

## SITE LOCATION MAP

## **PROJECT DESCRIPTION NOTE**

The Regnart Road Slope Stabilization Project consists of the installation of a new soldier pile and concrete or wood lagging retaining wall on the outboard side of the Regnart Road, located southwest of the intersection with Lindy Lane. The intent of the wall is to stabilize a portion of the adjacent creek bank that has failed as a landslide and begun to undermine the roadway. In addition to the soldier pile and concrete lagging, other improvements will include an AC curb, drop inlet and a backdrain.

# LIMITATIONS NOTES

1. The Regnart Road Slope Stabilization Project has been designed only for the portion of the road as designated for stabilization on these drawings. Other portions of the roadway and adjacent creek bank have not been specifically evaluated as part of this project.

2. Our services consist of professional designs, opinions and recommendations made in accordance with generally accepted engineering geology, geotechnical engineering and civil engineering principles and practices. No warranty, expressed or implied, or merchantability of fitness, is made or intended in connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings.

3. Any engineered design notes, drawings and specifications presented in this plan set are contingent upon Cotton, Shires and Associates being consulted when any questions arise with regard to the notes and specifications contained herein, and to provide observation and testing services for construction operations. Unanticipated soil and geologic conditions are commonly encountered during construction which cannot be fully determined from existing exposures or by limited subsurface investigation. Such conditions may require additional expenditures during construction to obtain a properly constructed project. Some contingency fund is recommended to accommodate these possible extra costs.

# **GENERAL NOTES**

- 1. For reference in these documents, the "Owner" is City of Cupertino, the "Engineer" is Cotton, Shires and Associates, Inc. (CSA), and the "Contractor" is a separate entity retained by the Owner to accomplish the work described herein. The construction work of the Contractor shall be observed by the Engineer, who is a separate entity retained by the Owner to design and observe the project.
- 2. The Contractor shall verify all site conditions and grades prior to commencing work. Any conflicts or discrepancies shall be brought to the attention of the Engineer and be resolved prior to the commencement of work.
- 3. The Contractor shall coordinate the work of all trades.
- 4. The Contractor shall exercise particular care to preserve existing trees not identified for removal, their root structures, and other natural landscaping. The Contractor shall require the approval from the Owner to remove any tree or branch prior to the removal.
- 5. The Contractor shall exercise particular care to protect the roadways and adjacent structures from damage. 6. In the event that any unusual conditions not covered by the drawings or specifications are encountered during construction operations, the Engineer shall be immediately contacted for recommendations.
- 7. All work to be in accordance with the Standard Provisions of the City of Cupertino and the latest edition of the State of California Standard Specifications.
- 8. Any distress or damage, caused by the Contractor's actions, to existing structures not identified for construction, including, without limitation, existing structures, fences, AC pavement, utilities, landscaping, etc. shall be repaired or replaced at the Contractor's expense. The Contractor shall document existing conditions of the site and adjacent structures prior to commencement of construction.
- 9. The Contractor shall notify the City and the Engineer at least two (2) working days prior to commencing work or if work has been suspended for a period of more than twenty-four (24) hours.

					COTTON, SHIRES & AS CONSULTING ENGINEERS AND C	SSOCIAT
					David T. Schrier, P.E. 4/5/17	SUBMITTE
					DESIGNED DATE	
					David T. Schrier, P.E. 4/5/17	
					DRAWN DATE	
NO.	REVISIONS	BY	DATE	APP'D	John Wallace, 4/5/17 CHECKED DATE	

# **REGNART ROAD SLOPE STABILIZATION PROJECT** Regnart Road Near Lindy Lane Cupertino, California

- 10. The Contractor shall provide the Owner and Engineer with the names and telephone numbers of the responsible persons to contact, with regard to this project, 24 hours a day.
- 11. The Contractor shall call U.S.A. (Underground Service Alert) at (800) 642-2444, forty-eight (48) hours prior to beginning any underground work to verify the location of existing underground utilities. Possible conflicts with underground utilities should be brought to the Engineer's attention.
- 12. The Contractor shall notify all public and private utility owners two (2) working days prior to commencement of work adjacent to the utilities unless the permit specifies otherwise.
- 13. The Contractor shall conform to the rules and regulations of the State Construction Safety Orders pertaining to excavations and trenches.
- 14. The Construction work shall occur only between the hours of 7:00 A.M. and 7:00 P.M., Monday through Friday, unless an exception is granted by the City of Cupertino.
- 15. The Contractor shall provide adequate dust control at all times. Any operation that creates excessive dust shall cease immediately until sufficient measures satisfactory to the Owner have been taken to insure compliance with dust control requirements
- 16. The Contractor shall furnish and install all signs, lights, barricades, and other traffic control or warning devices, including flagpersons, as required by the City of Cupertino.
- 17. All materials and methods of construction shall comply with the provisions of the California Building Code (2016) All work shall be subject to inspection and approval by the Owner and Engineer.
- 19. Contractor shall comply with all Federal, California, City of Cupertino and/or other applicable laws and regulations and shall bear the cost of any violations by Contractor thereof.
- 20. Any uncertainties, and need for clarifications, shall be addressed to the Engineer in writing in the form of Requests For Information (RFI's). The RFI forms shall include the date submitted, a reference to the sheet number, and a sketch if appropriate. The Contractor shall submit an RFI as soon as a question arises and understand that, depending on the complexity of the question, the answer may take time to be resolved.
- 21. The Contractor shall provide submittals as may be required for the prosecution of the work and approval of materials and/or equipment. Submittals may include calculations, specifications, product data, samples, manuals, spare parts, photographs, schedules, or similar items required to be submitted to the Engineer. These submittals shall be approved by the Engineer before any work involving these submittals is performed. No change shall be made by the Contractor to any submittal after it has been approved by the Engineer. Submittals shall contain all required detailed information at a reasonable scale with enough views to clearly show the work to be done or the item to be furnished, and shall be properly checked. It is expressly understood, however that approval of the Contractor's submittals shall not relieve the Contractor of any responsibility for accuracy of dimensions and details, or for mutual agreement of dimensions and details. The Contractor shall be solely responsible for agreement and conformity of submittals with the Contract Drawings and Specifications. The submittals shall be returned to the Contractor marked, "No Exceptions Noted," "Make Corrections Noted and Resubmit Final File Copy," "Rejected," "Revise and Resubmit," or "Submit Specified Items," within 10 days after receipt. The Contractor shall make any necessary corrections and revisions to returned submittals and shall resubmit the submittals within 10 days after receipt. The Contractor shall be responsible for furnishing submittals in sufficient time for approval action, including resubmittal, without delaying construction
- 22. Submittals shall be required for the following items: 1) Construction Schedule; 2) Permits and Licenses; 3) Construction Area Traffic Plan; 4) Public Notification; 5) Steel Mill Certifications 6) Concrete Mix Designs; 7) Concrete Lagging Reinforcement Shop Drawings; 8) Concrete Color Staining; 9) Asphaltic Concrete Mix Design (AC Dike); 10) Drain Rock; 11) PVC Pipe; 12) Plastic Sheeting; 13) Corrosion Protection (galvanized, Ameron Dimetcote 21-5, epoxy paint, ZRC Galvanizing Touchup Paint, etc.); 14) Filter Fabric; and 15) Drop-Inlet. Submittals may also be required for other items as they come up during the course of construction.
- 23. All Substitutions shall be approved by the Engineer prior to acceptance on the project.
- 24. Changes of work of less than 25 percent of the total estimated quantity of any contract items shall result in an adjustment (add-on or deduct) according to the contract unit price. Changes resulting in greater than 25 percent of the total estimated quantity of any contract item shall result in a re-negotiated unit cost for said item.
- 25. Extra work shall require a signed Contract Change Order, or a written order from the Owner, authorizing Contractor to proceed with extra work for an agreed upon price. The expressed terms of the signed Change Order shall govern over any conflicting documents, including, but not limited to, any proposals for Change Orders.
- 26. The Engineer's field personnel shall verify geotechnical conditions during construction. If field conditions are different, the Engineer shall revise the design layout to suit.
- 27. The Contractor shall be responsible for site cleanup to the satisfaction of the Owner.
- 28. Tree protection fencing will be required during construction. Type and location of the fencing will be determined in the field by the Owner.
- 29. The Contractor is responsible for legally disposing of drill and excavation spoil material, construction debris, and unused backfill. The Contractor is responsible for coordinating and costs associated with testing the off-haul material for contamination. 30. An encroachment permit will be provided by the City of Cupertino Department of Public Works.





