SAN LUIS OBISPO COUNTY

DEPARTMENT OF PLANNING AND BUILDING

THIS IS A NEW PROJECT REFERRAL

DATE: 5/10/2013

TO: _____

FROM: Murry Wilson, Coastal Team- Development Review

PROJECT DESCRIPTION: DRC2012-00093 CHEVRON ENVIRONMENTAL MGMT CO./ VARIANCE for proposed grading to repair three known active landslide areas. 2,200 acre site located off the Cabrillo Hwy in Morro Bay. APNs: 073-075-004, 005, and 008, 073-077-028 and 030.

Return this letter with your comments attached no later than: 14 days from receipt of this referral. CACs please respond within 60 days. Thank you.

PART 1 - IS THE ATTACHED INFORMATION ADEQUATE TO COMPLETE YOUR REVIEW?

- ❑ YES (Please go on to PART II.)
- ❑ NO (Call me ASAP to discuss what else you need. We have only 10 days in which we must obtain comments from outside agencies.)

PART II - ARE THERE SIGNIFICANT CONCERNS, PROBLEMS OR IMPACTS IN YOUR AREA OF REVIEW?

- ❑ YES (Please describe impacts, along with recommended mitigation measures to reduce the impacts to less-than-significant levels, and attach to this letter)
- ❑ NO (Please go on to PART III)

PART III - INDICATE YOUR RECOMMENDATION FOR FINAL ACTION.

Please attach any conditions of approval you recommend to be incorporated into the project's approval, or state reasons for recommending denial.

IF YOU HAVE "NO COMMENT," PLEASE SO INDICATE, OR CALL.

_____

_____

_____

Date	Name	Phone

COUNTY GOVERNMENT CENTER • SAN LUIS OBISPO • CALIFORNIA 93408 • (805)781-5600

EMAIL: planning @co.slo.ca.us • FAX: (805) 781-1242• WEBSITE: http://www.sloplanning.org

GENERAL APPLICATION FORM

San Luis Obispo County Department of Planning and Building File No _____

DRC2012-00093 **CHEVRON ENVIR**

VARIANCE

APPLICATION TYPE - CHECK ALL THAT APPLY

- ☐ Emergency Permit
- ☐ Site Plan
- ☒ Conditional Use Permit/Development Plan
- ☐ Curb, Gutter & Sidewalk Waiver
- ☐ Tree Permit
- ☒ Minor Use Permit
- ☐ GRADING PERMIT, TO REPAIR THREE KNOWN ACTIVE LANDSLIDE AREAS
- ☐ /
- ☐ AG AS CAZ COJ EX FH MBW GS LCP SRV

APPLICANT INFORMATION Check box for contact person assigned to this project

☐ Landowner Name Chevron Environmental Management Company Daytime Phone (805) 772-2611, ext. 3
Mailing Address 4000 Cabrillo Highway (Highway One), Morro Bay, CA Zip Code 93442
Email Address: _____

☐ Applicant Name Chevron Environmental Management Company Daytime Phone (805) 772-2611, ext. 3
Mailing Address 4000 Cabrillo Highway (Highway One), Morro Bay, CA 93442 Zip Code 93442
Email Address: jwestenberger@chevron.com

☒ Agent Name Eric Snelling, Padre Associates, Inc. Daytime Phone 786-2650 ext. 12
Mailing Address 369 Pacific St., San Luis Obispo, CA Zip Code 93401
Email Address: esnelling@padreinc.com

PROPERTY INFORMATION

Total Size of Site: 2200 acres Assessor Parcel Number(s): 073-075-004,-005,-008, 073-077-028,-030
Legal Description: Estero Marine Terminal
Address of the project (if known): 4000 Cabrillo Highway (Highway One), Morro Bay, CA 93442
Directions to the site (including gate codes) - describe first with name of road providing primary access to the site, then nearest roads, landmarks, etc.: Enter at main gate from Highway One south of Toro Creek Road

Describe current uses, existing structures, and other improvements and vegetation on the property:
Former crude oil marine terminal currently under decommissioning. Cattle grazing

PROPOSED PROJECT

Describe the proposed project (inc. sq. ft. of all buildings): See attachment A - Project Description

LEGAL DECLARATION

I, the owner of record of this property, have completed this form accurately and declare that all statements here are true. I do hereby grant official representatives of the county authorization to inspect the subject property.

Property owner signature _____ Date 4/18/13

FOR STAFF USE ONLY

Reason for Land Use Permit: _____

LAND USE PERMIT APPLICATION

San Luis Obispo County Department of Planning and Building File No _____

Type of project: ☐ Commercial ☐ Industrial ☐ Residential ☐ Recreational ☒ Other

Describe any modifications/adjustments from ordinance needed and the reason for the request (if applicable): _____

Describe existing and future access to the proposed project site: Access is provided to the site by Highway One and Hill Plant Rd., which has been compromised due to active landslides.

Surrounding parcel ownership: Do you own adjacent property? ☒ Yes ☐ No
If yes, what is the acreage of all property you own that surrounds the project site? 2200 acres

Surrounding land use: What are the uses of the land surrounding your property (when applicable, please specify all agricultural uses):
North: Agriculture, grazing South: Agriculture, grazing
East: Agriculture, grazing West: Agriculture, grazing

For all projects, answer the following:
Square footage and percentage of the total site (approximately) that will be used for the following:
Buildings: 0 sq. feet _____% Landscaping: 0 sq. feet 0 %
Paving: 0 sq. feet _____% Other (specify) _____
Total area of all paving and structures: 0 ☐ sq. feet ☐ acres
Total area of grading or removal of ground cover: 0.25 ☐ sq. feet ☒ acres
Number of parking spaces proposed: 0 Height of tallest structure: _____
Number of trees to be removed: 0 Type: _____
Setbacks: Front _____ Right _____ Left _____ Back _____

Proposed water source: ☒ On-site well ☐ Shared well ☐ Other _____
☐ Community System - List the agency or company responsible for provision: _____
Do you have a valid will-serve letter? ☐ Yes ☐ No (If yes, please submit copy)

Proposed sewage disposal: ☒ Individual on-site system ☐ Other _____
☐ Community System - List the agency or company responsible for sewage disposal: _____
Do you have a valid will-serve letter? ☐ Yes ☐ No (If yes, please submit copy)

Fire Agency: List the agency responsible for fire protection: Cal Fire

For commercial/industrial projects answer the following:
Total outdoor use area: _____ ☐ sq. feet ☐ acres
Total floor area of all structures including upper stories: _____ sq. feet

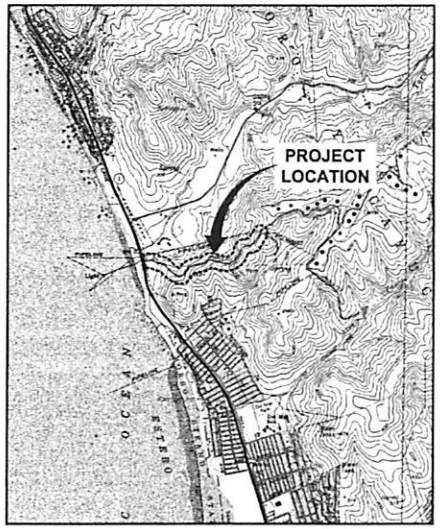
For residential projects, answer the following:
Number of residential units: _____ Number of bedrooms per unit: _____
Total floor area of all structures including upper stories, but not garages and carports: _____
Total of area of the lot(s) minus building footprint and parking spaces: _____

CONTRACT DRAWINGS

HILL PLANT ROAD LANDSLIDE REPAIRS

ESTERO MARINE TERMINAL

MORRO BAY, CALIFORNIA



REFERENCE: BASE MAP USGS 7.5 MINUTE QUADRANGLE, MORRO BAY NORTH, CA., 1965 REV. 1993; CAYUCOS, CA., 1965 REV. 1994.

LOCATION MAP

0 2000' 4000'
GRAPHIC SCALE

AREA LOCATION

CALIFORNIA

DATE ISSUED
MARCH 2013

CHEVRON
ENVIRONMENTAL
MANAGEMENT COMPANY

ARCADIS
ARCADIS U.S., INC.

LANDSLIDE SOLUTIONS, INC.

REGISTERED PROFESSIONAL ENGINEER
C 28253
EXP 6/30/13
CIVIL
STATE OF CALIFORNIA

INDEX TO DRAWINGS

	CIVIL
C-1	NOTES AND SPECIFICATIONS
C-2	SITE PLAN
C-3	GRADING PLAN - SLIDE 1
C-4	GRADING PLAN - SLIDE 2 A/B
C-5	GRADING PLAN - SLIDE 2C
C-6	GRADING PLAN - SLIDE 2D/E
C-7	GRADING PLAN - SLIDE 4
C-8	CROSS SECTION - SLIDE 1
C-9	CROSS SECTION - SLIDE 2A/B
C-10	CROSS SECTION - SLIDE 2C
C-11	CROSS SECTION - SLIDE 2D/E
C-12	CROSS SECTION - SLIDE 4
C-13	DETAILS
	LANDSLIDE REPAIR
L-1	GENERAL NOTES
L-2	PLAN VIEW
L-3	SLIDE 1
L-4	SLIDE 2A/B
L-5	SLIDE 2C
L-6	SLIDE 2D/E
L-7	SLIDE 4
L-8	GENERAL ELEVATION AND SHOTCRETE FACING

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

CITY: SYRACUSE NY DIV/GROUP: ENVCAD DB: EAK LD: AMS PIC: M. FLESCHNER PMTN: T. WEISE TB: M. FLINT LYR: OFF=*;OFF=*REF*
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CA_Morro Bay North.tif
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LSlogo.png

GENERAL NOTES

1. THE TERM "SITE", AS USED IN THESE DRAWINGS, REFERS TO ESTERO MARINE TERMINAL, MORRO BAY, CALIFORNIA.

2. PRIOR TO MOBILIZATION, ALL CONTRACTOR PERSONNEL THAT WILL BE ON-SITE, INCLUDING ALL SUBCONTRACTORS, SHALL READ AND UNDERSTAND THE PROVISIONS OF THE THEN CURRENT PROJECT HEALTH AND SAFETY PLAN (HASP). FURTHER, ALL PERSONNEL SHALL BE REQUIRED TO SIGN A CERTIFICATION STATEMENT INDICATING THAT THEY HAVE READ THE HASP, UNDERSTAND ITS CONTENTS, AND WILL ADHERE TO ALL PROCEDURES CONTAINED THEREIN. ADDITIONALLY, ALL PERSONNEL WORKING AT THE SITE REGARDLESS OF DURATION SHALL HAVE CURRENT TRAINING AS INDICATED IN THE HASP.

3. ALL CONTRACTOR ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HASP AS WELL AS CHEVRON'S POLICIES.

4. IN THE EVENT AN UNSAFE CONDITION IS DETECTED BY THE CONTRACTOR, SUBCONTRACTOR OR THE ENGINEER, ALL WORK IN THE AREA OF THE UNSAFE CONDITION SHALL BE STOPPED IMMEDIATELY. THE UNSAFE CONDITION SHALL BE RESOLVED BASED ON THE PROVISIONS OF THE HASP.

5. EXISTING SITE FEATURES THAT ARE DAMAGED OR DESTROYED (OTHER THAN THOSE FEATURES SPECIFICALLY INDICATED ON THESE DRAWINGS TO BE REMOVED OR ALTERED) BY THE CONTRACTOR DURING THE COURSE OF THE PROJECT SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

GENERAL SPECIFICATIONS FOR CONSTRUCTION ACTIVITIES

I. SITE PREPARATION

1. INSTALL AND MAINTAIN TEMPORARY TRAFFIC CONTROL DEVICES WITHIN THE SITE AS REQUIRED BY THE TRAFFIC CONTROL PLAN IN THE HASP.

2. DO NOT PERMIT DEBRIS TO ENTER WATERWAYS, TRAVEL LANES OPEN TO PUBLIC TRAFFIC, OR AREAS DESIGNATED NOT TO BE DISTURBED.

II. EROSION AND SEDIMENT CONTROL

1. PROVIDE PERMANENT AND TEMPORARY EROSION CONTROL MEASURES TO MINIMIZE EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION ACCORDING TO THE CONTRACT EROSION CONTROL PLAN, CONTRACT PERMITS, AND FEDERAL AND STATE REGULATIONS.

2. THE CONTRACTOR SHALL CONTROL THE GENERATION OF AIRBORNE DUST BY REGULARLY APPLYING WATER OR OTHER DUST CONTROL AGENTS TO ROAD SURFACES OR AREAS SUBJECT TO VEHICLE TRAFFIC.

3. TRASH AND CONSTRUCTION-RELATED SOLID WASTES SHALL BE CONTAINERIZED AND PROPERLY DISPOSED OF IN ACCORDANCE WITH APPLICABLE FEDERAL AND STATE REGULATIONS TO PREVENT CONTAMINATION OF SURFACE WATER OR DISPERSAL BY WIND.

4. ALL CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED IN A MANNER WHICH PREVENTS THE RELEASE OF HAZARDOUS MATERIALS, INCLUDING OILS, SOLVENTS, HYDRAULIC FLUIDS AND FUEL. HAZARDOUS MATERIALS THAT MUST BE STORED ON-SITE SHALL BE STORED IN AN APPROPRIATE MANNER THAT IS ACCEPTABLE TO CHEVRON AND THE ENGINEER.

III. GRADING REQUIREMENTS

1. EXCAVATIONS SHALL BE A WIDTH AND LENGTH THAT ALLOWS ROOM FOR WORK.

2. FOLLOW OSHA SAFETY REGULATIONS (29 CFR, PART 1926, SUBPART P, EXCAVATION) FOR SLOPING THE SIDES OF EXCAVATIONS, USING SHORING AND BRACING, AND FOR USING OTHER SAFETY FEATURES, IF NECESSARY.

3. CONTRACTOR SHALL BE PREPARED TO MOISTURE CONDITION BACKFILL MATERIAL TO ACHIEVE MOISTURE CONTENT NEAR OPTIMUM.

4. BACKFILL SHALL BE PLACED IN LOOSE LIFTS, NOT TO EXCEED 10 INCHES PRIOR TO COMPACTION.

5. USE A MINIMUM OF FOUR PASSES PER LIFT USING COMPACTION EQUIPMENT TO COMPACT BACKFILL.

6. USE CATERPILLER CP44 SHEEPSFOOT ROLLER COMPACTOR OR EQUIVALENT TO COMPACT BACKFILL.

7. WHERE IT IS NOT FEASIBLE TO COMPACT BACKFILL USING A CP44 COMPACTOR A SHEEPSFOOT COMPACTOR EXCAVATOR ATTACHMENT MAY BE USED.

8. ALL GRADING WORK SHALL BE PERFORMED WITH ADEQUATE SURVEY CONTROL SO THAT CONSTRUCTED CONDITIONS ARE WITHIN 0.1 FOOT VERTICAL AND HORIZONTAL OF DESIGN CONDITIONS.

9. THE ENGINEER WILL PROVIDE GRADE CONTROL INFORMATION IN THE APPROPRIATE FORMAT (E.G. ASCII POINTS, AUTOCAD SURFACE, ETC.).

IV. FILL MATERIAL REQUIREMENTS

1. NATIVE SOIL AND/OR SITE MATERIAL FROM EXCAVATION WILL BE USED AS BACKFILL.

2. CRUSHED ROCK FOR DRAINAGE PAD SHALL MEET THE FOLLOWING REQUIREMENTS: D_{50}= 1-1/2 INCHES, AND D_{MAX}= 4 INCHES WITH NO MORE THAN 3% PASSING ON THE No. 200 SIEVE. APRONS SHALL HAVE A MINIMUM LENGTH OF 6 FEET, MINIMUM WIDTH OF 2 FEET, AND MINIMUM THICKNESS OF 6 INCHES.

3. CRUSHED ROCK SHALL CONSIST OF CLASS 1 PERMEABLE MATERIAL.

V. GEOTEXTILE INSTALLATION REQUIREMENTS

1. A 10 OUNCE NON-WOVEN GEOTEXTILE SHALL BE USED AS A SEPARATOR LAYER IN VARIOUS APPLICATIONS.

2. IN ADDITION TO MEETING THE SPECIFIED UNIT WEIGHT, 10 OUNCE NON-WOVEN GEOTEXTILE SHALL POSSESS THE FOLLOWING MINIMUM PROPERTIES:
   - -GRAB STRENGTH (ASTM D 4632) = 235 LBS
   - -TRAPEZOIDAL TEAR STRENGTH (ASTM D 4533) = 95 LBS
   - -PUNCTURE STRENGTH (ASTM D 4833) = 165 LBS
   - -BURST STRENGTH (ASTM D 3786) = 550 LBS

   ACCEPTABLE PRODUCTS INCLUDE PROPEX 4510 OR APPROVED EQUAL.

3. ALL GEOTEXTILE SEAMS SHALL BE OVERLAPPED BY 2 FEET.

VI. HDPE PIPE MATERIAL AND INSTALLATION REQUIREMENTS

1. HDPE PIPE SHALL BE 4" CORRUGATED SMOOTH-BORE (ADS N-12 OR APPROVED EQUAL).

2. PIPE OUTFALL SHALL BE SCREENED.

VII. ASPHALT PAVEMENT SPECIFICATIONS

1. ASPHALT PAVEMENT SHALL CONSIST OF 2.5 INCHES HOT MIX ASPHALT BASE COURSE (CALTRANS TYPE A 3/4 INCH MAX. AGGREGATE) AND 1.5 INCHES HOT MIX TOP COURSE (CALTRANS TYPE A 3/8 INCH MAX. AGGREGATE).

VIII. PIEZOMETERS AND STANDARD INCLINOMETERS

1. EXISTING PIEZOMETERS AND STANDARD INCLOMETERS WITHIN THE PROXIMITY OF THE LIMIT OF WORK SHALL BE PROTECTED FROM DAMAGE.

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SCALE(S) AS INDICATED

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C66669
State: CA | Date Signed: 3/18/2013 | Project Mgr: TW
Designed by: MF | Drawn by: AS | Checked by: CB

ARCADIS
ARCADIS U.S., INC.

CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

NOTES AND SPECIFICATIONS

ARCADIS Project No. B0047172.2013
Date: MARCH 2013

ARCADIS
2300 North First Street
Suite 209
San Jose, CA 95131
TEL. 408.797.3000

C-1

CITY: SYRACUSE, NY DIVGROUP: ENVCAD DB: AMES, AK LO: AMES PCO: IN FLEISCHNER PMTR: T. WEISS TR: M. SUNT LTYCON=OFF=PREF
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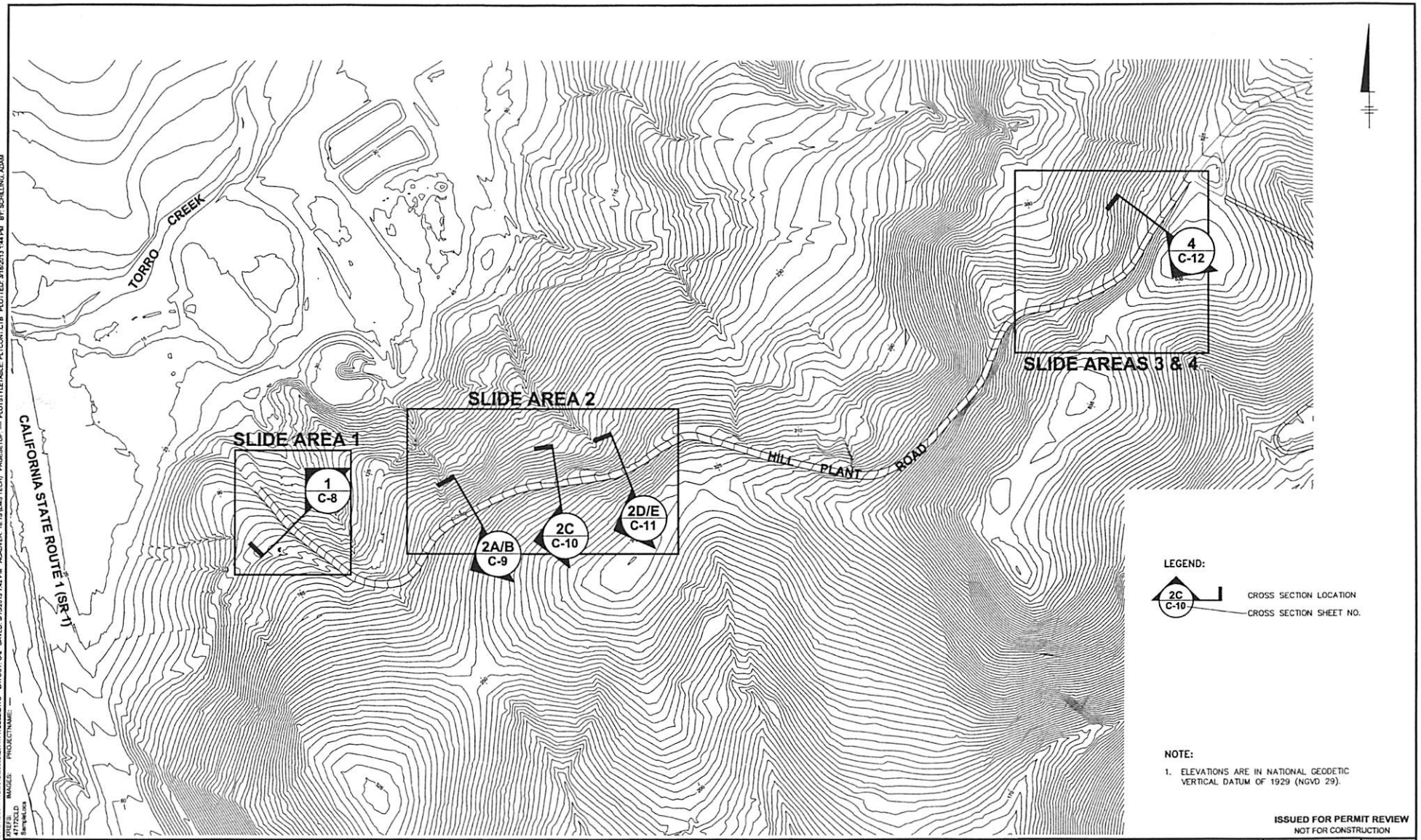

NOTE:

1. ELEVATIONS ARE IN NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

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SCALE(S) AS INDICATED

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C66569

State	Date Signed	Project Mgr.
CA	3/18/2013	TW
Designed by	Drawn by	Checked by
MF	AS	CB

REGISTERED PROFESSIONAL ENGINEER
C 66569
EXP. 6/30/2013
CIVIL
STATE OF CALIFORNIA

ARCADIS
ARCADIS U.S., INC.

CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

SITE PLAN

ARCADIS Project No. B0047172.0013
Date MARCH 2013
ARCADIS
2550 North First Street
Suite 200
San Jose, CA 95131
TEL. 408.797.2000

C-2

CITY: SYRACUSE NY DIV/GROUP: ENVCAD DB: AMS, EAK LD: AMS PIC: M. FLEISCHNER PM/TM: T. WEISE TR: M. FLINT LYR:ON=*;OFF=*REF*
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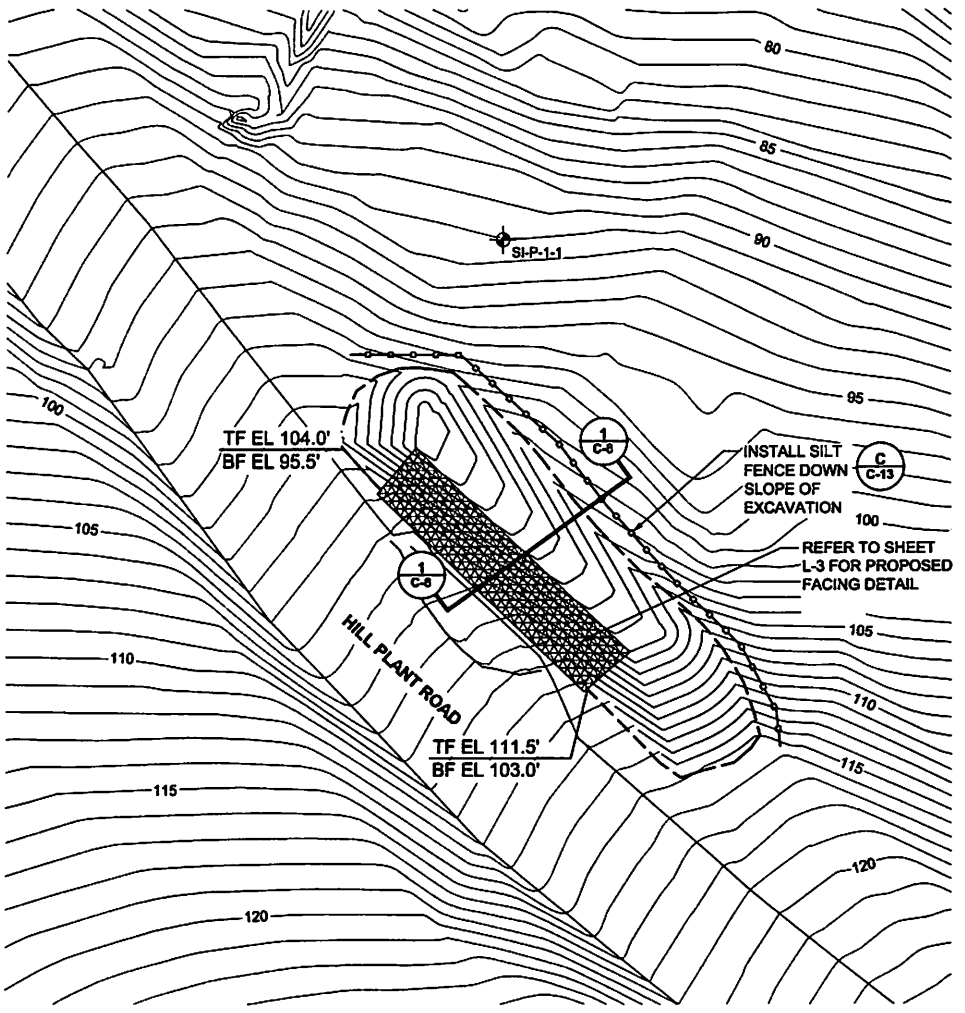

LEGEND:

- TP-2-1 — TEST PIT LOCATION (MAY 2011 SUBSURFACE INVESTIGATION)
- B-2-1 — BORING LOCATION (JULY 2011 SUBSURFACE INVESTIGATION)
- SI-P-1-1 — BORING LOCATION (DECEMBER 2011 SLOPE INSTRUMENTATION)
- HIGH STRENGTH MESH FACING (PROPOSED) TF = TOP OF FACING ELEVATION BF = BOTTOM OF FACING ELEVATION
- SILT FENCE
- APPROXIMATE DISTURBANCE LIMITS
- CRACKS
- 200 — EXISTING CONTOURS

NOTES:

1. ELEVATIONS ARE IN NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
2. EXISTING TOPOGRAPHY WAS OBTAINED FROM AN AERIAL SURVEY PERFORMED BY CANNON ASSOCIATES.
3. EXCAVATION TO SUBGRADE SHALL PROGRESS CONCURRENT WITH WALL CONSTRUCTION.
4. DISTURBED AREA SHALL BE RESEEDED ONCE BACKFILLING IS COMPLETE.
5. ESTIMATED EXCAVATION QUANTITY IS 168 CY AND ESTIMATED FILL QUANTITY IS 151 CY. TOTAL DISTURBANCE AREA IS APPROXIMATELY 1,724 SF.

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

SCALE(S) AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING. USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Chd
1	1/18/13	Excavation contours and cut and fill quantities.		

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C86509
State: CA | Date Signed: 3/18/2013 | Project Mgr: TW
Designed by: MF | Drawn by: AS | Checked by: CB

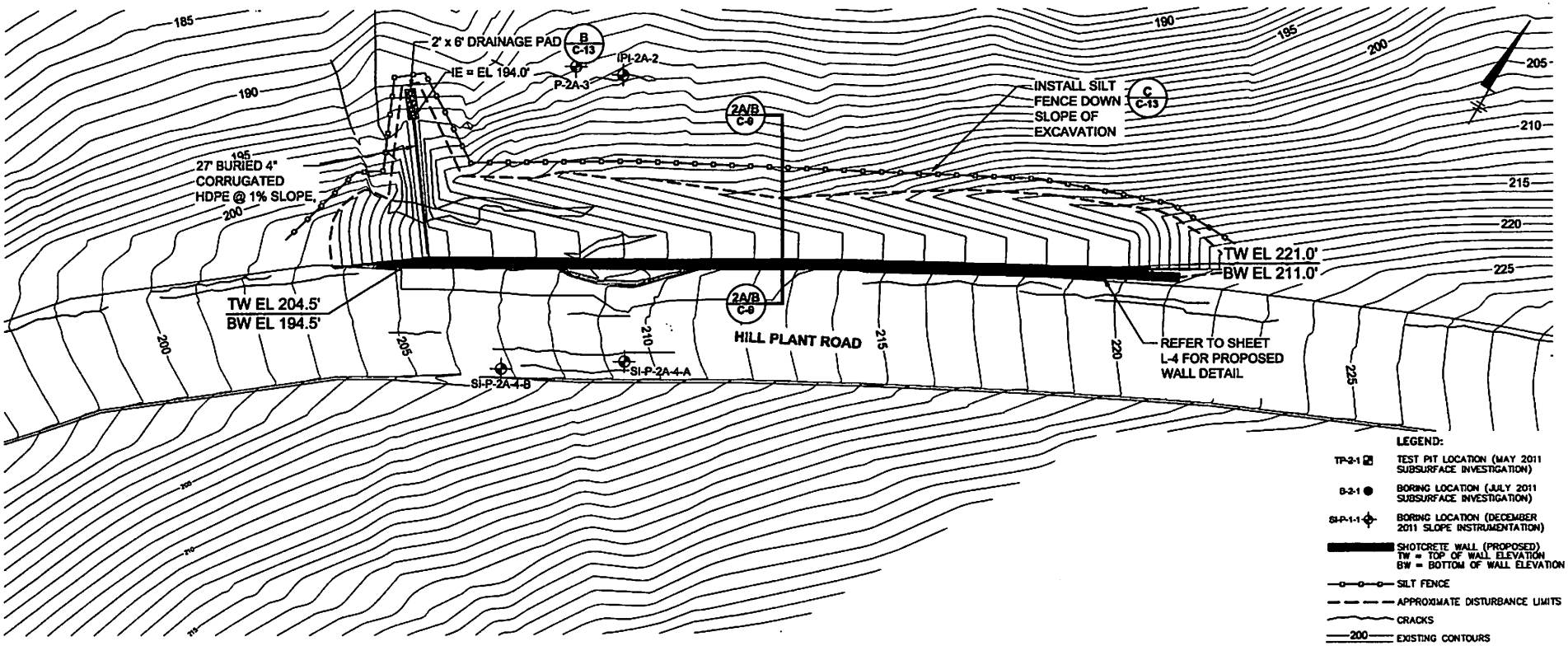
ARCADIS
ARCADIS U.S., INC.

CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

SUB-GRADE GRADING PLAN - SLIDE 1

ARCADIS Project No. B0047172.0013
Date: MARCH 2013
ARCADIS
2300 North First Street
Suite 200
San Jose, CA 95131
TEL. 408.797.3000

C-3



LEGEND:

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- B-2-1 — BORING LOCATION (JULY 2011 SUBSURFACE INVESTIGATION)
- SI-P-1-1 — BORING LOCATION (DECEMBER 2011 SLOPE INSTRUMENTATION)
- SHOTCRETE WALL (PROPOSED) TW = TOP OF WALL ELEVATION BW = BOTTOM OF WALL ELEVATION
- SILT FENCE
- APPROXIMATE DISTURBANCE LIMITS
- CRACKS
- 200 — EXISTING CONTOURS

NOTES:

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3. EXCAVATION TO SUBGRADE SHALL PROGRESS CONCURRENT WITH WALL CONSTRUCTION.
4. DISTURBED AREA SHALL BE RESEEDED ONCE BACKFILLING IS COMPLETE.
5. ESTIMATED EXCAVATION QUANTITY IS 455 CY AND ESTIMATED FILL QUANTITY IS 475 CY. TOTAL DISTURBANCE AREA IS APPROXIMATELY 2,933 SF.
6. FINAL PIPE TRENCH DIMENSIONS WILL BE DETERMINED IN THE FIELD IN ACCORDANCE WITH CAL/OSHA AND CALTRANS STANDARDS.

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SCALE(S) AS INDICATED (0, 10', 20')

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C065059
State: CA | Date Signed: 3/13/2013 | Project Mgr.: TW
Designed by: MF | Drawn by: AS | Checked by: CB

ARCADIS
ARCADIS U.S., INC.

CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

SUB-GRADE GRADING PLAN - SLIDE 2A/B

ARCADIS Project No. B0047172.0013
Date: MARCH 2013
ARCADIS
2200 North First Street
Suite 300
San Jose, CA 95131
TEL 408.767.3000

C-4

CITY: SYRACUSE INT DIVGROUP: ENVCAD DB: AMS SAK LO: AMS PIC: M. RUESCHER PAPER: T: WIDE TR: M. RUNT LYR: Grid=OFF;Prop=FREEZ
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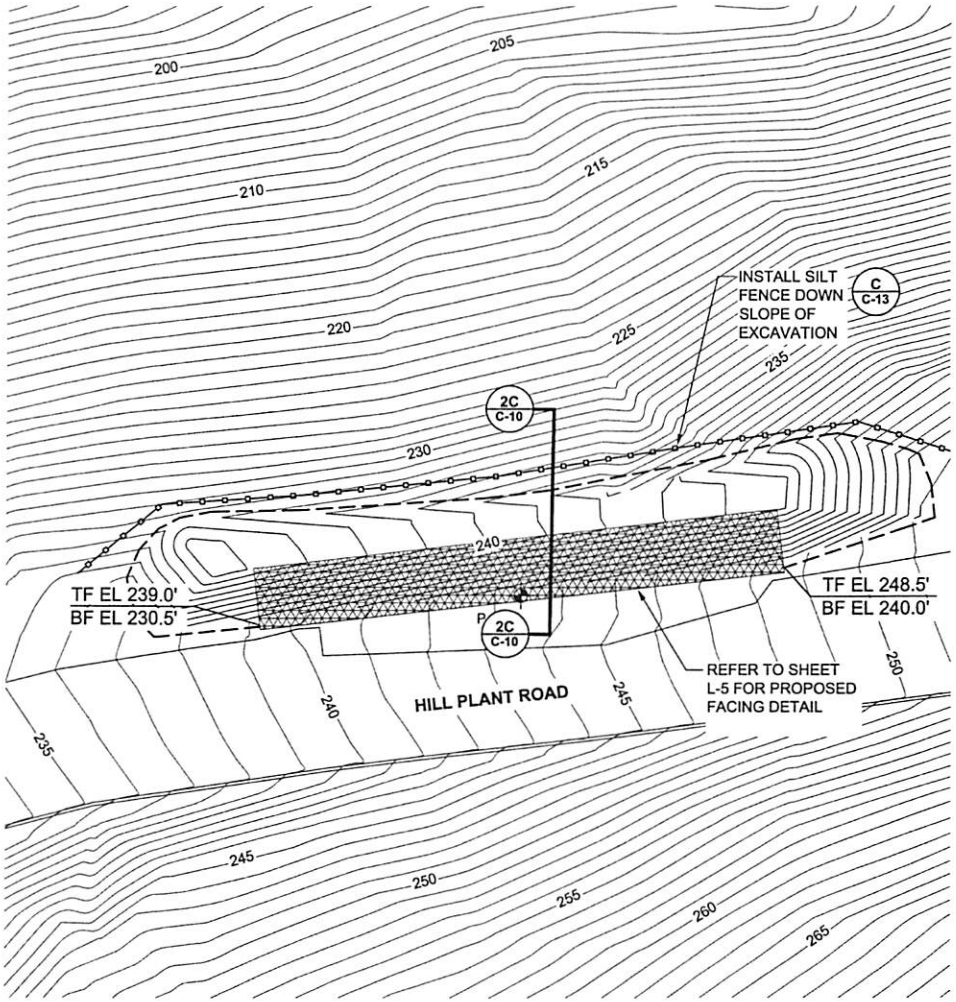

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4. DISTURBED AREA SHALL BE RESEEDED ONCE BACKFILLING IS COMPLETE.
5. ESTIMATED EXCAVATION QUANTITY IS 219 CY AND ESTIMATED FILL QUANTITY IS 170 CY. TOTAL DISTURBANCE AREA IS APPROXIMATELY 2,337 SF.

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

CITY: SYRACUSE NY DIV/GROUP: ENVCAD DB: AMS, EAK LD: AMS PIC: M FLEISCHNER PM/TM: T. WEISE TR: M. FLINT LYR:ON=*;OFF=*REF*
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XREFS: 47172CLD IMAGES: PROJECTNAME: ----

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No.	Date	Revisions	By	Chk
1	1/18/13	Excavation contours and cut and fill quantities.		

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C66569
State: CA | Date Signed: 3/18/2013 | Project Mgr.: TW
Designed by: MF | Drawn by: AS | Checked by: CB

REGISTERED PROFESSIONAL ENGINEER — CARSTEN BECKER — C66569 — CIVIL — STATE OF CALIFORNIA

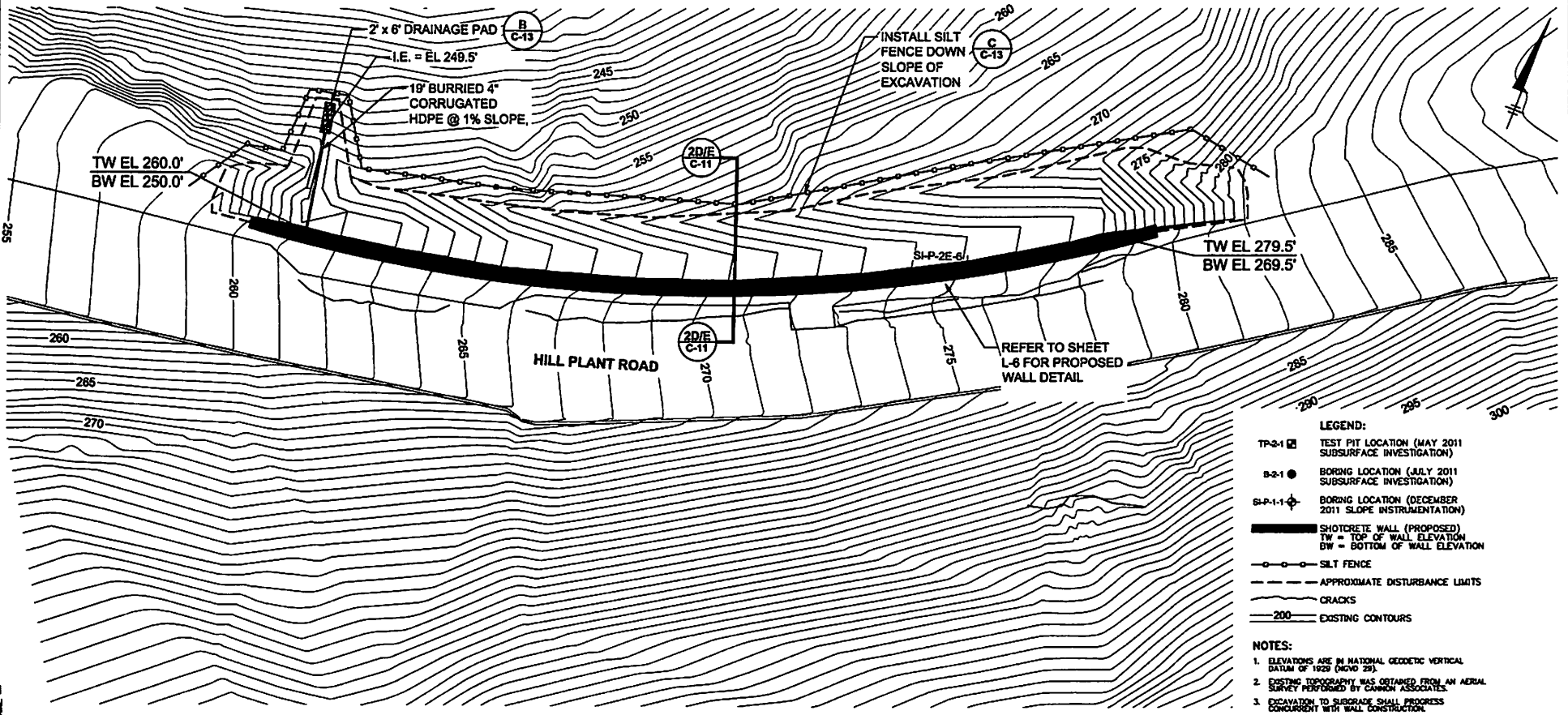
ARCADIS
ARCADIS U.S., INC.

CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

SUB-GRADE GRADING PLAN - SLIDE 2C

ARCADIS Project No. B0047172.0013
Date MARCH 2013
ARCADIS 2550 North First Street Suite 200 San Jose, CA 95131 TEL 408.797.2000

C-5



LEGEND:

- TP-2-1 — TEST PIT LOCATION (MAY 2011 SUBSURFACE INVESTIGATION)
- B-2-1 — BORING LOCATION (JULY 2011 SUBSURFACE INVESTIGATION)
- SI-P-1-1 — BORING LOCATION (DECEMBER 2011 SLOPE INSTRUMENTATION)
- SHOTCRETE WALL (PROPOSED) TW = TOP OF WALL ELEVATION BW = BOTTOM OF WALL ELEVATION
- SILT FENCE
- APPROXIMATE DISTURBANCE LIMITS
- CRACKS
- 200 — EXISTING CONTOURS

NOTES:

1. ELEVATIONS ARE IN NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
2. EXISTING TOPOGRAPHY WAS OBTAINED FROM AN AERIAL SURVEY PERFORMED BY CANNON ASSOCIATES.
3. EXCAVATION TO SUBGRADE SHALL PROGRESS CONCURRENT WITH WALL CONSTRUCTION.
4. DISTURBED AREA SHALL BE RESEEDED ONCE BACKFILLING IS COMPLETE.
5. ESTIMATED EXCAVATION QUANTITY IS 545 CY AND ESTIMATED FILL QUANTITY IS 320 CY. TOTAL DISTURBANCE AREA IS APPROXIMATELY 1,765 SF.
6. FINAL PIPE TRENCH DIMENSIONS WILL BE DETERMINED IN THE FIELD IN ACCORDANCE WITH CAL/OSHA AND CALTRANS STANDARDS.

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C60569
State: CA | Date Signed: 3/13/2013 | Project Mgr.: TW
Designed by: MF | Drawn by: AS | Checked by: CB

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ESTERO MARINE TERMINAL

SUB-GRADE GRADING PLAN - SLIDE 2D/E

ARCADIS Project No.: B0047172.0013
Date: MARCH 2013
ARCADIS
2330 North First Street
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TEL. 408.797.3000

C-6

CITY: SYRACUSE NY DIVGROUP: DIVCAD DE: AAS, EAK LD: AAS PIC: M. FLESCHNER PMTR: T. WEISE TR: M. FLINT LYR:0=*;OFF=*FEF* C:\Users\cadmin\Desktop\B0047172\0013\0000\CN\B172C07.dwg LAYOUT: C-6 SAVED: 3/13/2013 1:40 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 3/13/2013 5:28 PM BY: SCHILLING, ADAM
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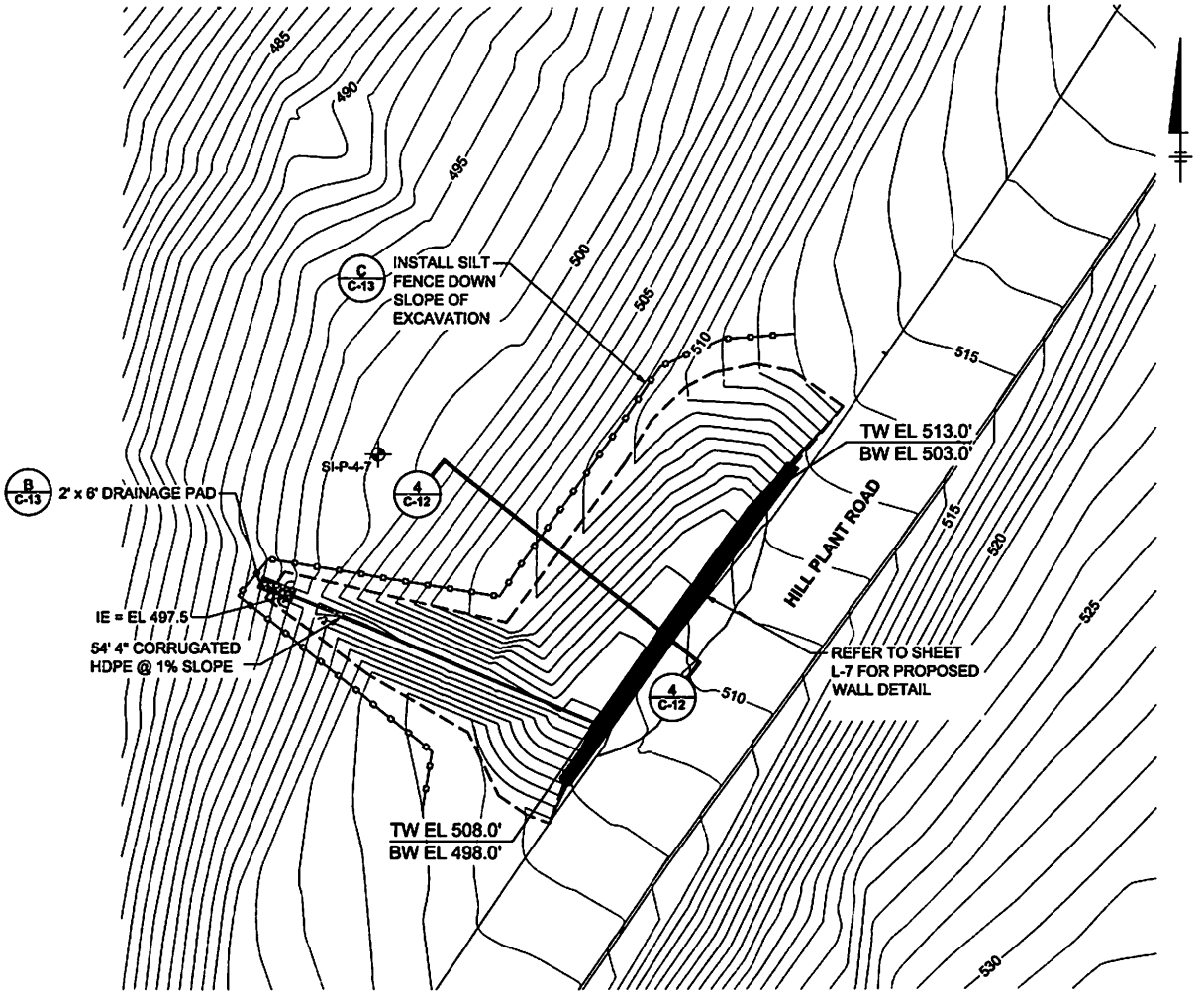

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- B-2-1 — BORING LOCATION (JULY 2011 SUBSURFACE INVESTIGATION)
- SI-P-1-1 — BORING LOCATION (DECEMBER 2011 SLOPE INSTRUMENTATION)
- SHOTCRETE WALL (PROPOSED) TW = TOP OF WALL ELEVATION BW = BOTTOM OF WALL ELEVATION
- SILT FENCE
- APPROXIMATE DISTURBANCE LIMITS
- CRACKS
- 200 — EXISTING CONTOURS

NOTES:

1. ELEVATIONS ARE IN NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).
2. EXISTING TOPOGRAPHY WAS OBTAINED FROM AN AERIAL SURVEY PERFORMED BY CANNON ASSOCIATES.
3. EXCAVATION TO SUBGRADE SHALL PROGRESS CONCURRENT WITH WALL CONSTRUCTION.
4. DISTURBED AREA SHALL BE RESEEDED ONCE BACKFILLING IS COMPLETE.
5. ESTIMATED EXCAVATION QUANTITY IS 328 CY AND ESTIMATED FILL QUANTITY IS 307 CY. TOTAL DISTURBANCE AREA IS APPROXIMATELY 2,290 SF.
6. FINAL PIPE TRENCH DIMENSIONS WILL BE DETERMINED IN THE FIELD IN ACCORDANCE WITH CAL/OSHA AND CALTRANS STANDARDS.

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0 10' 20'
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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C065029
State: CA | Date Signed: 3/18/2013 | Project Mgr: TW
Designed by: MF | Drawn by: AS | Checked by: CB

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SUB-GRADE GRADING PLAN - SLIDE 4

ARCADIS Project No. B0047172.0013
Date: MARCH 2013
ARCADIS
2390 North First Street
Suite 200
San Jose, CA 95131
TEL. 408.787.3000

C-7

CITY: SYRACUSE NY DIVGROUP: DIVCAD DB: AUS, EAK LD: AAB PIC: M. PLEISCHNER PMTR: T. WEISS TS: M. FLINT LYR: ON*;OFF=REF*
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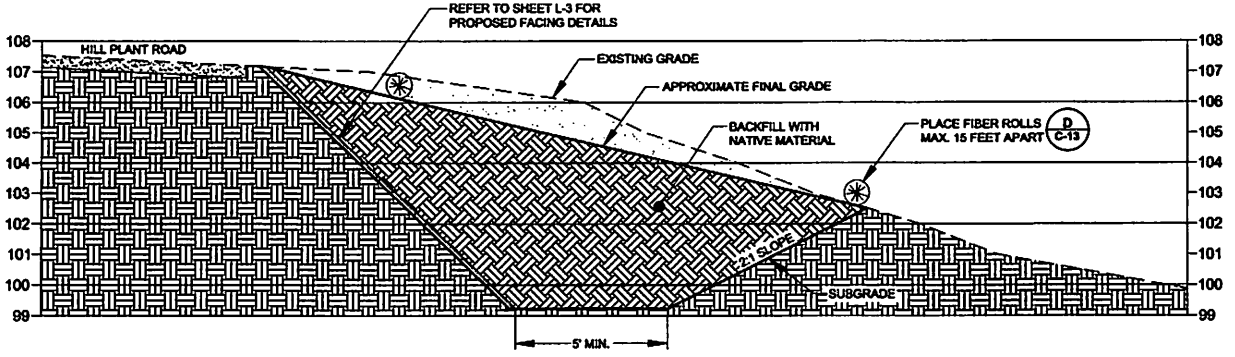

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C86369

State	Date Signed	Project Mgr.
CA	3/13/2013	TW
Designed by MF	Drawn by AS	Checked by CB

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CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

CROSS SECTION - SLIDE 1

ARCADIS Project No. B0047172.2013
Date: MARCH 2013
ARCADIS
2200 North First Street
Suite 300
San Jose, CA 95131
TEL 408.767.3000

C-8

CITY: SYRACUSE BY: DIVGROUP: ENVCAD DB: AMS, SAK LD: AMS PIC: M. FLESCHNER PM/TM: T. WEISE TR: M. FLINT LYR:CRW=*;OFF=REF*
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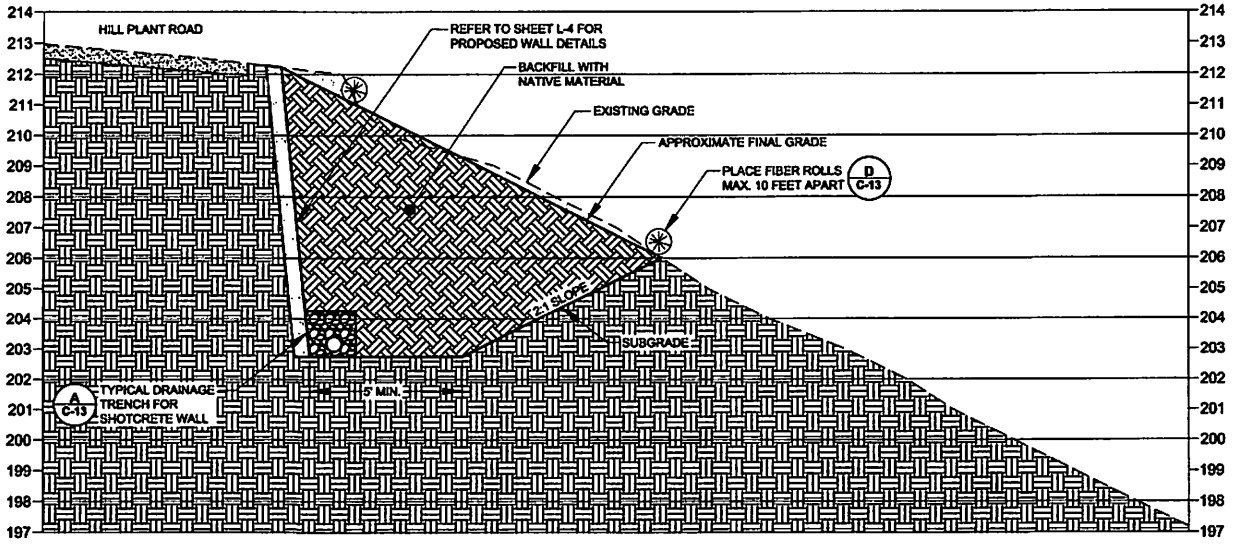

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C60009
State: CA | Date Signed: 3/13/2013 | Project Mgr.: TW
Designed by: MF | Drawn by: AS | Checked by: CB

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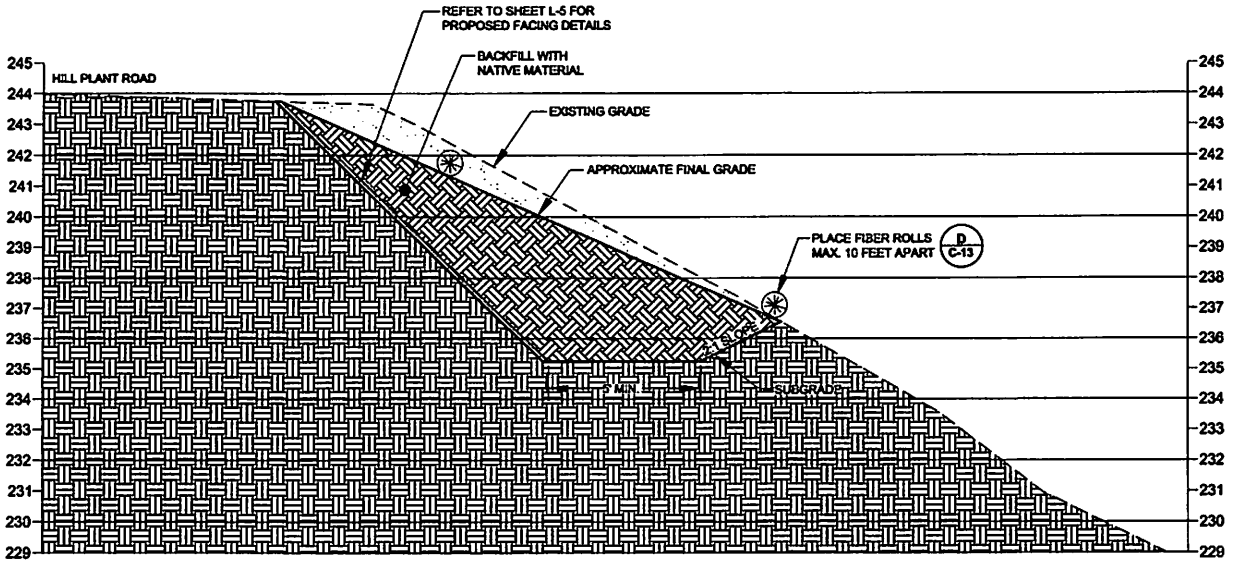
CROSS SECTION - SLIDE 2A/B

ARCADIS Project No. B0047172.2013
Date: MARCH 2013
ARCADIS
2000 North First Street
Suite 200
San Jose, CA 95131
TEL 408.797.2000

C-9



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Professional Engineer's No.: C60069
State: CA | Date Signed: 3/1/2013 | Project Mgr: TW
Designed by: MF | Drawn by: AS | Checked by: CB

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CROSS SECTION - SLIDE 2C

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ARCADIS
2200 North First Street
Suite 300
San Jose, CA 95131
TEL. 408.797.2700

C-10

CITY: SYRACUSE NY DIVGROUP: ENVCAD DB: AKS SAK LO: AKS PIC: M.FLEISCHER PAPER: 1 WIDE TR: M. PLANT LYR: OFF=*,STY=REF
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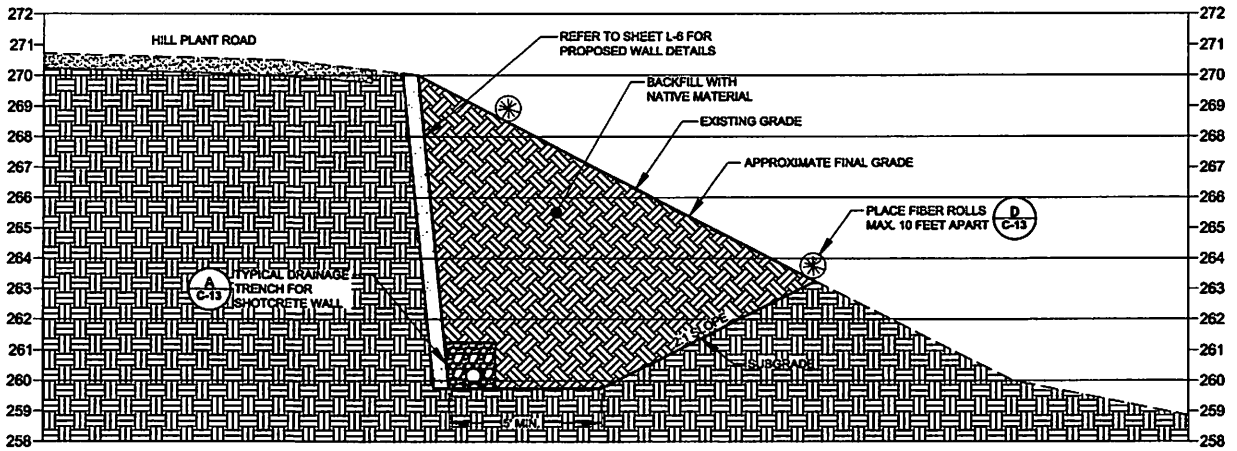

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C66309
State: CA | Date Signed: 3/18/2013 | Project Mgr: TW
Designed by: MF | Drawn by: AS | Checked by: CB

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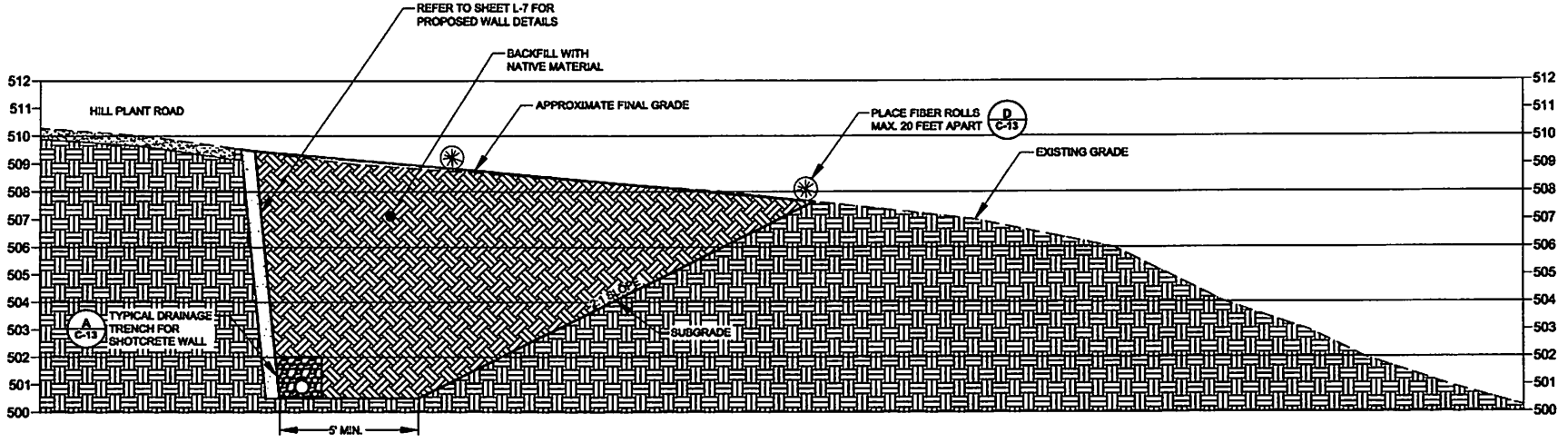
ESTERO MARINE TERMINAL

