

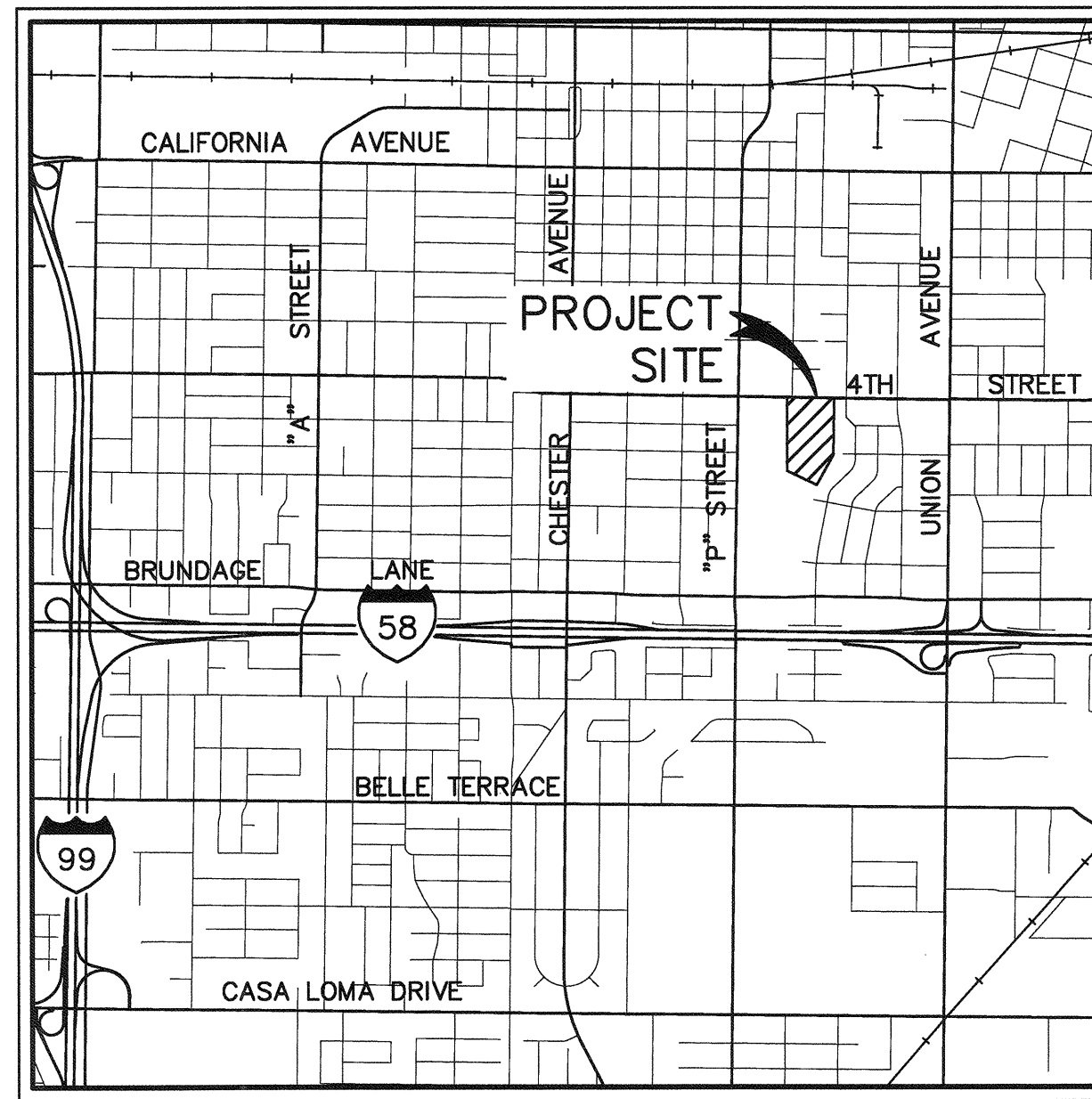




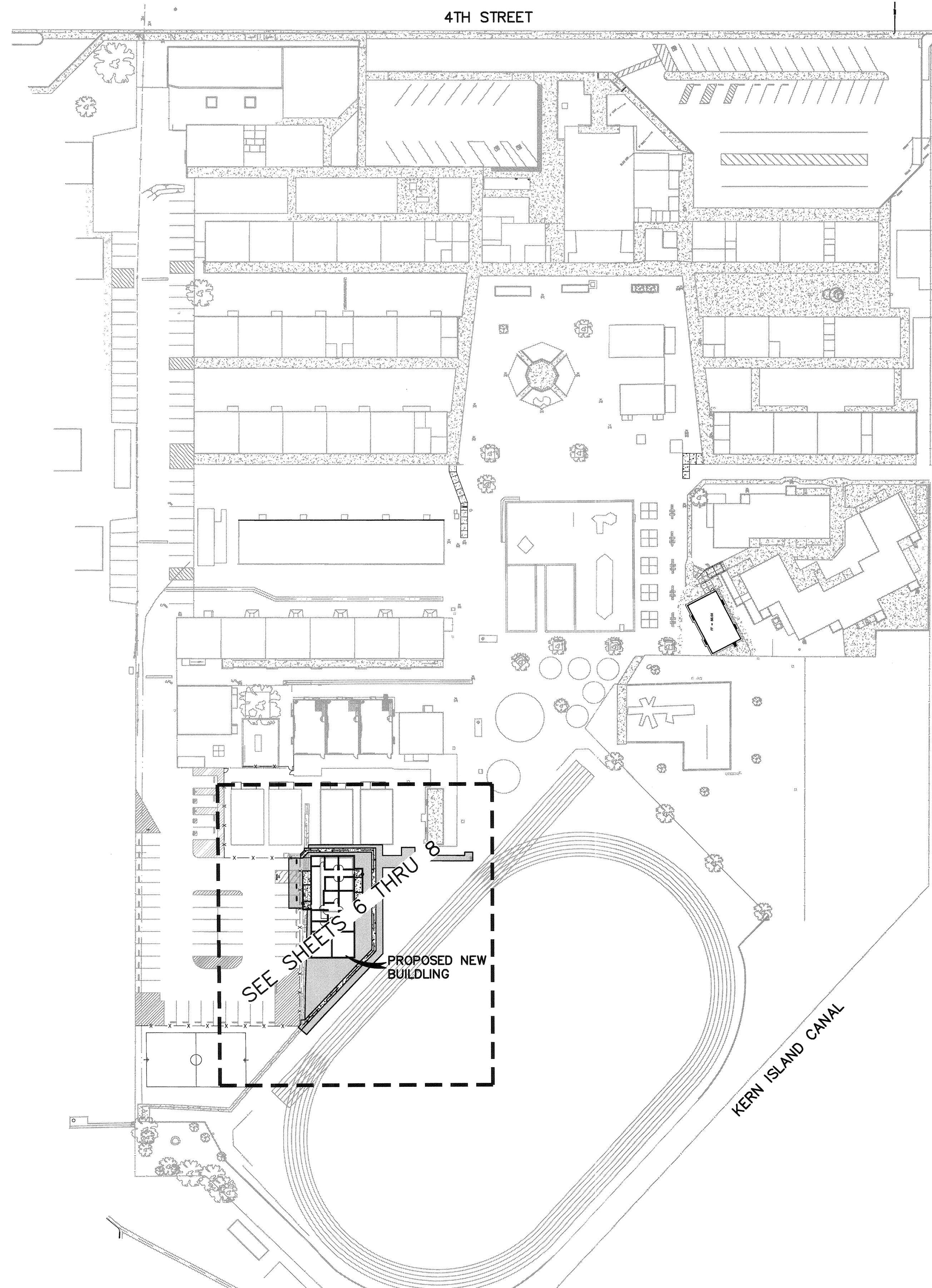




# GRADING AND SITE IMPROVEMENT PLANS FOR HEALTH CLINIC MCKINLEY ELEMENTARY SCHOOL



**VICINITY MAP**



**KEY MAP**  
SCALE: 1"=50'

**SHEET No. INDEX**

- ① COVER SHEET
- ② NOTES AND SPECIFICATIONS
- ③ NOTES AND SPECIFICATIONS
- ④ DETAILS AND TYPICAL SECTIONS
- ⑤ DETAILS AND TYPICAL SECTIONS
- ⑥ EXISTING CONDITIONS & DEMOLITION
- ⑦ GRADING AND SITE IMPROVEMENT PLAN
- ⑧ SITE UTILITY PLAN