FOR TIMM BORDEN, PE DIRECTOR OF PUBLIC WORKS

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LIST OF SHEETS

Sheet No.

1 of 11

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Drawing No.

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5/31/17

RCE #66077

# ABBREVIATIONS

Existing	Elev, El,	
New	or EL	Elevations
Corrugated Metal Pipe	Max.	Maximum
Number	Min.	Minimum
Asphaltic Concrete	O.C.	On Center
Polyvinylchloride	Af	Artificial Fill
Portland Cement	Col	Colluvium
Feet	psi	Pounds per square inch
Inches	AB	Aggregate Base
At	St. or STA	Survey Station
Typical	C.I.D.H.	Cast In Drilled Hole
Diameter	W/	With
Percent	C.C.	Center to Center
Horizontal equals Vertical	Als	Active Landslide
Termination Depth	DIs	Dormant Landslide
Drop Inlet	CSA	Cotton Shires and Associates,
Invert		Inc.
Top of Grate	Sch.	Schedule
Utility Pole	lb.	Pounds
Left	kg	Kilograms
Right	ID	Inner Diameter
Centerline	OD	Outer Diameter
Angle	N/A	Not Applicable
Ву	C/O	Clean-Out
North	R.C.	Relative Compaction
East	HDPE	High Density Polyethylene
West	HP	High Point
South	G.S.	Ground Surface
Millimeters	EQ.	Equal
Rough Construction Joint	VERT.	Vertical
Cubic Yards	CNTR.	Center
Standard	REINF.	Reinforcement
Each	STL.	Steel
Square	T&B	Top and Bottom
Unconfined Compressive Strength	f	Fahrenheit
Factor of Safety	STD.	Standard
Quality Control	DIA.	Diameter
Top of Wall	GR	Grade
Bottom of Wall	U.O.N.	Unless Otherwise Noted
Concrete		

## Drawing Title

Site Location Map, Notes, List of Sheets and Abbreviations Notes and Technical Specifications (Parts 1, 2, 3 and 4) Technical Specifications (Parts 5, 6, 7 and 8) Roadway Stabilization Plan Cross Section A-A' Elevation B-B' and Pier and Lagging Schedule Detail 1 Detail 2 Detail 3 Erosion Control Plan Boring Logs

DRAWING TITLE:

Site Location Map, Notes, List of Sheets and Abbreviations

**REGNART ROAD SLOPE STABILIZATION PROJECT** Regnart Road, Cupertino, California

DRAWING NO.

C-1 SHEET NO. 1 of 11 CSA PROJECT NO. E5177

## **REQUIRED SPECIAL INSPECTION NOTES**

In addition to regular inspections, the following numbered items shall also require Special Inspection in accordance with Sec. 1701 of the California Building Code:

SITE PREPARATION INSPECTION, PIER DRILLING, EXCAVATIONS and SOIL COMPACTION **REINFORCING STEEL** 

STRUCTURAL CONCRETE where F'c > 2,500 psi

# CONSTRUCTION, DESIGN, INSPECTION AND TESTING NOTES

- 1. All work shall be subject to inspection, testing and approval by the Engineer (Cotton, Shires and Associates, Inc.).
- 2. The Contractor agrees that they shall assume sole and complete responsibility for jobsite safety conditions during the course of construction of this project, including the safety of all persons and property: that this requirement shall apply continuously and not be limited to normal working hours and that the Contractor shall defend, indemnify and hold the Owner and the Engineer (Cotton, Shires and Associates, Inc.) harmless from any liability, real or alleged in connection with the safe performance of the work on this project excepting for liability arising from the sole negligence of the Owner or Engineer.
- 3. It is the Contractor's responsibility to assure the stability of adjacent structures and slopes, including temporary cutslopes, during excavations.
- 4. Locations are approximate and shall be verified by the Contractor in the field. Control shall be determined by relative location to temporary survey monuments.
- 5. The Contractor shall be responsible for site clean-up to the satisfaction of the Owner. All construction-related disturbed slope areas shall be treated with erosion control measures consisting of native vegetation planting and associated activities. exclusive of any drip or other irrigation techniques, as specified herein at the completion of the project.
- 6. The Engineer shall be responsible for initial layout of piers and soil nails, as well as providing elevation control points. The Contractor shall notify the Engineer at least 48 hours prior to when layout is needed and shall allow at least two working days for the Engineer to provide layout. Any layout destroyed or rendered inaccurate shall be replaced by the Engineer and paid for by the Contractor.
- 7. The Contractor shall be responsible for all measurements that may be necessary or required for the execution of any work to the locations, lines and grades specified or shown. Control Points placed by Licensed Surveyors or other reference marks moved, destroyed or rendered inaccurate by any cause whatsoever shall be replaced by a Licensed Land Surveyor and paid for by the Contractor at no additional cost to the Owner.
- 8. Where a construction detail is not shown or noted, the details shall be the same as for other similar work. The more restrictive detail shall be used with approval of the Engineer
- 9. Stockpiling or storage of materials on or near the top of slope is not permitted unless noted on the drawings and/or with prior approval of the Engineer.
- 10. Details and notes shown in this set of drawings and titled "typical" are typical and shall apply unless otherwise noted. Details of construction not fully shown shall be of the same nature as shown in typical details or as shown for similar conditions.
- 11. No pipes or sleeves shall pass through structural members without the approval of the Engineer unless shown on drawings. 12. The contract drawings and specifications represent the finished structure. They do not indicate the means and methods of construction. The Contractor shall provide all measures necessary to protect the existing improvements during construction. Such measures shall include, but not be limited to, bracing, shoring for loads due to construction equipment, materials, etc. Contractor shall provide for design, permits and installation of such bracing, if required.
- 13. The Contractor shall carefully check stability of all elements of existing improvements before doing any work on existing structures and brace or strengthen all portions of existing structures which may be weakened by removal of existing construction until new construction is in place.
- 14. Contractor shall take precautionary measures to ensure that all property is protected during construction. Any damaged or changed conditions shall be repaired and restored to the pre-construction conditions and to the satisfaction of the Engineer and Owner. Contractor shall repair any damage at Contractor's expense.
- 15. All excavations shall be properly backfilled. Backfill shall not be placed against new concrete structures until 75% of the design compressive strength has been developed.
- 16. The Owner shall retain a testing agency to perform inspection and special inspection in accordance with Section 1704 of the CBC, including taking and breaking test cylinders for confirmatory concrete compressive strength.
- 17. The testing agency shall compile testing and inspection reports detailing the items of work which have been inspected. A copy of the reports shall be sent to the Owner and Engineer and Contractor for review.
- 18. Concrete placement and testing:

