

## STRUCTURAL NOTES

#### A. BASIS OF DESIGN:

1. THE STRUCTURAL DESIGN HAS BEEN PERFORMED IN ACCORDANCE WITH THE 2022 CALIFORNIA BUILDING CODE (CBC).
2. STRUCTURAL MATERIALS INDICATED SHALL COMPLY WITH THE 2022 CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBC), INCLUDING 2024 SUPPLEMENT SECTIONS 5.105 OR 5.409.
3. LIVE LOADS (MAY BE REDUCED IN ACCORDANCE WITH THE BUILDING CODE)

ROOF 20 psf

#### 4. SEISMIC DESIGN DATA

RISK CATEGORY	III
SEISMIC IMPORTANCE FACTOR	$I_s = 1.25$
MAPPED SPECTRAL ACCELERATION	$S_s = 0.895$
MAPPED SPECTRAL ACCELERATION	$S_1 = 0.315$
SITE CLASS	D [DEFAULT]
SITE COEFFICIENT	$F_a = 1.2$
SITE COEFFICIENT	$F_v = N/A$
DESIGN SPECTRAL ACCELERATION	$S_{DS} = 0.716$
DESIGN SPECTRAL ACCELERATION	$S_{D1} = N/A$
SEISMIC DESIGN CATEGORY	D
PARTITION LOADING AT ROOFS	5 psf
ANALYSIS PROCEDURE USED	EQUIV LATERAL FORCE
FOR LONGITUDINAL DIRECTION	
SEISMIC FORCE RESISTING SYSTEM	
RESPONSE MODIFICATION FACTOR	$R = 6.5$
SYSTEM OVERSTRENGTH FACTOR	$\Omega = 3.0$
DEFLECTION AMPLIFICATION FACTOR	$C_d = 4.0$
REDUNDANCY FACTOR	$\phi = 1.0$
SEISMIC RESPONSE COEFFICIENT	$C_s = 0.138$

## 5. WIND DESIGN DATA

RISK CATEGORY	III
BASIC WIND SPEED	V = 103 mph
EXPOSURE CATEGORY	C
NORTH QUADRANT	C
EAST QUADRANT	C
SOUTH QUADRANT	C
WEST QUADRANT	C
ENCLOSURE CATEGORY	ENCLOSED
GUST & INTERNAL PRESSURE COEFF	GCp1 = 0.18
DIRECTIONALITY FACTOR	K2 = 0.85
GROUND ELEVATION FACTOR	K1 = 1.00
TOPOGRAPHIC FACTOR	K3 = 0.00
TOPOGRAPHIC FACTOR	K4 = 0.00
TOPOGRAPHIC FACTOR	K5 = 0.00
TOPOGRAPHIC FACTOR	K6 = 0.00

**B. SUBMITTALS:**

1. THE CONTRACTOR SHALL MAKE SUBMITTALS PRIOR TO FABRICATION AS REQUIRED BY THE WRITTEN SPECIFICATIONS AND SHALL INCLUDE AS A MINIMUM THE FOLLOWING SUBMITTALS:
  - A. CONCRETE MIX DESIGNS.
  - B. REINFORCING STEEL DRAWINGS.
  - C. COLD-FORMED STEEL FRAMING DRAWINGS.
2. THE FOLLOWING SUBMITTALS ARE NOT REQUIRED FOR STRUCTURAL REVIEW:
  - A. SHORING AND BRACING.
  - B. PICK-UP INSERTS.
  - C. UNSPLICED REBAR AT SLAB-ON-GRADE AND FOOTINGS
  - D. FORMWORK.
  - E. STRUCTURAL STEEL MILL REPORTS.
  - F. WELDER CERTIFICATIONS
3. STEEL REINFORCING LISTS AND QUANTITIES AND LENGTHS OF ALL MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE COMPLIANCE WITH THE PLANS. ENGINEER WILL NOT REVIEW.
4. SUBMITTALS MADE TO THE ENGINEER FOR REVIEW SHALL BE STAMPED AND SIGNED BY THE CONTRACTOR INDICATING THE CONTRACTORS PRIOR REVIEW AND THAT THE SUBMITTAL IS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. SUBMITTALS SHALL BE MADE IN ELECTRONIC (PDF) FORMAT. SUBMITTALS WILL BE PROCESSED AND RETURNED ELECTRONICALLY.

