



**IN-TRACT IMPROVEMENT PLANS** 

# RANCHO VISTA

**TRACT 322** 

MERITAGE HOMES 1671 EAST MONTE VISTA AVENUE, SUITE 214 VACAVILLE, CA 95688 707-359-2037

> SCALE AS INDICATED AUGUST 2016

## VVH CONSULTING ENGINEERS 430 TENTH STREET MODESTO, CALIFORNIA 95354 (209) 568-4477



UNAUTHORIZED CHANGES & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB, AND SHALL NOTIFY VVH CONSULTING ENGINEERS. OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS BEFORE PROCEEDING WITH FABRICATION.

VVH CONSULTING ENGINEERS ACCEPTS NO LIABILITY FOR IMPROVEMENTS PREPARED BY SAN BENITO ENGINEERING, INCLUDING /13\ IMRPOVEMENTS SHOWN IN THE APPROVED PLANS DATED JUNE 8, 2017 THROUGH REVISION 12 DATED DECEMBER 2017.

### SWPPP NOTE:

PRIOR TO START OF GRADING/CONSTURCTION ACTIVITIES, A SWPPP PREPARED BY A CERTIFIED QSP/QSD SHALL BE SUBMITTED TO THE COUNTY PUBLIC WORKS DEPARTMENT. A QSD/QSP SHALL BE RETAINED FOR THE DURATION OF THE CONSTRUCTION AND SHALL BE RESPONSIBLE TO COORDINATE AND COMPLY WITH REQUIREMENTS OF THE REGIONAL WATER QUALITY CONTROL BOARD, TO FILE A NOTICE OF INTENT PER CONSTRUCTION GENERAL PERMIT ORDER NO. 2009-0009-DWQ (AMENDED BY 2010-0014-DWQ) AND TO MONITOR THE PROJECT AREA AS TO COMPLIANCE WITH THE REQUIREMENTS UNTIL ITS COMPLETION. WDID # 3 35C377800

## **CITY ENGINEER'S APPROVAL:**

APPROVAL OF THESE PLANS DOES NOT RELEASE THE DEVELOPER OF RESPONSIBILITY FOR CORRECTION OF MISTAKES, ERRORS, OR OMISSIONS CONTAINED HEREIN. IF DURING THE COURSE OF CONSTRUCTION OF THE IMPROVEMENTS, PUBLIC INTEREST REQUIRES A MODIFICATION OF, OR DEPARTURE FROM, THE CITY SPECIFICATIONS OR THESE IMPROVEMENT PLANS, THE CITY ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE SUCH MODIFICATIONS OR DEPARTURE AND TO SPECIFY THE MANNER IN WHICH THE SAME IS TO BE MADE.

APPROVAL ON FILE	06/08/2017
ROGER GRIMSLEY, CITY ENGINEER	DATE
RCE 23003	

### SAN JUAN BAUTISTA FIRE DEPT: APPROVAL OF FIRE HYDRANT LAYOUT

## APPROVAL ON FILE

JOHN FOX, SAN JUAN BAUTISTA	
VOLUNTEER FIRE CHIEF	

## APPROVAL ON FILE

PATRICK DOBBINS, CITY ENGINEER RCE 48223 (REVISION 13 IMPROVEMENTS ONLY)

## OWNER:

MERITAGE HOMES 1671 E MONTE VISTA AVENUE #214 VACAVILLE, CA 95688 707-359-2029

## **DEVELOPER:**

MERITAGE HOMES 1671 E MONTE VISTA AVENUE #214 VACAVILLE, CA 95688 707-359-2029

## **CIVIL ENGINEER:**

VVH CONSULTING ENGINEERS 430 TENTH ST MODESTO, CA 95354 209-568-4477

### **GEOTECHNICAL ENGINEER:** ENGEO INCORPORATED

6399 SAN IGNACIO AVENUE SAN JOSE, CA 95119 408-574-4900

GRADING QUANTITIES: 161,600 CY FILL

### SHEET INDEX

DATE

DATE

COVER SHEET, LEGEND ROAD CROSS SECTIONS, DETAILS, NOTES DETAILS, NOTES 4. UTILITY OVERVIEW 5. SANITARY SEWER PLAN 6. WATER PLAN STORM DRAIN PLAN GROUNDWATER DRAIN PLAN 9. PLAN & PROFILE - LAVAGNINO DRIVE 08/08/2018 10. PLAN & PROFILE - VISTA WAY 11. PLAN & PROFILE - CAETANO PLACE 12. PLAN & PROFILE - THIRD STREET 13. PLAN & PROFILE - THIRD STREET 14. PLAN & PROFILE - RANCHO WAY 15. PLAN & PROFILE - TRAILSIDE DRIVE/COURT 16. PLAN & PROFILE - SAN JUAN HIGHWAY 17. SIGNING & STRIPING PLAN 18. GRADING PLAN 19. GRADING PLAN 20. INTERSECTION GRADING PLAN 21. CULVERT AND CHANNEL GRADING PLAN 22. DETAILS 23. DETAILS 24. DETAILS 25. DETAILS 26. DETAILS へ 27. DETAILS 28. DETAILS  $R \setminus 28A.DETAILS$ 29. ROCKERY RETAINING WALL DETAILS 30. GEOWALL SPECIFICATIONS 1. GEOWALL RETAINING WALL DETAILS R \ 31A.GEOWALL RETAINING WALL DETAILS -32. GEOWALL RETAINING WALL DETAILS 33. MASONRY RETAINING WALL DETAILS

34. MASONRY RETAINING WALL DETAILS

/13\

## **RECORD DRAWING**

IMPROVEMENTS HAVE NOT BEEN SURVEYED IN ORDER TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATIONS

THIS RECORD DRAWING IS BASED ON INFORMATION FROM THE PROJECT OWNER AND PROJECT CONTRACTORS, AND ARE NOT BASED UPON A FIELD VERIFICATION OR INVESTIGATION OF THE IMPROVEMENTS OR GRADES.

DATE: JANUARY 8, 2021



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DATE: <u>JANUARY 8, 2021</u>



NOTES:

- 1. PERFORATED PIPE TO BE SURROUNDED BY AT LEAST 2 INCHES OF CLASS 2 PERMEABLE MATERIAL.
- <u>/13</u> 2. PERFORATED PIPE TO DISCHARGE INTO GROUNDWATER DRAIN SYSTEM CONSISTENT WITH GEOTECHNICAL REPORT SECTION 2.12 (SURFACE AND SUBSURFACE DRAINAGE).
- 3. PERFORATED PIPE TO BE LOCATED BELOW EXISTING SHALLOW UNDERGROUND UTILITIES WHERE THEY CROSS.
- 4. FOR CROWNED STREETS, PAVEMENT EDGE DRAIN TO BE INSTALLED ON BOTH SIDES OF STREET. FOR FIXED CROSS SLOPE STREETS, PAVEMENT EDGE DRAIN TO BE INSTALLED ON LOW SIDE OF STREET.
- SCALE N.T.S.

