

DRAWINGS AND SPECIFICATIONS REMAIN THE PROPERTY OF THE DESIGN PROFESSIONAL. COPIES OF THE DRAWINGS AND SPECIFICATIONS RETAINED BY THE CLIENT MAY BE UTILIZED ONLY FOR HIS USE AND FOR OCCUPYING THE PROJECT FOR WHICH THEY WERE PREPARED, AND NOT FOR THE CONSTRUCTION OF ANY OTHER PROJECTS.

PROJECT NAME:  
**COMMUNITY PARK RESTROOM - BHC**  
 1251 HWY 95, BULLHEAD CITY, ARIZONA 86442 APN: 214-01-011

ARCHITECT OF RECORD  
  
**SELBERG ASSOCIATES INC.**  
 ARCHITECTURE & PLANNING  
 2130 MESQUITE AVE. | SUITE 204  
 LAKE HAVASU CITY, ARIZONA 86403  
 (928) 955-5544

  
 - A Utah Corporation -  
**CIVIL STRUCTURAL SURVEY**  
 3302 N. Main Street  
 Spanish Fork, UT 84660  
 Phone: 801-798-0555  
 office@lei-eng.com  
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DESIG.	LENGTH	WIDTH	DEPTH	LENGTHWISE REINFORCEMENT				CROSSWISE REINFORCEMENT				CAPACITY	NOTE
				QTY.	SIZE	LENGTH	SPACING	QTY.	SIZE	LENGTH	SPACING		
FT1	CONT.	12"	20"	2	#4	CONT.	EQ.	-	-	-	-	1250 PLF	(1) TOP, (1) BOTTOM
FT2	24"	24"	12"	3	#4	18"	EQ.	3	#4	18"	EQ.	5400 LBS	

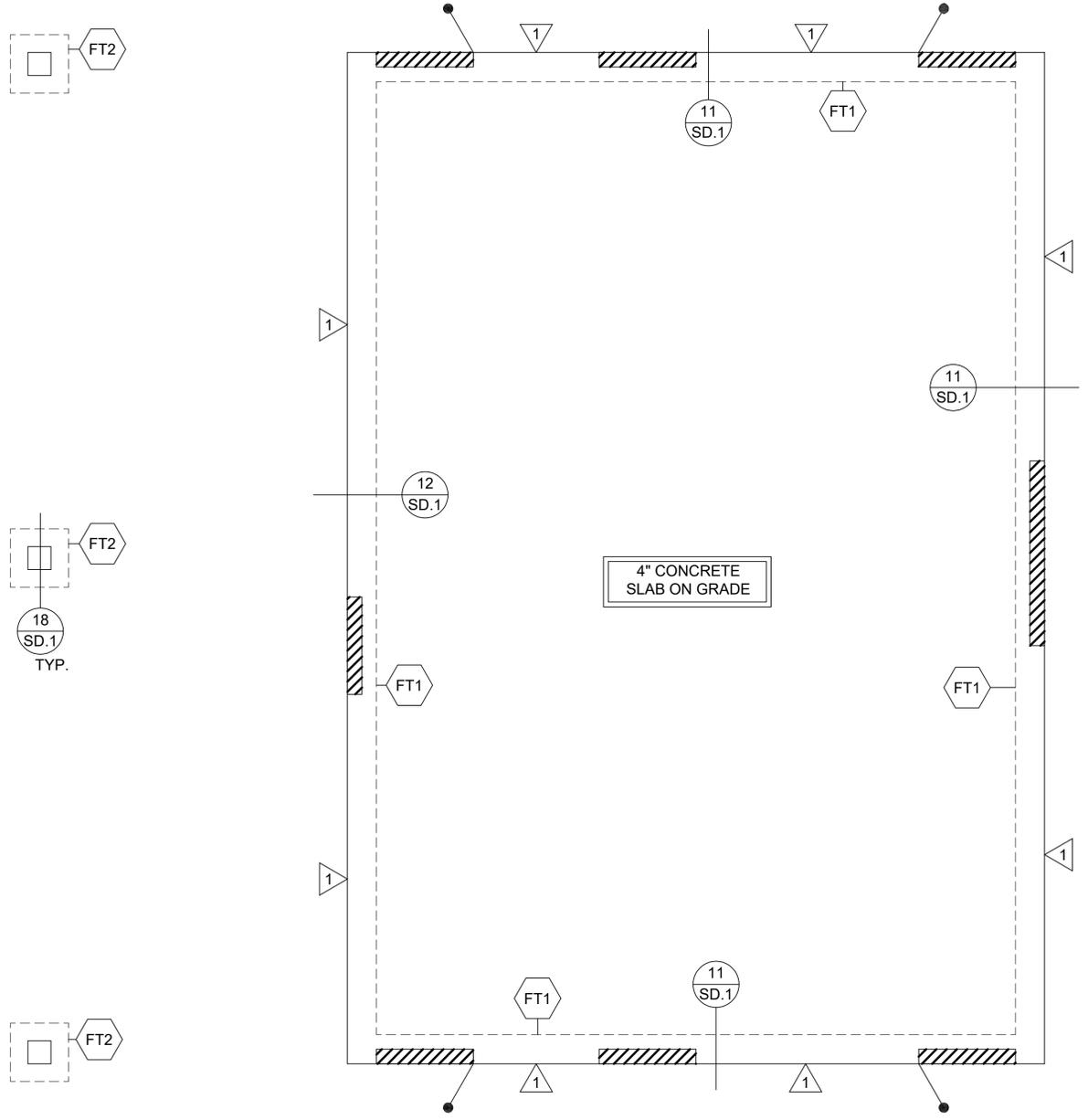
NOTES:  
 1. F<sub>ck</sub> = 2,500 PSI; F<sub>y</sub> = 40,000 PSI; NO SPECIAL INSPECTION REQUIRED.  
 2. FOOTINGS SHALL BEAR ON SUITABLE UNDISTURBED NATIVE SOILS OR STRUCTURAL COMPACTED FILL (95% COMPACTION), SPECIFIED AND TESTED BY A REGISTERED GEOTECHNICAL ENGINEER.  
 3. ALL FOOTINGS SHALL BEAR A MINIMUM OF 12" BELOW GRADE OR BELOW THE FROST LINE OF THE LOCALITY, WHICHEVER IS DEEPER.

LEI CONSULTING ENGINEERS AND SURVEYORS, INC. IS NOT A GEOTECHNICAL ENGINEER AND HAS NOT PERFORMED ANY SOIL BEARING OR SLOPE ANALYSIS. LEI HAS DESIGNED THE FOUNDATION IN ACCORDANCE WITH THE MAXIMUM BEARING PRESSURE ALLOWED WHEN NO GEOTECHNICAL REPORT IS PROVIDED. LEI IS NOT LIABLE FOR DAMAGE OR REPAIRS CAUSED BY SETTLEMENT RESULTING FROM OUTSIDE FACTORS OR POOR SOIL CONDITIONS. THE HOMEOWNER/CONTRACTOR ASSUME ALL RISK ASSOCIATED WITH CONSTRUCTION WITHOUT AN ADEQUATE GEOTECHNICAL INVESTIGATION.

