OWNERSHIP OF DOCUMENTS

ALL DRAWINGS, SPECIFICATIONS AND OTHER WORK PRODUCT OF THE ENGINEER FOR THIS PROJECT ARE INSTRUMENTS OF SERVICE FOR THIS PROJECT ONLY AND SHALL REMAIN THE PROPERTY OF THE ENGINEER WHETHER THE PROJECT IS COMPLETED OR NOT. REUSE OF ANY OF THE INSTRUMENTS OF SERVICE OF THE ENGINEER BY THE OWNER ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER SHALL BE AT THE OWNER'S RISK AND THE OWNER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, AND EXPENSES INCLUDING ATTORNEYS' FEES ARISING OUT OF SUCH UNAUTHORIZED REUSE OF THE ENGINEER'S INSTRUMENTS OF SERVICE BY THE OWNER OR BY OTHERS ACTING THROUGH THE OWNER.

GENERAL

1. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE ARCHITECT OR ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY.
2. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES.
3. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO 2022 CBC BASED ON IBC 2018.
4. THE ENGINEER HAS NOT CONSIDERED VIBRATION EFFECTS OF MECHANICAL EQUIPMENT.
5. THE ENGINEER HAS NOT DESIGNED CONCRETE SLAB ON GRADE.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHETHER SHOWN HEREON OR NOT AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT IN CONJUNCTION WITH THE PROSECUTION OF THIS WORK.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING DURING CONSTRUCTION AND SHALL PROVIDE ADEQUATE SHORING, BRACING AND GUYS DURING CONSTRUCTION. SAFETY AND BRACING REQUIREMENTS SHALL BE IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
8. IN ALL CASES WHERE A CONFLICT MAY OCCUR, SUCH AS BETWEEN ITEMS COVERED IN SPECIFICATIONS AND NOTES ON THE DRAWINGS OR BETWEEN GENERAL NOTES AND SPECIFIC DETAILS, THE ARCHITECT SHALL BE NOTIFIED AND HE WILL INTERPRET THE INTENT OF THE CONTRACT DOCUMENTS.
9. WHERE CONSTRUCTION MATERIALS ARE TEMPORARILY STORED ON ROOF OR FLOOR FRAMING, THEY SHALL BE DISTRIBUTED SO THAT THE LOADS DO NOT EXCEED THE DESIGN LOAD.
10. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY FIELD REPRESENTATIVES OF THE ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES REQUIRED FOR IT. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES, WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER, WHETHER OF MATERIAL OR WORK, AND WHETHER PERFORMED PRIOR TO, DURING, OR AFTER COMPLETION OF CONSTRUCTION ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS, BUT THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
11. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING:
    SIZE AND LOCATION OF ALL DOOR AND WINDOW OPENINGS, EXCEPT AS NOTED.
    SIZE AND LOCATION OF INTERIOR AND EXTERIOR NON-BEARING PARTITIONS.
    SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS SLOPES,
    DEPRESSED AREAS, CHANGES IN LEVEL, CHAMFERS, GROOVES, INSERTS, ETC.
    SIZE AND LOCATION OF ALL FLOOR AND ROOF OPENINGS EXCEPT AS SHOWN.
    FLOOR AND ROOF FINISHES.
    STAIR FRAMING AND DETAILS (EXCEPT AS SHOWN).
    DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
12. SEE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE FOLLOWING:
    PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC. (EXCEPT AS SHOWN OR NOTED). ELECTRIC CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL OR PLUMBING FIXTURES. SIZE AND, LOCATION OF MACHINE OR EQUIPMENT BASES, ANCHOR BOLTS FOR MOTOR MOUNTS.
13. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
14. OPENINGS, POCKETS, ETC. LARGER THAN 6 INCHES SHALL NOT BE PLACED IN CONCRETE SLABS, DECK BEAMS, JOISTS, COLUMNS, WALLS ETC., UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.NOTIFY THE ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC. LARGER THAN 6 INCHES NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS.
15. DESIGN, MATERIALS, EQUIPMENT, AND PRODUCTS OTHER THAN THOSE INDICATED ON THE DRAWINGS MAY BE CONSIDERED FOR USE, PROVIDED PRIOR APPROVAL IS OBTAINED FROM THE OWNER, ENGINEER, AND THE APPLICABLE GOVERNING CODE AUTHORITY.
16. ALL RETAINING WALLS SHALL BE ADEQUATELY SHORED DURING BACK FILLING.
17. STRUCTURAL OBSERVATIONS PERFORMED BY ARCHITECT/ENGINEER DURING CONSTRUCTION ARE NOT THE CONTINUOUS AND SPECIAL INSPECTION SERVICES AND DO NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR. OBSERVATIONS ALSO DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSIDERED AS SUPERVISION OF CONSTRUCTION.
18. APPROVAL BY THE INSPECTOR DOES NOT MEAN APPROVAL OF FAILURE TO COMPLY WITH THE PLANS OR SPECIFICATIONS. ANY DETAIL WHICH FAILS TO BE CLEAR OR IS AMBIGUOUS MUST BE REFERRED TO THE ENGINEER FOR INTERPRETATION OR CLARIFICATION.