## **PAVEMENT EDGE DRAIN**







15' REAR

SETBACK

MIN

25' TO

GARAGE

 $\frown$  PAD CONFORM ( $\Delta$ >1') C NOT TO SCALE



### **GENERAL NOTES**

- 1. ALL CONSTRUCTION MUST BE TO THE CITY OF SAN JUAN BAUTISTA STANDARDS AND ACCEPTED BY THE PUBLIC WORKS INSPECTOR. STANDARD PLANS ARE AVAILABLE AT THE OFFICE OF THE PUBLIC WORKS INSPECTOR.
- 2. CONTRACTOR SHALL MEET WITH THE CITY OF SAN JUAN BAUTISTA AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. 24 HOURS' NOTICE REQUIRED ON ALL INSPECTIONS.
- 3. CONTRACTOR IS RESPONSIBLE TO MAKE ALL ARRANGEMENTS FOR SITE INSPECTIONS AND INSURE THAT ALL CURRENT STANDARDS FOR THE CITY OF SAN JUAN BAUTISTA ARE FOLLOWED PRIOR TO BEGINNING ANY PHASE OF CONSTRUCTION WORK.
- 4. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FOR ANY WORK WITHIN THE PUBLIC RIGHT OF WAY ALONG THIRD STREET AND FIRST STREET (SAN JUAN HIGHWAY). COA 4
- 5. CONSTRUCTION SHALL BE LIMITED TO THE HOURS OF 7:30 A.M. AND 6:00 P.M., MONDAY THRU FRIDAY, AND 9:00 A.M. TO 6:00 P.M. SATURDAYS FOR ALL CONSTRUCTION WORK ON LOTS 71-77 AND LOTS 82-85. NO CONSTRUCTION WILL BE ALLOWED ON SUNDAYS. COA 31
- 6. APPLICANT SHALL RESTRICT ALL LOUD NOISES, VIBRATORY EQUIPMENT, TRUCKS BACKUP DEVICES, AND GAS POWERED COMPACTION TOOLS TO HOURS BETWEEN 8:30 A.M. TO 4:00 P.M.DURING THE PERMITTED DAYS OF THE WEEK FOR CONSTRUCTION ON LOTS 71 TO 77, 82 TO 85. NO CONSTRUCTION ON SUNDAYS UNLESS IT IS WITHIN A CONFINED BUILDING WHERE ALL NOISES ARE CONTAINED INSIDE THE BUILDING. COA 32
- 7. INSPECTION REQUESTS SHALL BE LIMITED TO NORMAL CITY BUSINESS HOURS: 8:00 A.M. TO 5:00 P.M., MONDAY THRU FRIDAY. ARRANGEMENTS FOR ANY OVERTIME INSPECTION SERVICES SHOULD BE MADE 48 HOURS IN ADVANCE AND ARE SUBJECT TO INSPECTION AVAILABILITY AND APPROVAL BY THE CITY ENGINEER.
- 8. THE OWNER IS RESPONSIBLE FOR ARRANGEMENTS TO PAY FOR ALL MATERIAL TESTING REQUIRED BY THE PUBLIC WORKS INSPECTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL TESTING REQUIRED BY THE PUBLIC WORKS INSPECTOR IS PERFORMED. ANY RETESTING REQUIRED DUE TO FAILURE OF THE INITIAL TEST IS THE **RESPONSIBILITY OF THE CONTRACTOR.**
- 9. CONTRACTOR SHALL UTILIZE ONLY LAVAGNINO DRIVE FOR ACCESS UNLESS OTHERWISE NOTED.
- 10. CONTRACTOR SHALL FIELD REVIEW SITE PRIOR TO SUBMITTING HIS BID.
- 11. SAW CUT ALL TRENCHES IN EXISTING PAVEMENT.
- 12. CONTRACTOR IS RESPONSIBLE FOR COMPACTION OF ALL UTILITY TRENCHES INCLUDING P.G.&E, AND FOR THE SPOILS GENERATED BY THESE SAME UTILITY TRENCHES.
- 13. CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CALL U.S.A. 1-(800) 642-2444 AND CITY OF SAN JUAN BAUTISTA SERVICE DEPARTMENT (831) 636-4370 & (831) 636-4377, 48 HOURS PRIOR TO ANY DIGGING.
- 14. THE CONTRACTOR/OWNER SHALL NOTIFY VVH CONSULTING ENGINEERS AT LEAST 48 HOURS PRIOR TO THE NEED FOR CONSTRUCTION STAKING.
- 15. THE PROPERTY OWNER/DEVELOPER SHALL REPLACE ANY STREET OR SIDEWALK IMPROVEMENTS OR UTILITY SERVICES THAT ARE REMOVED OR DAMAGED DURING THE CONSTRUCTION OF THE PROJECT AS DETERMINED BY THE CITY ENGINEER. THIS COULD INCLUDE, BUT IS NOT LIMITED TO, PERMEABLE PAVING, PCC CURBS, GUTTERS, SIDEWALKS; STREET LIGHTING; SIGNING AND STRIPING; ALL UNDERGROUND UTILITIES INCLUDING BUT NOT LIMITED TO, SANITARY SEWER, GAS, ELECTRICAL, TELEPHONE, AND WATER AND FIRE SERVICE LINES; AND ALL OTHER IMPROVEMENTS TO BRING THE RIGHT OF WAY INTO FULL CONFORMANCE WITH APPLICABLE CITY STANDARDS. ALL CONSTRUCTION IN THE RIGHT-OF-WAY SHALL BE COMPLETED PRIOR TO FINAL BUILDING APPROVAL.
- 16. THE OWNER IS RESPONSIBLE FOR ANY PERMITS AND ASSOCIATED FEES.
- 17. CONTRACTOR SHALL COORDINATE ALL UTILITY COMPANY WORK.
- 18. CONTRACTOR SHALL FURNISH SUBMITTALS AND TEST REPORTS ON ALL PIPES, VALVES, FITTINGS AND OTHER INTEGRAL ITEMS TO THE CITY.
- 19. CONTRACTOR REQUIRED TO CLEAN THE EXISTING IMPROVED STREETS AT THE END OF EACH WORKING DAY AND OTHER TIMES AS REQUIRED BY THE ENGINEER.
- 20. ALL UTILITIES MUST BE UNDERGROUND.
- 21. ALL BURIED METALLIC PIPE AND FITTINGS SHALL BE PROTECTED AGAINST EXTERNAL CORROSION AS PER THE CITY OF SAN JUAN BAUTISTA STANDARD SPECIFICATIONS.
- 22. THE CONTRACTOR IS TO MAINTAIN NO LESS THAN ONE TEN FOOT WIDE TRAVEL LANE IN EACH DIRECTION AT ALL TIMES, OR WITH THE APPROVAL OF THE PUBLIC WORKS INSPECTOR, DURING DAYLIGHT HOURS: ONE TWELVE FOOT WIDE TRAVEL LANE FOR BOTH DIRECTIONS WITH TRAFFIC CONTROL DEVICES AS REQUIRED BY THE PUBLIC WORKS INSPECTOR.
- 23. THE CONTRACTOR IS TO PROVIDE A DETAILED CONSTRUCTION SCHEDULE & TRAFFIC CONTROL PLAN AND RECEIVE APPROVAL FROM THE CITY OF SAN JUAN BAUTISTA ENGINEERING DEPARTMENT PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. TRAFFIC CONTROL SHALL ADDRESS CONSTRUCTION SIGNING AWAY FROM THE SITE, STORM DRAIN CROSSINGS, SPOILS HANDLING, UTILITIES, PAVING OPERATIONS AND BUSINESS NOTIFICATIONS OF INTERRUPTIONS (WHICH SHALL BE KEPT TO A MINIMUM).
- 24. ANY IMPROVEMENTS CONSTRUCTED WITHOUT INSPECTION AS PROVIDED ABOVE OR CONSTRUCTED CONTRARY TO THE ORDER OR INSTRUCTIONS OF THE CITY ENGINEER WILL BE DEEMED AS NOT COMPLYING WITH STANDARD SPECIFICATIONS AND WILL NOT BE ACCEPTED BY CITY OF SAN JUAN BAUTISTA FOR MAINTENANCE PURPOSES, AND MAY BE CAUSE FOR ISSUANCE OF A CORRECTION NOTICE OR STOP WORK ORDER .
- 25. WITHIN TEN DAYS AFTER RECEIVING THE REQUEST FOR FINAL INSPECTION, THE CITY ENGINEER SHALL INSPECT THE WORK. THE CONTRACTOR AND CONSULTING ENGINEER WILL BE NOTIFIED IN WRITING AS TO ANY PARTICULAR DEFECTS OR DEFICIENCIES TO BE REMEDIED. THE CONTRACTOR SHALL PROCEED TO CORRECT ANY PARTICULAR DEFECTS OF DEFICIENCIES AT THE EARLIEST POSSIBLE DATE. AT SUCH TIME AS THE WORK HAS BEEN COMPLIED, A SECOND INSPECTION SHALL BE MADE BY THE CITY ENGINEER TO DETERMINE IF THE PREVIOUSLY MENTIONED DEFECTS HAVE BEEN REPAIRED, ALTERED, AND COMPLETED IN ACCORDANCE WITH THE WORK FOR CITY OF SAN JUAN BAUTISTA, THE CONTRACTOR AND CONSULTING ENGINEER WILL BE NOTIFIED IN WRITING AS TO THE DATE OF FINAL APPROVAL AND ACCEPTANCE.
- 26. THE CITY WILL ENSURE THAT THE PROVISIONS OF THE APPROVED PLANS AND SPECIFICATIONS ARE COMPLIED WITH, ESPECIALLY WITH REGARD TO THE QUALITY OF WORKMANSHIP AND MATERIALS. IN THE EVENT OF ANY DISCREPANCY OR MATTER OF JUDGEMENT, THE DECISION OF THE CITY ENGINEER OR THEIR AUTHORIZED REPRESENTATIVE WILL BE BINDING ON THE CONTRACTOR AND DESIGN ENGINEER.
- 27. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ACCEPTED WORKMANSHIP PRACTICE AND THESE IMPROVEMENT STANDARDS. ORDERS GIVEN BY THE CITY RELATING TO QUALITY OF MATERIALS AND WORKMANSHIP SHALL BE COMPLIED WITH PROMPTLY BY THE CONTRACTOR.
- 28. ALL MATERIALS USED SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE DEPARTMENT AT ALL TIMES, AND SHALL NOT BE USED BEFORE BEING INSPECTED AND APPROVED BY THE INSPECTOR. THE DEPARTMENT HAS THE RIGHT TO PERFORM ANY TESTING DEEMED NECESSARY TO ENSURE COMPLIANCE OF THE MATERIALS WITH THE MATERIALS SPECIFICATIONS. FAILURE OR NEGLECT ON THE PART OF THE DEPARTMENT TO CONDEMN OR REJECT WORK OF MATERIALS NOT IN ACCORDANCE SHOULD THEIR INFERIORITY BECOME EVIDENT AT ANY TIME. MATERIALS REJECTED BY THE CITY SHALL BE IMMEDIATELY REMOVED FROM THE JOB SITE.
- 29. CONTRACTOR SHALL BE IN POSSESSION OF PLANS APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION. 30. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES INVOLVED IN THE DEVELOPMENT PRIOR TO BEGINNING OF WORK.
- 31. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND SHALL NOTIFY CITY ENGINEER OF ANY DAMAGED OR REMOVED CITY, STATE OR BUREAU MONUMENTS.
- 32. WHERE WORK IS BEING DONE IN AN OFF-SITE EASEMENT, THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNER 48 HOURS PRIOR TO COMMENCING WORK.
- 33. THE PROPERTY SHALL BE CONTINUALLY MAINTAINED AND KEPT FREE OF TRASH AND CLUTTER. OUTDOOR STORAGE OF ANY AND ALL MATERIALS AND EQUIPMENT SHALL BE LOCATED BEHIND A STRUCTURE, VEGETATION, OR A SOLID WOOD FENCE THAT PROVIDES SCREENING FROM PUBLIC VIEW. SOLID WASTE SHALL BE STORED IN CLOSED CONTAINERS, WHICH WILL BE SCREENED FROM PUBLIC VIEW, AND TRANSPORTED TO AN APPROVED DUMPSITE ON A REGULAR BASIS.
- 34. IF PREHISTORIC OR HISTORIC ARCHAEOLOGICAL RESOURCES OR HUMAN REMAINS ARE UNEXPECTEDLY DISCOVERED DURING CONSTRUCTION, WORK SHALL BE HALTED WITHIN 50 METERS (160 FEET MORE OR LESS) OF THE FIND UNTIL IT CAN BE EVALUATED BY A QUALIFIED PROFESSIONAL ARCHAEOLOGIST. IF THE FIND IS DETERMINED TO BE SIGNIFICANT, APPROPRIATE MITIGATION MEASURES SHALL BE FORMULATED AND IMPLEMENTED. COA 33