DESIG.	MATERIAL	#6 NAILS		1X 16 GAGE STAPLES		1/2" ANCHOR BOLT SPACING		CAPACITY		NOTE
		EDGE	FIELD	EDGE	FIELD	WIND	SEISMIC			
1	3/8" OSB OR CDX PLYWOOD	6"	12"	3 1/2"	12"	32" O.C.	339	241	2.45	

NOTES:  
 1. WALL STUDS ARE TO BE SPACED AT 16" O.C. U.N.O.  
 2. SHEATH ABOVE AND BELOW OPENINGS IN PERFORATED SHEAR WALLS AS PER THE ADJACENT SHEAR WALL DESIGNATION ON EACH SIDE OF THE OPENING.  
 3. USE (2) KING STUDS AT EACH END OF SHEAR PANELS (SHEAR WALL CHORDS) U.N.O.  
 4. ALL PANEL EDGES SHALL BE BLOCKED WITH 2x OR WIDER FRAMING WITH EDGE NAILING AT ALL SUPPORTS AND PANEL EDGES U.N.O.  
 5. WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6" O.C. ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS.

HOLDOWN SCHEDULE	
SYMBOL	HOLDOWN/STRAP
	LSTHDS HOLDOWN SEE DETAIL 15/SD.1



**FOOTING & FOUNDATION PLAN**  
 SCALE 3/8" = 1'-0"

PROJECT NO.	25053
ISSUED FOR:	PERMIT SET
ISSUED DATE:	SEPTEMBER 19, 2025
REVISION	ISSUE DATE
SHEET TITLE:	FOOTING PLAN
SHEET NO.	<b>S1.0</b>

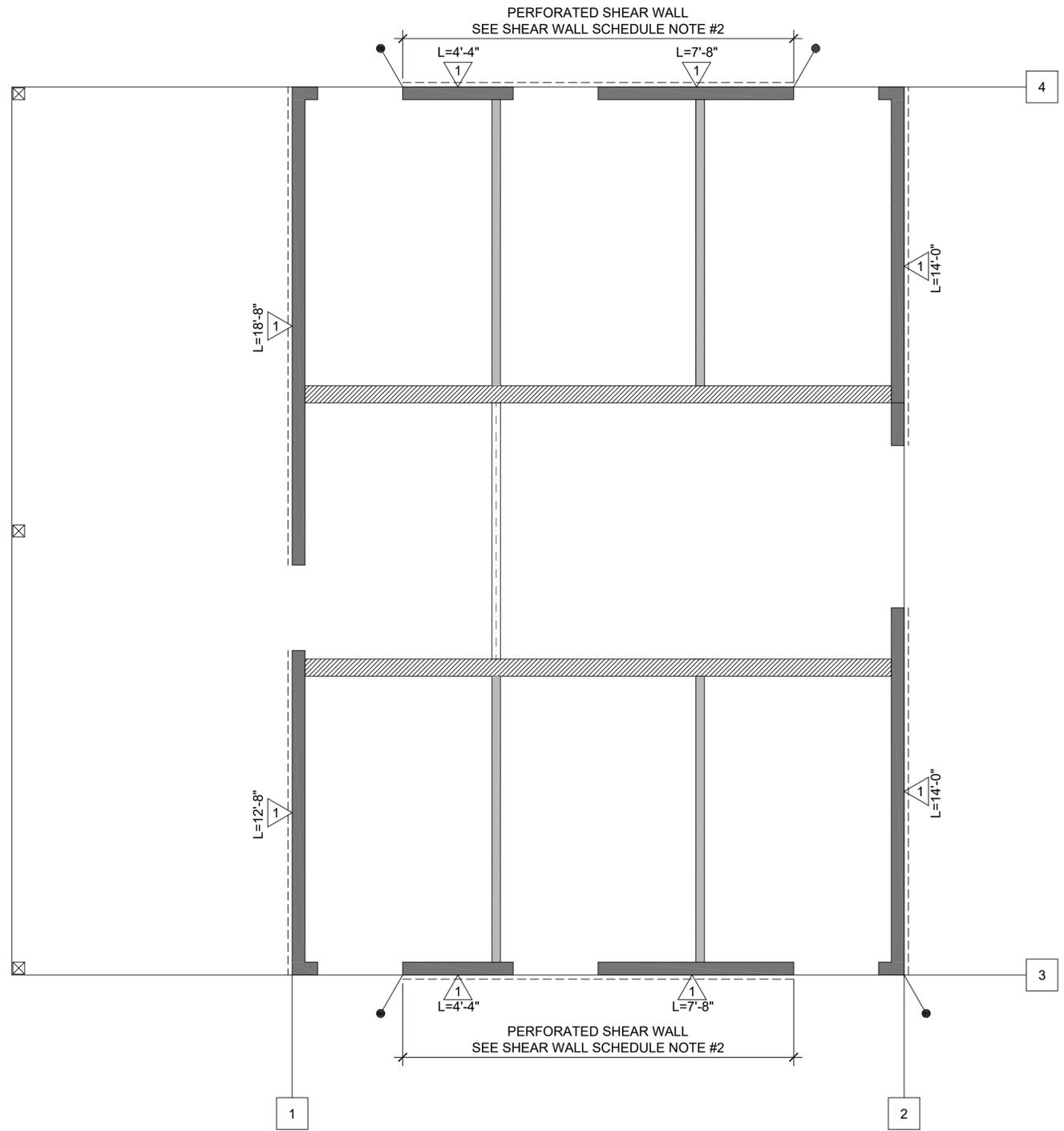


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SHEAR WALL SCHEDULE									
DESIG.	MATERIAL	8d NAILS		1 1/2" x 16 GAGE STAPLES		3/4" ANCHOR BOLT SPACING	CAPACITY		NOTE
		EDGE	FIELD	EDGE	FIELD		WIND	SEISMIC	
1	3/4" OSB OR CDX PLYWOOD	6"	12"	3 1/2"	12"	32" O.C.	339	241	2,4,5

NOTES: 1. WALL STUDS ARE TO BE SPACED AT 16" O.C. U.N.O.  
 2. SHEATH ABOVE AND BELOW OPENINGS IN PERFORATED SHEAR WALLS AS PER THE ADJACENT SHEAR WALL DESIGNATION ON EACH SIDE OF THE OPENING.  
 3. USE ZINKING STUDS AT EACH END OF SHEAR PANELS (SHEAR WALL CHORDS) U.N.O.  
 4. ALL PANEL EDGES SHALL BE BLOCKED WITH 2x OR WIDER FRAMING WITH EDGE NAILING AT ALL SUPPORTS AND PANEL EDGES U.N.O.  
 5. WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6" O.C. ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS.

