

GENERAL NOTES

1. THE STRUCTURAL DESIGN IS BASED ON THE STRUCTURE IN ITS COMPLETED STATE. THE CONTRACTOR AND HIS SUBS SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY BRACING AND SHORING, AS REQUIRED, TO ENSURE VERTICAL AND LATERAL STABILITY OF THE ENTIRE STRUCTURE OR PORTION THEREOF DURING CONSTRUCTION.
2. STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH SPECIFICATIONS AND ALL OTHER DRAWINGS RELATING TO THE WORK.
3. LOCATION AND SIZES OF OPENINGS IN FLOORS, ROOFS AND WALLS SHALL BE VERIFIED WITH ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL DRAWINGS.
4. NO PIPES, CONDUITS OR DUCTS SHALL BE PLACED IN SLABS, BEAMS, FOOTINGS OR WALLS, UNLESS SPECIFICALLY DETAILED ON STRUCTURAL DRAWINGS FOR THAT PURPOSE.
5. LOCATION AND SIZE OF EQUIPMENT SHALL BE VERIFIED WITH PLUMBING, FIRE PROTECTION, MECHANICAL, ELECTRICAL & MANUFACTURER'S DRAWINGS.
6. SEE PLUMBING, FIRE PROTECTION, MECHANICAL, ELECTRICAL AND MANUFACTURER'S DRAWINGS FOR SIZE, LOCATION AND ANCHOR BOLT REQUIREMENTS OF ALL EQUIPMENT. THE CONTRACTOR SHALL OBTAIN MANUFACTURER'S TEMPLATES SHOWING ANCHOR BOLT LOCATION FOR ALL EQUIPMENT.
7. SEE ARCHITECTURAL PLANS FOR LOCATION OF ALL NON-BEARING PARTITIONS, CONCRETE CURBS, FLOOR AND ROOF SLOPES, DRAINS AND LOCATION AND DETAILS OF ALL MISCELLANEOUS HANDRAILS, LADDERS HANGERS & STEEL GRATINGS. FOR LOCATION AND DETAIL OF MISCELLANEOUS YARD WORK INCLUDING WALKS, CURBS & DRIVEWAYS, SEE CIVIL DRAWINGS.
8. FOR UNDERGROUND UTILITIES, SEE CIVIL DRAWINGS
9. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. DO NOT SCALE DRAWINGS.
10. THE CONTRACTOR SHALL MEASURE AND PROVIDE ALL EXISTING FIELD DIMENSIONS, ELEVATIONS AND CONDITIONS AT THE JOB SITE PRIOR TO CONSTRUCTION AND THE SUBMISSION OF SHOP DRAWINGS AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES. VERIFICATION AND NOTIFICATION SHALL PROCEED PRIOR TO THE START OF THE WORK SO THAT ANY NECESSARY CHANGES CAN BE MADE WITHOUT DELAYING THE PROJECT SCHEDULE.
11. THE CONTRACTOR SHALL REVIEW AND COORDINATE DIMENSIONS PROVIDED IN THE CONTRACT DOCUMENTS LAYOUT OF BUILDING FOUNDATIONS AND OTHER STRUCTURAL MEMBERS SHALL BE BASED ON THE FULL SET OF CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE ARCHITECTURAL, CIVIL AND STRUCTURAL DRAWINGS AND THE PROJECT SPECIFICATIONS, INCONSISTENCIES OR OMISSIONS IN DIMENSIONS SHALL BE FORWARDED TO THE ARCHITECT/ ENGINEER FOR REVIEW AND RESOLUTION.
12. DETAILS, SECTIONS AND NOTES SHOWN ON THESE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR CONDITIONS ELSEWHERE UNLESS OTHERWISE SHOWN OR NOTED.
13. CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE VICINITY OF FOUNDATIONS AND DETERMINE IF A CONFLICT EXISTS. PROVIDE INFORMATION ON LOCATION SIZE AND ELEVATIONS OF UTILITIES PRIOR TO START OF WORK SO THAT ANY NECESSARY CHANGES CAN BE MADE WITHOUT DELAYING THE PROJECT SCHEDULE.
14. THE DEVELOPMENT AND IMPLEMENTATION OF JOB SITE SAFETY AND CONSTRUCTION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

MAJOR CODE AND STANDARDS

1. 2014 LOS ANGELES COUNTY BUILDING CODE.
2. ACI 318-11
3. ACI 530-11
4. AISC FOURTEENTH EDITION.
5. AWS D1.1, D1.3, D1.4
6. ASTM CURRENT EDITION
7. STEEL DECK INSTITUTE DESIGN MANUAL FOR COMPOSITE DECK, FORM DECKS AND ROOF DECKS.
8. ASCE 7-10
9. AISC 341-10
10. AISC 360-10

DESIGN LOADS

1. DEAD LOADS:
ROOF 12 PSF
2. LIVE LOADS:
ROOF REDUCIBLE 20 PSF
3. LATERAL LOADS: (EQUIVALENT LATERAL FORCE PROCEDURE)
- i) WIND DESIGN DATA:
ULTIMATE DESIGN WIND SPEED 115 MPH
WIND EXPOSURE D
RISK CATEGORY IV
- ii) SEISMIC LOAD
SPECTRAL RESPONSE COEFFICIENTS $S_s = 1.644g$
 $S_1 = 0.624g$
DESIGN SPECTRAL ACCELERATION PARAMETERS $SDS = 1.096g$
 $SD1 = 0.624g$
OCCUPANCY IMPORTANCE FACTOR 1.5
SITE CLASS D
SEISMIC DESIGN CAT D
OCCUPANCY CATEGORY IV
STRUCTURAL SYSTEM:
SPECIAL REINFORCED MASONRY SHEAR WALLS.
RESPONSE MODIFICATION COEFFICIENT $R = 5$
SYSTEM OVER-STRENGTH FACTOR $\Omega = 2.1/2$
DESIGN BASE SHEAR $V = 0.329W$
SEISMIC RESPONSE COEFFICIENT $C_s = 0.329$
REDUNDANCY FACTOR $RHO = 1.0$

CONCRETE

CONC. STRUCTURE TYPE	MINIMUM STRENGTH (PSI)	DENSITY (PCF)	MAXIMUM W/CM RATIO
FOUNDATIONS/SLAB ON GRADE.	4000	150	0.50

1. ALL CONCRETE MIXES SHALL BE DESIGNED BY A RECOGNIZED TESTING LABORATORY, AND STAMPED SEALED BY A LICENSED CALIFORNIA CIVIL ENGINEER AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO PLACING CONCRETE.
2. CALCIUM CHLORIDE SHALL NOT BE PERMITTED IN CONCRETE IN ANY FORM.
3. ALL CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED WITH 6% ±1%.
4. CURING COMPOUND MUST BE APPLIED IMMEDIATELY FOLLOWING FINAL FINISHING.
5. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL SO AS TO CAUSE SEGREGATION OF AGGREGATES. HOPPERS, VERTICAL CHUTES, OR TRUNKS SHALL BE USED IN SUFFICIENT NUMBERS SO THAT THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED SIX FEET AND TO ENSURE THAT THE CONCRETE IS KEPT LEVEL AT ALL TIMES.
6. SANDBLAST EXISTING CONCRETE TO 1/4" AMPLITUDE BEFORE FRESH CONCRETE IS POURED AGAINST CONCRETE IN PLACE, THE CONTACT SURFACES OF CONCRETE IN-PLACE SHALL BE THOROUGHLY CLEANED. ALL LAITANCE SHALL BE REMOVED AND THE CONTACT SURFACES SHALL BE THOROUGHLY SLOSHED WITH GROUT CONSISTING OF ONE PART SAND TO ONE PART CEMENT WITH MINIMUM AMOUNT OF WATER.
7. SUBMIT SHOP DRAWINGS INDICATING CONSTRUCTION AND CONTROL JOINTS FOR ENGINEER OF RECORD'S APPROVAL.
8. ALL PLUMBING SLOTS AROUND SLEEVES SHALL BE FILLED WITH FIRE RATED MATERIAL WITH AN EQUIVALENT RATING OF THE ADJACENT FLOOR CONSTRUCTION.
9. ALUMINUM CONDUITS ARE NOT PERMITTED IN CONCRETE ELEMENTS.
10. AGGREGATES IN NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C-33.
11. PORTLAND CEMENT: TYPE II FOR ALL CONCRETE CONFORMING TO ASTM C150, LOW ALKALI, MILL TESTED WITH CERTIFICATES OF COMPLIANCE REQUIRED.
12. CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C94.
13. ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE AND INSPECTED.
14. REFER TO ARCHITECTURAL DRAWINGS FOR MOLDS, GROOVES, ORNAMENTS, CLIPS OR GROUNDS REQUIRED TO BE CAST INTO THE CONCRETE AND FOR EXTENT OF DEPRESSIONS, RAMPS, ETC.
15. SLEEVE PLUMBING OPENINGS IN CONCRETE WALLS AND SLABS BEFORE PLACING CONCRETE AND BEND REINFORCING AROUND SLEEVES. CORING IS NOT PERMITTED IN FLOOR, ROOF, SLABS, COLUMNS AND WALLS UNLESS APPROVED IN ADVANCE.
16. EXPOSED PROJECTION CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4" CHAMFER, UNLESS SHOWN OR NOTED OTHERWISE.
17. ALL TESTING AND INSPECTION OF CONCRETE SHALL CONFORM WITH THE REQUIREMENTS OF THE 2014 LOS ANGELES COUNTY BUILDING CODE. ALL CONCRETE MATERIALS, AND THE MIXING AND PLACEMENT OF CONCRETE SHALL CONFORM WITH THE REQUIREMENTS OF PART 2, TITLE 24, C.B.C. CHAPTER 19.

DESIGN BY:	J.L.	STAMP	PLANS PREPARED BY:	BENCHMARK:
DRAWN BY:	M.C.			
CHECKED BY:	S.A.			



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ORANGE, CA 92668-4713

FOUNDATIONS

1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT PREPARED BY AECOM PROJECT No. 60422689 DATED OCTOBER 15, 2015. EARTHWORK SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED BY AECOM
2. SHALLOW FOUNDATION: NET ALLOWABLE BEARING CAPACITY IS 4000 PSF.
3. SHOULD WATER ENTER A FOOTING EXCAVATION AFTER SUBGRADE APPROVAL, THE SUBGRADE SHALL BE RE-INSPECTED BY THE GEOTECHNICAL ENGINEER AFTER REMOVAL OF WATER.
4. DO NOT PLACE UTILITY LINES THROUGH OR BELOW FOUNDATIONS WITHOUT REVIEW BY ENGINEER OF RECORD.
5. SEE ARCHITECTURAL DRAWINGS FOR ALL WATERPROOFING AND DAMP PROOFING DETAILS.
6. GRADING AND EXCAVATION SHOULD BE PERFORMED UNDER THE OBSERVATION AND TESTING OF STANDARDS DIVISION AT THE FOLLOWING STAGES:
UPON COMPLETION OF SITE CLEARING;
DURING SUBGRADE OVEREXCAVATION AND RECOMPACTION;
DURING FILL PLACEMENT;
DURING SHORING SYSTEM INSTALLATION, IF ANY;
DURING EXCAVATION AND BACKFILLING OF UTILITY TRENCHES;
WHEN ANY UNUSUAL OR UNEXPECTED GEOTECHNICAL CONDITIONS ARE ENCOUNTERED.
7. COMPACTION REPORTS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT PRIOR TO THE FOOTING INSPECTION.

REINFORCED CONCRETE MASONRY UNIT (CMU)

1. REQUIRED DESIGN STRENGTH $F_m = 2,500$ PSI; PROVIDE CONCRETE MASONRY UNITS, WITH MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI.
2. USE OPEN END UNITS, BOND BEAM UNITS AT HORIZONTAL REINFORCING. UNITS SHALL BE PLACED IN RUNNING BOND PATTERN.
3. REINFORCING BARS IN MASONRY SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60. LAP SPLICES IN HORIZONTAL REINFORCING SHALL BE 48 DIAMETERS & 2'-0" MINIMUM TYPICAL UNLESS OTHERWISE NOTED ON PLAN. VERTICAL REINFORCING TO BE ONE PIECE, NO SPLICE, UNLESS OTHERWISE NOTED ON PLANS.
4. ALL REINFORCING SHALL HAVE A MINIMUM COVERAGE OF 1/2" GROUT, PROVIDE A MINIMUM GROUT COVER EQUAL TO 1 1/2" NOR LESS THAN 2.5db AROUND MASONRY DOWELS.
5. FOR LOW LIFT CONSTRUCTION AND MAXIMUM GROUT POUR HEIGHT SEE TABLE 1.16.1 OF ACI 530-11.
6. ALL CELLS IN CONCRETE BLOCKS SHALL BE FILLED SOLID WITH GROUT U.N.O.
7. CELLS SHALL BE IN VERTICAL ALIGNMENT. DOWELS SHALL BE SET TO ALIGN WITH CORES CONTAINING REINFORCING STEEL.
8. ALL ISOLATED BOLTS EMBEDDED IN MASONRY SHALL BE GROUTED SOLIDLY IN PLACE WITH NOT LESS THAN 1" OF GROUT SURROUNDING THE BOLT & SHALL BE SET W/ TEMPLATES.
9. REFER TO ARCHITECTURAL DRAWINGS FOR SURFACE AND HEIGHTS OF UNIT, LAYING PATTERN AND JOINT TYP.
10. SPECIAL INSPECTION AND TESTING IS REQUIRED FOR ALL MASONRY WORK.
11. PROVIDE SHORING AND BRACING AS REQUIRED FOR MASONRY WALL CONSTRUCTION WORK.
12. TESTING OF CMU MUST CONFORM TO ASTM C140-02a & ASTM C426-99.
13. HOLLOW LOAD BEARING MASONRY UNITS SHALL BE GRADE "N" TYPE 1, MEDIUM WEIGHT CONFORMING TO ASTM C90 AND SHALL HAVE A COMPRESSIVE STRENGTH OF $f_m = 2,500$ PSI AT 28 DAYS, VERIFIED BY PRISM TESTING.
14. MORTAR SHALL BE TYPE 'S' PER LA CITY BUILDING CODE.
15. GROUT SHALL CONFORM TO REQUIREMENTS OF SECTION 2103.12 OF 2014 LOS ANGELES CITY BUILDING CODE.
16. COMPRESSIVE STRENGTH OF MORTAR SHALL BE 2500 PSI AND GROUT SHALL BE 2500 PSI.
17. CONSTRUCTION SHALL COMPLY WITH SECTION 3 OF ACI 530.1
 - a) REINFORCEMENT SHALL BE SUPPORTED AND FASTENED TOGETHER TO PREVENT DISPLACEMENTS BEYOND THE TOLERANCES ALLOWED BY 3.4 OF ACI 530.1 PRIOR TO GROUTING.
 - b) CLEANOUTS SHALL BE PROVIDED FOR ALL GROUT POURS OVER 5'-0".
 - c) GROUT LIFTS SHALL BE IN ACCORDANCE WITH ACI 530-11 TABLE 1.16.1.
18. QUALITY INSURANCE MEASURES, SHALL COMPLY WITH SEC. 2105 AND TABLES 1.15.1 AND 1.15.3 OF ACI 530 AND SHALL BE INCLUDED IN THE STATEMENT OF SPECIAL INSPECTIONS REQUIRED BY 1705.
19. PIPES & CONDUITS EMBEDDED IN MASONRY SHALL NOT REDUCE THE REQUIRED STRENGTH, ACI 530 SECTION 1.16.2.
20. JOINT REINFORCEMENT USED IN MASONRY SHALL NOT REDUCE THE REQUIRED STRENGTH.
21. WHERE PIPE PENETRATIONS OCCUR IN WALLS, CONTRACTOR SHALL GROUT ALL GAPS BETWEEN PIPES AND WALL.

REINFORCING STEEL

1. REINFORCING BARS SHALL BE SPLICED AS SHOWN ON DRAWINGS. ANY ADDITIONAL SPLICING SHALL REQUIRE PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER. WHERE SPLICE LENGTHS ARE NOT EXPLICITLY CALLED OUT ON DETAILS, THE MINIMUM SPLICE (IN COMPRESSION) IS 45 DIAMETERS IN CONCRETE, 65 DIAMETERS IN TENSION (FOR CONCRETE) AS NOTED ON TYP DETAILS. EMBEDMENT AND HOOK LENGTHS SHALL BE PER ACI 318-11.
2. ALL REINFORCING BARS IN CONCRETE MASONRY UNITS SHALL BE COMPLETELY EMBEDDED IN MORTAR OR GROUT AND SHALL HAVE A COVER OF NOT LESS THAN 1 1/2" NOR LESS THAN 2 1/2 TIMES THE BAR DIAMETER.
3. ALL BARS SHALL BE CLEAN OF RUST, GREASE AND OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL BENDS SHALL BE MADE COLD.
4. ALL REINFORCING STEEL INCLUDING STIRRUPS AND TIES, SHALL BE HIGH STRENGTH, NEW BILLET STEEL CONFORMING TO ASTM A615 GRADE 60 (FY = 60,000 PSI). ALL REINFORCING TO BE WELDED SHALL CONFORM TO ASTM A706 GRADE 60.
5. ALL REINFORCING SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH ACI-315 "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES (LATEST EDITION).
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND OBTAIN APPROVAL PRIOR TO FABRICATION.
7. U.N.O. ON STRUCTURAL DRAWINGS, PROVIDE MINIMUM CONCRETE PROTECTION FOR REINFORCING AS FOLLOWS:
CAST AGAINST EARTH 3"
EXPOSED TO EARTH OR WEATHER:
#5 AND SMALLER BARS AND WIRES 1-1/2"
#6 AND LARGER BARS 2"
NOT EXPOSED TO EARTH OR WEATHER:
SLABS AND WALLS:
#6 AND SMALLER BARS AND W.W.F. 3/4"
#7 AND #8 BARS 1"
#9 AND LARGER BARS 1 1/2"
BEAMS AND COLUMNS 1 1/2"
SLABS SUBJECT TO VEHICULAR TRAFFIC:
FRAMED SLABS TOP COVER 2"
BOTTOM COVER 3/4"
8. WHERE CONSTRUCTION JOINTS ARE PROVIDED, THE REINFORCEMENT SHALL PASS CONTINUOUSLY THROUGH THE JOINT.
9. ALL WELDING OF REINFORCING TO BE DONE WITH E80XX ELECTRODES IN ACCORDANCE WITH A.W.S. SPECIFICATIONS D1.4 (LATEST EDITION).
10. ANY MECHANICAL SPLICES USED MUST BE "TENSION-COMPRESSION" TYPE AND SHALL COMPLY WITH ACI-318-11 SECTION 12.14.3. UNLESS OTHERWISE SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER, SHOP DRAWINGS SUBMITTED FOR APPROVAL MUST INDICATE THE USE AND TYPE OF ANY MECHANICAL SPLICES USED.