- DISPOSED OF FROM THE PROJECT SITE. COA 36

GRADING NOTES

- THE CONSTRUCTION AREA.

- 4. PADS SHALL BE GRADED WITHIN ± 0.1'.
- <u>2016</u>
- 7. ROOTS WITHIN 12" OF SUBGRADE ARE TO BE REMOVED.

### WATER NOTES

- TESTS FOR TRACER WIRE.
- SPRINGLINE PER CITY OF SAN JUAN BAUTISTA STANDARDS.
- CLEARANCE ON EACH SIDE, AND 12" MIN SAND COVER.
- AND CONTINUITY TESTS FOR TRACER WIRE.

SANITARY SEWER NOTES

- CURB FACE
- PLAN B-13.
- SPECIFIED ON STANDARD PLAN B-13.
- WITH AN "S" ON THE CURB FACE. (CITY NOTE NO. 18).
- INSTALLED.

STORM DRAIN NOTES

- SHALL SUBMIT D-LOAD CALCULATIONS FOR RCP PIPE.

STREET SURFACE IMPROVEMENTS

WITHING THESE PLANS.

- STREET PAVING HAS BEEN PLACED.
- 6. IRRIGATION SLEEVE LOCATIONS SHALL BE MARKED USING A 2" X 4" STAKE EXTENDING 3' ABOVE GROUND AT EACH SLEEVE END.
- 7. ALL TRENCHES ADJACENT TO EXISTING ROADWAYS SHALL BE EITHER CLOSED UP TIGHT OR BE ENCLOSED BY A 6'
- BE PLUGGED AS DESCRIBED AS ABOVE.

35. THE CONTRACTOR SHALL SUBMIT TO THE CITY AND COUNTY HEALTH DEPARTMENT A HAZARDOUS WASTE MANAGEMENT PLAN, TOGETHER WITH EMERGENCY CONTACT INFORMATION. COA 35

36. THE APPLICANT SHALL SUBMIT TO THE CITY A SOLID WASTE DISPOSAL PLAN FOR ALL SOLID WASTE MATERIAL

37. ALL STATIONS REFER TO DISTANCES ALONG CENTERLINE, UNLESS OTHERWISE NOTED. ALONG CURVED CENTERLINES, ALL STATIONS ARE PERPENDICULAR TO OR RADIALLY OPPOSITE FROM CENTERLINE.

1. DUST CONTROL DURING THE GRADING PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE SOILS SHALL BE WATERED DURING SITE GRADING AND CONSTRUCTION ACTIVITIES TO MINIMIZE DUST. IT IS ALSO THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CLEANLINESS OF THE EXISTING IMPROVED STREETS IN AND AROUND

2. WATER FOR DUST CONTROL AND USE FOR COMPACTION MAY BE PURCHASED FROM THE APPROPRIATE AGENCY PRIOR TO START OF ANY WORK, AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR FOR ANY FEES OF DEPOSITS. 3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE DESIGN ENGINEER OF ANY ANTICIPATED SOILS IMBALANCE

SO GRADES CAN BE ADJUSTED. ADJUSTMENTS REQUIRE THE APPROVAL OF THE CITY ENGINEER.

5. ALL GRADING ACTIVITIES AT THE PROJECT SITE SHALL CEASE DURING HIGH WIND PERIODS. THE CITY PLANNING DEPARTMENT SHALL BE CONTACTED WHEN CONSTRUCTION ACTIVITIES HAVE CEASED DUE TO HIGH WINDS. COA 40

6. IN THE DRIVEWAY AND PARKING AREAS COMPACT UPPER 12" OF SUBGRADE MATERIAL TO 95% MINIMUM RELATIVE DENSITY UNDER A.C. PAVEMENT, CURB, GUTTER AND DRIVEWAY. FOLLOW RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEERING REPORT BY ENGEO INCORPORATED, PROJECT NO 13170.000.000, DATED 14 DEC

8. THE CONTRACTOR SHALL PROVIDE THE CITY ENGINEER WITH A COPY OF ALL CUT SHEETS.

9. PROPOSED PAD ELEVATIONS ARE ABOVE THE 100-YEAR BASE FLOOD ELEVATIONS AS SHOWN IN THE SCHAAF & WHEELER CONSULTING CIVIL ENGINEERS MEMORANDUM DATED APRIL 17, 2017 (JOB#: VVHC.01.17).

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1. SAND BEDDING FOR ALL PIPES SHALL BE COMPACTED TO 90% RELATIVE COMPACTION.

2. ALL ENDS, BENDS, AND TEES ON WATER LINES MUST HAVE ADEQUATE THRUST BLOCKS CALCULATED FROM THE CITY OF SAN JUAN BAUTISTA STANDARDS.

3. CITY OF SAN JUAN BAUTISTA WILL OPERATE ALL EXISTING WATER VALVES. CONTRACTOR SHALL MAKE ARRANGEMENTS 48 HOURS IN ADVANCE WITH THE CITY OF SAN JUAN BAUTISTA INSPECTOR.

4. ALL WATER MAINS TO HAVE A MINIMUM OF 36" COVER AND SHALL BE D.I.P. OR P.V.C. (AWWA C-900) WITH #10 INSULATED WIRE. COMPLETED WATER SYSTEM MUST PASS HYDROSTATIC AND LEAKAGE TESTS, AND CONTINUITY

5. WATER SERVICE MATERIAL SHALL BE POLYETHYLENE SDR 9 (ASTM D-2737) WITH CONNECTION MADE TO MAINS AT

6. ALL WATER SERVICES SHALL HAVE A HAND TAMPED SAND BEDDING 6" BENEATH TUBING, SHALL HAVE 6" MINIMUM

7. ALL NON-POTABLE WATER MAINS TO HAVE A MINIMUM OF 36" COVER AND SHALL BE P.V.C. (AWWA C-900 PURPLE PIPE) WITH #10 INSULATED WIRE. COMPLETED WATER SYSTEM MUST PASS HYDROSTATIC AND LEAKAGE TESTS,

4. ALL SANITARY SEWER MAINS TO BE P.V.C. SEWER PIPE (SDR 26, ASTM D-3034) AND IS SUBJECT TO MANDREL TEST FOR 5% DEFLECTION, A LOW PRESSURE AIR TEST, AND TV CAMERA VIDEO.

5. SEWER SERVICE FOR RESIDENTIAL LOTS TO BE A MINIMUM 4" PIPE AND MUST BE MARKED WITH AN "S" ON THE

6. THE SANITARY SEWER SYSTEM TO SERVE THE DEVELOPMENT SHALL BE DESIGNED AND INSTALLED AT THE DEVELOPER'S EXPENSE IN ACCORDANCE WITH THE CITY OF SAN JUAN BAUTISTA DESIGN STANDARDS. STANDARD SPECIFICATIONS, AND STANDARD PLANS FOR SANITARY SEWERS.