HOLDOWN SCHEDULE	
SYMBOL	HOLDOWN/STRAP
●	LSTHD8 HOLDOWN SEE DETAIL 15/SD.1



**SHEAR PLAN**  
 SCALE 3/8" = 1'-0"

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ARCHITECT OF RECORD	
PROJECT NO.	25053
ISSUED FOR:	PERMIT SET
ISSUED DATE:	SEPTEMBER 19, 2025
REVISION	ISSUE DATE
SHEET TITLE:	SHEAR WALL PLAN
SHEET NO.	<b>S2.0</b>

For Bids Only



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PROJECT NO.	25053
ISSUED FOR:	PERMIT SET
ISSUED DATE:	SEPTEMBER 19, 2025
REVISION	ISSUE DATE
SHEET TITLE:	ROOF FRAMING PLAN
SHEET NO.	S3.0

- ### FRAMING NOTES
1. PLANS ARE NOT COMPLETE WITHOUT THE STRUCTURAL CALCULATIONS.
  2. REFER TO SHEET SD.0 FOR THE GENERAL STRUCTURAL NOTES.
  3. ROOF SHEATHING SHALL BE APA RATED 7/8" OSB OR CDX PLYWOOD WITH 8d NAILS AT 6" O.C. EDGE, 12" O.C. FIELD.
  4. EXTERIOR STUD WALLS SHALL BE 2x6 DF-L#2 @ 16" O.C. U.N.O.
  5. USE (9) 16d NAILS BETWEEN TOP PLATE SPLICE POINTS ON ALL EXTERIOR AND SHEAR WALLS. PROVIDE A 4'-0" MINIMUM LAP SPLICE.
  6. INSTALL ALL SIMPSON HARDWARE PER MANUFACTURER'S SPECIFICATIONS.
  7. HOLD-DOWNS SHALL BE INSTALLED ON (2) FULL HEIGHT KING STUDS (MINIMUM)
  8. ROOF RAFTERS TO BE 2x10 DF-L#2 @ 16" O.C. U.N.O.
  9. ALL DETAILS SHALL APPLY IN ALL SIMILAR SITUATIONS.
  10. ALL LUMBER NOT PERMANENTLY PROTECTED FROM THE ELEMENTS SHALL BE PRESERVATIVE TREATED OR OF A DECAY RESISTANT SPECIES. CONTACT LEI ENGINEERS AND SURVEYORS, INC. IF A DIFFERENT SPECIES IS TO BE USED.

### POST SCHEDULE

DESIG.	POST SIZE
P1	(1) 2x
P2	(2) 2x
P3	(3) 2x
P4	(4) 2x
P5	(5) 2x
P6	4x4
P7	6x6

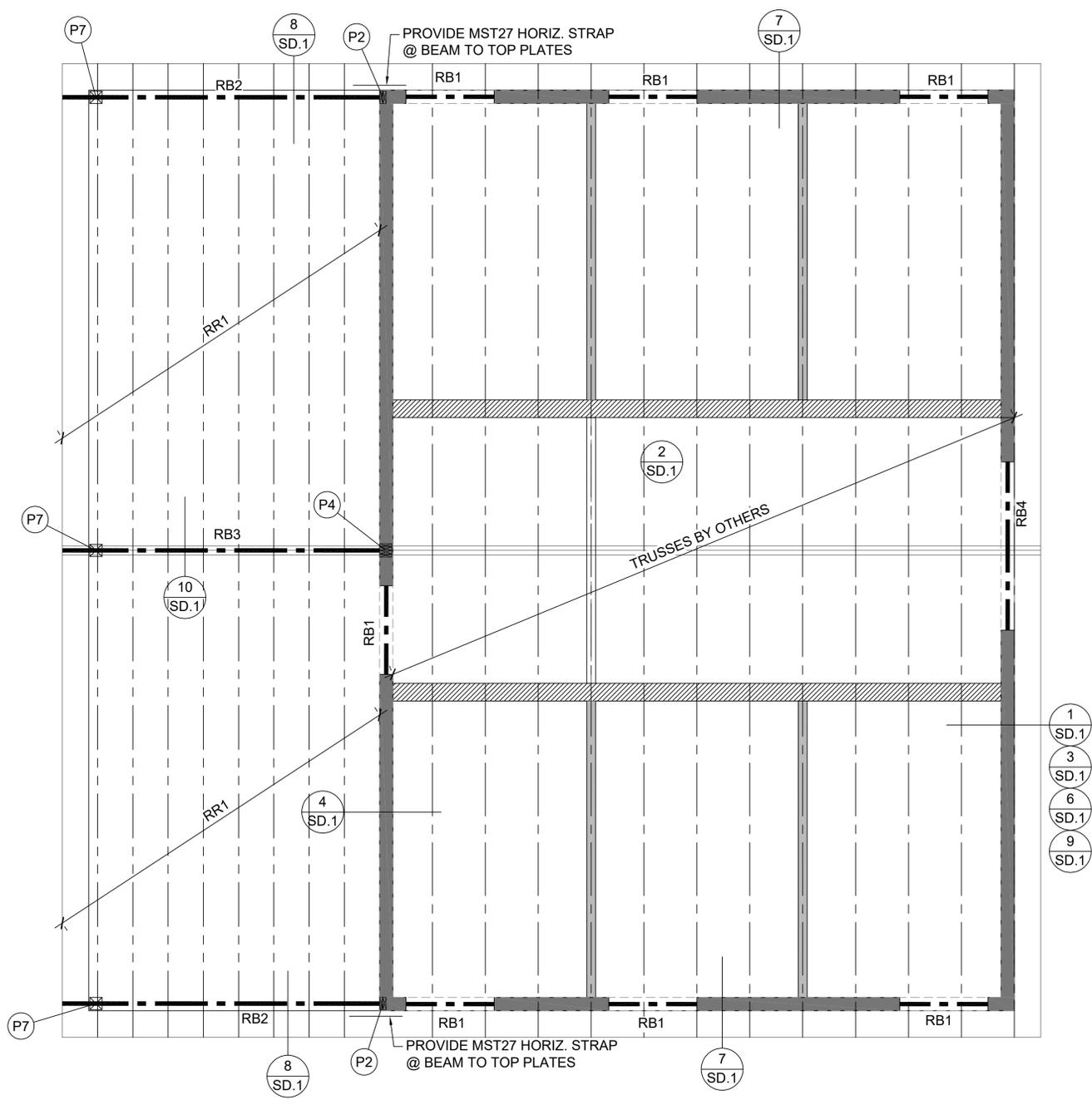
NOTES: 1. POSTS INDICATE NUMBER OF TRIMMER STUDS WHEN SPECIFIED AT HEADERS. ALL OTHER POST DESIGNATIONS REFER TO FULL HEIGHT KING STUDS U.N.O.  
 2. INSTALL (1) TRIMMER AND (1) KING STUD EACH SIDE OF EACH OPENING U.N.O.  
 3. INSTALL (2) TRIMMER STUDS AT EACH SIDE OF OPENINGS GREATER THAN 6'-0" WIDE U.N.O.  
 4. INSTALL (2) KING STUDS EACH SIDE OF OPENINGS GREATER THAN 8'-0" WIDE U.N.O.  
 5. 2x BUILT-UP POSTS SHALL BE THE SAME WIDTH OF THE WALL IN WHICH THEY ARE FRAMED U.N.O.  
 6. NAIL EACH PLY OF 2x BUILT-UP POSTS W/ 16d NAILS @ 6" O.C. STAGGERED U.N.O.  
 7. POSTS THAT ARE NOT FRAMED WITHIN A STUD WALL SHALL BE BRACED WITH BC OR AG POST CAP AND PB OR ABA POST BASE U.N.O.