REINFORCING STEEL

1. ALL REINFORCING SHALL CONFORM TO ASTM A615, 60 KSI UNLESS OTHERWISE NOTED.
2. REINFORCING BARS SHALL HAVE THE FOLLOWING MINIMUM COVERAGE. PLACE BARS AS NEAR TO THE CONCRETE SURFACE AS THESE MINIMUMS PERMIT WHEREVER POSSIBLE UNLESS NOTED OTHERWISE:

	MIN. CONCRETE COVER
CONCRETE POURED AGAINST EARTH	3"
FORMED CONCRETE IN CONTACT WITH EARTH	2"
EXPOSED TO WEATHER (#6 AND LARGER)	2"
EXPOSED TO WEATHER (#5 AND SMALLER)	1-1/2"
SLABS & WALLS NOT EXPOSED TO WEATHER	1"
NOT EXPOSED TO WEATHER	1-1/2"

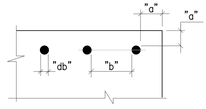
3. #5 AND LARGER REINFORCING BARS SHALL NOT BE SPLICED EXCEPT AS LOCATED AND DETAILED ON THE DRAWINGS. #4 AND SMALLER BARS WITH LENGTH NOT SHOWN SHALL BE CONTINUOUS, LAPPING 1'-6" MINIMUM IN CONCRETE (SEE TYPICAL DETAILS). HORIZONTAL WALL SPLICES SHALL BE STAGGERED. VERTICAL BARS SHALL NOT BE SPLICED EXCEPT AT HORIZONTAL SUPPORT, SUCH AS FLOOR OR ROOF, UNLESS DETAILED OTHERWISE. ALL BARS ENDING AT THE FACE OF A WALL, COLUMN, OR BEAM SHALL EXTEND TO WITHIN 2" OF THE FAR FACE AND HAVE A 90 DEGREE HOOK UNLESS OTHERWISE SHOWN.
4. BARS SHALL BE FIRMLY SUPPORTED AND ACCURATELY PLACED AS REQUIRED BY THE A.C.I. STANDARDS, USING TIE AND SUPPORT BARS IN ADDITION TO REINFORCEMENT SHOWN WHERE NECESSARY FOR FIRM AND ACCURATE PLACING. ALL DOWELS SHALL BE ACCURATELY SET IN PLACE BEFORE PLACING CONCRETE.
5. DRAWINGS SHOW TYPICAL REINFORCING CONDITIONS. CONTRACTOR SHALL PREPARE DETAILED PLACEMENT DRAWINGS OF ALL CONDITIONS SHOWING QUANTITY, SPACING, SIZE, CLEARANCES, LAPS, INTERSECTIONS AND COVERAGE REQUIRED BY STRUCTURAL DETAILS, APPLICABLE CODE AND TRADE STANDARDS. CONTRACTOR SHALL NOTIFY REINFORCING INSPECTOR OF ANY ADJUSTMENTS FROM TYPICAL CONDITIONS THAT ARE PROPOSED IN PLACEMENT DRAWINGS TO FACILITATE FIELD PLACEMENT OF REINFORCING STEEL AND CONCRETE.
6. NO WELDING OF REINFORCEMENT (INCLUDING TACK WELDING) SHALL BE DONE UNLESS SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWINGS, WELDING OF REINFORCING STEEL SHALL BE PERFORMED BY WELDERS SPECIFICALLY CERTIFIED FOR REINFORCING STEEL. USE E90XX ELECTRODES.

SPECIAL INSPECTION

PROVIDE CONTINUOUS INSPECTION FOR THE FOLLOWING:
-DURING PLACING OF ALL STRUCTURAL CONCRETE F'C > 2500 PSI @ 28 DAYS
-DURING ALL STRUCTURAL STEEL WELDING
-DURING BOLTING WITH HIGH TENSILE BOLTS
-DURING INSTALLATION OF EXPANSION ANCHORS
-DURING INSTALLATION OF EPOXY ANCHORS / DOWELS JUST PRIOR TO PLACING CONCRETE FOUNDATIONS TO ENSURE SUBGRADE IS SUITABLE, FREE FROM LOOSE SOIL, AND FOUNDATIONS ARE OF PROPER DIMENSIONS
-DURING INSTALLATION OF HOLD-DOWN ANCHORS AT PLYWOOD SHEAR WALLS.
-ROOF AND WALLS NAILING IN PROGRESS VISUAL INSPECTION PER AWS D1.1-94 IS REQUIRED FOR ALL WELDING (CUTOUTS, CLEAN-UP, ROOT PASSES, FILL-IN PASSES ETC.). WELDING INSPECTORS ARE TO BE AWS Q.C.-1 CERTIFIED. APPROVAL BY THE INSPECTOR DOES NOT MEAN APPROVAL OF FAILURE TO COMPLY WITH THE PLANS OR SPECIFICATIONS. ANY DETAIL WHICH FAILS TO BE CLEAR OR IS AMBIGUOUS MUST BE REFERRED TO THE ENGINEER FOR INTERPRETATION OR CLARIFICATION.
-CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR REQUIRED FOR EDGE DISTANCE OF ANCHOR BOLTS.