7. ALL SANITARY SEWER AND WATER MAINS SHALL HAVE 10 FEET MINIMUM SEPARATION AS SHOWN ON STANDARD

8. SANITARY SEWER MAIN TO BE PVC SDR 26. INSTALL WATER STOP GASKET AND CLAMP ASSEMBLY AT ALL MANHOLE CONNECTIONS. INSTALL #10 TRACING WIRE AT SPRINGLINE OR CURVED MAIN FROM MANHOLE TO MANHOLE. 9. SANITARY SEWER MAINS CROSSING WATER MAINS SHALL CONFORM TO THE "NO JOINT ZONES" AS SHOWN AND

10. SEWER SERVICES FOR RESIDENTIAL LOTS TO BE 4" P.V.C. SCHEDULE 40 OR A.B.S. (SDR 26) AND MUST BE MARKED

11. TRACER WIRE (#10 INSULATED WIRE) TO BE INSTALLED OVER ALL CURVED SEWER MAINS UNLESS MANHOLE IS

12. INSTALL CLEANOUT ON ENDS OF ALL SEWER MAINS UNLESS MANHOLE IS INSTALLED.

13. SEE SANITARY SEWER PLAN FOR LOTS THAT SHALL REQUIRE BACKWATER VALVES.

1. CURB INLETS ARE TO BE CITY OF SAN JUAN BAUTISTA STANDARD TYPE "A" UNLESS OTHERWISE NOTED.

2. STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) PER ASTM C76, OR SDR 35.0 PVC, UNLESS OTHERWISE INDICATED. STORM DRAIN PIPE TO BE BEDDED PER CITY OF SAN JUAN BAUTISTA STANDARD PLANS E-1-1 AND E-1-2. ALL RCP PIPE SHALL HAVE SUFFICIENT PIPE CLASS TO MEET D-LOAD REQUIREMENTS. CONTRACTOR

3. STORM DRAIN LINE CURVATURE SHALL NOT EXCEED 80% OF THE MANUFACTURER'S RECOMMENDATIONS.

1. PAVING SHALL CONFORM TO THE SPECIFICATION OF THE GEOTECHNICAL INVESTIGATION BY ENGEO **INCORPORATED, PROJECT NO 13170.000.000, DATED 14 DEC 2016**, AND THE CITY OF SAN JUAN BAUTISTA STDS.

2. PAVING: ALL POINTS OF GRADE CHANGE NOT WITHIN A VERTICAL CURVE SHALL BE ROUNDED IN THE FIELD FOR PROPER APPEARANCE. SIDEWALK TO BE 4" THICK AND CONSTRUCTED OF PORTLAND CEMENT CONCRETE. SIDEWALK TO BE 6" THICK IN ALL DRIVEWAYS, CURB, BUTTER, AND SIDEWALK WITHIN PUBLIC RIGHT-OF-WAY SHALL BE IN CONFORMANCE WITH CITY OF SAN JUAN BAUTISTA STANDARD DETAILS AND SPECIFICATIONS AND AS SHOWN

3. AGGREGATE BASE SHALL BE "CRUSHED MISCELLANEOUS BASE" CONFORMING TO SECTION 200-2.4 OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION' 1997 EDITION, MEETING THE FOLLOWING MINIMUM VALUES: R=78, SE-22, DURABILITY INDEX=35. ALL ASPHALT CONCRETE SHALL BE CLASS "C1-AR-4000" CONFORMING TO SECTION 203.6 OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" 1997 EDITION. ASPHALT CONCRETE SHALL BE PLACED IN ONE LIFT. APPLY FOG SEAL TO FINISH PAVEMENT.

4. TACK EDGE OF EXISTING PAVEMENT PRIOR TO CONSTRUCTING NEW PAVEMENT.

5. ALL MANHOLE RIMS, VALVE BOXES, PUBLIC MONUMENT BOXES, ETC. SHALL BE ADJUSTED TO FINISH GRADE AFTER

HIGH CHAIN LINK FENCE AND DELINEATED BY LIGHTED BARRICADES. 8. TRENCH BACKFILL SHALL CONFORM TO CITY OF SAN JUAN BAUTISTA STANDARD PLANS E-1-1 AND E-1-2. UTILITY TRENCHES BACKFILLED WITH SAND THAT ENTER BUILDING PADS SHOULD BE BACKFILLED WITH AN IMPERMEABLE

SOIL PLUG THAT EXTENDS 3 FEET BEYOND THE PERIMETER OF THE BUILDING PAD AND TO THE BOTTOM OF THE TRENCH, SAND BACKFILLED UTILITY TRENCHES THAT CROSS PLANTER AREAS, PAVEMENTS, OR SIDEWALKS SHOULD

- 9. CONTRACTOR IS TO MAKE PROVISIONS FOR TRENCH SPOILS. ON-SITE LOCATION FOR TRENCH SPOILS TO BE DESIGNATED BY THE OWNER AND APPROVED BY THE CITY ENGINEER PRIOR TO PLACEMENT.
- 10. CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CALL U.S.A. 1-800-642-2444 AND CITY OF SAN JUAN BAUTISTA PUBLIC WORKS DEPARTMENT (831) 623-4661 48 HOURS PRIOR TO ANY DIGGING.
- 11. CONTRACTOR SHALL FURNISH CERTIFICATES OF COMPLIANCE TO THE CITY FOR CRUSHED MISCELLANEOUS BASE MATERIAL AND FOR SPECIFIED CLASS OF P.C.C. PRIOR TO PAVING ROADWAYS.
- 12. DRIVEWAY LOCATIONS WILL BE DETERMINED BY OWNER PRIOR TO CONSTRUCTION OF CURB AND GUTTER, UNLESS OTHERWISE SHOWN ON THE PLANS. MINIMUM WIDTH SHALL BE 16' AS MEASURED AT THE BOTTOM OF THE DEPRESSION.
- 13. IN AREAS WHICH ARE TO RECEIVE A.C., P.C.C., OR AGGREGATE BASE, THE CONTRACTOR SHALL MAINTAIN SUBGRADE AT THE AS-GRADED WATER CONTENT. IF THE SUBGRADE IS ALLOWED TO DRY, THE WATER CONTENT OF SOIL SHOULD BE RAISED TO THE RECOMMENDED VALUE SPECIFIED FOR THE PROJECT AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- 14. CURRENT CITY OF SAN JUAN BAUTISTA CONSTRUCTION STANDARDS ARE THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" LATEST EDITION, EXCEPT AS MODIFIED BY "THE CITY OF SAN JUAN BAUTISTA STANDARD SPECIFICATIONS" LATEST EDITION.

The Contractor shall verify and be resonasible for all dimensions DO NOT	scale drawing. Any errors or omissions shall be reported to VMCE without	delay. Copyrights to all designs and drawings are the property of VVHCE.	Reproduction or use in whole or in part for any purpose other than that	authorized in writing by VMCE is strictly forbidden. This drawing shall not be used	for construction until section, signed and dated by the Engineer.	
			CONSULTING ENGINEERS	430 10th Street	Modesto, CA 93334 Tel.: 209.568.4477	Fax: 209.568.4478
DATE	07.18	01.21				
D. REVISIONS	3 ADDED NON-POTABLE WT	RECORD DRAWING				
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THIS RECORD DRAWING IS BASED ON INFORMATION FROM THE PROJECT OWNER AND PROJECT CONTRACTORS. AND ARE NOT BASED UPON A FIELD VERIFICATION OR INVESTIGATION OF THE IMPROVEMENTS OR GRADES.

DATE: JANUARY 8, 2021



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## NOTES:

- 1. SANITARY SEWER AND WATER SERVICES NOT PROFILED FOR CLARITY.
- WATER PIPE LENGTHS SHOWN DO NOT INCLUDE PIPES BETWEEN VERTICAL BENDS FOR WIDER UNDER CROSSING OF JURISDICTIONAL WATERWAY.

SCALE 1" = 40' HORZ 1" = 4' VERT

CITY OF SAN JUAN BAUTISTA     NO.     REVISIONS     DATE       A     CURB REVISIONS     11.17       ABADED VISTA     ADED NOTES     07.18       ABANITO COUNTY, CALIFORNIA     ADED NOTES     01.21
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![](_page_14_Figure_0.jpeg)

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# **SHEET VOIDED**

13

	430       10th Street Modesto, CA 95354 Tel:       209.568.4477 For construction until seded, signed and drawing shall not be used for construction until seded, signed and drawing shall not be used for construction until seded, signed and draft by the Engineer.
RECORD DRAWING IMPROVEMENTS HAVE NOT BEEN SURVEYED IN ORDER TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATIONS	CITY OF SAN JUAN BAUTISTA IN REVISIONS DATE DATE DATE DATE DATE DATE DATE DATE
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![](_page_16_Figure_0.jpeg)

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RAISED ASPHALT CONCRETE CROSSWALK TYPICAL DETAIL N.T.S.