REVISIONS			
NO	DESCRIPTION	APPROVE	DATE

SHELL OIL PRODUCTS US

CITY OF CARSON

SVE/ BIOVENTING SYSTEM

CAROUSEL TRACT

STRUCTURAL GENERAL NOTES

PROJECT NO. XXX	SHEET 57 of 87	PLAN NO. S-0.1
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STRUCTURAL STEEL

- MATERIAL AND WORK SHALL CONFORM TO AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", LATEST EDITION.
- ALL STRUCTURAL STEEL CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH TYPE BOLTS CONFORMING TO ASTM A325N UNO. BOLTS DESIGNATED AS SLIP-CRITICAL & BOLTS SUBJECT TO DIRECT TENSION LOADS SHALL BE PRETENSIONED PER AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS."
- ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO (2) BOLTS, UNO.
- MINIMUM EDGE DISTANCE (DISTANCE FROM CENTER OF BOLT TO NEAREST EDGE OF PLATE OR STRUCTURAL ELEMENT) SHALL BE 2 BOLT DIAMETERS OR 1 1/2", WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
- ANCHOR BOLTS SHALL BE A307 HEX HEAD BOLTS WITH FLAT WASHERS OR F1554 THREADED RODS WITH NUTS AND FLAT WASHERS UNO ON DWGS.
- ALL WELDING SHALL CONFORM TO STANDARDS OF AISC, AWS D1.1 & D1.3 USING E70 LOW-HYDROGEN ELECTRODES AND SHALL BE PERFORMED BY WELDERS CERTIFIED PER AWS REQUIREMENTS.
- ALL STRUCTURAL STEEL AND MISCELLANEOUS STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.
- AUTOMATICALLY END WELD SHEAR CONNECTORS (HEADED STUDS) THROUGH DECK TO SUPPORTING STRUCTURAL MEMBERS IN FIELD, ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND AWS D1.1. REMOVE CERAMIC FERRULES FROM CONNECTOR AND DECK BEFORE PLACING CONCRETE.
- AUTOMATICALLY END WELD ALL DEFORMED BAR ANCHORS (DBA). USE SAME TESTING AND INSPECTION REQUIREMENTS AS FOR SHEAR CONNECTORS.
- ALL TESTING AND INSPECTION OF STRUCTURAL STEEL SHALL CONFORM WITH THE REQUIREMENTS OF THE L.A. COUNTY BUILDING CODE PART 2, TITLE 24, CHAPTER 17.
- ALL HOT ROLLED SHAPES W/ FLANGES THICKER THAN 1 1/2" THICK AND ALL PLATES GREATER THAN 2" THICK SHALL HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBS @ 70° F TESTED IN THE ALTERNATE CORE LOCATION AS DESCRIBED IN ASTM A36.
- ALL STRUCTURAL STEEL WIDE FLANGE MEMBERS SHALL CONFORM TO ASTM SPECIFICATIONS A-982 GRADE 50KSI U.N.O. PLATES, ANGLES, CHANNELS AND BARS SHALL BE ASTM A-36.
- TUBES TO CONFORM TO ASTM A-500 GRADE B. PIPES TO CONFORM TO ASTM A-53 TYPE E OR S GRADE B.
- HIGH STRENGTH STEEL BOLTS TO CONFORM TO ASTM A-325 OR A-490. ANCHOR RODS TO CONFORM TO ASTM F-1554 GR.36 UNO.
- WELDING ELECTRODES SHALL BE E-70 LOW HYDROGEN.
- ALL BUTT WELDS SHALL BE FULL PENETRATION BUTT WELDS.
- SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED IS PROHIBITED WITHOUT PRIOR APPROVAL.
- FABRICATE STEEL BEAMS WITH THE NATURAL CAMBER UP.
- BASE PLATES, BEAMS, COLUMNS AND HARDWARE EXPOSED TO SOIL SHALL BE COVERED WITH MINIMUM OF 3" CONCRETE PRIOR TO BACKFILL.
- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND OBTAIN APPROVAL PRIOR TO FABRICATION.
- ALL TEMPORARY ERECTION BRACING AND TIE RODS SHALL REMAIN IN PLACE UNTIL ALL STRUCTURAL MEMBERS ARE PROPERLY ALIGNED AND CONNECTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES.

WELDING

- WELD LENGTHS SHOWN ARE EFFECTIVE LENGTH PER CODE. WHERE LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF JOINT.
- ALL WELDING REQUIREMENTS SHOWN OR INDICATED ON THE DRAWINGS MAY BE FIELD OR SHOP WELDED AS REQUIRED FOR EFFICIENT ERECTION, SUBJECT TO THE APPROVAL OF THE ENGINEER.
- ALL WELDING, OF STRUCTURAL STEEL, SHALL BE PER LATEST EDITION OF AWS D1.1.
- CONTINUOUS INSPECTION IS REQUIRED FOR ALL FIELD WELDING AND SHALL BE PERFORMED BY INSPECTORS CERTIFIED BY THE AGENCY HAVING JURISDICTION.
- ALL WELDERS SHALL BE CERTIFIED PER AWS REQUIREMENTS. SUBMIT WELDER CERTIFICATIONS FOR USE BY THE WELDING INSPECTOR.

STEEL DECK

- STEEL DECKING SHALL REST TIGHTLY UPON THE TOP FLANGE OF THE SUPPORTING MEMBERS.
- STEEL DECK MATERIAL AND INSTALLATION SHALL MEET THE REQUIREMENTS OF THE STEEL DECK INSTITUTE'S DESIGN MANUAL.
- ALL DECKING MATERIAL AND THE FLANGES OF SUPPORTING MEMBERS SHALL BE FREE OF DIRT, SAND, AND OTHER FOREIGN MATERIALS.
- WATER ON THE DECK OR BETWEEN THE DECK AND SUPPORTING MEMBERS SHALL BE REMOVED BEFORE WELDING.
- ALL STEEL DECK SHALL BE CONTINUOUS OVER 2 OR MORE SPANS UNLESS NOTED OTHERWISE SHORE DECK FOR WET CONCRETE WEIGHT AS REQUIRED BY THE DECK MANUFACTURER.
- DECK MANUFACTURER TO IDENTIFY SHORING REQUIREMENTS. PROVIDE SHORING DETAILS ON SHOP DRAWINGS.
- THE FIRST SHEET OF STEEL DECKING ADJACENT AND PARALLEL TO CHORDS, REACTION MEMBERS AND DRAGS (ON ONE OR BOTH SIDES AS APPLICABLE) IS REQUIRED TO BE A FULL WIDTH SHEET.
- MATERIAL FOR STEEL DECK SHALL HAVE A MIN. YIELD STRENGTH OF 50,000 PSI AND CONFORM TO ASTM A653 SQ, GRADE 50 WITH G60 COATING. THE STEEL DECK MANUFACTURER SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
 - SUPPORTS FOR DECK AROUND DISCONTINUITIES.
 - CLOSURE ANGLES AND DECK REINFORCEMENT AT OPENINGS FOR COLUMNS, BEAM POCKETS, PIPES, DUCTS, CONDUITS, ETC.
- INSTALL DECK BY WELDING PER TYPICAL DETAIL.
- DECK WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.3 WITH CONTINUOUS INSPECTION.
- NO LOADS SHALL BE HUNG FROM DECK WITHOUT APPROVAL.
- STEEL DECK SHALL HAVE A 2.5" MINIMUM BEARING ON SUPPORT STEEL.
- DECK SHALL BE LAID OUT SO THAT A RIB FALLS ON EACH PARALLEL SUPPORT.
- END LAPS OF STEEL DECK SHALL BE A MINIMUM OF 4" AND SHALL OCCUR OVER SUPPORTS.
- PROVIDE SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION.

STRUCTURAL OBSERVATION

- STRUCTURAL OBSERVATION AS INDICATED IN THE L.A. COUNTY BUILDING CODE SECTION 1704 IS REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE EOR 72 HOURS IN ADVANCE OF REQUIRED OBSERVATION(S) FOR SCHEDULING PURPOSES. FAILURE TO MEET OBSERVATION SCHEDULES MAY REQUIRE REMOVAL OF ANY FINISHES THAT HAVE BEEN SUBSEQUENTLY INSTALLED. REMOVAL AND REPLACEMENT OF ANY FINISHES AND/OR FRAMING DAMAGED BY THE FINISH REMOVAL PROCESS OR AS REQUIRED FOR CORRECTIVE ACTION SHALL BE AT THE CONTRACTOR'S EXPENSE, NOT THE OWNER, ENGINEER NOR STRUCTURAL OBSERVER.
- SEE PROJECT SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL OBSERVATION REQUIREMENTS.
- STRUCTURAL OBSERVATION SHALL BE AT THE FOLLOWING STAGES:
 - AFTER REINFORCING AND FORMS HAVE BEEN SET FOR ALL FOUNDATIONS, PEDESTALS AND 72 HOURS IN ADVANCE OF CONCRETE PLACEMENT.
 - AFTER PLACEMENT OF CMU BLOCK AND REINFORCING AND 72 HOURS IN ADVANCE OF CONCRETE GROUT PLACEMENT.
 - AFTER ERECTION OF ROOF FRAMING AND PLACEMENT OF METAL DECK.

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REVISIONS			
NO	DESCRIPTION	APPROVE	DATE

SHELL OIL PRODUCTS US
CITY OF CARSON
SVE/ BIOVENTING SYSTEM
CAROUSEL TRACT
STRUCTURAL GENERAL NOTES

PROJECT NO. XXX	SHEET 58 of 87	PLAN NO. S-0.2
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DESIGN BY: J.L.	STAMP	PLANS PREPARED BY: AECOM	BENCHMARK:
DRAWN BY: M.C.		999 W. TOWN & COUNTRY ROAD ORANGE, CA 92868-4713	
CHECKED BY: S.A.			

90% SUBMITTAL

STRUCTURAL TESTS, INSPECTIONS, AND OBSERVATIONS:

1. PER SECTION 1704 OF IBC 2012, THE FOLLOWING ITEMS SHALL BE INSPECTED AND TESTED BY A SPECIAL INSPECTOR.

2. ALL TESTS AND INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR PER IBC 2012. THE SPECIAL INSPECTOR SHALL BE EMPLOYED BY THE CONTRACTOR

3. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED (LICENSED) PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE CONTRACTING OFFICER, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR...

LIST OF SPECIAL INSPECTION	YES	NO	N/A
FOUNDATION			
A. GRADING AND FILLING AND CUT OPERATION PER SOILS REPORT	X		
B. FILL MATERIAL ACCEPTANCE TEST, COMPACTION CONTROL	X		
C. BEARING CAPACITY OF COMPACTED FILL	X		
CONCRETE:			
A. DURING THE TAKING OF TEST SPECIMENS	X		
B. PLACING OF REINFORCED CONCRETE	X		
C. BOLT INSTALLED IN CONCRETE	X		
REINFORCING STEEL			
A. DURING PLACING OF REINFORCING	X		
STRUCTURAL MASONRY:			
A. DURING PREPARATION AND TAKING OF PRISM OR TEST SPECIMENS	X		
B. PLACING OF ALL MASONRY UNITS, REINFORCEMENT, GROUTING AND MASONRY PRISM TEST	X		
STRUCTURAL STEEL:			
A. MILL REPORTS AND IDENTIFICATION OF STEEL (AFADAVIT OF COMPLIANCE)	X		
B. SAMPLING AND TESTING OF SPECIMEN	X		
WELDING:			
A. ALL STRUCTURAL WELDING (INCLUDES DECKING AND WELDED STUDS)	X		
B. ULTRASONIC TESTING OF FULL PENETRATION WELD CONNECTIONS AT MOMENT FRAMES, BRACED FRAMES, BEAM SPLICES, AND FIELD WELDS	X		
C. STRUCTURAL LIGHT GAGE METAL FRAME WELDING	X		
D. REINFORCING STEEL WELDING PER IBC 1704.3	X		
BOLT:			
A. HIGH STRENGTH BOLT A325SC & A490SC (TENSION VERIFICATION)			X
B. HIGH STRENGTH BOLT A325N & A490N (SNUG CONTACT OF PLYS)	X		
C. EXPANSION / ADHESIVE ANCHORS IN CONCRETE OR MASONRY INSTALLATION AND TESTING	X		
D. ANCHOR BOLTS AT CONCRETE WALLS AND BRACED FRAMES. (BOLT INSTALLATION AND CONCRETE PLACEMENT)	X		

TABLE 1705.6: REQUIRED VERIFICATION AND INSPECTION OF SOILS (BY GEOTECHNICAL ENGINEER):

VERIFICATION AND INSPECTION OF TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	---	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	---	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	---	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	---
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	---	X

TABLE 1705.3: REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION:

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD (a)	IBC REFERENCE
1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT.	---	X	ACI 318: 3.5, 7.1 - 7.7	1910.4
2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1705.2., ITEM 2B	---	---	AWS D1.4 ACI 318: 3.5.2	---
3. INSPECTION ON ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.	---	X	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS (b)	---	X	ACI 318: 3.8.8, 8.1.3, 21.2.8	1909.1
5. VERIFYING USE OF REQUIRED DESIGN MIX.	---	X	ACI 318: CH. 4, 5.2 - 5.4	1904.2, 1910.2, 1910.3
6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	---	ASTM C 172 ASTM C 31 ACI 318: 5.8, 5.8	1910.10
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	---	ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	---	X	ACI 318: 5.11 - 5.13	1910.9
9. INSPECTION OF PRESTRESSED CONCRETE:				
a. APPLICATION OF PRESTRESSING FORCES.	X	---	ACI 318: 18.20	---
b. GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC FORCE-RESISTING SYSTEM.	X	---	ACI 318: 18.18.4	---
10. ERECTION OF PRECAST CONCRETE MEMBERS.	---	X	ACI 318: CH. 16	---
11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	---	X	ACI 318: 6.2	---
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	---	X	ACI 318: 6.1.1	---

(a) WHERE APPLICABLE, SEE ALSO SECTION 1707.1, SPECIAL INSPECTION FOR SEISMIC RESISTANCE

(b) SPECIFIC REQUIREMENT FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH ACI 308.2 OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

**TABLE N5.4-1, AISC 360-10
INSPECTION TASKS PRIOR TO WELDING**

INSPECTION TASKS PRIOR TO WELDING	QC	QA
WELDING PROCEDURES SPECIFICATIONS (WPSs) AVAILABLE	P	P
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	P
MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O
WELDER IDENTIFICATION SYSTEM ¹	O	O
FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)		
- JOINT PREPARATION		
- DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)		
- CLEANLINESS (CONDITION OF STEEL SURFACES)	O	O
- SHIELDING GAS TYPE/FLOW RATE		
- TACKING (TACK WELD QUALITY AND LOCATION)		
- BACKING TYPE AND FIT (IF APPLICABLE)		
CONFIGURATION AND FINISH OF ACCESS HOLES	O	O
FIT-UP OF FILLET WELDS		
- DIMENSIONS (ALIGNMENT, GAPS, AT ROOT)		
- CLEANLINESS (CONDITION OF STEEL SURFACES)	O	O
- TACKING (TACK WELD QUALITY AND LOCATION)		
CHECK WELDING EQUIPMENT	O	---

¹ THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED SHALL BE THE LOW-STRESS TYPE.

**TABLE N5.4-2, AISC 360-10
INSPECTION TASKS DURING WELDING**

INSPECTION TASKS DURING WELDING	QC	QA
USE OF QUALIFIED WELDERS	O	O
CONTROL AND HANDLING OF WELDING CONSUMABLES		
- PACKAGING	O	O
- EXPOSURE CONTROL		
NO WELDING OVER CRACKED TACK WELDS	O	O
ENVIRONMENTAL CONDITIONS		
- WIND SPEED WITHIN LIMITS	O	O
- PRECIPITATION AND TEMPERATURE		
WPS FOLLOWED		
- SETTINGS ON WELDING EQUIPMENT		
- TRAVEL SPEED	O	O
- SELECTED WELDING MATERIALS		
- SHIELDING GAS TYPE/FLOW RATE		
- PREHEAT APPLIED		
- INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)		
- PROPER POSITION (F,V, H, OH)		
WELDING TECHNIQUES		
- INTERPASS AND FINAL CLEANING	O	O
- EACH PASS WITHIN PROFILE LIMITATIONS		
- EACH PASS MEETS QUALITY REQUIREMENTS		

**TABLE N5.4-3, AISC 360-10
INSPECTION TASKS AFTER WELDING**

INSPECTION TASKS AFTER WELDING	QC	QA
WELDS CLEANED	O	O
SIZE, LENGTH AND LOCATION OF WELDS	P	P
WELDS MEET VISUAL ACCEPTANCE CRITERIA		
- CRACK PROHIBITION		
- WELD/BASE-METAL FUSION	P	P
- CRATER CROSS SECTION		
- WELD PROFILES		
- WELD SIZE		
- UNDERCUT		
- POROSITY		
ARC STRIKES	P	P
k-AREA ¹	P	P
BACKING REMOVED & WELD TABS REMOVED (IF REQUIRED)	P	P
REPAIR ACTIVITIES	P	P
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P

¹ WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE k-AREA, VISUALLY INSPECT THE WEB k-AREA FOR CRACKS WITHIN 3 INCHES (75 mm) OF THE WELD.