**C. GENERAL:**

1. SPECIFIC NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
2. THE REQUIREMENTS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE STRUCTURAL BUILDING INFORMATION MODEL. THE STRUCTURAL BUILDING INFORMATION MODEL SHALL NOT BE RELIED ON FOR UNDERSTANDING CONSTRUCTION REQUIREMENTS.
3. WHERE NO DETAILS ARE SHOWN, OR NOTED IN ANY PART OF THE WORK THE DETAILS FOR OTHER SIMILAR WORK SHALL APPLY
4. DETAILS IDENTIFIED AS TYPICAL, SHALL APPLY IN ESTIMATING AND CONSTRUCTION TO EVERY LIKE CONDITION WHETHER OR NOT THE REFERENCE IS REPEATED.
5. THE STRUCTURAL DRAWINGS AND STRUCTURAL BUILDING INFORMATION MODEL SHALL NOT BE SCALED. COORDINATE DIMENSION, ELEVATION, SLOPE AND DRAINAGE REQUIREMENTS WITH THE ARCHITECTURAL DRAWINGS.
6. STANDARDS REFERENCED ON THE STRUCTURAL DRAWINGS REFER TO THE PERTINENT EDITION UNDER THE APPLICABLE BUILDING CODE.
7. THE RESPONSIBILITY FOR THE REVIEW AND COORDINATION OF DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF RELATED CONSTRUCTION SHALL BEAR ON THE CONTRACTOR. DISCREPANCIES THAT EXIST SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER, PRIOR TO START OF RELATED CONSTRUCTION.
8. WORK PERFORMED IN CONFLICT WITH THE STRUCTURAL DRAWINGS OR APPLICABLE BUILDING CODE REQUIREMENTS SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR.
9. EXISTING CONDITIONS SHALL BE VERIFIED BEFORE STARTING RELATED WORK. EXISTING CONDITIONS THAT ARE NOT REFLECTED ON THE STRUCTURAL DRAWINGS OR THAT DEViate FROM THE MAXIMUM OR MINIMUM DIMENSIONS INDICATED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER. SUCH CONDITIONS MAY INCLUDE CLASHES IN GRADES, ADVERSE SOIL CONDITIONS, PRESENCE OF GROUND WATER, UNCOVERED OR UNEXPECTED EXISTING CONSTRUCTION CONFIGURATIONS, ETC.
10. MATERIALS AND WORKMANSHIP SHALL CONFORM TO REQUIREMENTS OF APPLICABLE REGULATIONS AND THE BUILDING CODE AS AMENDED AND ADOPTED BY THE BUILDING OFFICIAL.

**D. TEMPORARY WORK AND SITE SAFETY:**

1. THE STRUCTURAL DRAWINGS SHOW THE REQUIREMENTS FOR THE COMPLETED STRUCTURE ONLY. TEMPORARY WORKS REQUIRED TO COMPLETE THE CONSTRUCTION PROCESS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE DESIGN OR FIELD VERIFICATION OF TEMPORARY AND ANCILLARY WORK.
  2. THE RESPONSIBILITY FOR SAFETY IN AND AROUND THE JOBSITE SHALL BEAR ON THE CONTRACTOR. PROPER AND SAFE METHODS OF CONSTRUCTION SHALL BE EMPLOYED AT ALL TIMES INCLUDING THE STABILIZING OF INCOMPLETE STRUCTURES, FORMWORK, SHORING, RESHORING, FALSEWORK, PLATFORMS, SCAFFOLDING, BARRIERS, WALKWAYS, ETC. AND INCLUDING CONTROL OF THE INTENSITY, DURATION AND LOCATION OF CONSTRUCTION LOADS.
  3. THE RESPONSIBILITY FOR THE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, UNDERPINNING, AND SHORING REQUIRED TO SAFELY RETAIN ALL GRADES AND STRUCTURES SHALL BEAR ON THE CONTRACTOR.
  4. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON A STRUCTURE. LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD INDICATED. WHERE THE STRUCTURE HAS NOT ATTAINED FINAL DESIGN STRENGTH, ADEQUATE SHORING AND OR BRACING SHALL BE INSTALLED.
- E. DEMOLITION:**
1. THE RESPONSIBILITY FOR NECESSARY SHORING OR BRACING OF THE EXISTING STRUCTURE DURING DEMOLITION PROCEDURES SHALL BEAR ON THE CONTRACTOR.
  2. DEVIATIONS FROM EXISTING CONDITIONS AS INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE RESOLVED WITH THE ENGINEER PRIOR TO PROCEEDING WITH DEMOLITION WORK.
  3. RESPONSIBILITY FOR COORDINATION OF DEMOLITION WORK WITH THE BUILDING OFFICIAL AND OTHER GOVERNING AUTHORITIES SHALL BEAR ON THE CONTRACTOR. EXITS SHALL BE MAINTAINED AS REQUIRED FOR SAFE LEGAL OPERATION OF THE FACILITY.
  4. ELEMENTS THAT WILL NOT BE DEMOLISHED SHALL BE PROTECTED FROM DAMAGE.
  5. SAW CUT LINES SHALL BE TRUE AND NEAT. CORNERS SHALL NOT BE OVER CUT.