18.1 Job site inspector shall review concrete batch dispatch ticket from driver for conformance with required mix.

- 18.2 Concrete shall be sampled and tested for quality control during the placement of concrete, as follows: 18.2.1 Sampling fresh concrete: comply with CBC, Sec. 1905A.6.
- 18.2.2 Slump: ASTM C143: one test for each load at point of discharge of chute; and one for each set of compressive strength test specimens.
- 18.2.3 Compression test specimen: ASTM C31: one cylinder or test panel for each compressive strength test, unless otherwise directed. Store cylinder or test panel for laboratory cured test specimens except when fieldcure test specimens are required.
- 18.2.4 Compressive strength tests: ASTM C39; one set each day and one set for each 50 Cu. Yds or fraction thereof, of each concrete class placed in any one day. Test 1 specimen at 7 days, 2 specimens at 28 days, and retain 1 specimen in reserve for later testing as required.

18.3 Test results shall be reported in writing to the Engineer and the Contractor on the same day that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of contractor, name of concrete testing service, concrete type and class, location of concrete batch in the structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.

18.4 Additional tests: the testing service shall make additional tests of in-place concrete when test results indicate the specified concrete strengths and other characteristics have not been attained in the structure. The testing service shall conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as recommended by the Engineer. Owner shall pay for such tests conducted, and any other additional testing as may be required. When unacceptable concrete is verified, test costs will be back-charged to the Contractor.

19. Reinforcement placement: special inspector shall observe placement of reinforcement, including rebar size or beam size, steel grades, spacing, clearances, and security during the concrete placement operation. Special inspector shall observe that reinforcing is free of dirt, mud or other materials prior to concrete placements.

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					CONSULTING ENGINEERS AND GE	EOLOGIS
						SUBMIT
					David T. Schrier, P.E. 4/5/17	
					DESIGNED DATE	
					David T. Schrier, P.E. 4/5/17	
					DRAWN DATE	
					John Wallace, 4/5/17	
NO.	REVISIONS	ΒY	DATE	APP'D	CHECKED DATE	

## **TECHNICAL SPECIFICATIONS**

#### PART 1 GENERAL

1.1 Work includes furnishing and installing soldier pile piers and concrete, and drainage structures as designated on the construction drawings and as specified herein

- A Typical details and notes on these sheets shall apply unless specifically shown or noted otherwise. Construction details not shown or noted shall be similar to details shown for similar conditions. All work and/or construction shall comply with the 2016 edition of the California Building Code (with the 2006 International Building Code as reference document).
- B. Discrepancies The Contractor shall verify all dimensions, elevations, and existing conditions (where applicable) at the job site as well as the provisions of the entire construction documents and bring to the Engineer's attention any discrepancy. In the event of a discrepancy in the construction documents, the note or detail utilizing the stricter requirement shall apply.
- C. Excavation, Shoring, and Bracing It shall be the Contractor's sole responsibility to design and provide adequate shoring, bracing, formwork, etc., as required for protection of life and property, to support any construction loads, and to maintain all building components safely in place prior to their final assembly and anchorage into the completed structure.
- D. The design for this slope improvement was based on design criteria provided to Daedalus Structural Engineering.

#### 1.2 Reference Standards

- A. California Building Code 2016.
- B. American Concrete Institute (ACI) 301 Latest edition ACI specifications for structural concrete for buildings.
- C. American Concrete Institute (ACI) 318 Latest edition ACI specifications for reinforced concrete.
- D. A.I.S.C. Latest edition specifications for the design, fabrication and erection of structural steel for buildings.
- E. A.W.S. Latest edition structural welding code D1.1 and D1.4.
- F. A.I.S.I. Latest edition specifications for the design of cold-formed steel structural members.
- G. California Department of Transportation (Caltrans) Standard Specifications.
- H. Standard Specifications for Public Works Construction (SSPWC).
- I. American Society for Testing Materials (ASTM).
- J. American Association of State Highway and Transportation Officials (AASHTO).
- K. Occupational Safety Health Administration (OSHA).
- L. Asphalt Institute (AI).

1.3 Delivery, Storage and Handling

- A. Contractor shall check the materials upon delivery to assure that proper material has been received.
- B. Contractor shall prevent excessive mud, wet cement, epoxy, and like materials which may affix themselves, from coming in contact with the materials.
- C. Contractor shall protect the materials from damage.
- D. Contractor shall not stockpile or store material at the tops of slopes or on slopes steeper than 4:1 (H:V).

## PART 2 REINFORCED CONCRETE

#### 2.1 Products

- 2.1.1 Cement shall conform to ASTM C 150. Type V.
- 2.1.2 Aggregates for normal weight concrete shall conform to ASTM C 33.
- 2.1.3 Concrete work shall conform to all requirements of ACI 301, "Specifications for Structural Concrete for Buildings", except as modified by these notes.
- 2.1.4 Concrete shall be mixed and delivered in accordance with ASTM C 94.
- 2.1.5 Admixtures shall be used only with prior written approval of the Engineer. Admixtures shall comply with ASTM C 494 and be of a type that increases the workability of the concrete, but which shall not reduce the specified minimum cement content. Calcium chloride shall not be used.
- 2.1.6 Aggregate: Minimum coarse aggregate shall be 3/4 inch for lagging and 1/2 inch for the piers.
- 2.1.7 Contractor shall submit mix designs for review before fabrication and installation.
- 2.1.8 Concrete shall develop the following minimum compressive strength at 28 days:
  - Piers: 3,000 psi

#### Lagging Panels: 2,500 psi

- 2.1.9 The concrete shall have a maximum water-to-cement ratio (W:C) 0.45.
- 2.1.10 The concrete for the lagging panels shall be stained Surecrete's water based, solid Brown Derby, or approved alternative.

