

PROTECTION MEASURES FOR PEARTREE LANE, PEARTREE LANE LANDSLIDE

CITY OF ROLLING HILLS ESTATES, CALIFORNIA

Project Reference No. 23-143-03

GENERAL

REFERENCE GEOTECHNICAL REPORT

REFERENCE GEOTECHNICAL REPORT: "GEOTECHNICAL STABILIZATION DESIGN FOR PORTIONS OF PEARTREE LANE, PEARTREE LANE LANDSLIDE, CITY OF ROLLING HILLS ESTATES, CALIFORNIA", PROJECT NUMBER 23-143-03, DATED JANUARY 8, 2024.

DEFINITIONS

- DESIGN ENGINEER - STRUCTURAL (DSE)
- GMU STRUCTURAL ENGINEERING
- DESIGN ENGINEER - GEOTECHNICAL (DGE)
- GMU ENGINEERS AND GEOLOGISTS

GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE WITH THE REFERENCED GEOTECHNICAL REPORT PREPARED BY GMU ENGINEERS AND GEOLOGISTS, INC.: "GEOTECHNICAL STABILIZATION DESIGN FOR PORTIONS OF PEARTREE LANE, PEARTREE LANE LANDSLIDE, CITY OF ROLLING HILLS ESTATES, CALIFORNIA" DATED JANUARY 8, 2024.
- ALL CONSTRUCTION PLANS, CALCULATIONS, CONSTRUCTION, WORKMANSHIP, AND INSPECTIONS SHALL CONFORM TO THE CALIFORNIA BUILDING CODE, 2022 EDITION.
- THESE NOTES SHALL BE USED IN CONJUNCTION WITH THE PLANS AND ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE DSE.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS, PROJECT BOUNDARIES AND SITE CONDITIONS BEFORE STARTING WORK. THE DSE SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES.
- CONDITIONS NOT SPECIFICALLY DETAILED SHALL BE CONSTRUCTED AS SPECIFIED IN TYPICAL DETAILS FOR THE RESPECTIVE MATERIALS.
- DESIGN, MATERIALS, EQUIPMENT, AND PRODUCTS OTHER THAN THOSE DESCRIBED BELOW OR INDICATED ON THE DRAWINGS MAY BE CONSIDERED FOR USE, PROVIDED PRIOR APPROVAL IS OBTAINED FROM THE CITY, THE ENGINEERS, AND THE APPLICABLE GOVERNING CODE AUTHORITY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS, PROJECT BOUNDARIES AND EXISTING CONDITIONS AT THE SITE PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL CROSS-CHECK DETAILS AND DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH RELATED REQUIREMENTS ON OTHER CONSTRUCTION DOCUMENTS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DSE OF ANY CONFLICTS BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER CONSTRUCTION DOCUMENTS OR EXISTING CONDITIONS. THE CONTRACTOR SHALL NOT ORDER MATERIALS, FABRICATE ELEMENTS, OR CONSTRUCT ANY PORTION OF STRUCTURE THAT IS IN CONFLICT UNTIL RESOLUTION IS MADE.
- WHEN DIMENSIONS ARE UNCLEAR, REQUEST CLARIFICATION FROM DSE. DO NOT SCALE DRAWINGS. UNLESS NOTED OTHERWISE, PLAN DIMENSIONS INDICATE CENTERLINE OF BEAMS AND COLUMNS AND FOOTINGS ARE CENTERED UNDER THE ELEMENTS THEY SUPPORT, UNLESS NOTED OTHERWISE.
- WHERE INFORMATION IS CONFLICTING WITHIN THE STRUCTURAL DOCUMENTS, SPECIFIC DETAILS SHALL GOVERN OVER TYPICAL DETAILS, WHICH HAVE PRECEDENTS OVER THESE NOTES, WHICH IN TURN OVERRULE PROJECT SPECIFICATIONS.
- DETAILS NOTED AS TYPICAL ON STRUCTURAL SHEETS SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. WHERE NO DETAIL IS INDICATED, CONSTRUCTION SHALL BE OF THE SAME NATURE AS FOR SIMILAR CASES OF CONSTRUCTION ON THIS PROJECT.
- THE DSE SHALL INTERPRET THE CONSTRUCTION DOCUMENTS IN CASE OF POSSIBLE CONFLICT OR DISCREPANCY BETWEEN STRUCTURAL AND OTHER DISCIPLINES.
- THE CONTRACTOR SHALL PROVIDE ALL NEW MATERIALS TO PERFORM THE WORK INDICATED ON STRUCTURAL DOCUMENTS UNLESS NOTED AS EXISTING (E) OR SUPPLIED BY OTHERS. WRITTEN APPROVAL FROM THE DSE SHALL BE OBTAINED PRIOR TO THE SUBSTITUTION OF ANY MATERIAL OR PRODUCT SPECIFIED ON THE STRUCTURAL DOCUMENTS.
- STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION OR NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN OF TEMPORARY ERECTION AIDS, FORMWORK, SCAFFOLDING, SAFETY MEASURES, SHORING OF ANY PORTION OF WORK, AND PROTECTION OF ADJACENT PROPERTIES. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, AND TECHNIQUES, SEQUENCES AND PROCEDURES. VISITS TO THE SITE BY THE DESIGN ENGINEER SHALL NOT INCLUDE OBSERVATION OR INSPECTION OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES FOR THE ABOVE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA, LATEST EDITION, AND DO ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. THE DESIGN ENGINEER AND THE OWNER DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY.
- ALL STRUCTURAL FRAMING SHALL BE ERECTED PLUMB AND TRUE TO LINE. TEMPORARY BRACING SHALL BE INSTALLED AND LEFT IN PLACE UNTIL ADEQUATE STRUCTURE IS CONSTRUCTED FOR STABILITY.
- CONSTRUCTION MATERIALS AND ERECTION LOADS SHALL BE DISTRIBUTED WHEN PLACED ON THE STRUCTURE SUCH THAT THEY DO NOT EXCEED DESIGN LIVE LOADS OR RESULT IN AN UNBALANCED CONDITION. MAXIMUM PERTINENT EQUIPMENT LOADS, POSTED LOAD LIMITS OR OTHER RESTRICTIONS NOTED ON THE STRUCTURAL DRAWINGS SHALL NOT BE EXCEEDED WITHOUT PRIOR WRITTEN APPROVAL. UNLESS SPECIFICALLY STATED, THE STRUCTURE IS NOT DESIGNED TO SUPPORT TRAFFIC FROM CRANES OR OTHER HEAVY CONSTRUCTION VEHICLES.
- HOA TO PROVIDE PRESSURIZED WATER SOURCE
- CONTRACTOR TO PROVIDE SANITARY FACILITIES AND SHALL BE REQUIRE TO SECURE SITE DURING CONSTRUCTION WITH FENCING.

GEOTECHNICAL / SOILS NOTES

- ALL FILL SOILS SHALL BE PROPERLY COMPACTED THROUGHOUT TO A MINIMUM OF 90% RELATIVE COMPACTION. MAXIMUM DENSITY SHALL BE DETERMINED BY ASTM D1557, AND FIELD DENSITY SHALL BE DETERMINED BY ASTM D6938.
- AREAS TO RECEIVE FILL SHALL BE PROPERLY PREPARED AND APPROVED IN WRITING BY THE FIELD ENGINEER PRIOR TO PLACEMENT OF FILL.
- FILL SHALL BE BENCH INTO COMPETENT MATERIAL OR AS DIRECTED BY DGE OR THEIR REPRESENTATIVE.

MATERIAL SPECIFICATIONS

REINFORCING STEEL

- PLACING TOLERANCES AND BAR SUPPORTS SHALL CONFORM TO THE "MANUAL OF STANDARD PRACTICE" FOR REINFORCED CONCRETE CONSTRUCTION, BY CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- ALL REINFORCING BAR (REBAR) STEEL SHALL BE DEFORMED ROUND BARS CONFORMING TO ASTM A615 OR ASTM A706, GRADE 60.
- PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCING IN POSITIONS INDICATED. CHAIRS OR BOLSTERS WHICH BEAR AGAINST FORMS FOR EXPOSED SURFACES SHALL BE GRAY COLOR PLASTIC COATED STEEL OR STAINLESS STEEL.
- REINFORCING BARS SHALL BE KEPT CLEAN AND FREE OF OIL, GREASE AND LOOSE RUST OR MILL SCALE.
- BEND REINFORCING BARS COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT.



REINFORCING STEEL, CONT

- ALL REINFORCING SHALL BE CONTINUOUS UNLESS NOTED OTHERWISE, WITH CONTACT LAP SPLICES PER THE TYPICAL DETAILS, OR SHOWN OTHERWISE.
- PROVISIONS FOR LAP SPLICES OR DOWELS SHALL BE PROVIDED ALONG ALL CONSTRUCTION JOINTS AND SHALL BE THE SAME GRADE, SIZE AND SPACING AS REINFORCING CONTINUING BEYOND, UNLESS NOTED OTHERWISE. IN LIEU OF SPLICES OR DOWELS, THE CONTRACTOR MAY SUBMIT FOR THE DESIGN ENGINEER'S APPROVAL THE LOCATION AND MANUFACTURER DATA OF FORM SAVERS OR COUPLERS PRIOR TO THEIR USE.
- ALL BENDS WITHIN HOOKS, STIRRUPS, HOOPS AND CROSS-TIES SHALL ENGAGE A LONGITUDINAL BAR, PROVIDE A #5 CONTINUOUS BAR WHERE ONE IS NOT SPECIFICALLY DETAILED.
- CLEARANCE BETWEEN PARALLEL BARS, AT BARS AND CONSTRUCTION JOINTS SHALL NOT BE LESS THAN THE SMALLER OF 1-INCH, 1-BAR DIAMETER, OR THE MAXIMUM AGGREGATE SIZE. UNLESS NOTED OTHERWISE, BARS IN PARALLEL LAYERS SHALL BE PLACED IN ALIGNMENT WITH ONE ANOTHER.
- MAINTAIN A MINIMUM COVER FROM FACE OF CONCRETE TO EDGE OF REINFORCEMENT PER THE CLEAR DISTANCE INDICATED ON INDIVIDUAL DETAILS.