**STATISTICS:**

1. ASSESSOR'S PARCEL NUMBER: 010-110-01
2. APPROXIMATE ACREAGE: 22.37 ACRES (TOTAL DISTRICT PROPERTY)
3. BUILDING SIZE: 40' X 60'
4. WATER: ON-SITE
5. SEWER DISPOSAL: ON-SITE
6. DRAINAGE: ON-SITE
7. EXISTING LAND USE: SCHOOL SITE
8. PROPOSED LAND USE: SCHOOL SITE
9. FIRE PROTECTION: C.O.B.
10. ADDRESS: 601 4th STREET  
BAKERSFIELD, CA 93307

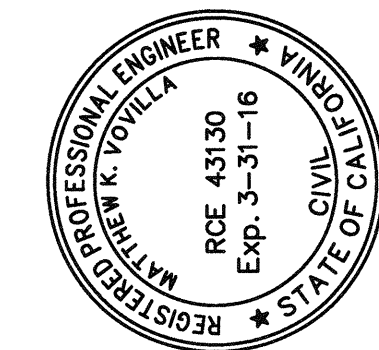
**BENCHMARK SET:**

SET CONCRETE NAIL IN PAVEMENT AND SHOWN ON THIS PLAN WITH ELEVATIONS NOTED.

**BENCHMARK USED:**

FOUND CHISELED "O" AT THE NORTH END OF THE THE NORTHEAST CURB RETURN AT THE INTERSECTION OF 4TH STREET AND "T" STREET PER CITY OF BAKERSFIELD BENCH MARK BOOK.

ELEVATION = 387.48 (TRACT No. 1557 STREET IMPROVEMENT PLANS).  
(ADD 300' TO ELEVATIONS SHOWN ON PLANS)

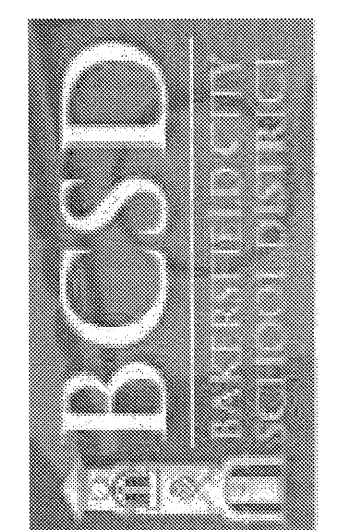


IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPROX 116810  
AC FLS  
DATE 02/11/16

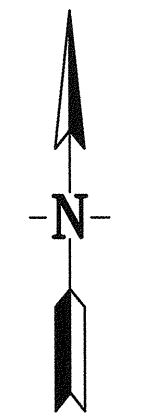
**LAV//Pinnacle Engineering**  
5401 Business Park South, Suite 204, Bakersfield, CA 93309  
Phone: (661) 869-0184 Fax: (661) 377-0076

|                    |                        |
|--------------------|------------------------|
| 02/01/16           | DATE                   |
| MATTHEW K. VOVILLA | RCE 43130 EXP. 3/31/16 |
| REVISIONS          | DATE                   |
|                    |                        |
|                    |                        |

GRADING & SITE IMPROVEMENT PLANS  
FOR HEALTH CLINIC  
MCKINLEY ELEMENTARY SCHOOL  
604 4TH STREET  
BAKERSFIELD, CALIFORNIA



|             |            |
|-------------|------------|
| JOB No.:    | 15-677     |
| DWG No.:    | BM01       |
| DATE:       | 02/01/2016 |
| DRAWN BY:   | ADA        |
| CHECKED BY: | MKV        |
| SHEET       | 1          |
| OF 8 SHEETS |            |





**GENERAL NOTES:**

- 1. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS BEFORE START OF CONSTRUCTION. A PERMIT SHALL BE OBTAINED FROM CITY PUBLIC WORKS DEPARTMENT FOR WORK TO BE DONE IN THE CITY STREET RIGHT-OF-WAY. CONTRACTOR SHALL PROVIDE ALL INSURANCE, BONDING, AND SECURITY REQUIRED BY THE PERMIT.
- 2. ANY TRENCHING TO BE CONDUCTED WITHIN THIS PROJECT SHALL BE BACKFILLED AND COMPACTED PER THE SOILS REPORT.
- 3. THE CONTRACTOR SHALL REMOVE OR RELOCATE ALL OBSTRUCTIONS AS DIRECTED BY CITY ENGINEER.
- 4. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE DISTRICT, THE ENGINEER, AND THE ARCHITECT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM NEGLIGENCE BY THE DISTRICT, ENGINEER, OR ARCHITECT.
- 5. IF A PROBLEM SHOULD ARISE DURING THE COURSE OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY PRIOR TO ANY FURTHER WORK.
- 6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE BAKERSFIELD CITY SCHOOL DISTRICT STANDARDS, CITY OF BAKERSFIELD STANDARDS, AND STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST EDITION, EXCEPT AS OTHERWISE SHOWN ON THESE PLANS OR CONTRACT DOCUMENTS.
- 7. ALL EXISTING IMPROVEMENTS (CURB, GUTTER, SIDEWALK, CROSS-GUTTER, FENCING, ETC.) THAT ARE REMOVED, DAMAGED, OR UNDERCUT SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER.
- 8. THE LOCATIONS OF EXISTING UTILITIES AND UNDERGROUND PIPELINES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES AND UNDERGROUND PIPELINES BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE, PRESERVE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES AND PIPELINES. THE CONTRACTOR SHALL CALL U.S.A. (UNDERGROUND SERVICE ALERT) 1-800-227-2600 TWO WORKING DAYS PRIOR TO ANY CONSTRUCTION OR EXCAVATION.
- 9. IF THE CONTRACTOR IS IN DOUBT AS TO THE MEANING OF ANY PART OF THE PLAN AND SPECIFICATIONS OR FINDS DISCREPANCIES OR OMISSIONS WITH THE DRAWINGS, HE SHALL SUBMIT A WRITTEN REQUEST FOR AN INTERPRETATION OR A CORRECTION THEREOF, PRIOR TO FILING HIS BID PRICE FOR THE PROJECT.
- 10. IN THE EVENT CONSTRUCTION STAKING BASED ON THE ENGINEER'S PLANS, DRAWINGS OR OTHER DOCUMENTS IS ACCOMPLISHED BY OTHER THAN THE ENGINEER, CLIENT AGREES TO HOLD ENGINEER HARMLESS AND RELEASE CONSULTANT FROM ALL LIABILITY ARISING FROM THE USE OF SAID PLANS, DRAWINGS OR OTHER DOCUMENTS.
- 11. ALL EXISTING PAVING AND SURFACING REMOVED, DAMAGED OR UNDERCUT WITHIN THE CITY RIGHT-OF-WAY SHALL BE REPLACED IN ACCORDANCE WITH THE CITY OF BAKERSFIELD DRAWING S-6, OR AS OTHERWISE NOTED HEREIN.
- 12. COMPACTION TESTING SHALL BE PROVIDED BY THE DISTRICT. RE-TESTS DUE TO FAILURES SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
- 13. LAV//PINNACLE ENGINEERING SHALL NOT BE RESPONSIBLE OR LIABLE FOR UNAUTHORIZED CHANGES TO, OR USES OF, THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE APPROVED IN WRITING BY LAV//PINNACLE ENGINEERING.
- 14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING ALL TRENCHES. IF TRENCHES OR PIPING BECOME DAMAGED DUE TO WATER INFILTRATION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR THE TRENCH AND PIPING TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- 15. FLOODING OR WATER JETTING SHALL NOT BE USED FOR BACKFILL COMPACTION.
- 16. DRAWINGS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY. CONTRACTOR SHALL OBTAIN A COPY OF "CITY OF BAKERSFIELD SUBDIVISION STANDARDS" AND DRAWINGS FOR HIS USE. THESE STANDARD DRAWINGS SHALL BE CONSIDERED A PART OF THESE PLANS.
- 17. NORMAL CONSTRUCTION STAKING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