CROSS SECTION - SLIDE 2D/E

ARCADIS Project No. B0047172.0013
Date: MARCH 2013
ARCADIS
3200 North First Street
Suite 300
San Jose, CA 95131
TEL. 408 797 3000

C-11



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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C66369
State: CA | Date Signed: 3/18/2013 | Project Mgr.: TW
Designed by: MF | Drawn by: AS | Checked by: CB

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CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

CROSS SECTION - SLIDE 4

ARCADIS Project No. B0047172.0013
Date: MARCH 2013
ARCADIS
2030 North First Street
Suite 300
San Jose, CA 95131
TEL. 408.767.2020

C-12

CITY: SYRACUSE HY DIVGROUP: ENVCAD DS: AAS, BAK LD: AAS PIC: N. FLEISCHNER PMTYK T: WB33 TR: N. PLANT LYR:ON=*;OFF=*REF*
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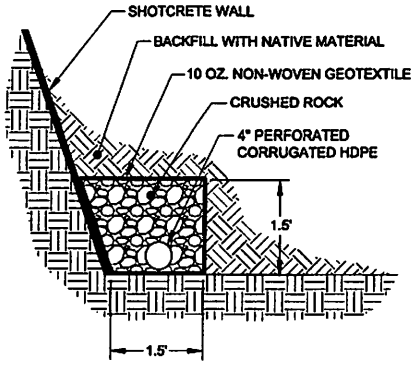
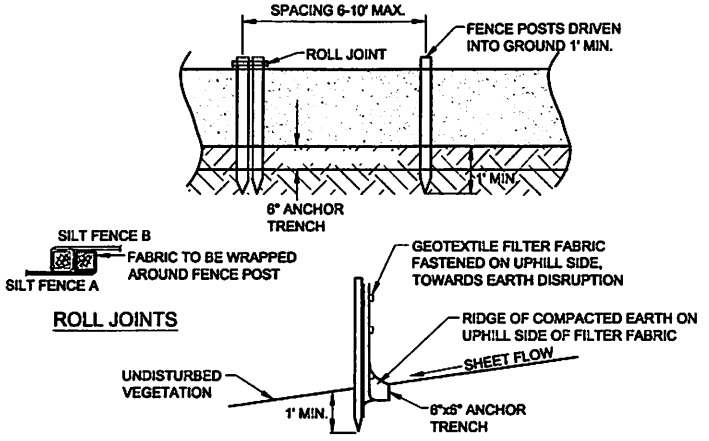
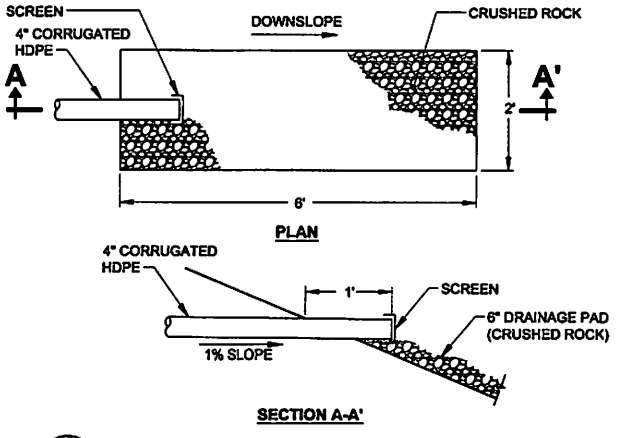


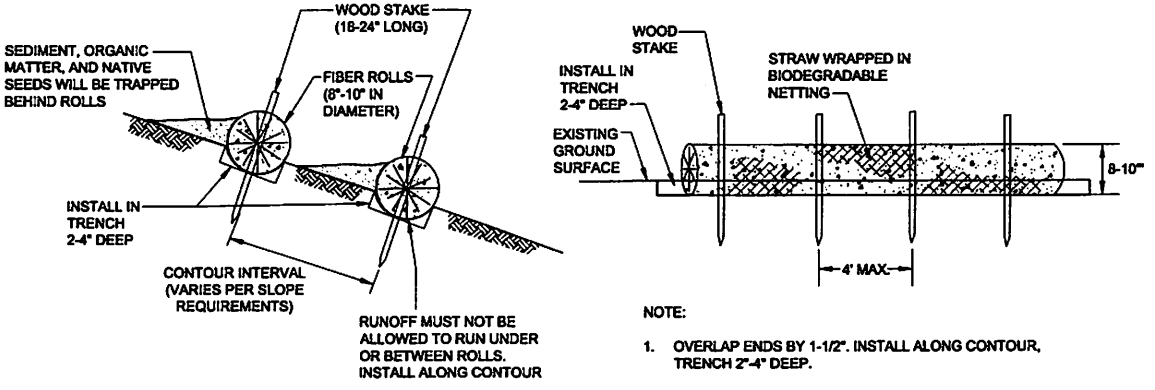
A C-13 **TYPICAL DRAINAGE TRENCH FOR SHOTCRETE WALL** N.T.S



C C-13 **SILT FENCE** N.T.S



B C-13 **DRAINAGE PAD** N.T.S



NOTE:

1. OVERLAP ENDS BY 1-1/2". INSTALL ALONG CONTOUR, TRENCH 2"-4" DEEP.

D C-13 **FIBER ROLL** N.T.S

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Professional Engineer's Name: CARSTEN BECKER
Professional Engineer's No.: C60069
State: CA | Date Signed: 3/18/2013 | Project Mgr: TW
Designed by: MF | Drawn by: AB | Checked by: CD

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ARCADIS U.S., INC.

CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

DETAILS

ARCADIS Project No. B0047172.0013
Date: MARCH 2013
ARCADIS
2000 North First Street
Suite 200
San Jose, CA 95131
TEL. 408.797.3000

C-13

CITY: SYRACUSE NY DIVGROUP: ENVCAD DB: AMS, EAK LD: AMS PIC: M. FLESCHNER PMTM: T. WEISS TR: M. FLINT LYR:OFF=*;PREF*
G:\ENCADDSTRACK\SERVACT\B0047172\0013\DCC\CH\4172C03.dwg LAYOUT: C-13 SAVED: 1/18/2013 5:23 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 3/18/2013 1:53 PM BY: SCHILLING, ADAM
XREFS: 4172CLD IMAGES: PROJECTNAME: ---

1. NAIL LENGTHS AND SIZES SHALL BE IN ACCORDANCE WITH DETAILS.
2. INDIVIDUAL NAIL ELEVATIONS SHALL BE BASED ON SPACING SHOWN ON ELEVATION DETAIL FOR EACH SLIDE.
3. FOR FACING REQUIREMENTS, SEE SHEET L-8.
4. ALL SOIL NAILS SHALL BE DECLINED TO 15 DEG. FROM HORIZONTAL UNLESS REQUIRED TO AVOID CULVERTS/OBSTRUCTIONS.
5. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THIS SHEET AND SPECIFICATIONS.
6. LANDSLIDE SOLUTIONS (LSI) IS RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES. IT IS ASSUMED THAT THERE ARE NO UTILITIES TO AVOID FOR SLIDES 1, 2A/B, 2C. THERE IS A CROSS CULVERT AT SLIDE 2D/E AND UNDERGROUND PIPING AT SLIDE 4. THE UNDERGROUND PIPING MAY BE REMOVED BEFORE STABILIZATION BEGINS. IF PIPING IS NOT REMOVED, LSI WILL WORK WITH CHEVRON AND ARCADIS TO LOCATE IT.
7. CHEVRON SHALL PROVIDE SURVEY CONTROL POINTS FOR SLIDE CONSTRUCTION LIMITS (IF REQUIRED). LSI SHALL BE RESPONSIBLE FOR SURVEY CONTROL AS REQUIRED AS EXCAVATION PROCEEDS FROM TOP OF WALL TO BOTTOM OF WALL.
8. PROOF TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH THIS SHEET.

DESIGN PARAMETERS:

9. THE SOIL NAIL STABILIZATION SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH GEOTECHNICAL ENGINEERING CIRCULAR NO.7, FHWA 0-IF-03-017
10. SEISMIC CONSIDERATIONS BASED ON SECTION 6.4.5 OF FHWA CIRCULAR #7. A PGA=0.43g (975 YEAR PROBABILISTIC EVENT) WILL BE USED FOR SEISMIC EVALUATION.
11. THE FOLLOWING GEOTECHNICAL PARAMETERS ARE BASED ON BACK-CALCULATION USING LIMIT EQUILIBRIUM SOFTWARE SLIDE 6.0:

ENGINEERING STRENGTH PARAMETERS

SOIL	COHESION c (PSF)	FRICTION ANGLE Ø (DEG)	UNIT WEIGHT γ (PCF)	ULTIMATE NAIL PULLOUT RESISTANCE Qu (KIP/FT)*	ALLOWABLE NAIL PULLOUT RESISTANCE Qa (KIP/FT)*
Existing Fill/Upper Material	0-40	18-19	120	3.0	1.6
Clay	75	20	120	3.0	1.5
Claystone Weathered	100	25	120	3.0	1.5
Claystone	500	29	120	3.0	1.5
Claystone Hard	1000	30	120	3.0	1.5

* ASSUMED NAIL HOLE DIAMETER = 4-INCH MINIMUM

12. EXCAVATION CONSISTS OF REMOVING SOIL IN LIFTS USING A 'TOP-DOWN' APPROACH. THE INITIAL LIFT CONSISTS OF THE VERTICAL DISTANCE MEASURED FROM THE TOP OF GROUND AT THE SOIL NAIL WALL FACE TO THE MINIMUM DEPTH REQUIRED TO INSTALL THE UPPERMOST SOIL NAIL (GENERALLY, ONE FOOT BELOW THE SOIL NAIL). SUBSEQUENT LIFTS CONSIST OF THE VERTICAL DISTANCE MEASURED FROM THE PREVIOUS POINT TO THE MINIMUM DEPTH REQUIRED TO INSTALL THE NEXT SOIL NAIL. INSTALL STRUCTURAL SHOTCRETE FACING PRIOR TO PROGRESSING TO NEXT LIFT OF WALL.

(A) TYPICAL SEQUENCE FOR SLIDES 2A/B, 2D/E AND 4.

I. CLEAR AND GRUB SLOPE TO ROUGH GRADE.
II. TRIM TO FINAL WALL FACE EXCAVATION LINE.
III. INSTALL SOIL NAILS.
IV. INSTALL BEARING PLATES, BAR HEX NUTS AND DRAIN BOARD.
V. INSTALL PERMANENT WALL REINFORCEMENT AND SHOTCRETE EXTEND GEOCOMPOSITE DRAINAGE STRIPS THROUGH THE WALL BASE.
VI. REPEAT STEPS II THROUGH V FOR ADDITIONAL LIFTS.
VII. BACKFILL TO RESHAPE SLOPE
VIII. SEED AND REVEGETATE SLOPE

(A) TYPICAL SEQUENCE FOR SLIDES 1 AND 2C.

I. CLEAR AND GRUB SLOPE.
II. EXCAVATE SLOPE TO 1:1 FOR FULL REPAIR HEIGHT.
III. INSTALL SOIL NAILS.
IV. INSTALL HIGH CAPACITY WIRE MESH
V. BACKFILL TO RESHAPE SLOPE
VI. SEED AND REVEGETATE SLOPE

13. DO NOT UNDERMINE THE WALL DURING EXCAVATION BEYOND THE CAPACITY OF THE SOIL NAIL SYSTEM TO SUPPORT ITSELF. DO NOT EXCAVATE SLOPES BEYOND THE SOIL'S ABILITY TO STAND UNSUPPORTED. USE STRUT NAILS AND TEMPORARY STABILIZATION BERMS WHERE LOCAL INSTABILITY IS OBSERVED OR ADDITIONAL BEARING CAPACITY OR VERTICAL SUPPORT IS REQ'D.
14. GENERAL EXCAVATION OPEN CUTS SHALL CONFORM TO OSHA REQUIREMENTS. OPEN CUTS SHALL BE DESIGNED BY LSI AND SHALL TAKE THE STABILITY OF THE SLOPE INTO CONSIDERATION.

INSPECTION AND MONITORING:

15. LSI SHALL TAKE PHOTOGRAPHS AND PERFORM A PRE- CONSTRUCTION SURVEY (IF REQUIRED) TO DOCUMENT CONDITIONS OF ADJACENT EXISTING STRUCTURES, WALLS, PAVEMENTS, UTILITIES, ETC. PRIOR TO COMMENCEMENT OF WORK.
16. SERVICES FOR WORK INSPECTION, QUALITY CONTROL (QC) MATERIAL TESTING, AND SURVEYING AND MONITORING OF SOIL NAIL INSTALLATION SHALL BE PROVIDED BY LSI. LSI WILL COOPERATE WITH ARCADIS ENGINEERS AND SHALL FURNISH EQUIPMENT, TOOLS, AND LABOR ON SITE, AS REQUIRED, TO FACILITATE SUCH TASKS.
17. SHOULD EXCESSIVE OR SUDDEN INCREASE OF GROUND SETTLEMENT OR SOIL NAIL WALL MOVEMENT BE DETECTED, STOP WORK AND IMMEDIATELY NOTIFY THE ENGINEER.

SOIL NAIL INSTALLATION:

18. THE ALLOWABLE TOLERANCES (DEVIATION FROM PLAN) SHALL BE AS FOLLOWS:

NAIL POSITION:	± 6 INCHES
NAIL LENGTH:	± 0.5 INCHES
NAIL INCLINATION:	± 5 DEGREES
SHOTCRETE THICKNESS:	- 1.0 INCHES

19. AT LOCATIONS WHERE NAILS CONFLICT OCCURS (CULVERT), ADJUST SKEW AND INCLINATION AS REQ'D TO AVOID INTERFERENCE.
20. PREPARE AND SUBMIT INSTALLATION RECORDS FOR EACH INSTALLED NAIL. INCLUDE: NAIL HEAD ELEVATION; HOLE DIAMETER; DRILLING METHOD; UNUSUAL DRILLING CONDITIONS; ELEVATION OF HARD BEDROCK; GROUNDWATER; BAR SIZE INSTALLED; OTHER USEFUL DATA.

PROOF TESTING

21. NOT LESS THAN FIVE PERCENT OF THE PRODUCTION NAILS OR AT LEAST ONE NAIL PER ROW SHALL BE PROOF TESTED AT EACH SITE. THE PROOF TEST SHALL BE PERFORMED BY INCREMENTALLY LOADING THE NAIL TO 150% OF THE DESIGN TEST LOAD (DTL). THE DESIGN TEST LOAD SHALL BE 1.5 KIPS/FT. THE NAIL MOVEMENT AT EACH LOAD SHALL BE MEASURED AND RECORDED. AT LOAD INCREMENTS OTHER THAN MAXIMUM TEST LOAD, THE LOAD SHALL BE HELD LONG ENOUGH TO OBTAIN A STABLE READING. INCREMENTAL LOADING FOR PROOF TESTS SHALL BE IN ACCORDANCE WITH THE SCHEDULE BELOW. THE CREEP TEST AT 1.5 DTL SHALL BE ACCEPTABLE IF THE CREEP IS LESS THAN 0.04 INCHES BETWEEN THE 1 AND 10 MINUTE , OR LESS THAN 0.08 INCHES BETWEEN THE 6 AND 60 MINUTE READINGS.

AL (0.05 DTL MAX)
0.25 DTL
0.50 DTL
0.75 DTL
1.00 DTL
1.25 DTL
1.50 DTL (MAX TEST LOAD)

AL = ALIGNMENT LOAD
DTL = DESIGN TEST LOAD

MATERIALS:

22. SHOTCRETE SHALL BE A PUMPABLE MIXTURE WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI AND A MINIMUM 3-DAY COMPRESSIVE STRENGTH OF 1,500 PSI. USE TYPE I OR II CEMENT. SHOTCRETE SHALL COMPLY WITH THE REQUIREMENTS OF ACI 506.2, "SPECIFICATIONS FOR MATERIALS, PROPORTIONING AND APPLICATION OF SHOTCRETE". EXCEPT AS OTHERWISE SPECIFIED. THE WET-MIX PROCESS CONSISTS OF THOROUGHLY MIXING ALL THE INGREDIENTS, INTRODUCING THE MIXTURE INTO THE DELIVERY EQUIPMENT AND DELIVERING IT BY POSITIVE DISPLACEMENT.

MATERIAL	WEIGHT PER CY
3/8" ROCK	500 LBS
SAND	2082 LBS
CEMENT	750 LBS
WATER	340 LBS
FLY ASH	100 LBS (41 GAL)
AIR ENTRAINMENT	6% (1.6 CUBIC FEET)

0.40 TO 0.50 WATER/CEMENT RATIO

23. PROPORTION NAIL GROUT TO HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI. USE TYPE I OR TYPE II CEMENT.

BATCH WEIGHT PER CUBIC YARD (CY)

MATERIAL	WEIGHT PER CY
CEMENT	2062 LBS (21.9 94-LBS BAGS)
WATER	1030.5 LBS (123.5 GALLONS)

MIX PER 94# BAG OF CEMENT

MATERIAL	WEIGHT PER CY
CEMENT	1 BAG (94 LBS)
WATER	5.6 GALLONS

0.5 TO 0.6 WATER/CEMENT RATIO

MATERIALS:

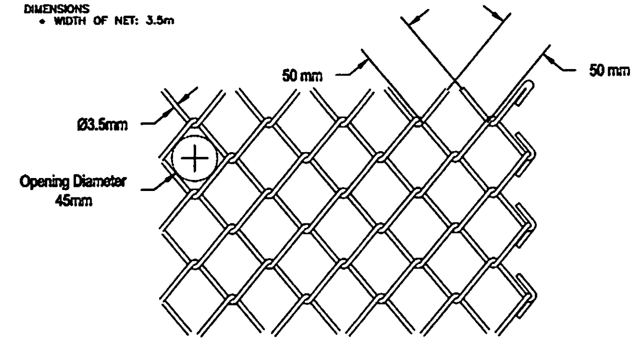
24. STEEL BEARING PLATES SHALL BE ASTM A36 1/2"X8"X8". GALVANIZED IN ACCORDANCE WITH ASTM A123 FOR MESH-ONLY APPLICATION .
25. SOIL NAIL BARS SHALL BE T40/16 INJECTION ANCHORS (OR EQUIVALENT) WITH EMBEDMENT LENGTHS, SPACING, AND INSTALLATION ANGLE SHOWN ON ELEVATION AND CROSS-SECTION VIEWS FOR EACH SLIDE. THE DRILL-BIT SHALL HAVE A 4-INCH DIAMETER.
26. PLACEMENT TOLERANCES FOR CONCRETE, FABRICATION, AND PLACING OF REINFORCEMENT (INCLUDING LAP SPLICES AND OVERLAP) SHALL CONFORM TO APPLICABLE AMERICAN CONCRETE INSTITUTE (ACI) AND CONCRETE REINFORCING STEEL INSTITUTE (CRSI) REQUIREMENTS.
27. REINFORCING BARS SHALL BE GRADE 60 DEFORMED BARS IN ACCORDANCE WITH ASTM A615. WELDED WIRE REINFORCING SHALL BE GRADE 60, 4X4 - W4.0XW4.0
28. GEOCOMPOSITE DRAINAGE BOARD SHALL HAVE A MINIMUM TRANSMISSIVITY OF 5.7 GPM/FT OF WIDTH AS MEASURED BY ASTM D4716. FILTER FABRIC COMPONENT OF DRAINAGE BOARD SHALL BE WOVEN OR NONWOVEN WITH A MINIMUM APPARENT OPENING SIZE EQUAL TO US STD. SIEVE NO. 100. DRAIN BOARD SHALL BE INSTALLED EVERY 4-FEET BETWEEN THE SOIL NAILS ALONG THE FACE OF EXCAVATION. DRAIN BOARDS SHALL BE CONTINUOUS AND ANY SPLICES SHALL BE MADE WITH A ONE-FOOT MINIMUM OVERLAP SUCH THAT THE FLOW OF WATER IS NOT IMPEDED.
29. HEX NUTS - GALVANIZED FOR MESH-ONLY APPLICATIONS.
30. HIGH STRENGTH MESH FACING (SUPERMESH)

WIRE MESH SPECIFICATIONS AND PLACEMENT

GEOMETRY
- MESH SIZE: 50mm X 50mm
- DIAMETER OF WIRE: 3.5mm
- APROXX. OPEN AREA DIAMETER: 45mm

MATERIAL
- TENSILE STRENGTH OF WIRE: MIN 724 N/mm²
- CORROSION PROTECTION: GALFAN (0.85oz GALFAN COATING, ZINC 95%, ALUMINUM MISCHMETAL 5%)

DIMENSIONS
- WIDTH OF NET: 3.5m



PLACEMENT
- A 12" Ø BY 3-6" DEEP AREA SHALL BE DUGOUT AROUND THE SOIL NAILS. THE WIRE MESH WILL BE PLACED ALONG THE FACE OF THE SLOPE WITH THE SOIL NAILS EXTENDING THROUGH THE MESH. GALVANIZED OR EPOXY COATED STEEL BEARING PLATES WILL BE PLACED OVER THE SOIL NAILS AND SECURED TO THE SLOPE BY GALVANIZED OR EPOXY COATED HEX NUTS. THE HEX NUTS SHALL BE INSTALLED TO ACHIEVE 330 FT-LBS OF TORQUE.

