GENERAL NOTES

1. NOTES: NOTES PROVIDED ON STRUCTURAL PLANS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES AND SPECIFICATIONS.

2. DIMENSIONS: WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALE DIMENSIONS. CONTRACTOR SHALL CHECK ALL DIMENSIONS AGAINST ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.

3. CODES AND SPECIFICATIONS: ALL WORK AND CONSTRUCTION SHALL COMPLY WITH CBC 2010 AND CITY OF GLENDALE BUILDING CODE 2011.

4. SAFETY: DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.

5. ERECTION: ALL ERECTION PROCEDURES SHALL CONFORM TO OSHA STANDARDS. ANY DEVIATION MUST BE APPROVED BY OSHA PRIOR TO ERECTION.

6. EARTH WORK: THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.

7. OTHER TRADES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS AND CONDITIONS OF THE JOB. ALL DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT OR ENGINEER AND BE RESOLVED BEFORE PROCEEDING WITH WORK.

8. SHOP DRAWINGS: SHOP DRAWINGS REQUIRED BY THE SPECIFICATIONS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER FOR REVIEW PRIOR TO FABRICATION.

9. DETAILS: DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS AND NOTES OF CONSTRUCTION, WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED SUBJECT TO REVIEW BY THE ARCHITECT OR ENGINEER.

10. OPENINGS: SEE ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF ALL FLOOR AND WALL OPENINGS, FLOOR FINISHES, ETC.

11. OTHER TRADES: SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES AND ALL PIPE SLEEVES, ELECTRICAL CONDUITS AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK.

12. SPECIAL DETAILS: PROVIDE OPENINGS AND SUPPORTS, AS REQUIRED PER SPECIAL DETAILS FOR HEATERS, MECHANICAL EQUIPMENT, VENTS, DUCTS, PIPING, ETC. ALL SUSPENDED MECHANICAL EQUIPMENT TO BE STRAPPED OR LATERALLY BRACED.

13. MODIFICATIONS: ALL INFORMATION SHOWN ON THE DRAWINGS, RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY, WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS THEY SHALL BE REPORTED TO THE ARCHITECT OR ENGINEER SO THAT PROPER REVISIONS MAY BE MADE. MODIFICATION OF DETAILS OF CONSTRUCTION SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT AND ENGINEER.

14. OTHER PLANS: ARCHITECTURAL AND MECHANICAL PLANS ARE CONSIDERED AS PART OF THE STRUCTURAL DESIGN DRAWINGS AND ARE TO BE USED TO DEFINE DETAIL CONFIGURATIONS INCLUDING, BUT NOT LIMITED TO RELATIVE LOCATION OF MEMBERS, ELEVATIONS, LOCATION OF ALL OPENINGS, ETC.

15. OTHER ITEMS: SKYLIGHT, STOREFRONT STAIR FABRICATOR, ETC. SHALL SUBMIT STRUCTURAL DESIGN CALCULATIONS AND DRAWINGS FOR ALL FRAMING MEMBERS AND CONNECTIONS(INCLUDING CONNECTIONS TO STRUCTURAL MEMBERS) TO STRUCTURAL ENGINEER AND BUILDING DEPARTMENT FOR THEIR APPROVAL PRIOR TO FABRICATION. CALCULATIONS AND DRAWINGS SHALL COMPLY WITH ALL REQUIREMENTS OF LATEST APPLICABLE BUILDING CODE. THESE DRAWINGS SHALL BE DESIGNED AND SIGNED BY A REGISTERED ENGINEER.

16. MECHANICAL: MECHANICAL EQUIPMENT MUST BE FIRMLY ATTACHED TO THE STRUCTURE, ISOLATORS , FASTENERS, AND ANY OTHER ELEMENTS PROVIDING STABILITY FOR MECHANICAL EQUIPMENT MUST BE APPROVED BY ICBO OR EQUIVALENT TO AT LEAST 0.3x OPERATING WEIGHT OF EQUIPMENT.

17. STAIRS: ALL STAIRS ARE TO BE STEEL STAIRS PER ARCHITECTURAL DRAWINGS EXCEPT WHERE CONCRETE OR WOODEN STAIRS ARE SPECIFICALLY SHOWN. STRUCTURAL CALCULATIONS AND DRAWINGS SIGNED BY A LICENSED CIVIL ENGINEER IN THE STATE ARE TO BE SUBMITTED TO THE ENGINEER. DRAWINGS ARE TO INCLUDE CONNECTIONS TO THE STRUCTURE. ENGINEER WILL APPROVE THE DRAWINGS AS TO THEIR COMPLIANCE WITH THE INTENT OF THE STRUCTURAL DRAWINGS AND SPECIFICATIONS.

18. SHORING: IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING. BRACING AND FORMWORK, ETC., AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY DURING THE CONSTRUCTION OF THIS BUILDING. POST-TENSIONED OR REINFORCED CONCRETE SLABS MAY CARRY SHORING LOADS EQUIVALENT TO THEIR DESIGN SUPERIMPOSED LOADS INCLUDE LIVE LOAD, PARTITION LOAD, AND ANY OTHER LOAD NOT IN PLACE AT TIME OF SHORING.

19. BACKFILL: BACKFILL AROUND THE EXTERIOR PERIMETER OF WALLS SHALL NOT BE PLACED UNTIL AFTER THE WALLS ARE SUPPORTED BY THE COMPLETION OF INTERIOR FLOOR SYSTEM. DO NOT PROCEED WITH BACKFILL UNTIL 7 DAYS (MINIMUM) AFTER THE COMPLETION OF INTERIOR FLOOR SYSTEMS UNLESS WALLS ARE ADEQUATELY BRACED. BACKFILL SHALL NOT BE PLACED UNTIL AFTER THE COMPLETION AND INSPECTION OF DAMP PROOFING.

20. BRACING: DO ALL TEMPORARY BRACING AS REQUIRED TO HOLD THE VARIOUS ELEMENTS IN PLACE UNTIL FINAL SUPPORT IS SECURELY ANCHORED.

21. THE DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES, INCLUDING, BUT NOT LIMITED TO BRACING AND SHORING. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES. ANY SUPPORT SERVICES PERFORMED BY THE ENGINEER DURING THE CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES. THESE SUPPORT SERVICES PERFORMED BY THE ENGINEER, WHETHER OF MATERIAL OF 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 DOCUMENTS, BUT DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.

22. WHERE CONSTRUCTION MATERIALS ARE TEMPORARILY STORED ON ROOF OR FLOOR FRAMING, THEY SHALL BE DISTRIBUTED SO THAT THE LOAD DOES NOT EXCEED DESIGN LIVE LOAD. ADEQUATE SHORING AND/OR BRACING SHALL BE PROVIDED WHERE STRUCTURAL MEMBERS HAVE NOT ATTAINED DESIGN STRENGTH.

23. ASTM DESIGNATION AND ALL STANDARDS REFER TO LATEST AMENDMENTS.

REINFORCING STEEL

1. GENERAL: DESIGN, DETAILING, FABRICATION, PLACEMENT AND SPECIAL INSPECTION SHALL BE IN ACCORDANCE WITH ACI CODES AND MANUALS 318-19 AND CBC 2013 EDITION. STEEL REINFORCEMENT SHALL BE NEW DEFORMED BILLET STEEL, MEETING ASTM STANDARD "A" 615-68, "A" 706; GRADE 60 KSI FOR #4 AND LARGER BARS, EXCEPT AS NOTED; GRADE 40 KSI FOR #3 AND SMALLER BARS. SHOP DRAWINGS SHALL BE MARKED ACCORDINGLY AND SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. GRADE 60 KSI REBARS SHALL NOT BE BENT IN FIELD AFTER PLACING.

2. LAPS: ALL TENSIONS SPLICES ARE ACCORDING TO ACI 318-19, CLASS C, OR 36 TIMES BAR DIAMETERS AND ALL COMPRESSION SPLICES 30 TIMES DIAMETERS (U.N.O.).

3. WELDING: TACK WELDING OF REBARS IS NOT PERMITTED UNLESS CALLED FOR OR APPROVED BY THE ENGINEER.

4. REINFORCING: ALL REINFORCING SHALL BE SECURELY TIED AND BRACED IN PLACE PRIOR TO POURING CONCRETE OR GROUTING MASONRY.

5. WIRE FABRIC: WELDED WIRE FABRIC (WWM OR WWF) SHALL CONFORM TO ASTM A-82 AND A-185. LAP 1 1/2 SPACES OR 9" MINIMUM.

FOUNDATIONS & RETAINING WALLS

1. SOILS REPORT: THE FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS IN THE REPORT OF GEOTECHNICAL INVESTIGATION "PROPOSED APARTMENT BUILDING LOT 7, BLK J, GLENDALE VALLEY VIEW TRACT, 426 IVY STREET, GLENDALE, CALIFORNIA" NO. 21-459 PREPARED BY GEOQUETE, INC., DBA ADVANCED GEOTECHNIQUES, AND DATED ON OCTOBER 12, 2021, UNLESS OTHERWISE INDICATED. FOUNDATION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THIS REPORT. THE REPORT IS PART OF THIS PLANS AND SHOULD BE KEPT ON THE JOB SITE AT ALL TIMES.

2. INSPECTION: FOUNDATION EXCAVATION SHALL BE EXAMINED AND CERTIFIED BY THE SOILS ENGINEER OR HIS REPRESENTATIVE PRIOR TO THE PLACEMENT OF ANY REINFORCING STEEL OR CONCRETE.