DESIGN BY:	J.L.	STAMP	PLANS PREPARED BY:	BENCHMARK:
DRAWN BY:	M.C.		AECOM	
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SHELL OIL PRODUCTS US		
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CAROUSEL TRACT		
STRUCTURAL TESTS, INSPECTIONS AND OBSERVATIONS		
PROJECT NO. XXX	SHEET 59 of 87	PLAN NO. S-0.3

BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES (TMS 402/ACI 530/ASCE 5)
TABLE 1.19.2 – LEVEL B QUALITY ASSURANCE

MINIMUM TESTS				
VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 B.1.b.3 FOR SELF-CONSOLIDATING GROUT				
VERIFICATION OF f'm AND f'AAC IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4 B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE				
MINIMUM INSPECTION				
INSPECTION TASK	FREQUENCY OF INSPECTION (a)		REFERENCE FOR CRITERIA	
	CONTINUOUS	PERIODIC	TMS 402/ ACI 530/ ASCE 5	TMS 402/ ACI 530/ ASCE 5
1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS	—	X	—	ART 1.5
2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:	—	—	—	—
a. PROPORTIONS OF SITE-PREPARED MORTAR	—	X	—	ART 2.1, 2.6 A
b. CONSTRUCTION OF MORTAR JOINTS	—	X	—	ART 3.3 B
c. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES	—	X	—	ART 2.4 B, 2.4 H
d. LOCATION OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	—	X	—	ART 3.4, 3.6 A
e. PRESTRESSING TECHNIQUE	—	X	—	ART 3.6 B
f. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X (b)	X (c)	—	ART 2.1 C
3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:	—	X	—	—
a. GROUT SPACE	—	X	—	ART 3.2 D, 3.2 F
b. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRESTRESSING TENDONS AND ANCHORAGES	—	X	SEC 1.16	ART 2.4, 3.4
c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND PRESTRESSING TENDONS AND ANCHORAGES	—	X	SEC 1.16	ART 3.2 E, 3.4, 3.6 A
d. PROPORTIONS OF SITE-PREPARED GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS	—	X	—	ART 2.6 B, 2.4 G.1.b
e. CONSTRUCTION OF MORTAR JOINTS	—	X	—	ART 3.3 B
4. VERIFY DURING CONSTRUCTION	—	—	—	—
a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	—	—	—	ART 3.3 F
b. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION	—	X	SEC 1.16.4.3, 1.17.1	—
c. WELDING REINFORCEMENT	X	—	SEC 2.1.7.7.2, 3.3.3.4(a), 8.3.3.4(b)	—
d. PREPARATION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40 DEG F (4.4 DEG C) OR HOT WEATHER (TEMPERATURE ABOVE 90 DEG F (32.2 DEG C))	—	X	—	ART 1.8 C, 1.8 D
e. APPLICATION AND MEASUREMENT OF PRESTRESSING FORCE	X	—	—	ART 3.6 B
f. PLACEMENT OF GROUT AND PRESTRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X	—	—	ART 3.5, 3.6 C
g. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X (b)	X (c)	—	ART 3.3 B.8
5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS	—	X	—	ART 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

(a) FREQUENCY REFERS TO THE FREQUENCY OF INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODICALLY DURING THE LISTED TASK, AS DEFINED IN THE TABLE.
 (b) REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.
 (c) REQUIRED AFTER THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) OF AAC MASONRY.

TABLE N6.1, AISC 360-10
INSPECTION OF STEEL ELEMENTS OF CONSTRUCTION PRIOR TO CONCRETE PLACEMENT

INSPECTION OF STEEL ELEMENTS OF CONSTRUCTION PRIOR TO CONCRETE PLACEMENT	QC	QA
INSPECTION OF STEEL ELEMENTS OF CONSTRUCTION PRIOR TO CONCRETE PLACEMENT	QC	QA
PLACEMENT AND INSTALLATION OF STEEL DECK	P	P
PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS	P	P
DOCUMENT ACCEPTANCE OR REJECTION OF STEEL ELEMENTS	P	P

TABLE N5.6-1, AISC 360-10
INSPECTION TASKS PRIOR TO BOLTING

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O
PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)	O	O
PROPER BOLTING PROCEDURES SELECTED FOR JOINT DETAIL	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE PAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O

TABLE N5.6-2, AISC 360-10
INSPECTION TASKS DURING BOLTING

INSPECTION TASKS DURING BOLTING	QC	QA
FASTENER ASSEMBLIES OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	O	O
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	O
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
FASTENER ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O

TABLE N5.6-3, AISC 360-10
INSPECTION TASKS AFTER BOLTING

INSPECTION TASKS AFTER BOLTING	QC	QA
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P

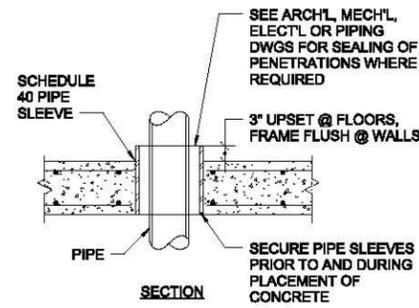
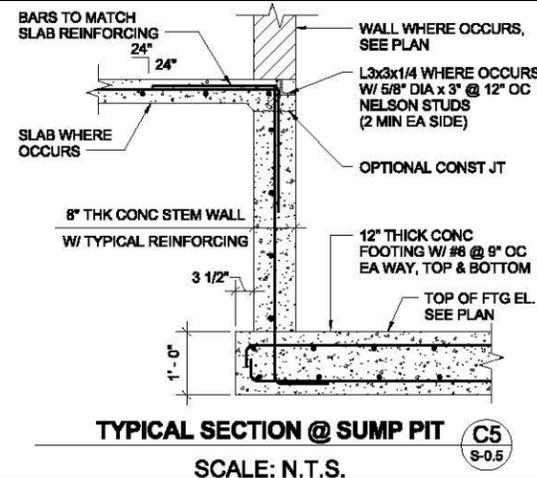
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PROJECT NO. **XXX** SHEET **60 of 87** PLAN NO. **S-0.4**

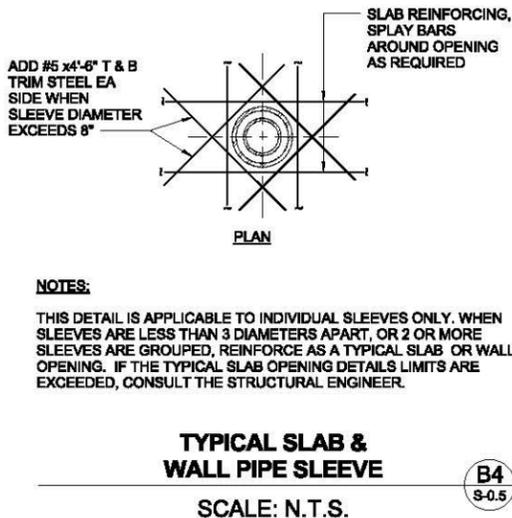
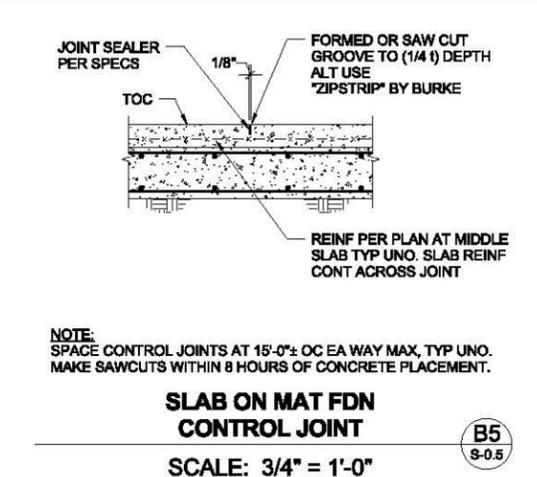
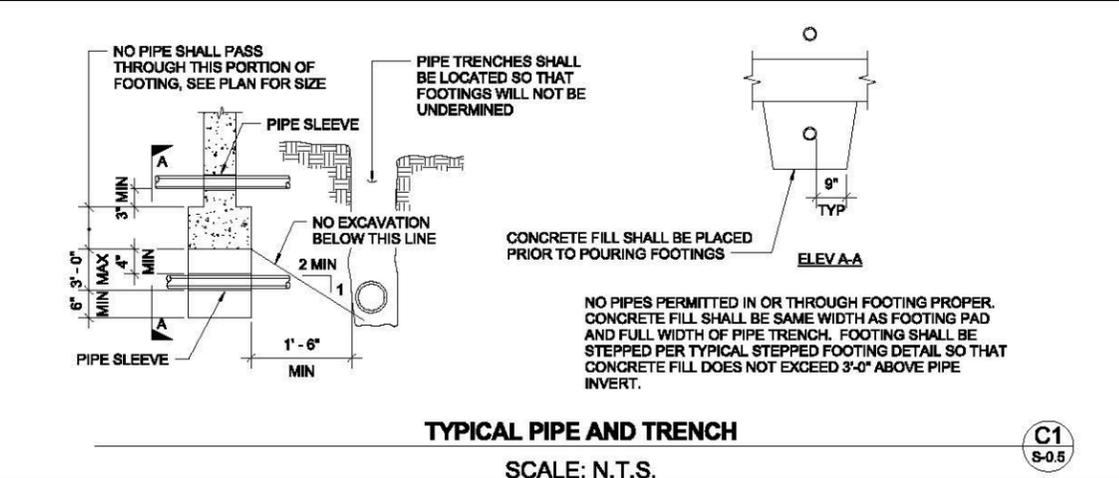
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TYPICAL LAP SPLICE / DEVELOPMENT LENGTH (CONCRETE) (B3)
SCALE: N.T.S.

NOTE: $f_c = 3,000 \text{ PSI}, 4,000 \text{ PSI}, 5,000 \text{ PSI}$ (NORMAL WT CONCRETE)
 $f_y = 60,000 \text{ PSI}$

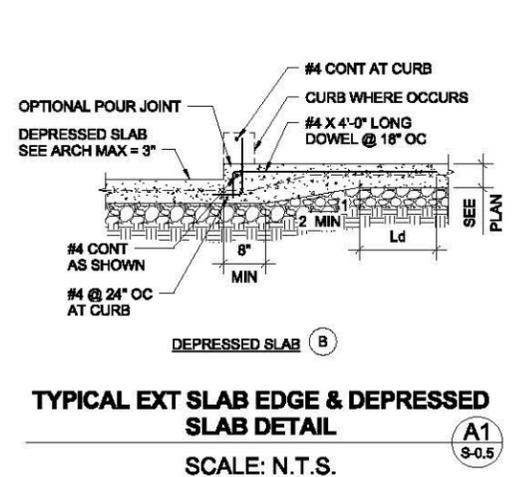
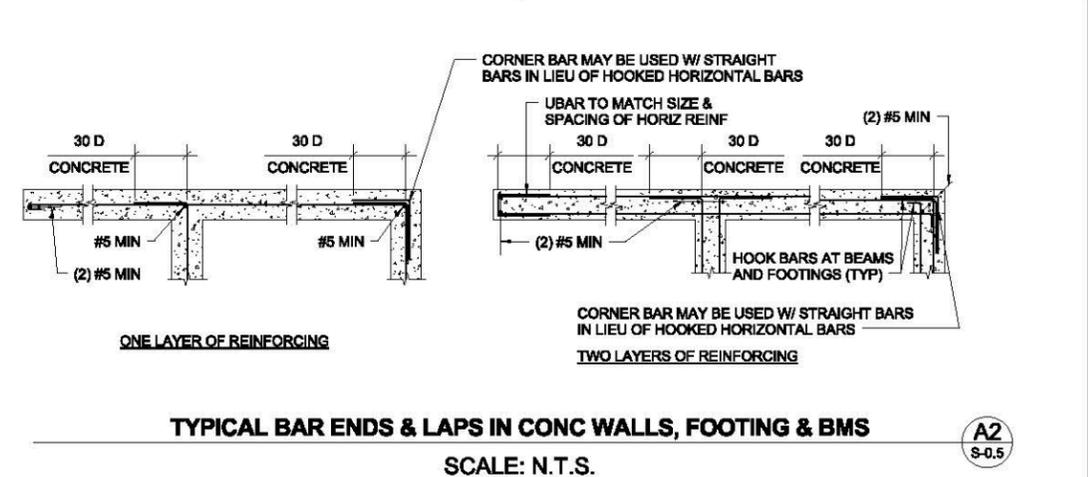
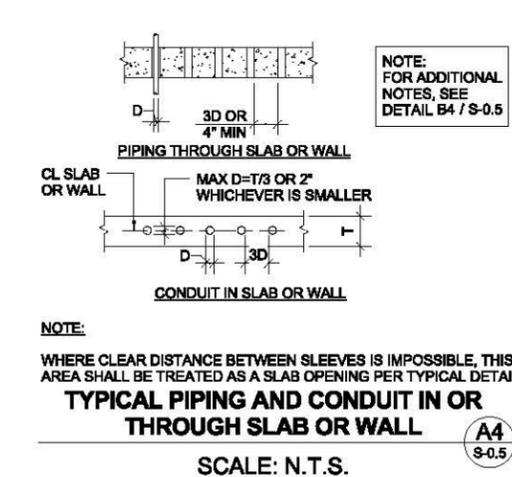
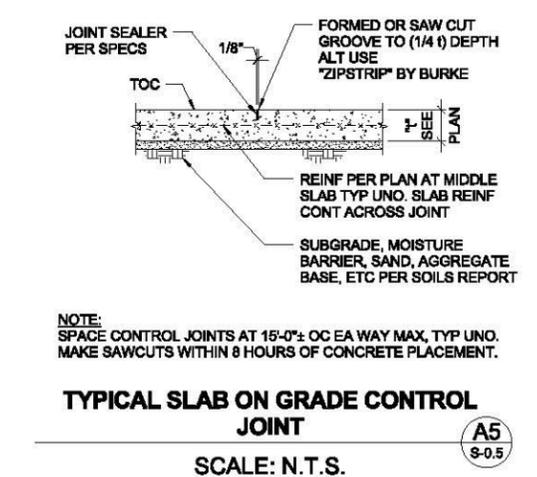
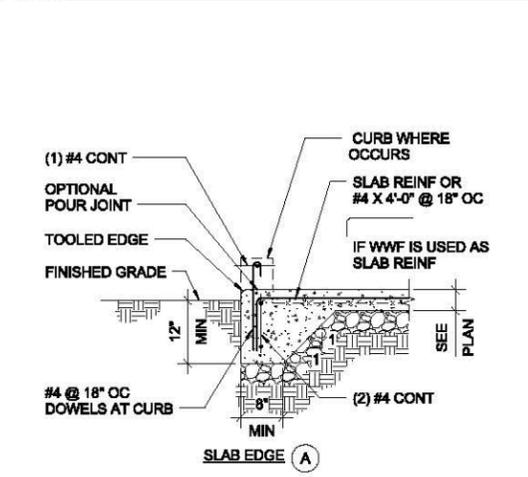
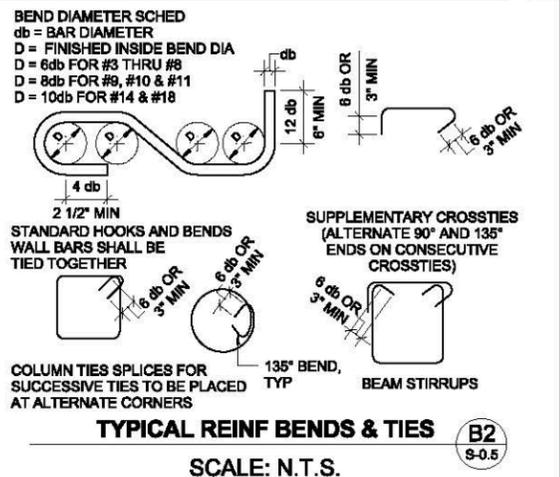
		BASIC										
LENGTH BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11			
3,000 PSI	"B"	1'-10"	2'-5"	3'-0"	3'-7"	5'-3"	6'-0"	6'-9"	7'-7"	8'-5"		
	"Ld"	1'-5"	1'-10"	2'-4"	2'-9"	4'-0"	4'-7"	5'-2"	5'-10"	6'-8"		
4,000 PSI	"B"	1'-7"	2'-1"	2'-7"	3'-1"	4'-8"	5'-2"	5'-10"	6'-7"	7'-3"		
	"Ld"	1'-3"	1'-7"	2'-0"	2'-5"	3'-6"	4'-0"	4'-6"	5'-1"	5'-7"		
5,000 PSI	"B"	1'-5"	1'-11"	2'-4"	2'-10"	4'-1"	4'-8"	5'-3"	5'-11"	6'-6"		
	"Ld"	1'-1"	1'-5"	1'-10"	2'-2"	3'-2"	3'-7"	4'-0"	4'-6"	5'-0"		



TYPICAL LAP SPLICE / DEVELOPMENT LENGTH (CONCRETE) (B3)
SCALE: N.T.S.

NOTE: 1. TOP BARS ARE HORIZONTAL REINFORCING BARS (EXCEPT WALL HORIZ BARS) SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. LAP LENGTH SHALL BE THAT OF THE SMALLER DIAMETER BAR IN THE SPLICE. 2. FOR LIGHT WT CONCRETE, THE TABULATED VALUES SHALL BE DIVIDED BY 0.75.

		TOP BARS										
LENGTH BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11			
3,000 PSI	"B"	2'-4"	3'-2"	3'-11"	4'-8"	6'-8"	7'-9"	8'-9"	9'-10"	10'-11"		
	"Ld"	1'-10"	2'-5"	3'-0"	3'-7"	5'-3"	6'-0"	6'-9"	7'-7"	8'-5"		
4,000 PSI	"B"	2'-1"	2'-9"	3'-5"	4'-1"	5'-11"	6'-9"	7'-7"	8'-6"	9'-6"		
	"Ld"	1'-7"	2'-1"	2'-7"	3'-1"	4'-8"	5'-2"	5'-10"	6'-7"	7'-3"		
5,000 PSI	"B"	1'-10"	2'-5"	3'-0"	3'-8"	5'-3"	6'-0"	6'-8"	7'-8"	8'-6"		
	"Ld"	1'-5"	1'-11"	2'-4"	2'-10"	4'-1"	4'-8"	5'-3"	5'-11"	6'-6"		



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90% SUBMITTAL

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DRAWN BY:	M.C.		
CHECKED BY:	S.A.		