### BEAM SCHEDULE

DESIG.	QTY.	SIZE	TYPE
RB1	1	4x6	DF-L#2
RB2	1	4x12	DF-L#2
RB3	1	6x12	DF-L#2
RB4	1	4x8	DF-L#2

### RAFTER SCHEDULE

DESIG.	RAFTER
RR1	2x10 DF-L#2 @ 16" O.C.



**ROOF FRAMING PLAN**  
 SCALE 3/8" = 1'-0"

## BASIS OF DESIGN

1. GOVERNING BUILDING CODE	2018 IBC			
GRAVITY DESIGN:				
ROOF DEAD LOAD (MRLA)	15 PSF			
FLOOR DEAD LOAD	20 PSF			
FLOOR LIVE LOAD	40 PSF			
ROOF LIVE LOAD	20 PSF			
SEISMIC DESIGN:				
LATERAL SYSTEM	SHEAR WALL			
ZONE	C			
S <sub>1</sub> =0.255	S <sub>2</sub> =0.118	S <sub>DS</sub> =0.271	S <sub>DS</sub> =0.186	R=6.5
SITE CLASS (ASSUMED)				II
RISK CATEGORY				II
WIND DESIGN:				
BASIC WIND SPEED	99 MPH			
EXPOSURE	C			
SOILS:				
SOIL BEARING PRESSURE (ASSUMED PER 2018 IBC 1806.2)	1500 PSF			

## GENERAL

### 1. THE GENERAL CONTRACTOR SHALL:

- BECOME FAMILIAR WITH ALL PORTIONS OF THE CONTRACT DOCUMENTS AND INSURE THAT ALL SUBCONTRACTORS ARE FAMILIAR WITH THESE PORTIONS PERTAINING TO THEIR AREA OF WORK. NO DEVIATIONS WILL BE ALLOWED UNLESS AGREED UPON BY ALL PARTIES IN WRITING PRIOR TO CONSTRUCTION OR FABRICATION.
- VERIFY ALL DIMENSIONS AND ELEVATIONS. COORDINATE ALL DOORS, WINDOWS, NON-BEARING INTERIOR AND EXTERIOR WALLS, ELEVATIONS, SLOPES, STAIRS, CURBS, DRAINS, RECESSES, DEPRESSIONS, RAILINGS, WATERPROOFING, FINISHES, CHAMFERS, KEYS, ETC.
- FIELD VERIFY ALL SITE CONDITIONS AND IMMEDIATELY NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER REGARDING ACTUAL CONDITIONS AT THE SITE WHICH ARE NOT PER THE DRAWINGS.
- COORDINATE ALL WORK BETWEEN THE VARIOUS TRADES AND SUBCONTRACTORS. REPORT ANY MODIFICATIONS TO THE STRUCTURAL PORTION OF THE BUILDING BY OTHER TRADES TO THE ARCHITECT AND STRUCTURAL ENGINEER.
- BE RESPONSIBLE FOR SAFETY AND PROTECTION IN AND AROUND THE JOB SITE AND/OR ADJACENT PROPERTIES.

### 2. CONTRACT DOCUMENTS:

- REFER TO THE SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE DRAWINGS.
- DETAILS, SECTIONS AND NOTES SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS ELSEWHERE, UNLESS NOTED OR SHOWN OTHERWISE.
- THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE OVER SHOP DRAWINGS UNLESS SPECIFICALLY NOTED OTHERWISE.

- INFORMATION ON DRAWINGS INDICATING EXISTING CONDITIONS IS BASED ON BEST PRACTICE KNOWLEDGE, BUT MAY NOT BE ENTIRELY ACCURATE AND MUST BE FIELD VERIFIED.

### 3. BUILDING CODE COMPLIANCE:

- INSPECTION, TESTING, CONSTRUCTION WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE GOVERNING BUILDING CODE AND STANDARDS. ASTM AND IBC DESIGNATIONS SHALL BE AS AMENDED TO LATEST DATE UNLESS NOTED OTHERWISE.
- COORDINATION:
  - COORDINATE AND VERIFY ROOF, FLOOR, AND WALL OPENINGS REQUIRED BY ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND/OR OTHER DRAWINGS PRIOR TO CONSTRUCTION. REPORT OPENINGS REQUIRED WHICH ARE NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW.

- COORDINATE ANY CONSTRUCTION SITUATION NOT COVERED BY THESE PLANS, GENERAL NOTES, OR SPECIFICATIONS WITH THE ARCHITECT AND STRUCTURAL ENGINEER.
- CONSTRUCTION SEQUENCE, SHORING, AND BRACING REQUIREMENTS:
  - THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE METHOD, MEANS, AND SEQUENCE OF ALL STRUCTURAL ERECTION EXCEPT WHEN SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. HE SHALL PROVIDE TEMPORARY SHORING AND BRACING AS HIS METHOD OF ERECTION REQUIRES TO PROVIDE ADEQUATE VERTICAL AND LATERAL SUPPORT DURING ERECTION. THIS SHORING AND BRACING SHALL REMAIN IN PLACE UNTIL ALL PERMANENT MEMBERS ARE PLACED AND ALL FINAL CONNECTIONS ARE COMPLETED, INCLUDING ALL ROOF AND FLOOR ATTACHMENTS.

- SHORING AND SUPPORTING FORM WORK FOR SUSPENDED CONCRETE OR MASONRY MATERIAL SHALL REMAIN IN PLACE AND SHALL NOT BE REMOVED UNTIL THE STRUCTURAL MEMBERS HAVE ACQUIRED SUFFICIENT STRENGTH TO SAFELY SUPPORT THEIR OWN WEIGHT AND ANY ADDITIONAL CONSTRUCTION STORAGE, AND/OR OTHER LOADS TO WHICH THEY MAY BE SUBJECTED. IN NO CASE SHALL THEY BE REMOVED PRIOR TO 7 DAYS. RE-SHORING SHALL BE IMMEDIATELY INSTALLED UPON REMOVAL OF SUCH FORMS AND SHALL REMAIN IN PLACE UNTIL 28 DAYS AFTER PLACING OF MATERIAL, OR UNTIL THE MATERIAL HAS REACHED THE DESIGN STRENGTH, WHICHEVER IS LONGER. DO NOT REMOVE LARGE AREAS OF SHORING BEFORE STARTING RE-SHORING PROCEDURES.

