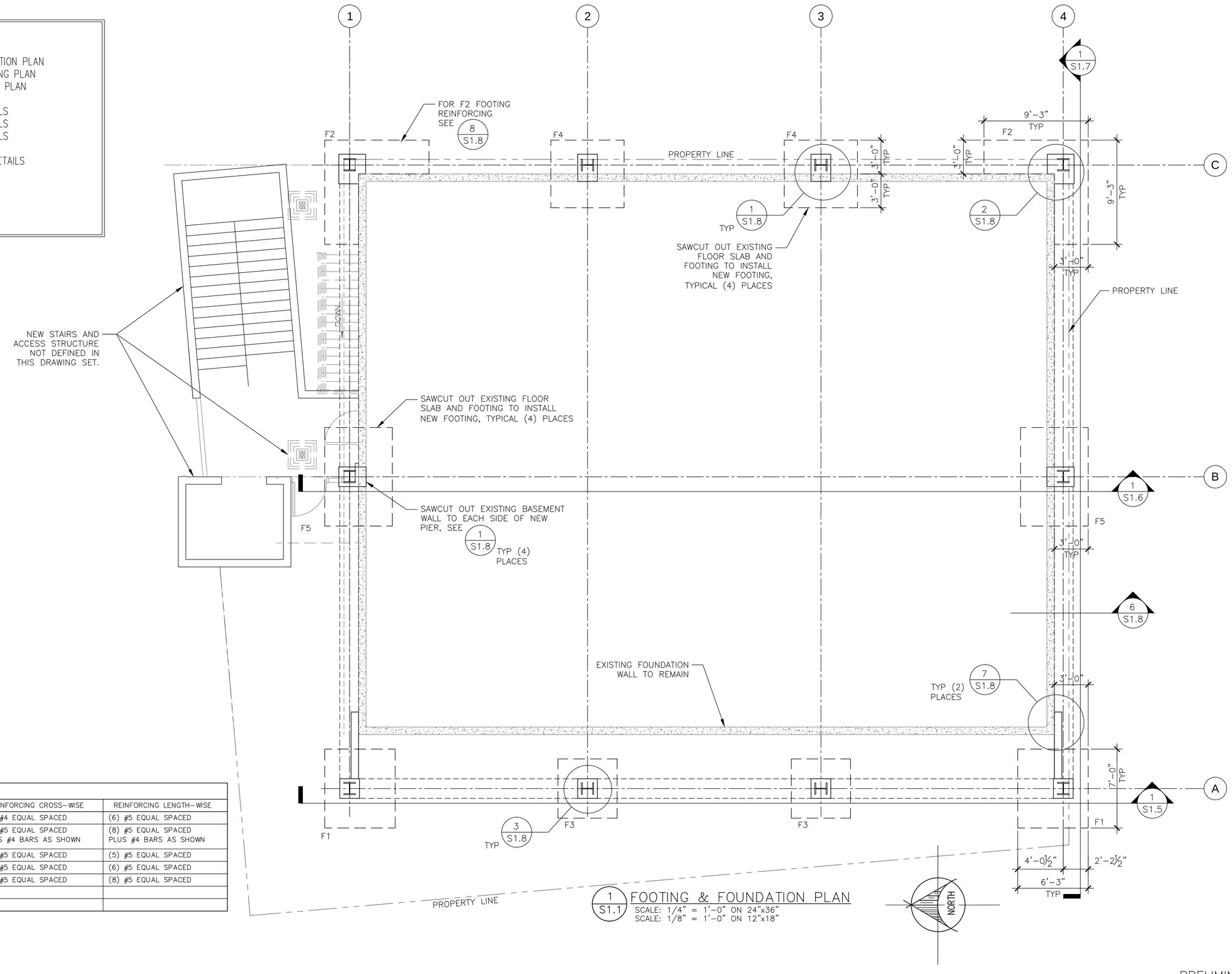
DRAWING INDEX:



FOOTING SCHEDULE					
MARK	WIDTH	LENGTH	DEPTH	REINFORCING CROSS-WISE	REINFORCING LENGTH-WISE
F1	6'-3"	7'-0"	12"	(6) #4 EQUAL SPACED	(6) #5 EQUAL SPACED
F2	3'-0"	9'-3"	12"	(8) #5 EQUAL SPACED PLUS #4 BARS AS SHOWN	(8) #5 EQUAL SPACED PLUS #4 BARS AS SHOWN
	SEE PLAN AND DETAILS				
F3	5'-3"	5'-3"	12"	(5) #5 EQUAL SPACED	(5) #5 EQUAL SPACED
F4	6'-0"	6'-6"	12"	(6) #5 EQUAL SPACED	(6) #5 EQUAL SPACED
F5	6'-0"	7'-6"	12"	(6) #5 EQUAL SPACED	(8) #5 EQUAL SPACED

1/S1.1 FOOTING & FOUNDATION PLAN
SCALE: 1/4" = 1'-0" ON 24"x36"
SCALE: 1/8" = 1'-0" ON 12"x18"

PRELIMINARY
06/01/20

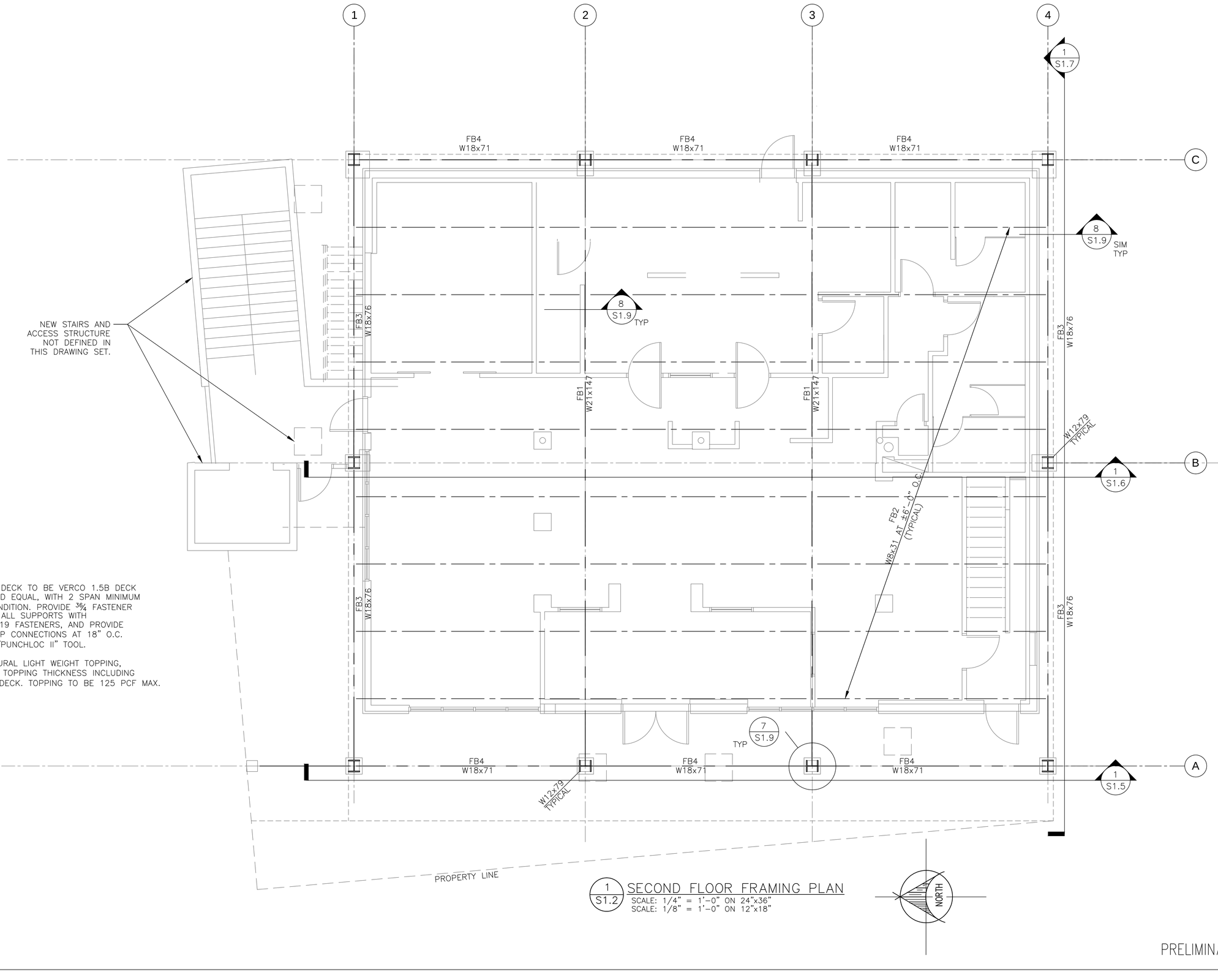
NO.	DATE	REVISIONS	BY
1			
2			
3			

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

PROJECT: *LA CARRETA MOMENT FRAME*
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE: *FOOTING AND FOUNDATION PLAN*

DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071
	S1.1
	1 OF 13 SHEETS



NOTES:

1. 20 GA ROOF DECK TO BE VERCO 1.5B DECK OR APPROVED EQUAL, WITH 2 SPAN MINIMUM BEARING CONDITION. PROVIDE $^{36}/_{4}$ FASTENER PATTERN AT ALL SUPPORTS WITH HILTI X-ENP19 FASTENERS, AND PROVIDE VSC2 SIDELAP CONNECTIONS AT 18" O.C. USING THE "PUNCHLOC II" TOOL.

2. NON-STRUCTURAL LIGHT WEIGHT TOPPING, 3" MAXIMUM TOPPING THICKNESS INCLUDING 1.5" METAL DECK. TOPPING TO BE 125 PCF MAX.

1 S1.2 SECOND FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0" ON 24"x36"
SCALE: 1/8" = 1'-0" ON 12"x18"

NO.	DATE	REVISIONS	BY
1			
2			
3			

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

PROJECT:
LA CARRETA MOMENT FRAME
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE:
SECOND FLOOR FRAMING PLAN

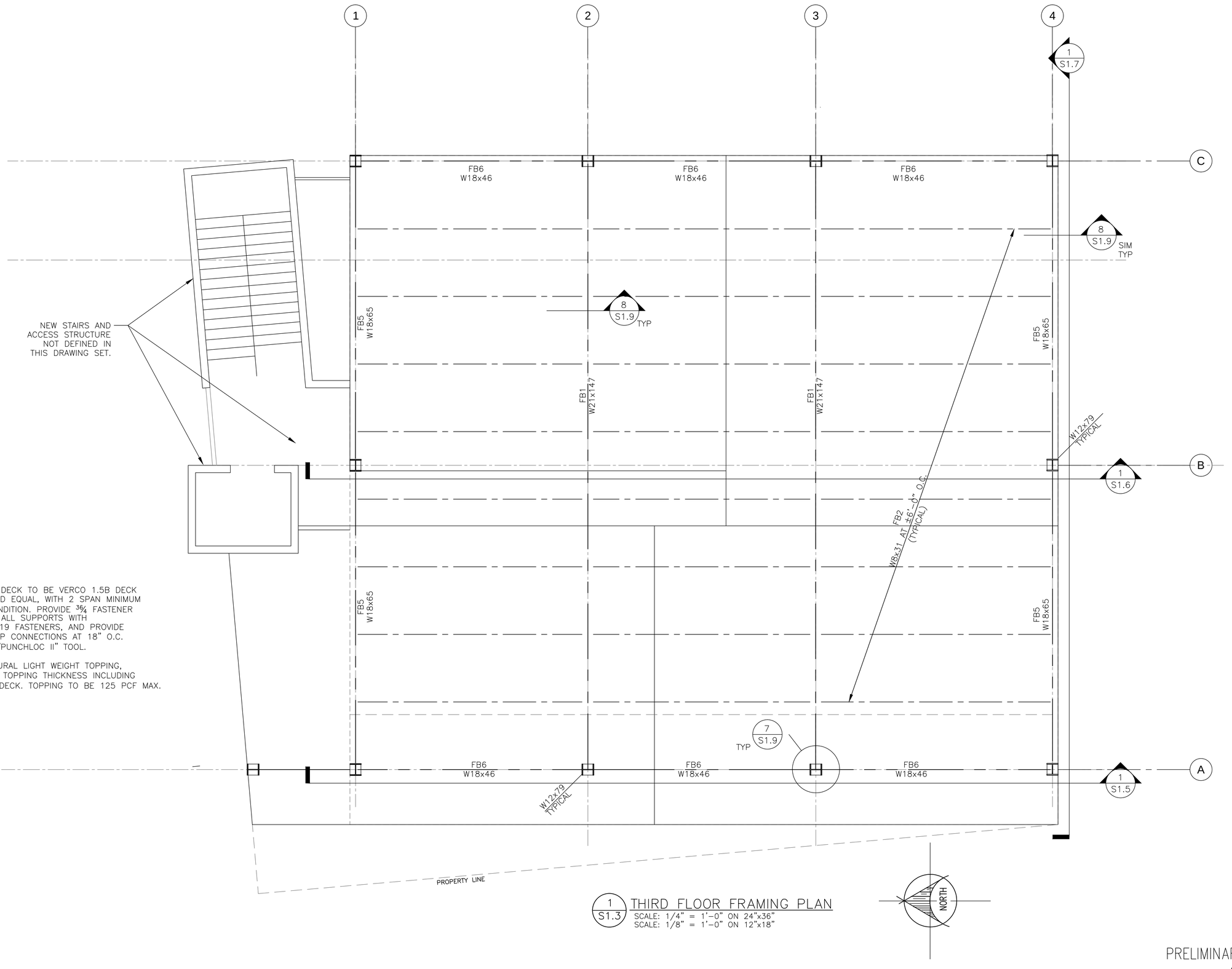
DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.2