**DEMOLITION NOTES:**

- 1. CONTRACTOR SHALL PERFORM ALL NECESSARY DEMOLITION WITHIN THE LIMITS OF WORK.
- 2. SEE SPECIFIC DEMOLITION NOTES ON PLANS.
- 3. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR DEMOLITION.
- 4. ALL NECESSARY DEMOLITION WITHIN THE LIMITS OF WORK SHALL BE PERFORMED BY THE CONTRACTOR. EXISTING IRRIGATION SHALL BE CUT AND CAPPED AT APPROPRIATE LOCATIONS UNTIL THE NEW SYSTEM IS OPERATIONAL. ALL EXISTING IRRIGATION APPURTENANCES WITHIN THE LIMITS OF WORK SHALL BE REMOVED AND PROPERLY DISPOSED.
- 5. ALL TREES AND PLANTINGS WITHIN THE WORK LIMITS SHALL BE COMPLETELY REMOVED, INCLUDING ROOT BALLS.
- 6. ALL VOIDS OR DEPRESSIONS CREATED BY DEMOLITION SHALL BE BACKFILLED WITH ENGINEERED FILL AND COMPACTED TO 95% RELATIVE DENSITY PER ASTM D1557.
- 7. EXCEPT AS OTHERWISE NOTED OR SHOWN ON THE PLANS, ALL MATERIAL GENERATED BY THE DEMOLITION SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LAWS AND ORDINANCES.
- 8. THE AREA OF WORK AND CONSTRUCTION TRAFFIC LANES SHALL BE CORDONED OFF FOR THE DURATION OF THE CONTRACT. THE CONTRACTOR SHALL CONTINUALLY PROVIDE FOR SAFE PASSAGE OF PEDESTRIANS AROUND THE WORK ZONE.

**SOIL STERILANT:**

- 1. SOIL STERILANT SHALL BE APPLIED TO NATIVE SOILS OR BASE MATERIAL IN AREAS TO RECEIVE PORTLAND CEMENT CONCRETE, ASPHALT CONCRETE, OR BENEATH PROPOSED STRUCTURES.
- 2. SOIL STERILANT SHALL BE STANDARD, QUICK-ACTING, SHORT-LIVED, AND NON-SELECTIVE WEED AND GRASS KILLER. APPLICATION OF THE STERILANT SHALL POSE NO LONG TERM OR SHORT TERM HEALTH THREATS TO THE INSTALLER OR THE GENERAL PUBLIC. SOIL STERILANT SHALL BE OUSTXP, AS MANUFACTURED BY DUPONT, OR APPROVED EQUAL. SOIL STERILANT SHALL BE APPLIED AT A RATE AND MANNER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, EXCEPT AS OTHERWISE MODIFIED HEREIN.
- 3. SOIL STERILANT SHALL BE APPLIED TO THE GRADED AND COMPACTED BASE MATERIAL IMMEDIATELY BEFORE PAVING.
- 4. SOIL STERILANT SHALL BE APPLIED TO THE GRADED AND COMPACTED NATIVE SOIL OR BASE MATERIAL UNDER PORTLAND CEMENT CONCRETE, AFTER GRADE IS ACCEPTED, FORMWORK, OR STRINGLINE HAS BEEN INSTALLED AND "POURING" IS PLANNED WITHIN 24-HOURS. GRADE SHALL NOT BE DISTURBED ONCE STERILANT HAS BEEN APPLIED.
- 5. SOIL STERILANT SHALL NOT BE APPLIED EARLIER THAN ONE DAY PRIOR TO PLACEMENT OF EITHER AGGREGATE BASE OR POURING PC CONCRETE. WATER SHALL NOT BE APPLIED TO AREA AFTER APPLICATION OF STERILANT.
- 6. SOIL STERILANT SHALL NOT BE APPLIED WHEN PRECIPITATION IS EMINENT. SOIL STERILANT SHALL BE APPLIED IN ACCORDANCE WITH ALL MANUFACTURER'S DRIFT MANAGEMENT RECOMMENDATIONS.