PLANS PREPARED BY:

AECOM

990 W. TOWN & COUNTRY ROAD
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BENCHMARK:

REVISIONS			
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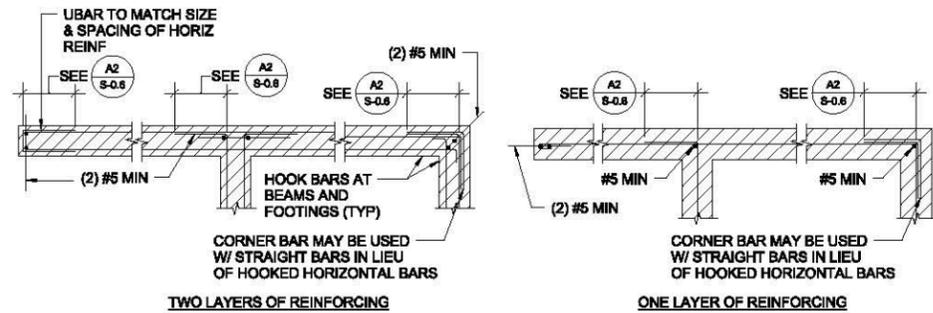
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STRUCTURAL TYPICAL DETAILS - CONCRETE

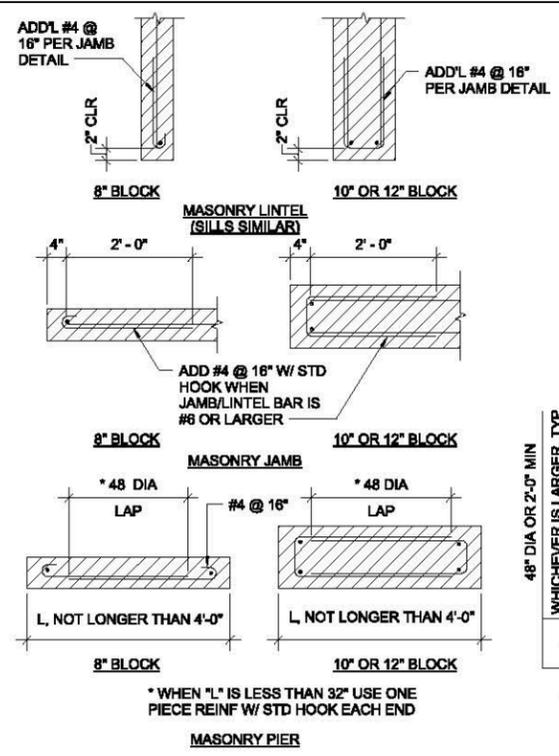
PROJECT NO. **XXX** SHEET **61 of 87** PLAN NO. **S-0.5**



TYPICAL BAR ENDS & LAPS IN MASONRY WALLS, FTGS AND BMS

SCALE: N.T.S.

C3
S-0.6

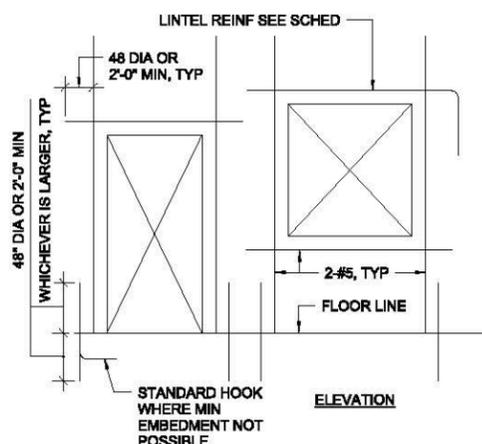


TYPICAL MASONRY WALL OPENING REINFORCING (CONC SIM)

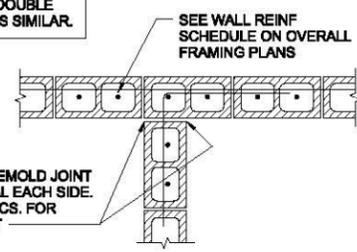
SCALE: N.T.S.

B1
S-0.6

LINTEL REINFORCING SCHEDULE	
# OF REBAR	SIZE OF OPENING
2-#6	OPENINGS LESS THAN 5'-0"
2-#7	OPENINGS 5'-1" TO 7'-0"
2-#8	OPENINGS 7'-1" TO 10'-0"
4-#8 (2 LAYERS)	OPENINGS 10'-1" TO 16'-0"



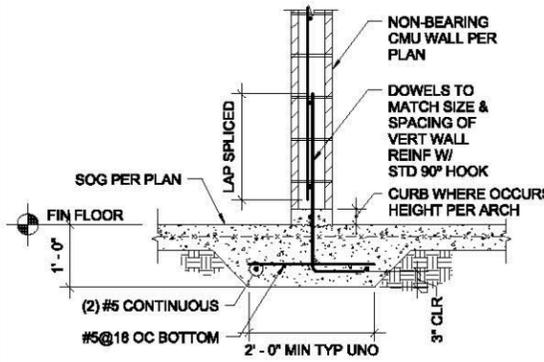
NOTE:
THIS DETAIL SHOWS ONE LAYER OF REINF DOUBLE LAYER OF REINF IS SIMILAR.



TYPICAL MASONRY SHEAR WALL AT INTERSECTION

SCALE: N.T.S.

B3
S-0.6

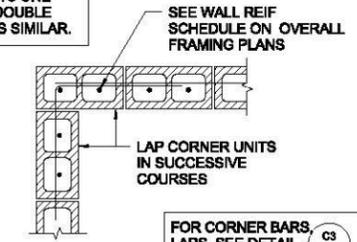


TYPICAL INTERIOR NON-BEARING CMU WALL FOOTING

SCALE: N.T.S.

A4
S-0.6

NOTE:
THIS DETAIL SHOWS ONE LAYER OF REINF DOUBLE LAYER OF REINF IS SIMILAR.



TYPICAL MASONRY SHEAR WALL INTERSECTION AT CORNER

SCALE: N.T.S.

A3
S-0.6

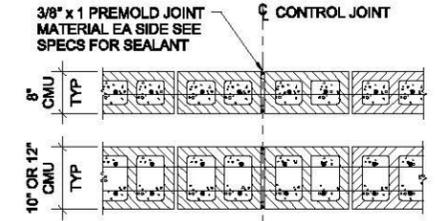
NOTE: m = 1,500 PSI fy = 60,000 PSI

BAR SIZE	COVER (IN)		
	2	4	6
#3	1'-6"	1'-6"	1'-6"
#4	2'-4"	2'-2"	2'-0"
#5	3'-8"	2'-8"	2'-6"
#6	4'-6"	3'-4"	3'-0"
#7	5'-4"	4'-6"	3'-6"
#8	6'-0"	6'-0"	4'-6"
#9	6'-10"	6'-10"	5'-8"

TYPICAL LAP SPLICE / DEV LENGTH (MASONRY)

SCALE: N.T.S.

A2
S-0.6



TYPICAL CONTROL JOINT FOR CMU SHEAR WALL

SCALE: N.T.S.

A1
S-0.6

- NOTES:
- CONTINUOUS HORIZONTAL STEEL, 25'-0" MAX SPACING OF JOINTS.
 - WHERE ELEMENTS SUCH AS BEAMS, JOISTS, BRIDGING OR PILASTERS MEET AT A MASONRY WALL, JOINTS SHALL BE MOVED BY 16" MINIMUM.
 - CONTROL JOINTS SHALL NOT BE LOCATED AT OPENINGS.
 - FOR TYPICAL REINFORCING SEE WALL REINFORCING SCHEDULE ON OVERALL FRAMING PLANS.

DESIGN BY:	J.L.
DRAWN BY:	M.C.
CHECKED BY:	S.A.

STAMP

PLANS PREPARED BY:

AECOM

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ORANGE, CA 92668-4713

BENCHMARK:

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NO	DESCRIPTION	APPROVE	DATE

SHELL OIL PRODUCTS US

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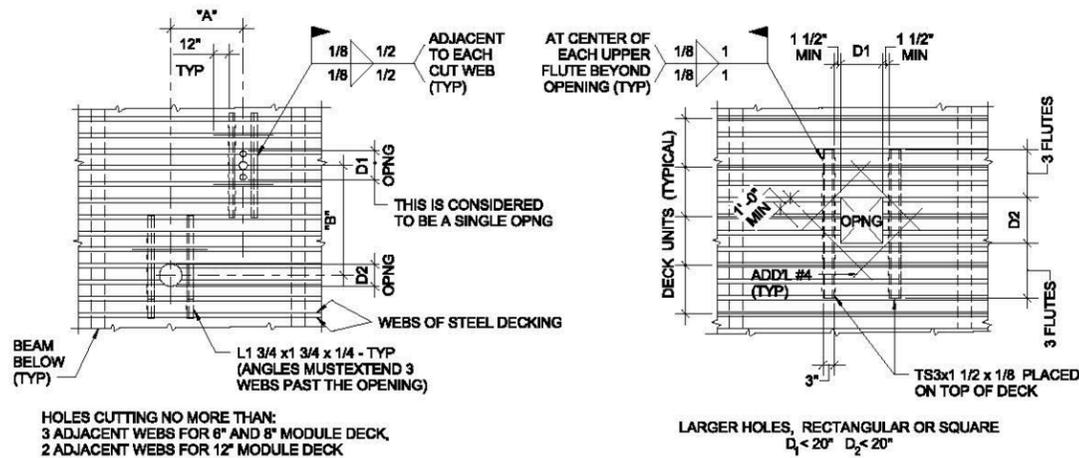
CAROUSEL TRACT

STRUCTURAL TYPICAL DETAILS - MASONRY

PROJECT NO. **XXX** SHEET **62 of 87** PLAN NO. **S-0.6**

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Holes cutting no more than:
 3 adjacent webs for 8" and 8" module deck,
 2 adjacent webs for 12" module deck

NOTE:

1. IF THE OPENING OR GROUP OF OPENINGS OCCURS IN ONE DECKING UNIT, THE OPENING OR OPENING GROUP MAY BE CUT PRIOR TO POURING OF CONCRETE.
2. IF, AS SHOWN IN THE DETAIL ABOVE, THE OPENING OR OPENING GROUP CUTS THROUGH TWO DECKING UNITS, THE DECKING SHALL NOT BE CUT UNTIL CONCRETE HAS BEEN PLACED AND CURED.
 A) AT THE TIME OF POURING, SUITABLE SLEEVES OR BULKHEADS SHALL BE PLACED AROUND THE OPENING.
3. ADD REBAR AT CORNERS OF OPENING AS SHOWN.
4. WHEN THE MAXIMUM DIMENSION OF AN OPENING OR OPENING GROUP EXCEEDS 24" PLACE HEADER BEAM AROUND OPENING.

NOTE:

ANGLES SHALL BE PLACED ON TOP OF DECK.
 1. IF DIMENSION "A" IS GREATER THAN 4D1, 4D2, OR 32", WHICHEVER IS LARGER, THEN THERE IS NO RESTRICTION ON DIMENSION "B".
 2. IF DIMENSION "B" IS GREATER THAN 4D1, 4D2, OR 32", WHICHEVER IS LARGER, THEN THERE IS NO RESTRICTION ON DIMENSION "A". IF DIMENSIONS "A" AND "B" ARE LESS THAN 4D1, 4D2, OR 32", WHICHEVER IS LARGER, THE OPENING GROUP WILL BE CONSIDERED AS A SINGLE HOLE, AND MUST BE REINFORCED AS REQUIRED FOR THE LARGER OPENING.

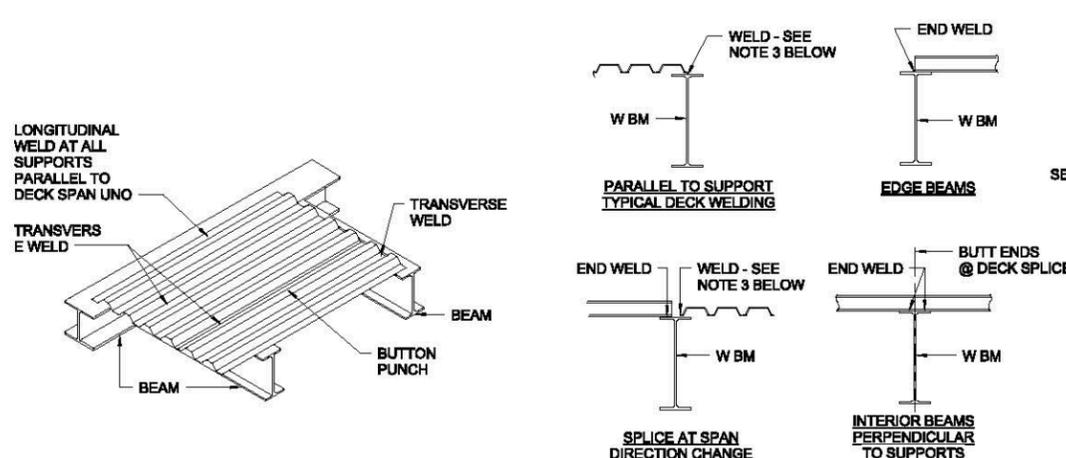
NOTE:

PRIOR TO CONCRETE POUR, SMALL OPENINGS SHOULD BE BLOCKED OUT AND DECK LEFT INTACT. HOLES LESS THAN 6" IN DIAMETER AND CUTTING NO MORE THAN ONE WEB NEED NO REINFORCING. AFTER THE CONCRETE HAS CURED, THE BLOCKOUT CAN BE REMOVED AND THE DECK IN THE AREA OF THE HOLE REMOVED.

TYPICAL REINFORCEMENT AT SMALL OPENINGS IN DECK

SCALE: N.T.S.

B4
S-0.7



METHOD OF CONNECTIONS ROOF DECK - "PLB"

1. 4 PUDDLE WELDS AT EACH TRANSVERSE SUPPORT UNO.
2. LONGITUDINAL WELDS @ 1'-0" OC AT ALL LONGITUDINAL SUPPORTS.
3. USE VERCO PUNCHLOCK II CONN @ 24" O.C. AT ALL SEAMS U.N.O.
4. ALL PUDDLE WELDS SHALL BE 1/2" EFFECTIVE.
5. WELD DECK TO ALL TRANSVERSE AND LONGITUDINAL SUPPORT BEAMS.

METHOD OF CONNECTIONS ROOF DECK - "PLN"

1. 4 PUDDLE WELDS AT EACH TRANSVERSE SUPPORT UNO.
2. LONGITUDINAL WELDS @ 1'-0" OC AT ALL LONGITUDINAL SUPPORTS.
3. USE VERCO PUNCHLOCK II CONN @ 24" OC
4. ALL PUDDLE WELDS SHALL BE 1/2" EFFECTIVE
5. WELD DECK TO ALL TRANSVERSE AND LONGITUDINAL SUPPORT BEAMS.

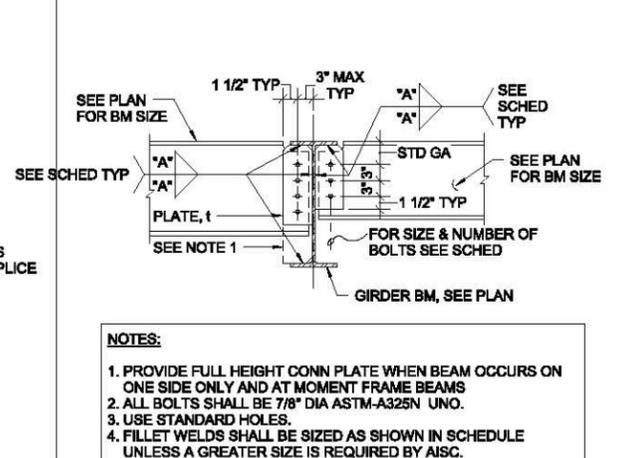
PLN 3" x 16 GA	PLB 1 1/2" x 18 GA
I = 1.571 in ⁴	I = 0.302 in ⁴
+S = 0.883 in ³	+S = 0.314 in ³
-S = 0.932 in ³	-S = 0.331 in ³

SECTION PROPERTIES (FOR WIDTHS SHOWN)

TYPICAL METAL DECK DETAIL

SCALE: N.T.S.

B2
S-0.7



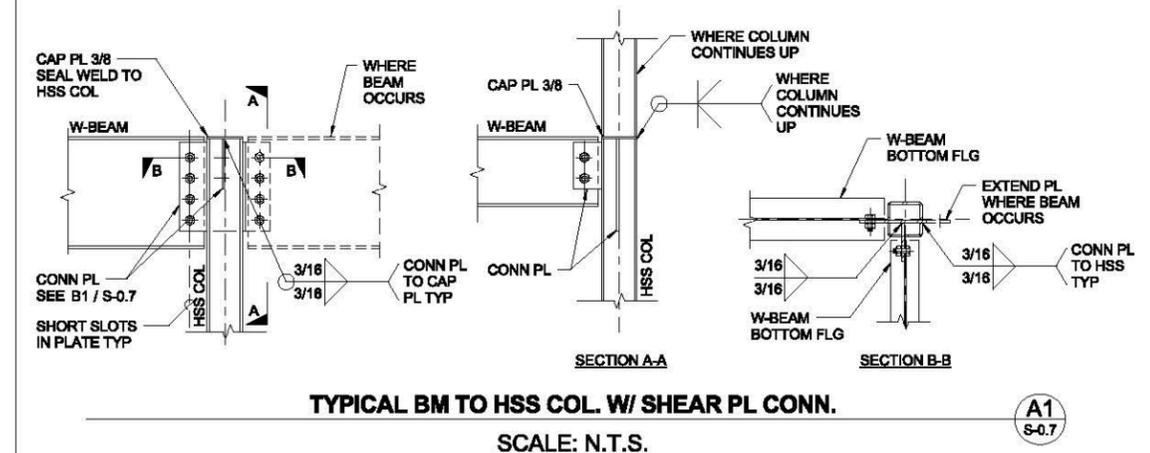
- NOTES:**
1. PROVIDE FULL HEIGHT CONN PLATE WHEN BEAM OCCURS ON ONE SIDE ONLY AND AT MOMENT FRAME BEAMS
 2. ALL BOLTS SHALL BE 7/8" DIA ASTM-A325N UNO.
 3. USE STANDARD HOLES.
 4. FILLET WELDS SHALL BE SIZED AS SHOWN IN SCHEDULE UNLESS A GREATER SIZE IS REQUIRED BY AISC.