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SCALE(S) AS INDICATED

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No.	Date	Revisions	By	Ckd
2	3/14/13	Replaced "ARCADIS" with "CHEVRON" Note 7	JDP	
2	3/14/13	Removed note "or wire mesh facing" in Const. Seq. (A) IV	JDP	

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Professional Engineer's Name: Cameron Anthony Lobato
Professional Engineer's No.: 75136
State: CA | Date Signed: 3/18/13 | Project Mgr.: Dan K.
Designed by: CALMAB | Drawn by: NRB/JDP | Checked by: CAL

LANDSLIDE SOLUTIONS, INC.

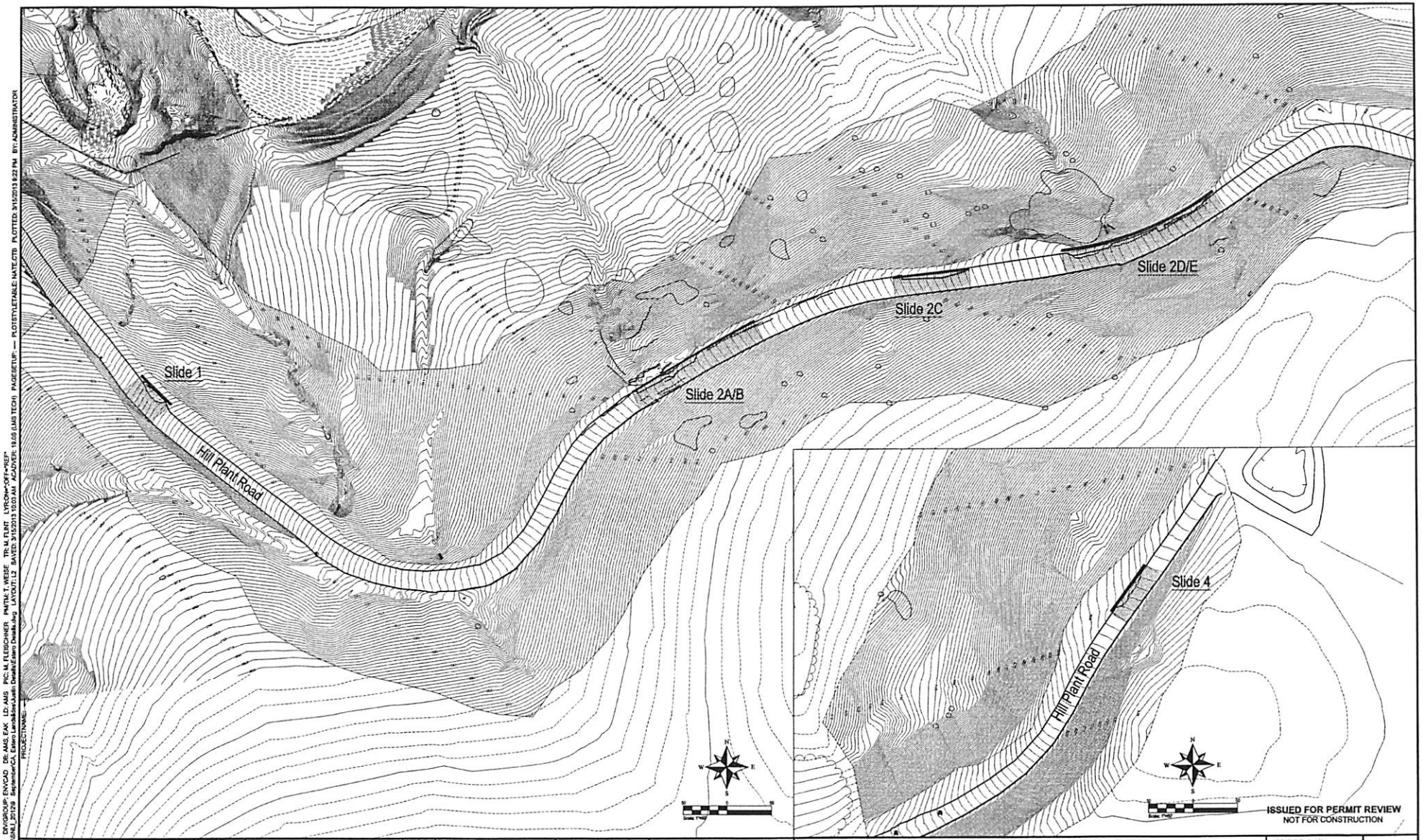
CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

General Notes

Landslide Solutions, Inc.

ARCADIS Project No. B0047172.0012
Date March 2013
ARCADIS
2300 NORTH FIRST STREET
SUITE 200
SAN JOSE, CA 95131
TEL. 408.750.3000

L-1



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Professional Engineer's Name		
Cameron Anthony Lobato		
Professional Engineer's No.		
75196		
State	Date Signed	Project Mgr.
CA	3/15/13	Dan K.
Designed by	Drawn by	Checked by
CAL/MAB	NRB/JDP	CAL

REGISTERED PROFESSIONAL ENGINEER CAMERON ANTHONY LOBATO 75196 3-18-13 CIVIL STATE OF CALIFORNIA

LANDSLIDE SOLUTIONS, INC.

CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

Plan View

Landslide Solutions, Inc.

ARCADIS Project No.
B0047172.0012

Date
March 2013

ARCADIS
2550 NORTH FIRST STREET
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SAN JOSE, CA 95131
TEL. 408.797.2000

L-2

CITY: SYRACUSE NY DIV/GROUP: ENVCAD DB: AMS, EAK LD: AMS PIC: M.FLEISCHNER PMTR: T-WEBE TB: M.FLINT LYR: On=*;Off=*;Freeze=* \\gal\Home\Documents\SRM_LJ\2129 Berkshire-CA, Estero Landslide\Arcadis Design\Estero Design.dwg LAYOUT: L2 SAVED: 3/15/2013 11:02:00 AM ACADVER: 18.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: NATE.CTB PLOTTED: 3/15/2013 8:22 PM BY: ADMINISTRATOR
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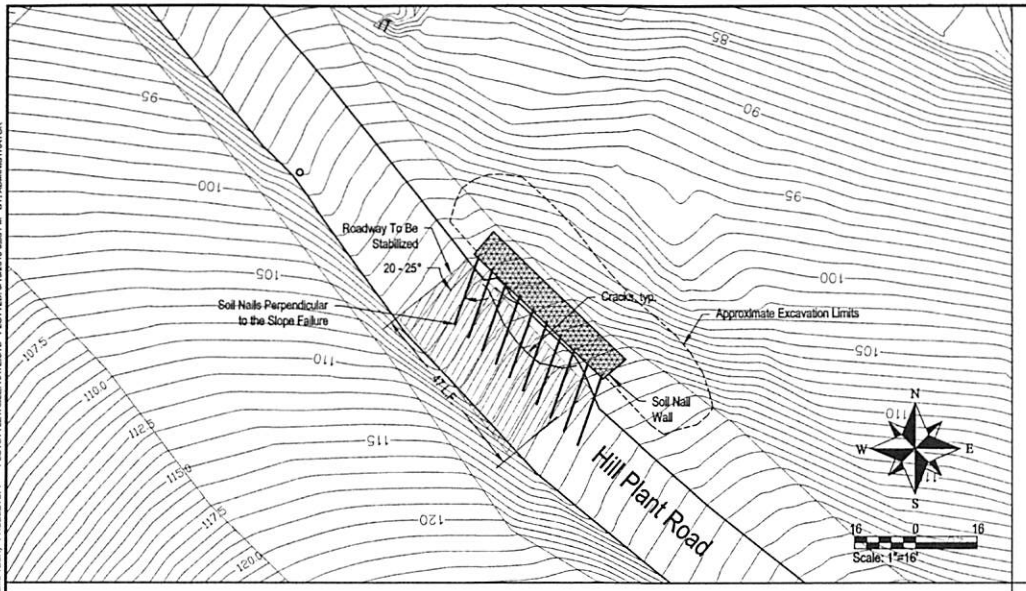

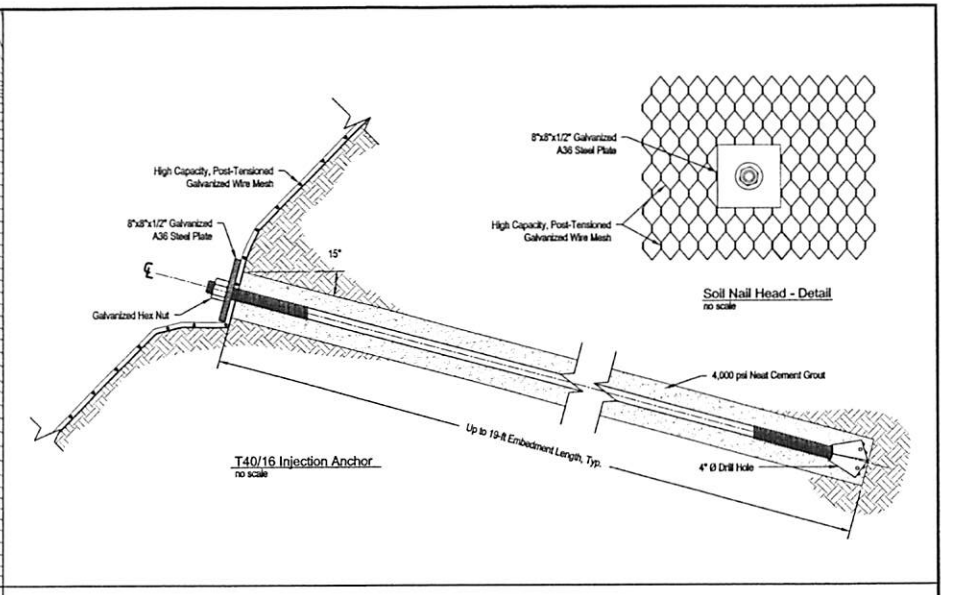

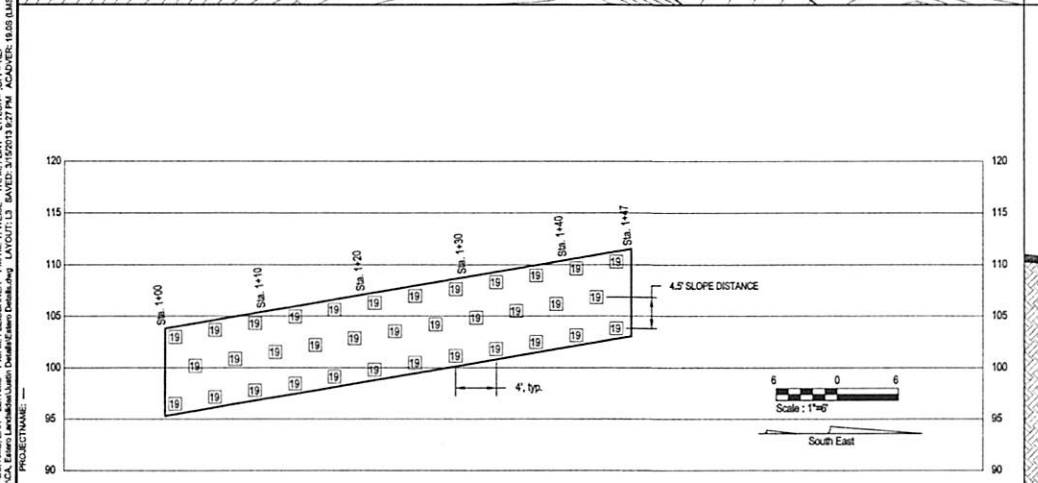

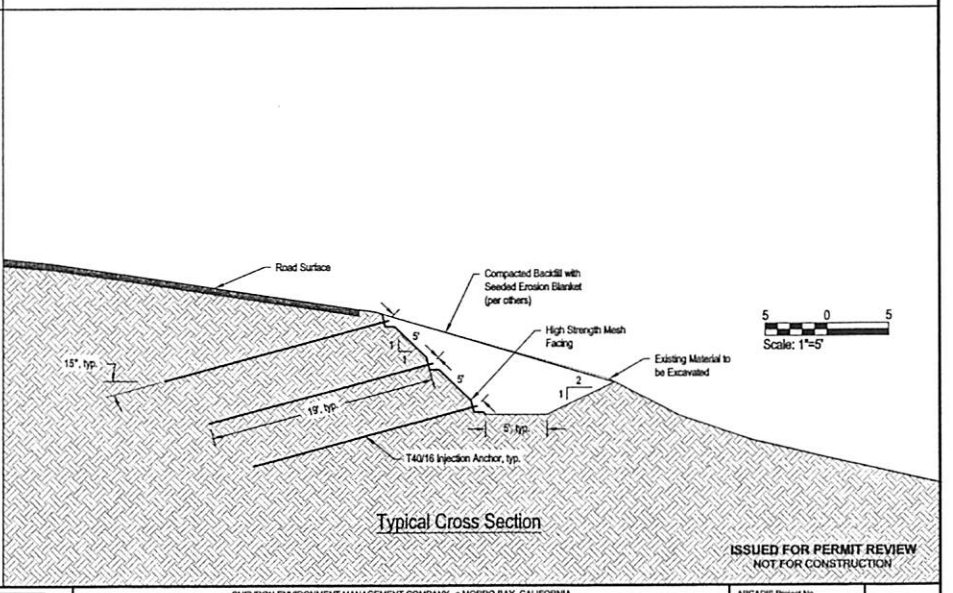

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No.	Date	Revisions	By	Ckd
2	3/15/13	Added Wire Mesh to Plan View	JDP	
2	3/15/13	Revised Excavation Limits in Plan View	JDP	
2	3/14/13	Added Nail Angle Dimension on Plan View	JDP	
1	9/26/2012	Modified Slope Below Wall	JDP	

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Professional Engineer's Name: Cameron Anthony Lobato
Professional Engineer's No.: 75196
State: CA | Date Signed: 3/15/13 | Project Mgr.: Dan K.
Designed by: CAL/MAB | Drawn by: NRB/JDP | Checked by: CAL

REGISTERED PROFESSIONAL ENGINEER CAMERON ANTHONY LOBATO 75196 5/15/15 CIVIL STATE OF CALIFORNIA

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Slide 1

Landslide Solutions, Inc.

ARCADIS Project No. B0047172.0012
Date: March 2013
ARCADIS 2550 NORTH FIRST STREET SUITE 200 SAN JOSE, CA 95131 TEL. 408.797.2000

L-3

CITY: SYRACUSE NY DIV/GROUP: ENVCAD DB: AMS, EAK LD: AMS PIC: M. FLEISCHNER PM/TM: T. WEISE TR: M. FLINT LYR:ON=*;OFF=*REF*
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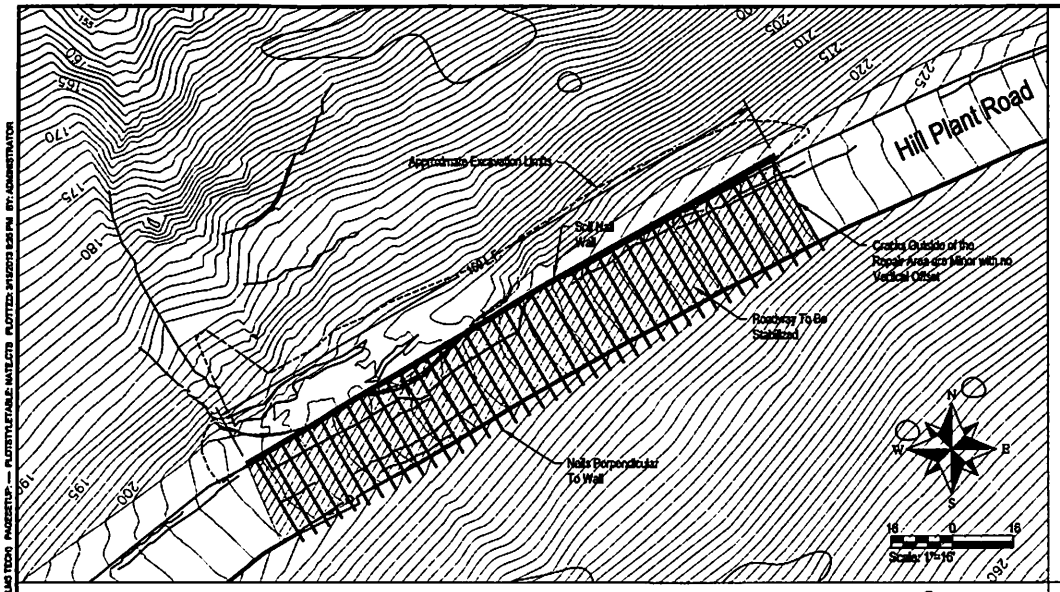
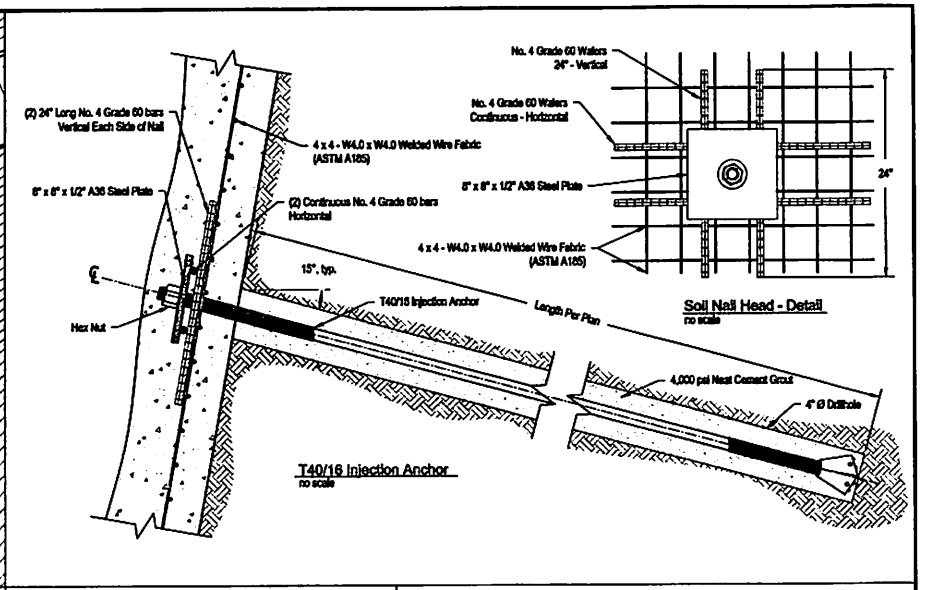
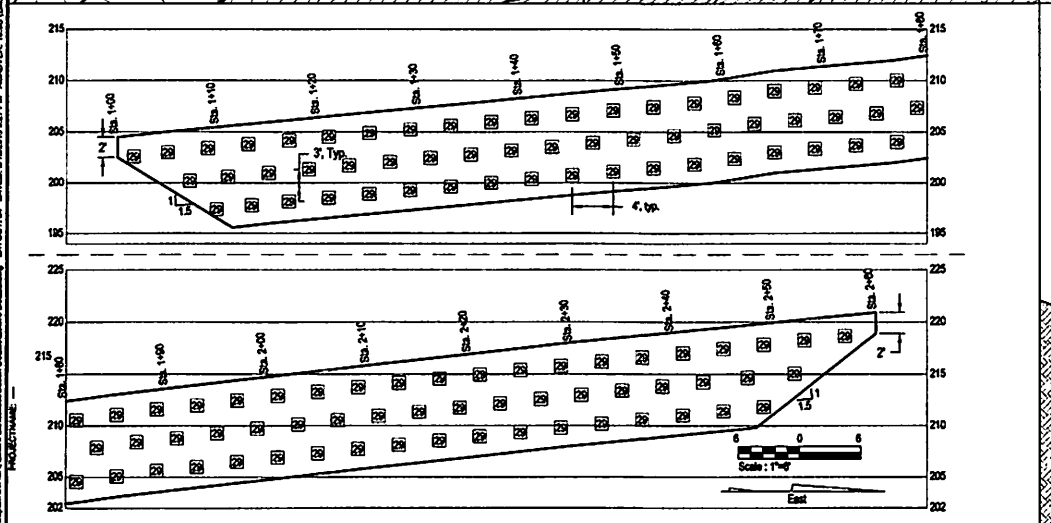
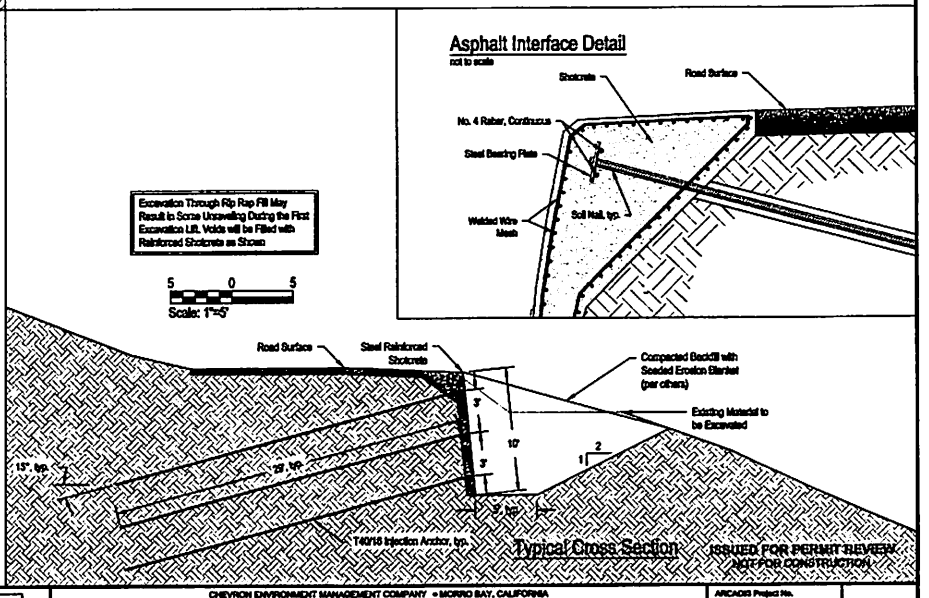