**GRADING NOTES:**

- 1. ALL GRADING AND SITE PREPARATION SHALL CONFORM TO THIS PLAN AND SHALL CONFORM WITH APPENDIX CHAPTER 33 OF CALIFORNIA BUILDING CODE (CURRENT EDITION) AND STANDARDS PERTAINING THERETO.
- 2. ALL WORK SHALL CONFORM TO AND COMPLY WITH THE REQUIREMENTS OF THE GEOTECHNICAL REPORT. IN THE EVENT OF A CONFLICT BETWEEN THESE PLANS AND THE SOILS REPORT, THE MORE RESTRICTIVE SPECIFICATION SHALL APPLY.
- 3. ALL DESIGN ELEVATIONS SHOWN ARE TO FINISH GRADE.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING THE PAD AND PAVING AREAS TO WITHIN 0.1 FOOT OF SUBGRADE. IF SUCH AREAS SHOULD BE FOUND TO BE MORE THAN 0.1 FOOT FROM THE DESIGN SUBGRADE ELEVATION AFTER COMPLETION OF GRADING, THE CONTRACTOR SHALL RETURN AND CORRECT THE GRADING AT NO COST TO THE OWNER.
- 5. COMPACTION TESTING SHALL BE PROVIDED BY THE DISTRICT. RE-TESTS DUE TO FAILURES SHALL BE AT THE EXPENSE OF THE CONTRACTOR.
- 6. IF A PROBLEM OR CONFLICT SHOULD ARISE DURING THE COURSE OF THIS PROJECT, IT IS THE RESPONSIBILITY OF THE OWNER OR THE GRADING CONTRACTOR TO NOTIFY THE ENGINEER IMMEDIATELY PRIOR TO ANY FURTHER WORK.
- 7. ALL GRADING WORK SHALL BE SUPERVISED AS "ENGINEERED GRADING" IN ACCORDANCE WITH APPENDIX CHAPTER 33 OF CALIFORNIA BUILDING CODE. THE DESIGN ENGINEER SHALL EXERCISE SUFFICIENT SUPERVISORY CONTROL DURING GRADING AND CONSTRUCTION TO ENSURE COMPLIANCE WITH THE PLANS, SPECIFICATIONS AND CODE WITHIN HIS PURVIEW.
- 8. DUST CONTROL: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PREVENT A DUST NUISANCE FROM ORIGINATING FROM THE SITE OF WORK AS A RESULT OF HIS OPERATIONS DURING THE EFFECTIVE PERIOD OF THIS CONTRACT. PREVENTATIVE MEASURES TO BE TAKEN BY THE CONTRACTOR SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
  - A. WATER SHALL BE APPLIED TO ALL UNPAVED AREAS AS REQUIRED TO PREVENT THE SURFACES FROM BECOMING DRY ENOUGH TO PERMIT DUST FORMATION.
  - B. PAVED SURFACES OVER WHICH VEHICULAR TRAFFIC IS PERMITTED TO TRAVEL SHALL BE KEPT FREE OF DIRT.
- 9. THE GEOTECHNICAL ENGINEER SHALL PROVIDE SUFFICIENT INSPECTIONS DURING THE PREPARATION OF THE NATURAL GROUND AND THE PLACEMENT AND COMPACTION OF THE FILL TO BE SATISFIED THAT THE WORK IS BEING PERFORMED IN ACCORDANCE WITH THE PLAN AND APPLICABLE CODE REQUIREMENTS.
- 10. EXISTING UNDERGROUND LINES HAVE BEEN SHOWN ON THIS PLAN ACCORDING TO AVAILABLE RECORDS. THE ENGINEER IS NOT RESPONSIBLE FOR POSSIBLE ERRORS OR OMISSIONS AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- 11. DURING GRADING, REASONABLE SEARCHING SHOULD BE PERFORMED FOR CONCEALED SUBSURFACE OBSTRUCTIONS. ALL ABANDONED SUBSURFACE OBSTRUCTIONS SHOULD BE REMOVED. IF THE TERMINUS OF ANY ABANDONED PIPING IS OUTSIDE THE PROJECT LIMITS, THE PIPING SHOULD BE REMOVED WITHIN THE PROJECT AND PROPERLY CAPPED AT THE PROJECT BOUNDARY.
- 12. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
- 13. CONSTRUCTION STAKING AND LAYOUT FOR ALL COMPONENTS OF WORK SHALL BE PROVIDED ONE-TIME BY THE DISTRICT. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT STAKES. RE-STAKING SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 14. ALL ONSITE OR OFFSITE OBSTRUCTIONS SHALL BE REMOVED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
- 15. ANY EXISTING IMPROVEMENT OR UTILITY REMOVED, DAMAGED OR UNDERCUT BY CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE DISTRICT AT THE CONTRACTOR'S EXPENSE.
- 16. ALL CUT AND FILL SLOPES SHALL NOT BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL.
- 17. SITE PREPARATION AND GRADING SHALL BE DONE UNDER THE SUPERVISION OF THE GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER AND DESIGN ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO PLACING OF ANY FILL MATERIAL.
- 18. THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION, INCLUDING ROOTS, LOOSE FILL, TRASH AND OTHER DELETERIOUS MATERIALS. ANY HOLE OR VOIDS LEFT AFTER THE REMOVAL OF TREES, ROOTS, SEPTIC TANKS, ABANDONED FOUNDATIONS, PIPELINES OR THE LIKE, SHALL BE FILLED AS REQUIRED BY THE GEOTECHNICAL ENGINEER.
- 19. FILL MATERIAL SHALL BE SUBJECT TO THE SOILS ENGINEER'S APPROVAL.
- 20. ALL FILL SLOPES SHALL NOT TOE OUT WITHIN 12 FEET HORIZONTALLY FROM THE TOP OF EXISTING OR PLANNED CUT SLOPES.
- 21. THE CUT AND FILL QUANTITIES ARE CALCULATED USING A COMPACTION FACTOR OF \_\_\_\_ THE ENGINEER MAKES NO WARRANTY EITHER DIRECT OR IMPLIED THAT THIS WILL BE THE ACTUAL COMPACTION FACTOR. IF A DEFICIENCY OR AN EXCESS OF SOIL ARISES, THE GRADING CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER, WHO SHALL DETERMINE IF ADJUSTMENTS CAN BE MADE TO IMPROVE THE BALANCE BETWEEN CUT AND FILL.
- 22. THE CUT AND FILL QUANTITIES SHOWN ON THIS PLAN ARE FOR PERMIT PURPOSES ONLY. THE CONTRACTOR SHALL, AFTER EXAMINING THE PLAN, SOILS REPORT AND THE SITE TERRAIN, PREPARE HIS BID PRICE FOR THE PROJECT, BASED ON HIS OWN EARTHWORK CALCULATIONS.