The C respond scale scale delay. Reproc for an author for bid forbid dated P 184.75 P 184.67 184.46 184 5 1el. INTERSECTION VISTA WAY AND LAVAGNINO DRIVE SCALE: 1"=20' E L 13 CALIFORNI SAN JUAN BAUTISTA  $\vdash$ RECORD DRAWING **SIN** IMPROVEMENTS HAVE NOT BEEN SURVEYED IN ORDER TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATIONS Ϋ́ΤΥ. COUN О Н THIS RECORD DRAWING IS BASED ON INFORMATION FROM THE PROJECT OWNER AND PROJECT CONTRACTORS, AND ARE NOT BASED UPON A FIELD VERIFICATION OR BENITO ANCI INVESTIGATION OF THE IMPROVEMENTS OR GRADES. ОF DATE: <u>JANUARY 8, 2021</u> CITY SAN Ľ A Ч GRADING TION AN /13 RAISED CROSSWALK DETAIL (TYPICAL) Ч VEMENT . С Ш SCALE: 1"=20' S Ш К О SECTION A-A NOTES IN MΡ 1. PROPOSED ELEVATIONS AND SLOPES PER PLAN. 2. COMPACT SUBGRADE MATERIAL UNDER CONCRETE CROSSWALK TO MINIMUM 95% RELATIVE COMPACTION FOR A DEPTH OF 12". SCALE: SCALE 1"=40' DATE: 05 January 2021 COMPACT CRUSHED MISCELLANEOUS BASE MATERIAL TO MINIMUM JOB #: 113071 95% RELATIVE COMPACTION. DWG: 20\_GRAD.dwg 4. WEAKENED PLANE JOINTS SHALL BE 1/8" X 1/2" DEEP WHEN EET: 20 FINISHED. PLACE AT APPROXIMATELY 10' INTERVALS. 34 SHEETS

![](_page_20_Figure_0.jpeg)

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![](_page_21_Figure_0.jpeg)

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34 SHEE

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![](_page_24_Figure_2.jpeg)

![](_page_25_Figure_0.jpeg)

34 SHEET

NOTES: 1. EXCEPT AS NOTED HEREON, THE PRECAST UNITS SHALL BE MANUFACTURED AND TESTED IN ACCORDANCE WITH ASTM C 478. AS AN ALTERNATE CURING METHOD. THE UNITS MAY BE CURED USING SATURATED STEAM FOR A MINIMUM OF 12 HOURS, FOLLOWED BY 6 DAYS WATER CURING OR MEMBRANE CURING. IF THE UNITS ARE CURED BY THE ALTERNATE METHOD, THEY SHALL NOT BE SHIPPED PRIOR TO 8 DAYS AFTER CASTING NOR UNTIL THE CONCRETE HAS ATTAINED A STRENGTH OF 3500 P.S.I. 2. MANHOLE STEPS SHALL BE MODEL PS2-PE AS MANUFACTURED BY MALIND	A (
OR APPROVED EQUAL. THE MANHOLE STEPS SHALL BE UNIFORMLY SPACED AT A MAXIMUM OF 16" WITH THE TOP STEP PLACED NO MORE THAN 18" UNDER THE MANHOLE FRAME. THE LOWEST STEP SHALL BE PLACED NOT LESS THAN 8" NOR MORE THAN 24" ABOVE THE SHELF. THE TOP STEP IF PLACED IN THE 24" DIAMETER SECTION SHALL PROJECT 5" INSIDE THE MANHOLE AND ALL OTHER 6". 3. RISER SECTIONS AND CONES MAY BE REINFORCED OR UNREINFORCED. REINFORCED SECTIONS AND CONES SHALL BE REINFORCED IN ACCORDANCE WITH ASTM C 478 AND SHALL NAVE A MINIMUM WALL THICKNESS OF 4". UNREINFORCED RISER SECTIONS AND CONES SHALL HAVE A MINIMUM WALL THICKNESS OF 6". 4. JOINTS SHALL BE TONGUE AND GROVE AND SHALL CONFORM WITH ASTM C 478 SECTION 14.	
5. AN IMPRESSION RING SHALL BE USED PRIOR TO INSTALLING THE FIRST RISER SECTION. PRECAST UNITS SHALL BE ASSEMBLED USING PREFORMED RAM-NEK JOINT SEALING COMPOUND OR CLASS "B" MORTAR. 6. INSTALL MANHOLE WATER STOP GASKET AND CLAMP ASSEMBLY ON ALL SANITARY SEWER PIPES.	
	1 1/8" - 1
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THIS RECORD DRAWING IS BASED ON INFORMATION FROM THE PROJECT OWNER AND PROJECT CONTRACTORS, AND ARE NOT BASED UPON A FIELD VERIFICATION OR INVESTIGATION OF THE IMPROVEMENTS OR GRADES.	9/16"
DATE: JANUARY 8, 2021	NOTES: 1. FRAME AND
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![](_page_26_Figure_0.jpeg)

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- US 4" DIA. SCHEDULE 40 C OR SDR 35 PERFORATED DRAIN PIPE, SLOPE @ 1% MIN, OUTLET AT BASE OF WALL. BLACK CORRUGATED PIPE NOT
- KH BEHIND/ABOVE WALL, EXCEPT SIDEWALK. SEE DETAIL, THIS SHEET.

- NG ROCKERY WALL CONSTRUCTION. DUTIES OF THE ON-SITE FIELD
- AND GEOGRID TYPE & PLACEMENT.

- B. MINIMUM ROCK SIZES PER THE TABLE, THIS SHEET. ROCK WEIGHT PER LINEAL FOOT MAY VARY BY ± 15% DEPENDING
- C. THE ROCKERY CONTRACTOR SHALL HAVE A MINIMUM 5 YEARS EXPERIENCE IN CONSTRUCTING GRAVITY, ROCK RETAINING WALLS.
- D. ROCK FACING SHALL CONSIST OF THE APPROXIMATE SIZE SHOWN IN THE TABLE. CHINKING (FILLING OF VOIDS) WILL BE REQUIRED WHEN ROCKS ARE GREATER THAN 6 INCHES; CHINKING TO BE PLACED WITH PRYBAR AND SLEDGEHAMMER TO PROVIDE TIGHT FIT.

- H. IF NECESSARY, BASE ROCKS MAY BE DOUBLED UP TO OBTAIN ADEQUATE WIDTH AS LONG AS THE OVERLYING ROCKS ARE PLACED IN A DISCONTINUOUS FASHION

DATE: <u>JANUARY 8, 2021</u>

![](_page_29_Figure_28.jpeg)

### **GEOWALL Pro MSE Specifications**

Following specification is for the construction of GEOWALL MSE segmental retaining wall (SRWs). Specifications for segmental retaining wall units are provided in standard Construction Specification Institute (CSI) format.

### GEOWALL Pro RETAINING STRUCTURE

PART 1: GENERAL

### 1.01 Description

- A. Work shall consist of furnishing all materials, labor, equipment, and supervision to install system in accordance with these specifications and in reasonably close conformity with dimensions shown on the plans or as established by the Owner or Owner's Engineer.
- B. Work shall consist of furnishing and installing appurtenant materials required for construction of the retaining wall as shown on the construction drawings.
- 1.02 Reference Standards A. Engineering Design
  - 1. NCMA SRW Design Manual for Segmental Retaining Walls 3nd Edition
  - 2. ASTM D 6638 Standard Test Method for Determining the Connection Strength Between Geosynthetics Reinforcement and Segmental Concrete Units
  - 3. ASTM D 6916 Standard Test Method for Determining the
  - Shear Strength Between Segmental Concrete Units
- B. Segmental Retaining Wall Units
- 1. ASTM C140 Sampling and Testing Concrete Masonry Units 2. ASTM 1262 Standard Test Method for Evaluating the Freeze-Thaw Durability of Manufactured Concrete Masonry
- Units and Related Concrete Units 3. ASTM C1372 Standard Specification for Dry-Cast Segmental
- Retaining Wall Units C. Geosynthetic Reinforcement
- 1. ASTM D 4595 Standard Test Method for Tensile Properties of
- Geotextiles by the Wide-Width Strip Method 2. ASTM D 5262 - Standard Test Methods for Evaluating the
- Unconfined Tension Creep and Creep Rupture Behavior of Geosynthetics 3. ASTM D 5321 - Standard Test Method for Determining the
- Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method
- 4. ASTM D 5818 Standard Practice for Exposure and Retrieval of Samples to Evaluate Installation Damage of Geosynthetics
- 5. ASTM D 6637 Standard Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-Rib Tensile Method
- 6. ASTM D 6706 Standard Test Method for Measuring Geosynthetic Pullout Resistance in Soil
- 7. ASTM D 6992 Standard Test Method for Accelerated Tensile Creep and Creep-Rupture of Geosynthetic Materials Based on Time-Temperature Superposition Using Stepped Isothermal
- 8. ASTM D6706 Geosynthetic Pullout Resistance in Soil ASTM D6916 Shear Strength Between Segmental Concrete Units
- D. Soils
- 1. ASTM D 422 Standard Test Method for Particle-Size Analysis of Soils
- 2. ASTM D 1557 Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb/ft3 (2,700 kN-m/m3))
- 3. ASTM D 2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- 4. ASTM D 6938 Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- 5. ASTM D 4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- 6. ASTM D 6913 Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
- 7. ASTM G 51 Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing
- E. Drainage Pipe
- 1. ASTM F 758 Standard Specification for Smooth-Wall Poly(Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage
- Where specifications and reference documents conflict, the Architect/Engineer shall make the final determination of applicable

document.

