mountains and areas well to the north, east, and west of the mountain range.

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3 CAL. Fish & Wildlife, Special Vascular Plants, Bryophytes, & Lichens, October 2015
4 CAL. Fish & Wildlife, State & Federally Listed Endangered, Threatened, & Rare Plants of California, April 2016
5 US Fish and Wildlife Service, Sacramento Fish & Wildlife Office, Proposed & Candidate Species, Threatened & Endangered Species System, Accessed April 2016
6 CAL. Fish & Game Code §§ 2050-2097
7 16 U.S.C. §§ 1531-1544
8 CAL. Fish & Game Code §§ 3511, 4700, 5050, & 5515
9 CAL. Fish & Game Code §§ 3511, 4700, 5050, & 5515

METHODS

The MRCA provided the biologists a shapefile containing data location for the proposed trail. Using Trimble Positions software in GIS, the biologists transferred the shapefile to the ArcGIS mobile platform on a Trimble Geo7x hand-held GPS. This provided real-time position of the biologist relative to the proposed trail route.

Dr Edith Read conducted surveys on April 28 and May 2, 2016. Some sections of trail were not accessible due to steep terrain, dense vegetation, or extensive understory of poison oak (Escondido Canyon). In these sections, the trail route was observed using binocular for indicators of unique habitat features with potential to support special status taxa (e.g. stands of ferns or moss). The spring season of 2016 followed a relatively dry winter and therefore it was expected that rare plants, if present, could be either vegetative or past flowering when the surveys were conducted. Therefore the surveys were conducted with an expectation that plants could be found at any stage of growth, not just the flowering stage. A buffer zone of about 20 feet from both sides of the proposed trail route was surveyed in order to provide full coverage in the event that changes in the route occur.

RESULTS

The database reviews revealed that there are no known occurrences of special-status plant species along or immediately adjacent to the trail route; however, there is a population of Parry's spineflower (*Chorizanthe parryi* var. *parryi*) approximately one air mile from the proposed trail route. Exhibit B includes a CNDDB overlay depicting the nearest known occurrence of a special-status plant species.

Plant communities observed by the biologist along the proposed trail route consisted of Non-Native Annual Grassland adjacent to Murphy Way, which is subject to routine fuel modification and weed abatement, Purple Sage Scrub on the slopes below the weed abated areas and fuel modification zones of the single-family residencies located along Murphy Way, and Oak-Sycamore Woodland in Escondido and Ramirez canyons. No rare plants were observed during the surveys. Table 1 provides a list of plant species observed during the surveys.

RECOMMENDATIONS

Although the biologist did not observe special-status plant species during the surveys, negative survey results do not necessarily mean that they are absent from the survey area particularly given that a number of areas were inaccessible. This calendar year was also relatively poor for detecting rare plants.

1. The biologist observed several non-native weed species along and adjacent the proposed trail route including thistle (*Centaurea melitensis*) and carnation weed (*Euphorbia terracina*) in the more open, fuel-modified and weed abated areas on either side of Murphy Way. English ivy (*Hedera helix*) also occurs in Escondido Canyon and castor bean (*Ricinis communis*) and garden nasturtium (*Tropaeolum majus*)

occur in Ramirez Canyon Park. The California Invasive Plant Council (Cal-IPC) recognizes some of these species to be highly invasive.

a. The highly invasive species should be removed before, where possible, and during construction of the proposed trail.

b. The highly invasive species should be removed by cutting them at their base, placing the parts immediately in bags or other suitable container, and then by removing their roots.

c. If thistle or castor bean are in seed, the seed shall be removed first and bagged, and then the remainder of the plant. Seed that has fallen on the ground shall also be collected and bagged.

d. Care should be taken to thoroughly clean all tools, equipment, and clothing of personnel working in these areas to avoid carrying propagules (seeds, stem pieces) of these weeds into undisturbed scrub and woodland habitats.

e. All plant parts and seed shall be taken to an appropriate landfill site.

f. The completed trail will likely require ongoing maintenance to keep these and other weeds from expanding across these canyons. Trail maintenance activities should include a focus on the removal of highly invasive non-native species.

2. Some special-status species respond favorably when shrub overstory is removed by disturbance or fire.

    a. After the trail is constructed, but before the trail is opened to the public, a qualified botanist should survey the trail during spring to re-evaluate the probability that rare plants could be impacted by recreational use of the trail.

    b. If rare plants are found and determined to be vulnerable by the botanist they should recommend suitable avoidance and/or mitigation measures. These measures could include re-routing of a trail section or salvage/relocation of the population to an area that is protected from future disturbance.