CONCRETE

- $f_c = 4,500$ PSI., 0.45 MAXIMUM WATER / CEMENT RATIO.
- AGGREGATES SHALL BE NATURAL SAND AND ROCK CONFORMING TO ASTM C33.
- CONTRACTOR SHALL USE PORTLAND CEMENT CONFORMING TO ASTM C-150, TYPE IV, LOW ALKALI, CEMENTITIOUS ADMIXTURES SUCH AS HYCRETE SYSTEM W SHOULD BE PROVIDED BY THE BATCH PLANT. EQUIVALENT ADMIXTURES MAY BE ACCEPTED PROVIDED PRIOR APPROVAL HAS BEEN OBTAINED FROM DESIGN ENGINEER.
- THE FOLLOWING MINIMUM CLEAR DISTANCES BETWEEN REINFORCING STEEL AND FACE OF CONCRETE SHALL BE MAINTAINED UNLESS NOTED OTHERWISE:
CONCRETE BELOW GRADE, FORMED,....."2"
CONCRETE BELOW GRADE, UNFORMED (POURED AGAINST EARTH),....."3"
CONCRETE EXPOSED TO EARTH,....."2"
- PIPES MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT SHALL NOT BE EMBEDDED THEREIN.

APPLICABLE CODES

- CALIFORNIA BUILDING CODE (CBC) 2022
- AMERICAN SOCIETY OF ENGINEERING (ASCE) 7-22
- AMERICAN CONCRETE INSTITUTE (ACI) 117-10, 301-20, 318-19, 506R-16
- ASTM INTERNATIONAL (ASTM) A-416, A-615, A-706, C-33, C-94, C494, C-618, C-1017, D-1557, D-6938

TIEBACK ANCHORS

TIEBACK ANCHORS - GENERAL

- DESIGN LOADS ON STRANDED CABLES ARE LISTED ON TIEBACK SCHEDULE, SHEET 3.
- STRANDS SHALL ASSEMBLED USING 0.6" DIAMETER, SEVEN-WIRE, LOW RELAXATION STRANDS CONFORMING TO ASTM A-416. STRANDS SHALL BE HI-STRENGTH (ULTIMATE MINIMUM STRENGTH OF 270 KSI).
- ANCHOR STRAND ASSEMBLY SHALL CONFORM TO PTI DC35.1 "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS".
- ANCHOR STRANDS SHALL NOT BE USED IF DAMAGED AND SHALL NOT BE WELDED OR USED FOR GROUNDING WELDING EQUIPMENT.
- DESIGN LOAD, TEST LOADS AND MINIMUM DEVELOPMENT LENGTHS ARE GIVEN BELOW:

NO. OF STRANDS	NOM. AREA	MAX. DESIGN LOAD (DL)	MAX. TEST LOAD
(5) 0.6" DIA.	1.09 IN ²	140.3 KIPS	209.4 KIPS (1.5 DL)
(4) 0.6" DIA.	0.868 IN ²	112.3 KIPS	167.5 KIPS (1.5DL)

INSPECTIONS

GEOTECHNICAL OBSERVATION AND TESTING CAISSON, GRADE BEAM, AND TIEBACKS

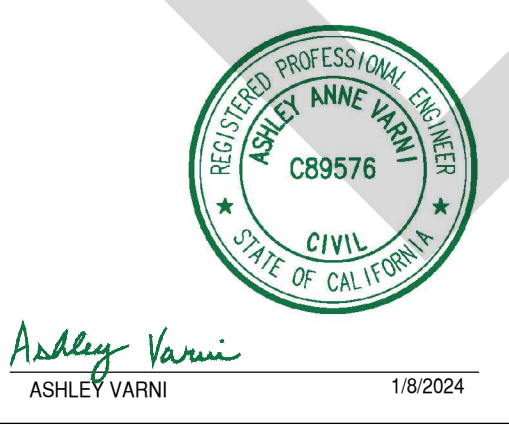
- ALL GEOTECHNICAL OBSERVATION AND TESTING SHOULD BE PERFORMED BY GMU ENGINEERS AND GEOLOGISTS IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE REFERENCE GEOTECHNICAL REPORT.
- BEDROCK CONTACT AND MINIMUM EMBEDMENT TO BE DETERMINED BY GEOTECHNICAL FIELD ENGINEER OR GEOLOGIST IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE REFERENCED GEOTECHNICAL REPORT.
- BACKFILL PLACED OVER GRADE BEAM & FILL PLACEMENT FOR SLOPE GRADING SHALL BE COMPACTED TO 90% RELATIVE COMPACTION AT 2% OVER OPTIMUM MOISTURE.

GEOTECHNICAL OBSERVATION AND TESTING CAISSON, GRADE BEAM, AND TIEBACKS, CONT.

GEOTECHNICAL OBSERVATION SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

THIS PLAN HAS BEEN REVIEWED BY GMU GEOTECHNICAL, INC. FOR GENERAL CONFORMITY TO THEIR RECOMMENDATIONS/ CONCLUSIONS CONTAINED IN THEIR GEOTECHNICAL REPORTS.

REVIEW OF NON-GEOTECHNICAL ENGINEERING DESIGN IS OUTSIDE THE PURVIEW OF GMU GEOTECHNICAL, INC.



APPROVED _____, DIRECTOR OF PUBLIC WORKS	NO.	REVISIONS	REVISED BY	APPROVED BY	DATE
BY _____					
APPROVED _____					
BY _____					
APPROVED _____					
BY _____					

GEOTECHNICAL OBSERVATION AND TESTING		
ITEM	CONTINUOUS	PERIODIC
INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE LOGS FOR EACH CAISSON	X	
VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETER, LENGTH, EMBEDMENT INTO BEDROCK, CLEANOUT AND ADEQUATE END-BEARING STRATA CAPACITY, RECORD CONCRETE VOLUMES	X	
OBSERVE BENCHING, BOTTOM REMOVALS, GRADE BEAM SUBGRADE, TEST AND OBSERVE FILL PLACEMENT TO PROJECT SPECIFICATIONS		X

REQUIRED REGISTERED SPECIAL INSPECTIONS

- ALL SPECIAL INSPECTIONS SHOULD BE PERFORMED BY GMU ENGINEERS & GEOLOGISTS IN ACCORDANCE WITH REFERENCED GEOTECHNICAL REPORT.
- REGISTERED SPECIAL INSPECTION TO APPROVE REBAR AS APPLICABLE.
- REGISTERED SPECIAL INSPECTION TO OBSERVE CONCRETE PLACEMENT, CONFIRM MIX DESIGN, AND FABRICATE COMPRESSION SPECIMENS FOR COMPRESSIVE STRENGTH TESTING.
- SPECIAL INSPECTION AND TESTS OF CONCRETE SHALL BE PERFORMED IN ACCORDANCE TO SECTION 1705.3 AND TABLE 1705.3 OF THE 2022 CBC.
- PERIODIC SPECIAL INSPECTION OF GRADE BEAM AND CAISSON REINFORCEMENT AND MINIMUM DIMENSIONS PER TABLE 1705.3 OF THE 2022 CBC IS REQUIRED FOR THE PROPOSED SLOPE STABILIZING STRUCTURE.

SPECIAL INSPECTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

SPECIAL INSPECTION		
TYPE	CONTINUOUS	PERIODIC
INSPECT REINFORCEMENT AND VERIFY REINFORCEMENT PLACEMENT.		X
VERIFY USE OF APPROVED DESIGN CONCRETE MIX FOR CAISSONS AND GRADE BEAMS.	X	
DURING CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR COMPRESSION TESTING, PERFORM SLUMP TESTING, AND DETERMINE TEMPERATURE OF CONCRETE.	X	
INSPECTION OF INSTALLATION AND GROUTING OF TIEBACK	X	

- A MINIMUM OF (1) SET OF COMPRESSION SPECIMENS FOR STRENGTH TESTS WILL BE REQUIRED FOR EVERY 4 CAISSONS/50 CU YD OF CONCRETE COMPLETED, WITH A MINIMUM OF ONE SPECIMEN FOR EACH DAYS POUR WHICHEVER IS GREATER.
- (4) 6" X 12" SPECIMENS WITH THE FOLLOWING BREAK SCHEDULE (1) @ 14-DAYS, (2) @ 28-DAYS, AND (1) HOLD
- OR -
- (5) 4" X 8" SPECIMENS WITH THE FOLLOWING BREAK SCHEDULE (1) @ 14-DAYS, (3) @ 28-DAYS, AND (1) HOLD
- TIEBACK GROUT: (6) 3" X 6" SPECIMENS WITH THE FOLLOWING BREAK SCHEDULE (1) @ 3-DAYS, (1) @ 7-DAYS, (3) @ 28 DAYS, AND (1) HOLD

SITE MONITORING REQUIREMENTS

- EXISTING SLOPE INCLINOMETERS SHOULD BE READ ONCE A WEEK DURING STABILIZATION DRILLING AND CONSTRUCTION. IT SHOULD BE NOTED THAT SHOULD ADDITIONAL MOVEMENTS RESULT IN DESTRUCTION OF THE EXISTING SLOPE INCLINOMETERS, THEN ADDITIONAL INCLINOMETERS MAY NEED TO BE INSTALLED. IT IS RECOMMENDED THAT A MINIMUM OF TWO SLOPE INCLINOMETERS BE MONITORED DURING STABILIZATION DRILLING AND CONSTRUCTION. INCLINOMETER READINGS SHALL BE COMPLETED BY GMU ENGINEERS AND GEOLOGISTS. (PROTECT ALL INCLINOMETERS IN PLACE)
- VIBRATION MONITORING SHALL BE PROVIDED BY GMU ENGINEERS AND GEOLOGISTS DURING ALL DRILLING ACTIVITIES.
- PERIODIC SURVEY MONITORING WILL BE PROVIDED DURING CONSTRUCTION UNDER GMU ENGINEERS AND GEOLOGISTS CONTRACT.
- VISUAL MONITORING BY GMU ENGINEERS AND GEOLOGISTS WILL BE PROVIDED DURING ALL DRILLING ACTIVITIES.