3. BEARING: THE FOUNDATION DESIGN IS BASED ON A BEARING CAPACITY OF (2,000 PSF), AND ALL FOOTINGS SHALL BE FOUNDED AT LEAST 24" BELOW LOWEST ADJACENT GRADE OR FINISH FLOOR, WHICHEVER IS LOWER.

4. BASE: ALL FOOTINGS SHALL BE FOUNDED ON A COMPACTED FILL APROVED BY SOIL ENGINEER OR UNDISTURBED NATURAL GRADE.

5. COMPACTION: MATERIAL FOR FILLING AND BACKFILLING SHALL CONSIST OF THE EXCAVATED MATERIAL AND/OR IMPORTED BORROW AND SHALL BE FREE OF ORGANIC MATTER, TRASH, LUMBER OR OTHER DEBRIS. BACKFILL AROUND THE EXTERIOR WALLS SHALL NOT BE PLACED UNTIL AFTER THE WALLS ARE SUPPORTED BY THE COMPLETION OF INTERIOR FLOOR SYSTEMS. DO NOT PROCEED WITH BACKFILL UNTIL 7 DAYS MINIMUM AFTER THE COMPLETION OF INTERIOR FLOOR SYSTEMS UNLESS WALLS ARE ADEQUATELY BRACED. BACKFILL SHALL NOT BE PLACED UNTIL AFTER COMPLETION AND INSPECTION OF DAMP PROOFING. FILL AND BACKFILL SHALL BE DEPOSITED IN LAYERS NOT TO EXCEED 8 INCHES THICK PROPERLY MOISTENED TO APPROXIMATE OPTIMUM REQUIREMENTS AND THOROUGHLY ROLLED OR COMPACTED WITH APPROVED EQUIPMENT IN SUCH A MANNER AND EXTENT AS TO PRODUCE A RELATIVE COMPACTION OF 90% OF MAXIMUM POSSIBLE DENSITY FOR OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D15557-54 METHOD OF COMPACTION. HAND TAMPERS SHALL WEIGHT AT LEAST 50 LBS. EACH SHALL HAVE A FACE AREA NOT IN EXCESS OF 64 SQUARE INCHES. HAND TAMPER MAY BE OPERATED EITHER MANUALLY OR MECHANICALLY AND SHALL BE USED WHERE LARGER POWER DRIVEN COMPACTION EQUIPMENT CANNOT BE USED. ALL COMPACTION SHALL CONFORM TO METHODS DESCRIBED IN THE SOIL REPORT.

6. GRADE SLAB: GRADE SLAB SHALL BE SUPPORTED ON COMPACTED GRADE.

7. BACKFILL: BACKFILLING BEHIND A RETAINING WALL SHALL NOT BE PLACED UNTIL THE CONCRETE OR MASONRY OBTAINS ITS DESIGNED STRENGTH. SOILS SHALL BE PLACED AND COMPACTED IN EQUAL LIFTS ON BOTH SIDES OF THE WALL UNTIL THE LOWER ELEVATION IS REACHED. USE LIGHTWEIGHT TAMPERS BEHIND WALLS AT HIGHER ELEVATION.

8. WALL SUPPORT: RETAINING WALLS HAVING STRUCTURAL SUPPORT AT TOP OF WALL SHALL NOT BE BACKFILLED UNTIL STRUCTURAL SLAB HAS CURED FOR 7 DAYS PERIOD OR PLYWOOD SHEATHING OVER WOOD JOISTS HAS BEEN STRUCTURALLY NAILED.

9. LOADING: NOTIFY ENGINEER IF SUPERIMPOSED LOADING FROM FOUNDATION, ETC. EXISTS ON ADJACENT PROPERTY WITHIN A DISTANCE DEFINED BY A 45° IMAGINARY LINE PROJECTED UPWARD FROM TOP OF FOOTING.

10. WATER PROOFING: SEE ARCHITECTURAL AND/OR CIVIL DRAWINGS FOR WATERPROOFING, DAMP PROOFING AND BACKFILLING DRAINAGE DETAILS.

11. SOILS ENGINEER SHALL REVIEW AND SIGN SITE/PLOT PLAN AND FOUNDATIONS PLANS DURING REQUIRED FIELD INSPECTIONS TO AFFIRM CORRECTNESS AND CONSISTENCY WITH THE RECOMMENDED COMMENTS OF THE SOILS REPORT, AS AN BUILT RECORD.

12. FOR SIZE AND SPACING OF ANCHOR BOLTS, SEE SHEAR WALL SCHEDULE AND/OR FOUNDATION PLAN.

13. SOIL COMPACTION REPORT SHALL BE PROVIDED TO THE BUILDING INSPECTOR AT THE JOB SITE PRIOR TO PLACEMENT OF CONCRETE FOR THE FOUNDATION.

CONCRETE

1. STRENGTH & QUALITY: CONCRETE STRENGTH AT 28 DAYS SHALL BE MINIMUM $f'c=2500$ PSI OR AS INDICATED BELOW:

CONCRETE QUALITY:

CONCRETE USE	STRENGTH AGG.
EXTERIOR WALKS AND CURBS	2000 @ 28 DAYS
GRADE SLAB AND FOUNDATION	2500 @ 28 DAYS
COLUMNS AND SLAB	4000 @ 28 DAYS
SUSPENDED POST-TENSIONED	3500 @ 7 DAYS
GRADE BEAMS AND PILES	3000 @ 28 DAYS

2. CEMENT: ALL CEMENT SHALL CONFORM TO ASTM C-150, TYPE II, UNLESS ALKALINE SOILS ARE PRESENT.

3. AGGREGATES: ALL CONCRETE UNLESS OTHERWISE NOTED SHALL BE REGULAR WEIGHT HARD ROCK TYPE (150 LBS/CU.FT.). AGGREGATES SHALL CONFOFM TO ASTM C-33 WITH PROVEN SHRINKAGE CHARACTERISTICS OF LESS THAN .005.

4. CURING: CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A MINIMUM OF FIVE (5) DAYS AFTER PLACEMENT. APPROVED CURING COMPOUNDS MAY BE USED IN LIEU OF MOST CURING. STRENGTH TEST OF CONCRETE SHALL BE REQUIRED AS PER SECTION 1913.9 OF C.B.C. PER ACI-318: 5.11-5.13 PLACEMENT OF CONCRETE AND REINFORCING STEEL SHALL BE INSPECTED BY A QUALIFIED SPECIAL INSPECTOR FROM AN AGENCY APPROVED BY THE BUILDING DEPARTMENT. KEYED CONSTRUCTION JOINTS SHALL BE USED IN ALL CASES. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND ALL LAITANCE SHALL BE REMOVED. ALL VERTICAL JOINTS SHALL BE THOROUGHLY WETTED AND SLUSHED WITH A COAT OF NEAT CEMENT IMMEDIATELY BEFORE PLACING NEW CONCRETE.

5. SLEEVES: SLEEVES NOT SPECIFICALLY SHOWN ON THE DRAWING SHALL BE LOCATED BY THE TRADES INVOLVED AND SHALL BE REVIEWED BY THE ENGINEER BEFORE CONCRETE IS POURED. CHECK WITH ALL TRADES TO INSURE PROPER PLACEMENT OF OPENING, SLEEVES, CURBS, CONDUITS, ETC., RELATING TO THE WORK.

6. INSERTS: ALL ITEMS TO BE CAST IN CONCRETE SUCH AS REINFORCING BARS, DOWELS, BOLTS, ANCHORS, PIPES, SLEEVES, ETC., SHALL BE SECURELY POSITIONED IN THE FORMS BEFORE PLACING THE CONCRETE.

7. SEGREGATION OF AGGREGATES: CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALLS AND COLUMNS) SO AS TO CAUSE SEGREGATION OF AGGREGATES, USE HOPPERS, CHUTES OR TRUNKS OF VARYING LENGTH SO THAT THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED FIVE FEET, AND A SUFFICIENT NUMBER SHALL BE USED TO ENSURE THE CONCRETE BEING KEPT LEVEL AT ALL TIMES.

8. DOWELING: ALL WALLS AND COLUMNS SHALL BE DOWELED INTO FOOTINGS, WALLS, BEAMS OR SLABS WITH BARS OF THE SAME SIZE AND SPACING AS THE WALL BARS EXCEPT WHERE SPECIFICALLY INDICATED OTHERWISE WITH 30 BAR DIAMETER LAP.

9. SPLICES: SPLICES IN CONTINUOUS REINFORCEMENT AS USED IN WALL, GRADE BEAMS, ETC., SHALL HAVE A LAP OF 30 TIMES BAR DIAMETERS BUT NOT LESS THAN 12 INCHES. THE SPLICES IN ADJACENT BARS SHALL NOT BE LESS THAN 5'-0" APART. VERTICAL WALL BARS SHALL BE SPLICED AT OR NEAR FLOOR LINES. SPLICE BARS IN SPANDRELS, WALLS, BEAMS, GRADE BEAMS, ETC., AS FOLLOWS: TOP BARS AT CENTER LINE OF SPAN, BOTTOM BARS AT THE SUPPORT: ALL REINFORCING STEEL SHALL BE SECURELY WIRED AND PROPERLY SUPPORTED ABOVE GROUND AND AWAY FROM THE FORMS.

10. CONSTRUCTION JOINTS: SHALL HAVE ENTIRE SURFACE REMOVED TO EXPOSE CLEAN AGGREGATE SOLIDLY EMBEDDED. THE CONTRACTOR SHALL OBTAIN THE ENGINEER'S APPROVAL OF CONSTRUCTION JOINT LOCATION OTHER THAN DETAILED OR SPECIFIED IN ALL SLABS, BEAMS AND SHEAR WALLS.