NOTES:
1. ALL SPLICES SHALL BE TENSION LAP SPLICES U.N.O.
2. LENGTHS SHOWN ARE FOR GRADE 60 UNCOATED BARS.
3. LENGTHS SHOWN ARE IN INCHES.
4. INCREASE LENGTHS 30% FOR LIGHT WEIGHT CONCRETE AND AT FOUR BAR BUNDLES (WHERE 2 BARS LAP WITH 2 OTHER BARS) INDIVIDUAL BARS WITHIN A BUNDLE SHALL NOT OVERLAP.
5. TOP BARS – HORIZONTAL BARS PLACED WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THEM .
6. INCREASE LENGTHS 50% WHERE a < db OR WHERE b < db FOR BEAMS AND COLUMNS OR WHERE b < 2db FOR OTHER ELEMENTS.
7. FOR #14 AND #18 BARS, USE MECHANICAL SPLICE IN ACCORDANCE WITH UBC REQUIREMENTS.

TENSION LAP SPLICE SCHEDULE



WHERE: "a" IS THE CLEAR COVER
"b" IS THE CLEAR SPACING
"db" IS THE BAR DIA.

	TENSION LAP SPLICE LENGTH (CLASS B)						DEVELOPMENT LENGTH (ld) (CLASS A)					
	3000 PSI CONC f'c		4000 PSI CONC f'c		5000 PSI CONC f'c		3000 PSI CONC f'c		4000 PSI CONC f'c		5000 PSI CONC f'c	
BAR SIZE	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER	TOP	OTHER
#3	29	22	28	20	28	20	23	17	21	15	21	15
#4	39	29	34	25	30	23	30	22	26	19	23	17
#5	48	36	42	31	38	28	37	28	32	24	29	22
#6	58	43	50	37	45	34	45	33	39	29	35	26
#7	81	63	71	54	63	49	63	48	54	42	49	38
#8	93	72	81	62	72	56	72	55	62	48	56	43
#9	105	81	91	70	81	63	81	62	70	54	63	48
#10	118	91	102	79	92	70	91	70	79	61	70	54
#11	131	101	113	87	102	78	101	78	87	67	78	60

ADHESIVE AND EXPANSION ANCHORS

1. MECHANICAL ANCHORS INTO CONCRETE: HILTI CARBON STEEL KWIK-BOLT II (ICC ESR 1917, LARR #25701) OR RAMSET RED HEAD TRUBOLT (ICC ESR-2427, LARR #25867).
2. ADHESIVE ANCHORS AND DOWELS INSTALLED INTO CONCRETE AND GROUT-FILLED MASONRY UNITS: CIA-GEL 7000 BY COVERT OPERATIONS (ICC ESR-1702, LARR #25113), HIT HY-150 BY HILTI (ICC ESR-3013, LARR #25881), OR EPOXY-TIE 'SET-XP' BY SIMPSON STRONG-TIE (ICC-ES #ESR-2508, LARR #25744).
3. ADHESIVE ANCHORS AND DOWELS INSTALLED INTO HOLLOW MASONRY UNITS AND UNREINFORCED BRICK MASONRY (URM): HIT HY-20 BY HILTI (ICC ESR 2659,), OR EPOXY-TIE 'SET-XP' BY SIMPSON STRONG-TIE (ICC-ES #ESR-2508, LARR #25744). USE SCREENS AS SPECIFIED BY THE MANUFACTURER.
4. MECHANICAL FASTENERS: STAINLESS STEEL FOR EXTERIOR USE OR WHEN EXPOSED TO WEATHER. PROVIDE GALVANIZED CARBON STEEL ANCHORS AT OTHER LOCATIONS, UNLESS OTHERWISE NOTED.
5. ADHESIVE ANCHORS: ASTM A36 THREADED RODS WITH ASTM A 563 GRADE A NUTS AND ANSI B18.22.1 TYPE A WASHERS, UNLESS OTHERWISE NOTED. ANCHORS DESIGNATED AS ASTM A193 GRADE B7 THREADED RODS TO USE ASTM A 563 GRADE DH HEAVY HEX NUTS AND ASTM F 436 WASHERS.
6. ADHESIVE DOWELS: ASTM A615 GRADE 60 REINFORCING STEEL.
7. ALL ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH ICC-ESR AND LARR REPORT AND MANUFACTURERS RECOMMENDATIONS.
8. UNLESS OTHERWISE NOTED, PROVIDE MINIMUM EMBEDMENT OF ANCHORS PER ICC-ESR, LARR REPORTS & MANUFACTURERS RECOMMENDATIONS.
9. PRIOR TO ALL DRILLING OR CORING, THE CONTRACTOR SHALL (1) VERIFY THE EXISTING CONCRETE OR MASONRY THICKNESS TO PREVENT DAMAGE TO THE OPPOSITE FACE OF CONCRETE AND MAINTAIN 1-1/2" CLEAR COVER U.N.O., AND (2) IDENTIFY EXISTING REINFORCING LOCATIONS BY PACHHOMETER, PROBING, CHIPPING, ETC. TO AVOID DAMAGE EXISTING REINFORCING.
10. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE HOLE LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1 INCH, WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE DOWEL AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED AS NOTED ABOVE, THE ENGINEER WILL DETERMINE A NEW LOCATION.
11. EPOXY ANCHOR INSTALLATION REQUIRES SPECIAL INSPECTION.
12. FASTENERS FOR PRESERVATIVE – TREATED SHALL BE HOT DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER

FOUNDATION DESIGN FOR EXPANSIVE SOILS

FOUNDATION SYSTEMS FOR BUILDINGS ON EXPANSIVE SOILS SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE DAMAGE TO THE STRUCTURE FROM MOVEMENT OF THE SOIL. THE FOLLOWING GUIDELINES ARE INTENDED TO PROVIDE THE REQUIRED MITIGATION.

I. NEW CONSTRUCTION

IN ORDER TO MITIGATE THE POTENTIAL FOR EXPANSIVE SOILS, EITHER A SOIL REPORT SHALL BE SUBMITTED TO THE GRADING DIVISION FOR REVIEW AND APPROVAL OR THE BUILDING FOOTINGS SHALL BE DESIGNED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

1. DEPTH OF FOOTINGS BELOW THE NATURAL AND FINISH GRADES SHALL NOT BE LESS THAN 24 INCHES FOR EXTERIOR AND 18 INCHES FOR INTERIOR FOOTINGS.
2. EXTERIOR WALLS AND INTERIOR BEARING WALLS SHALL BE SUPPORTED ON CONTINUOUS FOOTINGS.
3. FOOTINGS SHALL BE REINFORCED WITH FOUR 1/2-INCH-DIAMETER DEFORMED REINFORCING BARS. TWO BARS SHALL BE PLACED WITHIN 4 INCHES OF THE BOTTOM OF THE FOOTINGS AND TWO BARS WITHIN 4 INCHES OF THE TOP OF THE FOOTING.
4. ON-GRADE CONCRETE FLOOR SLABS SHALL BE PLACED ON A 4-INCH FILL OF COARSE AGGREGATE OR ON A 2-INCH SAND BED OVER A 6 MIL VISQUEEN OVER 2-INCH SAND. THE SLABS SHALL BE AT LEAST 4 INCHES THICK AND SHALL BE REINFORCED WITH #4 REINFORCING BARS. REINFORCING BARS SHALL BE SPACED AT INTERVALS NOT EXCEEDING 16 INCHES EACH WAY.
5. THE SOIL BELOW AN INTERIOR CONCRETE SLAB SHALL BE PRE-SATURATED TO A DEPTH OF 18 INCHES PRIOR TO PLACING THE CONCRETE.
6. ALL DRAINAGE ADJACENT TO FOOTINGS SHALL BE CONDUCTED AWAY FROM THE STRUCTURE BY A 3-FOOT-WIDE SLOPED APRON DRAINING INTO AN APPROVED NON-EROSIVE DEVICE.
7. ALLOWABLE FOUNDATION AND LATERAL PRESSURES FOR FOOTING DESIGN SHALL NOT EXCEED THE VALUES SHOWN IN TABLE 1804.2.

CONSTRUCTION IN ACCORDANCE WITH THESE REQUIREMENTS DOES NOT PREVENT THE BUILDING/GRADING INSPECTOR FROM REQUIRING A SOIL REPORT AT ANY TIME, BASED UPON SITE CONDITIONS.

SPECIAL INSPECTION

1. GENERAL INSPECTION: PER CBC CHAPTER 17. THE OWNER SHALL EMPLOY A LICENSED ENGINEER OR DSIGNER RESPONSIBLE FOR THE STRUCTURAL DESIGN, OR HIS DESIGNATED ENGINEER OR DSIGNER TO MAKE SITE VISITS TO OBSERVE GENERAL COMPLIANCE WITH THE APPROVED STRUCTURAL PLANS, SPECIFICATIONS AND CHANGE ORDERS. THE ENGINEER OR DSIGNER SHALL SUBMIT A STATEMENT IN WRITING TO THE BUILDING OFFICIAL STATING THAT THE SITE VISITS HAVE BEEN MADE AND THAT ANY DEFICIENCIES NOTED HAVE BEEN CORRECTED.
2. SPECIAL INSPECTION: PER CBC SECTION 1704. DUTIES & RESPONSIBILITIES OF THE INSPECTOR:
   A. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.
   B. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR DSIGNER OF RECORD, & OTHER DESIGNATED PERSONS. .ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
   C. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND APPLICABLE WORKMANSHIP PROVISIONS OF THE CURRENT BUILDING CODE.