- 23. EXPORT MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AT AN APPROVED SITE.
- 24. SEE ARCHITECT'S DETAIL SHEET FOR DETAILS NOT SHOWN ON THESE PLANS. ALSO SEE ARCHITECT'S SITE PLAN FOR DIMENSIONS NOT SHOWN ON THIS PLAN.
- 25. IF THE CONTRACTOR IS IN DOUBT AS TO THE MEANING OF ANY PART OF THE PLAN AND SPECIFICATIONS OR FINDS DISCREPANCIES IN OR OMISSIONS FROM THE DRAWINGS, HE SHALL SUBMIT A WRITTEN REQUEST FOR AN INTERPRETATION OR A CORRECTION THEREOF, PRIOR TO FILING HIS BID PRICE FOR THE PROJECT.
- 26. THE CONTRACTOR SHALL COORDINATE WITH THE DISTRICT AND THE ENGINEER FOR LOCATION OF THE BORROW AREAS (IF REQUIRED) PRIOR TO BEGINNING CONSTRUCTION.
- 27. ANY TRENCHING TO BE DONE WITHIN THE PROJECT SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE SOILS REPORT.
- 28. SURFACE DRAINAGE SHALL BE 1% MINIMUM, EXCEPT AS WAIVED BY THE BUILDING OFFICIAL.
- 29. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO (A) FAMILIARIZE THEMSELVES WITH THE FOREGOING RECOMMENDATIONS, (B) NOTIFY THE ENGINEER WHEN SITE PREPARATION BEGINS AND BEFORE THE PLACEMENT OF FILLS, AND (C) INFORM THE ENGINEER IF ITEMS WHICH MIGHT EFFECT FOUNDATION STABILITY ARE ENCOUNTERED DURING EARTHWORK OPERATIONS SO THAT THEY MAY BE TREATED UNDER HIS DIRECTION (THESE MIGHT INCLUDE BURIED TRASH OR VEGETATION, PIPELINES, ABANDONED WELLS, OLD FILLS, ETC.)
- 33. FLOODING, JETTING, OR SIMILAR CONSOLIDATION METHODS OF COMPACTION SHALL NOT BE PERMITTED.
- 34. ANY ABANDONED WELLS ON THE PROPERTY DISCOVERED DURING GRADING SHALL BE ADEQUATELY CAPPED IN ACCORDANCE WITH ALL APPLICABLE CITY, COUNTY AND STATE ORDINANCES.

**GRADING NOTES (CONTINUED):**

- 35. A BERM OR DRAINAGE SWALE SHALL BE CONSTRUCTED ALONG THE TOP OF ALL CUT AND FILL SLOPES TO PREVENT RUNOFF FROM GOING OVER THE SLOPE. THE FACE OF ALL CUT AND FILL SLOPES SHALL BE PLANTED WITH A GROUND COVER INDIGENOUS TO THE AREA.
- 36. EXCEPT AS OTHERWISE SPECIFIED BY THE SOILS REPORT OR STRUCTURAL SECTION HEREIN, GROUND SURFACES TO RECEIVE CONCRETE AND BITUMINOUS PAVEMENTS SHOULD BE SCARIFIED AND COMPACTED TO A MINIMUM DEPTH OF TWELVE INCHES (12") BELOW THE EXISTING GROUND SURFACE IN AREAS TO BE FILLED. COMPACTION IN PROPOSED PAVEMENT AREAS SHOULD BE TO A MINIMUM OF NINETY-FIVE PERCENT (95%) OF THE MAXIMUM DENSITY AS OBTAINED BY ASTM TEST METHOD D1557-78, METHOD A, AND SHOULD EXTEND TO A MINIMUM DISTANCE OF TWO FEET (2') BEYOND THE OUTSIDE EDGES OF PAVEMENTS.
- 37. ALL AREAS ON THE SITE ON WHICH STRUCTURES ARE TO BE PLACED MUST BE COMPACTED TO NINETY PERCENT (90%) DENSITY FOR A MINIMUM DISTANCE OF FIVE FEET (5') BEYOND THE OUTSIDE EDGES OF THE FOUNDATIONS OF THE STRUCTURES. THE DEPTH OF OVEREXCAVATION AND COMPACTION IN PAD AREAS SHALL BE IN ACCORDANCE WITH THE SOILS REPORT. RE-COMPACTION OF OVER-EXCAVATED MATERIAL SHALL BE TO AT LEAST NINETY PERCENT (90%) OF MAXIMUM DRY DENSITY.
- 38. ALL FILL AREAS TO BE CLEARED OF ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FOR A STRUCTURAL FILL AND THE AREA SCARIFIED TO A DEPTH OF 6".
- 39. FILL AREAS SLOPING STEEPER THAN 5:1 SHALL BE KEYED AND BENCHED TO SUPPORT FILL.
- 40. FILL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 6" IN COMPACTED THICKNESS AND COMPACTED AT OPTIMUM MOISTURE CONTENT BY APPROVED METHOD.
- 41. EXCEPT AS OTHERWISE REQUIRED BY THE PLANS AND SPECIFICATIONS, ALL FILL TO BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY AS DETERMINED BY C.B.C. APPENDIX CHAPTER 33 AND SO CERTIFIED BY TESTS AND REPORTS FROM SOILS ENGINEER.
- 42. UNAUTHORIZED CHANGES AND USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ANY AND ALL CHANGES TO THESE PLANS MUST BE APPROVED BY PINNACLE CIVIL ENGINEERING, INC.
- 43. PURSUANT TO SECTION 3317.8 OF THE CALIFORNIA BUILDING CODE, IF THE CIVIL ENGINEER, THE SOILS ENGINEER, OR THE ENGINEERING GEOLOGIST OF RECORD IS CHANGED DURING GRADING, THE WORK SHALL BE STOPPED UNTIL THE REPLACEMENT HAS AGREED IN WRITING TO ACCEPT THEIR RESPONSIBILITY WITHIN THEIR AREA OF TECHNICAL COMPETENCE FOR APPROVAL UPON COMPLETION OF THE WORK. IT SHALL BE THE DUTY OF THE PERMITTEE TO NOTIFY THE BUILDING OFFICIAL IN WRITING OF SUCH CHANGE PRIOR TO THE RECOMMENCEMENT OF SUCH GRADING.
- 44. IF THE PROJECT IS SUBJECT TO THE PROVISIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES), A "NOTICE OF INTENT" (NOI) TO COMPLY WITH THE TERMS OF THE GENERAL PERMIT TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY (WQ ORDER NO. 2009-200--DWQ) MUST BE FILED WITH STATE WATER RESOURCES CONTROL BOARD IN SACRAMENTO BEFORE THE BEGINNING OF ANY CONSTRUCTION ACTIVITY. COMPLIANCE WITH THE GENERAL PERMIT REQUIRES THAT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) BE PREPARED, CONTINUOUSLY CARRIED OUT, AND ALWAYS BE AVAILABLE FOR PUBLIC INSPECTION DURING NORMAL CONSTRUCTION HOURS.