- NON-BEARING INTERIOR WALLS SHALL BE ADEQUATELY BRACED TO THE STRUCTURE ABOVE WITH ALLOWANCE FOR DEFLECTION OF THE STRUCTURE ABOVE AND/OR BELOW.
- BUILDING WALLS WHICH RETAIN EARTH MUST BE BRACED AT THE TOP. DO NOT BACKFILL UNLESS BRACING IS PROVIDED OR UNTIL THE COMPLETE FLOOR OR ROOF SYSTEM IS IN PLACE, TYPICAL, UNLESS NOTED OTHERWISE ABOVE AND/OR BELOW.

### 6. OMISSIONS AND/OR CONFLICTS:

- OMISSIONS IN AND/OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER AND SHALL BE RESOLVED BY THE SAME BEFORE PROCEEDING WITH ANY WORK INVOLVED.
- IN CASE OF CONFLICTS IN THE STRUCTURAL WORK, THE MOST STRINGENT REQUIREMENTS, AS DIRECTED BY THE ARCHITECT AND STRUCTURAL ENGINEER, SHALL BE IMPLEMENTED AT NO ADDITIONAL COST TO THE OWNER.

### 7. MISCELLANEOUS:

- DURING AND AFTER CONSTRUCTION, THE CONTRACTOR AND/OR OWNER SHALL KEEP THE LOADS ON THE STRUCTURE WITHIN THE LIMITS OF THE DESIGN.
- OBSERVATION VISITS TO THE SITE BY REPRESENTATIVES OF THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHALL NOT BE CONSIDERED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
- SUBMITTALS:
  - THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION, ERECTION, INSTALLATION, OR OTHERWISE BEING INCORPORATED INTO THE WORK:
    - ENGINEERING TRUSS DRAWINGS
    - STRUCTURAL STEEL SHOP DRAWINGS
    - ENGINEER TRUSS DRAWINGS
  - THESE SUBMITTALS SHALL BE STAMPED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF ARIZONA FOR THE REVIEW OF RECORD.
  - A MINIMUM OF TWO WEEKS SHALL BE ALLOWED FOR THE REVIEW OF ALL SUBMITTALS BY THE ARCHITECT AND STRUCTURAL ENGINEER.
  - REQUESTS FOR SUBSTITUTIONS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER IN WRITING. REASONS FOR THE REQUEST AND COST DIFFERENTIALS SHALL BE INCLUDED IN THE REQUESTS. SUBSTITUTIONS ARE NOT ALLOWED UNLESS APPROVED IN WRITING BY THE ARCHITECT AND STRUCTURAL ENGINEER.

## SITE PREPARATION

### 1. REQUIREMENTS:

- DO NOT PLACE FOOTINGS OR FOUNDATIONS ON DISTURBED SOILS. UNDOCUMENTED FILL, DEBRIS, FROZEN SOIL, OR IN POWDED WATER.
- ALL UNSUITABLE SOILS AND VEGETATION, SUCH AS TOPSOIL, ORGANIC SOILS, UNDOCUMENTED FILL, DISTURBED NATIVE SOILS, AND OTHER DELETTERIOUS MATERIALS SHALL BE REMOVED FROM BELOW FOOTINGS, FOUNDATIONS, AND FLOOR SLABS.

## CONCRETE

### 1. CODES AND STANDARDS:

- CONCRETE WORK SHALL COMPLY WITH THE AMERICAN CONCRETE INSTITUTE (ACI) EDITIONS OF:
  - ACT 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
  - ACT 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
  - ACT 317, "RECOMMENDED PRACTICE FOR CONCRETE FORM WORK".
- MATERIALS:
  - CEMENT SHALL CONFORM TO ASTM C150, TYPE II, PORTLAND CEMENT.
  - HARD ROCK AGGREGATES SHALL CONFORM TO ASTM C33. LIGHTWEIGHT AGGREGATES SHALL CONFORM TO ASTM C330.
  - WATER SHALL BE POTABLE.
  - AIR ENTERTAINMENT SHALL CONFORM TO ASTM C260.
  - E. FLY ASH SHALL CONFORM TO ASTM C618.
  - CALCIUM CHLORIDE SHALL NOT BE USED.

### 3. MIX DESIGNS:

- ONLY ONE TYPE OF CONCRETE SHALL BE PLACED AT THE SITE AT ANY GIVEN TIME.
- A MIX DESIGN THAT PRODUCES THE LOWEST SLUMP COMPATIBLE WITH PROPER PLACEMENT SHALL BE USED. 4" MAXIMUM.
- CONCRETE MIXES SHALL CONFORM TO THE FOLLOWING:

TYPE OF CONCRETE MEMBER	MINIMUM STRENGTH AT 28 DAYS (PSI)	MAX. W/C (RATIO)	DRY WEIGHT (PCY)	MAX AGGREGATE SIZE (INCHES)	AIR ENTRAINMENT (%)	MIN. CEMENT PER YARD (LBS)
FOOTINGS:	2500	0.50	145	0'-0" 3/4"	3 ± 1	517
FOUNDATION WALLS:	2500	0.45	145	0'-0" 3/4"	3 ± 1	564
SLAB ON GRADE:						
INTERIOR:	2500	0.45	145	0'-0" 3/4"	3 ± 1	564
EXTERIOR:	2500	0.45	145	0'-0" 3/4"	6 ± 1	564
SLABS ON DECK:						
DT, WT*	2500	0.53	110	0'-0" 3/4"	6 ± 1	564
COLUMNS:	2500	0.45	145	0'-0" 3/4"	3 ± 1	564
BEAMS:	2500	0.45	145	0'-0" 3/4"	3 ± 1	564

- LT. WT. CONCRETE SHALL HAVE A MIN. SPLITTING TENSILE STRENGTH OF 450 PSI.
- LIMIT FLY ASH TO 15% OF THE TOTAL CEMENTitious MATERIAL.

- PEEA GRAVEL AGGREGATE AND/OR PLASTICIZER MAY BE USED IN CONGESTED AREAS WHEN REQUIRED TO PROPERLY FILL ALL VOIDS AND/OR FOR WORKABILITY. (CONTRACTOR'S OPTION).