11. PIPES: PIPES OTHER THAN ELECTRICAL CONDUITS SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER.

12. INSPECTION: THE FOLLOWING SPECIAL INSPECTIONS SHALL BE PERFORMED WHEN THE CONCRETE DESIGN STRENGTH IS GREATER THAN $f'c = 2000$ PSI;
a. REINFORCEMENT b. CONCRETE PLACING c. CONCRETE STRENGTH

13. DRYPACK: DRYPACK SHALL BE COMPOSED OF ONE PART PORTLAND CEMENT TO NOT MORE THAN THREE PARTS SAND. DRYPACKING OR NON-SHRINK GROUTING SHALL HAVE MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 2500 PSI @ 7 DAYS.

14. MISC. ITEMS: REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR MISCELLANEOUS ITEMS TO BE CAST INTO CONCRETE AND MASONRY. DO NOT CUT OR DEFORM PRIMARY REINFORCING BARS WITHOUT CONSENT OF THE ENGINEER.

15. FINISH: SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR SCORING AND FINISHING FOR CONCRETE SLABS AND STRUCTURAL CONCRETE.

16. BOLTS: BOLTS EMBEDDED IN CONCRETE TO BE ASTM A-307 U.N.O.

17. VIBRATION: VIBRATION OF CONCRETE SHALL BE IN ACCORDANCE WITH THE GENERAL PROVISIONS OUTLINED IN PORTLAND CEMENT ASSOCIATION SPECIFICATION ST26.

18. LIGHT WEIGHT CONCRETE: LIGHT WEIGHT CONCRETE USED WHERE INDICATED SHALL HAVE A MAXIMUM DENSITY OF 112 LBS/CU.FT. AGGREGATES SHALL BE EXPANDED SHALE TYPE CONFORMING TO ASTM C-330. PLACEMENT OF CONCRETE SHALL BE IN CONFORMANCE WITH THE ACI SPEC.301.

19. REBAR COVER: MINIMUM COVERAGE SHALL BE AS FOLLOWS:
3" WHERE CONCRETE IS DEPOSITED DIRECTLY AGAINST GROUND, EXCEPT SLABS ON GRADE.
2" WHERE CONCRETE IS EXPOSED TO GROUND BUT PLACED IN FORMS.
1 1/2" FOR MAIN BARS IN BEAMS, TIED COLUMNS AND TIED BARS IN WALLS.
1 1/2" FOR TIES IN COLUMNS.
1 1/2" FOR WALL BARS TO WEATHER SURFACE: 1" TO PROTECTED SURFACES.
1 1/2" FOR BARS IN SLABS ON GRADE.
1" FOR BARS IN SLABS.

20. BOLTS IN CONCRETE OR CONCRETE BLOCK: LENGTH OF EMBEDMENT OF ANCHOR BOLTS IN MASONRY OR CONCRETE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED.

SIZE OF BOLT	LENGTH OF EMBEDMENT
1/2" TO 5/8"	4"
5/8" TO 3/4"	5"
3/4"TO 7/8"	6"
1"	7"
1-1/	8"

DRILLED AND DRYPACKED OR GROUTED BOLTS SHALL HAVE 1" CLEAR FROM BOLT TO EDGE OF HOLE.

STRUCTURAL STEEL

1. STEEL: ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A-36 AND SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, LATEST EDITION.

2. PIPE COLUMNS: PIPE COLUMNS SHALL CONFORM TO ASTM A-53, GRADE B U.N.O. SULFUR CONTENT SHALL BE LESS THAN OR EQUAL TO 0,05%.

3. TUBES: STEEL TUBES SHALL CONFORM TO ASTM A-501, U.N.O. SULFUR CONTENT SHALL BE LESS THAN OR EQUAL TO 0.05%.

4. BOLTS: BOLTS SHALL CONFORM TO ASTM A-325, U.N.O.

5. SHOP DRAWINGS: STRUCTURAL STEEL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION AND ERECTION.

6. PROTECTION: HOT DIP GALVANIZE OR PROVIDE 3" MINIMUM CONCRETE COVER AROUND ALL STRUCTURAL STEEL BELOW GRADE. STRUCTURAL STEEL EMBEDDED IN CONCRETE OR MASONRY SHALL BE UNPAINTED.

7. WELDING: ALL WELDING IS TO COMPLY WITH AWS SPECIFICATION AND IS TO BE DONE BY WELDERS CERTIFIED FOR THE TYPE OF WELDING TO BE PERFORMED AS REQUIRED BY THE DEPARTMENT OF BUILDING AND SAFETY.

8. ALL WELDING IS TO BE DONE BY ELECTRIC ARC PROCESS WITH E70XX ELECTRODES.

9. ALL WELDING SHALL BE DONE IN THE SHOP OF A LICENSED FABRICATOR OR WITH CONTINUOUS INSPECTION BY A REGISTERED DEPUTY BUILDING INSPECTOR, U.N.O.

10. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL BUTT WELDS SHALL BE STANDARD PREQUALIFIED WELDS. IF OTHER JOINT FORMS ARE USED TESTING AND QUALIFICATION OF JOINTS SHALL BE IN ACCORDANCE WITH AWS STANDARD QUALIFICATIONS PROCEDURE.

LUMBER & PLYWOOD

1. PRESSURE TREATED WOOD: ALL WOOD BEARING ON CONCRETE OR MASONRY SHALL BE PRESSURE TREATED DOUGLAS FIR AND CONFORM TO C.B.C. SEC. 2304.

SHORING MONITORING PROGRAM

1) THE SURVEY DATA WILL BE USED BY THE SHORING CONTRACTOR TO MAINTAIN ALIGNMENT OF THE SHORING FACE RELATIVE TO BACK FACE OF THE NEW STRUCTURE WALL.

2) A COMPLETE AND ACCURATE RECORD OF ALL SOLDIER PILE LOCATIONS, DEPTHS, CONCRETE STRENGTHS, GROUT STRENGTH, QUANTITY OF CONCRETE PER PILE, QUANTITY OF SLURRY PER PILE, SHALL BE MAINTAINED BY THE SPECIAL INSPECTOR AND GEOTECHNICAL ENGINEER. THE SHORING ENGINEER SHALL BE NOTIFIED OF ANY UNUSUAL CONDITION ENCOUNTERED DURING INSTALLATION. ALL MONITORING RECORDS MUST BE KEPT AT THE JOB SITE AND BE AVAILABLE TO BUILDING OFFICIAL ANYTIME.

3) MONITORING POINT SHALL BE ESTABLISHED AT THE TOP AND AT THE ANCHOR HEADS (IF ANY) OF EACH SOLDIER PILE AND AT INTERMEDIATE INTERVALS AS CONSIDERED APPROPRIATE BY THE GEOTECHNICAL ENGINEER. CONTROL POINTS SHALL BE ESTABLISHED OUTSIDE THE AREA OF INFLUENCE OF THE SHORING SYSTEM TO ENSURE THE ACCURACY OF THE MONITORING READINGS. MONITORING READING SHALL BE SUBMITTED TO SHORING ENGINEER, ENGINEER IN RESPONSIBLE CHANGE, AND BUILDING OFFICIALS WITHIN 3 WORKING DAYS AFTER THEY ARE CONDUCTED. MONITORING READINGS SHALL BE ACCURATE TO WITHIN 0.01 FEET. RESULTS ARE TO BE SUBMITTED IN TABULAR FORM SHOWING AT LEAST THE INTITIAL DATE OF MONITORING AND READING, CURRENT MONITORING DATE AND READING AND DIFFERENCE BETWEEN THE TWO READINGS.

4) IF THE TOTAL CUMMULATIVE HORIZONTAL OR VERTICAL MOVEMENT (FROM START OF CONSTRUCTION) OF THE ADJACENT EXISTING BUILDINGS REACHES 1/2" OR SHORING PILES REACHES 1" ALL EXCAVATION ACTIVITIES SHALL BE SUSPENDED. THE GEOTECHNICAL AND SHORING ENGINEER SHALL DETERMINE THE CAUSE OF MOVEMENT, IF ANY, AND RECOMMEND CORRECTIVE MEASURES, IF NECESSARY, BEFORE EXCAVATION CONTINUES.

5) IF THE TOTAL CUMMULATIVE HORIZONTAL OR VERTICAL MOVEMENT (FROM START OF CONSTRUCTION) OF THE EXISTING BUILDINGS REACHES 3/4" OR SHORING PILES REACHES 1-1/2" ALL EXCAVATION ACTIVITIES SHALL BE SUSPENDED UNTIL THE CAUSES, IF ANY, CAN BE DETERMINED. SUPPLEMENTAL SHORING SHALL BE DEVISED TO ELIMINATE FURTHER MOVEMENT AND BUILDING OFFICIAL SHALL REVIEW AND APPROVE THE SUPPLEMENTAL SHORING BEFORE EXCAVATION CONTINUES.

6) THE PERIODIC BASIS OF SHORING MONITORING, AS A MINUMUM, SHALL BE AS FOLLOWS:
A. INTITIAL MONITORING SHALL BE PERFORMED PRIOR TO ANY EXCAVATION.
B. ONCE EXCAVATION HAS BEGIN, THE PERIODIC READING SHALL BE TAKEN WEEKLY UNTIL EXCAVATION REACHED THE ESTIMATED SUBGRADE ELEVATION AND THE PERMANENT FOUNDATION IS COMPLETE.
C. IF FOR 3 (THREE) CONSEQUTIVE WEEKS THE PERFORMANCE OF THE SHORING IS WITHIN ESTABLISHED GUIDELINES, SHORING ENGINEER MAY PERMIT THE PERIODIC READINGS TO BE BI-WEEKLY.
D. WHERE THE BUILDING HAS BEEN DESIGNED TO RESIST LATERAL EARTH PRESSURES, THE PERIODIC MONITORING OF THE SOLDIER PILES AND ADJACENT STRUCTURE CAN BE DISCONTINUED ONCE THE SLAB-ON-GRADE; SUBTERRANEAN PORTION OF THE STRUCTURE; AND CONCRETE DECK ARE POURED AND CURED FOR 28 DAYS AND APPROVAL BY THE SHORING ENGINEER, GEOTECHNICAL ENGINEER AND BUILDING OFFICIALS.
E. ADDITIONAL READINGS SHALL BE TAKEN WHEN REQUESTED BY THE SPECIAL INSPECTOR, SHORING ENGINEER, GEOTECHNICAL ENGINEER OR BUILDING OFFICIAL.