- 1.03 Approved Segmental Retaining Wall Systems A. Minimum requirements for the contractor shall include training and certification of the NCMA SRW Installer Certification Level 1 and a minimum of 5 years of continuous experience and 10,000 square feet of SRW wall installation similar to the system required herein. Each supplier must be approved two weeks prior to bid opening. Systems currently approved for this work are:
- B. Segmental Wall Units
- 1. Basalite Concrete Products
- C. Geosynthetic Reinforcements
- 1. T.C. Mirafi
- 2. Strata Systems
- No substitutions without written approval by Gularte & Associates, Inc.
- D. Submittals
- 1. Material Submittals The Contractor shall submit manufacturer's certifications, 30 days prior to the start of work, stating that the SRW units, geosynthetic reinforcement, reinforced backfill, and gravel fill meet the requirements of Part 2.0 of this specification. The Contractor shall provide a list of successful projects with references showing that the installer for the segmental retaining wall is qualified and has a record of successful performance.
- E. Delivery, Storage and Handling
- 1. The Contractor shall inspect the materials upon delivery to assure that proper type and grade of material has been received.
- 2. The Contractor shall store and handle materials in accordance with manufacturer's recommendations and in a manner to prevent deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping or other causes

- 3. The Contractor shall protect the materials from damage. Damaged material shall not be incorporated into the segmental retaining wall.
- PART 2: MATERIALS

2.01 GEOWALL Retaining Wall Units

- A. GEOWALL concrete segmental units shall conform to the requirements of ASTM C 1372 and have a minimum net average 28 days compressive strength of 3,000 psi and a maximum absorption of 13 pcf (for normal weight) as determined in accordance with ASTM C 140. For areas subject to detrimental freeze-thaw cycles, as determined by the Owner or Owner's Engineer, the concrete shall have adequate freeze/thaw protection and meet the requirements of ASTM C 1372 when tested in accordance with ASTM C1262.
- B. GEOWALL SRW units shall match the color, surface finish, and dimension for height, width, depth, and batter as shown on the plans.
- C. GEOWALL units dimensions shall not differ more than + 1/8 in., as measured in accordance with ASTM C140. This tolerance does not apply to architectural surfaces, such as split faces.
- D. All units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the construction. Any cracks or chips observed during construction shall fall within the guidelines outlined in ASTM C1372.
- E. Pins used by the retaining wall system shall be supplied by the retaining wall supplier and shall consist of nondegrading polymer or galvanized steel and shall be made for the express use with the GEOWALL units supplied.
- F. Cap adhesive shall meet the requirements of the SRW unit manufacture
- G. The following Segmental Retaining Wall Units have been pre-approved:
- 1. GEOWALL Pro units-18 inches wide 8 inches high and 12 inches deep with two batter options of Near Vertical and a 1
- 2. GEOWALL Standard units 18 inches wide, 8 inches high, and 21.5 inches deep with two batter options of Near Vertical and a 1 1/8.
- 3. GEOWALL Cap units
- H. Each course of GEOWALL Units shall be positively interlocked to the preceding course with a minimum shear capacity of 600 lb/lf at 2 psi as tested in accordance with ASTM D6916.
- GEOWALL units shall meet the following constructability and geometric requirements:
- 1. Units shall be capable of attaining concave and convex curves to a minimum radius of 72 inches.
- 2. Vertical Wall: Units shall be positively engaged to the unit below so as to provide a maximum of a 1/4 Inch horizontal setback per vertical foot of wall height (near vertical)
- OR.
- 3. Setback Wall: Units shall be positively engaged to the unit below so as to provide a minimum of 1 Inch horizontal setback per vertical foot of wall height.

### 2.02 Geosynthetic Reinforcements

- A. Geosynthetic Reinforcements shall consist of high tenacity PET geogrids, HDPE geogrids, or geotextiles manufactured for soil reinforcement applications. The type, strength and placement location of the reinforcing geosynthetic shall be as shown on the plans. The design properties of the reinforcement shall be determined according to the procedures outlines in this specification and the NCMA Design Manual for Segmental Retaining Walls (3rd Edition, 2009) Detailed test data shall be submitted to the Owner's Engineer for approval at least 30 days prior to construction and shall include tensile strength (ASTM D 4595 or ASTM D 6637), creep (ASTM D 5262), site damage (ASTM D 5818 durability (FHWA guidance (FHWA NHI-00-043, FHWA NHI-00-044)), pullout (ASTM D 6706 direct shear (ASTM D 5321 and connection (ASTM D 6638) test data.
- 2.03 Drainage Pipe
- A. The drainage collection pipe shall be a perforated or slotted schedule 40 PVC or SDR 35 pipe. The pipe and gravel fill may be wrapped with a geotextile that will function as a filter.
- B. Drainage pipe shall be manufactured in accordance with ASTM F 405 or ASTM F 758.
- 2.04 Leveling Pad and Unit Fill Material
- A. Material for leveling Pad shall consist of crushed stone placed a minimum of 6 inches thick, or lean non reinforced concrete (500 psi) placed a minimum of 2 to 4 inches thick.
- B. Unit Fill shall consist of free draining crushed stone.
- 1. Consolidate Unit Fill by running hand-operated vibrating compaction equipment behind units; do not run mechanical vibrating plate compactors directly on top of bare concrete units. Compact unit fill to a minimum 95% standard proctor density (ASTM D-698) or 92% of modified proctor density (ASTM D-1557).

### 2.05 Drainage Aggregate

A. Gravel fill shall be a clean crushed stone or granular fill meeting the following gradation as determined in accordance with ASTM D 422:

Sieve Size	Percent Passing
1 in.	100
3/4 in.	75 - 100
No. 4	0 - 60
No. 40	0 - 50
No. 200	0 - 5

- The vertical drainage layer placed within and behind the SRW unit R shall be no less than 24 -inches wide as measured from the front face for SRW units up to 21 inches wide (deep). For units greater than 21 wide (deep) unit fill shall be spilling out the back of the SRW units
- 2.06 Infill Soil/ Reinforced Backfill
- A. Reinforced backfill should be compacted in accordance with the December 14, 2016 Geotechnical Report by Engeo.
- B. The pH of the backfill material shall be between 3 and 9 when tested in accordance with ASTM G 51.

### PART 3: CONSTRUCTION

- 3.01 Construction Observation
  - A. The Owner or Owner's Engineer should verify the materials supplied by the contractor meet all the requirements of the specification. This includes all submittals and proper installation of the system.
  - B. The Contractor's field construction supervisor shall have demonstrated experience and be qualified to direct all work at the site

- 3.02 Excavation
- 3.03 Foundation Preparation
- Owner's Geotechnical Engineer.

## 3.04 Leveling Pad Construction

### 3.05 SRW and Geosynthetic Reinforcement Placement

- requirements.
- on the plans is provided.
- reinforcement has been covered by at least 6 inches of soil fill.

### 3.06 Quality Control

3.08 Cap Block Placement

Contractor shall excavate to the lines and grades shown on the project grading plans and SRW plan and profile drawing. Contractor shall take precautions to minimize over-excavation. Over-excavation shall be filled with compacted infill material, or as directed by the Architect/Engineer, at the Contractor's expense.

A. Following excavation for the leveling pad and the reinforced soil zone, foundation soil shall be examined by the Owner's Geotechnical Engineer to assure the actual foundation soil strength meets or exceeds the assumed design bearing strength. Soils not meeting the required strength shall be removed and replaced with soil meeting the design criteria, as directed by the

A. A minimum 6 in. thick layer of compacted granular material shall be placed for use as a leveling pad up to the grades and locations as shown on the construction drawings. The granular base shall be compacted to provide a firm, level bearing pad on which to place the first course of concrete segmental retaining wall units. A leveling pad consisting of 6 in. (minimum) thick lean, unreinforced concrete may be used at the wall contractor's option, or if so detailed on the plans. The leveling pad should extend a minimum of 6 in. from the toe and from the heel of the SRW unit.

A. All materials shall be installed at the proper elevation and orientation as shown in the wall details on the construction plans or as directed by the Owner's Engineer. The concrete segmental wall units and geosynthetic reinforcement shall be installed in general accordance with the manufacturer's recommendations. The drawings shall govern in any conflict between the two

B. Overlap or splice connections of the geosynthetic in the design strength direction shall not be permitted. The design strength direction is that length of geosynthetic reinforcement perpendicular to the wall face and shall consist of one continuous piece of material. Adjacent sections of geosynthetic shall be placed in a manner to assure that the horizontal coverage shown

C. Geosynthetic reinforcement should be installed under tension. A nominal tension shall be applied to the reinforcement and maintained by staples, stakes, or hand tensioning until the

D. Broken, chipped, stained or otherwise damaged units shall not be placed in the wall unless they are repaired, and the repair method and results are approved by the SRW Design Engineer.

A. Gularte & Associates, Inc. should be retained to provide on site inspections during construction. Duties of the inspector include checking footing excavation, geogrid type and placement, and testing compaction of the backfill in accordance with the project geotechnical report.

3.07 Gravel Fill and Drainage Placement A. Gravel fill shall be placed to the minimum finished thickness and widths shown on the construction plans.

B. Drainage collection pipes shall be installed to maintain gravity flow of water outside of the reinforced soil zone. The drainage collection pipe should daylight into a storm sewer manhole or along a slope at an elevation lower than the lowest point of the pipe within the aggregate drain.

C. The main collection drain pipe, just behind the block facing, shall be a minimum of 4 in. in diameter. The secondary collection drain pipes should be sloped a minimum of two percent to provide gravity flow into the main collection drain pipe. Drainage laterals shall be spaced at maximum 50 ft spacing along the wall face.