CONCRETE

1. THE MINIMUM ULTIMATE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 4500 PSI. WATER TO CEMENT RATIO SHALL BE W/C=0.45.
2. ALL CEMENT USED SHALL CONFORM TO A.S.T.M. C-150, CEMENT SHALL BE OF TYPE "V"
3. FINE AND COARSE AGGREGATE SHALL CONFORM TO A.S.T.M. C-33.
4. ALL-CONCRETE UNLESS OTHERWISE NOTED ON PLANS WILL BE REGULAR WEIGHT HARD ROCK TYPE (150 LB./CU.FT. AGGREGATE SHALL CONFORM TO A.S.T.M. C-33 WITH PROVEN SHRINKAGE CHARACTERISTICS PER A.S.T.M. C-157.
5. MAXIMUM SLUMP OF CONCRETE USED IN FLOOR SLAB AT FLAT WORK SHALL BE FOUR (4") INCHES.
6. VIBRATION: VIBRATION OF CONCRETE SHALL BE IN ACCORDANCE WITH GENERAL PROVISION OUTLINED IN PORTLAND CEMENT ASSOCIATION SPECIFICATIONS ST26.
7. CURING: CONCRETE SHALL BE MAINTAINED IN MOIST CONDITION FOR A MINIMUM OF FIVE (5) DAYS AFTER ITS PLACEMENT. APPROVED CURING COMPOUND MAY BE USED IN LIEU OF MOIST CURING.
8. STRENGTH TEST OF CONCRETE SHALL BE REQUIRED AS PER CODE AND OUTLINED IN SPECIFICATION REPORT SHALL BE FORWARDED TO THE STRUCTURAL ENGINEER.
9. ANCHOR BOLTS, DOWELS, INSERT, ETC. SHALL BE SECURELY TIED IN PLACE PRIOR TO POURING CONCRETE.
10. THE ENGINEER MUST APPROVE LOCATION OF CONSTRUCTION OR POUR JOINTS.
11. PIPES OR DUCTS EXCEEDING ONE THIRD THE SLAB, OR WALL THICKNESS SHALL NOT BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED. SEE MECHANICAL AND/OR ELECTRICAL DRAWINGS FOR LOCATION OF SLEEVES, ACCESSORIES ETC.
12. PIPES MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES, BUT SHALL NOT BE EMBEDDED THEREIN.
13. PROVIDE 3/4 INCH CHAMFER AT ALL EXPOSED CORNERS.
14. REFER TO ARCHITECTURAL DRAWINGS FOR MOLDS, GROOVES, ORNAMENTS, CLIPS, OR GROUNDS REQUIRED TO BE CAST IN CONCRETE, AND FOR LOCATIONS OF FLOOR FINISHED AND SLAB DEPRESSIONS.
15. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED FOR ALL CONCRETE DESIGNED WITH F'C GREATER THAN 2500 PSI.

FOUNDATIONS

1. FOUNDATIONS SHALL BE OF THE SIZE AND TYPE AS INDICATED ON THE DRAWINGS.
2. FOOTINGS ARE TO BE CARRIED A MINIMUM OF 24" INTO FIRM UNDISTURBED, NATURAL SOIL OR APPROVED COMPACTED-FILL.
3. DESIGN BEARING PRESSURE IS 1,500 PSF IN UNDISTURBED, NATURAL SOIL.
4. DESIGN LATERAL BEARING PRESSURE IS 200 PSF./FT WITH A 33% FOR WINDS, THE FOOTINGS OF THE PROPOSED STRUCTURES SHALL BE SUPPORTED COMPLETELY BY A UNIFORM THICKNESS OF NON-EXPANSIVE COMPACTED SOIL. THE STRUCTURES SHALL NOT BE SUPPORTED OVER A CUT/FILL TRANSITION.
5. CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUND WATER OR SEEPAGE.
6. ALL EXCAVATIONS SHALL BE PROPERLY BACK FILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE HAS ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL INSTALLATION OF SUCH BRACING.
7. ALL ABANDONED FOOTINGS, UTILITIES, ETC., THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED. NEW FOOTINGS MUST EXTEND INTO UNDISTURBED SOILS. FOUNDATION PLATES OR SILLS SHALL BE BOLTED TO THE FOUNDATION OR FOUNDATION WALL WITH NOT LESS THAN 5/8" NOMINAL DIAMETER STEEL BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE OR MASONRY AND SPACED NOT MORE THAN 4' APART. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PIECE WITH ONE BOLT LOCATED WITHIN 12" OF EACH END OF EACH PIECE. A PROPERLY SIZED NUT AND WASHER SHALL BE TIGHTENED ON EACH BOLT TO THE PLATE, USE 3"X3"X1/4" WASHER SPECIFIED IN SECTION 2306. ALL INTERIOR WALLS NON SHEAR WALLS TO HAVE HILTI X-DNI (WITH A MINNIMUM PENETRATION OF 1-1/4" INTO SLAB) AT 24" ON CENTER, UNLESS NOTED OTHERWISE, TO BE INSTALLED IN ACCORDANCE WITHICC-ESR #2611 AND LARR# 25827, APR 2010. ACTUAL SLAB THICKNESS TO BE MINIMUM 3-½".
8. CONTINUOUS FOOTING IN ADDITION (1) #4 BAR EXTRA FOR ELECTRICAL GROUND. LOCATION TO BE VERIFIED WITH ELECTRICAL CONTRACTOR.