BEAM CONNECTION BOLTING SCHEDULE			
DEPTH OF BEAM	MIN No OF 7/8" DIA BOLTS	CONN PL, t	WELD SIZE "A"
10" AND SMALLER	2	3/8"	5/16"
12" TO 14"	3	3/8"	5/16"
16" TO 18"	4	3/8"	5/16"
21"	5	1/2"	3/8"
24"	6	1/2"	3/8"
27"	7	5/8"	1/2"
30"	8	5/8"	1/2"
33"	9	5/8"	1/2"
36"	10	5/8"	1/2"
40"	10	5/8"	1/2"

TYPICAL BEAM CONNECTION WITH SHEAR PLATE

SCALE: N.T.S.

B1
S-0.7



TYPICAL BM TO HSS COL. W/ SHEAR PL CONN.

SCALE: N.T.S.

A1
S-0.7

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DRAWN BY: M.C.		990 W. TOWN & COUNTRY ROAD ORANGE, CA 92668-4713	
CHECKED BY: S.A.			

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CAROUSEL TRACT
STRUCTURAL TYPICAL DETAILS -
STEEL

PROJECT NO. **XXX** SHEET **63 of 87** PLAN NO. **S-0.7**

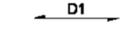
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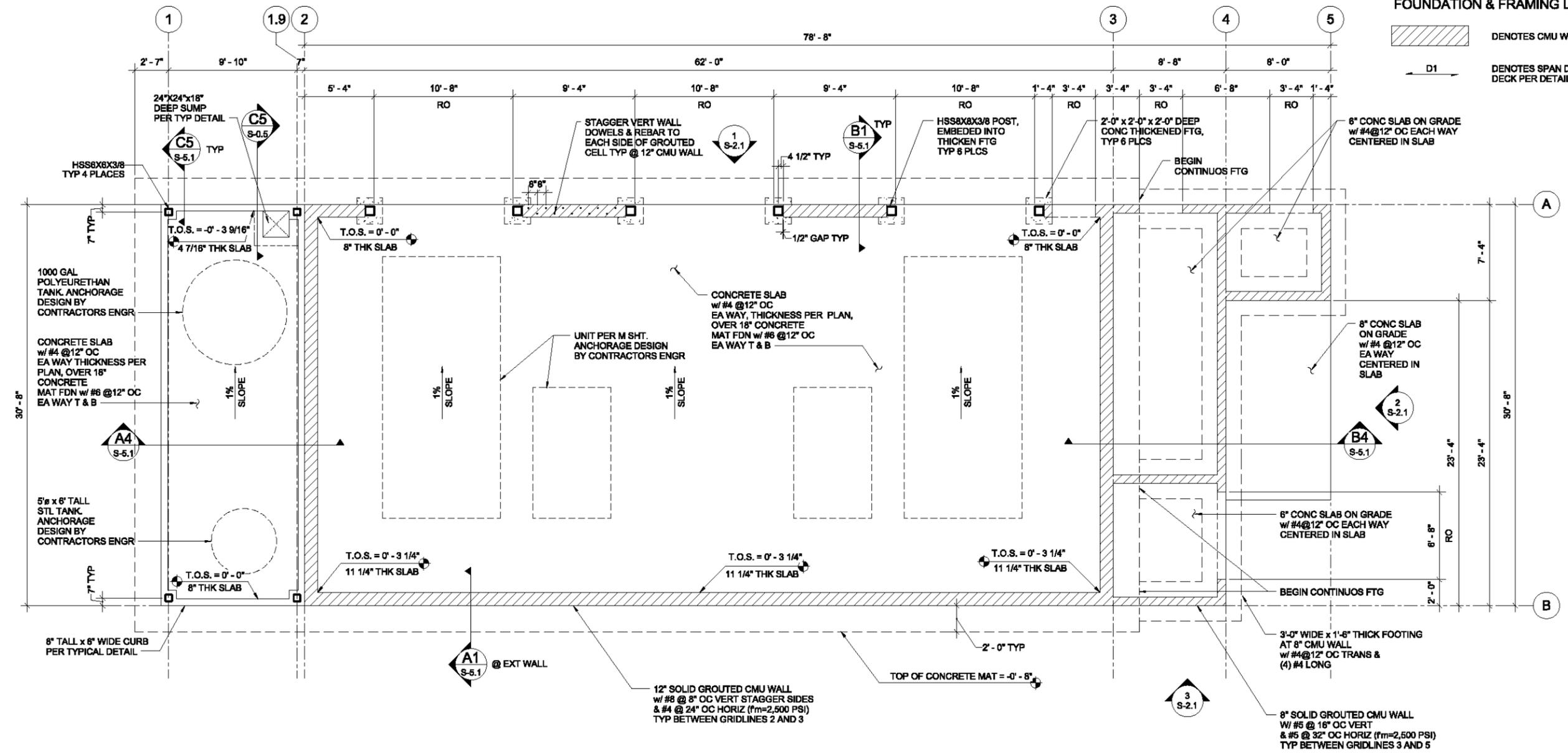
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FOUNDATION NOTES:

1. SEE SHEETS S-0.1 THROUGH S-0.7 FOR STRUCTURAL GENERAL NOTES AND TYPICAL DETAILS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR EDGE OF SLAB DIMENSIONS.
3. FOR SLAB ON GRADE CONTROL JOINTS, SEE DETAIL A5 / S-0.5
4. ALL FOOTINGS SHALL BE CENTERED BELOW WALLS.

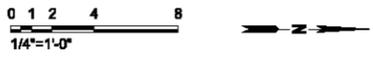
FOUNDATION & FRAMING LEGEND:

-  DENOTES CMU WALLS
-  DENOTES SPAN DIRECTION & TYPE OF DECK PER DETAIL B2 / S-0.7



FOUNDATION PLAN - SVE / BIOVENTING COMPOUND

SCALE: 1/4" = 1'-0"



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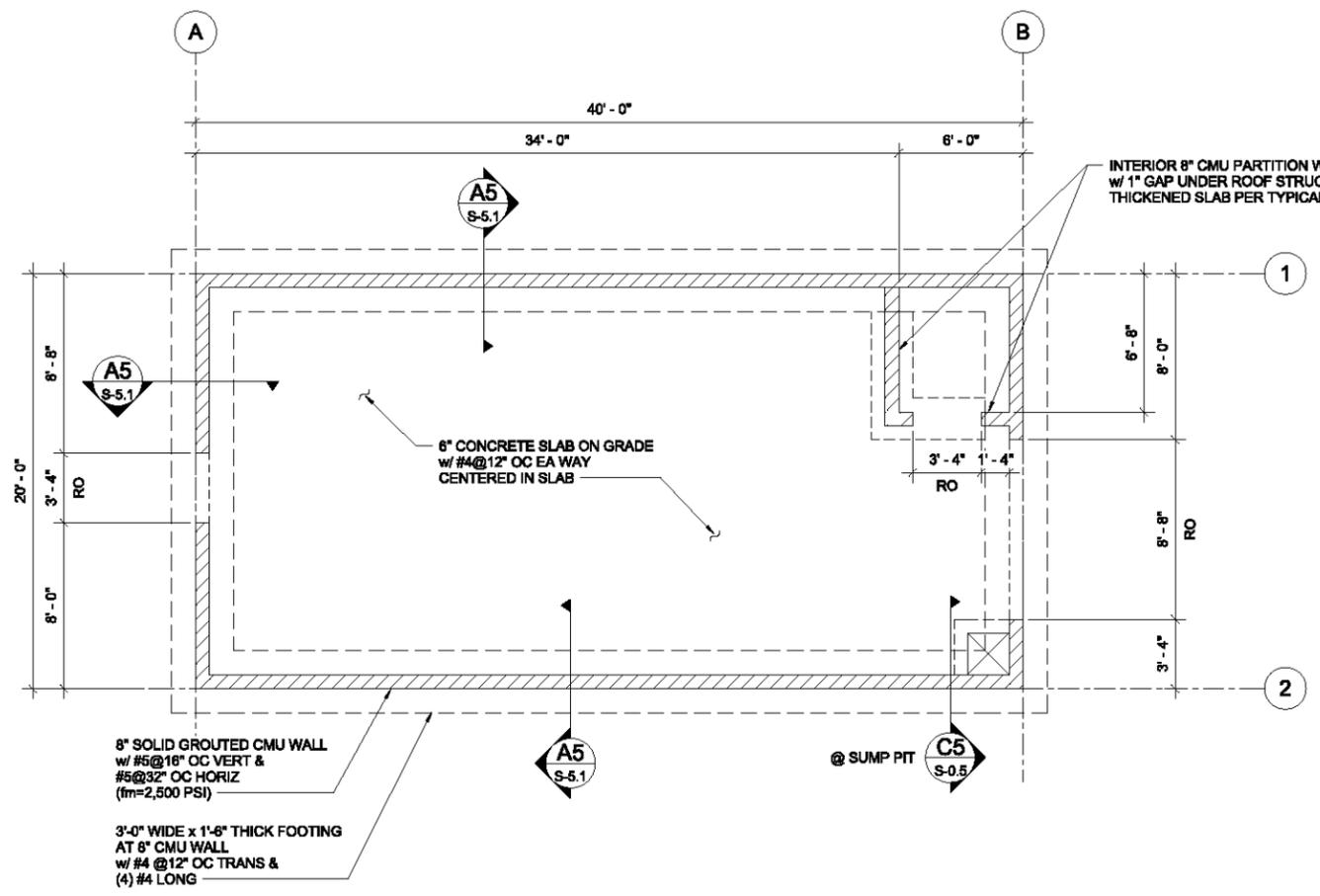
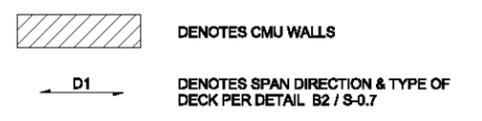
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CAROUSEL TRACT
FOUNDATION PLAN - SVE /
BIOVENTING COMPOUND

PROJECT NO. **XXX** SHEET **64 of 87** PLAN NO. **S-1.1**

FOUNDATION NOTES:

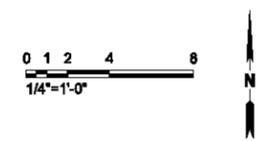
1. SEE SHEETS S-0.1 THROUGH S-0.7 FOR STRUCTURAL GENERAL NOTES AND TYPICAL DETAILS.
2. REFER TO ARCHITECTURAL DRAWINGS FOR EDGE OF SLAB DIMENSIONS.
3. FOR SLAB ON GRADE CONTROL JOINTS, SEE DETAIL A5 / S-0.5
4. ALL FOOTINGS SHALL BE CENTERED BELOW WALLS.

FOUNDATION & FRAMING LEGEND:



FOUNDATION PLAN - MANIFOLD BUILDING

SCALE: 1/4" = 1'-0"



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CAROUSEL TRACT
FOUNDATION PLAN - MANIFOLD BLDG

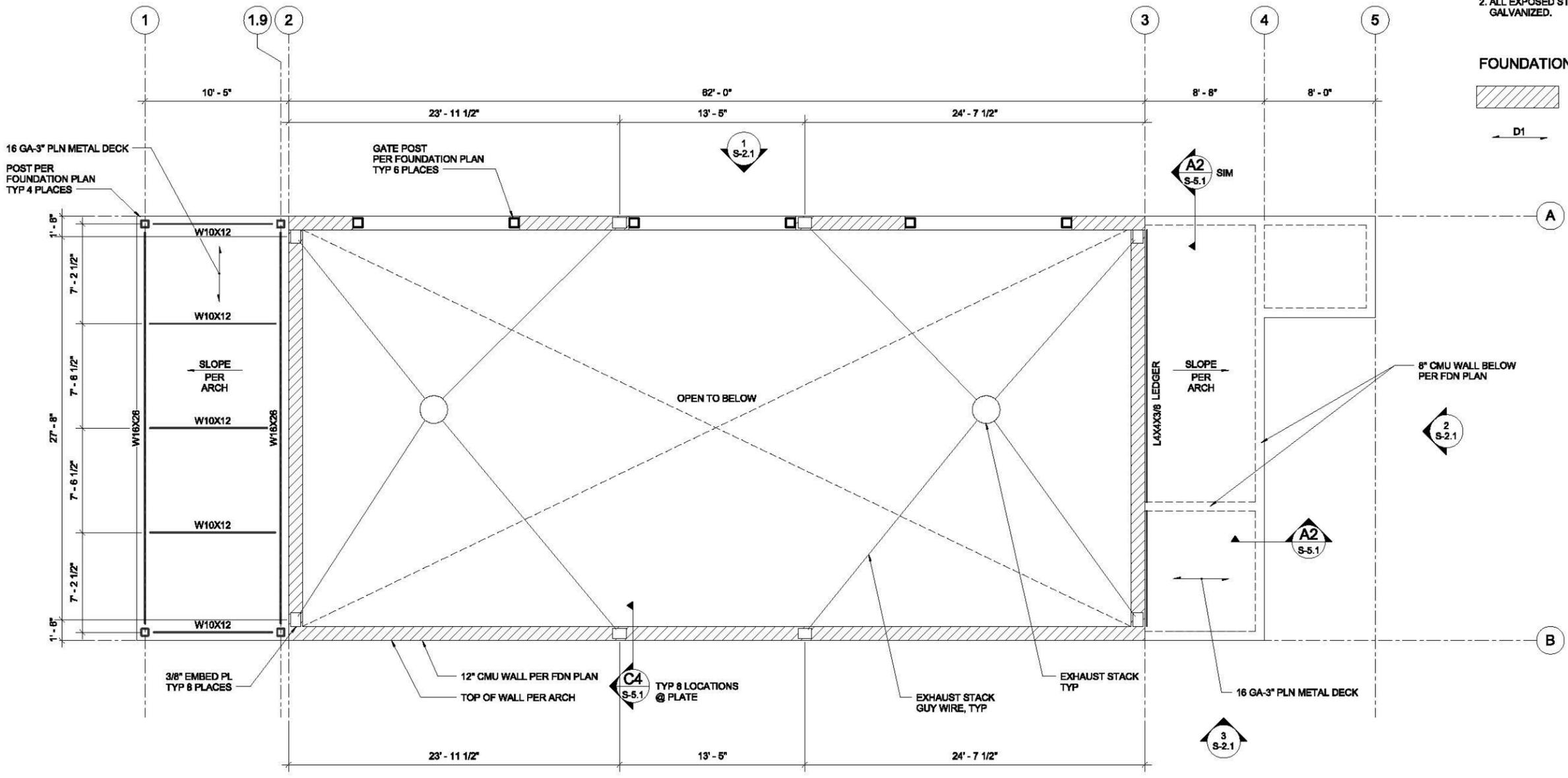
PROJECT NO. XXX	SHEET 65 of 87	PLAN NO. S-1.2
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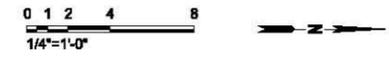
- ROOF FRAMING NOTES:**
- SEE SHEETS S-0.1 THROUGH S-0.7 FOR STRUCTURAL GENERAL NOTES AND TYPICAL DETAILS.
 - ALL EXPOSED STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED.