**PORTLAND CEMENT CONCRETE, CURBS & SIDEWALK:**

- 1. GENERAL
  - 1.1: PORTLAND CEMENT CONCRETE FOR CURBS, GUTTERS, SIDEWALK, AND OTHER "FLATWORK" SHALL CONFORM TO THE PROVISIONS OF SECTION 40 AND 90 OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS, EXCEPT AS OTHERWISE MODIFIED BY THESE PLANS, SPECIFICATIONS, OR CONTRACT DOCUMENTS.
  - 1.2: SEE ARCHITECT'S PLANS AND CONTRACT DOCUMENTS FOR STRUCTURAL CONCRETE, OR CONCRETE FOR FOUNDATIONS.
- 2. CONCRETE
  - 2.1 CLASS A: CLASS A CONCRETE SHALL HAVE A MINIMUM PORTLAND CEMENT CONTENT OF 564 POUNDS PER CUBIC YARD AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS.
  - 2.2 CLASS B: CLASS B CONCRETE SHALL A MINIMUM PORTLAND CEMENT CONTENT OF 500 POUNDS PER CUBIC YARD AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
  - 2.3 CLASS C: CLASS C CONCRETE SHALL HAVE A MINIMUM PORTLAND CEMENT CONTENT OF 376 POUNDS PER CUBIC YARD AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI IN 28 DAYS.
- 3. REINFORCING
  - WHERE REINFORCED CONCRETE IS REQUIRED, REINFORCING STEEL CONFORMING TO THE APPLICABLE PROVISIONS OF THE STATE SPECIFICATIONS SHALL BE FURNISHED AND INSTALLED.
- 4. CONCRETE IMPROVEMENTS
  - 4.1: PORTLAND CEMENT CONCRETE SHALL BE CLASS B FOR CURB AND GUTTER, ADA RAMPS, AND SIDEWALKS, AND CLASS A FOR CROSS GUTTERS, DRIVEWAY APPROACHES, AND ANY OTHER CONCRETE IMPROVEMENT SUBJECT TO VEHICULAR TRAFFIC. CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 90, "PORTLAND CEMENT CONCRETE", OF THE STATE SPECIFICATIONS.
  - 4.2: CROSS GUTTERS AND DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH PROVISIONS OF SECTION 73, "CONCRETE CURBS AND SIDEWALKS", OF THE STATE SPECIFICATIONS. DRIVE APPROACHES SHALL NOT BE CONSTRUCTED WITHIN TEN FEET OF CURB RETURNS, AS MEASURED FROM RETURN TO EDGE OF APPROACH, UNLESS APPROVED BY THE CITY. EXPANSION JOINTS SHALL BE EITHER (A) 1/4-INCH TO 1/2-INCH PREMOLDED EXPANSION JOINT FILLER PER SECTION 51-1.12 OF THE STATE SPECIFICATIONS, OR (B) 2-INCH DEEP SCORED JOINT (WEAKENED PLANE, EXTRUSION MACHINE ONLY).
  - 4.3: ALL CONCRETE IMPROVEMENTS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE STANDARD DETAILS. WHITE PIGMENTED CURING COMPOUNDS, CONFORMING TO ASTM C-309, SHALL BE APPLIED TO ALL EXPOSED SURFACES OF CONCRETE IMPROVEMENTS TO PROVIDE COMPLETE AND UNIFORM COVERAGE. CURING COMPOUND SHALL BE APPLIED WITHIN 1 HOUR OF CONCRETE FINISHING.
  - 4.4: EXCAVATION, GRADING AND BACKFILLING BEHIND THE CURB RETURNS, INCLUDING GRADING OF PARKWAY, SHALL BE DONE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS FOR EARTHWORK. ANY EXCAVATED MATERIAL NOT NEEDED FOR GRADING OR BACKFILL, IN THE OPINION OF THE CITY, SHALL BE REMOVED FROM THE SITE OF WORK AND DISPOSED OF AT THE EXPENSE OF THE OWNER.
  - 4.5: THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL THE DESIGN OF THE MIX PROPOSED FOR USE. SAID MIX DESIGN SHALL SET FORTH WEIGHTS OF CEMENT, SAND, COARSE AGGREGATE AND WATER TO BE USED TOGETHER WITH A GRADING ANALYSIS OF SAND AND COARSE AGGREGATE. THE SOURCE OF SUPPLY OF MATERIALS ENTERING INTO THE MIX SHALL ALSO BE GIVEN. THE MIX DESIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACING ANY CONCRETE.
  - 4.6: IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS, INSTALL REBAR DOWELS WHEN NEW PC CONCRETE IS SHOWN TO JOIN EXISTING PC CONCRETE.