DESIGN CRITERIA FOR RETAINING WALL

BUILDING CODE:

ALL WORK SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE INCLUDING LOCAL BUILDING OFFICIAL AMENDMENTS, ASCE 7-22 & 2024 CBC.

1. SOIL PARAMETERS PER SOIL REPORT DATED 08/28/2024

BEARING CAPACITY	2000 PSF
ACTIVE EARTH PRESSURE	40 PSF/FT
PASSIVE EARTH PRESSURE	300 PSF/FT
FRICTION ANGLE	0.40
SURCHARGE LOAD DUE TO TRAFFIC	100 PSF
SEISMIC LOAD FOR >6 FT WALL	20 PCF

REVISIONS

ADDRESS
400 E. 20TH ST.
UPLAND, CA 91784

PROJECT
NEW RETAINING WALL

REGISTERED PROFESSIONAL ENGINEER
AMGAD SAMWEL BENJAMIN
No. C 64449
Exp. 06/30/27
CIVIL
STATE OF CALIFORNIA

SAN MINA ENGINEERING, INC.
24310 MOULTON PKWY, STE. O-105
LAGUNA HILLS, CA 92637
TEL# (949) 446-1417
SM ENGINEERING

PROJECT NO:	
CAD DWG FILE:	
DRAWN BY :	M.S.
CHECKED BY:	A.B.
SCALE:	NOTED
DATE :	10-29-26

SHEET TITLE:
NOTES

SHEET
S-1

SCALE

FOUNDATION NOTES

1. CONCRETE STRENGTH SHALL BE MINIMUM 4500 PSI FOR ALL FOOTINGS AND SLAB.
2. THE MAXIMUM SOIL BEARING PRESSURE IS 2,000 PSF PER SOIL REPORT
3. ALL HOLDOWNS AND POST ANCHORS SHALL BE INSTALLED ACCORDING TO SIMPSON STRONG TIE SPECIFICATIONS AND REQUIREMENTS OF ICC ESR-2330 AND LARR# 25720.
4. ALL CONTINUOUS EXTERIOR FOOTINGS SHALL HAVE 5/8" DIAMETER X 12" A.B.'S WITH 3"x3"x1/4" WASHERS, MIN. 7" EMBEDMENT ONTO CONCRETE, AT 36" O.C. UNLESS NOTED OTHERWISE ON PLANS. ONE ANCHOR BOLT SHOULD BE LOCATED MAX. 12" AWAY FROM THE END OF THE SILL PLATES. MIN. (2) A.B.'S PER SILL PLATE PER SHEAR PANEL.
5. ALL INTERIOR NON-BEARING WALLS SHALL HAVE SHOT PINS HILTI X-C. WITH MIN. PENETRATION OF 1 1/4" INTO SLAB, AT 24" O.C. UNLESS NOTED OTHERWISE. TO BE INSTALLED IN ACCORDANCE WITH ICC-ESR #2611 AND LARR# 25827 ACTUAL SLAB THICKNESS SHALL BE MINIMUM 3-1/2".
6. PROVIDE #3X24" DOWEL AT 24" O.C. AND 12" FROM THE CORNER AT ALL CONCRETE STOOP AND PORCHES.
7. ALL FOOTINGS SHALL BE FOUNDED IN UNDISTURBED SOIL PER CODE, A MINIMUM OF 24" INTO COMPETENT BEARING MATERIALS, NATURAL SOILS OR COMPACTED FILL. SEE SOIL REPORT WHERE IT IS REQUIRED.
8. VERIFY MINIMUM FOUNDATION DEPTH, WIDTH, REINFORCING STEEL AND ADDITIONAL EXPANSIVE SOIL REQUIREMENTS WITH VALID SOILS REPORT (WHERE IT IS REQUIRED) AND IF ANY MORE RESTRICTIVE THEY SHALL SUPERSEDE THE ABOVE MINIMUMS.
9. FOUNDATION DRAWING SHALL REFLECT THE STRUCTURAL REQUIREMENT ONLY. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS NOT SHOWN. ACCURACY OF THE DIMENSIONS AND FINAL FIT OF THE BUILDING SHALL BE REVIEWED BY THE ARCHITECT AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
10. ALL BUILDING DIMENSIONS SHOWN ON THE PLANS HAVE BEEN DETERMINED BY THE ARCHITECT. (SEE ARCHITECTURAL PLANS)
11. TO REPLACE MISSING OR MISLOCATED 5/8" DIAMETER ANCHOR BOLTS, USE 5/8" DIAMETER THREADED RODS EMBEDDED MIN. 7" INTO CONCRETE WITH SIMPSON STRONG TIE "SET EPOXY TIE". SPECIAL INSPECTION IS REQUIRED DURING INSTALLATION. FOLLOW MANUFACTURER'S RECOMMENDATIONS, LARR# 25279.
12. SEE 3/S-03 FOR SHEAR WALL SCHEDULE.
13. PLATE WASHERS ARE REQUIRED FOR ALL HOLDOWNS.
14. HOLDOWNS SHALL BE RE-TIGHTENED JUST PRIOR TO COVERING THE WALL FRAMING.
15. IF ADVERSE SOIL CONDITIONS ARE ENCOUNTERED, A SOILS INVESTIGATION REPORT MAY BE REQUIRED.
16. ALL EXCAVATION SHALL BE APPROVED BY SOIL ENGINEER AND OR THE ENGINEERING GEOLOGIST PRIOR TO PLACEMENT OF REINFORCING STEEL. DOCUMENTATION OF THIS APPROVAL SHALL BE LEFT ON SITE FOR THE BUILDING INSPECTOR AT FOUNDATION INSPECTION.
19. CONTINUOUS INSPECTION BY DEPUTY INSPECTOR IS REQUIRED FOR INSTALLING SIMPSON STRONG WALL HOLD-DOWNS.
20. A 2-INCH THICK LAYER OF SAND OVER A VAPOR BARRIER MEETING ASTM 1745 (15MIL) OVER 2 INCHES OF SAND, OVER A 4-INCH THICK OF ½ INCH OR LARGER CLEAN AGGREGATE.