#### 2.2 Installation

- 2.2.1 Concrete shall be placed in a continuous operation until the section is completed between predetermined construction joints. Concrete shall be placed in piers in one continuous pour. Concrete shall be of a consistency to permit placing intimately around reinforcing bars and against forms.
- 2.2.2 Slumps shall be in a range of 4 to 6 inches for dry excavations and in a range of 6 to 8 inches for approved wet tremie placement.
- 2.2.3 Exposed surfaces of concrete shall be kept moist or cured by protective coverings applied in accordance with manufacturer's specifications.
- 2.2.4 Forms, if necessary, shall be tight, clean and wetted before placing concrete.



3.3 Inspections and Testing

## PART 4 RETAINING WALL PIERS

4.1	Pier Drill	ing
	4.1.1 4.1.2	Rock/soil materi recommended b dump site or, if a and pay for all re Pier excavations shall provide ac
	4.1.3	The Contractor s capable of exter of hole stabilization
	4.1.4	The Contractor sthe pier holes to
	4.1.5	Loose material a steel or pouring
4.2	Installatio	on
	4.2.1	A minimum 3 ind excavation. A m excavation.
	4.2.2	If more than 4 in concrete or the
	100	

4.2.3 The concrete shall stop at the elevations shown in these drawings. Sonotubes, if necessary, shall be removed prior to engineered backfill placement.



Chad Mosley City of Cupertino 10300 Torre Ave. Cupertino, California 95014



2.2.5 Chamfer all exposed edges of concrete 3/4" unless noted otherwise.

2.2.6 All defective work shall be repaired by the Contractor as specified.

2.2.7 Curing: during the curing periods specified herein, concrete shall be maintained above 40 degrees (f) and in moist condition. In initial curing, concrete shall be kept moist for 24 hours after placement is complete. Final curing shall continue for seven days after pouring, for three days if high-early strength cement is used, or until the specified strength is obtained. Final curing shall consist of a fog spray or an approved moisture retaining cover or curing compound forming a

2.2.8 A bond breaker or a layer of 10 mil plastic sheeting (Visqueen) shall be placed between the concrete lagging and the steel beams if cast-in-place construction method is selected.

#### 2.3.1 Inspections shall conform to CBC Section 1924.11

2.3.2 Strength test: strength tests for concrete shall be made in accordance with ASTM standards by an approved agency on specimens which are representative of the work and which have been water soaked for at least 24 hours prior to testing. When the maximum size aggregate is 3/8 inch or smaller, specimens shall consist of not less than three, 2 inch diameter cores. Specimens shall be taken in accordance with section 18.2.4 of the Construction, Design, Inspection and Testing

2.3.3 Inspections: during placement, special inspection is required. The special inspector shall provide inspection of the placement of the reinforcement and continuous inspection of the concrete and shall submit a statement indicating compliance with the drawings and specifications.

membrane.

2.3 Inspections and Testing

Notes.

3.1.1 Reinforcing bars shall be in accordance with ASTM A615, Grade 60. Tie wires to be 18 ga, or heavier, black annealed

3.1.2 The steel beams shall be in accordance with ASTM A572, Grade 50, or ASTM A588 Grade 50. ASTM, A572 Grade 50 steel shall be corrosion protected by hot-dipped galvanized; covered with (2) coats at least 4 to 6 mil of Ameron Dimetcote 21-5 water based inorganic-zinc silicate; or epoxy paint; or approved equal. Use ZRC Galvanizing compound for field touch up. ASTM A588 Grade 50 steel does not require a protective coating.

3.2.1 Minimum lap splices of steel reinforcing bars shall be as follows: Class B as defined in ACI 318-05.

3.2.2 Reinforcement detailing, bending, and placement shall be in accordance with the Concrete Reinforcing Steel Institute "Manual of Standard Practice", latest edition.

3.2.3 Reinforcing steel shall be provided with at lest 3 in. of cover for concrete at all structures.

3.2.4 All reinforcing, shall be rigidly secured in place prior to pouring concrete.

3.2.5 The clear distance between parallel bars in a layer shall not be less than 1-1/2 times the nominal diameter of the bars, or 1-1/3 times the maximum size aggregate, nor less than 1-1/2".

3.2.6 Unless otherwise noted, lap splices of bottom footing bars shall be staggered at least 5'-0" minimum from laps in other bottom footing bars. Stagger lap splices of top footing bars similarly.

3.2.7 Reinforcement splices: lap splices in reinforcing bars shall be by the non-contact lap splice method with at least 2 inches clearance between bars. All splices in reinforcing bars can be made with pre-approved threaded or welded reinforcing bar couplers as an alternate.

3.2.8 When lap splicing reinforcement bars of different sizes, Contractor shall use the largest bar lap splice length.

3.2.9 Contractor shall submit reinforcing steel shop drawings for review prior to fabrication and placing reinforcing steel.

3.3.1 Special inspector shall observe placement of reinforcement, including rebar size or beam size, steel grades, spacing, clearances, and security during the concrete placement operation. Special inspector shall observe that reinforcing is free of dirt, mud or other materials prior to concrete placements.

> ial shall be excavated as required for piers as shown on the construction drawings, or as by the Engineer. All excavated soil, including drill spoils, shall be offhauled to a legal approved approved by the Engineer, used as engineered fill in designated areas on site. Shall coordinate equired testing to off-haul and dispose of the material.

s shall be logged by the Engineer during excavation by Contractor. During drilling, the Contractor ccurate drill depths to the Engineer when requested by the Engineer.

shall anticipate both caving, voids and hard-rock drilling, and therefore provide suitable equipment nding the pier holes to their design depth. Water shall not be added to the pier holes as a method tion unless approved by the Engineer.

shall anticipate groundwater and/or seeps and provide suitable equipment capable of extending their design depth. Groundwater was encountered at a depth of 20 feet in one boring. at the bottom of the pier excavations shall be removed or compacted by tamping prior to placing of concrete. The tamped material shall not exceed 6 inches in tamped thickness.

ches of clearance all around shall be maintained between the structural steel and the sides of the ninimum of 12 inches of clearance shall be maintained between the structural steel and the bottom of the

nches of water has accumulated in the hole, the water shall be removed by pumping prior to the pouring of concrete shall be placed by the tremie method.