SITE SPECIFIC REQUIREMENTS

GENERAL / DIG-ALERT

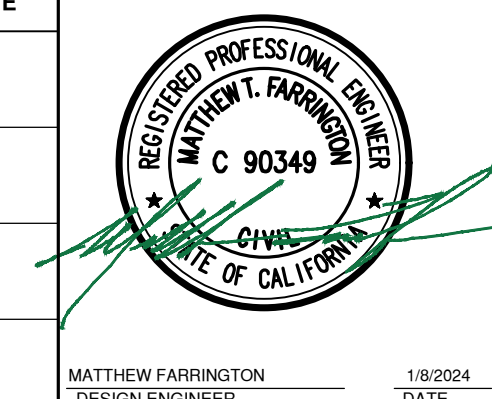
- PRIOR TO ANY SITE EXCAVATION THE PROPOSED AREA OF WORK SHALL BE CALLED INTO DIG - ALERT AND ALL UTILITIES SHALL BE MARKED. ALL UTILITIES IN CONFLICT WITH THE PROPOSED SCOPE OF WORK INCLUDED HEREIN SHALL BE TERMINATED OR SHALL BE RE-ROUTED, AS DIRECTED BY THE UTILITY COMPANIES.

CAISSON DRILLING

- CIDH CAISSONS SHALL BE DRILLED AND CLEANED OUT AT EVERY FOURTH LOCATION IN AN "ABC" SEQUENCE, ONCE INITIAL LOCATIONS ARE CONSTRUCTED SKIPPED LOCATIONS MAY BE DRILLED IN A CONTINUED "ABC" SEQUENCE AND THEN CONSTRUCTED.
- MAXIMUM 5 DRILL HOLE LOCATIONS SHALL BE OPEN AT ANY POINT.
- EXCESS SOIL SPOILS ABOVE MATERIAL REQUIRED TO FILL OVER GRADE BEAMS SHALL BE REMOVED.
- CONTRACTOR MAY STOCKPILE SPOILS, HARDSCAPE, AND LANDSCAPE DEBRIS ON SLIDE MASS.

CONSTRUCTION ACCESS

- CONTRACTOR SHALL PROVIDE AN ACCESS PLAN FOR ALL AREAS OF CONSTRUCTION. CONTRACTOR SHALL INDICATE CAISSON REINFORCEMENT CAGE LAYDOWN AREA, ACCESS / CONSTRUCTION PLAN AND WORK SEQUENCE PLAN TO BE APPROVED BY DSE, DGE AND HOA BOARD PRIOR TO START OF CONSTRUCTION.



CONTRACTOR SUBMITTALS

THE TIEBACK CONTRACTOR IS REQUIRED TO PROVIDE THE FOLLOWING SUBMITTALS TO THE DSE.

- TIEBACK ANCHOR AND ACCESSORY STRUCTURAL DETAILS / SHOP DRAWINGS
- MATERIAL VERIFICATIONS
- CONCRETE MIX DESIGN, GROUT MIX DESIGN
- REINFORCING STEEL SHOP DRAWINGS
- CONSTRUCTION SEQUENCING PLAN
- ANY PROPOSED ALTERNATE DESIGN ELEMENT OR PROCEDURES
- REBAR COUPLERS, (IF DESIRED)

TIEBACK ANCHORS - TESTING PROCEDURE

150% PERFORMANCE TEST:

- 150% PERFORMANCE TESTING SHALL BE COMPLETED ON AT LEAST (2) ANCHORS, WITH THE SPECIFIC ANCHORS CHOSEN BY THE CONTRACTOR.
- WITHIN SIX MONTHS OF TESTING, THE HYDRAULIC JACK, PUMP, AND GAUGE SYSTEM SHOULD BE CALIBRATED BY AN INDEPENDENT TESTING LABORATORY.
- TEST LOADS (TL) FOR THESE ANCHORS WILL BE 150% OF THE DESIGN LOAD (DL).
- ALIGNMENT LOADS (AL) MAY BE TAKEN AS 10 PERCENT OF THE DL.
- UNLESS OTHERWISE SPECIFIED BY THE DGE THE PERFORMANCE TEST SHALL BE CONDUCTED BY CYCLICALLY AND INCREMENTALLY LOADING AND UNLOADING THE ANCHOR AS FOLLOWS:
0.10 DL (AL) 0.25 DL 0.50 DL (AL) 0.75 DL 1.00 DL (AL) 1.25 DL (TL) HOLD FOR 15 MINUTES
- EACH LOAD INCREMENT WILL BE HELD NO LESS THAN ONE MINUTE TO OBTAIN THE MOVEMENT READING BEFORE THE NEXT LOAD IS APPLIED.
- AT THE TEST LOAD (T.L.), MOVEMENT READINGS WILL BE TAKEN AT 1, 2, 3, 5, 7, 10, 12, AND 15 MINUTES. IF THE TOTAL MOVEMENT IS LESS THAN 0.04" BETWEEN 1 AND 15 MINUTES, THE TEST SHALL BE CONCLUDED. IF THE TOTAL MOVEMENT EXCEEDS 0.04", THE TEST LOAD SHALL BE MAINTAINED FOR AN ADDITIONAL 50 MINUTES WITH MOVEMENT READINGS TAKEN EVERY 10 MINUTES. THE TOTAL MOVEMENT SHALL NOT EXCEED 0.08" OVER THE 60-MINUTE PERIOD IN ORDER FOR THE ANCHOR TO BE APPROVED. IF THE ANCHOR MOVEMENT EXCEEDS 0.08", THE ANCHOR MAY BE POST-GROUTED AND RE-TESTED AFTER 3 DAYS.
- THE TEST LOAD AT 1.50 DL SHALL NOT EXCEED 80 PERCENT OF THE MINIMUM TENSILE STRENGTH OF THE ANCHOR TENDONS.
- DURING EACH INCREMENT OF LOAD APPLICATION THE TOTAL MOVEMENT OF THE PULLING HEAD SHALL BE RECORDED TO THE NEAREST 0.001-INCH WITH RESPECT TO A PREVIOUSLY ESTABLISHED FIXED REFERENCE POINT.
- ONCE THE ANCHOR IS APPROVED, THE TEST LOAD SHALL BE REDUCED, AND THE ANCHOR SHALL BE LOADED TO ITS DESIGN LOAD AND LOCKED OFF.

24 HOUR 200% CREEP TEST:

- 200% CREEP TESTING SHALL BE DONE FOR AT LEAST (2) ANCHORS. SEE SHEET 3 OF 4 FOR DESIGNATED LOCATIONS.
- ANCHORS DESIGNATED FOR THE 200% TEST SHALL HAVE ADDITIONAL ANCHOR STRAND(S) AS REQUIRED SO AS NOT EXCEED 80 PERCENT OF THE MINIMUM TENSILE STRENGTH OF THE ANCHOR TENDONS AT THE FINAL TEST LOAD.
- FOR THE INITIAL PHASE OF THE 200% CREEP TEST, FOLLOW THE PROCEDURE FOR THE 150% PERFORMANCE TEST (ABOVE) AND RECORD THE RESULTS.
- UPON A SUCCESSFUL COMPLETION OF THE 150% PERFORMANCE TEST, STEADILY INCREASE THE TEST LOAD TO 200% OF THE DESIGN LOAD.
- TAKE AN INITIAL DIAL READING AFTER THE 200% TEST LOAD HAS BEEN APPLIED FOR 1 MINUTE. THIS IS THE INITIAL CREEP LOAD READING.
- TAKE ADDITIONAL READINGS AT THE FOLLOWING INCREMENTS: 10 MIN, 20 MIN, 30 MIN, 45 MIN, 1 HOUR, 2 HOURS, 4 HOURS, 6 HOURS, 8 HOURS, 12 HOURS, 15 HOURS, 18 HOURS, 21 HOURS, 24 HOURS.
- IF THE DEFLECTION AFTER THE 200% TEST LOAD HAS BEEN APPLIED DOES NOT EXCEED 0.1" AFTER 4 HOURS AND TOTAL DISPLACEMENT OVER THE PREVIOUS 3 HOURS IS LESS THAN 0.04", THE TEST SHALL BE CONSIDERED COMPLETE. IF THE DEFLECTION AFTER 4 HOURS EXCEEDS 0.1", BUT DOES NOT EXCEED 0.5" AFTER 12 HOURS AND TOTAL DISPLACEMENT OVER THE PREVIOUS 4 HOURS IS LESS THAN 0.10", TEST IS CONSIDERED COMPLETE.
- IF TOTAL DEFLECTION DOES EXCEED 0.75" AT THE 24-HOUR MARK, THE TEST IS CONSIDERED COMPLETE.
- UPON COMPLETION, REDUCE LOAD TO ALIGNMENT LOAD, RECORD DIAL READING, THEN PROCEED TO LOAD ANCHOR TO THE DESIGN LOAD AND LOCK OFF.

PROOF TESTING:

- PROOF TESTING SHALL BE DONE FOR ALL REMAINING ANCHORS
- WITHIN SIX MONTHS OF TESTING, THE HYDRAULIC JACK, PUMP, AND GAUGE SYSTEM SHOULD BE CALIBRATED BY AN INDEPENDENT TESTING LABORATORY.
- TEST LOADS (TL) FOR THESE ANCHORS WILL BE 150% OF THE DESIGN LOAD (DL).
- ALIGNMENT LOADS (AL) MAY BE TAKEN AS 10 PERCENT OF THE DL.
- UNLESS OTHERWISE SPECIFIED BY THE GEOTECHNICAL ENGINEER, THE PULL TEST SHALL BE CONDUCTED BY INCREMENTALLY LOADING THE ANCHOR AS FOLLOWS:
0.10 DL (AL) 0.25 DL 0.50 DL 0.75 DL 1.00 DL 1.25 DL 1.50 DL (TL) - HOLD FOR 15 MINUTES
- AT THE TEST LOAD (T.L.), MOVEMENT READINGS WILL BE TAKEN AT 1, 2, 3, 5, 7, 10, 12, AND 15 MINUTES. IF THE TOTAL MOVEMENT IS LESS THAN 0.10" BETWEEN 1 AND 15 MINUTES, THE TEST SHALL BE CONCLUDED. IF THE TOTAL MOVEMENT EXCEEDS 0.10", THE TEST LOAD SHALL BE MAINTAINED FOR AN ADDITIONAL 50 MINUTES WITH MOVEMENT READINGS TAKEN EVERY 10 MINUTES. THE TOTAL MOVEMENT SHALL NOT EXCEED 0.10" OVER THE 60-MINUTE PERIOD IN ORDER FOR THE ANCHOR TO BE APPROVED. IF THE ANCHOR MOVEMENT EXCEEDS 0.10", THE ANCHOR MAY BE POST-GROUTED AND RE-TESTED AFTER 3 DAYS.