### 4. CONSTRUCTION:

- CONCRETE SHALL BE PROPERLY VIBRATED DURING PLACEMENT.
- PRIOR TO PLACING CONCRETE, CHECK WITH ALL TRADES TO INSURE PROPER PLACEMENT OF OPENINGS, BLOCK OUTS, SLEEVES, CURBS, CONDUITS, BOLTS, INSERTS, EMBOSSES, DOWELS, ETC. ANCHOR BOLTS AND DOWELS SHALL BE PLACED PRIOR TO CASTING CONCRETE.
- CONSTRUCTION JOISTS AND BULKHEADS SHALL BE FORMED WITH A KEY WAY. ALL CONTACT SURFACES, NEW OR EXISTING, AT CONSTRUCTION JOINTS SHALL BE INTENTIONALLY ROUGHENED PRIOR TO CASTING ADJACENT POUR.
- OPENINGS IN FLOORS AND/OR WALLS SHALL HAVE ADDITIONAL REINFORCING AROUND ALL SIDES OF THE OPENING EQUIVALENT TO THE BARS CUT BY THE OPENING WITH HALF ON EACH SIDE OF THE OPENING OR 2-#5 BARS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE. BARS PARALLEL TO THE PRINCIPAL REINFORCING SHALL RUN FULL LENGTH OF THE SPAN. BARS IN THE OTHER DIRECTION SHALL RUN 24 INCHES BEYOND THE EDGE OF THE OPENING OR END WITH 4 STANDARD HOOK. ALSO PROVIDE 2-#5 x 4'-0" DIAGONAL BARS AT EACH CORNER OF EACH OPENING.
- NO PENETRATION SHALL BE ALLOWED THROUGH ANY CONCRETE BEAM, JOIST, COLUMN, PIER, OR JAMB UNTIL THE ARCHITECT AND STRUCTURAL ENGINEER'S PRIOR WRITTEN APPROVAL. PENETRATIONS SHALL BE RE-ROUTED AS REQUIRED AT THESE LOCATIONS.

### 5. FOOTINGS:

- FOOTINGS SHALL BE PROPERLY PREPARED MATERIAL. SEE SITE PREPARATION NOTES.
- FOOTINGS SHALL BE CENTERED BELOW THE WALL AND/OR COLUMN ABOVE, TYPICAL UNLESS NOTED OTHERWISE.
- EXTERIOR FOOTINGS SHALL BEAR BELOW THE EFFECTS OF FROST.
- PROVIDE 2x4 BEVELED KEY WAYS IN ALL CONTINUOUS WALL FOOTINGS.
- STAGGER FOOTING CONSTRUCTION JOINTS FROM WALL CONSTRUCTION JOINTS ABOVE BY AT LEAST 6 FEET.
- REINFORCING IN CONTINUOUS FOOTINGS SHALL BE CONTINUOUS AT CORNERS AND/OR INTERSECTIONS BY PROVIDING PROPER LAP LENGTHS AND/OR CORNER BARS.
- NO PENETRATIONS SHALL BE ALLOWED THROUGH ANY CONCRETE FOOTING WHEN CONFLICTS ARISE BETWEEN UNDERGROUND PIPING, UTILITIES, ETC. THE FOOTING SHALL BE STOPPED DOWN BELOW THE CONFLICT AND A CONCRETE WALL, PIER, COLUMN, ETC. SHALL BE EXTENDED TO THE FOOTING AS REQUIRED.
- BEARING SURFACES FOR FOOTINGS WHICH ARE, OR BECOME, UNDERMINED DURING CONSTRUCTION SHALL BE BACKFILLED WITH A LEAN-MIX CONCRETE (1000 PSI MIN.).

### 6. SLABS ON GRADE:

- INTERIOR SLABS ON GRADE SHALL BE A MINIMUM OF 4 INCHES THICK, SHALL BEAR ON A 4 INCH MINIMUM LAYER OF FINE DRAINING GRAVEL, AND SHALL BE REINFORCED WITH #4 BARS AT 24" O.C. BOTH WAYS, TYPICAL UNLESS NOTED OTHERWISE. PROVIDE CHAIRS WITH SAND PLATES FOR PROPER PLACEMENT.
- LARGE AREAS OF INTERIOR SLABS ON GRADE SHALL BE PLACED IN STRIPS NOT TO EXCEED 150 FEET IN LENGTH NOR 50 FEET IN WIDTH WHICH ARE SUBDIVIDED BY CONSTRUCTION AND/OR CONSTRUCTION (CONTROL) JOINTS AND REGULARLY SQUARE WHOSE SIDES SHALL NOT EXCEED 15 FEET IN EITHER DIRECTION.
- SEE ARCHITECTURAL FOR INTERIOR SLABS ON GRADE, TYPICAL, UNLESS NOTED OTHERWISE.

## MASONRY VENEER ANCHOR TIES

### 1. PRODUCTS:

- MASONRY VENEER ANCHOR TIES SHALL BE ONE OF THE FOLLOWING:
  - DOVETAIL ANCHORS.
  - DX-10 SEISMIC CLIP INTERLOCK SYSTEM BY HORMAN & BARNARD.
  - ARCHITECT AND STRUCTURAL ENGINEER APPROVED TWO PIECE ADJUSTABLE HOT-DIPPED GALVANIZED TIES.

### 2. INSTALLATION:

- MAXIMUM SPACING SHALL BE 16" O.C. HORIZONTAL AND VERTICAL.
- PROVIDE CONTINUOUS HORIZONTAL GALVANIZED #6 WIRE IN CENTER THIRD OF MORTAR JOINTS AT 16" O.C. ENGAGE #6 WIRE WITH ALL ANCHOR TIES.
- CONSTRUCTION JOINTS IN MASONRY VENEER WALLS SHALL BE PROVIDED AS PER THE ARCHITECTURAL DRAWINGS, AND SHALL BE SPACED AT A MAXIMUM OF 15'-0" O.C. FOR MASONRY BLOCK VENEER.

## REINFORCING STEEL

### 1. CODES AND STANDARDS:

- REINFORCING STEEL SHALL COMPLY WITH:
  - AMERICAN CONCRETE INSTITUTE BUILDING CODE COMMENTARY ACI 318.
  - AMERICAN CONCRETE INSTITUTE "DETAILING MANUAL", ACT 315 (OR SP-66).
- MATERIALS:
  - REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS AND SHALL CONFORM TO ASTM A615, GRADE 60, WITH A DESIGN YIELD STRENGTH OF 60,000 PSI, EXCEPT AS NOTED BELOW.
  - DOWELS TO BE BENT IN THE FIELD DURING CONSTRUCTION SHALL BE ASTM A615, GRADE 40 OR ASTM A706, GRADE 60, "LOW ALLOY STEEL".
  - REINFORCING TO BE WELDED SHALL BE ASTM A706, GRADE 60, "LOW ALLOY STEEL".
- MASONRY JOINT REINFORCING SHALL BE MANUFACTURED FROM WIRE WHICH CONFORMS TO ASTM A62.