	DRAWING TITLE:	DRAWING NO.
	Notes and Technical Specifications (Parts 1, 2, 3 and 4)	C-2
C	<b>REGNART ROAD SLOPE STABILIZATION PROJECT</b> Regnart Road, Cupertino, California	SHEET NO. 2 OF 11 CSA PROJECT NO. E5177

PART 5 BACKDRAINS 5.1 Reference Standards (American Society for Testing and Materials)	7.3 Gen 7
5.1.1 ASTM D-3034 Polyvinyl Chloride Pipe (PVC)	
5.2 Products	7
5.2.1 Drain Rock - ½-inch by ¾-inch clean crushed drain rock which is placed in maximum 12-inch thick lifts and vibrated into	
place using mechanical equipment. 5.2.2 Filter Fabric - Mirafi 140N, or approved equivalent, filter fabric shall surround drain rock where the drainrock is in contact	7
with earth materials.	1.
5.2.3 Perforated Drain Pipe - Schedule 40 PVC perforated drain pipe (minimum 4-inch diameter) shall be placed within drainrock or Class 2 Permeable Material (minimum 3 inches cover) in the temporary excavation to act as a subdrain	
sloping to drain at minimum 1% and shall discharge via tight-line Schedule 40 PVC Pipe.	
5.2.4 Non-Perforated Drain Pipe - Schedule 40 PVC drain pipe (minimum 4-inch diameter) shall be used to collect perforated drain pipe and convey water to discharge location.	
5.2.5 Cleanouts - The upslope ends of the subdrain pipes shall be connected with two 45° PVC couplings to a 4-inch diameter non-perforated Schedule 40 PVC cleanout pipe extending to the ground surface and equipped with a removable cap to facilitate cleaning	7.
<ul> <li>5.2.6 Utility Box - The cleanout cap shall be protected in a Christy F08BOX utility box (or approved equivalent).</li> <li>5.2.7 Rip Rap - The energy dissipator rip rap shall conform to Caltrans Backing No. 1 Class rock.</li> </ul>	7.4 Excava 7.4.
5.3 Installation	
5.3.1 The backdrain shall be minimum 1.5 feet wide (~2 feet wide) and installed in a manner to prevent contamination of the	7.4.
drainrock.	
5.3.2 Perforated pipe shall be installed with the holes down and all pipe sections shall be glued with manufacturer approved cleaner and glue.	
PART 6 PAVEMENT	7.4.
6.1 Reference Standards, American Society for Testing and Materials (ASTM)	7.4.
6.1.1 ASTM D-422 Particle Size Analysis	7.4
6.1.2 ASTM D-698 Laboratory Compaction Characteristics of Soil -Standard Effort	7.4.
6.1.3 ASTM D-1557 Laboratory Compaction	
6.2 Products	
6.2.1 Aggregate Base Rock - The Aggregate Base rock shall conform to the provisions of Section 26 of Caltrans Standard	7. E. Justa
Specifications for 3/4-inch maximum, Class 2 Aggregate Base.	7.5 Insta
6.2.2 Asphaltic Concrete - Asphaltic Concrete shall conform to the provisions of Section 39, 92 and 94 of 2010 Caltrans Standard Specifications for Type A, 3/8-inch maximum aggregate.	1.
a. Asphaltic binder shall be steam refined paving asphalt, viscosity grade AR4000.	7.
b. Prime coat shall be liquid asphalt, SC-250.	
c. Tack coat (paint binder) shall be penetration type, slow setting asphaltic emulsion, Type SS-1, conforming to requirements of Section 94, Caltrans State Specifications.	
6.3 Installation	7.
6.3.1 Contractor shall saw cut at the limit of the new pavement.	
6.3.2 Aggregate Base shall be at least 9 inches thick and be compacted to at least 95 percent Relative Compaction (RC) as determined by ASTM D1557-12 with scarification 8 inches deep and compacted to 95% RC below base.	7.
6.3.3 Asphaltic Concrete shall be at least 3 inches thick and conform to the applicable provisions of Section 39 of the Caltrans Standard Specifications.	
39 of the Caltrans Standard Specifications. The AC dike shall be installed on pavement only.	7.6 Eros
	7.
PART 7 ENGINEERED EARTH FILL	
7.1 Reference Standards, American Society for Testing and Materials (ASTM)	
7.1.1 ASTM D-422 Particle Size Analysis	7.
7.1.2 ASTM D-698 Laboratory Compaction Characteristics of Soil-Standard Effort	
7.1.4 ASTM D-3034 Polyvinyl Chloride Pipe (PVC)	7
7.1.5 ASTM D-1248 Corrugated Plastic Pipe	7.
7.1.6 ASTM D-1557 Laboratory Compaction	7.7 Testi
7.1.7 ASTM D-5195 In-Place Unit Weight by Nuclear Methods	7.
7.2 Products	7.
7.2.1 Engineered Earth Fill - Compacted soil material shall be on site soils (from excavations and pier drilling) provided they are free of organics, materials larger than 4 inches in maximum dimension, and approved by the Engineer, unless otherwise specified in the drawings. Imported soil material if required, shall be free of organic materials, shall have a PI	7.
(if import soil is required, a sample of the import soil shall be provided to the Engineer for approval a minimum of 72 hours prior to placement). Imported soil shall also be free of contamination (per State of California) and if coming from a	7.
non-licensed source, the necessary laboratory test results shall be provided. AC grinding are not acceptable. 7.2.2 Spoils - All spoils left over from excavations, drilling and compaction/backfill shall be legally disposed of off site. The	
Contractor can temporarily stockpile spoils at an approved and agreed upon location on the Owner's Property. All trash and non-soil debris shall be legally disposed of off-site at the Contractor's expense. At no time shall loose spoils be placed or stockpiled on slopes steeper than 4:1 (H:V), compacted spoils shall not be placed or stockpiled on slopes	7
greater than 1.5:1 (H:V).	1.

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#### eral

- 7.3.1 General Prior to all work related to Engineered Earth Fill, Contractor shall become thoroughly familiar with the site, the site conditions, and all portions of the work related to Engineered Earth Fill. The site shall be taken "as found".
- 7.3.2 Site Preparation The Contractor shall remove all vegetation, utilities, debris, concrete and deliterious material and legally dispose of these materials off site. All excavation work shall be executed to lines indicated and as required to permit installation of forms and similar work prior to performing the work.
- 7.3.3 Approvals The Contractor shall not allow or cause any of the work performed or installed to be covered up or enclosed by work prior to all required inspections, tests, and approvals. The Contractor shall schedule the work so at least three (3) working days notice is given before any work is to be covered. Should any of the work be so enclosed or covered up before it has been approved, uncover all such work at no additional cost to the Owner. After the work has been completely tested, inspected, and approved, the Contractor shall make all repairs and replacements necessary to restore the work to the condition in which it was found at the time of uncovering, all at no additional cost to the Owner.
- 7.3.4 Unauthorized Excavation Any unauthorized excavations under or adjacent to foundations, or retaining walls shall be filled with lean concrete to return the elevation to its proper position, if acceptable to the Engineer. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations and backfills.