**ASPHALT CONCRETE PAVING:**

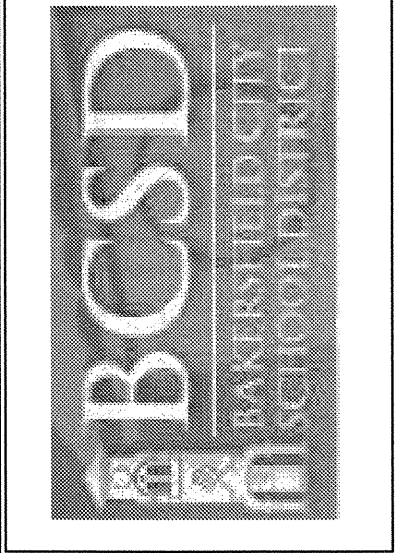
- 1. ASPHALT CONCRETE SHALL BE TYPE A (MODIFIED) FOR ALL ARTERIAL AND COLLECTOR STREETS AND TYPE B (MODIFIED) FOR LOCAL STREETS, AND SHALL CONFORM TO THE PROVISIONS IN SECTION 39, "ASPHALT CONCRETE," OF THE STANDARD SPECIFICATIONS AND THESE PROVISIONS.
- 2. TYPE A AND TYPE B ASPHALT CONCRETE, WITHIN CITY RIGHT-OF-WAY, SHALL CONFORM TO THE REQUIREMENTS OF SECTION 39-2.02, "AGGREGATE," OF THE STANDARD SPECIFICATIONS FOR 3/4" MAXIMUM, MEDIUM GRADATION. TYPE B ASPHALT CONCRETE FOR SITEMARK SHALL CONFORM TO THE REQUIREMENTS OF SECTION 39-2.02, "AGGREGATE," OF THE STANDARD SPECIFICATIONS FOR 1/2" MAXIMUM, MEDIUM GRADATION.
- 3. ASPHALT BINDER FOR TYPE A (MODIFIED) ASPHALT CONCRETE SHALL BE PG70-10 VISCOSITY GRADED ASPHALT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ASPHALT BINDER FOR TYPE B (MODIFIED) ASPHALT CONCRETE SHALL BE PG70-10 VISCOSITY GRADED ASPHALT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE ASPHALT BINDER SHALL CONFORM TO THE REQUIREMENTS IN THE TABLE FOR "STEAM-REFINED PAVING ASPHALTS," IN SECTION 92-1.02, "GRADES," OF THE STANDARD SPECIFICATIONS.
- 4. THE AMOUNT OF ASPHALT BINDER TO BE MIXED WITH THE MINERAL AGGREGATE SHALL BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH CALIFORNIA TEST METHOD 367 USING SAMPLES OF MATERIALS PROPOSED FOR USE IN THE WORK. THE AMOUNT OF ASPHALT BINDER SHALL BE APPROVED BY THE ENGINEER.
- 5. AT LEAST 14 DAYS PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING FOR THE ENGINEER'S REVIEW AND APPROVAL:
  - A. A LIST OF AGGREGATE AND ASPHALT SOURCES.
  - B. DOCUMENTATION VERIFYING THAT THE AGGREGATES TO BE INCORPORATED IN THE WORK CONFORM TO THE REQUIREMENTS IN SECTION 39-2.02, "AGGREGATE," OF THE STANDARD SPECIFICATIONS AND THESE SPECIAL PROVISIONS. MATERIAL SIEVE ANALYSIS AND SAND EQUIVALENT TEST RESULTS SHOULD NOT BE OLDER THAN SIX (6) MONTHS. ALL OTHER TEST RESULTS SHOULD NOT BE OLDER THAN ONE (1) YEAR.
  - C. AN ASPHALT CONCRETE MIX DESIGN DETERMINED IN ACCORDANCE WITH CALIFORNIA TEST 367, LABORATORY TEST RESULTS ON WHICH THE DESIGN IS BASED SHALL BE SUBMITTED WITH THE MIX DESIGN ALONG WITH THE THEORETICAL MAXIMUM DENSITY OF THE DESIGN MIXTURE AS DETERMINED BY ASTM D-2041. THE ASPHALT CONCRETE MIX SHALL MEET THE REQUIREMENTS OF SECTION 39-2.02, "AGGREGATE," OF THE STANDARD SPECIFICATIONS AND THESE SPECIAL PROVISIONS. IF THE DATA SUBMITTED SHOWS THAT THE MATERIALS ARE SUBSTANTIALLY THE SAME AS WHEN THE DESIGN WAS PREPARED, THE DESIGN MAY BE UP TO THREE (3) YEARS OLD. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH THE ASPHALT CONCRETE MIX DESIGN.
- 6. WHERE NEW ASPHALT CONCRETE IS TO CONFORM TO EXISTING PAVED SURFACES, THE EXISTING PAVEMENT SHALL BE SAW CUT.
- 7. A PRIME COAT WILL NOT BE REQUIRED ON NON-PAVED AREAS TO BE SURFACED PRIOR TO THE PLACEMENT OF ASPHALT CONCRETE; HOWEVER, ALL OTHER REQUIREMENTS OF SECTION 39-4.01, "SUB-GRADE," OF THE STANDARD SPECIFICATIONS SHALL BE MET.
- 8. THE AREA TO WHICH PAINT BINDER HAS BEEN APPLIED SHALL BE CLOSED TO PUBLIC TRAFFIC. CARE SHALL BE TAKEN TO AVOID TRACKING BINDER MATERIAL ONTO EXISTING PAVEMENT SURFACE BEYOND THE LIMITS OF CONSTRUCTION.
- 9. PAVING JOINTS SHALL MATCH STRIPE LOCATIONS UNLESS OTHERWISE PERMITTED BY THE ENGINEER.
  - A. INTERSECTIONS AND TAPERED SHOULDERS SHALL BE SURFACED AS DIRECTED BY THE ENGINEER. ADDITIONAL ASPHALT CONCRETE SHALL BE PLACED AT ROAD CONNECTIONS AND PRIVATE DRIVES, WHERE SHOWN ON PLANS AND AS DIRECTED BY THE ENGINEER, AND HAND RAKED, IF NECESSARY, AND COMPACTED TO FORM SMOOTH, TAPERED CONNECTIONS.
- 10. WHERE THE COMPACTED THICKNESS OF A LAYER OF ASPHALT CONCRETE IS 0.15 FOOT OR LESS, PAVING OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER THAT, AT THE END OF EACH WORK SHIFT, THE LENGTH OF PAVEMENT ALONG THE LONGITUDINAL DROP-OFF BETWEEN ADJACENT LANES IS NOT GREATER THAN THAT WHICH CAN BE SURFACED DURING THE FOLLOWING SHIFT OF NORMAL PAVING OPERATIONS. ADDITIONAL ASPHALT CONCRETE SHALL BE PLACED ALONG THE TRANSVERSE DROP-OFFS ON EACH LANE. SUCH ADDITIONAL ASPHALT CONCRETE SHALL BE HAND RAKED AND COMPACTED TO FORM TEMPORARY CONFORMS TO ADJACENT LANES SHALL NOT BE GREATER THAN 10 FEET. ADDITIONAL ASPHALT CONCRETE SHALL BE PLACED ALONG THE TRANSVERSE DROP-OFFS ON EACH LANE AND ALONG THE LONGITUDINAL DROP-OFF BETWEEN ADJACENT LANES. SUCH ADDITIONAL ASPHALT CONCRETE SHALL BE HAND RAKED AND COMPACTED TO FORM TEMPORARY CONFORMS BEFORE THE LANES ARE OPENED TO PUBLIC TRAFFIC. KRAFT PAPER, OR OTHER APPROVED BOND BREAKER, MAY BE PLACED UNDER THE CONFORMS TO FACILITATE THE REMOVAL OF THE CONFORMS WHEN PAVING OPERATIONS RESUME.
- 11. WHERE THE COMPACTED THICKNESS OF A LAYER OF ASPHALT CONCRETE IS MORE THAN 0.15 FOOT, PAVING OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER THAT THE LAYER OF ASPHALT CONCRETE IS PLACED ON ALL CONTIGUOUS LANES OF THE TRAVELED WAY BEFORE THE LANES ARE OPENED TO PUBLIC TRAFFIC. AT THE END OF EACH WORK SHIFT, THE DISTANCE BETWEEN THE ENDS OF A LAYER OF ASPHALT CONCRETE ON ADJACENT LANES SHALL NOT BE GREATER THAN 10 FEET. ADDITIONAL ASPHALT CONCRETE SHALL BE PLACED ALONG THE TRANSVERSE DROP-OFFS ON EACH LANE AND ALONG THE LONGITUDINAL DROP-OFF BETWEEN ADJACENT LANES. SUCH ADDITIONAL ASPHALT CONCRETE SHALL BE HAND RAKED AND COMPACTED TO FORM TEMPORARY CONFORMS BEFORE THE LANES ARE OPENED TO PUBLIC TRAFFIC. KRAFT PAPER, OR OTHER APPROVED BOND BREAKER, MAY BE PLACED UNDER THE CONFORMS TO FACILITATE THE REMOVAL OF THE CONFORMS WHEN PAVING OPERATIONS RESUME.
- 12. ASPHALT CONCRETE SHALL BE COMPACTED TO A MINIMUM 92 PERCENT OF THE MAXIMUM THEORETICAL DENSITY AS DETERMINED BY ASTM D-2041. IN-PLACE DENSITY SHALL BE DETERMINED IN ACCORDANCE WITH CALIFORNIA TEST 375.
- 13. IF THE IN-PLACE DENSITY OF ANY LOT OF ASPHALT CONCRETE IS LESS THAN 92 PERCENT OR GREATER THAN 94 PERCENT OF THE MAXIMUM THEORETICAL DENSITY, THE ASPHALT CONCRETE REPRESENTED BY THAT LOT SHALL BE REMOVED AND REPLACED WITH MATERIAL THAT DOES MEET THE IN-PLACE DENSITY REQUIREMENT. THE CORRECTIVE WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 14. IF THE FINISHED SURFACE OF THE ASPHALT CONCRETE DOES NOT MEET THE SPECIFIED SURFACE TOLERANCES, IT SHALL BE BROUGHT WITHIN TOLERANCE BY EITHER: (1) ABRASIVE GRINDING WITH EQUIPMENT UTILIZING DIAMOND BLADES, (2) REMOVAL AND REPLACEMENT, OR (3) PLACEMENT OF AN ASPHALT CONCRETE OVERLAY. THE METHOD WILL BE SELECTED BY THE ENGINEER. THE CORRECTIVE WORK SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 15. IF ABRASIVE GRINDING IS USED TO BRING THE FINISHED SURFACE TO SPECIFIED SURFACE TOLERANCES, ADDITIONAL GRINDING SHALL BE PERFORMED, AS NECESSARY, TO ENLARGE THE GRINDING AREA SO THAT THE LONGITUDINAL LIMITS OF GRINDING ARE AT A CONSTANT OFFSET FROM, AND ARE PARALLEL TO, THE NEAREST LANE LINE OR PAVEMENT EDGE, AND THE TRANSVERSE LIMITS OF GRINDING ARE NORMAL TO THE PAVEMENT CENTERLINE. ALL GROUND AREAS SHALL BE NEAT RECTANGULAR AREAS OF UNIFORM SURFACE APPEARANCE. ABRASIVE GRINDING SHALL CONFORM TO THE REQUIREMENTS IN THE FIRST PARAGRAPH AND THE LAST FOUR PARAGRAPHS OF SECTION 42-2.02, "CONSTRUCTION," OF THE STANDARD SPECIFICATIONS. A FOG SEAL COAT SHALL BE APPLIED TO ALL FINISHED ASPHALT SURFACES AT THE CONTRACTOR'S EXPENSE. THE FOG SEAL COAT SHALL BE EITHER ASPHALT REJUVENATING AGENT OR ASPHALTIC EMULSION AS DIRECTED BY THE ENGINEER.
- 16. BASE MATERIAL IN ARTERIAL AND COLLECTOR ROADS SHALL BE CRUSHED AGGREGATE BASE (CAB) CONFORMING TO SECTION 200-2.2 OF THE "GREENBOOK." BASE MATERIAL IN LOCAL ROADS SHALL EITHER BE CAB OR CRUSHED MISCELLANEOUS BASE (CMB) CONFORMING TO SECTION 200-2.4 OF THE "GREENBOOK."
- 17. BASE MATERIAL FOR SITE WORK SHALL BE CLASS II AGGREGATE BASE, PER SECTION 25 OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS.
- 18. SEE ALSO BAKERSFIELD CITY SCHOOL DISTRICT GENERAL CONDITIONS AND SPECIAL PROVISIONS.