### 3. CONSTRUCTION:

- CONCRETE WORK SHALL BE DETAILED, BOLTERED, AND SUPPORTED PER ACI 315.
- REINFORCING STEEL SHALL BE FREE OF LOOSE, FLAKY RUST, SCALE, GREASE, OIL, DIRT, AND OTHER MATERIALS WHICH MIGHT AFFECT OR IMPAIR BOND.
- REINFORCING SHALL BE CONTINUOUS IN WALLS, BEAMS, COLUMNS, SLABS, FOOTINGS, ETC.
- SPLICES IN CONTINUOUS REINFORCING SHALL BE MADE IN AREAS OF COMPRESSION AND/OR AT POINTS OF MINIMUM STRESS, TYPICAL UNLESS NOTED OTHERWISE. LAP SPLICES SHALL BE 40 BAR DIAMETERS LONG IN CONCRETE AND 48 BAR DIAMETERS LONG IN MASONRY. MINIMUM LAP SHALL BE 24 INCHES LONG. DOWELS SHALL HAVE A MINIMUM OF 30 BAR DIAMETERS EMBEDED. TENSION SPLICES SHALL BE MADE AT MID SPAN. SPLICES IN BOTTOM BARS IN SUSPENDED SLABS AND BEAMS SHALL BE MADE AT SUPPORTS.
- BENDS SHALL BE MADE COLD. DO NOT USE HEAT. BENDS SHALL BE DONE IN THE FABRICATOR'S SHOP UNLESS SPECIFICALLY NOTED FOR THE FIELD. DO NOT UN-BEND OR RE-BEND A PREVIOUSLY BENT BAR.
- REINFORCING STEEL IN CONCRETE SHALL BE SECURELY ANCHORED AND TIED IN PLACE PRIOR TO PLACING CONCRETE AND SHALL BE POSITIONED WITH THE FOLLOWING MINIMUM CONCRETE COVER:
 

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER: #6 AND LARGER	2"
#5 AND SMALLER	1 1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER: SLABS AND WALLS, #11 AND SMALLER	3/4"
BEAMS AND COLUMNS, MAIN REINFORCING OR TIES	1 1/2"
SLABS ON GRADE, CENTER OF SLAB	

- NO REINFORCING STEEL SHALL BE WELDED UNLESS SPECIFICALLY NOTED AS SUCH. USE EROX ELECTRODES AND ASTM A706 REINFORCING COMPLY WITH ALL REQUIREMENTS.
- PEEA COATED REINFORCING BARS SHALL BE USED WHEN SPECIFICALLY NOTED. INCREASE LAP SPICE LENGTHS AS REQUIRED BY THE IBC.
- NO REINFORCING STEEL SHALL BE WELDED UNLESS SPECIFICALLY NOTED AS SUCH. USE EROX ELECTRODES AND ASTM A706 REINFORCING COMPLY WITH ALL REQUIREMENTS.
- PEEA COATED REINFORCING BARS SHALL BE USED WHEN SPECIFICALLY NOTED. INCREASE LAP SPICE LENGTHS AS REQUIRED BY THE IBC.

## WOOD TRUSS NOTES

- BOOTH CHORDS OF TRUSSES ACTING AS CEILING MEMBERS MUST BE ABLE TO SUPPORT A 10 PSF LIVE LOAD PER IBC REQUIREMENTS.
- THE TRUSS MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF THE PRE-ENGINEERED TRUSSES, AND SHALL DESIGN THE TRUSSES PER ATTACHED ENGINEERING NOTES.
- THE TRUSSES SHALL BE DESIGNED TO CARRY ANY ADDITIONAL LOADS DUE TO MECHANICAL UNITS, OVERHEAD DOORS, ROOF OVERLIES, ETC.
- THE TRUSSES SHALL ALSO BE DESIGNED PER THE IBC, AND LOCAL ORDINANCES.
- CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO STARTING CONSTRUCTION.

## MINIMUM NAILING SCHEDULE

CONNECTION	NAILING
1. JOIST TO SILL OR GIRDER, TOENAIL	(3) 8d
2. BRIDGING TO JOIST, TOENAIL EACH END	(2) 8d
3. 1"x6" (25mm x 152mm) SUB FLOOR OR LESS TO EACH JOIST, FACE NAIL	(2) 8d
4. WIDER 1"x6" (25mm x 152mm) SUB FLOOR TO EACH JOIST, FACE NAIL	(3) 8d
5. 2" (51mm) SUB FLOOR TO JOIST OR GIRDER, END AND FACE NAIL	(2) 16d
6. SOLE PLATE TO JOIST OR BRACING, TYPICAL FACE NAIL	16d @ 16" (406mm) O.C.
SOLE PLATE TO JOIST OR BLOCKING, AT BRACED WALL PANELS	(3) 16d PER 16" (406mm)
7. TOP PLATE TO STUD, END NAIL	(2) 16d
8. STUD TO SOLE PLATE	(4) 8d, TOENAIL OR (2) 16d, END NAIL
9. DOUBLE STUDS, FACE NAIL	16d @ 24" (610mm) O.C.
10. DOUBLE TOP PLATES, TYPICAL FACE NAIL	16d @ 16" (406mm) O.C.
DOUBLE TOP PLATES, LAP SPICE	(8) 16d
11. BLOCKING BETWEEN JOIST OR RAFTERS TO TOP PLATE, TOENAIL	(3) 8d
12. RIM JOIST TO TOP PLATE, TOENAIL	8d @ 6" (152mm) O.C.
13. TOP PLATES, LAPS AND INTERSECTIONS, FACE NAIL	(2) 16d
14. CONTINUOUS HEADER, TWO PIECES	6d @ 16" (406mm) O.C. ALONG EACH EDGE
15. CEILING JOIST TO PLATE, TOENAIL	(3) 8d
16. CONTINUOUS HEADER TO STUD, TOENAIL	(4) 8d
17. CEILING JOIST LAPS OVER PARTITIONS, FACE NAIL	(3) 16d
18. CEILING JOIST TO PARALLEL RAFTERS, FACE NAIL	(3) 16d
19. RAFTERS TO PLATE, TOENAIL	(3) 16d
20. 1" (25mm) BRACE TO EACH STUD AND PLATE, FACE NAIL	(2) 8d
21. 1"x6" (25mm x 152mm) SHEATHING OR LESS TO EACH BEARING, FACE NAIL	(2) 8d
22. WIDER THAN 1"x6" (25mm x 152mm) SHEATHING TO EACH BEARING, FACE NAIL	(3) 8d
23. BUILT-UP CORNER STUDS	16d @ 24" (610mm) O.C.
24. BUILT-UP CORNER AND BEAMS	20d @ 32" (813mm) O.C. AT TOP & BOTTOM & STAGGERED, (2) 20d AT ENDS & AT EACH SPLICE
25. 2" (51mm) PLANS	(2) 16d AT EACH BEARING
26. WOOD STRUCTURAL PANELS AND PARTICLEBOARD: 2 SUBFLOOR AND WALL SHEATHING (TO FRAMING):	
1/2" (12.7mm) AND LESS	6d 3
19/32" - 3/4" (15mm-19mm)	8d 4 OR 6d 5
7/8" - 1" (22mm-25mm)	8d 5
1 1/8" - 1 1/4" (29mm-32mm)	10d 4 OR 8d 5
COMBINATION SUBFLOOR-UNDERLAYMENT (TO FRAMING):	
3/4" (19mm) AND LESS	6d 5
7/8" - 1" (22mm-25mm)	8d 5
1 1/8" - 1 1/4" (29mm-32mm)	10d 4 OR 8d 5
27. PANEL SIDING (TO FRAMING) 2:	
1/2" (12.7mm) OR LESS	6d 5
5/8" (16mm)	8d 5
28. FIBERBOARD SHEATHING - 7	
1/2" (12.7mm)	No 11 Ca 6d 8b, 16 Ca 9
25/32" (20mm)	No 11 Ca 8d 8b, 16 Ca 9
29. INTERIOR PANELING	
1/4" (6.4mm)	6d 10
3/8" (9.5mm)	6d 11