CF-1 30" WIDE X 24" DEEP W/ 3-#4 BARS TOP & BOTTOM U.N.O.
SEE DETAILS

FOOTING LEGEND
NEW FOOTING

WALL LEGEND
INDICATES NEW RETAINING WALL

ADDITIONL RETAINING WALL STANDARD NOTES

1) ALL VERTICAL & HORIZONTAL STEEL SHALL BE CONTINUOUS OR HAVE A MINIMUM 24" LAP SLICE.
2) WALLS SHALL NOT OBSTRUCT OR CONCENTRATE LOT DRAINAGE.
3) ALL STEEL TO MAINTAIN 3" CLEAR OF EARTH.
4) ALL FOOTINGS ARE TO BE PLACED AGAINST UNDISTURBED SOIL.
5) CONCRETE IN FOOTING TO TEST 4500 P.S.I. @ 28 DAYS.
6) CONCRETE BLOCK – GRADE "N" UNITS A.S.T.M. C-90
7) GROUT: 1 PART CEMENT, 3 PARTS SAND, 2 PARTS PEA GRAVEL.
8) MORTAR; 2 PARTS CEMENT, 1 PART LIME PUTTY, 9 PARTS SAND.
9) REINFORCING STEEL MINIMUM GRADE 40.

RETAINING WALL/CMU PILASTER STANDARD NOTES:

1 – CONCRETE BLOCK WALL SHALL CONFORM TO C.R.C. STANDARD NO. R301.2, USE GRADE "N" NORMAL WEIGHT UNITS A.S.T.M. C-90 WITH MAXIMUM LINEAR SHRINKAGE OF 0.06 %. MORTAR SHALL CONFORM TO ASTM C 270 AND ARTICLES 2.1 AND 2.6A OF TMS 602/ACI 530/ASCE 6. GROUT SHALL CONFORM TO C.R.C. R403.1 ROD OR VIBRATE IMMEDIATELY. RE-ROD OR RE-VIBRATE GROUT 10 MINUTES AFTER POURING TO ENSURE SOLID CONSOLIDATION. DEFORMED REINFORCEMENT SHALL CONFORM TO ASTM SPECIFICATION A615-85, GRADE 40 OR 60. ALL REINFORCEMENT SHALL ACCURATELY PLACED AND SECURELY TIED PER CURRENT BUILDING CODE REQUIREMENTS. MASONRY REINFORCEMENT SHALL HAVE LAP OR SPLICE OF 40 BAR DIAMETERS IS REQUIRED.