2 OF 13 SHEETS

PRELIMINARY

06/01/20



NOTES:

1. 20 GA ROOF DECK TO BE VERCO 1.5B DECK OR APPROVED EQUAL, WITH 2 SPAN MINIMUM BEARING CONDITION. PROVIDE $^{36}/_{4}$ FASTENER PATTERN AT ALL SUPPORTS WITH HILTI X-ENP19 FASTENERS, AND PROVIDE VSC2 SIDELAP CONNECTIONS AT 18" O.C. USING THE "PUNCHLOC II" TOOL.

2. NON-STRUCTURAL LIGHT WEIGHT TOPPING, 3" MAXIMUM TOPPING THICKNESS INCLUDING 1.5" METAL DECK. TOPPING TO BE 125 PCF MAX.

1 S1.3 THIRD FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0" ON 24"x36"
SCALE: 1/8" = 1'-0" ON 12"x18"

NORTH

PRELIMINARY

06/01/20

NO.	DATE	REVISIONS	BY
1			
2			
3			

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

Structural Engineers
Palmer Engineering

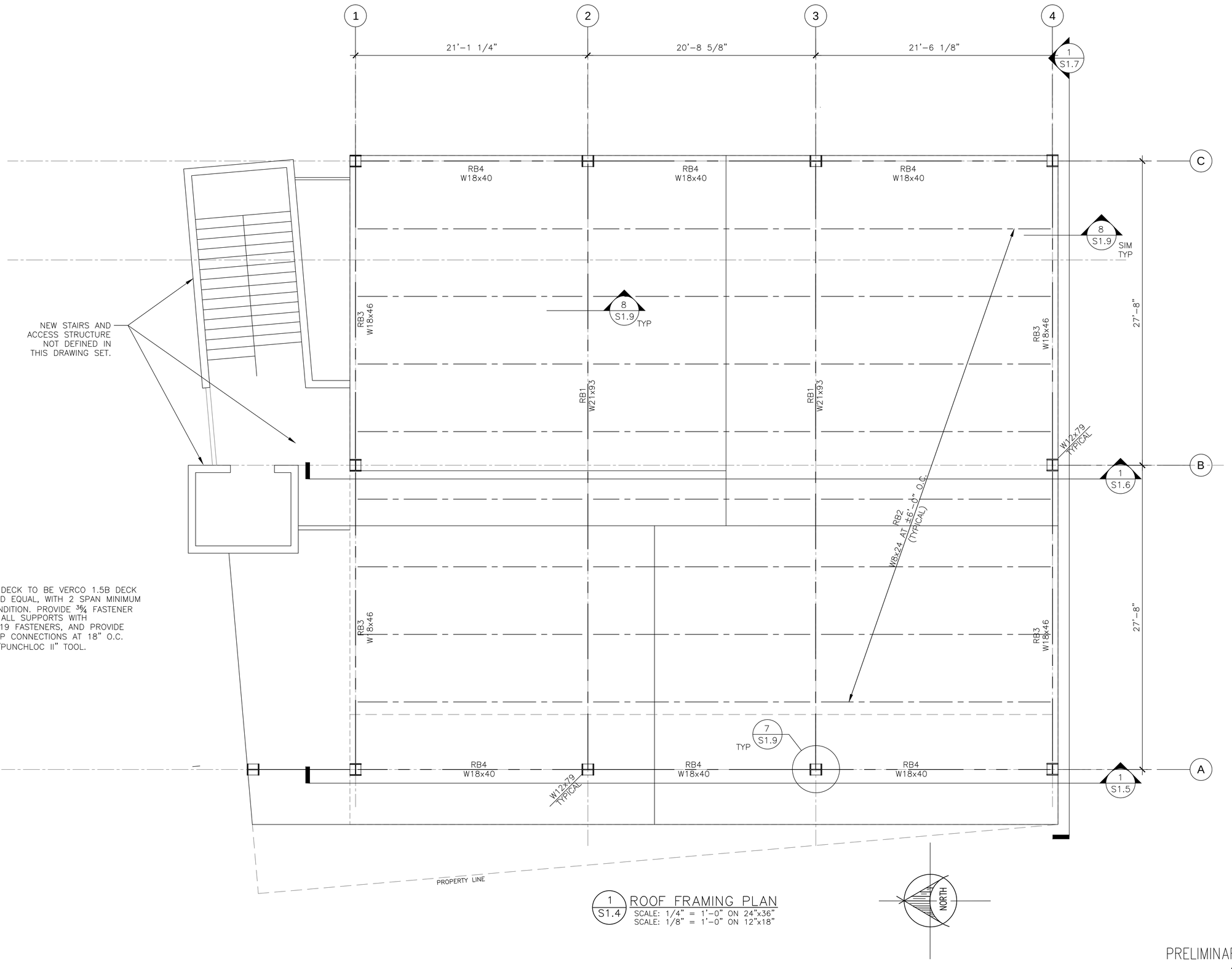
PROJECT:
LA CARRETA MOMENT FRAME
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE:
THIRD FLOOR FRAMING PLAN

DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.3

3 OF 13 SHEETS



NOTES:

1. 22 GA ROOF DECK TO BE VERCO 1.5B DECK OR APPROVED EQUAL, WITH 2 SPAN MINIMUM BEARING CONDITION. PROVIDE $^{36}/_{4}$ FASTENER PATTERN AT ALL SUPPORTS WITH HILTI X-ENP19 FASTENERS, AND PROVIDE VSC2 SIDELAP CONNECTIONS AT 18" O.C. USING THE "PUNCHLOC II" TOOL.

1/S1.4 ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0" ON 24"x36"
SCALE: 1/8" = 1'-0" ON 12"x18"

PRELIMINARY

06/01/20

NO.	DATE	REVISIONS	BY
1			
2			
3			

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

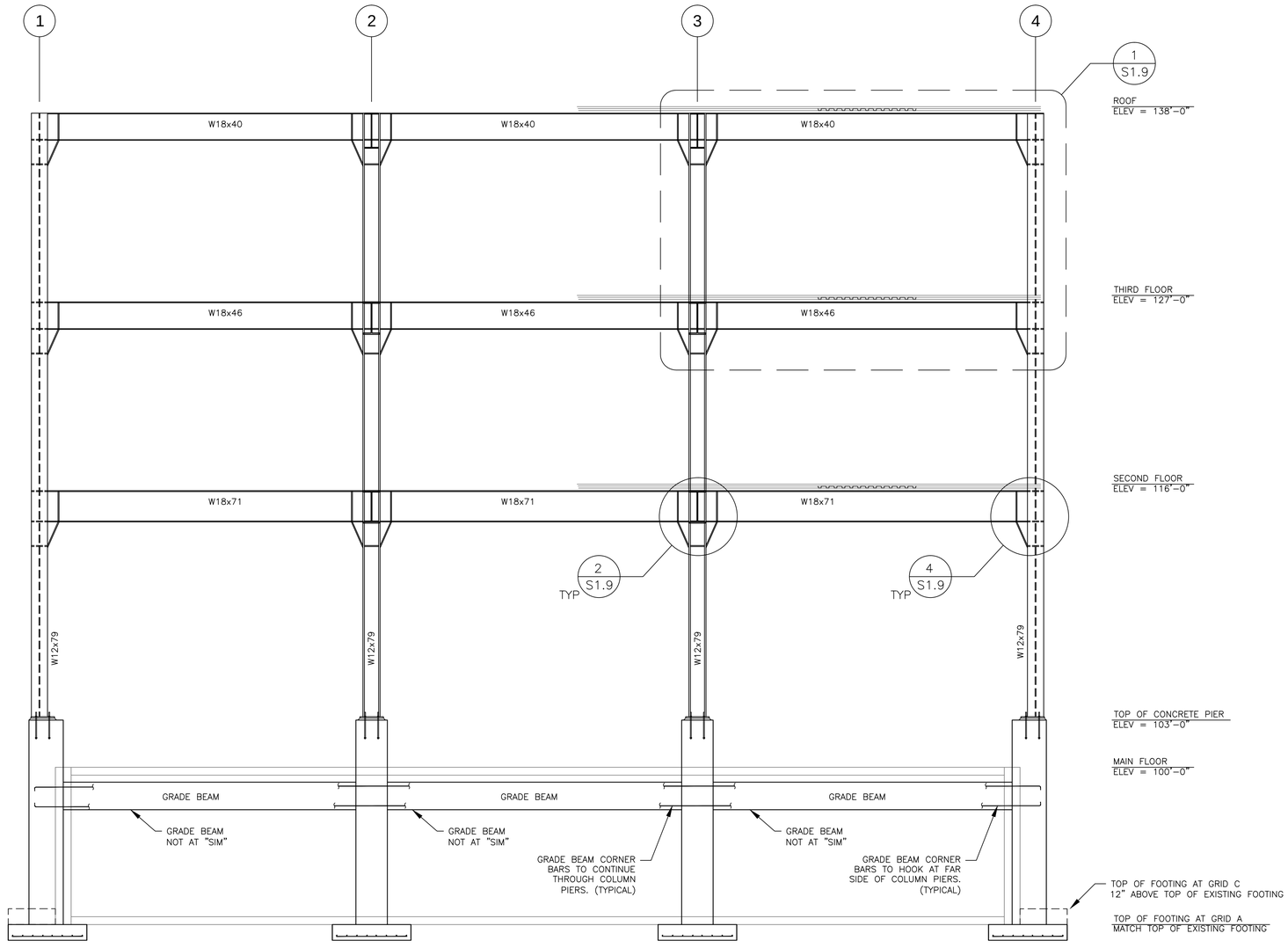
PROJECT:
LA CARRETA MOMENT FRAME
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE:
ROOF FRAMING PLAN

DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.4

4 OF 13 SHEETS



1/S1.5 MOMENT FRAME ELEVATION – GRID A (GRID C SIMILAR)

SCALE: 1/4" = 1'-0" ON 24"x36"
SCALE: 1/8" = 1'-0" ON 12"x18"