Elevation View

19 - Nail Embedment Depth



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No.	Date	Revisions	By	Chk
3	3/15/13	Revised Excavation Limits in Plan View	JOP	
2	3/14/13	Added Nails in Plan View	JOP	
1	3/26/2012	Added Asphalt Interface Detail, Modified Slope Below Wall	JOP	

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Professional Engineer's Name: Cameron Anthony Lobato
Professional Engineer's No.: 75196
State: CA | Date Signed: 3/15/13 | Project Mgr.: Dan K.
Designed by: CALIMAS | Drawn by: NRBJOP | Checked by: CAL

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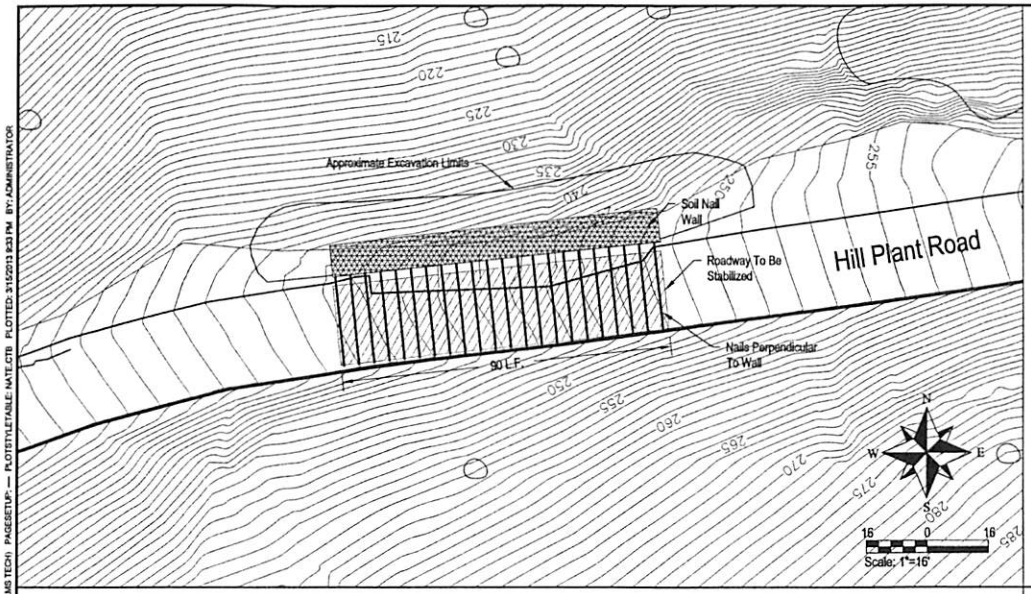
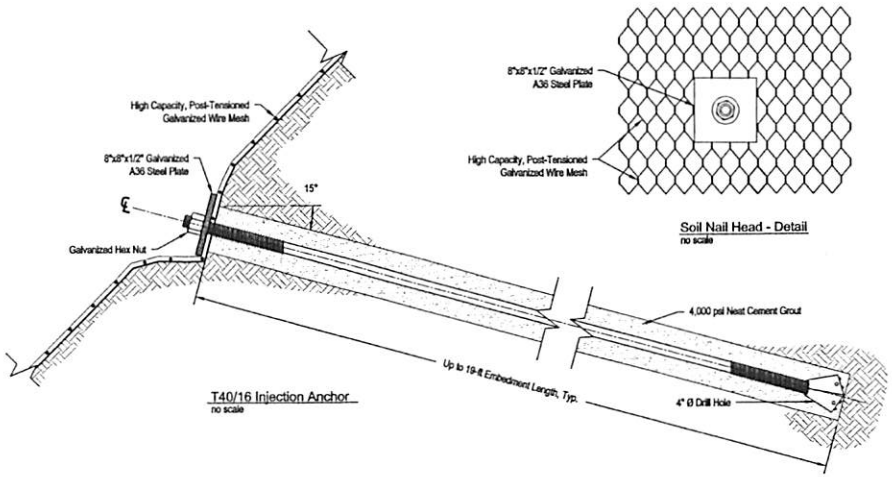
Slide 2A/B

Landslide Solutions, Inc.

ARCADIS Project No. B0041712.0012
Date: March 2013
ARCADIS 2220 NORTH FIRST STREET SUITE 200 SAN JOSE, CA 95131 TEL. 408.797.3030

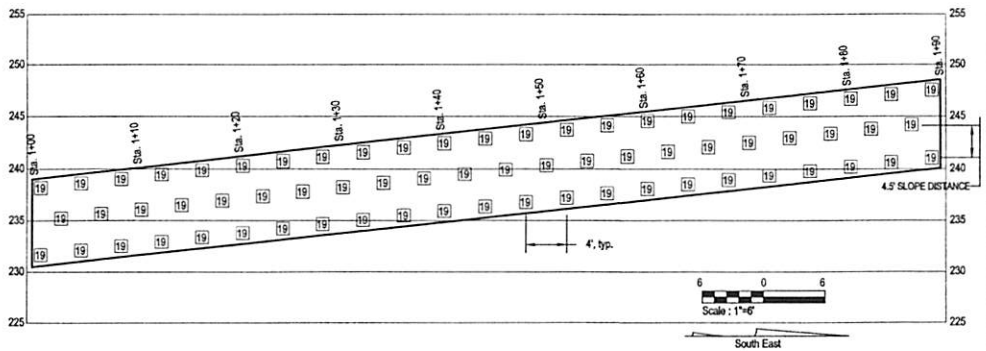
L-4





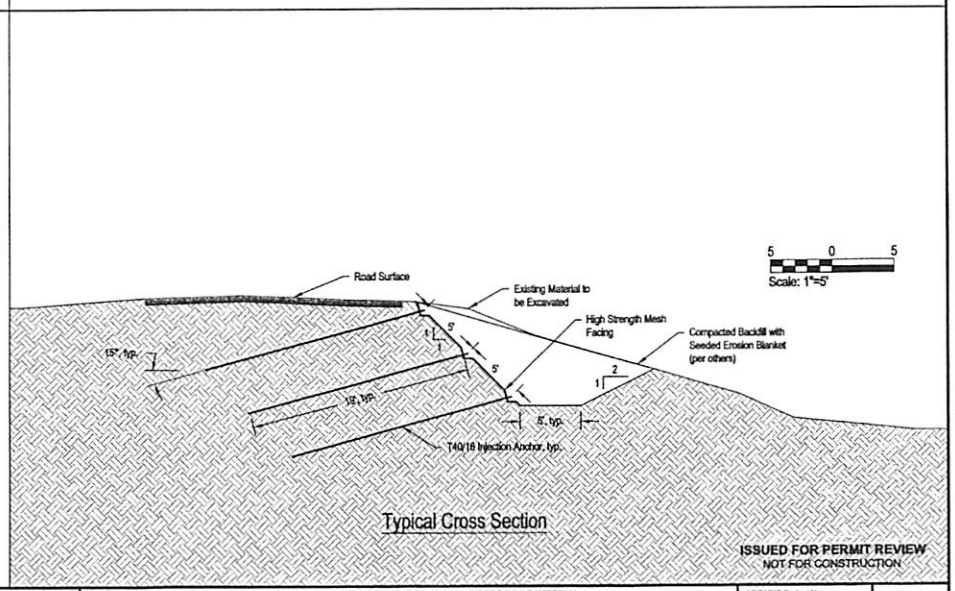
T40/16 Injection Anchor
no scale

Soil Nail Head - Detail
no scale



Elevation View

19 - Nail Embedment Depth



Typical Cross Section

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SCALE(S) AS INDICATED

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No.	Date	Revisions	By	Chd
2	3/15/13	Added Wire Mesh to Plan View	JDP	
2	3/15/13	Revised Excavation Limits in Plan View	JDP	
2	3/14/13	Added Nails in Plan View	JDP	
1	9/26/2012	Modified Slope Below Wall	JDP	

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Professional Engineer's Name: Cameron Anthony Lobato
Professional Engineer's No.: 75196
State: CA | Date Signed: 3/15/13 | Project Mgr: Dan K.
Designed by: CAL/MAB | Drawn by: NRB/JDP | Checked by: CAL

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Slide 2C

Landslide Solutions, Inc.

ARCADIS Project No. B0047172.0012
Date: March 2013
ARCADIS
2550 NORTH FIRST STREET
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SAN JOSE, CA 95131
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L-5

CITY: SYRACUSE NY DIVGROUP: ENVCAD DB: AMS, EJK LD: AMS PC: M. FLEISCHNER PAINTS: T-WEBE TP: 24 FLNT LYROW=OFF=YES*
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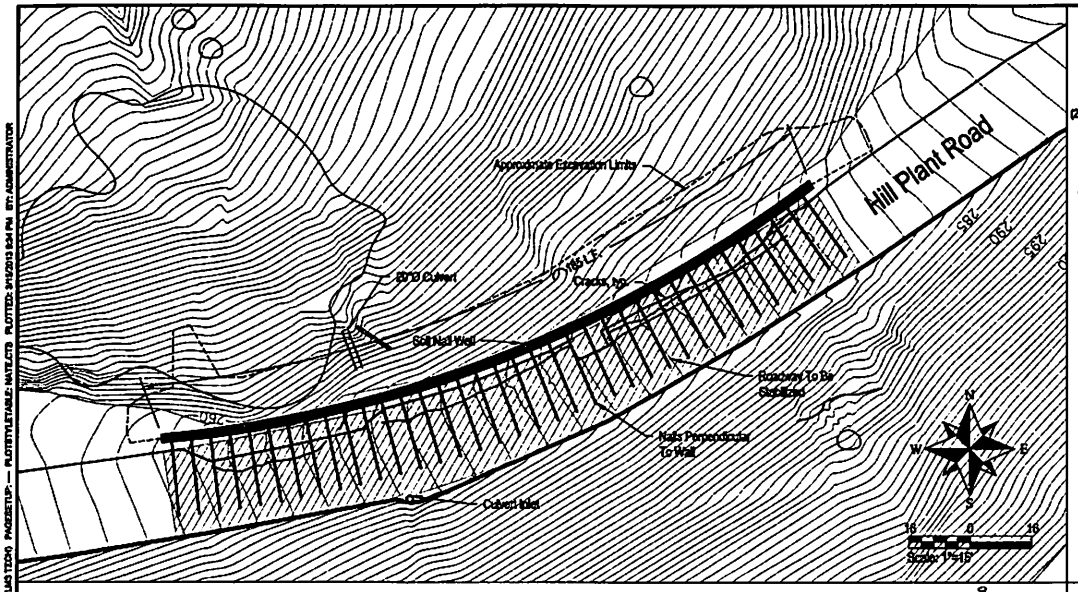

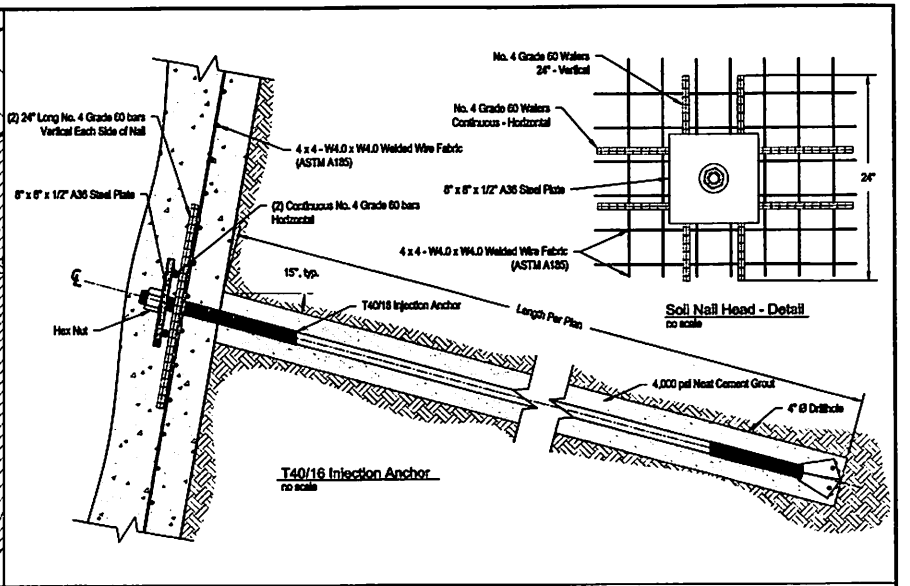

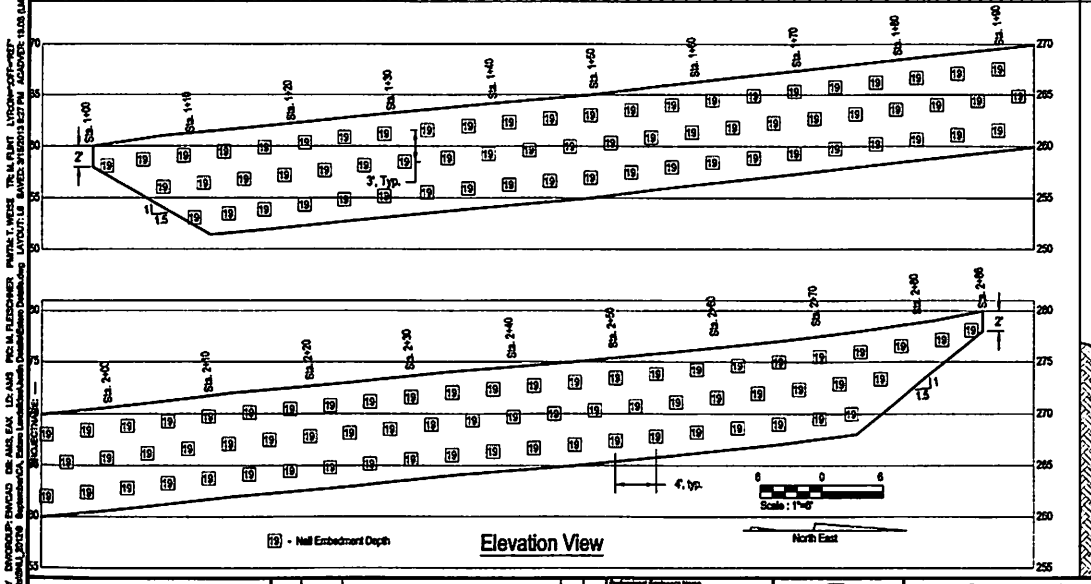

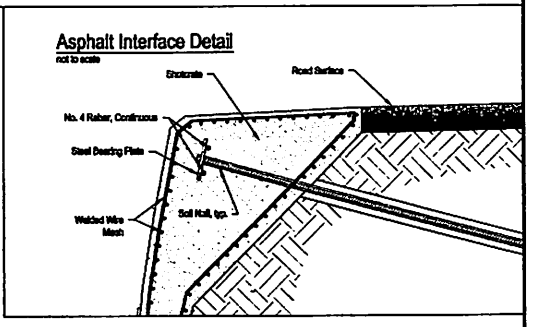

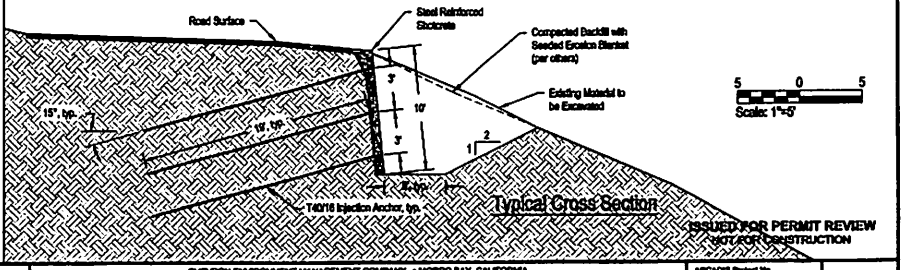

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No.	Date	Revisions	By	Chk
3	3/15/13	Revised Excavation Limits In Plan View	JDP	
2	3/14/13	Added Nails In Plan View	JDP	
1	9/28/2012	Added Asphalt Interface Detail, Modified Slope Below Wall	JDP	

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Professional Engineer's Name: Cameron Anthony Lobato
Professional Engineer's No.: 75136
State: CA | Date Signed: 3/15/13 | Project Mgr.: Dan K.
Designed by: CALMAB | Drawn by: NRD/JDP | Checked by: CAL

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ESTERO MARINE TERMINAL

Slide 2D/E

Landslide Solutions, Inc.