STRUCTURAL

GMU STRUCTURAL ENGINEERING

30336 ESPERANZA RANCHO SANTA MARGARITA, CALIFORNIA 92688

GEOTECHNICAL

GMU ENGINEERS AND GEOLOGISTS

30336 ESPERANZA RANCHO SANTA MARGARITA, CALIFORNIA 92688

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CONSTRUCTION NOTES AND SPECIFICATIONS

CITY OF ROLLING HILLS ESTATES PUBLIC WORKS

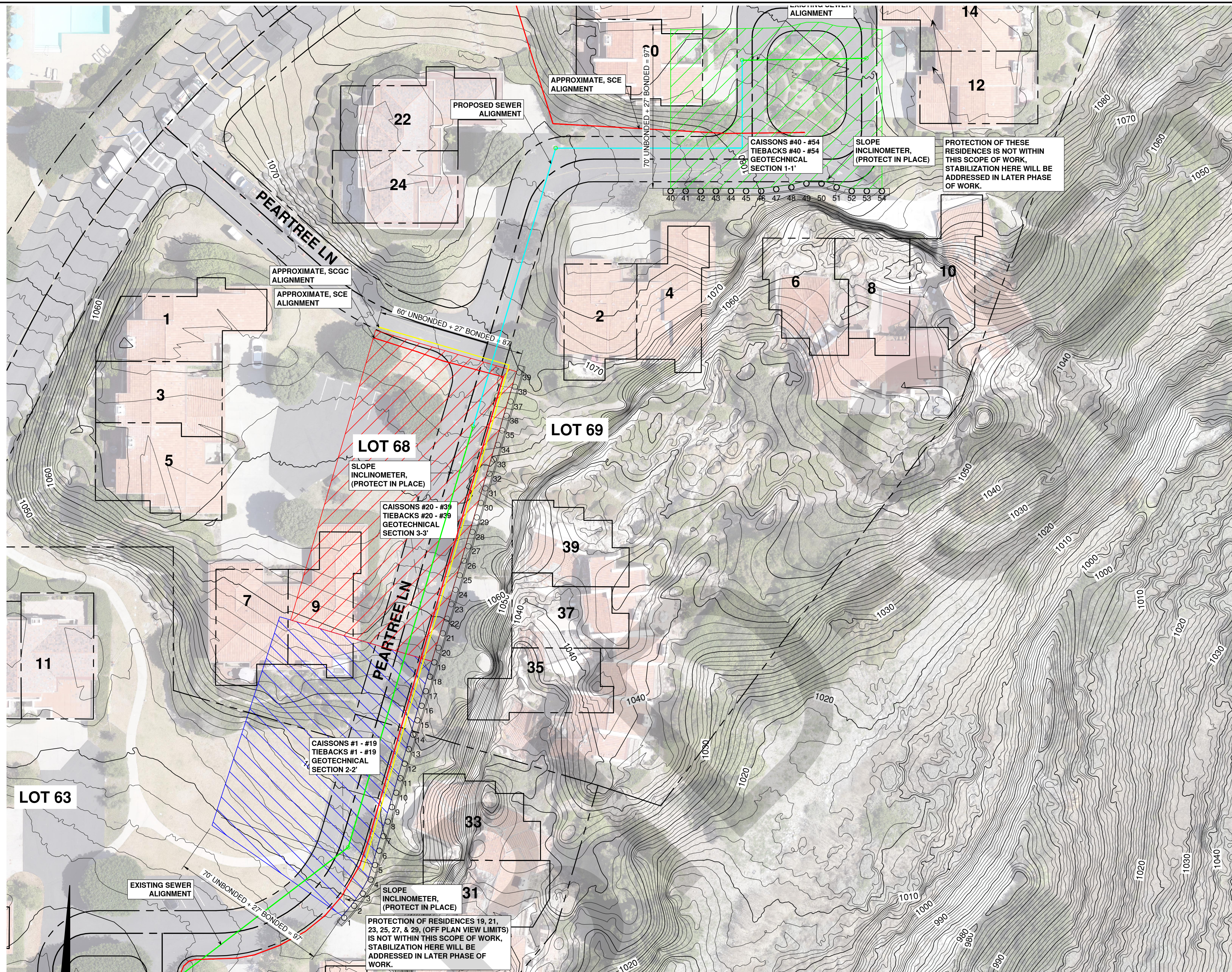
PROTECTIVE MEASURES FOR PEARTREE LANE, PEARTREE LANE LANDSLIDE



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SHEET 1 OF 4

PLAN DATE: JANUARY 8, 2024



CAISSON LOCATIONS (NORTHINGS AND EASTINGS)

Caisson #	Northing	Easting	Geotechnical Section	Caisson #	Northing	Easting	Geotechnical Section
1	1736442.325	6443327.15	2	31	1736669.785	6443401.889	3
2	1736448.575	6443332.417	2	32	1736677.463	6443404.137	3
3	1736455.13	6443337.001	2	33	1736685.141	6443406.384	3
4	1736462.485	6443341.205	2	34	1736692.819	6443408.632	3
5	1736470.162	6443343.453	2	35	1736700.496	6443410.879	3
6	1736477.84	6443345.701	2	36	1736708.174	6443413.127	3
7	1736485.518	6443347.948	2	37	1736715.852	6443415.374	3
8	1736493.196	6443350.196	2	38	1736723.53	6443417.622	3
9	1736500.874	6443352.443	2	39	1736731.208	6443419.869	3
10	1736508.551	6443354.691	2	40	1736827.296	6443500.121	1
11	1736516.229	6443356.938	2	41	1736827.296	6443508.121	1
12	1736523.907	6443359.186	2	42	1736827.296	6443516.121	1
13	1736531.585	6443361.433	2	43	1736827.296	6443524.121	1
14	1736539.263	6443363.681	2	44	1736827.296	6443532.121	1
15	1736546.94	6443365.928	2	45	1736827.296	6443540.121	1
16	1736554.618	6443368.176	2	46	1736827.296	6443548.121	1
17	1736562.296	6443370.423	2	47	1736827.296	6443556.121	1
18	1736569.974	6443372.671	2	48	1736827.296	6443564.121	1
19	1736577.652	6443374.919	2	49	1736831.296	6443572.121	1
20	1736585.329	6443377.166	3	50	1736831.296	6443580.121	1
21	1736593.007	6443379.414	3	51	1736829.296	6443588.121	1
22	1736600.685	6443381.661	3	52	1736827.296	6443596.121	1
23	1736608.363	6443383.909	3	53	1736827.296	6443604.121	1
24	1736616.041	6443386.156	3	54	1736827.296	6443612.121	1
25	1736623.718	6443388.404	3				
26	1736631.396	6443390.651	3				
27	1736639.074	6443392.899	3				
28	1736646.752	6443395.146	3				
29	1736654.43	6443397.394	3				
30	1736662.107	6443399.641	3				

CONTRACTOR SURVEY REFERENCE

QUAD YEAR	ELEVATION	DESCRIPTION	BM NUMBER
2013	988.974 (ft)	SE CORNER OF HAWTHORNE BLVD. AND INDIAN VALLEY RD.	8561

CONTRACTOR RESPONSIBLE FOR SITE SURVEY. ELEVATIONS HEREON ARE IN TERMS OF LOS ANGELES COUNTY PUBLIC WORKS BENCHMARKS PALOS VERDE QUAD 2013 ADJUSTMENTS 2013 BASELINE NAVD88 DATUM BASED LOCALLY UPON BENCHMARK 8561, ELEVATION 988.974

TIEBACK ANCHORS - INSTALLATION PROCEDURES

- DRILL TIEBACK SHAFT (USE TEMPORARY CASING TO PREVENT SLOUGHING OR CAVING IF REQUIRED).
- REMOVE THE EXCESS SPOILS FROM THE DRILLED SHAFT
- UNBONDED LENGTH OF TIEBACK ANCHOR SHALL HAVE A PVC SLEEVE AROUND THE ANCHOR RODS OR STRANDS. THE UNBONDED LENGTH FOR STRANDS ANCHORS SHALL NOT BE LESS THAN THE LOCATION OF THE ACTIVE WEDGE AS SPECIFIED BY SOILS ENGINEER.
- USE CENTRALIZING DEVICES AT MIN. 10FT CENTERS WHEN INSTALLING TIEBACKS AND TWO 1/2" DIA. POST-GROUT LINES WITH RUBBER VALVES AT 5 FEET CENTERS IN THE POST-GROUT ZONE.
- FILL THE ENTIRE SHAFT THROUGH A TREMIE GROUT TUBE WITH NEAT CEMENT GROUT. GROUT TUBES SHALL BE REMOVED AFTER GROUTING. (IF LEFT IN PLACE, TUBES SHALL BE 1/2" DIAMETER AND MUST BE FULLY GROUTED). TERMINATE GROUTING WHEN THE SHAFT IS COMPLETELY FILLED.
- AFTER THE INITIAL GROUT HAS ATTAINED ITS SET (24 HOURS TYPICALLY), POST GROUTING OF THE ANCHOR BONDED ZONE SHALL BE PERFORMED. FIRST, FRACTURE THE INITIAL NEAT CEMENT SET IN THE BOND ZONE WITH WATER AND INSTALL GROUT UNTIL A PRESSURE OF APPROX. 300 PSI IS ACHIEVED. INJECTION PRESSURES AND POST-GROUT VOLUMES MAY VARY BASED ON GROUTING CONDITIONS AND ANCHOR DESIGN LOADS. FLUSH POST GROUT LINE WITH WATER FOR REUSE.
- TIEBACK ANCHOR SHALL REMAIN UNDISTURBED UNTIL THE GROUT HAS CURED A MIN OF 3 DAYS.
- TEST ANCHORS IN ACCORDANCE WITH THE PROCEDURES IN "TIEBACK ANCHORS - TESTING PROCEDURES".
- SHOULD THE ANCHOR FAIL THE ACCEPTANCE CRITERIA, DE-TENSION THE TIEBACK AND AN ADDITIONAL POST-GROUT PROCESS SHALL OCCUR. ADDITIONAL TESTING IS REQUIRED. MAXIMUM OF THREE (3) POST-GROUTING PROCEDURES MAY BE PERFORMED ON ANY ANCHOR.
- AFTER A SUCCESSFUL LOAD TEST, LOCK OFF THE TIEBACK BE AT SPECIFIED DESIGN LOAD.
- REPEAT THE ABOVE PROCEDURE FOR ALL TIEBACKS.
- IF REQUIRED, TIEBACK ANCHORS SHALL BE DE-TENSIONED AND/OR REMOVED AT THE APPROPRIATE CONSTRUCTION SEQUENCE.