A. The cap block and/or top SRW unit shall be bonded to the SRW units below using cap adhesive described in Part 2. The block shall be dry and swept clean prior to adhesive placement.

IMPROVEMENTS HAVE NOT BEEN SURVEYED IN ORDER TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATIONS

THIS RECORD DRAWING IS BASED ON INFORMATION FROM THE PROJECT OWNER AND PROJECT CONTRACTORS, AND ARE NOT BASED UPON A FIELD VERIFICATION OR INVESTIGATION OF THE IMPROVEMENTS OR GRADES.

DATE: <u>JANUARY 8, 2021</u>

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![](_page_30_Picture_118.jpeg)

![](_page_30_Picture_119.jpeg)

![](_page_30_Picture_120.jpeg)

**RECORD DRAWING** 

![](_page_31_Figure_0.jpeg)

						., ., .							
TOTAL HEIGHT (feet)	EMBEDMENT (feet)	EXPOSED HEIGHT (feet)	NO, OF GRIDS	GRID LENGTH (Note 1) (feet)			G	RID (1	LO( Note	CATIO 2)	зис		GRID TYPE
3	1	0-2	1	3	2							 	А
5	1	2-4	2	4, 4.5 ON TOP	2	5						 	А
7	1	4-6	3	6, 7.5 TOP	2	5	8					 	A, B LOWES
9.33	1.33	6-8	5	8, 11.5 ON TOP	1	3	6	9	11			 	A, B LOWES
11.33	1.33	8-10	6	10, 13 ON TOP	1	3	6	9	12	14		 	A, B LOWEST

TOTAL HEIGHT (feet)	EMBEDMENT (feet)	EXPOSED HEIGHT (feet)	NO, OF GRIDS	GRID LENGTH (Note 1) (feet)	;RID_LENGTH (Note 1) (feet) GRID_LOCATIONS (Note 2)							GRID TYPE	
3	1	0-2	1	3	2								 
5	1	2-4	2	4, 4.5 ON TOP	2	5							 А
7	1	4-6	3	4.5/6 ON TOP	2	5	8						 A, B LOWES
9.33	1.33	6-8	4	11.5	2	5	8	11					 A, B LOWES
11.33	1.33	8-10	5	11.5/15.5 ON TOP	2	5	8	11	14				 A, B LOWEST
13.33	1.33	10-12	6	11.5/17 ON TOP	2	5	8	11	14	17			 A, B LOWEST
16.33	1.33	12-15	8	13.5/17.5 ON TOP	2	5	8	11	14	17	20	22	 B, C LOWEST

Soil Parameters per December 14	Soil Parameters per December 14, 2016 Geotechnical Report by Engeo									
Friction Angle*	27°									
Unit Weight*	120 pcf									
Cohesion	0 psf									
* values listed here are equivaler	nt to 45 pcf equivalent fluid pressure.									

TYPE	STRATAGRID	
А	SG200	
В	SG350	
С	SG500	
		_

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![](_page_31_Picture_13.jpeg)

![](_page_31_Picture_14.jpeg)

![](_page_32_Figure_0.jpeg)

![](_page_32_Figure_1.jpeg)

TOTAL HEIGHT (feet)	EMBEDMENT (feet)	EXPOSED HEIGHT (feet)	NO, OF GRIDS	GRID LENGTH (Note 1) (feet)		GRID LOCATIONS (Note 2)				GRID TYPE			
9.33	1.33	0-8	4	9.5	2	5	8	11				 	A, B LOWES
13.33	1.33	8-12	6	10	2	5	8	11	14	17		 	A, B LOWEST
16	1.33	4-6	7	11	2	5	8	11	14	17	20	 	В

GRID	GRID LOCATIONS (Note 2)								GRID LENGTH (Note 1) (feet)	NO, OF GRIDS	EXPOSED HEIGHT (feet)	EMBEDMENT (feet)	TOTAL HEIGHT (feet)
A					.		5	2	4, 4.5 ON TOP	2	0-4	0.67	4.67
A, B					11	8	5	2	7, 8.5 ON TOP	4	4-8	1.33	9.33
A, B			17	14	11	8	5	2	10/11.5 ON TOP	6	8-12	1.33	13.33
——————————————————————————————————————		20	17	14	11	8	5	2	11/13 ON TOP	7	12-14.67	1.33	16

Soil Parameters per December 14, 2016 Geotechnical Report by Engeo									
Friction Angle*	27°								
Unit Weight*	120 pcf								
Cohesion 0 psf									

TYPE	STRATAGRID	MIRAFI
А	SG200	3XT
В	SG350	5XT
С	SG500	7XT

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![](_page_32_Picture_14.jpeg)

![](_page_33_Figure_0.jpeg)

### TYPICAL GEOWALL RETAINING WALL W/ 3:1 BACKSLOPE NOT TO SCALE

### **GEOGRID SCHEDULE -- 3:1 BACKSLOPE CONDITION**

TOTAL HEIGHT (feet)	EMBEDMENT (feet)	EXPOSED HEIGHT (feet)	NO, OF GRIDS	GRID LENGTH (Note 1) (feet)	GRID (N			GRID LOCATIONS (Note 2)						GRID TYPE
2.67	1	0-1.67	0	N/A										SEE NOTE 4
4	1	1.67-3	2	4, 4.5 ON TOP	1	4								А
6	1	3-5	3	5, 6.5 ON TOP	1	4	7							А
8	1	5-7	4	7.5, 9.5 ON TOP	1	4	7	10						А

NOTES: 1. IF MULTIPLE LENGTHS SHOWN, LONGER GRID GOES TOWARD TOP OF WALL.

2. GRID LOCATION IS ON TOP OF COURSE NUMBER SHOWN, COUNTING UP FROM BOTTOM OF WALL. 3. FOR WALL HEIGHTS BETWEEN THOSE SHOWN, USE GRID LENGTH & LOCATION OF THE TALLER WALL.

4. FOR GRAVITY CONDITION (I.E. TOTAL HEIGHT LESS THAN 2'-8"), USE GEOWALL MAX UNITS.

GEOWALL NOTES:

- 1. 12" EMBEDMENT.
- 2. GEOWALL 4" CAP UNIT
- 3. GEOWALL PRO UNIT.
- 4. CLASS II PERMEABLE MATERIAL.
- 5. 4"ø SCH. 40 PVC OR SDR 35 PERFORATED DRAIN PIPE OUTLET EVERY 100'. BLACK CORRUGATED PIPE NOT ACCEPTABLE.
- 6. CRUSHED STONE LEVELING PAD 6"HX24"W. FOR GRAVITY WALL LESS THAN 2.67 TOTAL HEIGHT, INCREASE LEVELING PAD WIDTH TO 36" AND USE GEOWALL MAX UNITS.
- 7. GEOGRID LENGTH AND TYPE PER TABLE, THIS SHEET.
- 8. STRUCTURAL BACKFILL BEHIND GEOWALL TO BE MIN. 90% RELATIVE COMPACTION OR PER THE ON SITE GEOTECHNICAL ENGINEER.
- 9. 5' MIN. HORIZONTAL OFFSET FROM BASE OF WALL TO DAYLIGHT ON SLOPE.

H.R. 4"X6"X3/8" ANGLE, FULL-CONTACT WITH MSE WALL SECURE TO CULVERT WITH 3/4"ø A325 BOLT AT TOP OF

![](_page_33_Figure_20.jpeg)

## **GEOGRID STRENGTH CHART**

TYPE	STRATAGRID	MIRAFI
А	SG200	3XT
В	SG350	5XT
С	SG500	7XT

## Soil Parameters per December 14, 2016 Geotechnical Report by Engeo

└─6" STEP

\_\_<mark>→</mark>\_Unit + 12" (24")

SECTION

 $\bigcirc$ 

Friction Angle*	27°
Unit Weight*	120 pcf
Cohesion	0 psf

\* values listed here are equivalent to 45 pcf equivalent fluid pressure, as recommended in the above referenced Geotechnical Report

![](_page_33_Figure_26.jpeg)

![](_page_33_Figure_27.jpeg)

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1049 Nichols Dr. Rocklin, CA 95765

916.626.5577 FAX 916.626.5533

SHT. 32 OF 34

FILE NO: 4089

REV. DATE NOV. 14, 2017

# RECORD DRAWING

IMPROVEMENTS HAVE NOT BEEN SURVEYED IN ORDER TO VERIFY EXACT HORIZONTAL AND VERTICAL LOCATIONS

THIS RECORD DRAWING IS BASED ON INFORMATION FROM THE PROJECT OWNER AND PROJECT CONTRACTORS, AND ARE NOT BASED UPON A FIELD VERIFICATION OR INVESTIGATION OF THE IMPROVEMENTS OR GRADES.