NO.	DATE	REVISIONS	BY
1			
2			
3			

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

PROJECT: *LA CARRETA MOMENT FRAME*
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE: *MOMENT FRAME DETAILS*

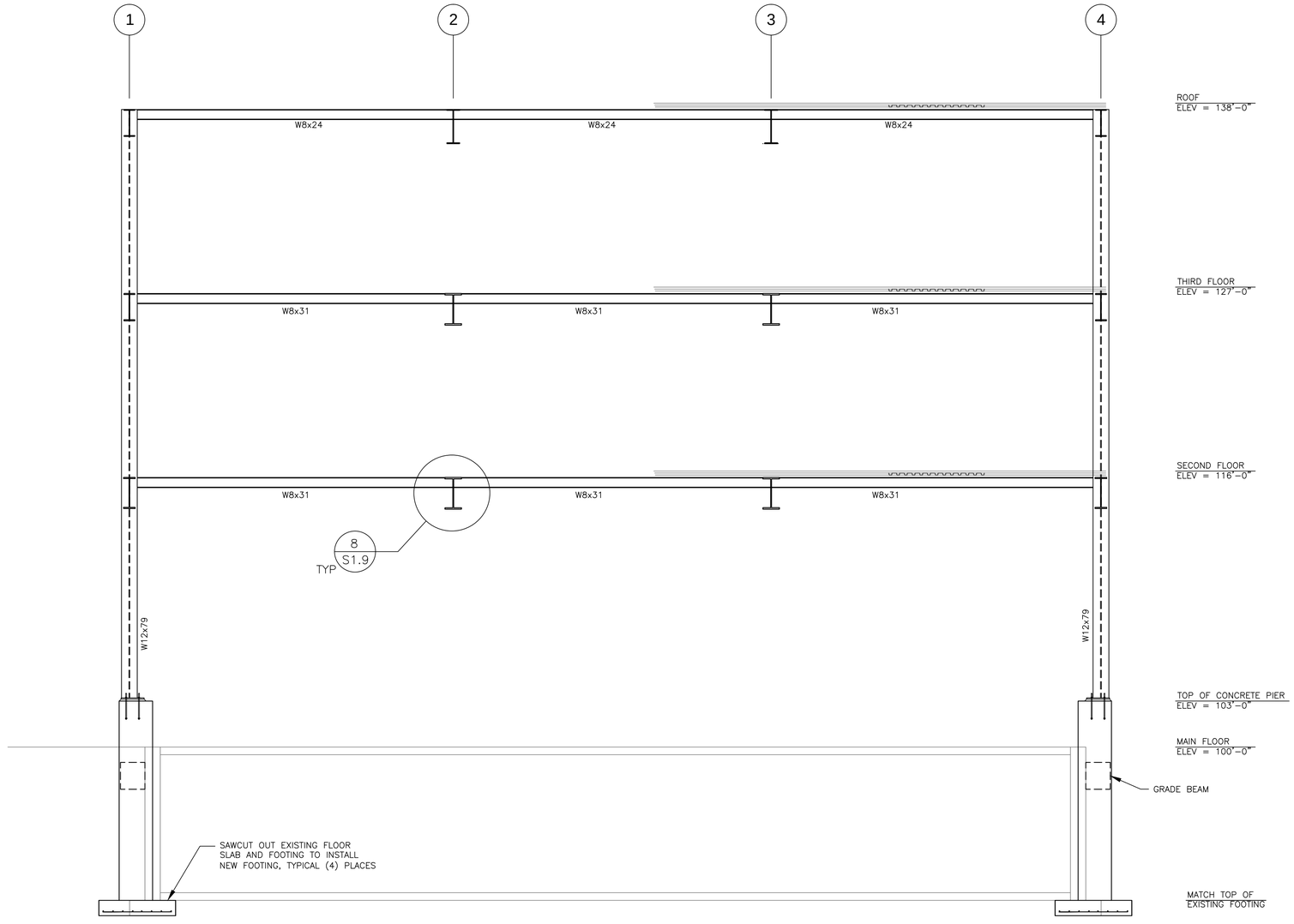
DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.5

5 OF 13 SHEETS

PRELIMINARY

06/01/20



1/S1.6 MOMENT FRAME ELEVATION – GRID B

SCALE: 1/4" = 1'-0" ON 24"x36"
SCALE: 1/8" = 1'-0" ON 12"x18"

PRELIMINARY

06/01/20

REVISIONS

NO.	DATE	BY
1		
2		
3		

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

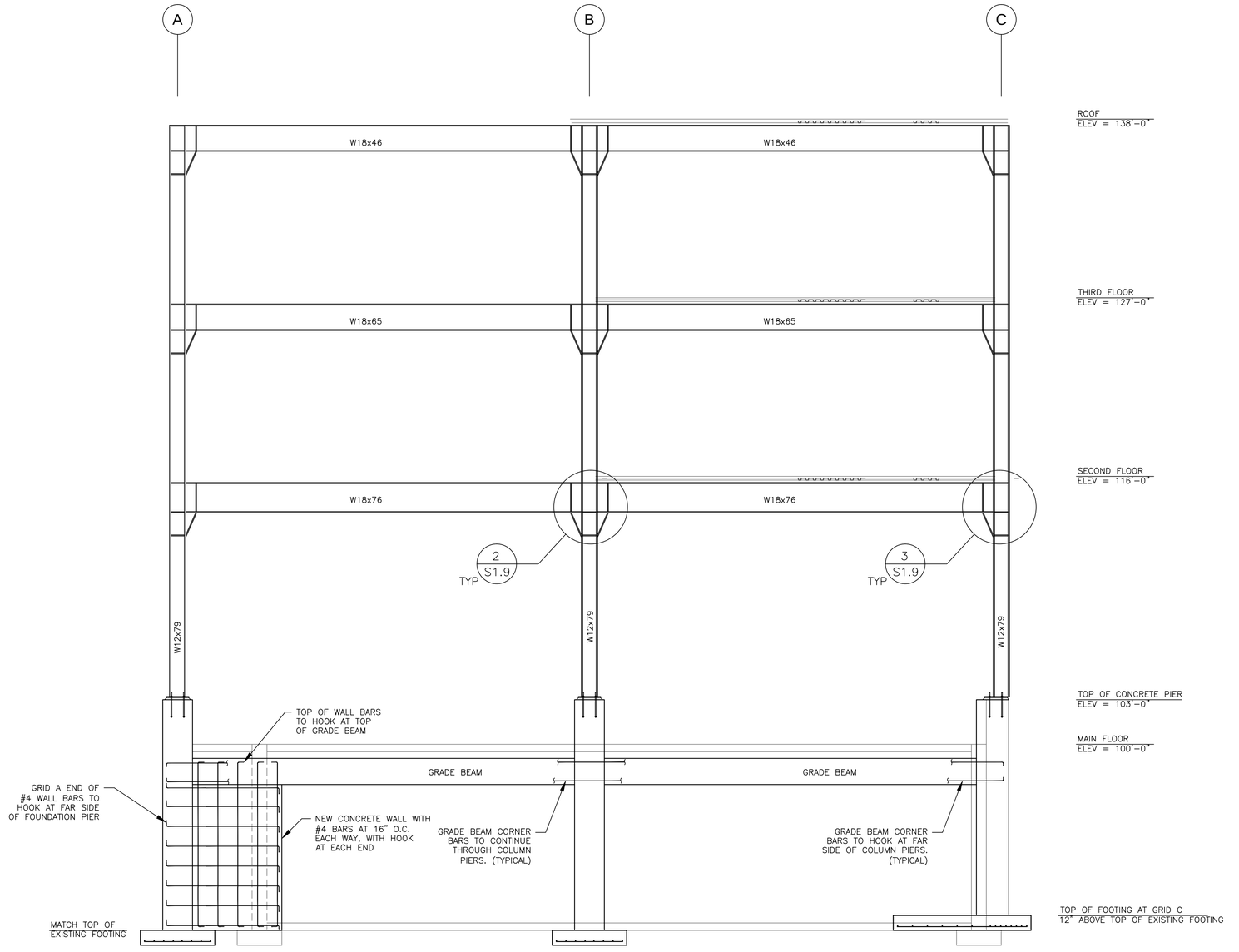
PROJECT:
LA CARRETA MOMENT FRAME
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE:
MOMENT FRAME DETAILS

DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.6

6 OF 13 SHEETS



1 / S1.7 MOMENT FRAME ELEVATION – GRID 1 AND GRID 4

SCALE: 1/4" = 1'-0" ON 24"x36"
SCALE: 1/8" = 1'-0" ON 12"x18"

REVISIONS

NO.	DATE	BY
1		
2		
3		

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

PROJECT: *LA CARRETA MOMENT FRAME*
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE: *MOMENT FRAME DETAILS*

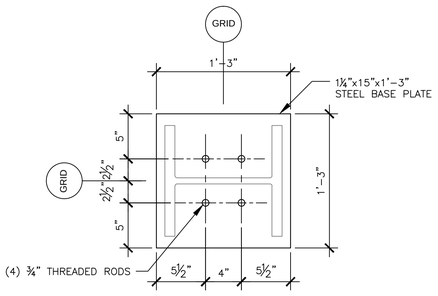
DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.7

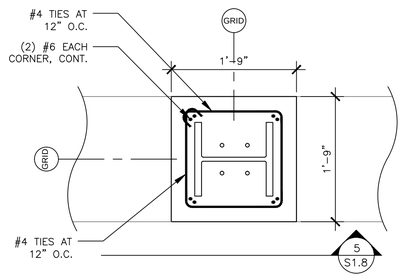
7 OF 13 SHEETS

PRELIMINARY

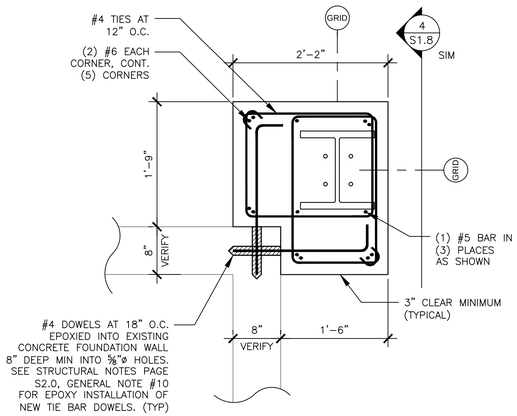
06/01/20



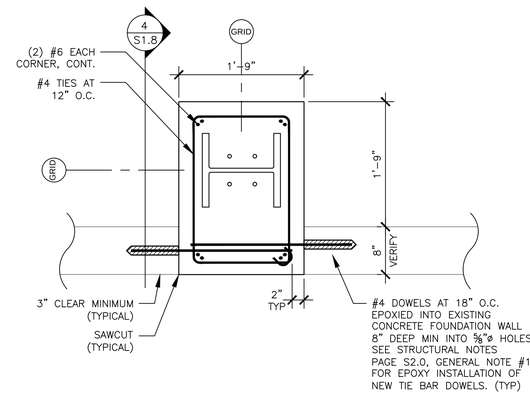
8 / S1.8 TYPICAL BASE PLATE DETAIL
SCALE: 1 1/2" = 1'-0" ON 24"x36"
SCALE: 3/4" = 1'-0" ON 12"x18"



3 / S1.8 CONCRETE PIER DETAIL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"

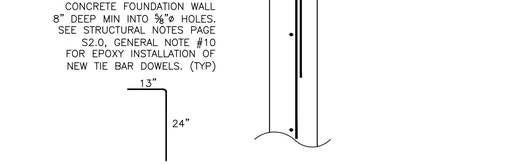


2 / S1.8 CONCRETE PIER DETAIL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"



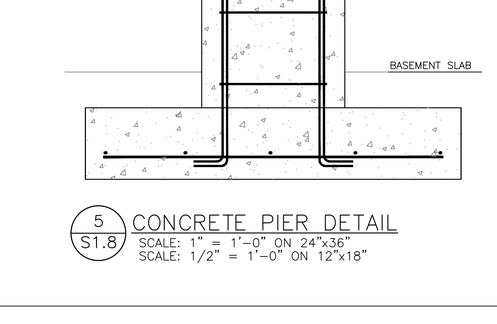
1 / S1.8 CONCRETE PIER DETAIL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"

8 / S1.8 FOOTING F2 DETAIL
SCALE: 1/2" = 1'-0" ON 24"x36"
SCALE: 1/4" = 1'-0" ON 12"x18"