GROUT BATCHING PROCEDURE

- GROUT OR "NEAT" MIX SHALL BE BATCHED ON-SITE USING AIR-DRIVEN MIXER UNIT.
- FILL MIXING UNIT WITH SPECIFIED WATER QUANTITY USING CALIBRATED MEASURING DEVICE.
- ADD DRY PORTLAND CEMENT WITH MAXIMUM W/C RATIO OF 5 GAL WATER : 94LB PORTLAND CEMENT.
- AGITATE THOROUGHLY UNTIL A COLLOIDAL MIX IS ACHIEVED.
- DISCHARGE GROUT INTO HOLDING TANK. AGITATE SLOWLY TO PREVENT SEGREGATION OF MATERIALS.
- PER CTS41 GROUT FLOW SHALL BE TESTED FOR MINIMUM FLOW VISCOSITY OF 11 SECONDS
- PUMP GROUT INTO DRILLED HOLE IN ACCORDANCE WITH TIEBACK INSTALLATION PROCEDURE.
- GROUT SHALL BE DISCHARGED DIRECTLY INTO THE GROUT PUMP OR A HOLDING TANK/AGITATOR UNIT.
- GROUT SHALL BE PUMPED BY AN AIR DRIVEN (HENDERSON) PISTON PUMP AND MONITORED BY A DIAPHRAGM PROTECTED PRESSURE GAGE AT THE OUTLET OF THE PUMP.

UTILITIES

- ALL UTILITIES DISPLAYED ON THIS PLAN SHEET ARE APPROXIMATE. AND ARE SHOWN FOR REFERENCE ONLY.
- CONTRACTOR IS RESPONSIBLE TO CALL FOR DIG ALERT AND SHALL BE RESPONSIBLE TO POT-HOLE UTILITIES AS NEEDED PRIOR TO COMPLETING ANY CONSTRUCTION.

SAFETY PRECAUTIONS

THE CURRENT LANDSCAPE VERTICAL SCARP AND OVERHANGING DAMAGED STRUCTURES AND DRIVEWAYS ARE UNSTABLE AND POSE A HAZARD TO PERSONNEL AND EQUIPMENT. UTMOST CAUTION MUST BE TAKEN WHEN PERSONNEL AND EQUIPMENT ARE WORKING IN THE VICINITY OF THE TOP OF THE LANDSLIDE OR ON THE LANDSLIDE MASS. OPEN FRACTURES ARE PRESENT THROUGHOUT THE LANDSLIDE AND PERSONNEL WORKING ON THE SLIDE MASS MUST BE MADE AWARE OF THE HAZARD POSED BY THE FRACTURES AND CONTRACTORS MUST PROVIDE SAFETY FEATURES TO BRIDGE OVER THE FRACTURES WHERE PERSONNEL ACCESS IS REQUIRED.

GMU PERSONNEL WILL BE ONSITE DURING CONSTRUCTION ACTIVITIES TO MONITOR PEARTREE LANE AND THE LANDSLIDE FOR ANY SIGNIFICANT CHANGED CONDITIONS THAT COULD POSE A DANGER DURING CONSTRUCTION. WORKER'S SAFETY IS THE CONTRACTOR'S RESPONSIBILITY AND IT IS IMPERATIVE THAT THE CONTRACTOR EXERCISES CAUTION DURING CONSTRUCTION ACTIVITIES.

THIS PLAN HAS BEEN REVIEWED BY GMU GEOTECHNICAL, INC. FOR GENERAL CONFORMITY TO THEIR RECOMMENDATIONS/ CONCLUSIONS CONTAINED IN THEIR GEOTECHNICAL REPORTS:
REVIEW OF NON-GEOTECHNICAL ENGINEERING DESIGN IS OUTSIDE THE PURVIEW OF GMU GEOTECHNICAL, INC.



Ashley Varni
ASHLEY VARNI
1/8/2024

SITE LAYOUT PLAN

1" = 30'

APPROVED	NO.	REVISIONS	REVISED BY	APPROVED BY	DATE
_____ BY _____					
APPROVED _____					
BY _____					
APPROVED _____					
BY _____					



MATTHEW FARRINGTON
DESIGN ENGINEER
1/8/2024
DATE

SITE LAYOUT PLAN WITH UTILITIES

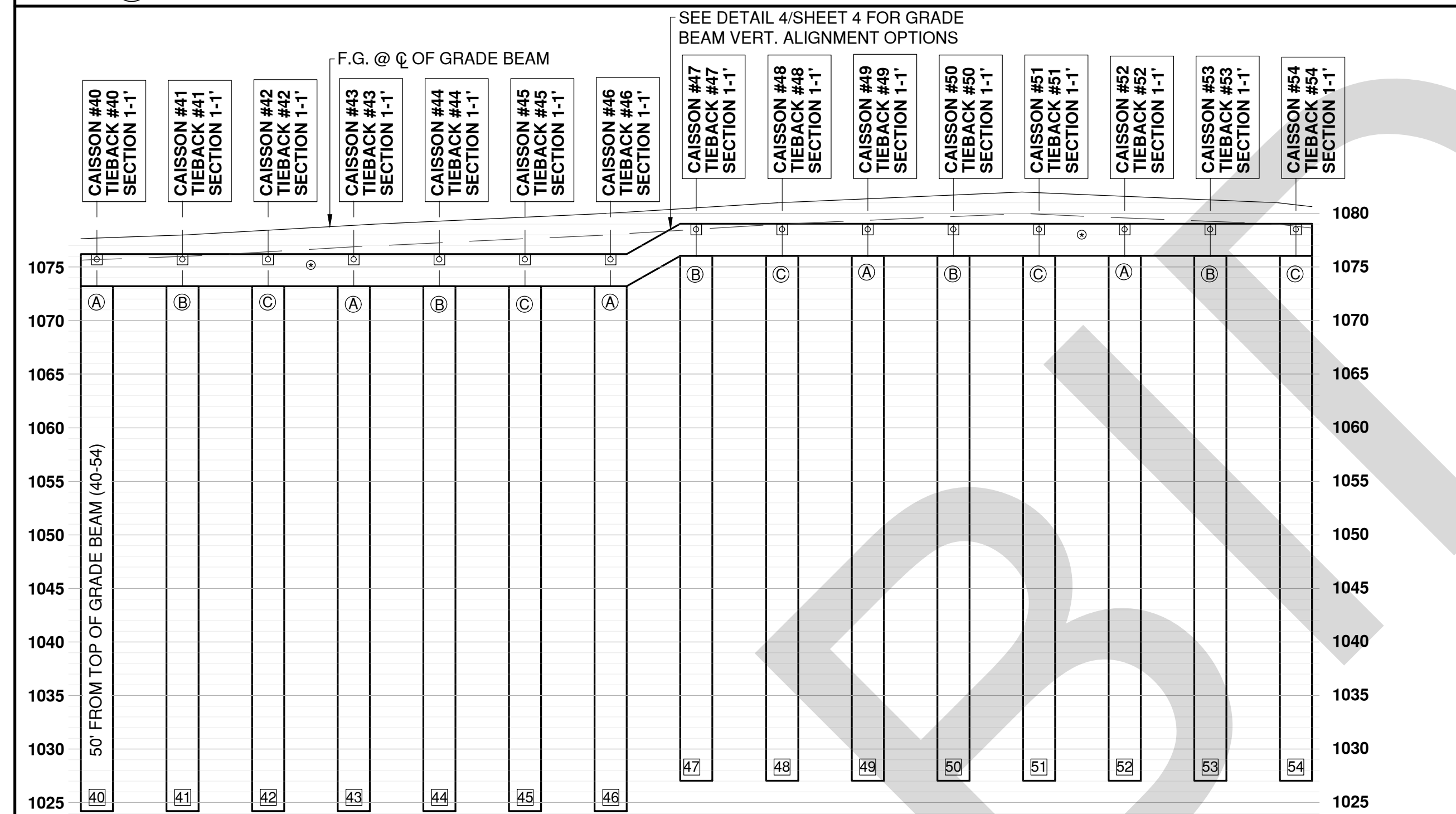
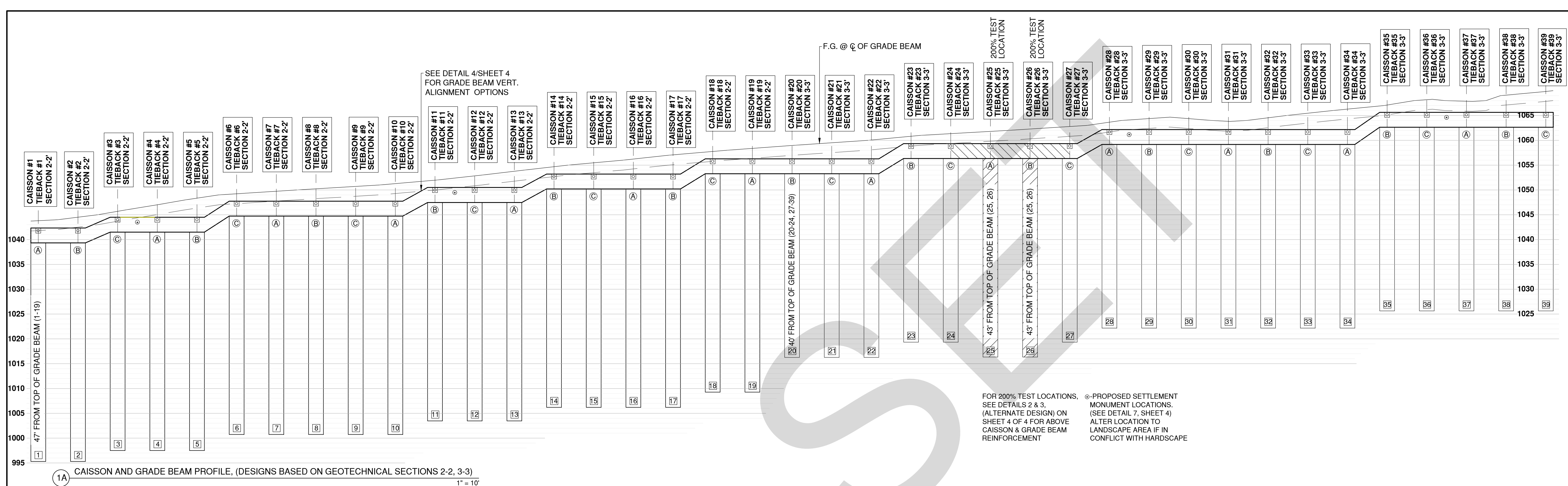
CITY OF ROLLING HILLS ESTATES PUBLIC WORKS