DATE: JANUARY 8, 2021

![](_page_33_Picture_32.jpeg)

MASONRY WALL NOTES

- 1. 8" CMU f'm= 1900. PSI, Fy= 60000. PSI WITH STUCCO VENEER. COLOR BY OWNER.
- 2. CLASS II PERMEABLE MATERIAL, 12" WIDE.
- 3. 4″Ø SCH. 40 P∨C OR SDR 35 PERFORATED DRAIN PIPE DUTLET EVERY 50' TO THE NEAREST DRAINAGE AREA, BLACK CORRUGATED PIPE NOT ACCEPTABLE.
- 4, CONC, FOOTING f'c=2500 psi 3″ MIN, REBAR COVER
- 5. LONGITUDINAL REINFORCING PER TABLE, THIS SHEET.
- 6. HORIZONTAL REINFORCING PER TABLE, THIS SHEET.
- 7. VERTICAL REINFORCING PER TABLE, THIS SHEET.
- 8. MASTERSEAL HLM 5000-R (ROLLER GRADE) ELASTOMERIC WATERPROOFING MEMBRANE. APPLY TWO COATS, OR PER MANUFACTURER'S RECOMMENDATIONS.
- 9. FENCEPOST PER DETAIL, THIS SHEET.

![](_page_34_Figure_10.jpeg)

9

TYPICAL MASONRY RETAINING WALL NOT TO SCALE

	FOOTING & REBAR SCHEDULE														
	Stem Reinforcing Footing Reinforcing														
Total								Total							
Height, H				Stem	Тое	Heel	Footing	Footing							
(ft.)	Vertical	Horizontal	Longitudinal	Width, Sw	Width, t	Width, h	Thickness, d	Width <i>,</i> Fw							
2.5	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 12" O.C.	8"	1'	1'-6"	2'	2'-6"							
4.5	#4 @ 16" O.C.	#4 @ 16" O.C.	#4 @ 12" O.C.	8"	1'-6"	2'-0"	2'	3'-6"							

## GENERAL

## SUBMITTALS

## BLOCK

## MORTAR

## GROUT

## **GROUT POURS**

- lifts.

- ✓ Concrete pour should commence w/o more than 1 hour interruption during the pour.

# **REINFORCING STEEL**

- ✓ Grade 60 or better.
- $\checkmark$  Vertical rebar in footing to be continuous to at least 30 inches above top of footing.

- ✓ Double reinforcing steel at openings, such as doors and windows.
- $\checkmark$  Place horizontal rebar outside vertical rebar at corners.

![](_page_34_Figure_49.jpeg)

## **MASONRY WALL SPECIFICATIONS** (Special Inspection Required)

✓ All masonry construction shall comply with the requirements of the 2013 CBC sections 2104A.1.1 through 2104A.4 and the TMS 602/ACI 530.1/ASCE 6. Hollow grout filled and steel reinforced load-bearing concrete masonry units shall meet the requirements of 2013 CBC and ASTM C 90, latest edition, for load-bearing CMU. ✓ All masonry shall be laid true, level, and plumb in accordance with

the drawings. All CMU shall be laid in a running bond unless otherwise indicated. Brace masonry during construction to assure stability. Place mortar in accordance with TMS 602/ACI 530.1/ASCE 6 article 3.3B. Initial bed joint shall not be less than  $\frac{1}{4}$ " or more than  $\frac{3}{4}$ ". All head and bed joints shall be a nominal  $\frac{3}{8}$ " thick not to exceed  $\frac{5}{8}$ ", unless otherwise required. All mortar joints on exposed walls shall be concave and struck to produce a dense, slightly concave surface well bonded to the surface of the masonry unit.

✓ Submit material certificates certifying compliance of concrete masonry units, steel reinforcing bars, anchors, ties, fasteners, and metal accessories, and preformed control joint gaskets.

- ✓ Concrete masonry units to be 1,900 psi minimum.
- ✓ Place control joints every 40 lineal feet.
- ✓ Linear shrinkage shall not exceed 0.065 percent.
- ✓ Concrete masonry units shall be medium density units manufactured in Northern California.
- ✓ Type 'M' or 'S' only. Masonry or Plastic Cement prohibited.
- $\checkmark$  Projections  $\frac{1}{2}$ -inch or larger need to be removed.
- ✓ Joints should be 3/8-inch +/- 1/8 inch for Horiz and Vert joints. ✓ 1,500 psi min at 28 days.
- ✓ Slump 8 inches (+/- 1-inch) to allow coverage over reinforcing steel.  $\vee$  2,000 psi required at 28 days.
- ✓ Provide mix design and test reports indicating types and proportions of materials according to specifications of ASTM C476.

- ✓ 6-foot max pour height.
- ✓ Grout lifts should be stopped 1.5 inches below mortar joint between
- ✓ Mechanical vibration is required.
- ✓ Tolerance for placement, 1-inch.
- ✓ Minimum overlap 30 bar diameters
- ✓ Secure reinforcing steel every 6 feet.

# **RECORD DRAWING**

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- DATE: <u>JANUARY 8, 2021</u>

![](_page_34_Picture_76.jpeg)

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![](_page_34_Picture_79.jpeg)

![](_page_35_Figure_0.jpeg)

## MASONRY WALL SPECIFICATIONS (Special Inspection Required)

### **GENERAL**

- ✓ All masonry construction shall comply with the requirements of the 2016 CBC and the TMS 602/ACI 530.1/ASCE 6. Hollow grout filled and steel reinforced load-bearing concrete masonry units shall meet the requirements of 2016 CBC and ASTM C 90, latest edition, for load-bearing CMU.
- ✓ All masonry shall be laid true, level, and plumb in accordance with the drawings. All CMU shall be laid in a running bond unless otherwise indicated. Brace masonry during construction to assure stability. Place mortar in accordance with TMS 602/ACI 530.1/ASCE 6 article 3.3B. Initial bed joint shall not be less than  $\frac{1}{4}$ " or more than  $\frac{3}{4}$ ". All head and bed joints shall be a nominal  $\frac{3}{8}$ " thick not to exceed  $\frac{5}{8}$ ", unless otherwise requried. All mortar joints on exposed walls shall be concave and struck to produce a dense, slightly concave surface well bonded to the surface of the masonry unit.

### **SUBMITTALS**

✓ Submit material certificates certifying compliance of concrete masonry units, steel reinforcing bars, anchors, ties, fasteners, and metal accessories, and preformed control joint gaskets.

### BLOCK

- ✓ Concrete masonry units to be 1,900 psi minimum.
- ✓ Place control joints every 40 lineal feet.
- ✓ Linear shrinkage shall not exceed 0.065 percent.
- ✓ Concrete masonry units shall be medium density units manufactured in Northern California.

### MORTAR

- ✓ Type 'M' or 'S' only. Masonry or Plastic Cement prohibited.
- $\vee$  Projections  $\frac{1}{2}$ -inch or larger need to be removed.
- $\checkmark$  Joints should be 3/8-inch +/- 1/8 inch for Horiz and Vert joints.
- $\vee$  1,500 psi min at 28 days.

### GROUT

- ✓ Slump 8 inches (+/- 1-inch) to allow coverage over reinforcing steel.
- ✓ 2,000 psi required at 28 days.
- ✓ Provide mix design and test reports indicating types and proportions of materials according to specifications of ASTM C476.

### **GROUT POURS**

- ✓ 6-foot max pour height.
- ✓ Grout lifts should be stopped 1.5 inches below mortar joint between lifts.
- ✓ Mechanical vibration is required.
- ✓ Concrete pour should commence w/o more than 1 hour interruption during the pour.

### **REINFORCING STEEL**

- ✓ Grade 60 or better.
- $\checkmark$  Vertical rebar in footing to be continuous to at least 30 inches above top of footing.
- ✓ Tolerance for placement, 1-inch.
- ✓ Minimum overlap 30 bar diameters
- ✓ Double reinforcing steel at openings, such as doors and windows.
- $\checkmark$  Secure reinforcing steel every 6 feet.
- ✓ Place horizontal rebar outside vertical rebar at corners.

	Stem Reinfo	rcing	Footing & Pier Reinforcing											
Total									Footing	Total				
Height, H				Pier	Pier Depth,		Vertical Pier		Thickness,	Footing				
(ft.)	Vertical	Horizontal	Longitudinal	Diameter, D	Pd	Pier Spacing	Reinforcing	Stem Width, Sw	Fd	Width, Fw				
2.5	#4 @ 16" O.C.	#4 @ 16" O.C.	#5 @ 10" O.C.	12"	6'	8'	6Qty #5	8"	1'	2'				
4.5	#5 @ 16" O.C.	#5 @ 16" O.C.	#5 @ 10" O.C.	18"	7'	6'	6Qty #6	8"	1'-6"	2'-6"				
	#5 @ 8" O.C. lower stem,							12" lower stem,						
6.5	#5 @ 16" O.C. upper stem	#5 @ 16" O.C.	#5 @ 10" O.C.	24"	8'	6'	8Qty #6	8" upper stem	2'	3'-6"				
								12" lower stem,						
8.5	#7 @ 8" O.C.	#5 @ 16" O.C.	#5 @ 10" O.C.	24"	10'	6'	8Qty #8	8" upper stem	2'	4'-3"				

### FOOTING & REBAR SCHEDULE

# **RECORD DRAWING**

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DATE: <u>JANUARY 8, 2021</u>

![](_page_35_Picture_43.jpeg)

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