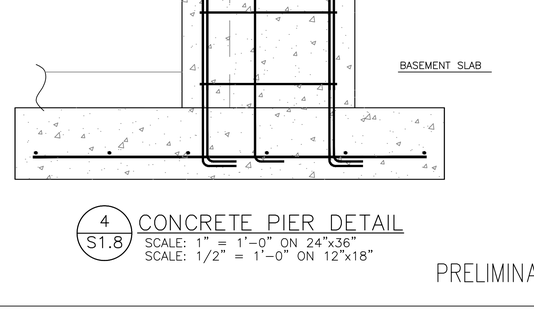


6 / S1.8 GRADE BEAM DETAIL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"

7 / S1.8 CONCRETE SUPPORT WALL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"



5 / S1.8 CONCRETE PIER DETAIL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"



4 / S1.8 CONCRETE PIER DETAIL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"

PRELIMINARY
06/01/20

REVISIONS

NO.	DATE	BY
1		
2		
3		

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

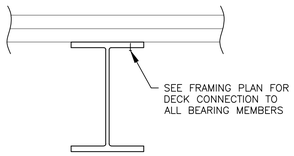
PROJECT: LA CARRETA MOMENT FRAME
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE: CONCRETE DETAILS

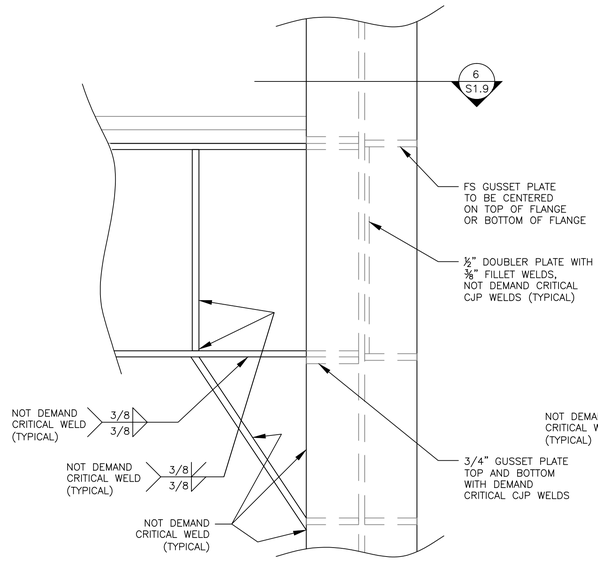
DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.8

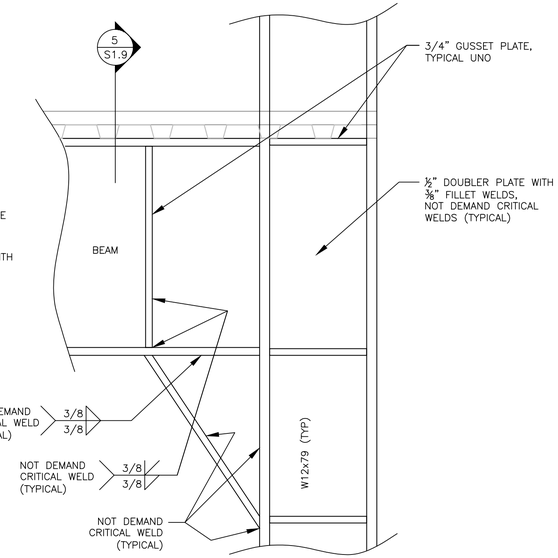
8 OF 13 SHEETS



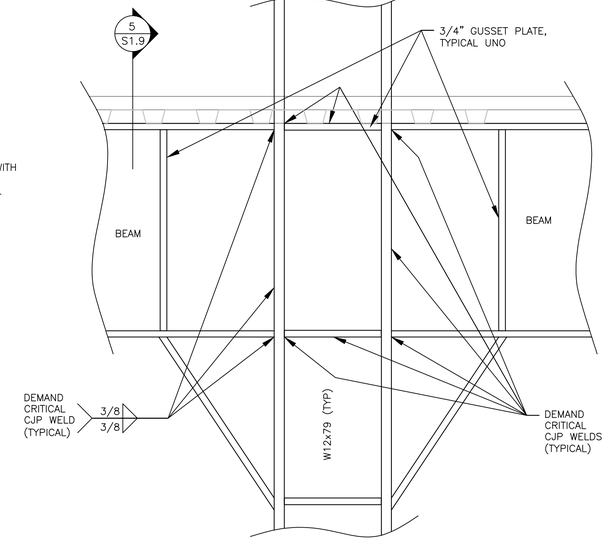
5 / S1.9 DECK CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0" ON 24"x36"
SCALE: 3/4" = 1'-0" ON 12"x18"



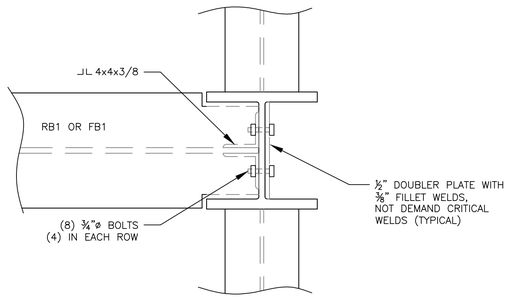
4 / S1.9 MOMENT CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0" ON 24"x36"
SCALE: 3/4" = 1'-0" ON 12"x18"



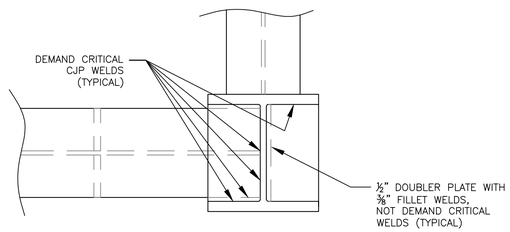
3 / S1.9 MOMENT CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0" ON 24"x36"
SCALE: 3/4" = 1'-0" ON 12"x18"



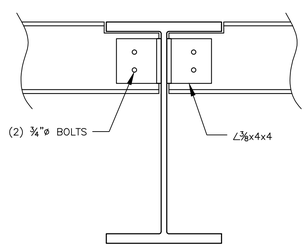
2 / S1.9 MOMENT CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0" ON 24"x36"
SCALE: 3/4" = 1'-0" ON 12"x18"



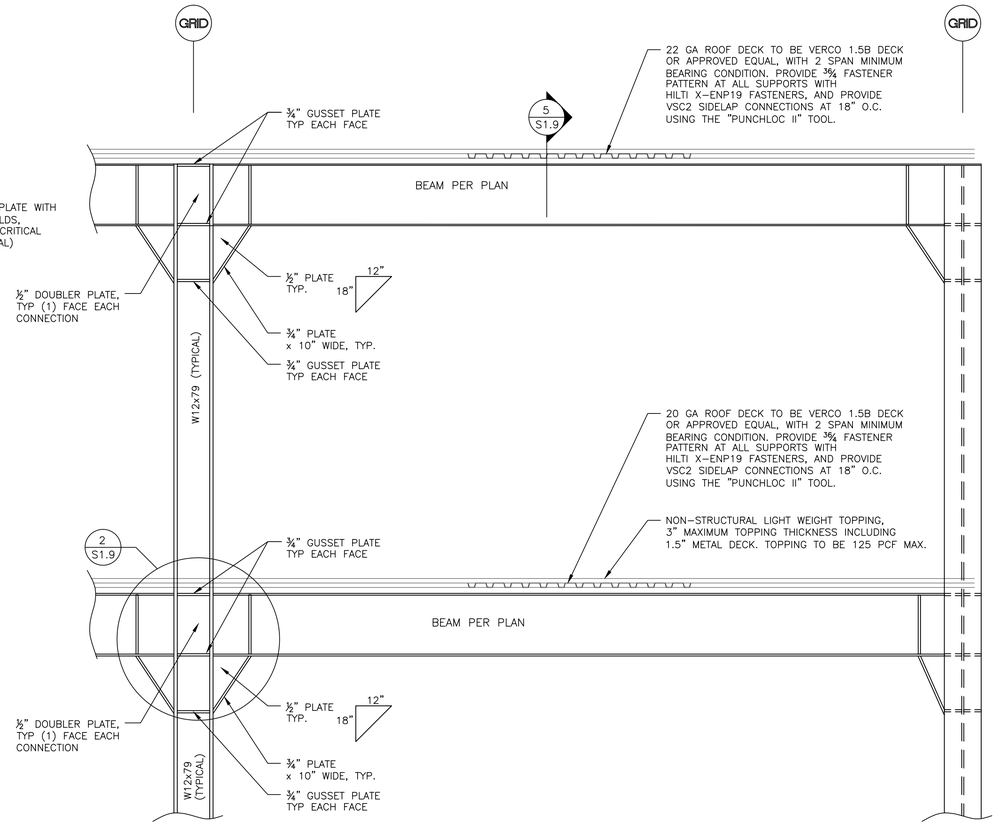
7 / S1.9 FB1 & RB1 BEAM TO MOMENT FRAME CONNECTION DETAIL – PLAN VIEW
SCALE: 1 1/2" = 1'-0" ON 24"x36"
SCALE: 3/4" = 1'-0" ON 12"x18"



6 / S1.9 TYP BEAM TO MOMENT FRAME CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0" ON 24"x36"
SCALE: 3/4" = 1'-0" ON 12"x18"



8 / S1.9 NON-MOMENT FRAME TYP BEAM TO BEAM CONNECTION DETAIL
SCALE: 1 1/2" = 1'-0" ON 24"x36"
SCALE: 3/4" = 1'-0" ON 12"x18"



1 / S1.9 MOMENT FRAME DETAIL
SCALE: 1/2" = 1'-0" ON 24"x36"
SCALE: 1/4" = 1'-0" ON 12"x18"

PRELIMINARY

06/01/20

REVISIONS

NO.	DATE	BY
1		
2		
3		

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

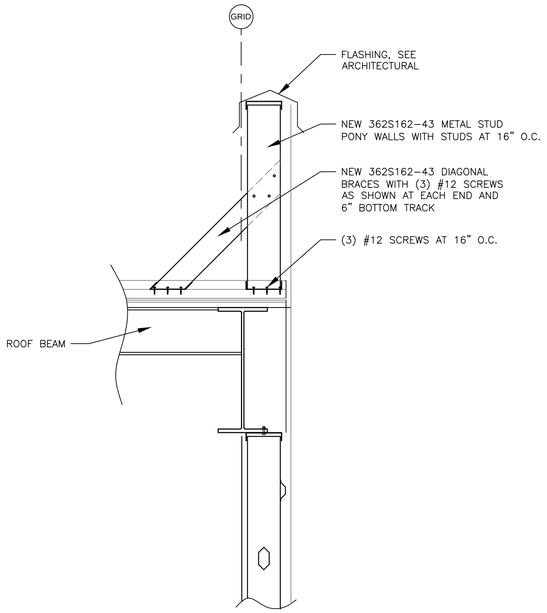
PROJECT:
LA CARRETA MOMENT FRAME
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE:
STRUCTURAL STEEL DETAILS

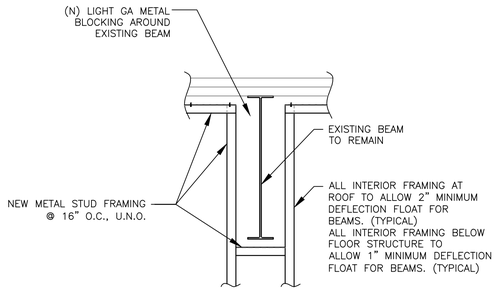
DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.9