PROTECTIVE MEASURES FOR PEARTREE LANE, PEARTREE LANE LANDSLIDE

30336 Esperanza
Rancho Santa Margarita, CA 92688
Phone (949) 888 6513
www.gmugeo.com

SHEET 2 OF 4

PLAN DATE: JANUARY 8, 2024



TIEBACK ANCHOR SCHEDULE

DESIGN SECTION	Tie Back ID	TIEBACK DIA. (in.)	TIEBACK ANGLE	UNBONDED LENGTH (FEET)	BONDED LENGTH (FEET)	TOTAL LENGTH (FEET)	DESIGN LOAD (DL)	1.5 DL TEST LOAD	2.0 DL TEST LOAD	TIEBACK ASSEMBLY	TIEBACK SPACING (FEET)
Section 2-2	(1-19)	6"	30 DEG	70	27	97	90.5	135.75	-	(4) 0.6" DIA STRANDS	8
Section 3-3	(20-24, 27-39)	6"	30 DEG	60	27	87	90.5	135.75	-	(4) 0.6" DIA STRANDS	8
Section 3-3 (200% DL)	(25, 26)	6"	30 DEG	60	36	96	90.5	135.75	181	(5) 0.6" DIA STRANDS	8
Section 1-1	(40-54)	6"	30 DEG	70	27	97	90.5	135.75	-	(4) 0.6" DIA STRANDS	8

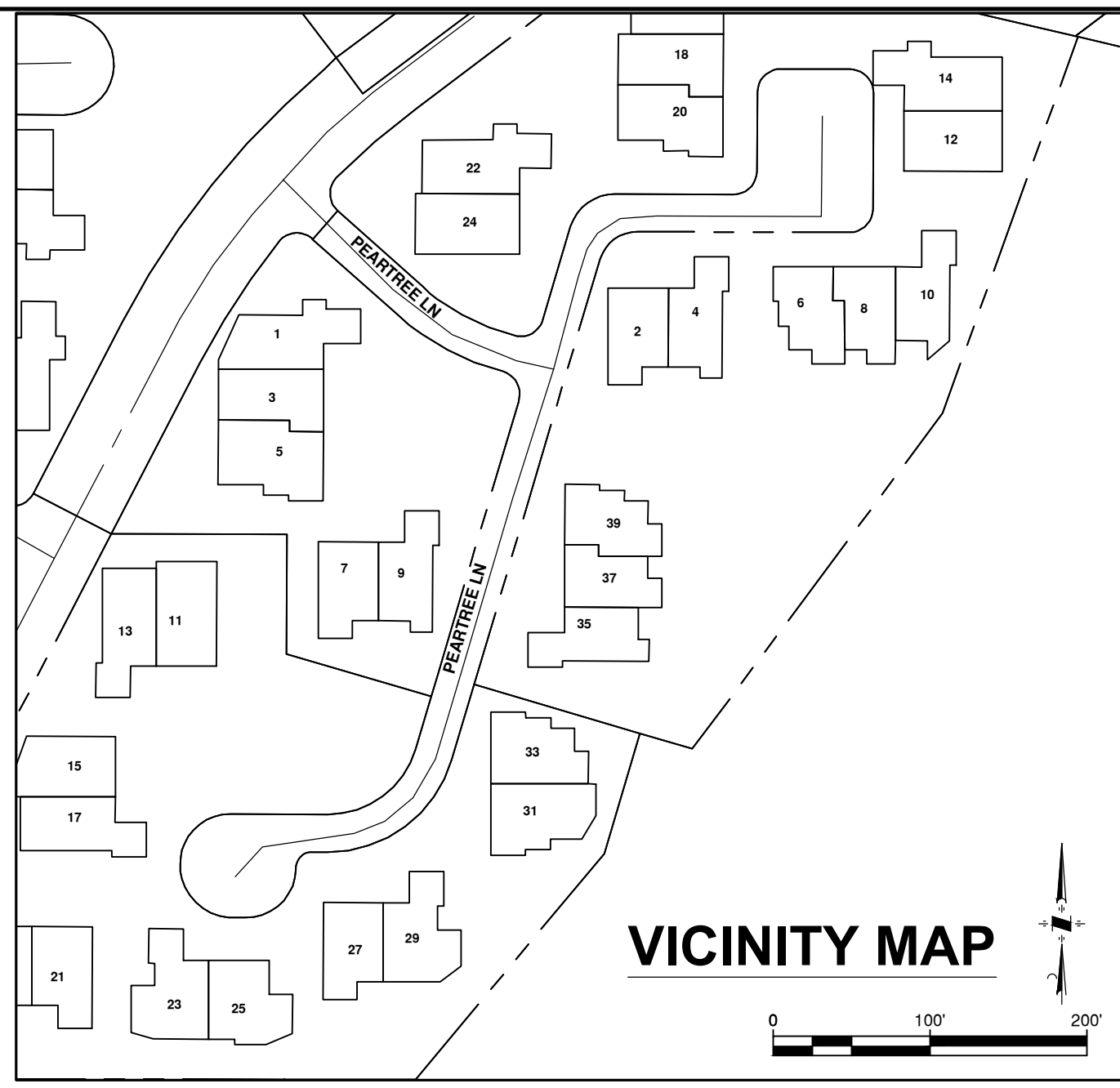
NOTES:

- ALL CIDH DRILLING TO BE COMPLETED IN AN ABC SEQUENCE.
- AT END OF GRADE BEAM CONDITIONS EXTEND GRADE BEAM 2-FEET BEYOND FINAL CIDH CAISSON.

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Ashley Varni
ASHLEY VARNI 1/8/2024



APPROVED _____, DIRECTOR OF PUBLIC WORKS

BY _____

APPROVED _____

BY _____

APPROVED _____

BY _____

NO.	REVISIONS	REVISED BY	APPROVED BY	DATE

REGISTERED PROFESSIONAL ENGINEER
MATTHEW T. FARRINGTON
C 90349
CIVIL
STATE OF CALIFORNIA

MATTHEW FARRINGTON
DESIGN ENGINEER 1/8/2024
DATE

1" = 100'

CAISSON AND GRADE BEAM PROFILES

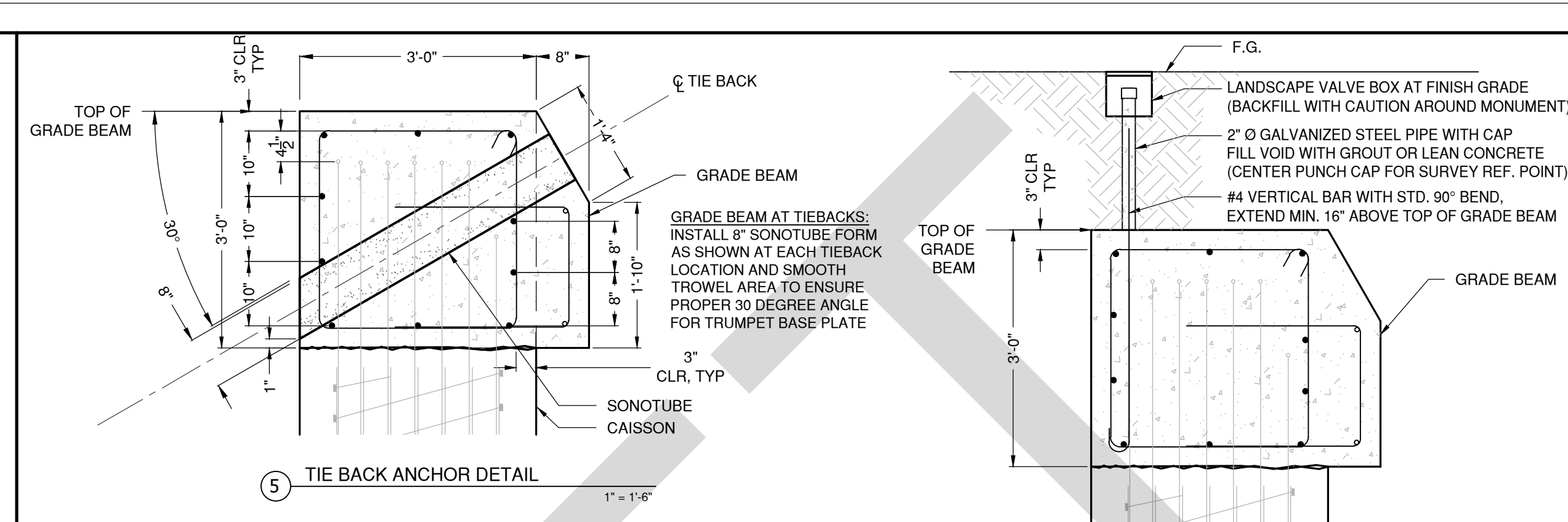
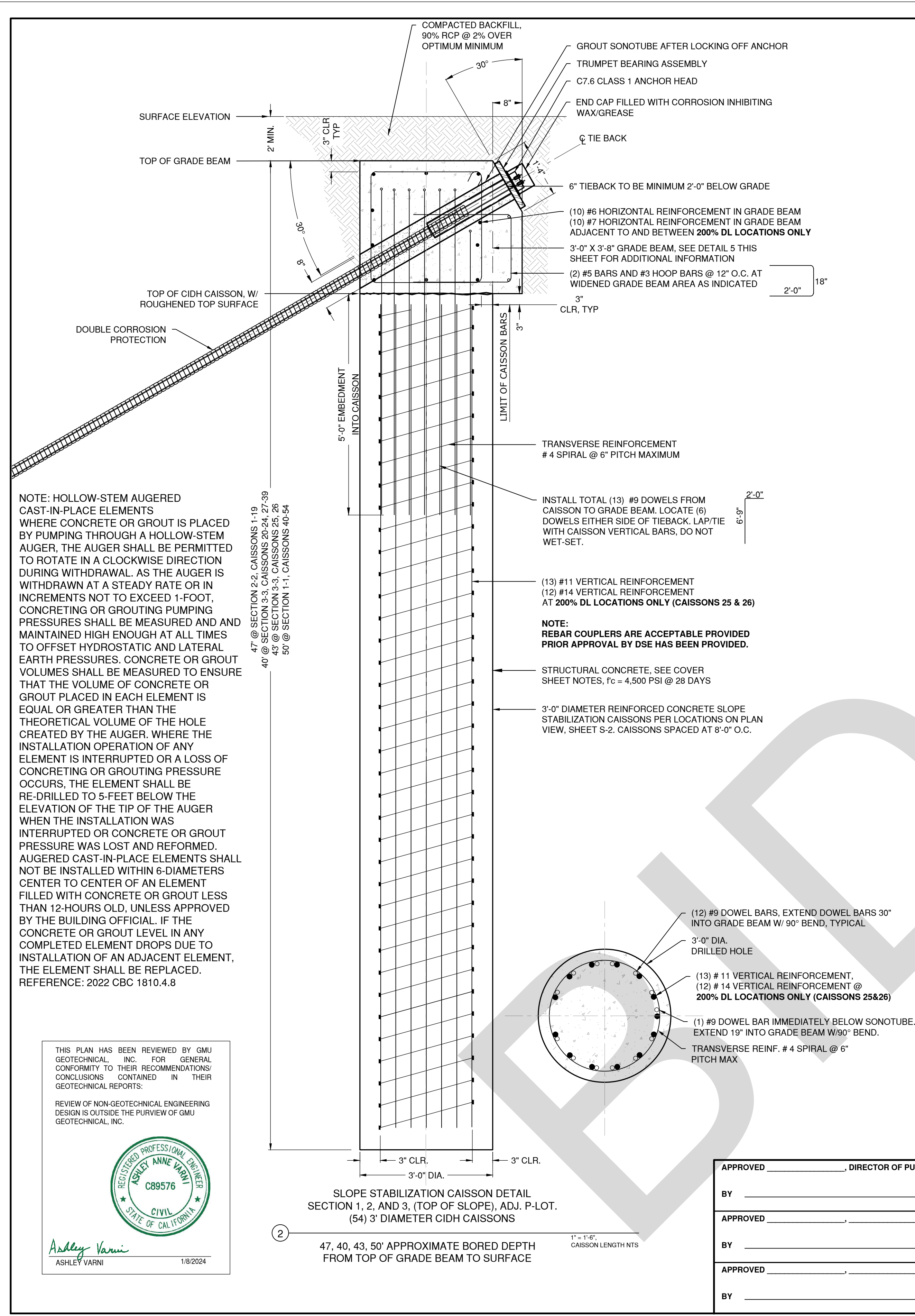
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SHEET 3 OF 4