ARCADIS Project No. B0041772.0013
Date: March 2013

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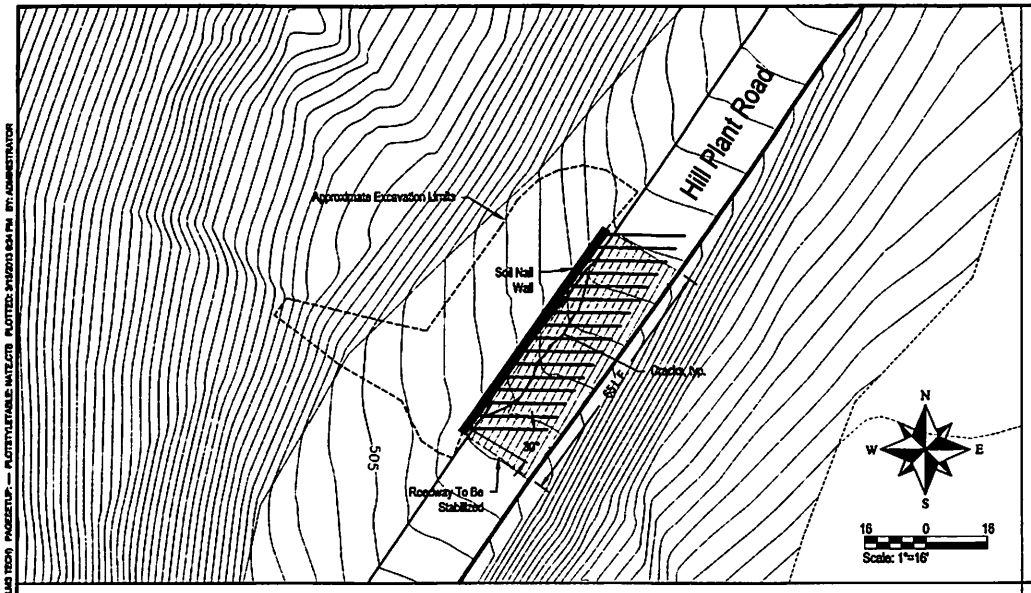
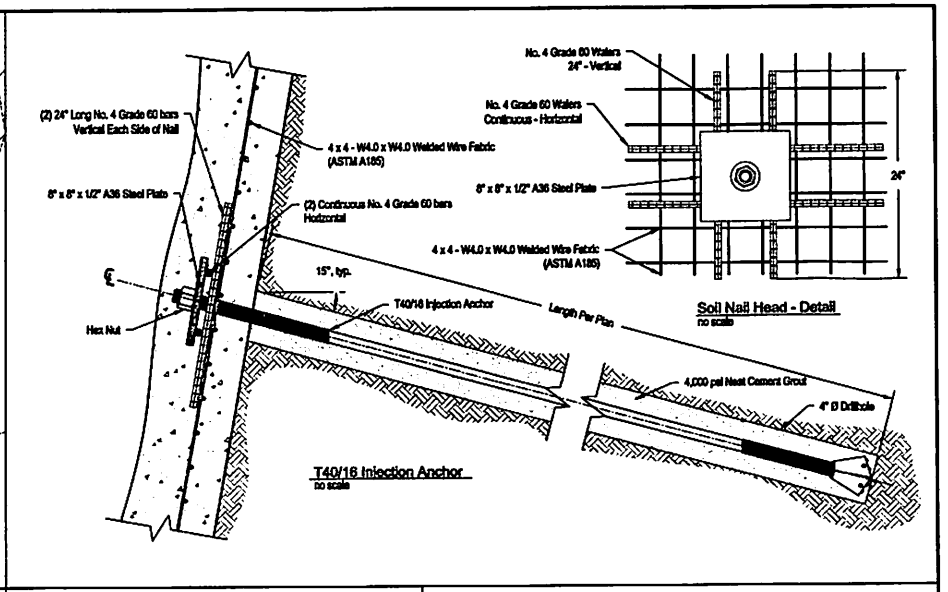
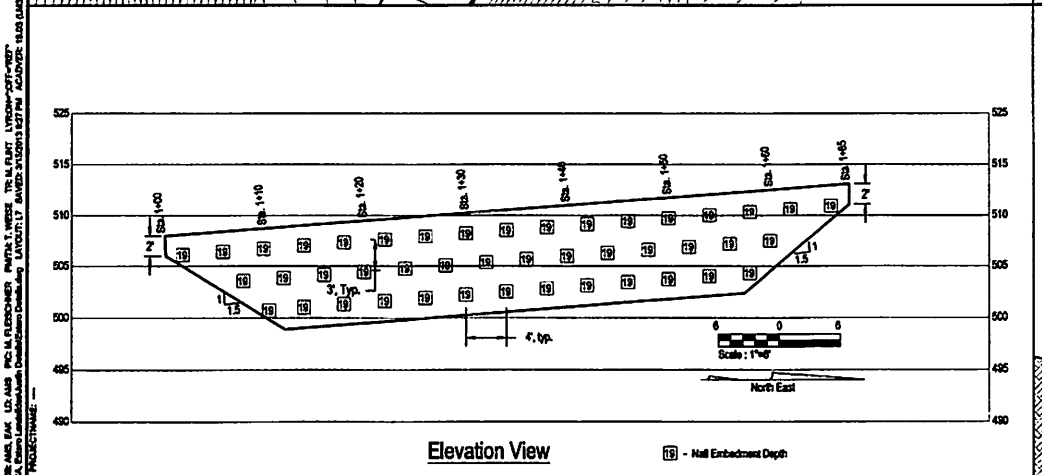
TEL. 408.787.3000

L-6

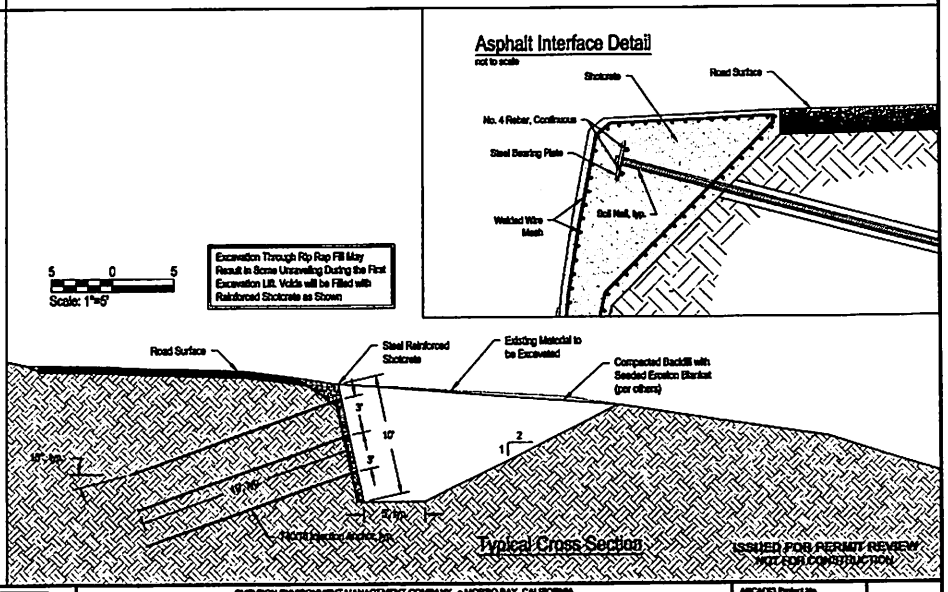






Elevation View

19 - Nail Embedment Depth



Typical Cross Section

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SCALE(S) AS INDICATED

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No.	Date	Revisions	By	Chk
2	3/19/13	Revised Excavation Limits in Plan View	JDP	
3	3/14/13	Added Nails in Plan View	JDP	
1	9/24/2012	Added Asphalt Interface Detail, Modified Slope Below Wall	JDP	

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Professional Engineer's Name: Cameron Anthony Lobato
Professional Engineer's No.: 78186
State: CA | Date Signed: 3/15/13 | Project Mgr.: Dan K.
Designed by: CAL/MAB | Drawn by: NRB/JDP | Checked by: CAL

LANDSLIDE SOLUTIONS, INC.

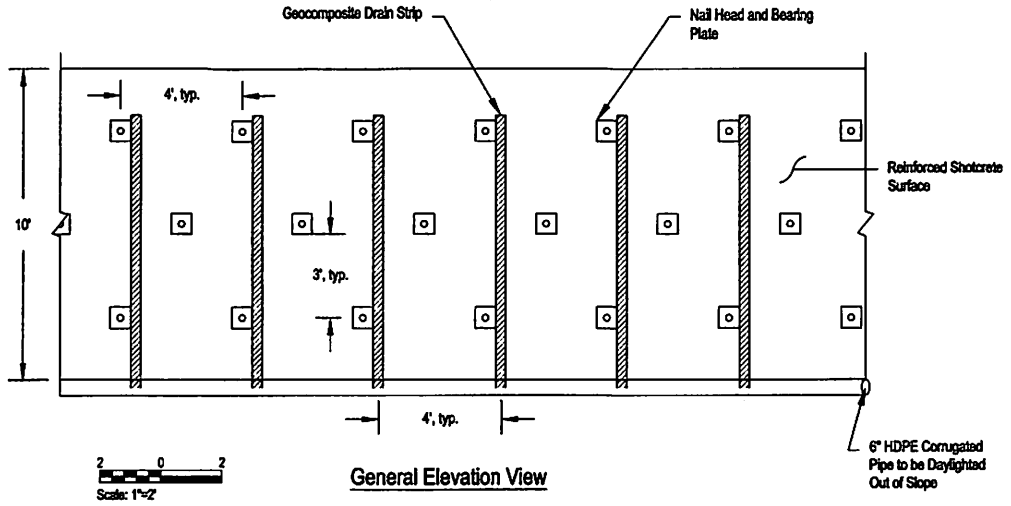
CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

Slide 4

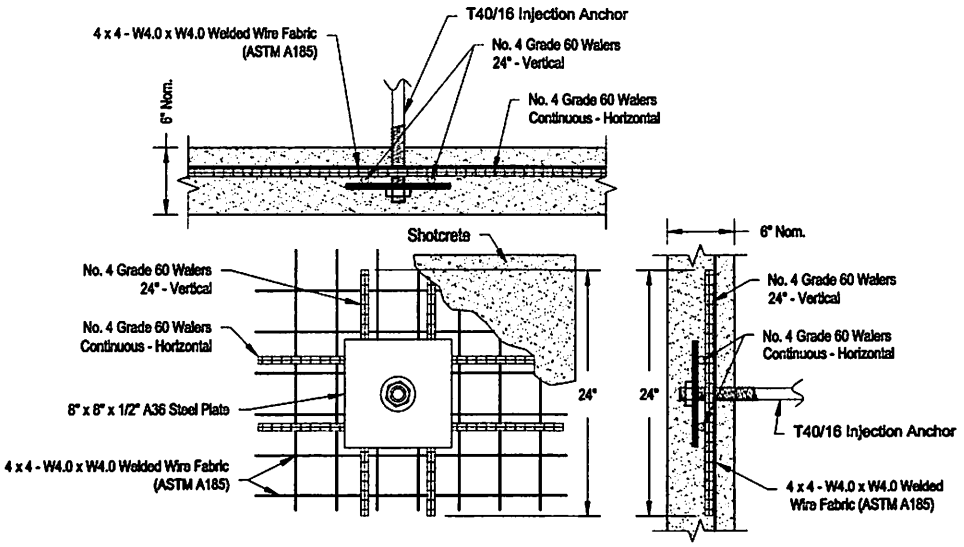
Landslide Solutions, Inc.

ARCADIS Project No. B0041772.0012
Date: March 2013
ARCADIS
2020 NORTH FIRST STREET
SUITE 200
SAN JOSE, CA 95131
TEL. 408.797.2020

L-7

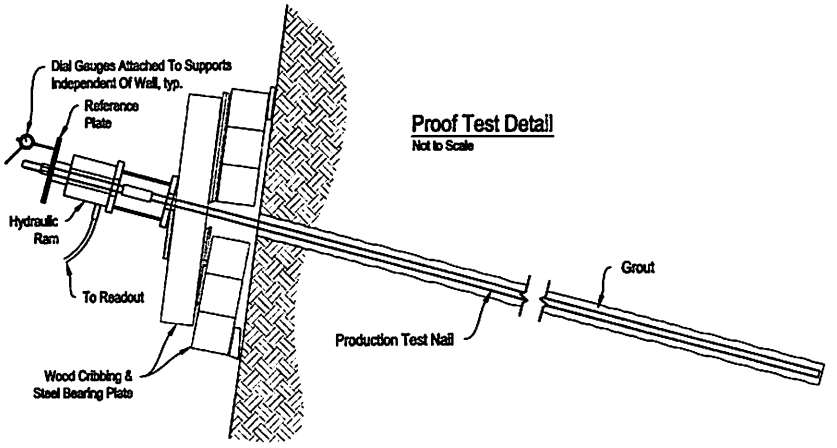


General Elevation View



Reinforced Shotcrete Facing Detail

Not to Scale



Proof Test Detail

Not to Scale

- Proof tests will be performed on production nails, test nails will be determined by the onsite engineer. Test nails will be tested 72 hours after installation. Proof testing may be conducted before 72 hours provided that the Contractor submits qualified independent test data demonstrating that the grout mix has reached its minimum 3-day compressive strength.
- Proof Test Procedure: Testing equipment shall include dial gauges, dial gauge support, jack, and pressure gauge. Electronic testing equipment or load cells shall not be used. The testing reaction frame shall be constructed of sections of heavy timber sufficiently rigid and of adequate dimensions such that excessive deformation of the testing equipment does not occur. The jack shall be independently supported and centered over the nail bar so that the bar does not carry the weight of the testing equipment. The jack, bearing plates and stressing anchorage shall be aligned with the bar such that unloading and repositioning of the equipment shall not be required during the test. The Contractor shall apply and measure the test load with a hydraulic jack and pressure gauge; the pressure gauge shall be graduated in 100 psi increments or less. The jack and pressure gauge shall have a pressure range not exceeding twice the anticipated maximum test pressure. Jack ram travel shall be sufficient to allow the test to be done without resetting the equipment. Monitor the nail load during verification tests with both the pressure gauge and load cell. The Contractor shall measure the nail head movement with a dial gauge capable of measuring to 0.0010 inch. Visually align the gauge to be parallel with the axis of the nail and support the gauge independently from the jack or reaction frame. Due to the type of installation, test nails shall have bonded lengths only

. The following equation shall be used for determining the proof test nail dimensions to be used to avoid structurally overstressing the proof test nail bar size:

- $(CFy) \geq 1.50d$

  Where:

  C = 0.9 for Grade 60 and 75 bars

  Fy = Minimum Bar Yield Strength (118.1 kips for a Titan T40/16 Injection Anchor)

  1.5 = Pullout Resistance Safety Factor

  Qd = Allowable Pullout Resistance (43.5 kips at Max Embedment of 29-ft)

  Here, CFy = 118.1 kips * 0.9 = 106.3 kips and 1.50d = 65.3 kips, so the proposed test passes.

- The Design Test Load (DTL) during proof testing shall be 1.5 kips/ft. Proof tests shall be performed by incrementally loading the proof test nail to a maximum test load of 150 percent of the Design Test Load (DTL). The test load shall be monitored by a jack pressure gauge with a sensitivity and range meeting the requirements of pressure gauges used for soil nail testing. At load increments other than maximum test load,the load shall be held long enough to obtain a stable reading. Incremental loading for proof tests shall be in accordance with the following loading schedule. The soil nail movements shall be recorded at each load increment.

  PROOF TEST LOADING SCHEDULE
  LOAD HOLD TIME
  AL (0.05 DTL Max.) Until Stable
  0.25 DTL Until Stable
  0.50 DTL Until Stable
  0.75 DTL Until Stable
  1.00 DTL Until Stable
  1.25 DTL Until Stable
  1.50 DTL Max Test Load - See Below

Depending on performance, either ten (10) minute or sixty (60) minute creep tests shall be performed at the maximum test load (1.5DTL). The creep period shall start as soon as the maximum test load is applied and the nail movement shall be measured and recorded at 1, 2, 3, 5, 6 and 10 minutes. Where the nail movement between 1 minute and 10 minutes exceeds 0.04 inch, the maximum test load shall be maintained an additional 50 minutes and movements shall be recorded at 20, 30, 50 and 60 minutes.

- Proof test nail acceptance criteria:
  a. A total creep movement of less than 0.04 inch is measured between the 1 and 10 minute readings or a total creep movement of less than 0.08 inch is measured between the 6 and 60 minute readings and the creep rate is linear or decreasing throughout the creep test load hold period.

ISSUED FOR PERMIT REVIEW
NOT FOR CONSTRUCTION

SCALE(S) AS INDICATED

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING — USE TO VERIFY FUTURE REPRODUCTION SCALE

No.	Date	Revisions	By	Chk

THIS DRAWING IS THE PROPERTY OF THE ARCADIS ENTITY CONTRACTED IN THE TITLE BLOCK AND MAY NOT BE REUSED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF ARCADIS.

Professional Engineer's Name: Cameron Anthony Lobato
Professional Engineer's No.: 75196
State: CA | Date Signed: 3/15/13 | Project Mgr.: Dan K.
Designed by: CALA/AB | Drawn by: NRB/JDP | Checked by: CAL

LANDSLIDE SOLUTIONS, INC.

CHEVRON ENVIRONMENT MANAGEMENT COMPANY • MORRO BAY, CALIFORNIA
ESTERO MARINE TERMINAL

General Details

Landslide Solutions, Inc.

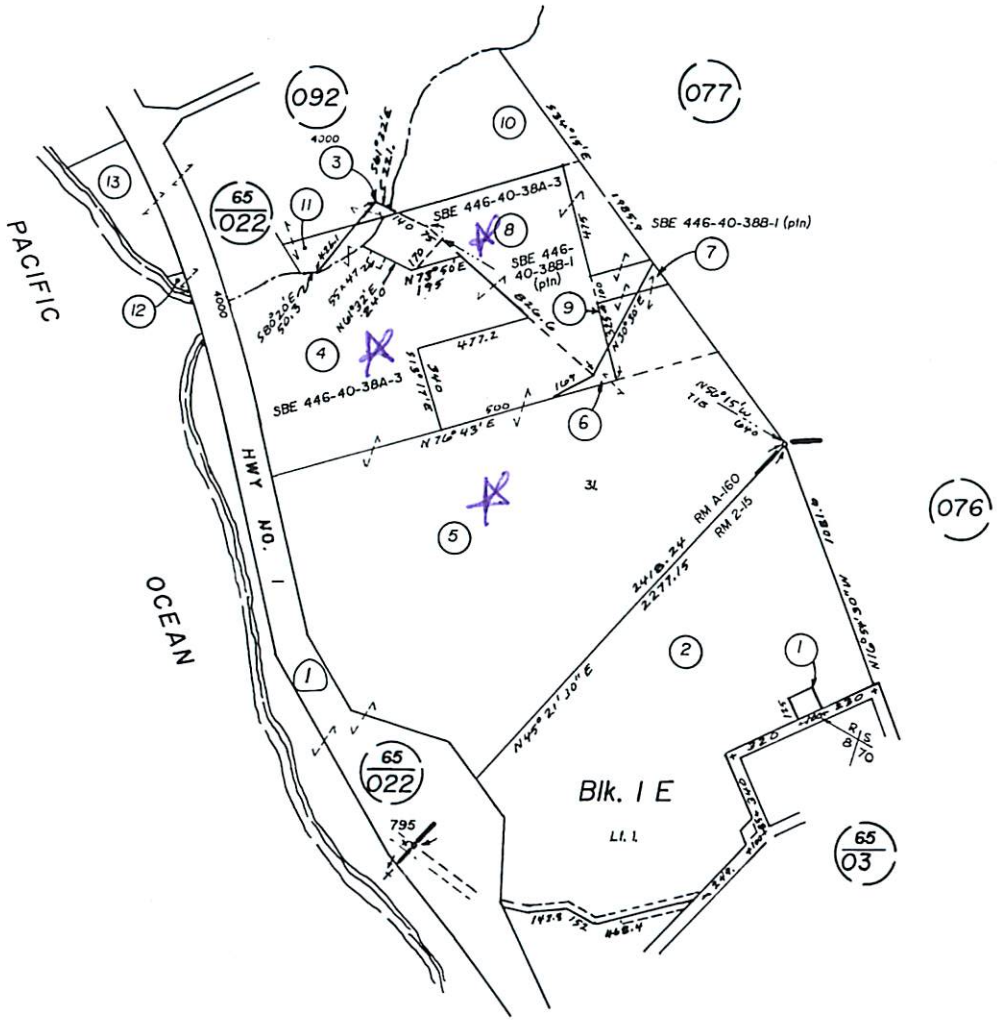
ARCADIS Project No. B0047172.2012
Date: March 2013

ARCADIS
2000 NORTH FIRST STREET
SUITE 200
SAN JOSE, CA 95131
TEL: 408.797.3000

L-8

RHO MORO Y CAYUCOS

73-075
FMLY PTN
73-092
64-30



1" = 500'

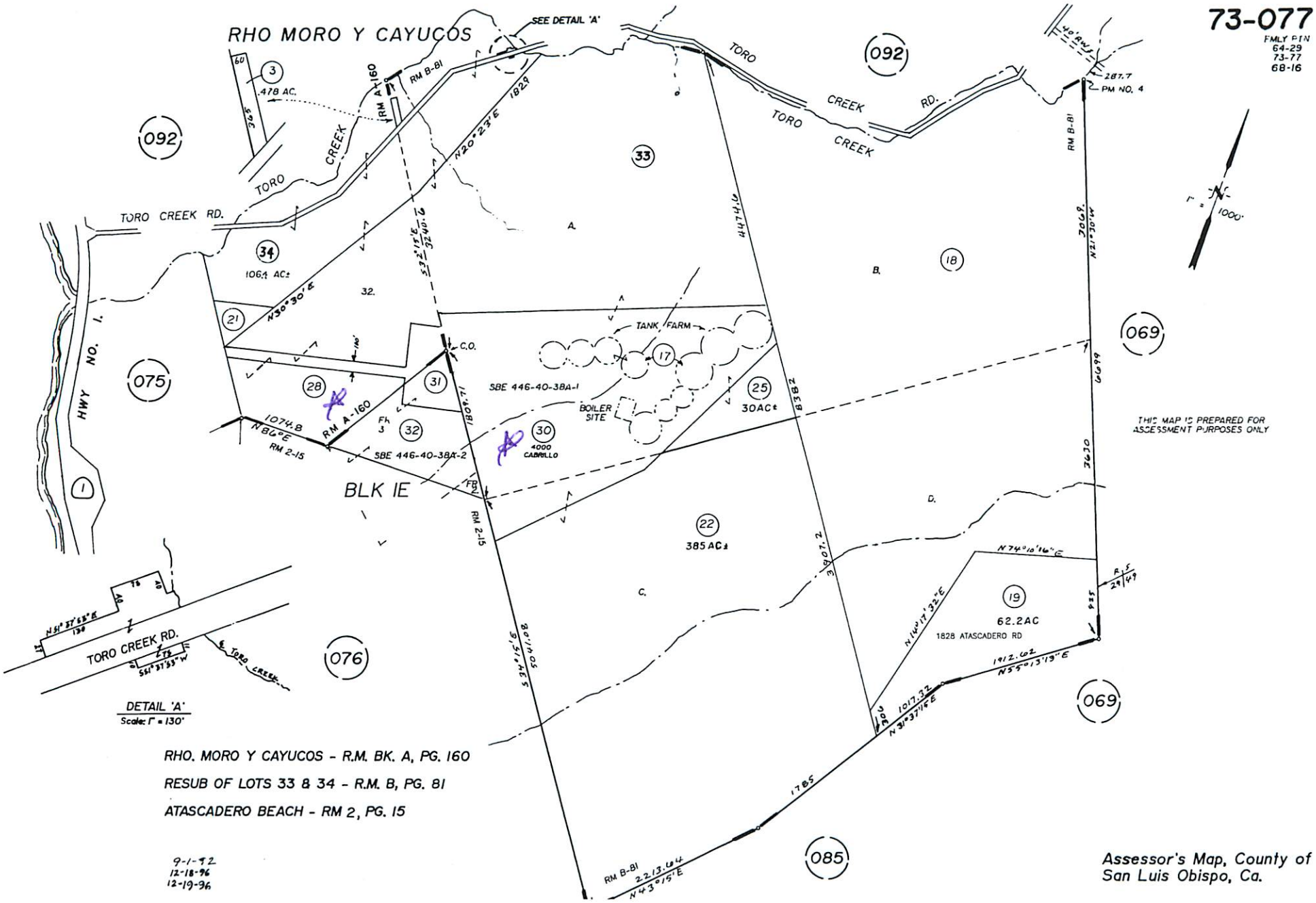
THIS MAP IS PREPRED FOR ASSESSMENT PURPOSES ONLY.