3. California sycamore (*Platanus racemosa*), California black walnut (*Juglans californica*), and California live oak (*Quercus agrifolia*) are located in Ramirez Canyon Park and Escondido Canyon. The County of Los Angeles and the City of Malibu protect these species.

a. The proposed trail shall be routed so that it avoids the removal of trees and trimming of major limbs.

b. A qualified arborist should conduct a tree survey to determine the exact locations of protected trees in relation to the proposed trail route, make recommendations for avoidance, and for any necessary work to ensure the health and safety of any trees that are encroached, and any measures necessary to reduce and/or remove potential safety hazards posed by any trees.

Sincerely,

Andrew McGinn Forde

Table 1. Plant Species Observed

Asterisk (*) indicates taxon not native to California

Latin Name	Common Name
DICOTS	**FLOWERING PLANTS**
Adoxaceae	**Muskroot Family**
Sambucus nigra L.subsp. *caerulea* (Raf.) Bolli	blue elderberry
Anacardiaceae	**Sumac Family**
Malosma laurina (Nutt.) Abrams	laurel sumac
Toxicodendron diversilobum (Torrey & A. Gray) E. Greene	poison oak
Apiaceae	**Carrot Family**
Foeniculum vulgare Mill.*	fennel
Araliaceae	**Ginseng Family**
*Hedera helix**	English ivy
Asteraceae	**Sunflower Family**
Artemisia californica Less.	California sagebrush
Artemisia douglasiana Besser	mugwort
Baccharis pilularis DC.	coyote brush
Centaurea melitensis L.*	Maltese star thistle
Deinandra fasciculata(DC.) Greene	common tarplant
Encelia californica Nutt.	coast sunflower
Hazardia squarrosa (Hook. & Arn.) Greene var. *grindelioides* (DC) W.D. Clark	saw-toothed goldenbush
Malacothrix saxatilis (Nutt.) Torrey & A. Gray	cliff aster
Bignoniaceae	**Bignonia Family**
Campsis radicans (L.) Bureau*	trumpet creeper
Brassicaceae	**Mustard Family**
Hirschfeldia incana (L.) Lagr.-Fossat*	wild mustard, shortpod mustard
Chenopodiaceae	**Goosefoot Family**
Salsola tragus L.*	Russian thistle, tumbleweed
Convolvulaceae	**Morning Glory Family**
Calystegia macrostegia (Greene) Brummitt ssp. *cyclostegia* (House) Brummit	wild morning glory
Euphorbiaceae	**Spurge Family**
Euphorbia terracina L.*	Geraldton carnation weed
Ricinis communis L.*	castor bean
Lupinus sp.	unidentified lupine
Fagaceae	**Oak Family**
Quercus agrifolia Nee	live oak
Quercus berberidifolia Liebm.	scrub oak
Juglandaceae	**Walnut Family**
Juglans californica S. Watson	California black walnut

Lamiaceae	**Mint Family**
Salvia leucophylla Greene	purple sage
Salvia mellifera E. Greene	black sage
Malvaceae	**Mallow Family**
Malva parviflora L.*	cheeseweed
Nyctaginaceae	**Four-O'Clock Family**
Mirabilis laevis (Benth.) Curran var. *crassifolia* (Choisy) Spellenb.	California wishbone bush
Phyrmaceae	**Lopseed Family**
Mimulus aurantiacus Curtis	bush monkeyflower
Platanaceae	**Sycamore Family**
Platanus racemosa Nutt.	western sycamore
Polygonaceae	**Buckwheat Family**
Eriogonum cinereum Benth.	ashy-leaved buckwheat
Rhamnaceae	**Buckthorn Family**
Frangula californica (=Rhamnus c.) Eschsch.	California coffeeberry
Rosaceae	**Rose Family**
Heteromeles arbutifolia (Lindley) Roemer	toyon
Prunus ilicifolia (Nutt.) Walp. ssp. *ilicifolia*	holly-leaved cherry
Salicaceae	**Willow Family**
*Salix lasiolepis*Benth.	arroyo willow
Scrophulariaceae	**Figwort Family**
Keckiella cordifolia (Benth.) Straw	climbing penstemon
Tropaeolaceae	**Nasturtium Family**
Tropaeolum majus L.*	garden nasturtium
MONOCOTS	**GRASSES AND ALLIES**
Agavaceae	**Century Plant Family**
Hesperoyucca whipplei (Torr.) Trel.	chaparral yucca
Liliaceae	**Lily Family**
Dichelostemma capitatum (Benth.) A.W. Wood	blue dicks
Poaceae	**Grass Family**
Avena fatua L.*	common wild oats
Avena sativa L.*	cultivated oats
Bromus diandrus Roth*	ripgut brome
Bromus madritensis L. ssp. *rubens* (L.) Husnot*	red brome
Elymus condensatus J. Presl	giant wild rye
Horeum vulgare L.*	common barley
Stipa lepida Hitchc.	foothill needlegrass