- FOUNDATION & FRAMING LEGEND:**
-  DENOTES CMU WALLS
 -  DENOTES SPAN DIRECTION & TYPE OF DECK PER DETAIL B2 / S-0.7



**ROOF FRAMING PLAN - SVE /
BIOVENTING COMPOUND**

SCALE: 1/4" = 1'-0"



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CAROUSEL TRACT
ROOF FRAMING PLAN - SVE /
BIOVENTING COMPOUND

PROJECT NO. **XXX** SHEET **66 of 87** PLAN NO. **S-1.3**

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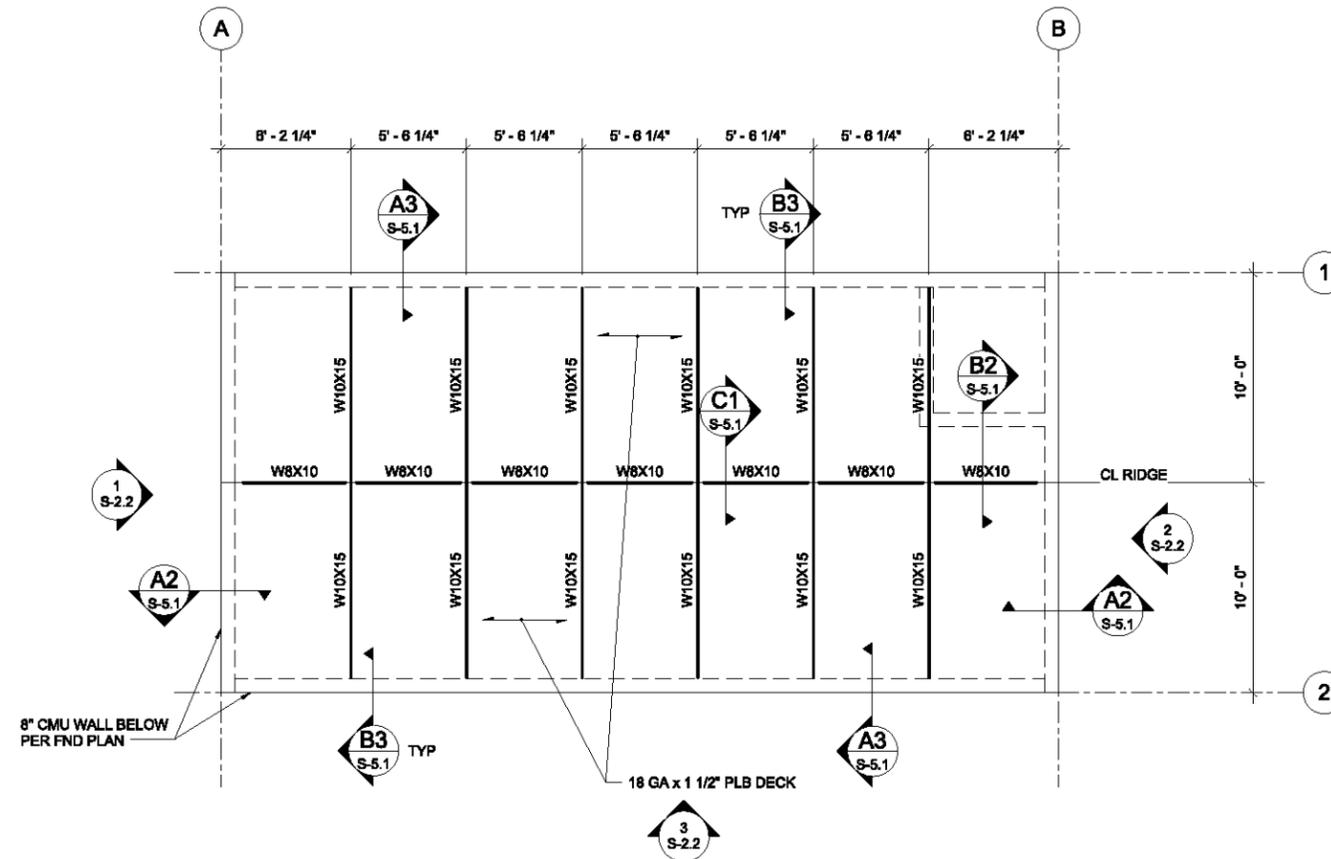
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ROOF FRAMING NOTES:

1. SEE SHEETS S-0.1 THROUGH S-0.7 FOR STRUCTURAL GENERAL NOTES AND TYPICAL DETAILS.
2. ALL EXPOSED STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED.

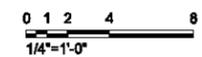
FOUNDATION & FRAMING LEGEND:

-  DENOTES CMU WALLS
-  DENOTES SPAN DIRECTION & TYPE OF DECK PER DETAIL B2 / S-0.7



ROOF FRAMING PLAN - MANIFOLD BUILDING

SCALE: 1/4" = 1'-0"



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CHECKED BY:

J.L.
M.C.
S.A.

STAMP

PLANS PREPARED BY:

AECOM

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ORANGE, CA 92668-4713

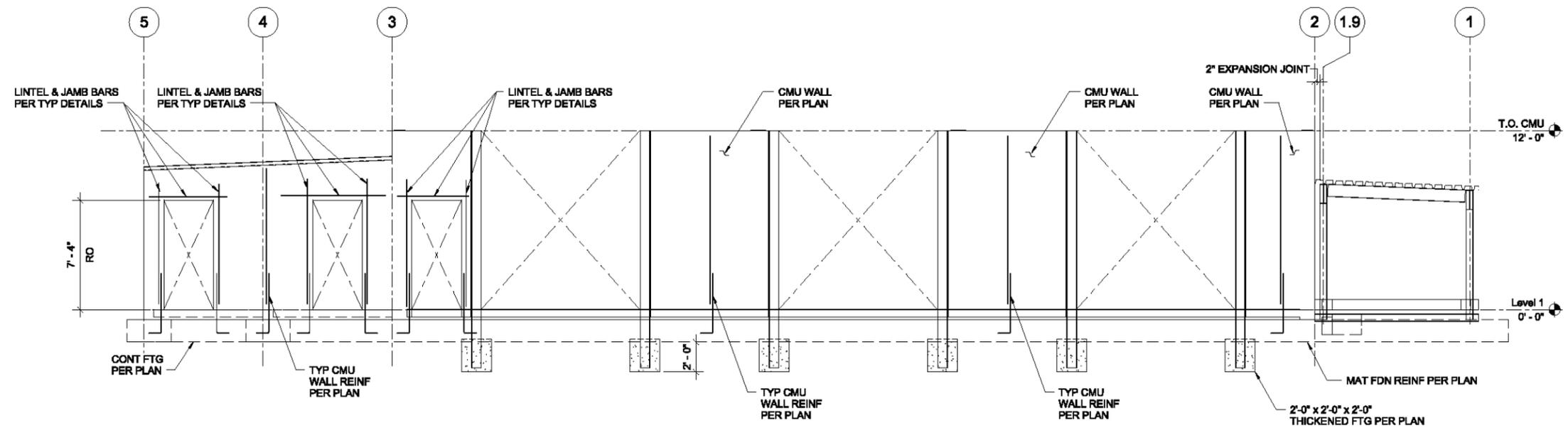
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CAROUSEL TRACT
ROOF FRAMING PLAN - MANIFOLD BLDG

PROJECT NO. XXX	SHEET 67 of 87	PLAN NO. S-1.4
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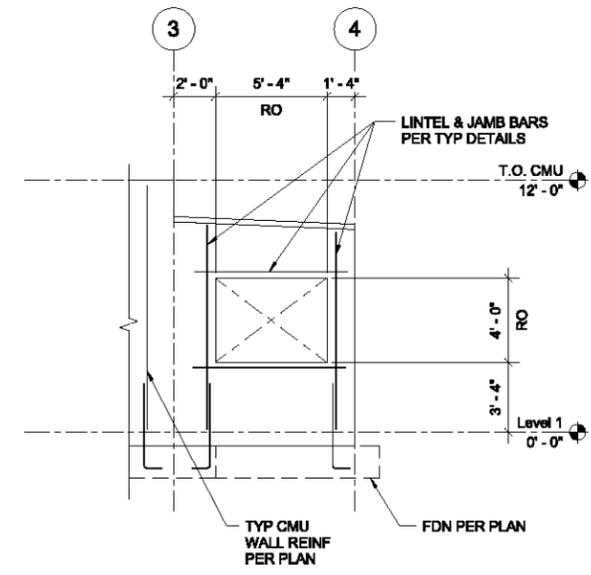
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WEST ELEVATION

SCALE: 1/4" = 1'-0"

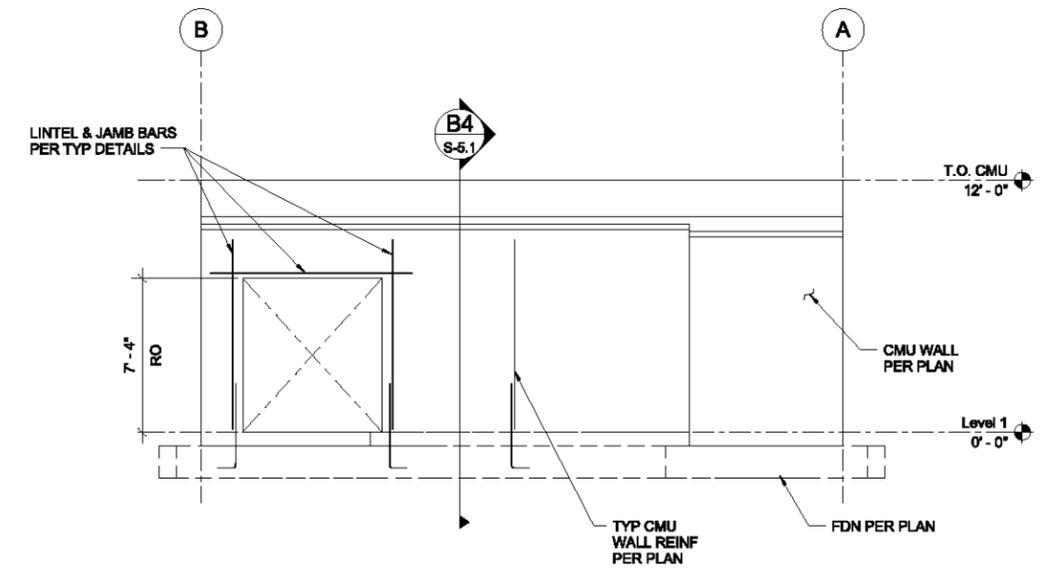
1
S-2.1



SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

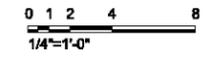
3
S-2.1



NORTH ELEVATION

SCALE: 1/4" = 1'-0"

2
S-2.1



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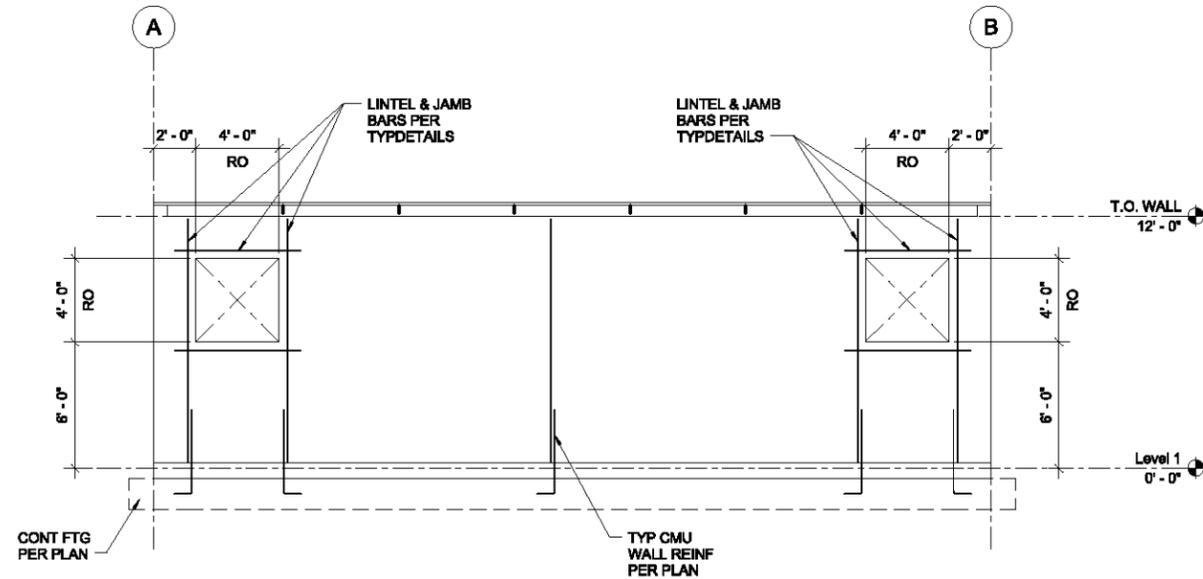
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CAROUSEL TRACT
WALL ELEVATIONS - SVE /
BIOVENTING COMPOUND

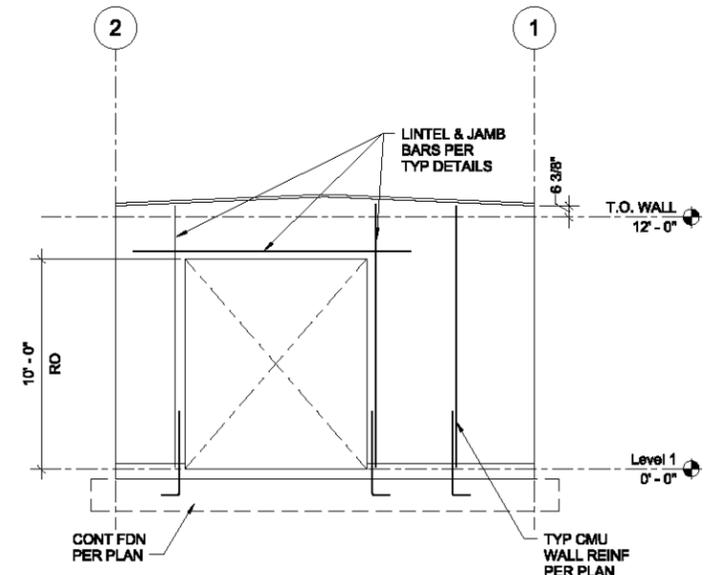
PROJECT NO.	SHEET	PLAN NO.
XXX	68 of 87	S-2.1

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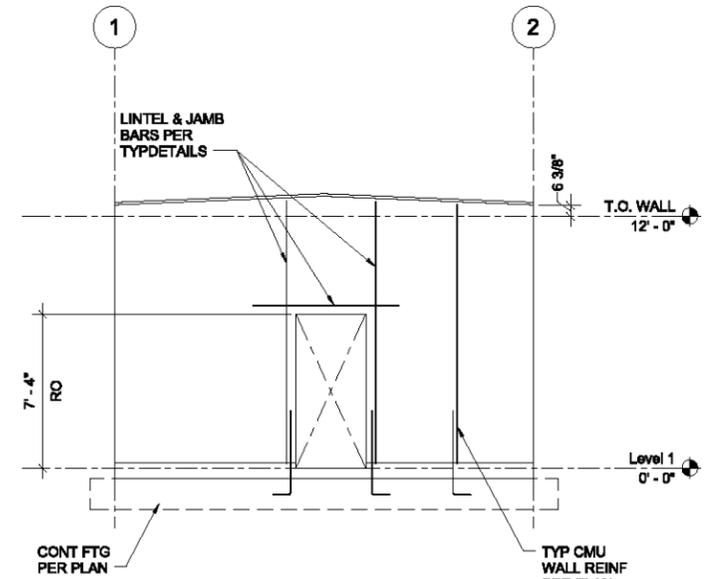
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SOUTH ELEVATION
 SCALE: 1/4" = 1'-0" 3
S-22



EAST ELEVATION
 SCALE: 1/4" = 1'-0" 2
S-22



WEST ELEVATION
 SCALE: 1/4" = 1'-0" 1
S-22

0 1 2 4 8
 1/4" = 1'-0"

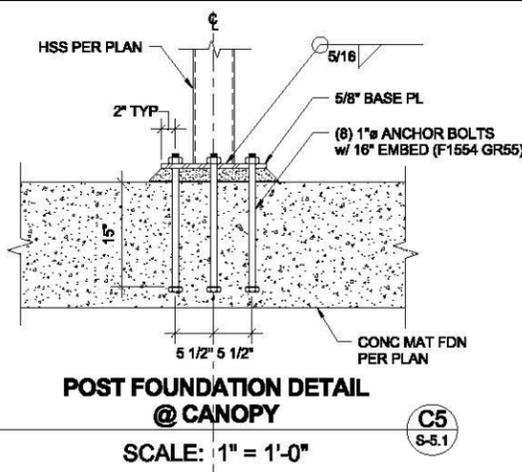
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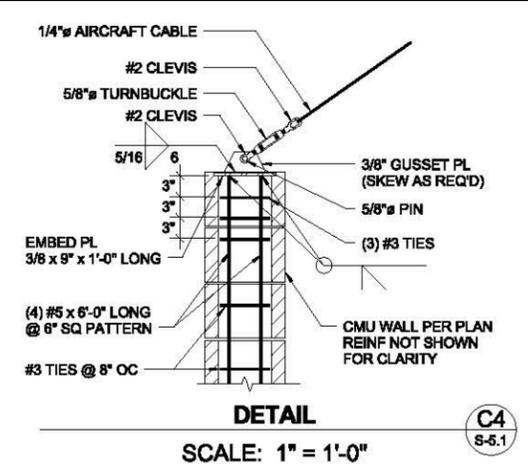
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CAROUSEL TRACT
WALL ELEVATIONS - MANIFOLD
BLDG

PROJECT NO. XXX	SHEET 69 of 87	PLAN NO. S-2.2
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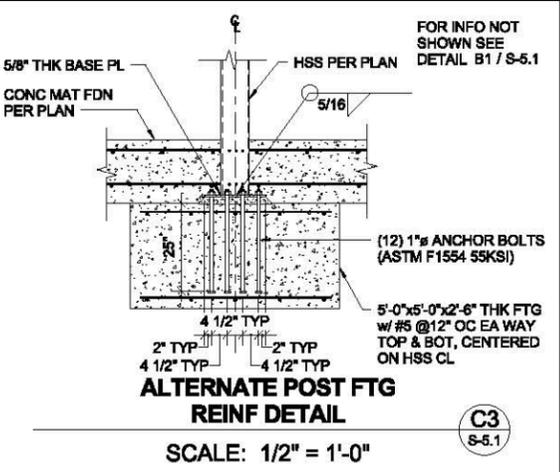
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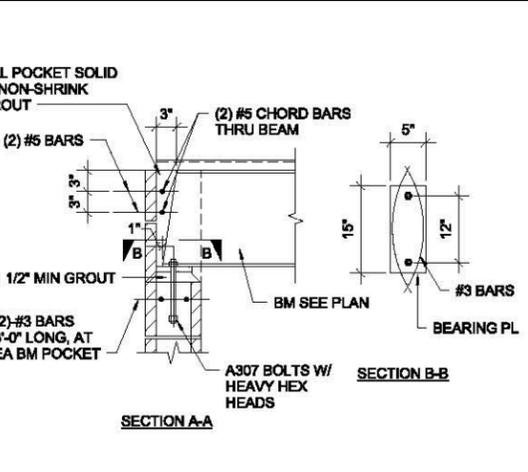
POST FOUNDATION DETAIL @ CANOPY
SCALE: 1" = 1'-0"
C5 S-5.1