City of Glendale

633 E. Broadway Room 101. Glendale, CA 91206
BUILDING & SAFETY DIVISION (818) 548-3200 (818) 548-3215 FAX
http://www.ci.glendale.ca.us/planning/building_and_safety_division.asp

STRUCTURAL OBSERVATION PROGRAM FORM
AND DESIGNATION OF THE
STRUCTURAL OBSERVER

PROJECT ADDRESS 426 Ivy Street, Glendale, CA 91204 PERMIT APPL NO.: ____

Description of work: Shoring for a New 2-Story 4-Unit Apartment Building

Owner: ____ Architect: ARPA Technology Group Engineer: Armen Martirossyan

STRUCTURAL OBSERVATION
(only checked items are required)

Firm or Individual to be responsible for the **Structural Observation:**

Name: ARPA Technology Group

Phone: (818) 434-1708 Calif. Registration: C 64223

FOUNDATION	WALL	FRAME	DIAPHRAGM
☐ Footing, Stem Walls, Piers	☐ Concrete	☐ Steel Moment Frame	☐ Concrete
☐ Mat Foundation	☐ Masonry	☐ Steel Braced Frame	☐ Steel Deck
■ Caisson, Piles, Grade Beams	☐ Wood	☐ Concrete Moment Frame	☐ Wood
☐ Stepp'g/Retain'g Foundation Hillside Special Anchors	☐ Others:	☐ Masonry Wall Frame	☐ Others:
☐ Others:		■ Others Shoring I-BEAMS	

DECLARATION BY OWNER
I, the Owner of the project, declare that the above listed firm or individual is hired **by me** to be the **Structural** Observer.

Signature ____ Date ____

DECLARATION BY ARCHITECT OR ENGINEER OF RECORD (required if the **Structural** Observer is different from the Architect or Engineer of Record)

I, the Architect or Engineer of record for the project, declare that the above listed firm or individual is designated by me to be responsible for the **Structural Observation**

Signature ____ License No. ____ Date ____

STRUCTURAL OBSERVATION NOTES:

(1) STRUCTURAL OBSERVATION IS REQUIRED FOR THE STRUCTURAL SYSTEM IN ACCORDANCE WITH THE INFORMATION BULLETIN NO. P/BC 2002-024 STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION AT THE CONSTRUCTION SITE OF THE ELEMENTS AND CONNECTIONS OF THE STRUCTURAL SYSTEM AT SIGNIFICANT CONSTRUCTION STAGES AND THE COMPLETE STRUCTURE FOR GENERAL CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED OF THE BUILDING INSPECTOR OR THE DEPUTY INSPECTOR.

(2) THE OWNER SHALL EMPLOY A STATE OF CALIFORNIA REGISTERED CIVIL OR STRUCTURAL ENGINEER OR LICENSED ARCHITECT TO PERFORM THE STRUCTURAL OBSERVATION. THE DEPARTMENT OF BUILDING AND SAFETY (LADBS) RECOMMENDS THE USE OF THE ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN WHO ARE INDEPENDENT OF THE CONTRACTOR.

(3) THE STRUCTURAL OBSERVER SHALL PROVIDE EVIDENCE OF EMPLOYMENT BY THE OWNER OR THE OWNER'S REPRESENTATIVE. A LETTER FROM THE OWNER, THE OWNER'S REPRESENTATIVE, OR A COPY OF THE AGREEMENT FOR SERVICES SHALL BE SENT TO THE BUILDING INSPECTOR BEFORE THE FIRST SITE VISIT.

(4) THE OWNER OR OWNER'S REPRESENTATIVE SHALL COORDINATE AND CALL FOR A MEETING BETWEEN THE ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN, STRUCTURAL OBSERVER, CONTRACTOR, AFFECTED SUBCONTRACTORS AND DEPUTY INSPECTORS. THE PURPOSE OF THE MEETING SHALL BE TO IDENTIFY THE MAJOR STRUCTURAL ELEMENTS AND CONNECTIONS THAT AFFECT THE VERTICAL AND LATERAL LOAD SYSTEMS OF THE STRUCTURE AND TO REVIEW SCHEDULING OF THE REQUIRED OBSERVATIONS. A RECORD OF THE MEETING SHALL BE INCLUDED IN THE FIRST OBSERVATION REPORT SUBMITTED TO THE BUILDING INSPECTOR.

(5) THE STRUCTURAL OBSERVER SHALL PERFORM SITE VISITS AT THOSE STEPS IN THE PROGRESS OF THE WORK THAT ALLOW FOR CORRECTION OF DEFICIENCIES WITHOUT SUBSTANTIAL EFFORT OR UNCOVERING OF THE WORK INVOLVED. AT A MINIMUM, THE LISTED SIGNIFICANT CONSTRUCTION STAGES ON THE FOLLOWING STRUCTURAL OBSERVATION/SIGNIFICANT CONSTRUCTION STAGES TABLE REQUIRE A SITE VISIT AND AN OBSERVATION REPORT FROM THE STRUCTURAL OBSERVER.

(6) THE STRUCTURAL OBSERVER SHALL PREPARE A REPORT OF THE STRUCTURAL OBSERVATION REPORT FORM IN/FORM.08 (PART 1) FOR EACH SIGNIFICANT STAGE OF CONSTRUCTION OBSERVED. THE ORIGINAL OF THE STRUCTURAL OBSERVATION REPORT SHALL BE SENT TO THE BUILDING INSPECTOR'S OFFICE AND SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER. ONE COPY OF THE OBSERVATION REPORT SHALL BE ATTACHED TO THE APPROVED PLANS. THE COPY ATTACHED TO THE PLANS SHALL BE SIGNED AND SEALED (WET STAMP) BY THE RESPONSIBLE STRUCTURAL OBSERVER OR THEIR DESIGNEE. COPIES OF THE REPORT SHALL ALSO BE GIVEN TO THE OWNER, CONTRACTOR, AND DEPUTY INSPECTOR. ANY DEFICIENCY NOTED ON THE OBSERVATION REPORT WILL BECOME THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER OF RECORD TO VERIFY ITS COMPLETION BY HIM (HER), OR BY A REGISTERED DEPUTY INSPECTOR AT THE DISCRETION OF THE STRUCTURAL OBSERVER.

(7) A FINAL OBSERVATION REPORT AND THAT OF THE REGISTERED DEPUTY INSPECTOR MUST BE SUBMITTED WHICH SHOWS THAT ALL OBSERVED DEFICIENCIES WERE RESOLVED AND STRUCTURAL SYSTEM GENERALLY CONFORMS WITH THE APPROVED PLANS AND SPECIFICATIONS. THE DEPARTMENT OF BUILDING AND SAFETY (LADBS) WILL NOT ACCEPT THE STRUCTURAL WORK WITHOUT THIS FINAL OBSERVATION REPORT AND THAT OF THE REGISTERED DEPUTY INSPECTOR(WHEN PROVIDED) AND THE CORRECTION OF SPECIFIC DEFICIENCIES NOTED DURING NORMAL BUILDING INSPECTION.

(8) THE STRUCTURAL OBSERVER SHALL PROVIDE THE ORIGINAL STAMPED AND SIGNED STRUCTURAL OBSERVATION REPORT TO THE CITY OF LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY BUILDING INSPECTOR.

(9) WHEN THE OWNER ELECTS TO CHANGE THE STRUCTURAL OBSERVER OF RECORD, THE OWNER SHALL:
A) NOTIFY THE BUILDING INSPECTOR IN WRITING BEFORE THE NEXT INSPECTION BY SUBMITTING COMPLETED "STRUCTURAL OBSERVATION PROGRAM AND DESIGNATION OF THE STRUCTURAL OBSERVER" FORM IN/FORM.08 (PART 2)
B) CALL AN ADDITIONAL PRECONSTRUCTION MEETING, AND
C) FURNISH THE REPLACEMENT STRUCTURAL OBSERVER WITH A COPY OF ALL PREVIOUS OBSERVATION REPORTS.
THE REPLACEMENT STRUCTURAL OBSERVER SHALL APPROVE THE CORRECTION OF THE ORIGINAL OBSERVED DEFICIENCIES UNLESS OTHERWISE APPROVED BY PLAN CHECK SUPERVISION. THE POLICY OF THE DEPARTMENT SHALL BE TO CORRECT ANY PROPERTY NOTED DEFICIENCIES WITHOUT CONSIDERATION OF THEIR SOURCE.

(10) THE ENGINEER OR ARCHITECT OF RECORD SHALL DEVELOP ALL CHANGES RELATING TO THE STRUCTURAL SYSTEMS. THE BUILDING DEPARTMENT SHALL REVIEW AND APPROVE ALL CHANGES TO THE APPROVED PLANS AND SPECIFICATIONS.