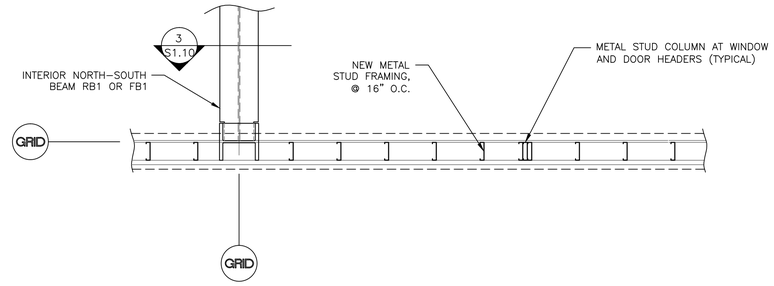
9 OF 13 SHEETS



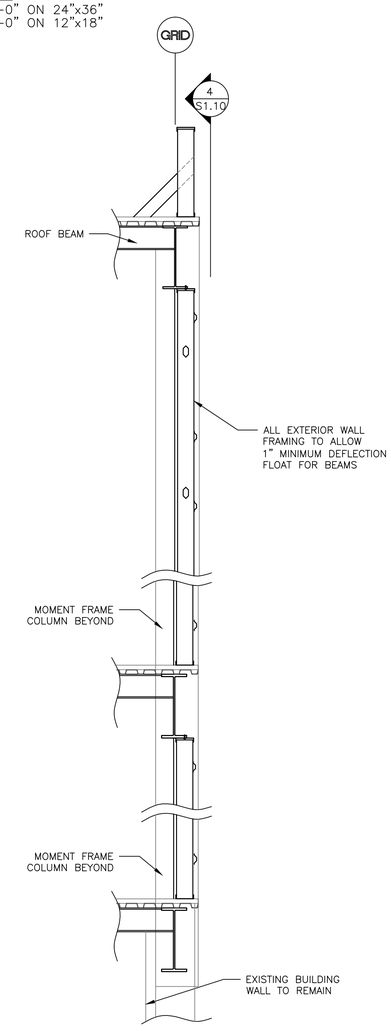
4 / S1.10 ROOF PARAPET DETAIL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"



3 / S1.10 COLUMN DETAIL
SCALE: 1" = 1'-0" ON 24"x36"
SCALE: 1/2" = 1'-0" ON 12"x18"



1 / S1.10 WALL DETAIL
SCALE: 1/2" = 1'-0" ON 24"x36"
SCALE: 1/4" = 1'-0" ON 12"x18"



2 / S1.10 TYP WALL DETAIL
SCALE: 1/2" = 1'-0" ON 24"x36"
SCALE: 1/4" = 1'-0" ON 12"x18"

PRELIMINARY

06/01/20

NO.	DATE	REVISIONS	BY
1			
2			
3			

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

PROJECT: *LA CARRETA MOMENT FRAME*
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE: *DETAILS*

DRAWN	CBP
CHECKED	GEP
DATE	4/1/2020
SCALE	AS NOTED
JOB NO.	18071

S1.10

10 OF 13 SHEETS

GENERAL

1. THE GENERAL CONTRACTOR SHALL:
   A. BECOME FAMILIAR WITH ALL SECTIONS OF THE GENERAL NOTES AND INSURE THAT ALL SUBCONTRACTORS ARE FAMILIAR WITH THOSE SECTIONS PERTAINING TO THEIR AREA OF WORK. NO DEVIATIONS WILL BE ALLOWED UNLESS AGREED UPON BY ALL PARTIES IN WRITING PRIOR TO CONSTRUCTION OR FABRICATION.

   B. VERIFY ALL DIMENSIONS AND COORDINATE DIMENSIONS AND ELEVATIONS WITH THE DRAWINGS.

   C. NOTIFY THE ENGINEER OF RECORD REGARDING CONDITIONS AT THE SITE NOT AS PER THE DRAWINGS.

   D. COORDINATE ALL WORK BETWEEN THE VARIOUS TRADES.

   E. COORDINATE AND VERIFY ALL LOCATIONS AND SIZE OF LOADS FOR MECHANICAL UNITS AND/OR EQUIPMENT OR DEVICES PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY SUPPORTING STRUCTURE. SUCH LOADS SHALL BE REPORTED TO THE STRUCTURAL ENGINEER ENGINEER OF RECORD FOR REVIEW. ADDITIONAL FRAMING MAY BE REQUIRED FOR THE PROPER SUPPORT OF SUCH UNITS OR EQUIPMENT. COORDINATE WITH THE STRUCTURAL ENGINEER.

   F. COORDINATE ALL ROOF AND FLOOR OPENINGS REQUIRED WITH MECHANICAL AND/OR OTHER DRAWINGS TO ACCOMMODATE ALL MECHANICAL AND/OR OTHER UNITS, OPENINGS, ETC.

   G. BE RESPONSIBLE FOR SAFETY AND PROTECTION IN AND AROUND THE JOB SITE AND/OR ADJACENT PROPERTIES.

   H. PROVIDE DRAINAGE AT THE BASE OF RETAINING WALLS AND AT THE BASE OF ALL CONCRETE OR BLOCK BASEMENT WALLS.

   I. BE RESPONSIBLE FOR ADEQUATE TEMPORARY BRACING OF STRUCTURAL AND NON-STRUCTURAL PORTIONS OF THE BUILDING UNTIL THE STRUCTURE IS COMPLETE.

   J. LOCATE CONSTRUCTION AND CONTRACTION JOINTS FOR THE SLAB-ON-GRADE AND HAVE IT APPROVED BY THE ENGINEER BEFORE PROCEEDING.

2. ARCHITECTURAL DRAWINGS: SEE ARCHITECTURAL DRAWINGS OR CHECK WITH OWNER FOR DIMENSIONS, DOORS, WINDOWS, NON-BEARING INTERIOR AND EXTERIOR WALLS, ELEVATIONS, SLOPES, STAIRS, CURBS, DRAINS, RECESSES, DEPRESSIONS, RAILINGS, WATERPROOFING, FINISHES, CHAMFERS, KERFS, ETC.

3. BUILDING CODE COMPLIANCE:
   ALL INSPECTION, CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE 2018 IBC AND STANDARDS. ALL ASTM AND IBC DESIGNATIONS SHALL BE AMENDED TO SUCH DATE UNLESS NOTED OTHERWISE.

4. DEAD AND LIVE LOADS:
   DURING AND AFTER CONSTRUCTION, BUILDER AND/OR OWNER SHALL KEEP LOADS ON THE STRUCTURE WITHIN THE LIMITS OF DESIGN LOADS.

5. DETAILS:
   A. ALL DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS ELSEWHERE, UNLESS NOTED OR SHOWN OTHERWISE.

6. OMISSIONS AND/OR CONFLICTS:
   ALL OMISSIONS AND/OR CONFLICTS BETWEEN THE VARIOUS STRUCTURAL ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER OF RECORD AND RESOLVED BY THE ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED.

7. PENETRATIONS:
   A. NO PENETRATION SHALL BE ALLOWED THROUGH ANY CONCRETE OR MASONRY BEAM, COLUMN, PIER, OR JAMB, WITHOUT THE STRUCTURAL ENGINEER OF RECORD'S WRITTEN APPROVAL. MECHANICAL AND/OR OTHER PENETRATIONS SHALL BE RE-ROUTED AS REQUIRED AT THESE LOCATIONS.

8. SHORING AND BRACING REQUIREMENTS:
   A. ALL STRUCTURES – THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE METHOD AND SEQUENCE OF ALL STRUCTURAL ERECTION. HE SHALL PROVIDE TEMPORARY SHORING AND BRACING AS HIS METHOD OF ERECTION REQUIRES SO AS TO PROVIDE ADEQUATE VERTICAL AND LATERAL SUPPORT. THIS SHORING AND BRACING SHALL BE ADEQUATELY MAINTAINED UNTIL ALL PERMANENT MEMBERS ARE PLACED AND ALL FINAL CONNECTIONS ARE COMPLETED, INCLUDING ALL ROOF ATTACHMENTS.

   B. FOUNDATION WALLS MUST BE BRACED UNTIL THE COMPLETE HORIZONTAL FRAMING SYSTEM IS COMPLETED FOR THE ELEVATION EQUAL TO THE TOP OF THE WALL. DO NOT BACKFILL UNTIL THIS FLOOR OR ROOF SYSTEM IS IN PLACE.

   C. ALL NON-BEARING WALLS TO HAVE SILL PLATE ANCHORED WITH POWDER ACTUATED FASTENERS AT 32"O.C. HILTI OR EQUAL, AND HAVE A 1" SEPARATION FROM STRUCTURE ABOVE WITH SIMPSON "STC" ANCHORS (O.A.E.).

9. ABBREVIATIONS:
   A. U.N.O. MEANS "UNLESS NOTED OTHERWISE".
   B. O.A.E MEANS "OR APPROVED EQUAL".

10. ADHESIVE ANCHORS:
   A. USE SIMPSON "SET-XP" PRODUCT, OR APPROVED EQUAL. INSTALL PER ALL MANUFACTURER'S RECOMMENDATIONS & THE FOLLOWING:

   B. DRILL HOLES 1/8" OVERSIZE IN DIAMETER, TO A MINIMUM DEPTH AS AS SHOWN ON THE DRAWINGS. DRILL HOLES VERTICAL, HORIZONTAL OR ANGLED, ACCURATELY AS SHOWN.

   C. CLEAN HOLES THOROUGHLY WITH BOTH MECHANICAL (BRUSH) METHOD AND THEN WITH CLEAN, DRY AIR METHOD.

   D. MIX EPOXY PER MANUFACTURER'S INSTRUCTIONS. EPOXY MAY BE PRE-MIXED WITH UP TO 1:1 RATIO WITH CLEAN, DRY, BAGGED 30 GRIT SILICA SAND. INJECT EPOXY INTO HOLE FROM BOTTOM END OUT TO FRONT, SO THAT HOLE IS SUFFICIENTLY FILLED SO THAT ALL VOIDS ARE FILLED WHEN BOLT AND/OR BAR IS INSERTED. INSERT TO MINIMUM DEPTH REQ'D.

   E. DO NOT ALLOW EXCESS EPOXY TO COAT CONCRETE OR MASONRY SURFACES WHICH WILL BE BONDED TO NEW CONCRETE OR MORTAR.

STRUCTURAL OBSERVATIONS

1. THE STRUCTURAL ENGINEER OF RECORD SHALL PROVIDE "STRUCTURAL OBSERVATION" FOR THE WORK TO ALL STRUCTURAL SYSTEMS.
2. ALL CONSTRUCTION OR WORK DEFINED IN THESE DOCUMENTS SHALL BE SUBJECT TO OBSERVATION BY THE ENGINEER OF RECORD, AND ALL SUCH WORK SHALL REMAIN ACCESSIBLE AND EXPOSED FOR OBSERVATION UNTIL APPROVED BY THE ENGINEER. IT SHALL BE THE DUTY OF THE GENERAL CONTRACTOR TO PROVIDE ACCESS AND MEANS FOR OBSERVATION.
3. APPROVAL AS A RESULT OF AN OBSERVATION SHALL NOT BE CONSTRUED AS AN APPROVAL OF A VIOLATION OF THE PROVISIONS OF THE CONSTRUCTION STANDARDS, THESE CONSTRUCTION DOCUMENTS, OR ANY OTHER LOCAL, STATE, OR FEDERAL ORDINANCES OR REGULATIONS. ALL SUCH DISCREPANCIES ARE TO BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
4. IT SHALL BE THE DUTY OF THE GENERAL CONTRACTOR TO CAUSE THE WORK TO REMAIN ACCESSIBLE AND EXPOSED FOR OBSERVATION PURPOSES. THE ENGINEER SHALL NOT BE LIABLE FOR THE EXPENSE OR SCHEDULE LOSS ENTAILED IN THE REMOVAL OR REPLACEMENT OF ANY MATERIAL REQUIRED TO ALLOW SUCH OBSERVATION.
5. IT SHALL BE THE DUTY OF THE GENERAL CONTRACTOR TO NOTIFY THE ENGINEER THAT SUCH WORK IS READY FOR OBSERVATION. THE REQUEST SHALL BE SUBMITTED BY FAX AT LEAST TWO WORKING DAYS BEFORE SUCH OBSERVATION IS DESIRED, UNLESS THE SITE DISTANCE IS GREATER THAN 50 MILES FROM THE ENGINEER'S OFFICE, WHEN 5 WORKING DAYS ARE REQ'D.
6. A WRITTEN RECORD OF THE OBSERVATION SHALL BE PROVIDED BY THE ENGINEER, NOTING CONFORMANCE OR NON-CONFORMANCE OF THE WORK. NO WORK SHALL BE DONE BEYOND THE POINT INDICATED IN EACH SUCCESSIVE OBSERVATION WITHOUT FIRST OBTAINING THE WRITTEN APPROVAL OF THE ENGINEER. ANY PORTIONS WHICH DO NOT COMPLY SHALL BE CORRECTED AT THE COST OF THE CONTRACTOR, AND SUCH PORTIONS SHALL NOT BE COVERED OR CONCEALED UNTIL AUTHORIZED BY THE ENGINEER.
7. IF OBSERVED DEFICIENCIES REMAIN UNCORRECTED, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL AND THE OWNER A WRITTEN REPORT THAT THE SITE VISITS HAVE BEEN PERFORMED, IDENTIFYING THE DEFICIENCIES WHICH, TO THE BEST KNOWLEDGE OF THE STRUCTURAL OBSERVER, HAVE NOT BEEN RESOLVED.