## MASONRY

- CODES AND STANDARDS:
  - MASONRY WORK SHALL COMPLY WITH THE AMERICAN CONCRETE INSTITUTE (ACI) 530, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES".
- MATERIALS:
  - MASONRY WALL CONSTRUCTION SHALL CONSIST OF GRADE N, TYPE II, MEDIUM WEIGHT OR NORMAL-WEIGHT, CLOSED END, CONCRETE MASONRY UNITS (CMU's) CONFORMING TO ASTM C90.
  - MORTAR SHALL BE TYPE "N" AS DEFINED BY THE ACT AND SHALL CONFORM TO ASTM C270, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS. IT SHALL CONSIST OF 1.0 PART PORTLAND CEMENT, 0.25 TO 0.5 PARTS HYDRATED LIME OR PUTTY LIME, AND 3.5 TO 4.5 PARTS SAND. ALL MEASUREMENTS ARE PARTS BY VOLUME. NO ADDITIVES ARE ALLOWED.
  - GROUT SHALL CONFORM TO ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AT 28 DAYS. IT SHALL BE OF A FLUID CONSISTENCY AND SHALL CONSIST OF A MINIMUM OF 1.0 PART PORTLAND CEMENT, 2.25 TO 3.0 PARTS SAND, AND ONE CONTAIN ADDITIVE.
  - ALL WOOD CONNECTIONS MUST CARRY THE CAPACITY OF THE MEMBER. CONTRACTOR IS RESPONSIBLE FOR CONNECTIONS. IF OTHER THAN STANDARD CONNECTIONS ARE REQUIRED, SEE PROJECT ENGINEER FOR ADDITIONAL ASSISTANCE. USE SIMPSON OR EQUAL CONNECTIONS FOR WOOD TO WOOD.
  - FRESH TESTS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 74=1500 PSI AT 28 DAYS.
  - COMMON
  - DEFORMED SHANK
  - CORROSION-RESISTANT SIDING OR CASING NAILS
  - FASTENERS SPACED 3 INCHES (76mm) ON CENTER AT EXTERIOR EDGES AND 6 INCHES (152mm) ON CENTER AT INTERMEDIATE SUPPORTS.
  - CORROSION-RESISTANT ROOFING NAILS WITH 7/16 INCH DIAMETER (11mm) HEAD AND 1 1/2 INCH (38mm) LENGTH FOR 1/2 INCH (12.7mm) SHEATHING AND 3/4 INCH (14mm) LENGTH FOR 25/32 INCH (20mm) SHEATHING.
  - CORROSION-RESISTANT STAPLES WITH NOMINAL 7/16 INCH (11mm) CROWN AND 1 1/8 INCH (29mm) SHEATHING AND 1 1/2 INCH (38mm) LENGTH FOR 25/32 INCH (20mm) SHEATHING.
  - PANEL SUPPORTS AT 6 INCHES (152mm) [20 INCHES (508mm) IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED]. CASING OR FINISH NAILS SPACED 6 INCHES (152mm) ON PANEL EDGES, 12 INCHES (305mm) AT INTERMEDIATE SUPPORTS.
  - PANEL SUPPORTS AT 24 INCHES (610mm), CASING OR FINISH NAILS SPACED 6 INCHES (152mm) ON PANEL EDGES, 12 INCHES (305mm) AT INTERMEDIATE SUPPORTS.

## GENERAL FRAMING NOTES

- ALL JOISTS, RAFTERS, POSTS AND HEADERS SHALL BE DOUGLAS FIR LARCH NO.2 OR EQUAL 11.5. IF THIS OR EQUAL ARE USED, THEY MUST BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND SPECIFICATIONS. ALSO PROVIDE BRIDGING @ 6' O.C. FOR 4 TO 4.5 PARTS SAND. ALL MEASUREMENTS ARE PARTS BY VOLUME. NO ADDITIVES ARE ALLOWED.
- ALL JOISTS AND RAFTERS SHALL HAVE SOLE BLOCKING AT THEIR BEARING POINTS. ROOF JOISTS TO HAVE HURRICANE CLIPS AT 24" O.C. MIN.
- ALL WOOD/LUMBER PLACED ONTO CONCRETE SHALL BE PRESSURE TREATED OR BURNED.
- ALL WOOD CONNECTIONS MUST CARRY THE CAPACITY OF THE MEMBER. CONTRACTOR IS RESPONSIBLE FOR CONNECTIONS. IF OTHER THAN STANDARD CONNECTIONS ARE REQUIRED, SEE PROJECT ENGINEER FOR ADDITIONAL ASSISTANCE. USE SIMPSON OR EQUAL CONNECTIONS FOR WOOD TO WOOD.
- FRESH TESTS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 74=1500 PSI AT 28 DAYS.
- COMMON
- DEFORMED SHANK
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- PANEL SUPPORTS AT 24 INCHES (610mm), CASING OR FINISH NAILS SPACED 6 INCHES (152mm) ON PANEL EDGES, 12 INCHES (305mm) AT INTERMEDIATE SUPPORTS.

### 6. VERIFY ALL BEAM SIZES WITH ENGINEERING SPECIFICATIONS.

- ALL BEAMS AND JOISTS OVER 48" SHALL BE SUPPORTED BY DOUBLE TRUSSERS UNLESS NOTED OTHERWISE.
- TRUSS MANUFACTURER SHALL PROVIDE ENGINEERING SPECS FOR ALL TRUSSES.

- USE 7/16" O.S.B. OR CDX PLYWOOD SHEATHING WITH 8d NAILS @ 6" O.C. AT EDGES OF ROOF AND WALLS @ 6" O.C. AT GABLE ENDS. SPACE NAILS 12" O.C. ON INTERMEDIATE MEMBERS. STAGGER JOINTS BETWEEN MEMBERS. PLYWOOD PERI. TO RAFTERS AND TRUSSES.

- SOLID BLOCK BETWEEN TRUSSES: HOLD DOWN EVERY 3RD BLOCK FOR ATTIC VENTILATION.

- ALL OVER FRAME AREAS TO HAVE FULL ROOF SHEATHING BELOW.
- PROVIDE SQUASH BLOCKING AT RM JOIST BELOW ALL POSTS FROM ROOF, HEADER OR BEAM POINT LOADS.
- PROVIDE DOUBLE FLOOR JOISTS BELOW ALL PARALLEL BEARING WALLS IN EACH BAY.

- ALL FRAMING LUMBER SHALL BE HEM FIR OR BETTER UNLESS A HIGHER GRADE IS NOTED OTHERWISE.