#### ation

- 1.1 Stripping Strip the upper 3 to 6 inches of surface soil containing organic matter and stockpile for later use. Remove material to the elevations indicated. Further excavate to remove undesirable material as recommended by the Engineer.
- .2 Stability of Excavation Temporary cut slopes during the dry season in bedrock shall not exceed 5-foot vertical or 1:1 (H:V) where height exceeds 5 feet, provided that they are inspected and approved by the Engineer, and monitored daily during construction. All excavations shall comply with applicable local, State and Federal safety regulations. Where sloping is not possible due to space restrictions or stability concerns, excavations shall be shored and braced.
- 1.3 The Contractor shall excavate to the lines and grades shown on these plans.
- .4 Shoring and Bracing Shoring and bracing shall comply with local codes and authorities having jurisdiction. The shoring and bracing shall be extended as the excavation extends and shall be installed regardless of the duration the excavation will be open.
- .5 Dewatering The Contractor shall prevent surface and subsurface (groundwater) water from flowing into the excavation and from flooding the project site. The Contractor shall not allow water to accumulate in excavations, and any water which does accumulate shall be removed to prevent softening and soil changes detrimental to the strength and stability of subgrades. The Contractor shall provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from the excavation. The water shall be discharged away from planned improvements and excavations.

#### allation

- 7.5.1 The upper 6 inches of exposed material in areas to receive fill shall be moisture conditioned to obtain a moisture content of at least optimum or greater, scarified and compacted to minimum 90% relative compaction (ASTM D1557-12).
- 5.2 Engineered Fill shall be placed in horizontal lifts not exceeding 8 inches in loose thickness, moisture conditioned to at least 2% above optimum moisture, and compacted by mechanical means to a minimum of 90% of relative compaction as determined by the ASTM D 1557-12 standard. Engineered fill placed beneath all structures and/or roads shall be compacted to at least 95% relative compaction to a minimum depth of 12 inches below pavement.
- 5.3 Grading Graded surfaces shall be uniformly graded, including adjacent transition areas. The finished surface shall be smooth, stiff and free of loose material. The Contractor shall "over-build" the slope and cut-back to the design grade to ensure specified compaction at the slope face.
- 5.4 Moisture Conditioning Where the subgrade or fill material requires moisture conditioning (adding water) to achieve the specified moisture content, water shall be applied uniformly to the exposed surface to prevent free water from appearing on the surface. In the event that the material is too wet (has a moisture content which precludes achieving the specified relative compaction), the material can be removed and replaced, scarified and air-dried, or mixed with drier material.

#### ion Control

- .6.1 The Contractor shall provide adequate erosion control during construction (including necessary straw bales, sand bags and/or silt fencing) to prevent mud and/or debris from spilling into drainage channels and streets in accordance with the recommendations and designs shown in the California Stormwater Best Management Practices for Construction Activities.
- .6.2 The Contractor shall treat all graded, denuded or disturbed slopes higher than 3 feet, and steeper than 33 percent (3:1) with North American Green SC150 Double Net Straw Coconut Blanket (or approved equivalent) and seed (native grass mix as approved by Owner). All other grounds disturbed by construction activities shall be treated with hydroseed prior to exposure to rain.
- .6.3 The Contractor shall keep the graded and disturbed areas moist at all times throughout the grading operation to control dust.

#### ing

- 7.7.1 Compaction testing shall be provided by the Engineer and paid for by the Owner.
- 7.7.2 The Engineer must inspect and approve subgrades and fill layers before further construction work is performed thereon.
- 7.7.3 If, in the opinion of the Engineer, based on testing and/or inspection, subgrade or fills which have been placed are below specified unit weight or relative compaction or are pumping (yielding), the Contractor shall provide additional compaction and testing at no additional expense, or the failing material shall be removed and replaced with suitable material.
- 7.7.4 Where tests indicate that the unit weight of any layer of fill, or portion thereof, is below the required relative compaction, or improper moisture content is in evidence, the particular layer or portion shall be reworked until the required unit weight and/or moisture content has been attained. No additional fill shall be placed over an area until the last placed lift of fill has been tested and found to meet the relative compaction and moisture requirements, and that lift has been approved by the Engineer.
- 7.7.5 Where the work is interrupted by heavy rains, fill operations shall not be resumed until the field observation and tests by the Engineer indicate that the moisture content and relative compaction of the previously placed and "passed" fill are within the limits previously specified.
- 7.7.6 All grading inspections must be made by the Engineer.

ATES, INC. ISTS IITTED:	NO. 47816 EXP. 12/31/17 SAFE OF CALIFORNIT	330 Village Lane Los Gatos, California 95030 (408) 354-5542 Fax: (408) 354-1852	FOR:	Chad Mosley City of Cupertino 10300 Torre Ave. Cupertino, California 95014	CU	

#### PART 8 STORM DRAIN STRUCTURES

8.1	Products	;
	8.1.1	HDPE Pipe - HDP diameter, N-12 W equivalent.
	8.1.2	Drop Inlet - Drop In welded H20 traffic
	813	Rin Ran - The ene

#### 8.2 Installation

8.2.1	All HDPE connection
8.2.2	The connections be
	manufacturer.
8.2.3	Drop Inlets - Drop I

- Density Fill or lean concrete.

PE pipe shall be corrugated exterior, smooth wall interior HDPE pipe. The pipe shall be 12-inch interior VT 1B pipe (per AASHTO) manufactured by Advanced Drainage Systems, Inc. (ADS), or approved

Inlet shall be US Concrete Precast Model CB3636 with appropriately sized knock-outs and galvanized c rated steel grate or approved equivalent.

8.1.3 Rip Rap - The energy dissipator rip rap shall conform to Caltrans Backing No. 1 Class rock.

ons shall be water-tight and as recommended by the approved manufacturer. etween the drop inlet and the HDPE pipes shall be watertight and as recommended by the approved

Inlets shall be installed level, on firm subgrade and backfilled around with compacted fill, Controlled

8.2.4 The HDPE pipe shall be staked to the slope using manufacturer approved stakes and collars. 8.2.5 The rip rap for the energy dissipator shall be keyed Min 12" to 18" into the slope with a drain trench

DRAWING TITLE:	DRAWING NO.
Technical Specifications (Parts 5, 6, 7 and 8)	C-3
<b>REGNART ROAD SLOPE STABILIZATION PROJECT</b> Regnart Road, Cupertino, California	SHEET NO. 3 OF 11 CSA PROJECT NO. E5177

**Notes:** Base map compiled from detailed (2-foot contour interval) topographic survey by Cotton, Shires and Associates, Inc. on February 28, 2017. Elevation data is based on arbitrary datum set by Cotton, Shires and Associates, Inc., and is not based on an established City or State elevation datum.