SOILS, SITE PREPARATION

1. ALL ORGANIC MATERIALS, RUBBISH, ETC. SHALL BE REMOVED FROM BENEATH LOCATIONS OF PROPOSED FOOTINGS, CONCRETE SLABS AND ASPHALT PAVING.
2. ALL MODERATE TO HIGHLY EXPANSIVE CLAY WITHIN TWO FEET OF BOTTOM OF CONCRETE SHALL BE REMOVED AND REPLACED WITH COMPACTED STRUCTURAL FILL. CONSULT SOILS ENG. ON ALL EXPANSIVE CLAY.
3. EXPOSED MATERIAL SOILS SHALL BE SCARIFIED SIX INCHES MINIMUM, MOISTURE CONDITIONED AND COMPACTED, WHEN REQ'D BY SOILS ENGINEER.
4. SOIL AT SUBGRADE UNDER CONCRETE SHOULD BE KEPT MOIST UNTIL CONCRETE IS PLACED. DRY OR CRACKED MATERIAL SHALL BE REPLACED PER ENGINEERS APPROVAL. ALL FREE WATER SHALL BE REMOVED FROM THE FOUNDATION EXCAVATION PRIOR TO PLACING CONCRETE.
5. ALL BEARING SOIL PREPARATION SHALL BE IN CONFORMANCE TO THE PROJECT SOILS REPORT. IN THE EVENT OF NO SOILS REPORT, THE FOLLOWING SHALL APPLY:
   ALL FOOTINGS AND SLABS SHALL BE PLACED ON UNDISTURBED NATIVE SOIL, LEAN CONCRETE FILL, OR ON STRUCTURAL ENGINEERED FILL. IF NOTED ON PLAN DETAILS FOR OVER EXCAVATION TO BE USED, THE FOUNDATION AREA SHALL BE OVEREXCAVATED TO A DEPTH OF 3'-0" BELOW BOTTOM OF FOOTING, AND OVER EXCAVATION SHALL EXTEND 2'-0" BEYOND FOOTING PERIMETER. THE EXCAVATION ZONE SHALL BE FILLED WITH LEAN CONCRETE OR STRUCTURAL ENGINEERED FILL. STRUCTURAL ENGINEERED FILL SHALL BE COMPACTED TO 95% MAXIMUM RELATIVE DENSITY, BASED ON ASTM D1557, CURRENT REVISION. PLACE FILL IN 8" MAX LOOSE LIFTS PRIOR TO COMPACTION. STRUCTURAL FILL SHALL BE APPROVED BY THE ENGINEER AND CONSIST OF LOW PLASTICITY, NON-GYPSIFEROUS GRANULAR SOILS AND NOT CONTAIN MATERIAL GREATER THAN 3 INCHES NOMINAL DIAMETER, AND HAVE A SOLUBILITY LESS THAN 5%. THE LIQUID LIMIT OF FINES SHALL NOT EXCEED 35 AND THE PLASTICITY INDEX SHALL BE BELOW 6.

FOUNDATIONS

1. CONTINUOUS FOOTINGS: ADD 2-#4 LONGITUDINAL TOP BARS TO ALL CONTINUOUS FOOTINGS WITHOUT FOUNDATION WALLS ABOVE, UNLESS NOTED OTHERWISE. THICKEN FOOTINGS AS REQ'D TO PROVIDE 3" MIN COVER BELOW ALL REQ'D HARDWARE AND HOLD DOWN BOLTS.
2. PENETRATIONS: NO PENETRATIONS SHALL BE ALLOWED THROUGH ANY CONCRETE FOOTING. WHEN CONFLICTS ARISE BETWEEN UNDERGROUND PLUMBING, UTILITIES, ETC, THE FOOTING SHALL BE STEPPED DOWN BELOW THE CONFLICT AND THE WALL, PIER, OR COLUMN SHALL BE EXTENDED TO THE FOOTING AS REQUIRED. COORDINATE WITH THE ARCHITECT AND/OR STRUCTURAL ENGINEER.

CONCRETE

1. CONCRETE SHALL BE AS FOLLOWS:
   A. CEMENT SHALL CONFORM TO ASTM C150, TYPE II. HARD ROCK AGGREGATES SHALL CONFORM TO ASTM C33. AND SHALL BE 1 1/2" MAX. FOR FOOTINGS AND 3/4" MAX. FOR ALL OTHER WORK. ONLY ONE GRADE OF CONCRETE SHALL BE POURED ON THE JOB AT ONE TIME. COPIES OF ALL THE MIX DESIGNS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEER FOR REVIEW BEFORE USE. USE A MIX THAT PRODUCES THE LOWEST SLUMP COMPATIBLE WITH PROPER PLACEMENT (SLABS 3" MAX, ALL OTHER 4" MAX, UNLESS APPROVED BY THE STRUCTURAL ENGINEER). ALL CONCRETE SHALL BE VIBRATED DURING PLACEMENT. ALL CONCRETE FOR FOOTINGS SHALL HAVE A MIN. STRENGTH AT 28 DAYS OF 3500 PSI, AND ALL OTHER CONCRETE SHALL HAVE A MINIMUM STRENGTH AT 28 DAYS OF 4500 PSI.

   B. FOOTINGS, FOUNDATION WALLS, AND INTERIOR SLABS SHALL BE AIR ENTRAINED WITH 5% +/- 1%, SHALL HAVE A MIN. OF 5 BAGS OF CEMENT PER CUBIC YARD, AND A MAX WATER/CEMENT RATIO OF 0.45.

   C. EXTERIOR SLABS SHALL BE AIR ENTRAINED WITH 6% +/- 1% AIR, SHALL HAVE A MIN. OF 6 BAGS OF CEMENT PER CUBIC YARD, AND A MAXIMUM WATER/CEMENT RATIO OF 0.45.

   D. ELEVATED SLABS AND FLOOR TOPPING SHALL BE HARD ROCK NORMAL WEIGHT CONCRETE, U.N.O. CONCRETE MIX FOR SLABS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT.

2. COORDINATION:
   A. BEFORE CONCRETE IS POURED, CHECK WITH ALL TRADES TO INSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, BOLTS, INSERTS, ETC., RELATING TO THE WORK.

   B. ALL EQUIPMENT ANCHOR BOLT SIZES AND LOCATIONS SHALL BE VERIFIED IN THE FIELD WITH THE EQUIPMENT MANUFACTURERS CERTIFIED DRAWINGS, LATEST REVISION, BEFORE PLACING CONCRETE.

3. GROUT:
   A. USE HIGH STRENGTH NON-METALLIC NON-SHRINK LIQUID EPOXY GROUT UNDER ALL STEEL BASE PLATES. MIX GROUT WITH SAND OR PEA GRAVEL AS RECOMMENDED BY MANUFACTURER.

   B. GROUT SHALL BE MIXED WITH JUST ENOUGH WATER TOO ALLOW PLACING. MIN COMPRESSIVE STRENGTH AT 28 DAYS TO BE 5000 PSI.

4. KEY WAYS:
   KEYWAYS IF NOTED SHALL BE 2x4, OTHERWISE SURFACE AT COLD JOINTS TO BE ROUGHENED.

5. OPENINGS:
   AROUND ALL SIDES OF OPENINGS ADD REINFORCEMENT EQUIVALENT TO THE NUMBER OF BARS CUT BY OPENING WITH HALF ON EACH SIDE OF OPENING, OR (2)-#5 BARS, WHICHEVER IS GREATER. BARS PARALLEL TO PRINCIPLE REINFORCING SHALL RUN FULL LENGTH OF SPAN. BARS IN OTHER DIRECTION SHALL RUN 24" BEYOND OPENING OR END WITH A STANDARD HOOK.

6. MAKE ALL CONCRETE SLABS ON GRADE AT LEAST 4" THICK AND REINFORCE WITH #4 AT 24"O.C. BOTH WAYS IN CENTER OF THE SLAB, UNLESS NOTED OTHERWISE. INTERIOR SLABS TO BEAR ON A 4" LAYER OF COMPACTED FREE DRAINING COARSE GRANULAR MATERIAL BELOW A 4 MIL. MIN. VISQUEEN BARRIER, U.N.O. LARGE AREAS OF SLAB ON GRADE SHALL BE PLACED IN STRIPS SUBDIVIDED BY CONSTRUCTION OR CONTRACTION JOINTS INTO ROUGHLY SQUARE WHOSE SIDES SHALL NOT EXCEED 15FT. IN EITHER DIRECTION. CONCRETE SLAB JOINT PLAN SHALL BE SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION

7. WALL REINFORCING:
   UNLESS NOTED OTHERWISE ON THE PLANS, REINFORCE ALL WALLS AS FOLLOWS:

THICKNESS	HORIZONTAL	VERTICAL
6"-WALL	#4 AT 16"O.C.	#4 AT 18"O.C.
8"-WALL	#4 AT 12"O.C.	#5 AT 18"O.C.
10"-WALL	#5 AT 12"O.C.	#5 AT 12"O.C.
12"-WALL	#4 AT 13"O.C. E.F.	#4 AT 13"O.C. E.F.

   STEEL IS TO BE PLACED IN THE CENTER OF THE WALL (EXCEPT WALLS MORE THAN 10" THICK) AND DOWELED TO THE FOOTING BELOW AND TO THE STRUCTURE ABOVE WITH THE SAME DOWEL SIZE AND SPACING AS VERTICAL REINFORCEMENT. PROVIDE CORNER BARS AT ALL INTERSECTION CORNERS, USE SAME BAR SIZE AND SPACING AS HORIZONTAL REINFORCING UNLESS NOTED OTHERWISE. ALL STEEL MUST BE TIED IN PLACE PRIOR TO PLACING CONCRETE. PLACE STEEL WITH PROPER COVER AWAY FROM FACE AGAINST SOIL & DOWEL TO FOOTING WITH SAME DOWEL SIZE AND SPACING AS VERTICAL REINFORCEMENT. ALL DOWELS SHALL HAVE AT LEAST 30 BAR DIAMETERS EMBEDMENT OR 9"., WHICHEVER IS GREATER, AND SHALL HAVE A STANDARD 90 DEGREE HOOK FOR ANCHORAGE.

8. FOR POURING CONCRETE DURING COLD WEATHER:
   A. FOLLOW RECOMMENDATIONS CONTAINED IN PUBLICATION "COLD WEATHER CONCRETING," ACI 306, CURRENT REVISION.
   B. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH WHICH COULD BE CAUSED BY FROST, FREEZING, OR LOW TEMPERATURES.
   C. WHEN AIR TEMPERATURES HAS FALLEN TO OR IS EXPECTED TO FALL BELOW 40F OR 4C, UNIFORMLY HEAT WATER AND AGGREGATES BEFORE MIXING TO OBTAIN A CONCRETE MIXTURE TEMPERATURE OF NOT LESS THAN 50F OR 10C, AND NOT MORE THAN 80F OR 27C AT TIME OF PLACEMENT.
   D. CONCRETE SHALL BE AIR-ENTRAINED WITH AIR CONTENT OF 5% BY VOLUME + OR – 1%.
   E. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE OR SNOW. DO NOT PLACE CONCRETE ON FROZEN SUBGRADE OR ON SUBGRADE CONTAINING FROZEN MATERIALS.
   F. DO NOT USE CALCIUM CHLORIDE, SALT OR OTHER MATERIAL CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS.
   G. COVER AND HEAT CONCRETE AS RECOMMENDED BY ACI 306, CURRENT EDITION.