CONTRACTOR TO VERIFY ALL DIMENSIONS, CONDITIONS, ETC., PERTAINING TO THE WORK AT THE SITE BEFORE PROCEEDING WITH THE WORK

PRINTED ON 10-18-2023

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REVISIONS	BY

LICENSED PROFESSIONAL ENGINEER ARMEN MARTIROSSYAN C64223 CIVIL STATE OF CALIFORNIA

PROJECT OWNER:

PROJECT ADDRESS:
426 IVY STREET, GLENDALE, CA 91204

PROJECT TITLE:
SHORING FOR 2-STORY
4-UNIT APARTMENT BUILDING

JOB NO.:	2019-112
DRAWN BY:	A.H.
CHECKED BY:	A.M.
DATE:	10-18-2023
SHEET TITLE:	GENERAL NOTES

SHEET NUMBER
SH-1
SHEETS OF

SEISMIC DESIGN CONSIDERATIONS

Based on soil properties, the site class is D. Ground motions are expressed as a fraction of the acceleration due to gravity (g). The values of ground motion are determined from latitude and longitude (34.14355 , -118. 2621) utilizing the USGS Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration 7-16 Standard Ground motion values are

S_s	2.157	MCER ground motion. (for 0.2 second period)
S_1	0.731	MCER ground motion. (for 1.0s period)
S_{MS}	2.157	Site-modified spectral acceleration value
S_{M1}	1.24	Site-modified spectral acceleration value $Sm_1 = F_V \times S_1$
S_{DS}	1.438	Numeric seismic design value at 0.2 second SA
S_{D1}	0.83	Numeric seismic design value at 1.0 second SA $SD_1=2/3SM_1$
Fa	1	Site amplification factor at 0.2 second
F_V	1.7	Site amplification factor at 1.0 second
PGA	0.93	MCEG peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	1.023	Site modified peak ground acceleration
TL	8	Long-period transition period in seconds
SsRT	2.157	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.426	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.415	Factored deterministic acceleration value. (0.2 second)
S1RT	0.777	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.872	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.731	Factored deterministic acceleration value. (1.0 second)
PGAd	0.963	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.889	Mapped value of the risk coefficient at short periods
C_{R1}	0.891	Mapped value of the risk coefficient at a period of 1 s

SITE LIQUEFACTION CONSIDERATIONS

During the course of our field investigation, no water was found in our borings drilled to a maximum depth of about 18 feet. Considering that the subject site occurs outside the areas of historic liquefaction occurrence in accordance with California Seismic Hazard Zones Map (Burbank Quadrangle 1999) and that the top zone of the site (within the foundation stress influence zone) consists of relatively dense sand soils,

it is our opinion that the chances of structural damages resulting from soil liquefaction is remote at the subject site.

EVALUATION AND RECOMMENDATIONS

GENERAL

Based on the geotechnical engineering data derived from this investigation, the site is considered to be suitable for the proposed development. Conventional spread footing foundation system is expected to provide adequate support for the proposed apartment building. Foundation bearing soils are expected to be medium dense silty and/or clean sand soils,

Existing off-site improvements occur at close proximity of the property lines. During the course of basement construction, temporary shoring would be required in the vicinity of the existing off-site improvements. Due to the setback from the front property line, where adequate horizontal distance beyond the planned line of excavation is available unsupported, open excavation slopes with gradients as recommended in this report can be used.

The basement floor slabs could be supported on the exposed subgrade, provided that any disturbed soils would be compacted in-place to a compact condition and that any fill soils placed over the interior footings would be properly compacted. Soil expansion should not be a problem at this site,

The following sections present our specific recommendations for temporary excavations, foundations, lateral design, basement grade slabs, subsurface walls, grading and observations during construction.

TEMPORARY EXCAVATIONS

Unshored Excavations: Where space limitations permit, unshored temporary excavation slopes could be used. Based upon the engineering characteristics of the site upper soils, it is our opinion that temporary excavation slopes in accordance with the following table should be used:

Maximum Depth of Cut (Ft)	Maximum Slope Ratio (Horizontal:Vertical)
0-4	Vertical
>4	1:1

Water should not be allowed to flow over the top of the excavation in an uncontrolled manner. No surcharge should be allowed within a 45-degree line drawn from the bottom of the excavation. Excavation surfaces should be kept moist but not saturated to retard raveling and sloughing during construction.

It would be advantageous, particularly during wet season construction, to place polyethylene plastic sheeting over the slopes. This will reduce the chances of moisture changes within the soil banks and material wash into the excavation.

Cantilevered Soldier Piles: Cantilevered soldier piles should be used as a means of temporary shoring where open excavation along south, east and west property lines. The lateral resistance for soldier piles may be assumed to be offered by available passive pressure below the basement level, An allowable passive pressure of 500 pounds per square foot per foot of depth may be used below the basement level for soldier piles having center-to-center spacing of 2-1/2 times the pile diameter. Maximum allowable passive pressure should be limited to 4,000 pounds per square foot.

For temporary construction excavations, the active pressure on cantilever soldier piles may be computed using an equivalent fluid density of 22 pounds per cubic foot. Uniform surcharge may be computed using an active pressure coefficient of 0.35 times the uniform load.

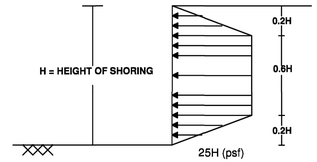
Due to the magnitude of the height of the proposed excavation, lagging will be required between the vertical soldier piles within all soil types. This will help reduce the chances of local sloughing.

Braced Shoring: Where the structures are closer than 3 feet, the vertical soldier piles should be laterally supported by internal bracing system. This will reduce the magnitude of the lateral deflection at the top of the piles. It is recommended that the

top of the soldier piles along the north property line be maintained at some 3 feet above the grade to provide lateral confinement to the existing off-site wall.

The internal bracing will require footings. For the purpose of design, the footings for the bracing that are normally inclined at 45-degree angles should be designed based on a lower allowable maximum soil pressure (1/2 of the allowable maximum bearing value recommended in this report for normal spread footings).

When internal bracing is used against the soldier piles, trapezoidal pressure distribution should be used to calculate the lateral thrust. The following sketch shows the recommended lateral earth pressure distribution behind restrained shoring system.



Lateral pressure due to uniform surcharge loads, such as those from existing off-site improvements, should be added to the above pressure diagram. Such loads should be computed using an at rest pressure coefficient of 0.40 times the assumed uniform loads. All deflections of shoring piles along the north should be limited to 1/2 inch.

It should be noted that the recommendations presented in the "TEMPORARY EXCAVATION" Section of this report is for use in design and for cost estimating purposes prior to construction. The contractor is solely responsible for safety during construction.

It is recommended that a representative of this office be present when the basement excavation is first exposed. Modifications to our recommendations may be necessary if significant variation in the soil conditions are encountered.

FOUNDATIONS

Conventional spread footings could be used to support the proposed apartment structure. Exterior and interior footings should be at least 18 inches wide and should be placed at a minimum depth of 18 inches below the lowest adjacent final grades (in this case, basement level).

The recommended allowable maximum bearing pressure for footings placed on medium dense native soils could be taken as 2,000 pounds per square foot, This value could be increased by at a rate of 200 and 300 pounds per square foot for each additional foot of footing width and depth, to a maximum value of 3,500 pounds per square foot.

The indicated bearing values are for the total of dead and frequently applied live loads, For short duration transient loadings, such as wind or seismic forces, these values may be increased by one-third.

Under the allowable maximum soil pressure, footings carrying the assumed maximum concentrated loads of 300 kips is expected to settle on the order of one inch. Continuous footings, with loads of about 6 kips per lineal foot are expected to settle on the order of 3/4 of an inch, Maximum differential settlements are expected to be on the order of 1/4 of an inch, Major portion of the settlement is expected to occur during construction.

LATERAL DESIGN

Lateral resistance at the base of footings in contact with in-place compacted soils may be assumed to be the product of the dead load forces and a coefficient of friction of 0.4. Passive pressure on the face of footings may also be used to resist lateral forces. A passive pressure of zero at the finished grades and increasing at a rate of 250 pounds per square foot per foot of depth to a maximum value of 3,600 pounds per square foot may be used for footings poured against medium dense native soils, If

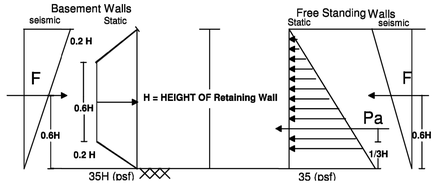
passive pressure and frictional resistance are combined when calculating the lateral resistance, one value should be reduced by one-half.

GRADE SLABS

On the basis that slab subgrades would be prepared in accordance with the recommendations presented in the preceding sections of this report, grade slabs may be supported on the exposed native soils, at the basement level, which is properly compacted in-place to a firm condition. Any disturbed soils, at the basement levels and all backfill material, placed over the interior footings, should be compacted to a relative compaction of at least 90 percent before the grade slabs are poured.

BASEMENT WALLS

The perimeter walls of the basement garage of the proposed building are expected to be buried to maximum depths of about 8 feet. Static design of these walls (being restrained against rotation) could be based on an equivalent fluid pressure of 40 pounds per square foot per foot of depth. In addition to the lateral earth pressure, the basement garage walls should also be designed for any applicable uniform surcharge loads imposed on the adjacent grounds. Uniform surcharge effects may be computed using a coefficient of 0.30 times the assumed uniform loads.



If the height of the retaining wall is greater than 6 feet, the lateral pressures on walls due to earthquake motions is could be based on an equivalent fluid pressure of 32 pounds per cubic foot.s.