1. This is not a map of a boundary survey. No property corners have been set as part of this work.

2. Survey monuments found in the course of this mapping are set by others, and have been used only as a reference for the purpose of topographic mapping, without our verification of their agreement with applicable legal descriptions and seniority of deeds.

3. Relation of topographic features (i.e., fences, walls, trees, power poles, etc.) to property lines as shown on this map is subject to the adjustments that a boundary survey may require.

4. This survey was prepared without the benefit of a Title Report. Easements, if any, are not shown on this map.

5. If this map is provided in an electronic format as a courtesy to client delivery of the electronic file does not constitute delivery of a professional work product. The signed paper print delivered with this electronic file constitutes our professional work product and, in the event the electronic file is altered, the print must be referred to for the original and correct survey information. We shall not be responsible for any modifications made to the electronic file or for any products derived from the electronic file which are not reviewed, signed and sealed by us.

40

REVISIONS

20

(feet)

10

(N) DI W/ H20 GRATE, CONNECT TO (N) 12"Ø PIPE WITH WATER-TIGHT CONNECTIONS, TYP.

(N) SAWCUT PAVEMENT AND PLACE 2 FEET OF (N) 3" AC OVER 9" AB (RECONSTRUCT SUBGRADE AS NECESSARY TO PLACE NEW PAVEMENT SECTION)

# (N) AC DIKE (N) RETAINING WALL BACKDRAIN, TYP.

(N) ABANDON (E) 8" PIPE W/ (N) CONCRETE PLUG

(N) DI W/ H20 GRATE, CONNECT/TO (N) 12"Ø PIPE WITH WATER-TIGHT CONNECTIONS, SAWCUT PAVEMENT FOR INSTALLATION TYP.

(N) SAWCUT AND PLACE (N) 3" AC OVER 9" AB FOR STAKED TO SLOPE W/ CULVERT TRENCH PATCH

			COTTON, SHIRE CONSULTING ENGINEER	S & ASS RS AND GEC	OCIATES, INC DIOGISTS
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			DESIGNED	DATE	
			David T. Schrier, P.E. 4/5/	17	
			DRAWN	DATE	
			John Wallace, 4/5/17		
BY	DATE	APP'D	CHECKED	DATE	

(N) BACKFILL BEHIND LAGGING WITH ENGINEERED FILL

> (N) 12"Ø HDPE PIPE MANUFACTURER APPROVED COLLAR AND STAKE AT MAX. 8' INTERVALS, TYP.

> > Los Gatos, California 95030 408) 354-5542 Fax: (408) 354-1852

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C/Ø 🎾

(N) DISCHARGE BACKDRAIN BELOW LÁGGING ONTO (3) 12"Ø RIP RAP ENERGY DISSIPATOR BOULDERS KEYED INTO SLOPE WITH OUTLET TRENCH (N) REMOVE (E) EUCALYPTUS TREE (N) REMOVE (E) 8" PIPE

(N) DISCHARGE STORM DRAIN ONTO (6) 12"Ø RIP RAP ENERGY DISSIPATOR BOULDERS KEYED INTO SLOPE WITH OUTLET TRENCH, AND LOCATED ABOVE ORDINARY HIGH



(N) 12"Ø HDPE PIPE STAKED TO SLOPE W/ MANUFACTURER APPROVED COLLAR AND STAKE AT MAX. 8' INTERVALS, TYP.

(N) AC DIKE

(N) CLEANOUT, TYP. (N) SOLDIER PILE PIER AND NO., TYP.

(N) CONCRETE LAGGING TYP.

-(E) 8"? DUCTILE IRON

VVATER MARK, TYP.	
DRAWING TITLE:	DRAWING NO.
Roadway Stabilization Plan	C-4
REGNART ROAD SLOPE STABILIZATION PROJECT	SHEET NO. 4 of 11
Regnart Road, Cupertino, California	CSA PROJECT NO. E5177



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# Elevation

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С Т

# Distance (feet)



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DRAWING TITLE:	DRAWING NO.
Cross Section A-A'	C-5
<b>REGNART ROAD SLOPE STABILIZATION PROJECT</b> Regnart Road, Cupertino, California	SHEET NO. 5 OF 11 CSA PROJECT NO. E5177



REVISIONS

# SOLDIER PILE PIER AND LAGGING SCHEDULE

	PIER NO.	NO. OF 6X12 LAGGING IN THE BAY TO THE RIGHT OF THE PIER (NO)	CANTILEVERED HEIGHT OF BEAM (FT)	PIER DEPTH (FT)	LENGTH OF BEAM (FT)	TOTAL LENGTH {TOP OF SOLDIER PILE/BEAM TO BOTTOM OF PIER} (FT)	BEAM	PIER DIAMETER (FT)
	1	0	0	35.5	34.5	35.5	W24x94	3
	2	5	5	30.5	34.5	35.5	W24x94	3
EL	3	5	5	30.5	34.5	35.5	W24x94	3
	4	6	6	29.5	34.5	35.5	W24x94	3
	5	7	7	28.5	34.5	35.5	W24x94	3
	6	7	7	28.5	34.5	35.5	W24x94	3
	7	6	6	29.5	34.5	35.5	W24x94	3
	8	6	6	29.5	34.5	35.5	W24x94	3
	9	5	5	30.5	34.5	35.5	W24x94	3
	10	3	3	32.5	34.5	35.5	W24x94	3
	11	0	0	35.5	34.5	35.5	W24x94	3
	12	0	0	35.5	34.5	35.5	W24x94	3

ACCOMMODATE THE CONCRETE LAGGING PANELS, TYP.



John Wallace, 4/5/17

DATE

APP'D CHECKED

ΒY

DATE

Chad Mosley City of Cupertino 10300 Torre Ave. Cupertino, California 95014

FOR:



DRAWING TITLE:

DRAWING NO.

## Elevation B-B' and Pier and Lagging Schedule

**REGNART ROAD SLOPE STABILIZATION PROJECT** Regnart Road, Cupertino, California

	(	)-	6	
SHEET NO.				
	6	OF	11	
CSA PROJEC	T NC	<sup>).</sup> E	5177	



(N) SECURE UPPER LAGGING-MEMBER TO EACH FLANGE WITH A PLATE WELDED ONTO THE TOP OF EACH FLANGE

(N) A572 GRADE 50 KSI W24X94 STEEL BEAM WITH ALL EXPOSED PORTIONS AND 3' INTO CONCRETE TREATED WITH AMERLOCK 400 EPOXY COATING, OR APPROVED EQUIVALENT, AND PAINTED CITY SELECTED TOPCOAT

(N) ~24" WIDE  $\frac{1}{2}$ " X  $\frac{3}{4}$ " CLEAN **CRUSHED DRAIN ROCK WRAPPED** IN MIRAFI 140N FILTER FABRIC OR APPROVED EQUIVALENT

Min. 3" CLEAR ON ALL SIDES

(2) NO. 5 BARS

NO. 3 TIES @ 6" O.C.