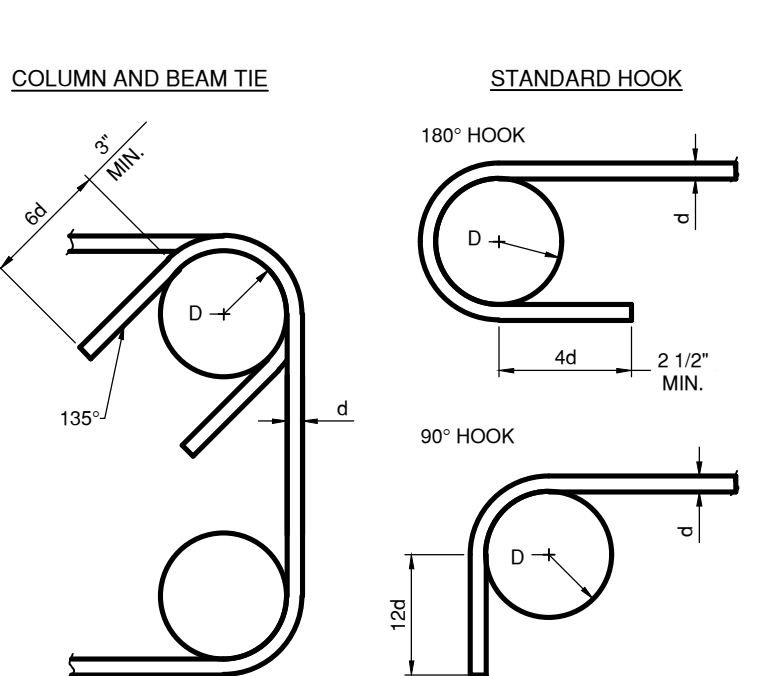
PLN DATE: JANUARY 8, 2024



BAR	AREA (SQ. IN.)	0.11		0.20		0.31		0.44			
		DIAMETER db	0.375	0.500	0.625	0.750					
DEVELOPMENT TYPE	NORMAL WEIGHT CONCRETE f _c (psi)	CATEGORY	#3	#4	#5	#6					
			TOP	BOTT	TOP	BOTT	TOP	BOTT			
			2000	27	21	35	27	44	34	53	41
			3000	21	16	28	23	36	27	43	33
			4000	18	16	25	19	31	24	37	29
5000	17	16	22	17	28	21	33	26			
HOOK EMBEDMENT STANDARD	2000	10	14	17	20						
	3000	8	11	14	16						
	4000	7	10	12	15						
	5000	6	9	11	13						

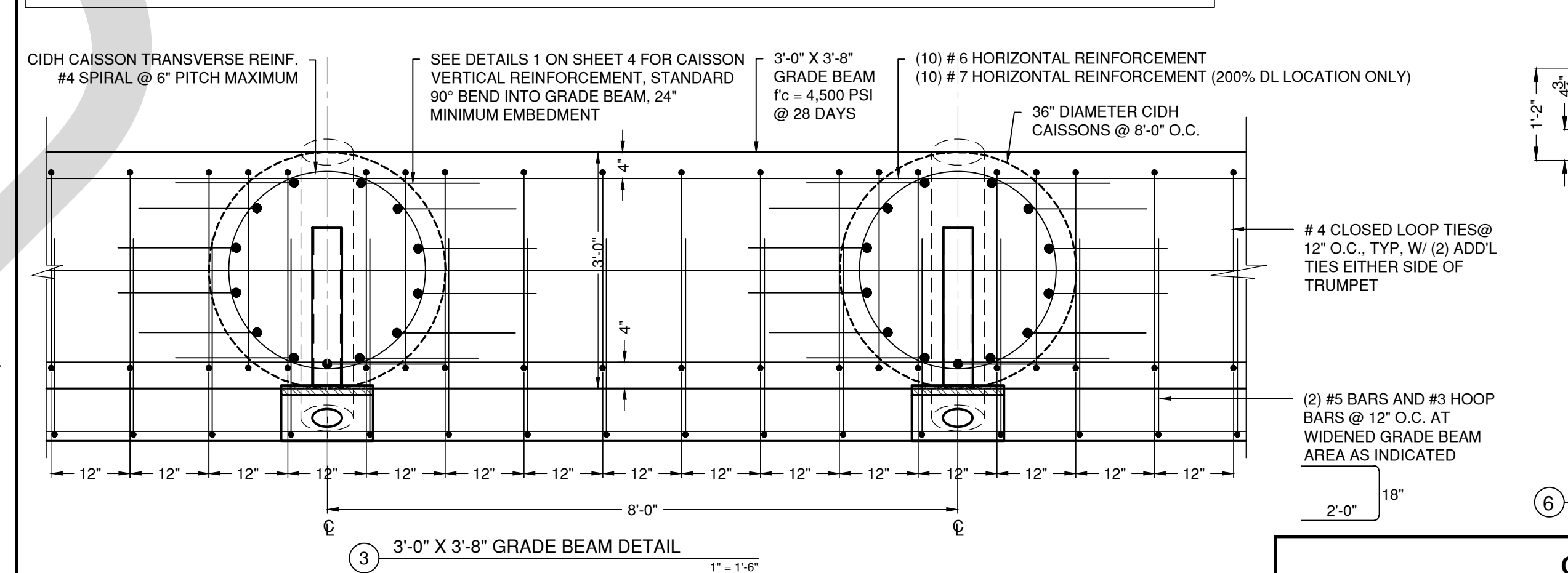
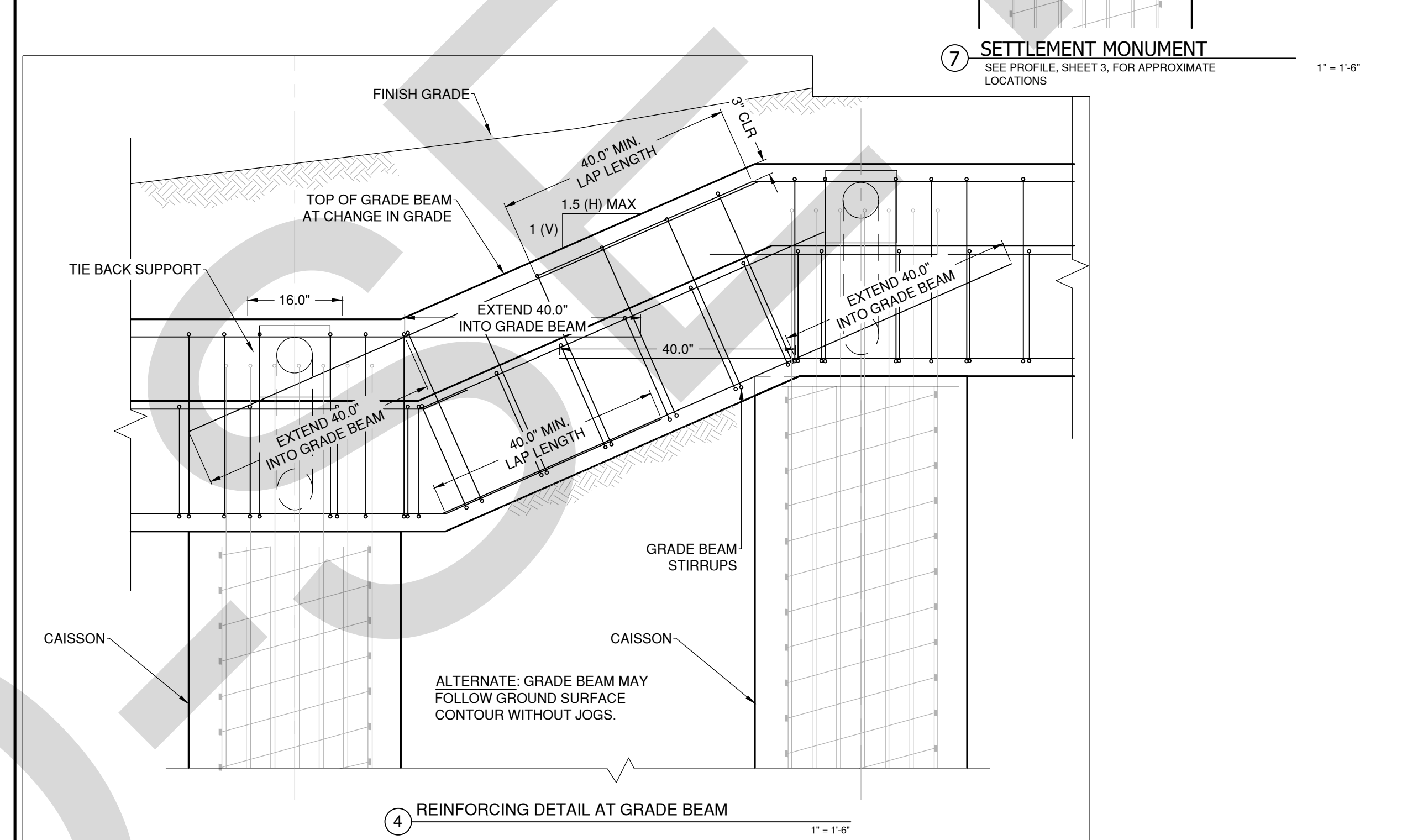
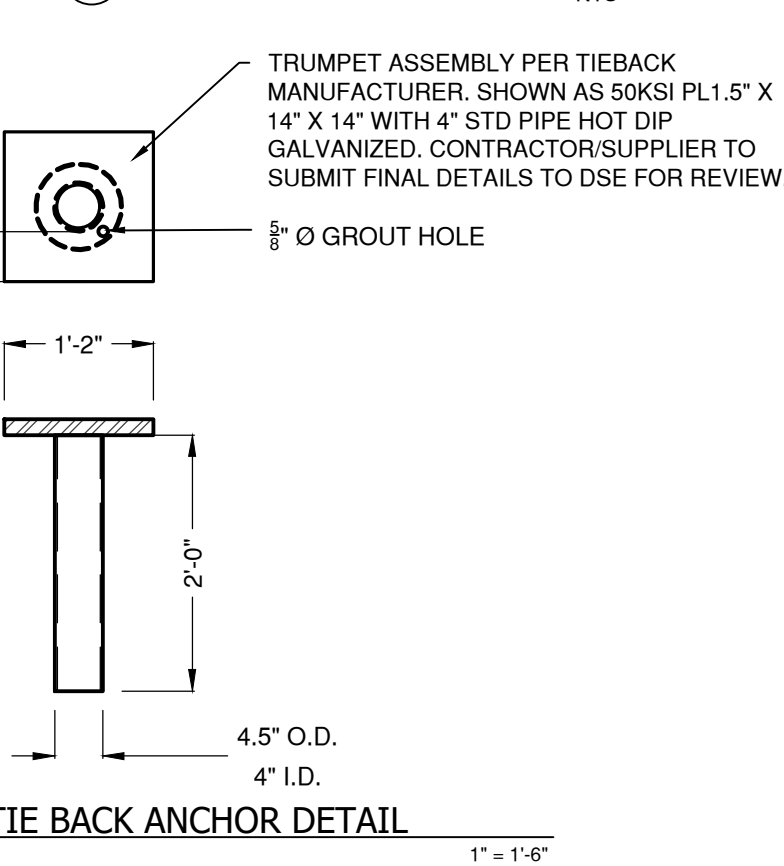
- NOTES:
- ALL VALUES SHOWN IN SCHEDULE ARE IN INCHES.
 - ALL LAP SPLICES ARE TO BE CLASS B TENSION LAP SPLICES U.N.O. ON DRAWINGS.
 - TOP BAR IS DEFINED AS A HORIZONTAL BAR WITH 12" OR MORE OF CONCRETE PLACED BELOW THE BAR.