9. MIX WATER SHALL BE FREE OF ACID ALKALI, OIL OR ANY ORGANIC MATERIAL THAT MAY INTERFERE WITH THE SETTING OF THE CEMENT.
10. IF REQUIRED, WATER AND AGGREGATES SHALL BE COOLED PRIOR TO USE AND AGGREGATE STOCKPILES SHALL BE SHADED FROM THE SUN. USE CHILLED WATER OR CRUSHED ICE AS PART OF THE MIXING WATER WHEN SO REQUIRED TO MAINTAIN TEMPERATURE.
11. CONSOLIDATE CONCRETE BY MEANS OF INTERNAL VIBRATORS, OR FORM VIBRATORS.
12. CURE ALL CONCRETE AS PER LATEST ACI RECOMMENDATIONS. CURE A MIN. OF 7 DAYS, AND INSURE THAT CONCRETE HAS REACHED A MIN. OF 85% OF 28 DAY STRENGTH, BEFORE BACKFILLING OR APPLYING LOADS.

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE:
   A. NEW STOCK DEFORMED BARS AND CONFORMING TO ASTM A615, GRADE 60, EXCEPT AS FOLLOWS: ALL DOWELS TO BE BENT IN THE FIELD DURING CONSTRUCTION MAY BE GRADE 40. BARS TO BE WELDED SHALL CONFORM TO ASTM A706.
   B. FREE OF LOOSE FLAKY RUST, SCALE, GREASE AND OTHER MATERIALS WHICH MIGHT AFFECT OR IMPAIR BOND.
   C. DETAILED, BOLSTERED, AND SUPPORTED IN ACCORDANCE WITH ACI 315, LATEST EDITION.
   D. SECURELY ANCHORED TO THE FORMS.(SEE REINFORCEMENT COVER).
2. BENDS:
   ALL BENDS SHALL BE MADE COLD. ALL BAR FABRICATION TO BE AS PER THE LATEST EDITION OF ACI REQUIREMENTS, SHOP FABRICATED WHEN AT ALL POSSIBLE.
3. CONCRETE REINFORCEMENT COVER:
   CAST AGAINST & PERMANENTLY EXPOSED TO EARTH.......3"
   EXPOSED TO EARTH OR WEATHER:
   #6 & LARGER........2"
   #5 & SMALLER.......1-1/2" (2" WITH CORROSIVE SOILS)
   NOT EXPOSED TO EARTH OR WEATHER:
   SLABS AND WALLS, #11 & SMALLER.......3/4"
   BEAMS AND COLUMNS, MAIN REINF. OR TIES..........1-1/2"
   SLABS ON GRADE, FROM TOP OF SLAB........1" FOR 4" SLABS
   SLABS ON GRADE....CENTERED IN SLAB FOR 5" SLABS AND THICKER, UNO

   MASONRY REINFORCEMENT PLACEMENT:
   A. REINFORCEMENT SHALL BE PLACED AND TIED PRIOR TO GROUTING. REINFORCEMENT SHALL BE SECURED AGAINST DISPLACEMENT PRIOR TO GROUTING AT INTERVALS NOT EXCEEDING 200 BAR DIA. OR 10'.
   B. REINFORCEMENT TO BE LOCATED IN ACCORDANCE WITH THE PLANS.
4. SPLICES:
   CONTINUOUS REINFORCEMENT SHALL BE SPLICED AT POINTS AT MIN. STRESS BY LAPPING 48 BAR DIAMETERS IN CONCRETE AND 60 BAR DIAMETERS IN MASONRY. MINIMUM LAP SHALL BE 2'-0" LONG IN MASONRY, 1'- 6" LONG IN CONCRETE.
5. SHOP DRAWINGS:
   SUBMIT SHOP DRAWINGS FOR REVIEW BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION.
6. WELDED WIRE FABRIC:
   WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. LAP FABRIC 2 CROSSLINE SPACES AND TIE AT SPLICES. PROVIDE POSITIVE MEANS OF HOLDING OR POSITIONING FABRIC AT REQUIRED DEPTH DURING PLACEMENT OF CONCRETE.
7. WELDING:
   NO REINFORCING SHALL BE WELDED UNLESS IT CONFORMS TO ASTM A706, GRADE 60, "LOW-ALLOY STEEL".

COLD FORMED STEEL FRAMING

1. CONSTRUCTION IS TO FOLLOW CONSTRUCTION PRACTICE CONTAINED IN THE "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" BY AISI AND THE "COLD-FORMED STEEL DESIGN" BY AISI, LATEST EDITIONS, AND THE "LIGHTWEIGHT STEEL FRAMING SYSTEMS MANUAL" BY THE METAL LATH/STEEL FRAMING ASSOCIATION (ML/SFA) AND PER THE STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA) MANUAL.
2. COLD FORMED MEMBERS USED TO BE MANUFACTURED BY A CURRENT MEMBER OF THE STEEL STRUC MANUFACTURER'S ASSOCIATION (SSMA).
3. POWER DRIVEN FASTENERS CALLED OUT IN THE DRAWINGS TO BE "SIMPSON" 0.145 SHANK PDP FASTENERS UNO, 1.25" MIN PENETRATION, OR APPROVED EQUAL.
4. ALL MEMBERS SHALL BE CUT TRUE AND SET TO PROVIDE FULL BEARING, AND ALL FLANGES SHALL BE ATTACHED TO END TRACKS WITH AT LEAST (1) #8 SCREW. ALL BEARING POINTS SHALL HAVE FULL WIDTH BEARING UPON SUPPORTING MEMBER.
5. ALL WOOD SHEATHING USED ON FRAMED WALLS TO BE RATED 7/16" OSB, UNO. SHEATHING TO BE ATTACHED USING #8 SCREWS, MIN., SPACED AT 6" OC AT PANEL EDGES AND 12" OC IN FIELD U.N.O. ALL PANEL EDGES SHALL BE ATTACHED TO FRAMING MEMBERS OR BLOCKING.
6. ALL SHEAR WALL HOLDOWNS TO BE INSTALLED PER ALL MANUFACTURER RECOMMENDATIONS, AND SHALL BE "SIMPSON" OR APPROVED EQUAL.
7. UNO, ALL METAL STUD SHEAR WALL FRAMING MEMBERS SHALL BE 43-MILS MIN., AND SHALL HAVE 1.625" MIN. FLANGE WIDTH AND 3/8" MIN. EDGE STIFFENERS. UNO, TRACKS SHALL ALSO BE 43-MILS MIN. AND SHALL HAVE A MIN. FLANGE WIDTH OF 1.25".

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL FABRICATION AND CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS:
   A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
   B. AISC "CODE OF STANDARD PRACTICE" EXCLUDING SECTIONS 1.5.1, 3.3 (1ST SENTENCE), 4.2, 7.5.4, AND 7.11.5.
   C. AMERICAN WELDING SOCIETY (AWS, STRUCTURAL WELDING CODE, EXCLUDING ITEMS CONFLICTING WITH AISC REQUIREMENTS.
2. CONNECTIONS – DETAILING:
   A. BEAM END CONNECTIONS SHALL BE DETAILED FOR THE FORCES SHOWN ON THE DRAWINGS. WHERE NO FORCE IS GIVEN, THE CONNECTIONS SHALL BE DETAILED TO SUPPORT THE TOTAL UNIFORM LOAD CAPACITY OF THE BEAM WITH ITS COMPRESSION FLANGE LATERALLY SUPPORTED FULL LENGTH. WHERE DRAWINGS INDICATE AN AXIAL FORCE IN THE BEAM, ITS END CONNECTIONS SHALL BE DETAILED FOR THIS FORCE IN COMBINATION WITH THE VERTICAL FORCES. MOMENT CONNECTION OF MEMBERS WHERE REQUIRED SHALL DEVELOP FULL MOMENT STRENGTH OF THE MEMBER UNLESS ACTUAL MOMENT IS GIVEN.
   B. BRACING END CONNECTIONS SHALL BE DETAILED FOR THE AXIAL FORCES SHOWN ON THE DRAWINGS. WHERE NO AXIAL FORCE IS GIVEN, BOLTED END CONNECTIONS SHALL BE DETAILED FOR A MINIMUM OF 50 % OF THE MAXIMUM CAPACITY OF THE MEMBER IN TENSION. END CONNECTIONS OF TRUSSES AND TRUSS BENTS WILL BE DETAILED FOR THE AXIAL FORCES SHOWN ON THE DRAWINGS, WHERE NO AXIAL FORCE IS GIVEN THE END CONNECTION SHALL BE DETAILED FOR 100% OF THE EFFECTIVE CAPACITY OF THE MEMBER IN TENSION.
3. CONNECTIONS – BOLTED:
   A. STEEL TO STEEL SHALL BE WITH BOLTS AND NUTS CONFORMING TO ASTM A325, CARRYING THE IDENTIFYING MARK OF (3) RADIAL LINES. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF (2) BOLTS, UNO.
   B. STAIR AND HANDRAIL CONNECTIONS SHALL BE WITH BOLTS AND NUTS CONFORMING TO ASTM A307 UNLESS NOTED OTHERWISE.
   C. BOLTS SHALL BE 3/4" DIAMETER, UNLESS NOTED OTHERWISE. HOLES TO BE 1/16" OVERSIZE UNLESS NOTED OTHERWISE. EACH A325 BOLT SHALL BE SUPPLIED WITH HARDENED STEEL WASHER AND HIGH STRENGTH NUT. BEVELED WASHERS SHALL BE PROVIDED WHERE SLOPE BETWEEN THE CONNECTION SURFACES EXCEEDS 1:20.
   D. TORCH CUT HOLES ARE NOT ALLOWED.
4. CONNECTIONS – WELDED:
   A. USE E70 ELECTRODES FOR ALL WELDING UNLESS NOTED OTHERWISE. ALL WELDED CONNECTIONS SHALL HAVE A MINIMUM OF 2" OF FILLET WELD ON EACH SIDE OF MEMBER.
   B. ALL WELDERS SHALL BE QUALIFIED ACCORDING TO AWS WITHIN THE LAST 12 MONTHS. PROVIDE WRITTEN CERTIFICATION WHEN REQUESTED.
   C. THE OWNER SHALL TEST OR INSPECT ALL WELDS BY ANY APPROPRIATE PROCEDURE AS DEEMED NECESSARY. DEFICIENT WELDS SHALL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.
5. PAINT:
   PROVIDE SHOP COAT OF PAINT ON ALL STEEL ITEMS.
6. SHOP DRAWINGS:
   SUBMIT SHOP DRAWINGS FOR REVIEW BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION.
7. MATERIAL STRENGTH:
   A. STRUCTURAL STEEL SHAPES & PLATE TO BE NEW & CONFORM TO ASTM A36
   B. HSS SHAPES TO BE NEW & CONFORM TO ASTM A500, GRADE B. FY=46 KSI.
8. STUDS & DBA'S:
   ALL HEADED STUDS AND DEFORMED BAR ANCHORS (DBA) SHALL BE WELDABLE GRADE, AND SHALL CONFORM TO SPECIFICATIONS PROVIDED BY THE MANUFACTURER.
9. GROUT:
   NON-SHRINK, NON-METALLIC GROUT WITH 7000 PSI MIN. @ 28 DAYS.