6. THESE STRUCTURES

- OF THE WORK SHALL BEAR ON THE CONTRACTOR. WORK SHALL BE COORDINATED TO LEAST IMPACT THE OPERATION OF THE EXISTING FACILITY.

**F. FOUNDATION:**

1. AS A CALIFORNIA-LICENSED ENGINEER, THE ENGINEER OF RECORD FOR THE STRUCTURAL DESIGN HAS CLASSIFIED THE UNDISTURBED, NATIVE SOILS TO BE SANDY SILT. IN ACCORDANCE WITH TABLE 1806.2 OF THE BUILDING CODE, AN ALLOWABLE FOUNDATION BEARING PRESSURE OF 1,500 PSF HAS BEEN ASSIGNED FOR THE DESIGN OF FOUNDATIONS RELATED TO THIS PROJECT.
2. IF THE BUILDING OFFICIAL SUSPECTS FILL MATERIAL, EXPANSIVE SOIL OR GEOLOGICAL INSTABILITY UPON OBSERVATION OF THE FOUNDATION EXCAVATIONS, A GEOLOGICAL INVESTIGATION REPORT AND CONSTRUCTION DRAWINGS THAT ARE COMPLIANT WITH THE RECOMMENDATIONS OF THAT GEOLOGICAL INVESTIGATION REPORT MAY BE REQUIRED TO BE SUBMITTED FOR REVIEW BY THE BUILDING OFFICIAL PRIOR TO CONSTRUCTION OF THE FOUNDATIONS.
3. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
4. FOOTING AND UTILITY TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED IN LAYERS SUBJECT TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. FLOODING WILL NOT BE PERMITTED.
5. LOOSE SOIL AND FILL MATERIAL SHALL BE COMPACTED ACCORDING TO THE REQUIREMENTS OF THE SOILS REPORT.
6. COMPACTION TEST REPORTS FOR FILL BY A QUALIFIED TESTING LAB SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND BUILDING OFFICIAL PRIOR TO REQUESTING FOUNDATION INSPECTION.
7. FOOTING DEPTHS INDICATED ON THE STRUCTURAL DRAWINGS ARE BELIEVED TO BE IN SUITABLE BEARING MATERIALS AND ARE INDICATED FOR COST ESTIMATING PURPOSES ONLY.
8. ANCHOR BOLTS, DOWELS AND HOLD-DOWN ANCHORS SHALL BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.

**G. WELDING:**

1. WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY (AWS) D1.1. ELECTRODE FILLER MATERIAL SHALL BE A MINIMUM OF E70XX U.O.N
2. WELDING OF COLD-FORMED STEEL DECK AND COLD-FORMED FRAMING SHALL BE PERFORMED BY WELDERS CERTIFIED FOR SHEET STEEL IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY (AWS) D1.3. E60XX ELECTRODES SHALL BE USED FOR WELDING OF COLD-FORMED STEEL DECK AND COLD-FORMED FRAMING.
3. WELDING OF REINFORCING BARS SHALL BE PERFORMED BY WELDERS CERTIFIED FOR REINFORCING BARS IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY (AWS) D1.4. E90XX ELECTRODES SHALL BE USED FOR WELDING OF REINFORCING BAR TO REINFORCING BAR. E70XX ELECTRODES SHALL BE USED FOR WELDING OF REINFORCING BAR TO ROLLED STEEL SHAPES AND PLATES.
4. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
5. WELDING ELECTRODES FOR THE SHIELDED METAL-ARC WELDING (S.M.A.W.) PROCESS AND WELDING ELECTRODES SHALL CONFORM TO AWS A5.1 "SPECIFICATION FOR CARBON STEEL ELECTRODES FOR SHIELDED METAL ARC WELDING."
6. WELDING ELECTRODES FOR THE FLUX CORED ARC WELDING (F.C.A.W.) PROCESS AND WELDING ELECTRODES SHALL CONFORM TO AWS A5.20 "SPECIFICATION FOR CARBON STEEL ELECTRODES FOR FLUX CORED ARC WELDING."
7. WELDS SHALL HAVE A WELD CONTROLLED SEQUENCE AND TECHNIQUE IN ORDER TO MINIMIZE SHRINKAGE STRESSES AND DISTORTION.
8. WELDED CONNECTIONS OF COLLECTORS ARE CONSIDERED TO BE PART OF THE SEISMIC FORCE RESISTING SYSTEM AND SHALL CONFORM TO THE REQUIREMENTS OF AISC 341. FILLER MATERIAL FOR THESE WELDS SHALL MEET AWS D1.8 REQUIREMENTS FOR H16 WELDS.