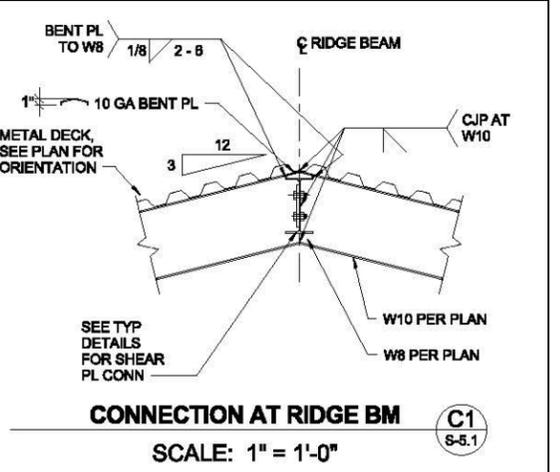
DETAIL
SCALE: 1" = 1'-0"
C4 S-5.1



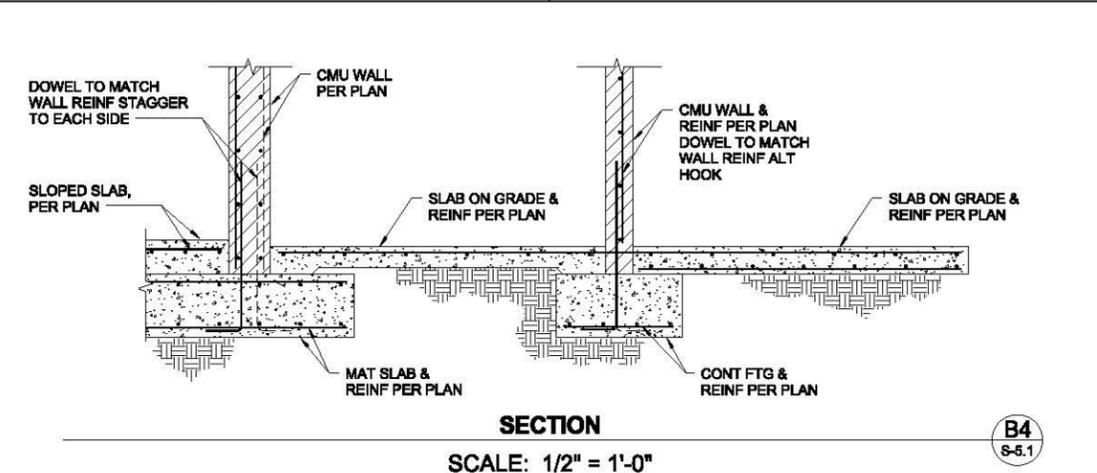
ALTERNATE POST FTG REINF DETAIL
SCALE: 1/2" = 1'-0"
C3 S-5.1



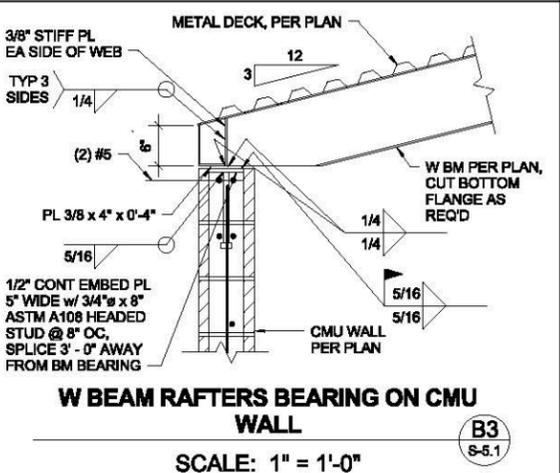
SECTION A-A
SCALE: 1" = 1'-0"
C1 S-5.1



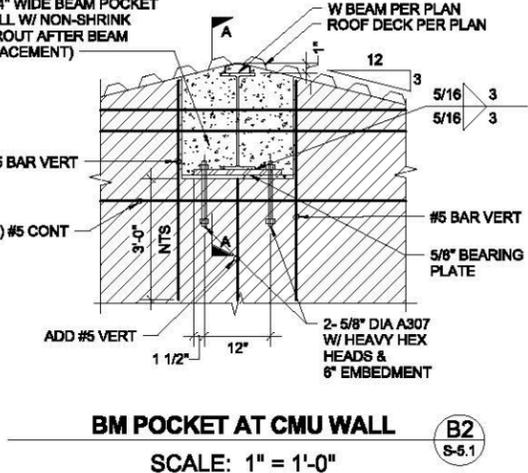
CONNECTION AT RIDGE BM
SCALE: 1" = 1'-0"
C1 S-5.1



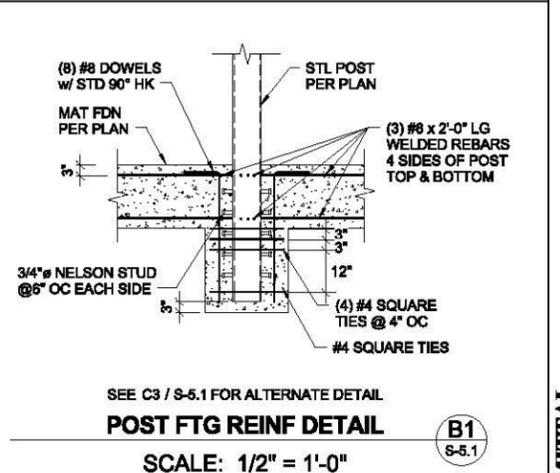
SECTION
SCALE: 1/2" = 1'-0"
B4 S-5.1



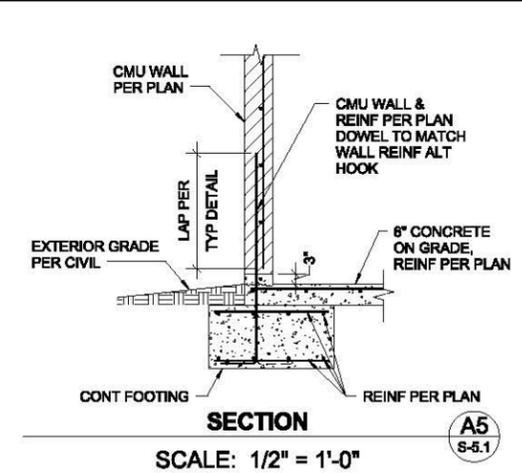
W BEAM RAFTERS BEARING ON CMU WALL
SCALE: 1" = 1'-0"
B3 S-5.1



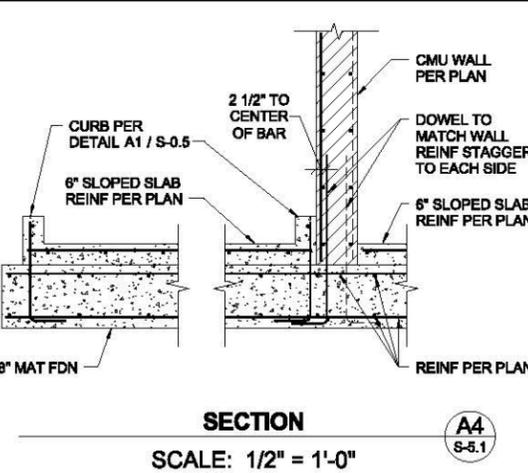
BM POCKET AT CMU WALL
SCALE: 1" = 1'-0"
B2 S-5.1



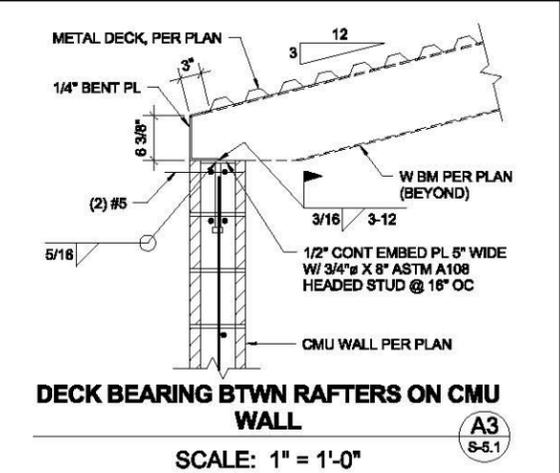
POST FTG REINF DETAIL
SCALE: 1/2" = 1'-0"
B1 S-5.1



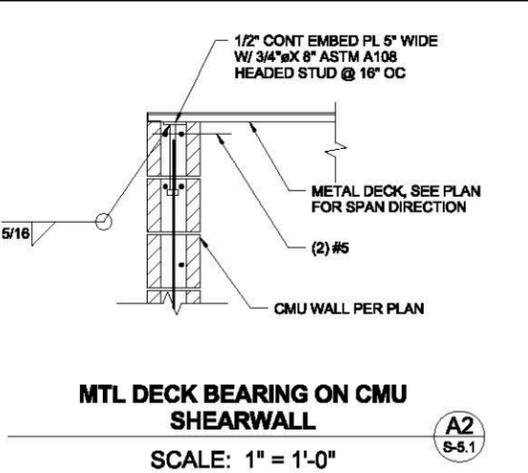
SECTION
SCALE: 1/2" = 1'-0"
A5 S-5.1



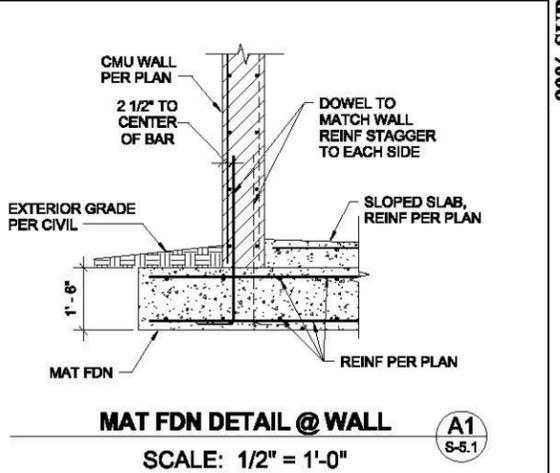
SECTION
SCALE: 1/2" = 1'-0"
A4 S-5.1



DECK BEARING BTWN RAFTERS ON CMU WALL
SCALE: 1" = 1'-0"
A3 S-5.1



MTL DECK BEARING ON CMU SHEARWALL
SCALE: 1" = 1'-0"
A2 S-5.1



MAT FDN DETAIL @ WALL
SCALE: 1/2" = 1'-0"
A1 S-5.1

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DRAWN BY:	M.C.			990 W. TOWN & COUNTRY ROAD			
CHECKED BY:	S.A.			ORANGE, CA 92668-4713			

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CAROUSEL TRACT
STRUCTURAL DETAILS

PROJECT NO. **XXX** SHEET **70 of 87** PLAN NO. **S-5.1**

ABBREVIATIONS		ABBREVIATIONS		GENERAL NOTES		GENERAL NOTES		DRAWING IDENTIFICATION	
AAV	AUTOMATIC AIR VENT	KW	KILOWATT	1.	THE CONTRACTOR SHALL COORDINATE THE WORK WITH ALL TRADES AT THE SITE. ANY COSTS TO INSTALL WORK TO ACCOMPLISH SAID COORDINATION WHICH DIFFERS FROM THE WORK AS SHOWN ON THE PLANS SHALL BE INCURRED AT THE EXPENSE OF THE CONTRACTOR. ANY DISCREPANCIES, AMBIGUITIES OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER DURING BID TIME FOR CLARIFICATION. ANY SUCH CONFLICTS NOT CLARIFIED PRIOR TO BID SHALL BE SUBJECT TO THE INTERPRETATION OF THE PROJECT MANAGER AT NO ADDITIONAL COST.	19.	WHERE MORE THAN ONE EQUIPMENT UNIT OR MARK NUMBERS ARE LISTED IN AN EQUIPMENT SCHEDULE THE PERFORMANCE & ACCESSING DATA FOLLOWED BY THE NUMBER IS TYPICAL FOR EACH EQUIPMENT.		DETAIL/ENLARGED PLAN NUMBER SHEET ON WHICH DETAIL/ENLARGED PLAN OCCURS
ABV	ABOVE	LB	POUND	2.	THE MECHANICAL PLANS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.	20.	THE SEISMIC ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT SHALL CONFORM TO CURRENT EDITION OF THE OREGON BUILDING CODE, AND ASHRAE AND SMACNA STANDARDS. WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS OR APPROVED DURING PLAN REVIEW THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF STRUCTURAL, MECHANICAL, OR ELECTRICAL ENGINEER OF RECORD AND THE FIELD ENGINEER AND/OR DISTRICT STRUCTURAL ENGINEER OF THE DIVISION OF THE STATE ARCHITECT PRIOR TO INSTALLATION AND INSPECTION BY THE PROJECT INSPECTOR.		SECTION NUMBER SHEET ON WHICH SECTION OCCURS
AC	AIR CONDITIONING	LRA	LOCKED ROTOR AMPERES	3.	THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS THAT ARE NOT FIXED BY DIMENSIONS ARE APPROXIMATE. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE PROJECT MANAGER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.	21.	PROVIDE GUARANTEE ON ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER COMPLETION OF INSTALLATION.		EQUIPMENT IDENTIFICATION EQUIPMENT NUMBER
AFF	ABOVE FINISHED FLOOR	LVG	LEAVING	4.	PIPING SHALL BE CONSTRUCTED, SUPPORTED AND INSTALLED IN COMPLETE CONFORMANCE WITH SMACNA STANDARDS "SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL SYSTEMS". INSTALL PIPING TO AVOID INTERFERENCE AND OBSTRUCTIONS.	22.	ALL NON-INTEGRAL THERMOSTAT LOCATIONS SHALL BE FIELD COORDINATED.		REVISION NUMBER REVISED AREA CLOUDED
ARCH	ARCHITECTURAL	MAX	MAXIMUM	5.	CONTROL/POWER WIRING REQUIRED BUT NOT SHOWN FOR AND INCLUDING BUT NOT LIMITED TO: THERMOSTATS, EQUIPMENT MANUFACTURER CONTROLS, DAMPER MOTORS, SENSING DEVICES (TEMPERATURE, PRESSURE, HUMIDITY, LEVEL, FLOW, VOLUME, ON-OFF, FIRE ALARM DEVICES) AND OTHER MECHANICAL/ FIRE PROTECTION/PLUMBING EQUIPMENT REQUIRING CONTROL WIRING. ALL REQUIRED CONTROL WIRING SHALL BE SUPPLIED AND INSTALLED TO PROVIDE A COMPLETE AND USABLE FACILITY. INSTALL ALL CONTROL WIRING IN METAL CONDUITS.	23.	INCLUDE FURNISHING AND INSTALLATION OF CONTROL WIRING AND CONNECTIONS TO ELECTRICAL EQUIPMENT AS PROVIDED BY OTHERS.		
AS	AIR SEPARATOR	MCC	MOTOR CONTROL CENTER	6.	ALL EQUIPMENT SHALL BE ANCHORED & INSTALLED PER CURRENT STATE AND LOCAL CODES, MANUFACTURER'S RECOMMENDATIONS & INSTRUCTIONS, AND STRUCTURAL DETAILS.	24.	PROVIDE PERMANENT IDENTIFICATION ON EACH PIECE OF MECHANICAL EQUIPMENT.		
@	AT	MD	MOTORIZED DAMPER	7.	THE EXACT LOCATION AND SIZE OF EQUIPMENT PADS SHALL BE COORDINATED IN THE FIELD WITH THE ACTUAL EQUIPMENT FURNISHED.	25.	PROVIDE AN OPERATING INSTRUCTION AND SERVICE MANUAL FOR EACH PIECE OF EQUIPMENT. THE SERVICE MANUALS SHALL BE ASSEMBLED IN HARD COVER, THREE RING BINDERS. THE FORM IN WHICH THE SERVICE MANUAL IS TO BE PRESENTED SHALL BE SUBJECT TO THE APPROVAL OF THE PROJECT MANAGER. ALL ITEMS IN THE MANUAL SHALL BE NUMBERED IN SUCCESSION.		
&	AND	MECH	MECHANICAL	8.	TEMPERATURE TRANSMITTERS AND THERMOSTATS NOT PROVIDED WITHIN INSTALLED EQUIPMENT SHALL BE MOUNTED 5 FEET ABOVE FINISHED FLOOR, UNLESS NOTED OTHERWISE.	26.	ALL INDICATED DIMENSIONS ARE APPROXIMATE AND ARE GIVEN FOR ESTIMATE PURPOSES ONLY. BEFORE PROCEEDING WITH THE WORK, CONTRACTOR SHALL CAREFULLY CHECK AND VERIFY ALL DIMENSIONS, SIZES, REQUIRED CLEARANCES FOR EQUIPMENT ORDERED AND TO BE INSTALLED, AND SHALL ASSUME FULL RESPONSIBILITY FOR THE FITTING OF ALL EQUIPMENT AND MATERIALS HEREIN REQUIRED TO OTHER PARTS OF THE WORK AND TO THE WORK OF OTHER TRADES		
AUTO	AUTOMATIC	MIN	MINIMUM	9.	EACH PIECE OF EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE VIBRATION OR NOISE.				
B	BOILER	MISC	MISCELLANEOUS	10.	DO NOT INSTALL ANY PIPING OR EQUIPMENT OVER ELECTRICAL PANELS OR EQUIPMENT AS REQUIRED BY NEC. WHERE PIPING MUST RUN ABOVE ELECTRICAL EQUIPMENT, INSTALL SHEET METAL TROUGH. OBTAIN APPROVAL OF THE ARCHITECT PRIOR TO TROUGH CONSTRUCTION.				
BEL	BELOW	MTD	MOUNTED	11.	CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY CONDUIT AND WIRING FOR COMPLETE CONTROL SYSTEM.				
BFV	BUTTERFLY VALVE	MTG	MOUNTING	12.	MODEL NUMBERS LISTED ON EQUIPMENT SCHEDULE ARE ESTABLISHING MINIMUM REQUIREMENTS. HOWEVER ALL EQUIPMENT SHALL COMPLY WITH THE SPECIFICATIONS & INDICATED SCHEDULED REQUIREMENTS.				
BHP	BRAKE HORSEPOWER	MVD	MANUALLY OPERATED VOLUME DAMPER	13.	DESIGNATE A PERSON TO BE RESPONSIBLE FOR FIRE PROTECTION DURING WELDING OR CUTTING OPERATIONS. PROVIDE TEMPORARY FIRE EXTINGUISHERS DURING CONSTRUCTION.				
BLDG	BUILDING	NC	NORMALLY CLOSE	14.	THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH ALL DIRECTIONS AND RECOMMENDATIONS FURNISHED BY THE MANUFACTURER. WHERE SUCH DIRECTIONS ARE IN CONFLICT WITH THE PLANS THE CONTRACTOR SHALL REPORT SUCH CONFLICTS TO THE PROJECT MANAGER WHO SHALL MAKE A DETERMINATION.				
BOP	BOTTOM OF PIPE	NO	NORMALLY OPEN	15.	LABOR SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY MECHANICS SKILLED IN THEIR PARTICULAR TRADE. PIPE AND EQUIPMENT SHALL BE INSTALLED SQUARE AND PLUMB AND ACCESSIBLE FOR PROPER OPERATION AND SERVICE.				
BTUH	BRITISH THERMAL UNITS PER HOUR	NTS	NOT TO SCALE	16.	EACH MANUFACTURER'S REPRESENTATIVE FOR EQUIPMENT SHALL BE RESPONSIBLE FOR PROVIDING QUALIFIED PERSONNEL TO THE JOB SITE AT ANY TIME DURING THE CONSTRUCTION PERIOD AND THE ONE YEAR WARRANTY PERIOD WHEN REQUESTED BY AN AUTHORIZED PROJECT REPRESENTATIVE TO DO SO. EACH SUPPLIER FURNISHING EQUIPMENT SHALL CERTIFY THAT THE EQUIPMENT IS PROPERLY INSTALLED AND THAT THE WARRANTY IS VALID. SUBMIT WRITTEN REPORTS ON THE INSTALLATION, STARTUP, AND EQUIPMENT PERFORMANCE.				
CFM	CUBIC FEET PER MINUTE	OA/OSA	OUTSIDE AIR	17.	THE CONTRACTOR SHALL, DURING THE EXECUTION OF THE WORK, MAINTAIN TWO COMPLETE SETS OF RECORD DRAWINGS UPON WHICH ALL DIMENSIONAL LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING AND ALL DEVIATIONS AND/OR CHANGES IN THE WORK SHALL BE RECORDED.				
CH	CHILLER	PD	PRESSURE DIFFERENTIAL	18.	SEE ARCHITECTURAL DRAWINGS FOR EXACT SIZES AND LOCATION OF THE WALL AND FLOOR OPENINGS. LOUVER SIZES LISTED ON MECHANICAL DRAWINGS ARE MINIMUM REQUIRED SIZES. FOR EXACT LOUVER SIZE SEE ARCHITECTURAL DRAWINGS.				
CHP	CHILLED WATER PUMP	POC	POINT OF CONNECTION						
CONC	CONCRETE	POD	POINT OF DISCONNECTION						
CONN	CONNECTION	POS	POSITIVE						
CONT	CONTINUATION	PRESS	PRESSURE						
CPF	CHEMICAL POT FEEDER	PSI	POUNDS PER SQUARE INCH						
CT	COOLING TOWER	RA	RETURN AIR						
CTF	COOLING TOWER FILTER	REF	REFERENCE						
CWP	CONDENSER WATER PUMP	REL / RELA	RELIEF AIR						
CWR	CONDENSER WATER RETURN	REQD	REQUIRED						
CWS	CONDENSER WATER SUPPLY	RET	RETURN						
DB	DRY BULB (TEMPERATURE)	RH	RIGHT HAND						
DOC	DIRECT DIGITAL CONTROL	RLA	RATED LOAD AMPERES						
DET	DETAIL	RM	ROOM						
DIA	DIAMETER	RPM	REVOLUTIONS PER MINUTE						
DN	DOWN	SA	SUPPLY AIR						
DTR	DOWN THROUGH ROOF	SCBA	SELF CONTAINED BREATHING APPARATUS						
DWG	DRAWING	SCHR	SECONDARY CHILLED WATER RETURN						
(E)	EXISTING	SCHS	SECONDARY CHILLED WATER SUPPLY						
EA	EACH / EXHAUST AIR	SECT	SECTION						
EF	EXHAUST FAN	SHT	SHEET						
EL	ELEVATION	SMS	SHEET METAL SCREW						
ENT	ENTERING	SOV	SHUT-OFF VALVE						
EQUIP	EQUIPMENT	SP	STATIC PRESSURE						
ET	EXPANSION TANK	SPEC	SPECIFICATION						
°F	DEGREES FAHRENHEIT	SQ	SQUARE						
FD	FIRE DAMPER	SS	STAINLESS STEEL						
FIN	FINISHED	STD	STANDARD						
FLEX	FLEXIBLE	STRUCT	STRUCTURAL						
FLR	FLOOR	SW	SWITCH						
FPM	FEET PER MINUTE	TEFC	TOTALLY ENCLOSED FAN COOLED						
FSD	FIRE SMOKE DAMPER	TEMP	TEMPERATURE						
FS	FLOOR SINK	TOS	TOP OF STEEL						
FT	FOOT / FEET	TYP	TYPICAL						
FV	FACE VELOCITY	UON	UNLESS OTHERWISE NOTED						
GAL	GALLON	UTR	UP THROUGH ROOF						
GALV	GALVANIZED	V	VENT						
GPM	GALLONS PER MINUTE	VFD	VARIABLE FREQUENCY DRIVE						
HGT	HEIGHT	VERT	VERTICAL						
HORIZ	HORIZONTAL	W/	WIDTH						
HP	HORSEPOWER	WB	WET BULB (TEMPERATURE)						
HR	HOUR	WT	WEIGHT						
HVAC	HEATING, VENTILATING AND AIR CONDITIONING	WMS	WIRE MESH SCREEN						
HZ	HERTZ								
ID	INSIDE DIAMETER								
IN	INCH / INCHES								
IN WG	INCHES WATER GAUGE								