MASONRY

1. BEAM-SUPPORT INTERFACE:
   MASONRY BEAMS SHALL BE BUILT AS AN INTEGRAL PART OF THE SUPPORT. NO TOOTHING OR DOWELLING WILL BE PERMITTED AT SUPPORTS. USE PRE-FORMED BOND BEAM CMU UNITS FOR ALL MASONRY BEAMS TO ALLOW THE GROUT POUR TO BE CONTINUOUS.
2. BEAM AND WALL GROUTING:
   A. GROUT MASONRY BEAMS SOLID FOR FULL DEPTH INDICATED IN MASONRY BEAM SCHEDULE.
   B. GROUT WALL SOLID FOR FULL HEIGHT AND LENGTH AT SIDES AND TOP OF OPENINGS: ONE CELL FOR EACH 4'-0" OF SPAN OR PORTION THEREOF. REINFORCE WITH (2)-#5 BARS IN EACH GROUTED CELL, ONE BAR EACH FACE OF WALL, TYPICAL U.N.O. (EXAMPLE: FOR 6'-0" SPAN, GROUT TWO CELLS EACH SIDE OF OPENING). SEE PLANS FOR OTHER REINFORCEMENT.
   C. FILL ALL UNREINFORCED CAVITIES WITH PERLITE, U.N.O.
3. OPENINGS:
   FOR MECHANICAL OPENINGS NOT SHOWN, USE SIMILAR BEAM AS FOR SIMILAR LENGTH OPENINGS. VERIFY WITH STRUCTURAL ENGINEER.
4. PENETRATIONS:
   NO PENETRATIONS SHALL BE ALLOWED THROUGH ANY MASONRY BEAM WITHOUT THE ARCHITECT'S AND/OR ENGINEER'S WRITTEN APPROVAL.
5. BEAM REINFORCEMENT:
   A. ALL REINFORCING IN MASONRY BEAM SCHEDULE IS IN ADDITION TO TYPICAL WALL REINFORCING.
   B. UNLESS NOTED OTHERWISE IN PLANS OR SCHEDULES, REINFORCE ALL BEAMS AND LINTELS AND HEADERS AS NOTED WITHIN NOTE 2.B. UNDER "MASONRY" NOTES ABOVE ON THIS DRAWING PAGE.
   C. HORIZONTAL REINFORCING BARS IN THE TOP OR BOTTOM OF MASONRY BEAMS SHALL EXTEND THE GREATEST OF 2'-0" OR 60 BAR DIAMETERS BEYOND THE EDGE OF THE OPENING OR SHALL BE HOOKED IF REQUIRED.
   D. VERTICAL REINFORCING BARS IN BEAMS SHALL HOOK AROUND THE BOTTOM HORIZONTAL REINFORCING BARS. THEY SHALL ALSO HOOK AROUND THE TOP HORIZONTAL REINFORCING BARS OR EXTEND INTO WALL ABOVE A MINIMUM OF 48 BAR DIAMETERS.
   E. DO NOT SPLICE HORIZONTAL TOP OR BOTTOM REINFORCING BARS WITHIN BEAMS (TYPICAL), UNLESS NOTED OTHERWISE.
6. WALL REINFORCEMENT:
   A. ALL VERTICAL WALL REINFORCEMENT SHALL BE DOWELED TO SUPPORTING WALLS WITH THE SAME SIZE BAR AND SPACING, U.N.O.
   B. WHERE HORIZONTAL REINFORCING BARS JOIN CONCRETE COLUMNS OR PILASTERS, REINFORCING SHALL BE CONTINUOUS. ALSO, A KEY SHALL BE PROVIDED BETWEEN THE WALL AND COLUMN.
   C. PROVIDE (2)-#5 BARS, IN GROUTED CELLS, ALONG TOP OF WALL AND ALONG EA. FACE OF OPENINGS WHICH EXCEEDS 24 INCHES IN EITHER DIRECTION. BARS SHALL EXTEND 24 INCHES MINIMUM BEYOND THE CORNERS OF THE OPENING (UNLESS NOTED OTHERWISE ON DRAWINGS). ALL CORNERS AND END OF WALLS SHALL HAVE VERT. REINFORCING U.N.O. THIS REINFORCING IS IN ADDITION TO OTHER REINFORCEMENT INDICATED.
   D. HORIZONTAL REINFORCEMENT IN WALLS SHALL HAVE MATCHING DOWELS OR CORNER REBARS AT CORNERS AND AT INTERSECTING WALLS.
   E. ALL MASONRY WALLS SHALL BE REINFORCED AS FOLLOWS, U.N.O.:
   8" CMU 1-#4 VERTICALS @ 24" O.C.
   2-#5 HORIZONTALS @ 48" O.C. (PLACE BARS TO THE INSIDE)

   SEE DRAWINGS & DETAILS FOR OTHER REINFORCING REQUIREMENTS. HORIZ REINFORCEMENT TO BE CONTINUOUS AT ALL INTERSECTING WALL CORNERS.
7. CONCRETE UNIT MASONRY:
   A. MEET REQUIREMENTS OF ASTM C 90, GRADE N-1 LIGHTWEIGHT, TYPE I, WEIGHT CLASSIFICATION 85 LB/CU FT. MIN. AGGREGATES SHALL BE LIGHTWEIGHT CONFORMING TO ASTM C 331. MATERIALS SHALL BE STORED UNDER WEATHER PROOF PROTECTIVE COVER. STANDARD WEIGHT CMU MAY BE USED AS AN ALTERNATE IF APPROVED BY THE ENGINEER.
   B. PRISM TESTS SHALL BE PROVIDED BEFORE STARTING MASONRY WORK ON THE BUILDING UNLESS REQUIRED OTHERWISE BY THE ARCHITECT OR AT INTERVALS AS REQUIRED IN THE SPECIFICATIONS, BUT NOT LESS THAN EVERY 5000 SF OF WALL AREA. MIN. COMPRESSIVE STRENGTH OF TESTS SHALL BE F'm = 1,500 PSI.
8. MASONRY GROUT:
   A. GROUT TO BE OF A FLUID CONSISTENCY AND SHALL BE 1.0 PART PORTLAND CEMENT, 2.25 TO 3.0 PARTS SAND, AND MAY CONTAIN AN ADDITIONAL 1 TO 2 PARTS PEA GRAVEL IF GROUT SPACES ARE 4" OR MORE IN EACH DIRECTION. ALL MEASUREMENTS ARE PARTS BY VOLUME. DO NOT USE MORTAR AS GROUT. F'c = 4000 PSI MIN. AT 28 DAYS.
   B. GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION DURING PLACING, AND RECONSOLIDATED AFTER EXCESS MOISTURE HAS BEEN ABSORBED (BUT BEFORE WORKABILITY IS LOST) BY MECH. VIBRATION.
   C. GROUT FILL ALL CELLS SOLID WHICH CONTAIN REINFORCING, BOLTS, ANCHORS, EMBEDS, ETC. CELL CAVITIES SHALL BE KEPT CLEAN UNTIL GROUT IS PLACED.
9. MORTAR:
   MORTAR SHALL BE TYPE "S" OR "N" AND TO BE 1.0 PART PORTLAND CEMENT, 1/2 PART HYDRATED LIME OR LIME PUTTY, AND 3.5 TO 4.5 PARTS SAND. ALL MEASUREMENTS ARE PARTS BY VOLUME. NO ADDITIVES WILL BE ALLOWED. ALL MORTAR JOINTS SHALL BE TROWELED CONCAVE.
10. RUNNING BOND:
   ALL CONCRETE BLOCK WALLS SHALL BE CONSTRUCTED UTILIZING COMMON RUNNING BOND UNLESS NOTED OTHERWISE.
11. ALL WALLS SHALL BE BUILT AS AN INTEGRAL UNIT AT CORNERS AND INTERSECTIONS.
12. VERTICAL CONTROL JOINTS SHALL HAVE A 25 FOOT MAX. SPACING. THE LOCATION OF THE JOINTS SHALL BE SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

DESIGN CRITERIA
2018 IBC
ROOF LIVE LOAD – 20 PSF
ROOF SNOW LOAD – 30 PSF
ROOF DEAD LOAD – 12.5 PSF

SOIL PARAMETERS;
SOIL SITE CLASS – D
SOIL BEARING PRESSURE – 1500 PSF ASSUMED
NO SOILS REPORT

WIND PARAMETERS;
WIND SPEED – 115 MPH = V_{ULT}, 90 MPH = V_{ASD},
3 SECOND GUST
EXPOSURE – EXPOSURE B

SEISMIC PARAMETERS @ IMF
BUILDING TYPE – STEEL INTERMEDIATE MOMENT FRAME WITH NON-LFRS INFILL WALLS OF COLD FORMED LIGHT GAGE METAL STUDS

SEISMIC RISK CATEGORY – II
SDS = 0.826 SD1 =0.518
R = 4.5 CD = 4.0
$\Omega = 2.5$
CS = 0.1835

STATEMENT OF SPECIAL INSPECTIONS:

TESTING OF CONCRETE POURED ON SITE IS TO BE PERFORMED BY TEST LAB AND SHALL INCLUDE (1) SET OF (3) CYLINDERS AND (1) SLUMP AND (1) AIR CONTENT TEST PER EA. 100 CU YDS OR LESS OF EACH CLASS OF CONCRETE PLACED.

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR REBAR PLACEMENT PRIOR TO POUR OF CONCRETE WALLS AND FOOTINGS AS PARTS OF THE SEISMIC LFR SYSTEM.

EPOXY EMBEDMENT OF ANY HARDWARE SHALL BE APPROVED IN WRITING BY THE PROJECT STRUCTURAL ENGINEER OF RECORD PRIOR TO THE BEGINNING OF ANY WORK, AND ALL SUCH WORK SHALL BE IN CONFORMANCE WITH GENERAL NOTE #10 ON THIS SHEET. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR EPOXY ANCHORING OF ANCHOR BOLTS, REBAR DOWELS, HEADED STUDS, AND OTHER HARDWARE.

STRUCTURAL STEEL WELDING SPECIAL INSPECTION:

ALL FIELD WELDING IS TO BE VISUALLY INSPECTED AFTER WELDING IS COMPLETE AND PRIOR TO THE MEMBER BEING PUT INTO PERMANENT SERVICE.

THE INTERMEDIATE MOMENT FRAME BEAM-TO-COLUMN DEMAND CRITICAL WELDS SHALL BE OBSERVED/INSPECTED IN ACCORDANCE TO THE TABLED REQUIREMENTS LISTED IN AISC 341-10, INCLUDING THE FOLLOWING:

1) PRIOR TO WELDING THE INSPECTOR SHALL RANDOMLY OBSERVE THE MATERIAL IDENTIFICATION, WELD FIT-UP AND CONFIGURATION, AND JOINT PREPARATION.

2) DURING WELDING THE INSPECTOR SHALL RANDOMLY OBSERVE THAT WPS PROCEDURES AND TECHNIQUES ARE PROPERLY FOLLOWED, THAT WELDERS ARE PROPERLY QUALIFIED, AND THAT WELD PASSES AND CLEANING MEETS QUALITY REQUIREMENTS.

3) AFTER WELDING, ALL WELDS SHALL BE VISUALLY INSPECTED FOR PROPER CLEANED CONDITIONS, SIZE, LENGTH, LOCATION, FULL FUSION, CRACKS, AND POROSITY. ALL DEMAND CRITICAL CJP WELDS SHALL PASS ULTRASONIC TESTING, AND 25% OF ALL DEMAND CRITICAL CJP WELDS SHALL PASS MAGNETIC PARTICAL TESTING. ACCEPTANCE IS TO BE BASED UPON AWS D1.1/D1.1M, TABLE 6.2.

CMU WALL SPECIAL INSPECTION:

ALL CMU WALL CONSTRUCTION SHALL BE PERIODIC SPECIAL INSPECTED TO LEVEL B QUALITY ASSURANCE REQUIREMENTS, INCLUDING:

1) STRENGTH VERIFICATION OF MATERIALS AND MASONRY ASSEMBLY WITH PRISM TESTING AS REQUIRED IN THE STRUCTURAL NOTES UNDER "MASONRY", ITEM 7. B.

2) PERIODIC SPECIAL INSPECTION DURING CMU LAYUP OF STRUCTURAL ELEMENTS, REINFORCING STEEL AND ANCHORS, AND GROUT PLACEMENT. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR ANY AND ALL WELDING OF REINFORCEMENT, AND ALL REBAR TO BE WELDED SHALL BE A706 WELDABLE REBAR.

NO.	DATE	REVISIONS	BY
1			
2			
3			

Palmer Engineering L.L.C.
Structural Engineers
2408 North 1050 West
Pleasant Grove, Utah 84062
Office: (801) 796-0590

PROJECT: LA CARRETA MOMENT FRAME
340 EAST 1200 SOUTH
OREM, UTAH

SHEET TITLE: STRUCTURAL NOTES

DRAWN: CBP
CHECKED: GEP
DATE: 4/1/2020
SCALE: AS NOTED
JOB NO. 18071

S2.0

PRELIMINARY

06/01/20