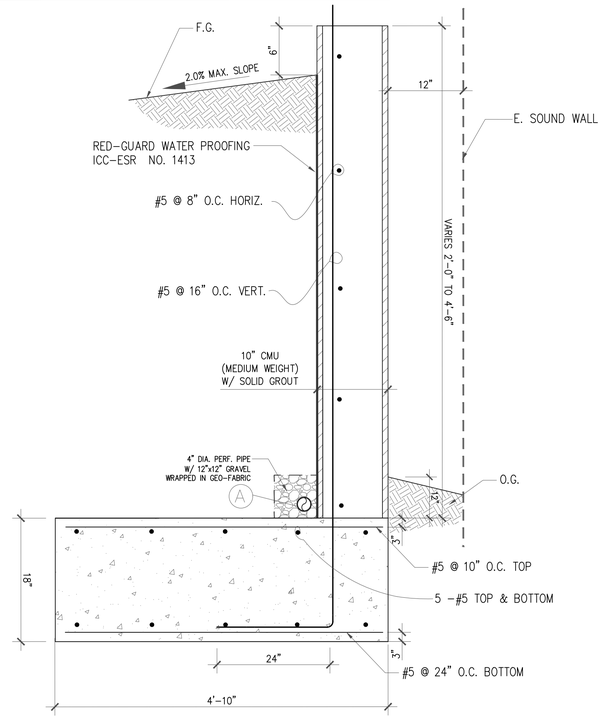
Ⓐ – 4" PERFORATED PIPE WITH MINIMUM SLOPE OF 1 % PERFORATION SHALL BE FACING DOWNWARDS. CONNECT TO EXISTING DRAINAGE TO ENSURE PROPER RELEASE OF MOISTURE BEHIND THE NEW WALL.

2 – ALL CELLS SHALL BE SOLID GROUTED. ALL GROUTING SHALL COMPLY WITH C.R.C. R403.1

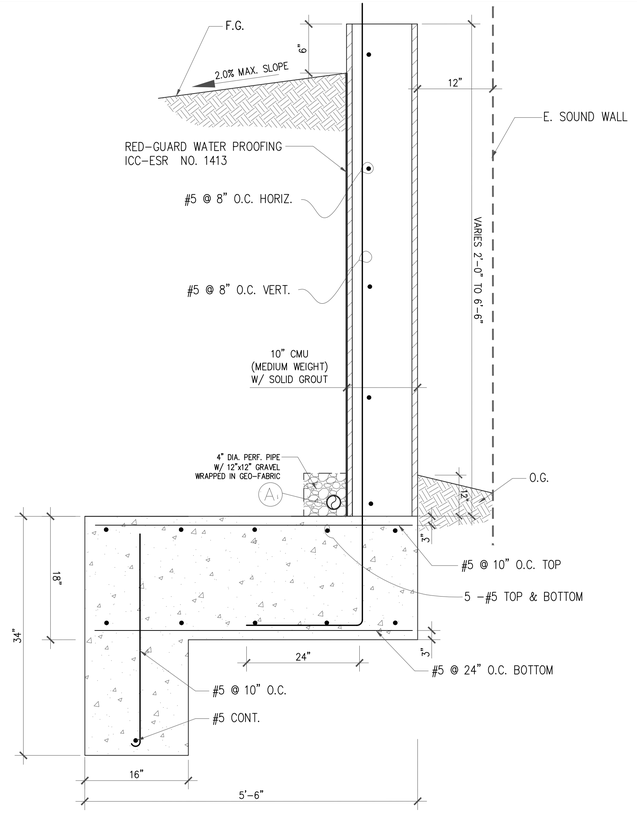
3 – ALL RETAINING WALLS SHALL BE PROVIDED WITH DRAINAGE DEVICES CONSISTING OF DRAINAGE POINT PER PLAN OR ALTERNATELY OMITTED FIRST COURSE HEAD JOINTS, AND ONE CUBIC FOOT PER FOOT 0.75" TO 1.5" CLEAN GRAVEL AT THE RETAINING SIDE OF THE WALL WITH A 4" DIAMETER PVC PIPE WITH PERFORATIONS ORIENTED UP AND A 1.0% SLOPE TO AN APPROVED DOWN DRAIN.

4 – DO NOT BACKFILL RETAINING WALLS FOR A MINIMUM OF TWENTY EIGHT (28) DAYS.

SUBGRADE: FOOTINGS SHALL BEAR UPON UNDISTURBED NATIVE SOIL OR APPROVED COMPACTED FILL. COMPACTED FILL SHALL BE PLACED AND COMPACTED AT LEAST 90% OF THE SOILS MAXIMUM DENSITY PER ASTM D-1557. ORGANIC DELETERIOUS MATERIAL SHALL NOT BE PLACED IN FILL.



4.5' RETAINING WALL DETAIL PER SECTION B-B IN GRADING PLAN



6.5' RETAINING WALL DETAIL PER SECTION B-B IN GRADING PLAN

REVISIONS

OWNER
400 E. 20TH ST.
UPLAND, CA 91784

PROJECT

REGISTERED PROFESSIONAL ENGINEER
GILAMGAO SAMMEL BENJAMIN
No. C 64449
Exp. 06/30/27
CIVIL
OF CALIFORNIA

SAN MINA ENGINEERING, INC.
24310 MOULTON PKWY, STE. O-105
LAGUNA HILLS, CA 92637
TEL. # (949) 446-1417

SM ENGINEERING

PROJECT NO:	
CAD DWG FILE:	
DRAWN BY :	A.B.
CHECKED BY:	E.M.
SCALE:	NOTED
DATE :	10-29-26

SHEET TITLE:

FOUNDATION PLAN & DETAILS

SHEET
S-2

SCALE