WORK SEQUENCE:

- BEFORE COMMENCING WORK, SUBMIT A SCHEDULE SHOWING THE SEQUENCE, COMMENCEMENT AND COMPLETION DATES, AND ANY MOVE-OUT AND MOVE-IN DATES OF OWNER'S PERSONNEL.

FINAL OPERATION:

- UPON COMPLETION OF THE INSTALLATION OF THE EQUIPMENT, THE CONTRACTOR SHALL OPERATE ALL SYSTEMS IN THE PRESENCE OF THE PROJECT MANAGER AND PROVIDE INSTRUCTION ON ALL DETAILS OF OPERATION AND MAINTENANCE.
- PROVIDE AND MAINTAIN, ON THE JOBSITE, A COMPLETE AND ACCURATE RECORD SET OF PRINTS SHOWING ALL MECHANICAL WORK. KEEP RECORD UP-TO-DATE AS WORK PROGRESSES. INDICATE CLEARLY AND CORRECTLY ALL SERVICE AND UTILITY LINES, WITH SIZE, INVERT ELEVATIONS OF BURIED PIPES, AND LOCATION OF ALL EQUIPMENT. UPON COMPLETION OF WORK, FURNISH TO THE PROJECT MANAGER, FOUR (4) NEAT, LEGIBLE HARD COPIES OF AS-BUILT DRAWINGS AND ONE (1) SOFT COPY IN AUTOCAD FORMAT.

REVISIONS			
NO	DESCRIPTION	APPROVE	DATE

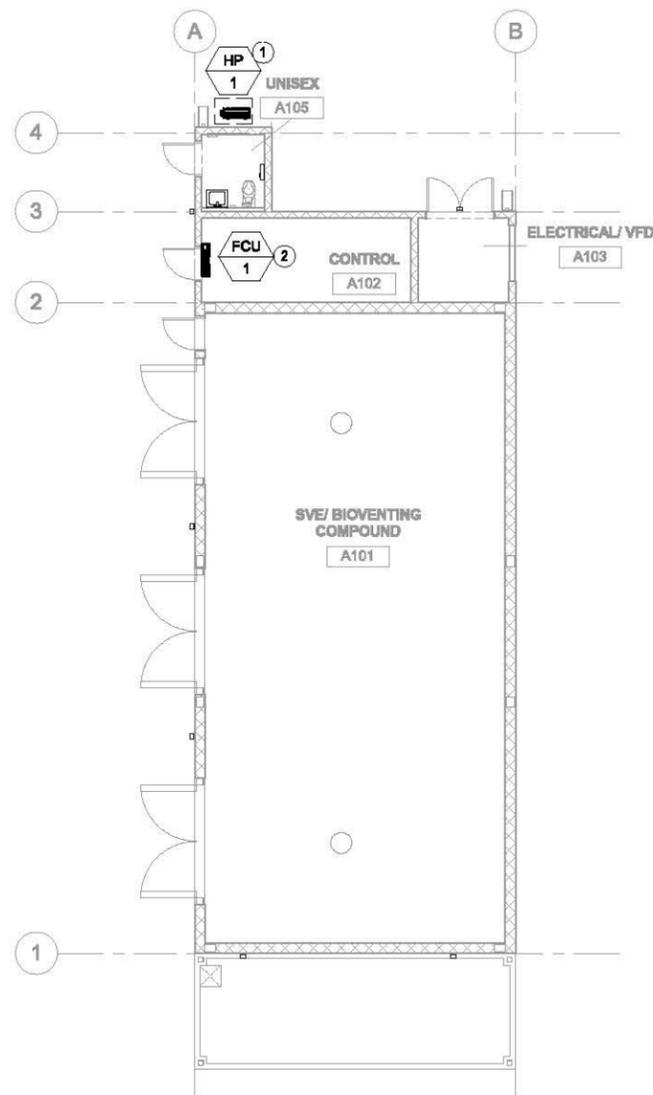
SHELL OIL PRODUCTS US
CITY OF CARSON
SVE/ BIOVENTING SYSTEM
CAROUSEL TRACT
HVAC SYMBOLS, LEGENDS,
GENERAL NOTES AND SCHEDULES

PROJECT NO. **XXX** SHEET **71 of 87** PLAN NO. **H-0.1**

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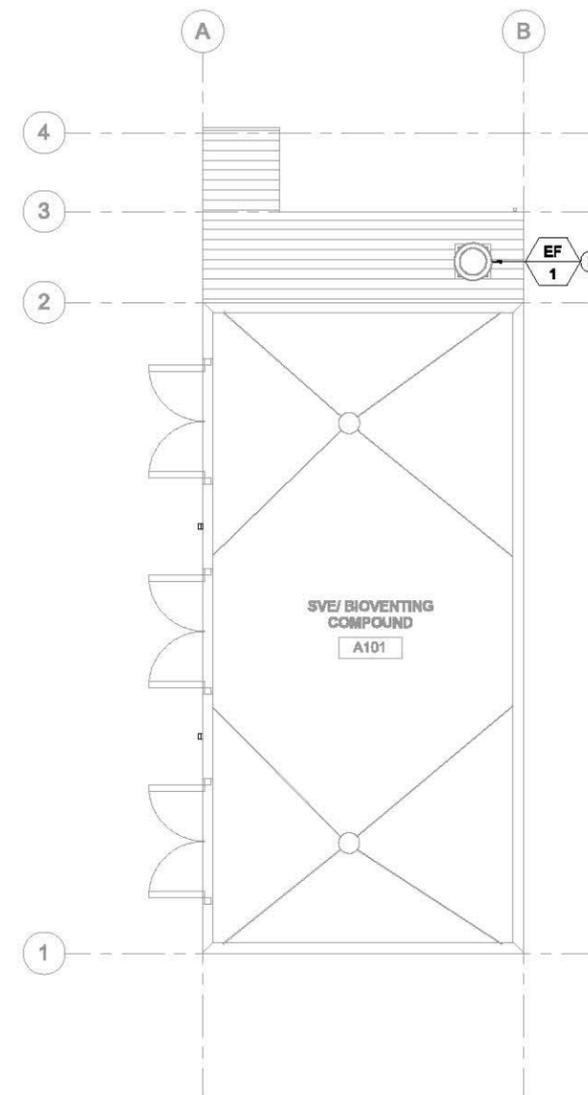
KEYNOTES

- 1 PAD-MOUNTED HEAT PUMP. MOUNT MINIMUM 6" FROM ADJACENT WALL FOR PROPER AIRFLOW. SIZE AND ROUTE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
- 2 WALL-MOUNTED HIGH-WALL FAN-COIL UNIT WITH INTEGRATED THERMOSTAT. UNIT POWERED DIRECTLY FROM OUTDOOR UNIT HP-1 AND NOT CONNECTED DIRECTLY TO POWER CIRCUIT. MOUNT UNIT ABOVE DOOR, AS SHOWN. EXTEND CONDENSATE PIPING DOWN ALONG INTERIOR SIDE OF EXTERIOR WALL. PENETRATE EXTERIOR WALL 24" A.F.F. AND TERMINATE WITH NON-THREADED ELBOW TURNED DOWN 90 CONDENSATE MAY DRAIN TO SPLASHBLOCK AT GRADE.
- 3 ROOF-MOUNTED THERMAL EXHAUST FAN. SEE SHEET H-6.1 FOR EQUIPMENT SCHEDULE AND MOUNTING DETAIL.



MECHANICAL 1ST FLOOR PLAN

SCALE: 1/8" = 1'-0"



MECHANICAL ROOF PLAN

SCALE: 1/8" = 1'-0"



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PLANS PREPARED BY:



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ORANGE, CA 92668-4713

BENCHMARK:

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SHELL OIL PRODUCTS US
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MECHANICAL 1ST FLOOR & ROOF
PLAN

PROJECT NO.	SHEET	PLAN NO.
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DX FAN COIL UNIT SCHEDULE																				
ITEM	ITEM NO.	MANUFACTURER	MODEL	SIZE	WEIGHT (LBS)	CFM SUPPLY AIR	CFM OUTSIDE AIR	ESP IN. W.G.	MOTOR HP	ELECTRICAL				DX COOLING SECTION					ACCESSORIES	
										VOLT	PH	HZ	TYPE	TOTAL CAPACITY (BTUH)	SENSIBLE CAPACITY (BTUH)	EDB	EWB	LDB		LWB
FCU	1	Daikin	FTXG12HVJU		45.00 lb	456 CFM	0 CFM	0.00 in-wg	1.00 hp	208 V	1	60 Hz	HIGH WALL	12000.0 Btu/h	10130.0 Btu/h	80.0 °F	67.0 °F	59.7 °F	57.0 °F	SEE BELOW

ACCESSORIES:
 1. INTEGRATED T-STAT.
 2. MOUNTING HARDWARE.

AIR COOLED CONDENSING UNIT SCHEDULE													
ITEM	ITEM NO.	MANUFACTURER	MODEL	CAPACITY (BTUH)	REFRIGERANT	AMBIENT AIR		WEIGHT (LBS)	ELECTRICAL			EFFICIENCY RATING (EER)	ACCESSORIES
						LOW	HIGH		VOLT	PH	HZ		
HP	1	Daikin	RXG12HVJU	12000.0 Btu/h	R-410A	95.0 °F	59.0 °F	110.00 lb	208 V	1	60 Hz	14	

ACCESSORIES:
 1. COMPRESSOR CYCLE DELAY PACKAGE.
 2. AUTOMATIC RESET.

NOTES:
 1. PROVIDE REFRIGERANT PIPING SIZED AND INSTALLED PER MANUFACTURER'S WRITTEN DOCUMENTATION AND RECOMMENDATIONS.

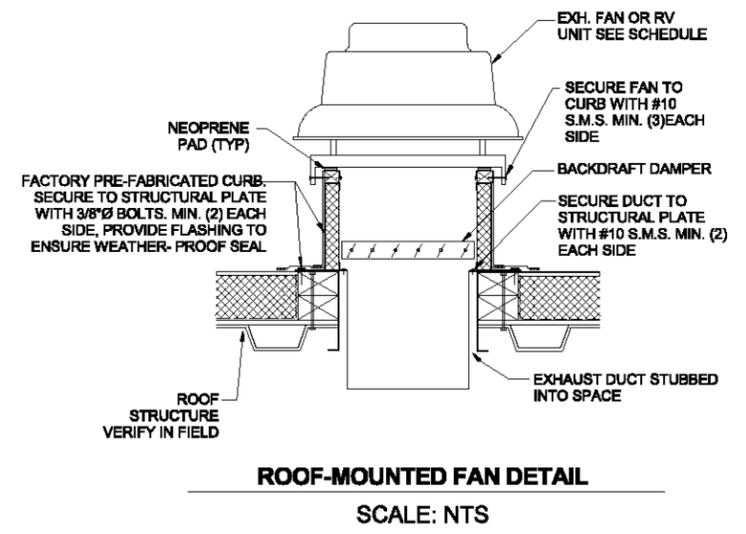
SEQUENCE OF OPERATION:

OCCUPIED MODE:
 1. UPON A RISE IN SPACE TEMPERATURE ABOVE SETPOINT OF 75 DEG. F. (ADJ), COMPRESSOR AND FAN SHALL ENERGIZE TO MAINTAIN SPACE TEMPERATURE AT THERMOSTAT SETPOINT.
 2. UPON A DROP IN SPACE TEMPERATURE BELOW SETPOINT OF 72 DEG. F. (ADJ), FAN AND COMPRESSOR SHALL DE-ENERGIZE.

UNOCCUPIED MODE:
 1. EQUIPMENT SHALL BE DE-ENERGIZED.

EXHAUST FAN SCHEDULE															
ITEM	ITEM NO.	MANUFACTURER	MODEL	TYPE	LOCATION	CFM	ESP (IN. W.G.)	FAN RPM	DRIVE	HP	ELECTRICAL			WEIGHT (LBS)	NOTES
											VOLT	PH	Hz		
EF	1	Greenheck	GB-240-10	DOWNBLAST	ROOF	4700 CFM	0.50 in-wg	867	BELT	0.85 hp	480 V	3	60 Hz	135.00 lb	

SEQUENCE OF OPERATION:
 1. UPON A RISE IN SPACE TEMPERATURE ABOVE SETPOINT OF 85 DEG. F. (ADJ), FAN SHALL ENERGIZE TO MAINTAIN SPACE TEMPERATURE AT THERMOSTAT SETPOINT.
 2. UPON A DROP IN SPACE TEMPERATURE BELOW SETPOINT OF 80 DEG. F. (ADJ), FAN SHALL DE-ENERGIZE.



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PROJECT NO. **XXX** SHEET **73 of 87** PLAN NO. **H-6.1**

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