9 REBAR SCHEDULE NTS



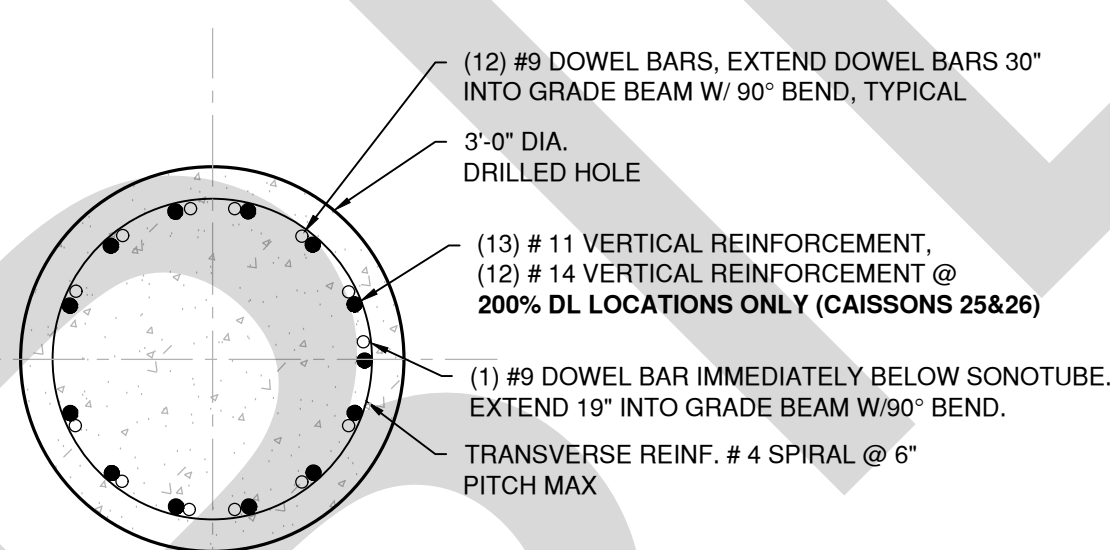
"D" DIA.	(IN NO CASE SHALL DIA. "D" BE LESS THAN LONGITUDINAL OR VERTICAL BAR DIA.)	
BAR SIZE	"D" FOR TIES & STIRRUPS ONLY	"D" FOR NON-TIES & NON-STIRRUPS ONLY
#3	1 1/2"	2 1/4"
#4	2"	3"
#5	2 1/2"	3 3/4"
#6	4 1/4"	4 1/2"
#7 - #8	-	6D
#9 - #11	-	8D
#14 - #18	-	10D

8 REBAR BEND SCHEDULE NTS



NOTE: HOLLOW-STEM AUGERED CAST-IN-PLACE ELEMENTS WHERE CONCRETE OR GROUT IS PLACED BY PUMPING THROUGH A HOLLOW-STEM AUGER, THE AUGER SHALL BE PERMITTED TO ROTATE IN A CLOCKWISE DIRECTION DURING WITHDRAWAL. AS THE AUGER IS WITHDRAWN AT A STEADY RATE OR IN INCREMENTS NOT TO EXCEED 1-FOOT, CONCRETING OR GROUTING PUMPING PRESSURES SHALL BE MEASURED AND MAINTAINED HIGH ENOUGH AT ALL TIMES TO OFFSET HYDROSTATIC AND LATERAL EARTH PRESSURES. CONCRETE OR GROUT VOLUMES SHALL BE MEASURED TO ENSURE THAT THE VOLUME OF CONCRETE OR GROUT PLACED IN EACH ELEMENT IS EQUAL OR GREATER THAN THE THEORETICAL VOLUME OF THE HOLE CREATED BY THE AUGER. WHERE THE INSTALLATION OPERATION OF ANY ELEMENT IS INTERRUPTED OR A LOSS OF CONCRETING OR GROUTING PRESSURE OCCURS, THE ELEMENT SHALL BE RE-DRILLED TO 5-FEET BELOW THE ELEVATION OF THE TIP OF THE AUGER WHEN THE INSTALLATION WAS INTERRUPTED OR CONCRETE OR GROUT PRESSURE WAS LOST AND REFORMED. AUGERED CAST-IN-PLACE ELEMENTS SHALL NOT BE INSTALLED WITHIN 6-DIAMETERS CENTER TO CENTER OF AN ELEMENT FILLED WITH CONCRETE OR GROUT LESS THAN 12-HOURS OLD, UNLESS APPROVED BY THE BUILDING OFFICIAL. IF THE CONCRETE OR GROUT LEVEL IN ANY COMPLETED ELEMENT DROPS DUE TO INSTALLATION OF AN ADJACENT ELEMENT, THE ELEMENT SHALL BE REPLACED. REFERENCE: 2022 CBC 1810.4.8

47' @ SECTION 2-2, CAISSONS 1-19
40' @ SECTION 3-3, CAISSONS 20-24, 27-39
43' @ SECTION 3-3, CAISSONS 25-26
50' @ SECTION 1-1, CAISSONS 40-54



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REGISTERED PROFESSIONAL ENGINEER
ASHLEY ANNE VARNI
C89576
CIVIL
STATE OF CALIFORNIA

Ashley Varni
1/8/2024

2 SLOPE STABILIZATION CAISSON DETAIL SECTION 1, 2, AND 3, (TOP OF SLOPE), ADJ. P-LOT. (54) 3' DIAMETER CIDH CAISSONS

47, 40, 43, 50' APPROXIMATE BORED DEPTH FROM TOP OF GRADE BEAM TO SURFACE

1" = 1'-6" CAISSON LENGTH NTS

APPROVED	DIRECTOR OF PUBLIC WORKS	NO.	REVISIONS	REVISED BY	APPROVED BY	DATE
BY						
APPROVED						
BY						
APPROVED						
BY						

REGISTERED PROFESSIONAL ENGINEER
MATTHEW T. FARRINGTON
C 90349
CIVIL
STATE OF CALIFORNIA

MATTHEW FARRINGTON
DESIGN ENGINEER
1/8/2024
DATE

CAISSON DETAILS

CITY OF ROLLING HILLS ESTATES PUBLIC WORKS
PROTECTIVE MEASURES FOR PEARTREE LANE, PEARTREE LANE LANDSLIDE

GMU
ENGINEERS & GEOLOGISTS

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SHEET 4 OF 4

PLAN DATE: JANUARY 8, 2024