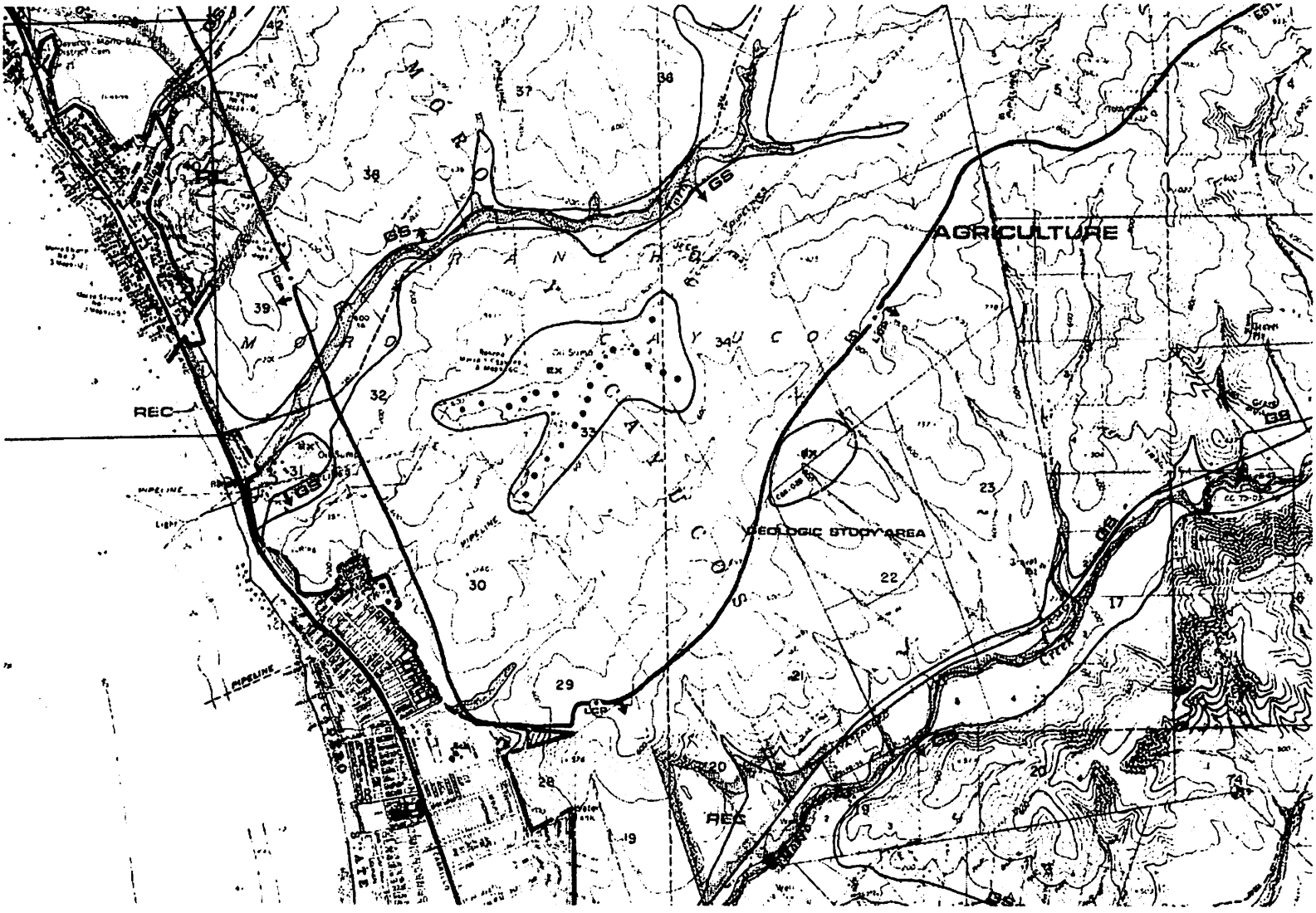
RHO MORO Y CAYUCOS - R.M. BK. A, PG. 160

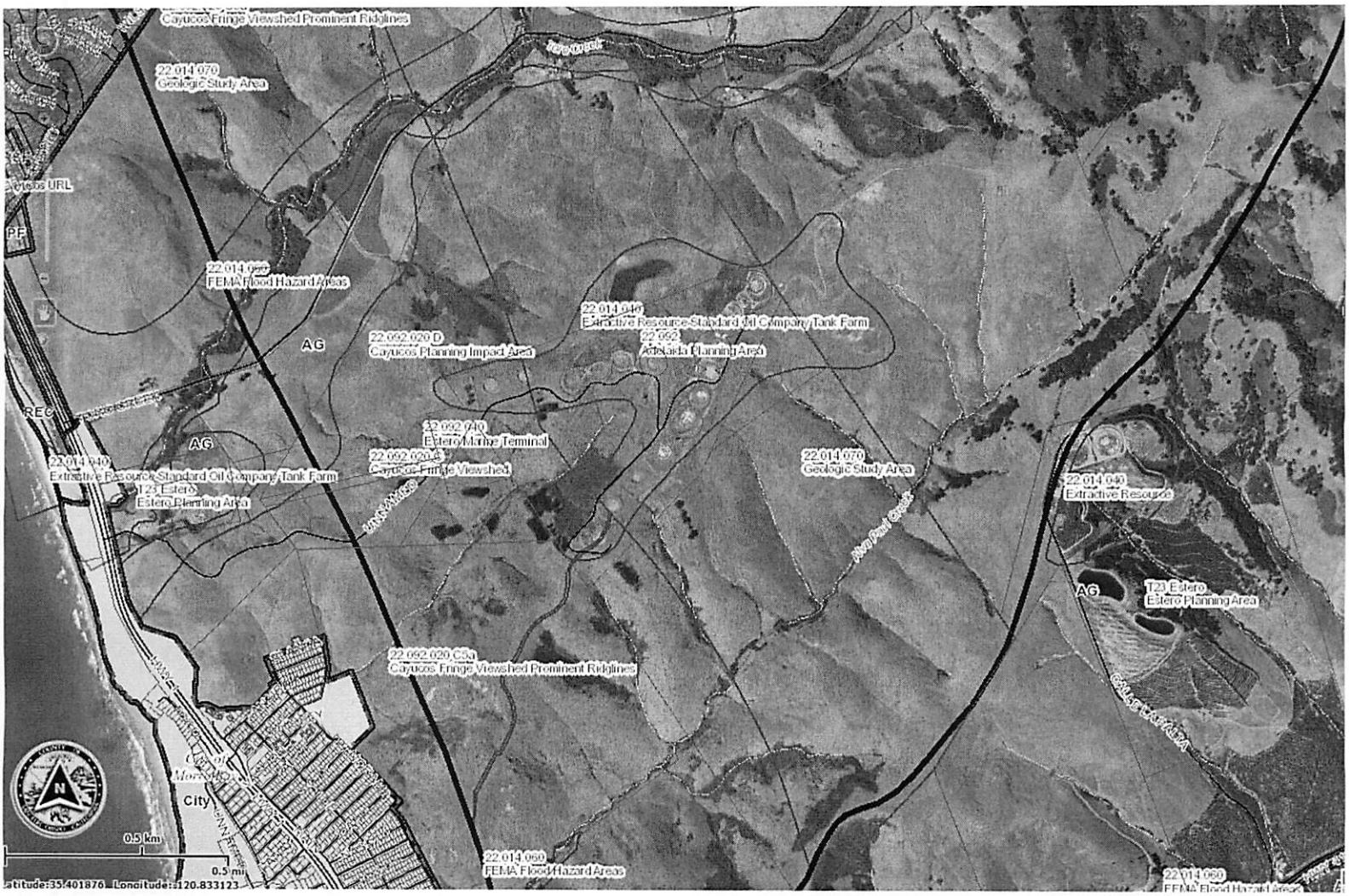
ATASCADERO BEACH - R.M. BK. 2, PG. 15

9-1-92

Assessor's Map, County of San Luis OBISPO, Ca.


73-077
FMLY PIN
64-29
73-77
68-16
RHO MORO Y CAYUCOS
SEE DETAIL 'A'
TORO CREEK RD.
TORO CREEK
HWY NO. 1
BLK IE
TANK FARM
BOILER SITE
SBE 446-40-38A-1
SBE 446-40-38A-2
4000 CABRILLO
30AC±
385AC±
62.2AC
1828 ATASCADERO RD
106.4 AC±
.478 AC.
RM A-160
RM B-81
RM 2-15
PM NO. 4
THIS MAP IS PREPARED FOR ASSESSMENT PURPOSES ONLY
DETAIL 'A'
Scale: 1" = 130'
RHO. MORO Y CAYUCOS - R.M. BK. A, PG. 160
RESUB OF LOTS 33 & 34 - R.M. B, PG. 81
ATASCADERO BEACH - RM 2, PG. 15
9-1-92
12-18-96
12-19-96
Assessor's Map, County of San Luis Obispo, Ca.


AGRICULTURE
GEOLOGIC STUDY AREA
REC
REC
GS
GS
GS
GS
GS
PIPELINE
PIPELINE
PIPELINE
LCP
LCP
37
38
39
32
33
34
30
29
28
19
20
21
22
23
17
5
4
42


Cayucos Fringe Viewshed Prominent Ridglines
22.014.070
Geologic Study Area
PF
22.014.050
FEMA Flood Hazard Areas
AG
22.092.020.D
Cayucos Planning Impact Area
22.014.040
Extractive Resource-Standard Oil Company Tank Farm
22.092
Adelaida Planning Area
REC
AG
22.092.040
Estero Marine Terminal
22.092.020.B
Cayucos Fringe Viewshed
22.014.040
Extractive Resource-Standard Oil Company Tank Farm
T23 Estero
Estero Planning Area
22.014.070
Geologic Study Area
22.014.040
Extractive Resource
AG
T23 Estero
Estero Planning Area
22.092.020.C3a
Cayucos Fringe Viewshed Prominent Ridglines
City
0.5 km
0.5 mi
22.014.050
FEMA Flood Hazard Areas
22.014.050
FEMA Flood Hazard Areas

TORO CREEK
City of
Morro Bay
200 m
500 ft

Parcel Summary Report For Parcel # 073-075-004

5/10/2013
11:22:10AM

San Luis Obispo County Department of Planning and Building
County Government Center San Luis Obispo, California 93408 Telephone: (805) 781-5600

People Information

Role	Name and Address
OWN	STANDARD PIPE LINE COMPANY

Address Information

Status	Address
P	04000 CABRILLO HY REST

Lot Information:

Tract / Twnshp	Block / Range	Section	Community:	Plan/Area:	Lue 1:	Lue 2:	Lue 3:	Lot:	Flags:	Misc
APV.C10-	0100	0005						Y		
APV.C10-	0099	7P						Y	LM	

Lot Information:

Tract / Twnshp	Block / Range	Section	Community:	Plan/Area:	Lue 1:	Lue 2:	Lue 3:	Lot:	Flags:	Misc
073075	004	0001	Estero Rural	Estero	FH	SRV	GS	N		
073075	004	0002	Estero Rural	Estero	CAZ	COJ	AS	N		
RHOMORCY	0000	31P	Estero Rural	Estero	AG	LCP	EX	N	IP	P920068Z / D940059P

Parcel Information

Status	Description
Active	RHO MORO Y CAY PTN LT 31

Notes

Tax Districts

COAST (SB1537)
CAYUCOS
SAN LUIS OBISPO JT(27,40)

Parcel Summary Report For Parcel # 073-075-004

San Luis Obispo County Department of Planning and Building
County Government Center San Luis Obispo, California 93408 Telephone: (805) 781-5600

CAYUCOS-MORRO
NO. 02
AREA NO. 21

Case Information

Case Number:	Case Status:	
70214	FNL	Primary Parcel
Description:		
96733	FNL	Primary Parcel
Description:		
BALLAST LINE REPLACEMENT		
97265	FNL	Primary Parcel
Description:		
ALARM LT & ABOVE GROUND SUMP TANK		
99401	FNL	Primary Parcel
Description:		
GRADING		
C4151	FNL	Primary Parcel
Description:		
DEMO TWO CRUDE OIL STORAGE TANKS #315 & 383 & UNDERGROUND PIPING 1250 LINEAR FT 3" TO 22" DIAMET		
D020315D	EX1	Primary Parcel
Description:		
EXCAVATE AND REMOVAL OF AFFECTED SOIL		
D940059P	CMP	Primary Parcel
Description:		
SOIL & GROUNDWATER/OIL SPILL CLEANUP		
D980068D	ISP	Primary Parcel
Description:		
TELECOMMUNICATIONS FACILITY		
DRC2012-00093	REC	Primary Parcel
Description:		
GRADING PERMIT, TO REPAIR THREE KNOWN ACTIVE LANDSLIDE AREAS		
P940175E	APP	Primary Parcel
Description:		
OIL SPILL CLEANUP AS DESCRIBED IN THE "WORKPLAN FOR SOIL AND GROUNDWATER INVESTIGATION,SHORE PLANT AREA,CHEVRON ESTERO MARINE TERMINAL" DATED 09/09/1994.		

Parcel Summary Report For Parcel # 073-075-004

San Luis Obispo County Department of Planning and Building
County Government Center San Luis Obispo, California 93408 Telephone: (805) 781-5600

P940247E ACC Primary Parcel

Description:

OIL SPILL CLEANUP AS DESCRIBED IN THE "WORKPLAN FOR SOIL AND GROUNDWATER INVESTIGATION,SHORE PLANT AREA,CHEVRON ESTERO MARINE TERMINAL" DATED 10/10/1994.

PMT2004-00558 FNL Primary Parcel

Description:

ELECTRICAL SERVICE RELOCATION & DISTRIBUTION BOX

PMT2004-01687 FNL Primary Parcel

Description:

DEMO 1200 SQFT STORAGE BUILDING AND 21,000 WATER TANK

PMT2006-00810 FNL Primary Parcel

Description:

DEMO OF 3 BUILDINGS TOTAL= 400 SQUARE FEET

PMT2008-01199 WIT Primary Parcel

Description:

WITHDRAWN - RE-CONFIGURE PETROLEUM LINES, SOIL BERM & 8000 C.Y OF GRADING FOR SOIL REMEDIATION & RELOCATE SEPTIC LINE. CLARIFY SCOPE?? PADRE & TIMOTHY NAUGHTON, RCE OF CHEVRON/SOILS: NONE - SEE PMT 2008-02005

PMT2008-02005 EXT Primary Parcel

Description:

MAJOR GRADING FOR CLEANUP OF SOILS - REMEDIATION OF (3) AREAS OF WORK INCLUDING SHORING, TREATEMENT OF SOILS & CREATE A WETLANDS & MINOR WORK OF RELOCATING UTILITES. (COMBINED WORK FROM PMT 2008-01199 ON THIS PMT) LIST WORK..... ANY ELECTRICAL REQUIRES A SEPARATE PERMIT. TIM NAUGHTON, PE/SOILS: PHILIP J MEYMAND, GE, 2596 & TEMPORARY OFFICE TRAILER W/ELECTRICAL ADDED 7/31/2009 8/9/10, NEW ENGINEER IS KRISTOF FABIAN, RCE, SEE TRANSFER OF RESPONSIBILTY LETTERS.

PMT2009-01694 EXT Primary Parcel

Description:

TEMPORARY ABOVE GROUND FUEL TANK FOR CONSTRUCTION - 1,000 GAL ON SITE DIESEL FUEL TANK

PMT2010-01252 FNL Primary Parcel

Description:

REPLACEMENT OF SEPTIC TANK & 85 LF OF BUILDING SEWER ONLY.

PMT2010-01881 REA Primary Parcel

Description:

MAJOR ENGINEERED GRADING FOR CLEANUP OF SOILS - SEE PMT2008-02005 ERIC SNELLING & JOHN EVANS, RCE -CLOSE TWO FORMER BALLAST PONDS USED TO STORE SEA WATER PRIOR TO DISCHARGING THE SEA WATER TO THE PACIFIC OCEAN. THIS PROJECT WILL INVOLVE EXCAVATION OF PETROLEUM HYDROCARBON-CONTAININIG SOIL AND BACKFILL OF PONDS WITH A COMBINATION OF ON-SITE SOIL AND IMPORTED FILL MATERIAL. AREA WILL BE RESTORED TO A 1% SLOPE AND RE-SEEDING ACCORDING TO WETLAND RESTORATION PLAN. D020315D

Parcel Summary Report For Parcel # 073-075-004

San Luis Obispo County Department of Planning and Building
County Government Center San Luis Obispo, California 93408 Telephone: (805) 781-5600

91310 FNL Related Parcel
Description:
GRADING FOR CONTAINMENT BERMS
97259 FNL Related Parcel
Description:
REPLACE FLOOR IN EXIST. TANK
97260 FNL Related Parcel
Description:
ALARM LT & ABOVE GROUND SUMP TANK
97261 FNL Related Parcel
Description:
DEMO ABOVE GROUND TANK #316
97262 FNL Related Parcel
Description:
DEMO ABOVE GROUND TANK #317
97263 FNL Related Parcel
Description:
DEMO ABOVE GROUND TANK #386
97264 FNL Related Parcel
Description:
DEMO ABOVE GROUND TANK #387
A9141 FNL Related Parcel
Description:
DEMO FIVE ABOVE GROUND STORAGE TANKS AT MARINE TERMINAL OFF HWY 1 N.OF MORRO BAY
SUB2010-00026 RDD Related Parcel
Description:
PROP 8 CERTS OF COMPLIANCE; REVISED 7 TOTAL CERTS REQUESTED
SUB2010-00027 RDD Related Parcel
Description:
PROP 32 CERTS OF COMPLIANCE; REVISED 31 CERTS