					COTTON, SHIRES & AS	SOCIATES, IN
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![](_page_7_Figure_8.jpeg)

(N) 36-INCH Ø SOLDIER PILE PIER WITH 3,000 PSI CONCRETE

> (N) 6" x 12" PRE-CAST CONCRETE PANELS FOR LAGGING

(N) LAGGING TO FIT TIGHT TO BEAM WEB, MIN 3" OVERLAP W/ FLANGE

(N) 4" Ø SCH. 40 PVC RIGID PERFORATED DRAIN PIPE WITH PERFORATIONS DOWN ON 2" TO 3" OF DRAINROCK

|--|

DRAWING N	(
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SHEET NO.

REGNART ROAD SLOPE STABILIZATION PROJECT Regnart Road, Cupertino, Californi

Detail 2

CSA PROJECT NO. E5177

C-8

8 OF 11

REINFORCED CONCRET LAGGING, MIN. 2,500 PS CONCRET	E SI E SI E A A A A A A A A A A A A A A A A A A	6'
STEEL BEA REINFORCEMEN TY	M IT, P. 3'	
CONCRETE	E LAGGING E	ELEVATION DE SCALE: N.T
4 IN. Ø PERFOR 40 WALL BACKD	ATED PVC SCH. RAIN PIPE	1.5 NONPERFORA PIPE PERFORATI PIPE NOT END
		PROTECT TO MODEL F08 I
3/8" HOLES AT	MAX. 4" O.C.	
PVC DRAIN I	PIPE	
PERFORATION I SCALE:	$\frac{\text{DETAIL}}{\text{N.T.S.}} \qquad \begin{array}{c} 7 \\ \sim \end{array}$	BACKDRA
		COTTON, SHIRES & ASSOCIATES, IN CONSULTING ENGINEERS AND GEOLOGISTS
		David T. Schrier, P.E. 4/5/17 DESIGNED DATE David T. Schrier, P.E. 4/5/17 DRAWN
NO. REVISIONS	BY DATE A	APP'D CHECKED DATE

![](_page_8_Figure_1.jpeg)

![](_page_9_Figure_0.jpeg)

# (N) STRAW WATTLES (DURING CONSTRUCTION),

# (N) SILT FENCE

# -(E) 8"? DUCTILE IRON

DRAWING TITLE:

**Erosion Protection Plan** 

**REGNART ROAD SLOPE STABILIZATION PROJECT** Regnart Road, Cupertino, California

DRAWING NO.

C-10 SHEET NO. 10of 11 CSA PROJECT NO. E5177

![](_page_10_Figure_0.jpeg)

![](_page_10_Figure_1.jpeg)

**COTTON, SHIRES AND ASSOCIATES, INC.** CONSULTING ENGINEERS AND GEOLOGISTS

					COTTON, SHIRES & AS	SOCIATES, INC.
					CONSULTING ENGINEERS AND GE	OLOGISTS
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					DESIGNED DATE	
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					DRAWN DATE	
					John Wallace, 4/5/17	
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Boring CSA/SD-2							
hwest of the failure) Project No. E5177							
ic Exploration/ 2400 SK-	1		ate o	of Drilling March 7. 2017			
et Logged By KW		– 2. Н	ole D	)iame	ter	(	5" solid stem
		_ 11	one D	or	si si	unnv.	warm
		_ // 					
nical Description	Sample Desig.	Dry Unit Weight (pc	Moisture Content (%	SPT Blows/ft	Sample Type	Recov. (%)	Remarks
FICIAL FILL (Af) 0-8.5 feet							Driller: Mike Helper: Theran 7:34 AM - started drilling
ND with rare gravel, medium oose, wet, angular, ranges	T1	100	20.9	$\begin{array}{c}2\\3\\3\end{array}$	MC		9"/18" @ 9:22
				(4)			
AND with rare gravel, dark clasts, loose, wet, angular,	T2	96	23.8	$\begin{array}{c} 2\\ 3\\ 3 \end{array}$	MC		 
	T3	102	17.9	$\begin{pmatrix} 4 \\ 2 \\ 2 \\ 2 \\ 2 \end{pmatrix}$	MC		 11"/18" @ 9:32
<u>LLUVIUM (Qc)</u> <u>8.5-18 feet</u>				3			-
AND with rare gravel, dark se to loose, wet, angular,	T4 T5	104	17.3	3 2 3	MC		 
				3			
							-
	Т6 Т7			3 $4$ $4$	MC		LL=25, PI=3 17"/18" @ 9:50
				G			-
ara Formation (Qsc) 18-30.9 feet							
ne, tan/orange, soft, wet, htly oxidized	T8 T9 T10			6 12 24	MC		 
countered at 20ft	110			2Đ			
							-
one, tan and light grey, soft, ted	T11			50/6")	MC		-
	T12			25/1.5" 25/1.5	MC		<u>7</u> .5"/7.5" @ 10:15
							-
							- - -
							-

## COTTON, SHIRES AND ASSOCIATES, INC. LOG OF EXPLORATORY DRILLING Boring CSA/SD-2

COTTON, SHIRES AND ASSOCIATES, INC. CONSULTING ENGINEERS AND GEOLOGISTS

Project	Regr	Regnart Road		3/7/2017				Boring		CSA/SD-2
Depth (feet) Graphic Log	USCS Class.	Geotechnical Desc	cription	Sample Desig.	Dry Unit Weight (pct)	Moisture Content (%)	Blows/ft	Sample Type	Recov. (%)	Remarks
32—	SS -	TD = 30.9 feet groundwater encountered	1 @ 20ft	B1			50/4.5 50/4.5	) )		10.5"/10.5" @ 10:35
										_
										_
40										_
42										-
44										_
46										_
48-										-
50										-
52										-
54 —										-
56-										_
58-										_
60										-
62										-
										Sheet 2 of 2
COTTON, SHIRES AND ASSOCIATES, INC. CONSULTING ENGINEERS AND GEOLOGISTS										

![](_page_10_Picture_8.jpeg)

Sheet 1 of 2

. Chad Mosley City of Cupertino 10300 Torre Ave. Cupertino, California 95014

FOR:

![](_page_10_Picture_11.jpeg)

DRAWING TITLE:	DRAWING NO.		
Boring Logs	C-11		
REGNART ROAD SLOPE STABILIZATION PROJECT	SHEET NO. 11 of 11		
Regnart Road, Cupertino, California	CSA PROJECT NO. E5177		