The above pressure assumes that no hydrostatic pressure will occur behind the retaining walls. This will require that proper subdrain be installed behind the basement garage walls. Subdrain normally consists of 4-inch diameter perforated pipes encased in free-draining gravel (at least one cubic foot per lineal foot of the pipes). In order to reduce the chances of siltation which would cause clogging of the drain pipes, the free-draining gravel should be wrapped in filter fabric proper for the site soils.

It should be noted that, if proper subdrain can not be installed due to limited and/or no space, the basement garage walls should be designed based on full hydrostatic pressure (65 pounds per square foot per foot of depth).

Where adequate space is available, fill should be placed and compacted behind the retaining walls (after the subdrain is installed) to a relative compaction of at least 90 percent. At least one field density tests should be taken for each 2 feet of the backfill. The degree of compaction of the wall backfill should be verified by the Soil Engineer.

Where space is limited, free-draining gravel should be placed behind the retaining walls. The gravel should then be capped with at least 18 inch thick site soils also compacted to a relative compaction of at least 90 percent. It should be noted that the backfill placed behind the basement garage walls should be made after the concrete decking is cast. All grading surrounding the building should be such to ensure that water drains freely from the site and does not pond.

SITE GRADING

Site grading for the proposed project is expected to include excavation in order to create the basement parking garage grades and backfilling behind the retaining walls.

Prior to placing any fill, the Soil Engineer should observe the excavation bottoms. The areas to receive compacted fill should be scarified to a depth of about 8 inches, moistened as required to bring to approximately near optimum moisture content, and

compacted to at least 90 percent of the maximum dry density as determined by the ASTM Designation D 1557-12 Compaction Method.

General guidelines regarding site grading are presented below which may be included in the earthwork specification. It is recommended that all fill be placed under engineering observation and in accordance with the following guidelines:

1. All backfill should be granular in nature. Therefore, only the excavated sandy soil from the site may be reused in the areas of wall backfill.
2. Before wall backfilling, subdrain should be installed. The subdrain system should consist of 4-inch diameter perforated pipes embedded in about 1 cubic feet of free draining gravel per foot of pipe. An approved filter fabric should then be wrapped around the free draining gravel in order to reduce the chances of siltation. Non-perforated outlet pipes should then be used to pass through the wall into an interior sump. The subdrain pipes should be laid at a minimum grade of two percent for self cleaning.
3. The excavated sandy soils from the site are considered to be satisfactory to be reused in the areas of compacted fill and wall backfill provided that rocks larger than 6 inches in diameter are removed.
4. Fill material, approved by the Soil Engineer, should be placed in controlled layers. Each layer should be compacted to at least 90 percent of the maximum unit weight as determined by ASTM designation D 1557-12 for the material used.
5. The fill material shall be placed in layers which, when compacted, shall not exceed 8 inches per layer. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to insure uniformity of material in each layer.
6. When moisture content of the fill material is too low to obtain adequate compaction, water shall be added and thoroughly dispersed until the moisture content is near optimum.
7. When the moisture content of the fill material is too high to obtain adequate compaction, the fill material shall be aerated by blading or other satisfactory methods until near optimum moisture condition is achieved.
8. Inspection and field density tests should be conducted by the Soil Engineer during grading work to assure that adequate compaction is attained. Where compaction of less than 90 percent is indicated, additional compactive effort should be made with adjustment of the moisture content or layer thickness, as necessary, until at least 90 percent compaction is obtained.

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PRINTED ON 10-18-2023

REVISIONS	BY

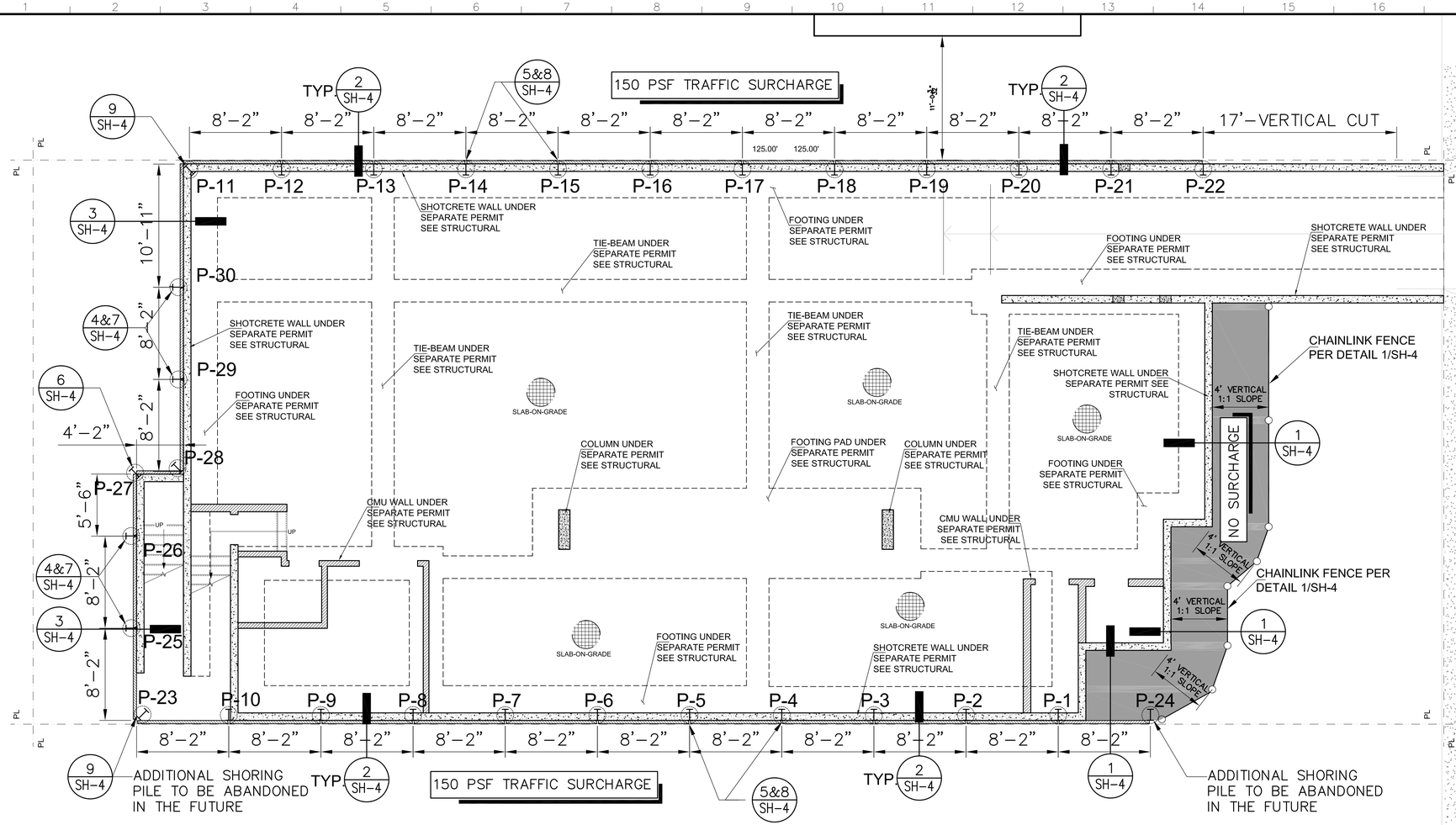
PROJECT OWNER:

PROJECT ADDRESS:
426 IVY STREET, GLENDALE, CA 91204

PROJECT TITLE:
SHORING FOR 2-STORY 4-UNIT APARTMENT BUILDING

JOB NO.:	2019-112
DRAWN BY:	A.H.
CHECKED BY:	A.M.
DATE:	10-18-2023
SHEET TITLE:	SOIL REPORT NOTES

SHEET NUMBER
SH-2
SHEETS OF



SHORING NOTES

1. SHORING MONITORING PROGRAM SHALL BE STRICTLY ENFORCED DURING THE CONSTRUCTION. SEE DRAWING PAGE SH-1 FOR THE GUIDELINES AND REQUIREMENTS FOR SHORING MONITORING PROGRAM.

2. SHORING PLAN AND ALL RELATED DETAILS SHALL BE REVIEWED AND APPROVED BY THE SOILS ENGINEER PRIOR TO APPROVAL BY THE CITY.

3. BASED ON OBSERVATION FIELD CONDITION THE CONTRACTOR SHALL VERIFY THE DEPTH OF FOOTING. ANY ALTERATION TO DESIGN MUST BE APPROVED IN WRITING BY STRUCTURAL ENGINEER AND GEOTECHNICAL ENGINEER. NO SLOT CUT DESIGN ALLOWED. CONTINUOUS OPEN TRENCH FULL LENGTH OF THE PIT MUST BE GOVERNING CONDITION FOR ALL SHORING DESIGNS.

4. GEOTECHNICAL ENGINEER IS TO REVIEW AND APPROVE THE SHORING PLANS PRIOR TO PERMIT ISSUANCE.

5. ALL SUB-DRAINS AND THE DRIVEWAY TRENCH DRAIN WILL OUTLET TO EVERETT STREET (SEE GRADING PLAN AND/OR ARCHITECTURAL DRAWINGS FOR DRAINAGE DETAILS).