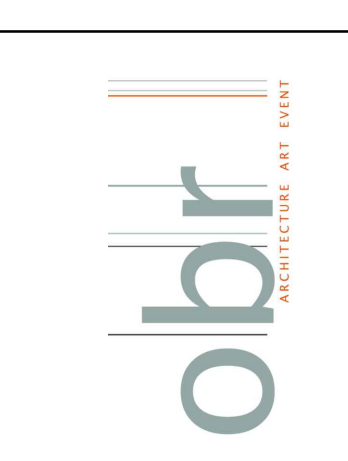
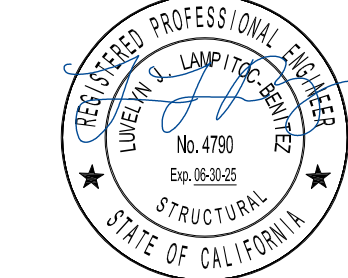
#### H. REINFORCING STEEL:

1. DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS SHALL BE PERFORMED IN ACCORDANCE WITH ACI 315R, "GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS."
2. SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
3. REINFORCING BARS SHALL CONFORM TO A MAXIMUM UNFABRICATED GLOBAL WARMING POTENTIAL (GWP) LIMIT OF 1.56 MT CO<sub>2</sub>e / MT.
4. REINFORCING BARS SHALL CONFORM TO ASTM A 615, GRADE 60, U.O.N. ADDITIONALLY, ASTM A 615 REINFORCING BARS SHALL ALSO CONFORM TO THE FOLLOWING:

	GRADE 60
MINIMUM ACTUAL TENSILE STRENGTH	80,000 PSI
MINIMUM ACTUAL YIELD STRENGTH	60,000 PSI
ACTUAL TENSILE STRENGTH DIVIDED BY ACTUAL YIELD STRENGTH	1.10 (MIN)
5. REINFORCING BAR LAP SPICES SHALL BE: CLASS B. (18" MIN.) FOR CONCRETE, U.O.N. 65 BAR DIA. (24" MIN.) FOR MASONRY, U.O.N.
6. DETAILS OF REINFORCEMENT SHALL COMPLY WITH THE PROVISIONS OF ACI 318
7. WHERE HOOKS ARE ILLUSTRATED AS 90-DEGREE HOOKS, 180-DEGREE HOOKS MAY BE USED IN LIEU OF 90-DEGREE HOOKS.
8. WHERE CONVENTIONAL STIRRUPS, TIES, HOOPS OR CROSS-TIES ARE ILLUSTRATED, CONTINUOUSLY-WOUND, MACHINE-PRESSASSEMBLED, TRANSVERSE REINFORCEMENT MAY BE SUBSTITUTED, PROVIDED THAT:
  - A. THE RESULTING CONFIGURATION PROVIDES FOR PROPER CONSOLIDATION OF CONCRETE
  - B. ASTM A 706 REINFORCING IS USED FOR TRANSVERSE REINFORCING, AND
  - C. WHERE FUSION-WELDED HOOKING WIRES ARE USED, THEY SHALL BE 1/4 INCH DIAMETER, CONFORMING TO ASTM A 82 OR A 496.
9. REINFORCING BARS FOR CONCRETE SHALL BE PROVIDED WITH THE FOLLOWING MINIMUM COVER:

CONC. CAST AGAINST EARTH	3"
FORMED CONC. EXPOSED TO EARTH / WEATHER	
NO 5 OR SMALLER	1 1/2"
NO 6 OR LARGER	2"
SLABS (#11 AND SMALLER)	3/4"
10. #3 SPACER TIES SHALL BE INSTALLED AT 30" ON CENTER IN BEAMS AND FOOTINGS TO SECURE REINFORCING BARS IN PLACE, U.O.N.
11. REINFORCEMENT SUPPORTS SHALL BE MANUFACTURED OF NONCORROSIVE MATERIAL

FOR DSA REVIEW ONLY -  
NOT FOR CONSTRUCTION



# BOARD OF EDUCATION

BY THE  
obrARCHITECTURE  
2419 EL CAJON BLVD, SAN DIEGO, CA 92104

## STRUCTURAL NOTES

**SAN DIEGO UNIFIED SCHOOL DISTRICT**  
**KITCHEN MODIFICATIONS GROUP 6**  
**BELL MIDDLE SCHOOL**  
620 BRIARWOOD RD.  
SAN DIEGO, CA 92139  
**BID SET**

PROJECT NO. SDUF-002

DATE 04/12/25

VISIONS SHEET NO. 04/23/25