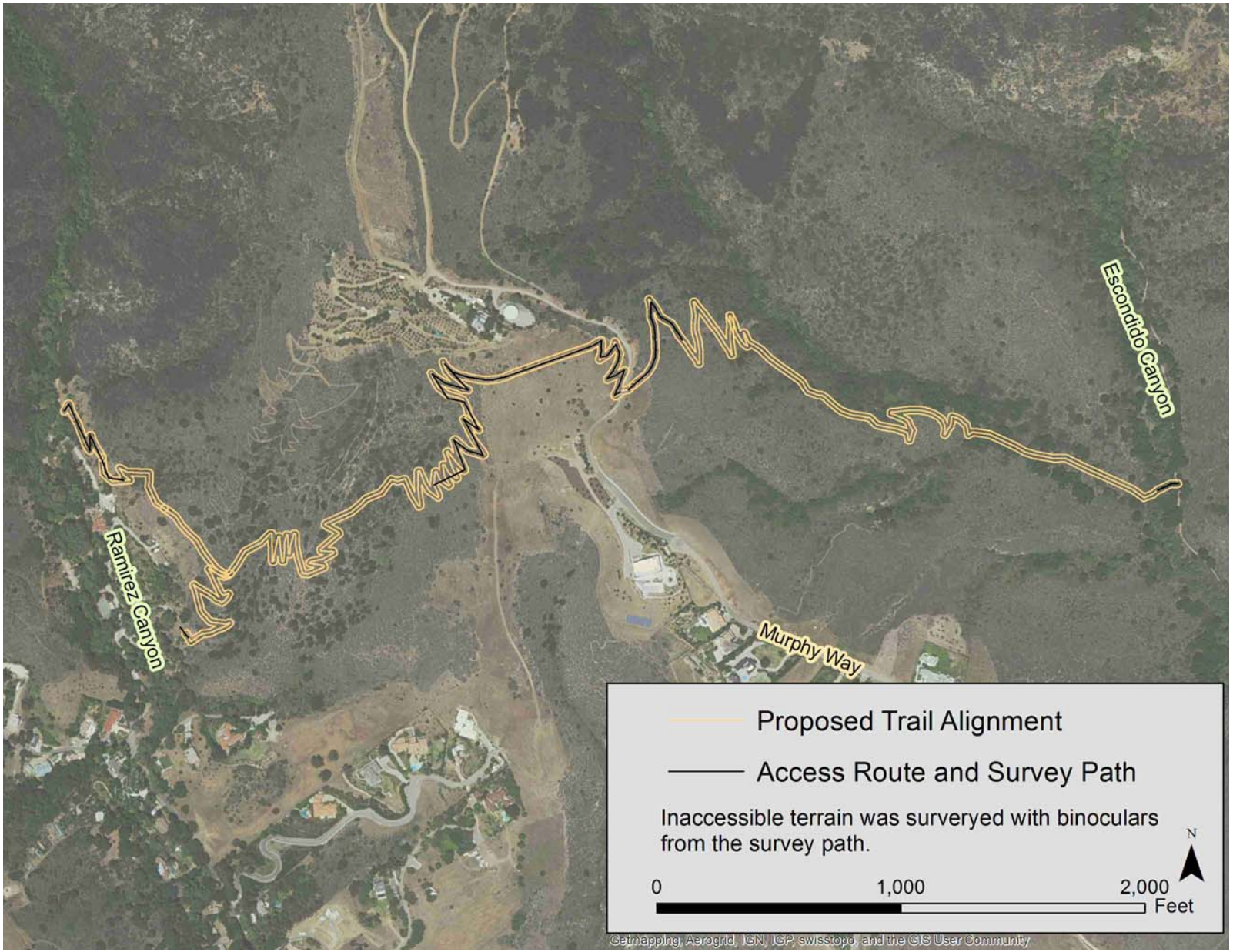

Exhibit A - Proposed Trail Alignment & Survey Area

Forde Biological Consultants

Exhibit B - CNDDB Overlay