1. SHORING PLAN AND ALL RELATED DETAILS SHALL BE REVIEWED AND APPROVED BY THE SOILS ENGINEER PRIOR TO APPROVAL BY THE CITY.
2. BASED ON OBSERVATION FIELD CONDITION THE CONTRACTOR SHALL VERIFY THE DEPTH OF FOOTING. ANY ALTERATION TO DESIGN MUST BE APPROVED IN WRITING BY STRUCTURAL ENGINEER AND GEOTECHNICAL ENGINEER. NO SLOT CUT DESIGN ALLOWED. CONTINUOUS OPEN TRENCH FULL LENGTH OF THE PIT MUST BE GOVERNING CONDITION FOR ALL SHORING DESIGNS.
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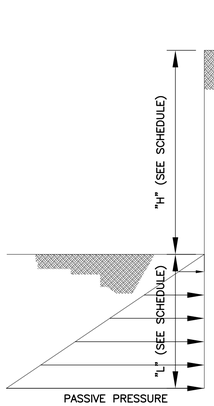
4. ALL SUBDRAINS AND THE DRIVEWAY TRENCH DRAIN WILL OUTLET TO EVERETT STREET (SEE GRADING PLAN AND ARCH. DRAWINGS FOR DRAINAGE DETAILS).

SCALE: 3/16"=1'-0" (1)

SHORING PLAN

SHORING SEQUENCE (DRILLED PILES)

1) DRILL SHAFTS FOR STEEL PILE FOUNDATIONS. DRILLED SHAFTS TO BE LEFT OPEN NO MORE THAN 24 HOURS AND SHALL BE COVERED WITH PLYWOOD AFTERWARDS;
2) INSTALL STEEL PILES;
3) POUR 2,500 PSI CONCRETE FROM THE BOTTOM OF THE DRILLED SHAFT UP TO THE BOTTOM OF THE PROPOSED FOUNDATION. FILL THE REMAINING PORTION OF THE SHAFT WITH SLURRY MIX;
4) PERFORM ALL INITIAL MONITORING READINGS. SEE MONITORING PROGRAM FOR GUIDELINES;
5) START EXCAVATION AFTER CONCRETE HAD CURED FOR 7 DAYS; 4 FT MAXIMUM EXCAVATION IS ALLOWED 24 HOURS AFTER THE SLURRY POUR;
6) INSTALL LAGGING USING PRESERVATIVE TREATED DOUGLAS FIR CONSTRUCTION GRADE TIMBER;
7) EXCAVATE TO THE PROPOSED SUB-GRADE ELEVATIONS;
8) IF REQUIRED, INSTALL WATERPROOFING FOR THE CONCRETE WALL (UNDER SEPARATE PERMIT);
9) DRILL HOLES IN STEEL PILE WEBS WHERE NECESSARY TO INSTALL HORIZONTAL REBAR OF THE WALL (UNDER SEPARATE PERMIT);
10) INSTALL HORIZONTAL AND VERTICAL WALL REBAR (UNDER SEPARATE PERMIT);
11) SHOTCRETE THE WALL (UNDER SEPARATE PERMIT);
12) AFTER SLAB-ON-GRADE AND CONCRETE DECK ARE POURED AND CURED FOR 28 DAYS, CUT THE PORTION OF THOSE STEEL PILES WHICH ARE OUTSIDE OF THE CONCRETE WALL SURFACE;
13) NO BACKFILL IS ALLOWED UNTIL SLAB-ON-GRADE AND CONCRETE DECK ARE POURED AND CURED FOR 28 DAYS.



PILE SCHEDULE (DRILLED PILES)

PILE NUMBER	PILE DIA.	"H"	"L" (EMB.)	SPACING	STEEL (G65)	SURCHARGE	MAX. DEFLECTION
P1-P20; P15-P20; P23-P28	30"	10'-0"	17'-6"	8'-2"	W 18x40	150 PSF	0.5 INCHES
P14-P29	30"	10'-0"	12'-6"	8'-2"	W 16x26	NO SURCHARGE	0.5 INCHES
P21	30"	9'-6"	11'-5"	8'-2"	W 16x22	NO SURCHARGE	0.5 INCHES
P22	30"	7'-9"	10'-0"	8'-2"	W 14x22	NO SURCHARGE	0.5 INCHES

This Plan has been Reviewed by Advanced Geotechniques & appears to be in general conformance with our report dated October 12, 2021 We make no representation for the accuracy or proper dimension of this plan

REGISTERED PROFESSIONAL ENGINEER ARA JITECHIAN No. 34893 CIVIL STATE OF CALIFORNIA

Ara Jitechian
Civil Engineer

City of Glendale
Public Works Department, Engineering Division
633 East Broadway Room 205, Glendale, California 91205-4338
Tel. No. (818) 548-3945 Fax No. (818) 242-7587

NPDES[1] Certification

As the project **Owner/Developer**, I certify that the following minimum requirements and/or Best Management Practices (BMPs) are effectively implemented at this(ese) construction site(s):

- Sediments generated on the project site shall be retained using adequate treatment control or structural control;
- Construction related materials, wastes, spills, or residues shall be retained at the project site to avoid discharge to streets, drainage facilities, receiving waters or adjacent properties by wind or runoff;
- Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site; and
- Erosion from slopes and channels shall be controlled by implementing an effective combination of BMPs such as the limiting of grading during rain events, planting and maintenance of vegetation on slopes, and covering erosion susceptible slopes.

I am aware that these BMPs if applicable, must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation is considered redundant or deemed not applicable to the proposed construction activities.

Construction Site Address: 426 IVY STREET
County Assessor Parcel Nos.: 5695-007-009
Building/Grading Permit Nos.: BSHORING-002923-2023
Applicant/Developer: HAYKANUSH ANANYAN
Property Owner: SUREN ZAKARYAN
Contractor: _____
State Contractor License No.: _____
Signed (Initial): _____ Date: _____
Title & Full name: _____

[1] National Pollutants Discharge Elimination System (NPDES) is the engine of the Clean Water Act that protects the receiving waters. The City of Glendale as a Permittee to the NPDES Municipal Storm Water and Urban Runoff Discharges Permit issued by the Los Angeles Regional Water Quality Control Board implement a program to control runoff from construction activity at **all construction sites less than one acre** within its jurisdiction.

For details and design criteria of these BMPs, you may refer to the current edition of the California Stormwater BMP Construction Handbook.

PROTECTION OF ADJOINING PROPERTY NOTES:

ADJOINING PUBLIC AND PRIVATE PROPERTY SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION, REMODELING AND DEMOLITION WORK. PROTECTION SHALL BE PROVIDED FOR FOOTINGS, FOUNDATIONS, PARTY WALLS, CHIMNEYS, SKYLIGHTS AND ROOFS. PROVISIONS SHALL ME MADE TO CONTROL WATER RUNOFF AND EROSION DURING CONSTRUCTION OR DEMOLITION ACTIVITIES,. THE PERSON MAKING OR CAUSING AN EXCAVATION TO BE MADE SHALL PROVIDE WRITTEN NOTICE TO THE OWNERS OF ADJOINING BUILDINGS ADVISING THEM THAT THE EXCAVATION IS TO BE MADE AND THAT THE ADJOINING BUILDINGS SHOULD BE PROTECTED. SAID NOTIFICATION SHALL BE DELIVERED NOT LESS THAN 10 DAYS PRIOR TO THE SCHEDULED STARTING DATE OF THE EXCAVATION.

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Web: www.arka4.com

REVISIONS	BY

LICENSED PROFESSIONAL ENGINEER ARMEN MARTIROSSIAN C64223 CIVIL STATE OF CALIFORNIA

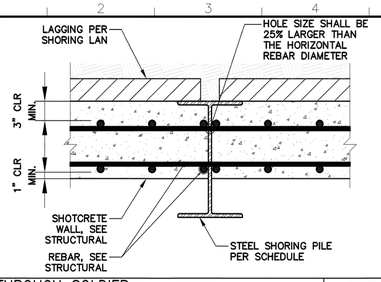
PROJECT OWNER:

PROJECT ADDRESS:
426 IVY STREET, GLENDALE, CA 91204

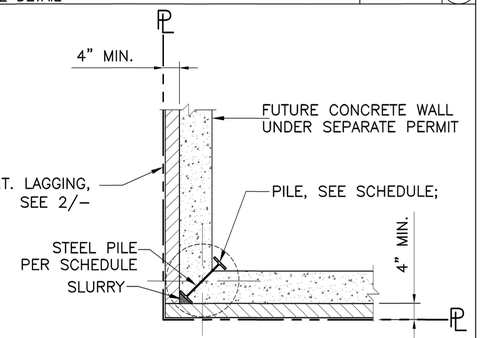
PROJECT TITLE:
SHORING FOR 2-STORY
4-UNIT APARTMENT BUILDING

JOB NO.:	2019-112
DRAWN BY:	A.H.
CHECKED BY:	A.M.
DATE:	10-18-2023
SHEET TITLE:	SHORING PLAN

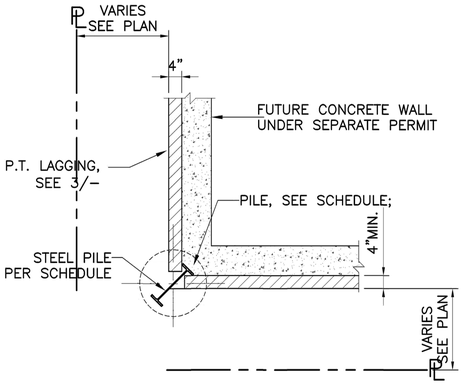
SHEET NUMBER
SH-3
SHEETS OF



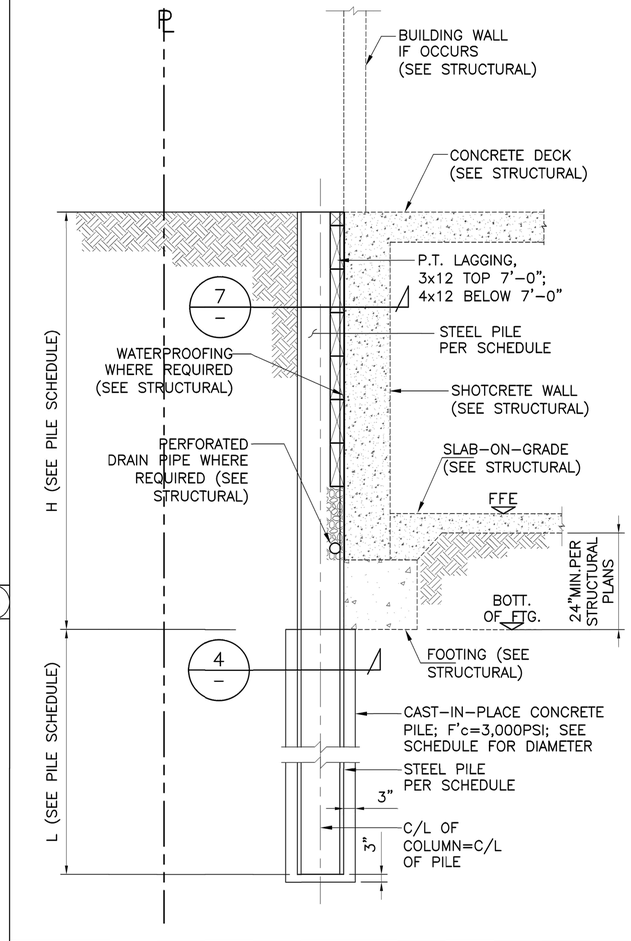
REBAR THROUGH SOLDIER PILE DETAIL — SCALE: 1"=1'-0" — 10



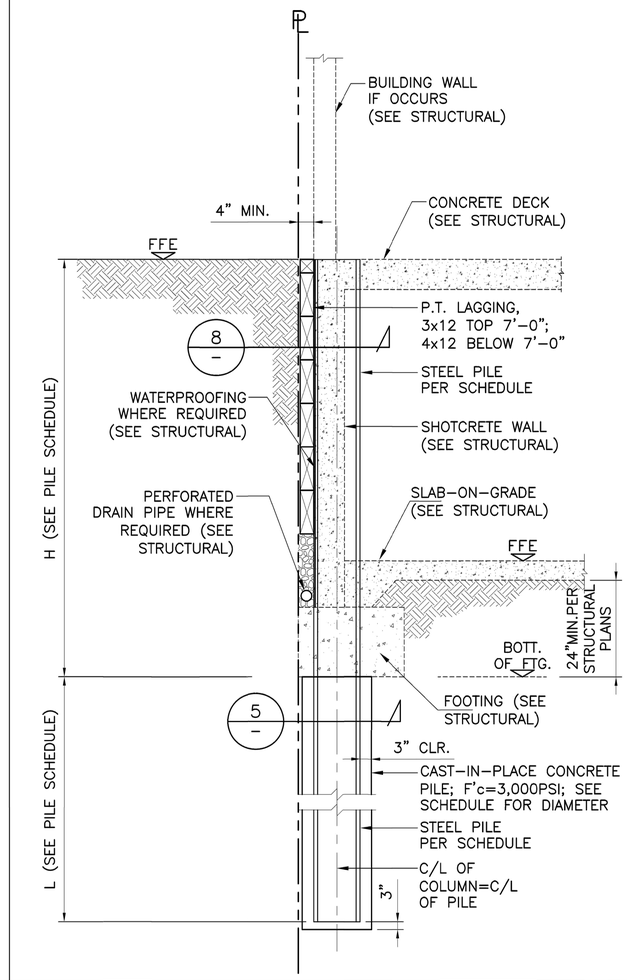
CORNER PILE DETAIL — SCALE: 1"=1'-0" — 9



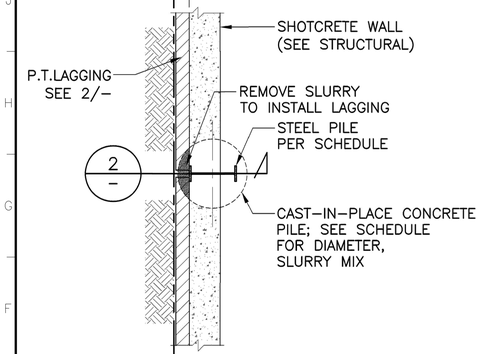
SCALE: 1"=1'-0" — 6



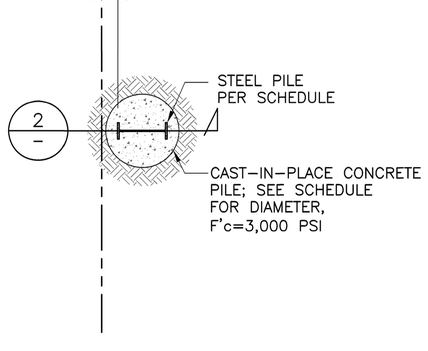
TYPICAL RACED SOLDIER PILE SECTION — SCALE: 3/4"=1'-0" — 3



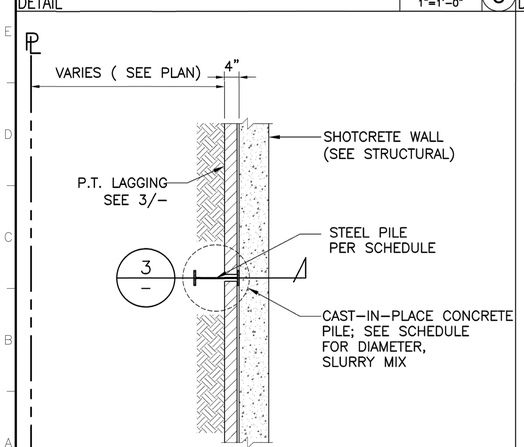
TYPICAL RACED SOLDIER PILE SECTION — SCALE: 3/4"=1'-0" — 2



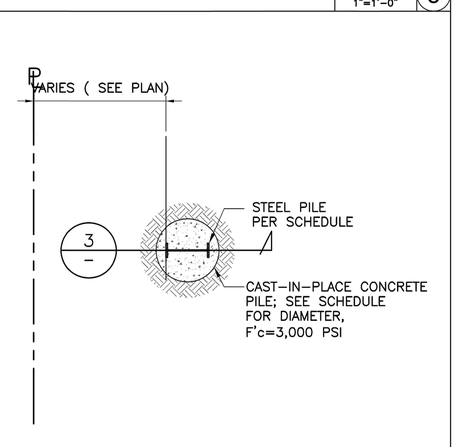
SOLDIER PILE AT WALL DETAIL — SCALE: 1"=1'-0" — 8



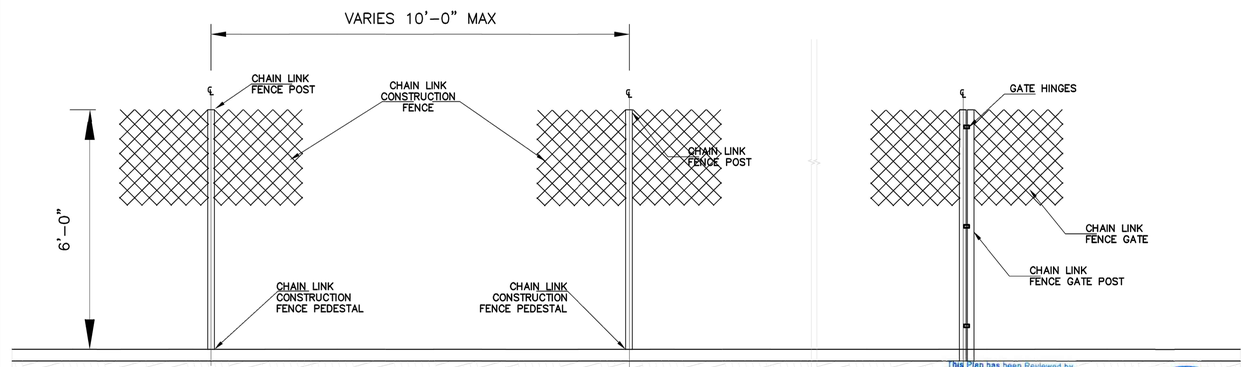
SOLDIER PILE AT WALL DETAIL — SCALE: 1"=1'-0" — 5



SOLDIER PILE AT WALL DETAIL — SCALE: 1"=1'-0" — 7



SOLDIER PILE AT WALL DETAIL — SCALE: 1"=1'-0" — 4



CHAIN LINK FENCE DETAIL — SCALE: 1"=1'-0" — 1

This Plan has been Reviewed by Advanced Geotechniques & appears to be in general conformance with our report dated October 12, 2021. We make no representation for the accuracy or proper dimension of this plan.

REGISTERED PROFESSIONAL ENGINEER — ARA JITECHIAN — No. 63893 — CIVIL — STATE OF CALIFORNIA

Ara Jitechian
Civil Engineer

CONTRACTOR TO VERIFY ALL DIMENSIONS, CONDITIONS, ETC., PERTAINING TO THE WORK AT THE SITE BEFORE PROCEEDING WITH THE WORK

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PRINTED ON 10-18-2023

REVISIONS	BY

LICENSED PROFESSIONAL ENGINEER — ARMEN MARTIROSSIAN — C64223 — CIVIL — STATE OF CALIFORNIA

PROJECT OWNER:

PROJECT ADDRESS:
426 IVY STREET, GLENDALE, CA 91204

PROJECT TITLE:

SHORING FOR 2 STORY 4-UNIT APARTMENT BUILDING

JOB NO.:	2019-112
DRAWN BY:	A.H.
CHECKED BY:	A.M.
DATE:	10-18-2023

SHEET TITLE: SHORING DETAILS

SHEET NUMBER

SH-4

SHEETS OF