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| 02/01/16                   | DATE   |
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**GENERAL NOTES & SPECIFICATIONS**  
**GRADING & SITE IMPROVEMENT PLANS**  
FOR HEALTH CLINIC  
MCKINLEY ELEMENTARY SCHOOL  
604 4TH STREET  
BAKERSFIELD, CALIFORNIA



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| JOB No.:    | 15-677     |
| DWG No.:    | BM01       |
| DATE:       | 02/01/2016 |
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CITY OF BAKERSFIELD SEWER SPECIFICATIONS:

- 1. GENERAL CONTRACTOR SHALL FURNISH ALL MATERIAL, TOOLS, LABOR, EQUIPMENT AND SUPERVISION NECESSARY TO COMPLETE INSTALLATION.
2. VCP INSTALLATION: (NOT ALLOWED FOR 8" PIPE SET AT 0.25%)
A. MATERIALS: THE PIPE AND FITTINGS SHALL BE EXTRA STRENGTH VITRIFIED CLAY CONFORMING TO CURRENT ASTM DESIGNATION C-700, AND SHALL BE INSTALLED IN CONFORMANCE WITH THE PROVISIONS OF SECTION 71 OF THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, CURRENT EDITION AND THE CURRENT ASTM DESIGNATION C-12.
B. JOINTS: I. THE PIPE AND FITTINGS SHALL HAVE A SOCKET END AND A SPIGOT END WITH COMPRESSION JOINTS CONFORMING WITH THE CURRENT ATSM DESIGNATION C-425.
II. THE PIPE FITTINGS FOR 6", 8", 10" AND 12" SANITARY SEWER MAINS MAY BE PLAIN-END WITH COMPRESSION COUPLINGS CONFORMING WITH THE CURRENT ATSM DESIGNATION C-425. EXCEPTING THAT A STAINLESS STEEL SHEAR RING AS MANUFACTURED BY MISSION CLAY PRODUCTS CORPORATION FOR THEIR "MAINLINE" BAND SEAL COMPRESSION COUPLING, OR APPROVED EQUAL, SHALL BE REQUIRED.
III. THE PIPE AND FITTINGS FOR PRIVATE SANITARY SEWER HOUSE OR BUILDING LATERALS MAY BE PLAIN-END WITH COMPRESSION COUPLINGS CONFORMING WITH THE CURRENT ASTM DESIGNATION C-425. (STAINLESS STEEL SHEAR RINGS ARE NOT REQUIRED).
3. ABS PIPE INSTALLATION:
A. MATERIALS: PIPE AND FITTINGS SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS D-2680 AND D-2751. PIPE AND FITTINGS SHALL BE HOMOGENEOUS THROUGHOUT AND FREE FROM CRACKS, HOLES, FOREIGN INCLUSIONS OR OTHER INJURIOUS DEFECTS. FITTINGS SHALL BE INJECTION MOLDED AND SHALL BE INSTALLED IN LINE ON NEW PIPELINES; CUT-IN FITTINGS ARE NOT PERMITTED.
B. JOINTS: ONLY USE SOLVENT WELDED JOINTS. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE ABS PIPE CONNECTS TO VCP, USE COUPLINGS APPROVED BY THE CITY OF BAKERSFIELD.
C. INSTALLATION: PIPE AND FITTINGS SHOULD BE INSTALLED IN ACCORDANCE WITH ASTM D 2321. ONLY CLASS I, II OR III EMBEDMENT MATERIALS WILL BE CONSIDERED SUITABLE.
4. PVC PIPE INSTALLATION:
A. MATERIALS: PIPES AND FITTINGS SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATIONS D-3034 AND SDR 35. PIPE AND FITTINGS SHALL BE HOMOGENEOUS THROUGHOUT AND FREE FROM CRACKS, HOLES, FOREIGN INCLUSIONS OR OTHER INJURIOUS DEFECTS. FITTINGS SHALL BE INJECTION MOLDED AND SHALL BE INSTALLED IN LINE ON NEW PIPELINES; CUT-IN FITTINGS ARE NOT PERMITTED.
B. JOINTS: USE ONLY ELASTOMERIC GASKET JOINTS. THE ASSEMBLY OF JOINTS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. WHERE PVC PIPE CONNECTS TO VCP, USE COUPLINGS APPROVED BY THE CITY OF BAKERSFIELD.
C. INSTALLATION: PIPE AND FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321. ONLY CLASS I OR II EMBEDMENT MATERIALS WILL BE CONSIDERED SUITABLE.
5. SYSTEM TESTING:
A. INSTALLED PIPE SHALL BE TESTED IN ACCORDANCE WITH CHAPTER 1.3 OF THE SUBDIVISION DESIGN MANUAL AND WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND ACCEPTABLE BY THE CITY OF BAKERSFIELD. 24 HOURS NOTICE WILL BE REQUIRED FOR TEST AND INSPECTION.
6. WYE-FITTINGS SHALL BE INJECTION MOLDED IN-LINE AND SHALL BE USED FOR ALL LATERAL CONNECTIONS AND SHALL BE ROTATED A MINIMUM OF 23° AND A MAXIMUM OF 45° ABOVE THE HORIZONTAL PLANE RUNNING THROUGH THE CENTERLINE OF THE MAIN. WYE-FITTINGS ONLY SHALL BE USED FOR VCP. ALL SEWER STUBS SHALL BE CLOSED WITH A STANDARD PLASTIC PLUG (SOLVENT WELDED).
7. THE MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF BAKERSFIELD DRAWING S-7 AND S-8 AND SECTION 70-1.02H AND 71-1.07 OF THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, LATEST EDITION. THE CLEANOUTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF BAKERSFIELD STANDARD DRAWINGS S-20.
8. ALL SEWER LATERALS SHALL BE 4" IN DIAMETER EXCEPT AS NOTED ON PLANS AND EXTEND 4 FEET BEYOND PROPERTY LINE.
9. SURFACE MARKERS FOR SEWER LATERALS SHALL BE INSTALLED PER CITY OF BAKERSFIELD DRAWING SW-1.
10. INTENTIONALLY LEFT BLANK.
11. FOR CURVED PIPE: IDENTIFICATION TAPE DESIGNED FOR USE ON SEWERS SHALL BE PLACED ON TOP OF SEWER MAIN ALONG ITS ENTIRE LENGTH. IDENTIFICATION TAPE SHALL ALSO BE PLACED ON SEWER LATERALS EXTENDING 1-FOOT ABOVE SEWER MAIN TO RIGHT-OF-WAY LINE.
12. SEWER FORCE MAIN PIPE:
A. POLYVINYL CHLORIDE PIPE (PVC) FOR SEWER FORCE MAIN SHALL BE CLASS 150 (DR18) OR CLASS 200 (DR14) AND SHALL COMPLY WITH AWWA SPECIFICATIONS FOR 12" AND LESS.
B. PVC JOINTS FOR SEWER FORCE MAIN SHALL HAVE ELASTOMERIC GASKET JOINTS, EITHER GASKET BELL AND SPIGOT TYPE OR PLAIN END WITH GASKET COUPLING TYPE.
C. FITTINGS: SPECIALS AND FITTING SHALL BE DUCTILE-IRON CONFORMING TO AWWA SPECIFICATION C100, CLASS D, EXCEPT THAT FITTING SHALL HAVE ALL BELL CONNECTIONS OF STANDARD AWWA DIMENSIONS OR SPECIAL DIMENSIONS AS REQUIRED, OR FITTINGS SHALL BE EQUIPPED WITH ADAPTERS OF THE PROPER CLASS FOR THE SIZE OF PIPE, AS RECOMMENDED BY THE PIPE MANUFACTURER, OR EQUAL. PROTECTIVE COATING SHALL BE IN ACCORDANCE WITH SECTION 5.15 OF THESE SPECIFICATIONS.
13. CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF EXISTING SEWER LINES THAT THE NEW SYSTEM TIES INTO. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER SO THAT ANY NECESSARY ADJUSTMENTS CAN BE MADE TO THE PLANS.
14. PRIOR TO FINAL ACCEPTANCE, ALL SEWER LINES SHALL BE INSPECTED WITH VIDEO EQUIPMENT DESIGNED FOR THIS PURPOSE. THE TELEVISION CAMERA SHALL HAVE THE CAPABILITY TO ROTATE 360°, IN ORDER TO VIEW AND RECORD THE TOP AND SIDES OF THE PIPE, AS REQUIRED. THE VIDEO INSPECTION SHALL BE WITNESSED BY THE CONSTRUCTION INSPECTOR, WHO WILL ALSO INITIAL AND DATE THE "CHAIN OF CUSTODY" FORM. THE SUBDIVIDER SHALL IMMEDIATELY NOTIFY THE CITY OF ANY PIPE LOCATIONS REVEALED TO BE NOT IN COMPLIANCE WITH THE SPECIFICATIONS. A RECORDED VIDEO CASSETTE, THE COMPLETED "CHAIN OF CUSTODY" FORM AND A WRITTEN LOG (WHICH INCLUDES THE STATIONING, BASED ON THE STATIONING OF THE APPROVED PLANS, OF ALL CONNECTED LATERALS) OF THE INSPECTION SHALL BE PROVIDED FOR VIEWING, AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO ACCEPTANCE. AFTER ACCEPTANCE, THE VIDEO CASSETTE SHALL BECOME THE PROPERTY OF THE CITY.
15. AN OPEN STREET PERMIT SHALL BE OBTAINED FROM THE CITY OF BAKERSFIELD PUBLIC WORKS DEPARTMENT FOR ANY WORK PERFORMED WITHIN EXISTING ACCEPTED STREET RIGHT-OF-WAY, UNLESS SECURED BY A SUBDIVISION AGREEMENT, SECURITY BASED ON AN APPROVED ENGINEER'S ESTIMATE FOR THE WORK PERFORMED WITHIN THE RIGHT-OF-WAY AND INSURANCE AS REQUIRED SHALL BE PROVIDED PRIOR TO ISSUANCE OF A BUILDING PERMIT.
16. CLASS 1 BEDDING AND EMBANKMENT IS REQUIRED FOR ALL PLASTIC SEWER PIPE WITHIN THE PIPE ZONE.
17. CONTRACTOR TO VERIFY POSITIVE SLOPE FROM MANHOLE PRIOR TO CONNECTING STUB. IF THE POSITIVE SLOPE DOES NOT EXIST, REPLACE STUB TO MANHOLE.

CITY OF BAKERSFIELD WATER SPECIFICATIONS

- 1. 5.2 QUALITY OF MATERIALS: ALL MATERIAL INCORPORATED INTO THE WORK SHALL BE NEW AND SHALL CONFORM TO THESE STANDARDS AND SPECIFICATIONS. NO MATERIAL SHALL BE INCORPORATED INTO THE WORK UNTIL IT HAS BEEN APPROVED BY THE INSPECTOR. ANY REJECTED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE SITE.
1.1. CERTIFICATE OF COMPLIANCE: A CERTIFICATE OF COMPLIANCE SHALL BE FURNISHED PRIOR TO THE USE OF ANY MATERIALS OR EQUIPMENT. THE CERTIFICATE SHALL BE SIGNED BY THE MANUFACTURER OF THE MATERIALS OR EQUIPMENT. A CERTIFICATE OF COMPLIANCE SHALL BE FURNISHED WITH EACH LOT OF MATERIAL DELIVERED TO THE WORK AND THE LOT SO CERTIFIED SHALL BE CLEARLY IDENTIFIED IN THE CERTIFICATE.
2. POLYVINYL CHLORIDE PIPE (PVC): PVC PIPE SHALL BE MANUFACTURED FOR USE IN WATER SYSTEMS AND SHALL BE DESIGNATED AS CLASS 150 (DR18) OR CLASS 200 (DR14), AND SHALL COMPLY WITH AWWA C900-75 SPECIFICATIONS FOR 12" AND LESS, AND AWWA C905-88 FOR PIPE 14" TO 36" IN DIAMETER. OUTSIDE DIAMETER OF PVC PIPE SHALL BE EQUIVALENT TO CAST-IRON PIPE.
2.1. PVC JOINTS: PVC PIPE SHALL HAVE ELASTOMERIC GASKET JOINTS, EITHER GASKET BELL AND SPIGOT TYPE OR PLAIN END WITH GASKET COUPLING TYPE.
2.2. FITTINGS: SPECIALS AND FITTINGS SHALL BE CAST-IRON CONFORMING TO AWWA SPECIFICATION C100, CLASS D, EXCEPT THAT FITTING SHALL HAVE ALL BELL CONNECTIONS OF STANDARD AWWA DIMENSIONS OR SPECIAL DIMENSIONS AS REQUIRED, OR FITTINGS SHALL BE EQUIPPED WITH ADAPTERS OF THE PROPER CLASS FOR THE SIZE OF PIPE, AS RECOMMENDED BY THE PIPE MANUFACTURER, OR EQUAL. PROTECTIVE COATING SHALL BE IN ACCORDANCE WITH THESE SPECIFICATIONS.
3. 5.4 ASBESTOS-CEMENT PIPE (ACP): ASBESTOS-CEMENT PIPE SHALL CONFORM TO AWWA SPECIFICATION C400, CLASS 150, EXCEPT AS OTHERWISE APPROVED BY THE DEPARTMENT. EVIDENCE THAT PIPE HAS BEEN TESTED AS SPECIFIED BY AWWA SPECIFICATION C400 SHALL BE SUBMITTED TO THE INSPECTOR IF REQUESTED.
3.1. COUPLINGS: RUBBER RING COUPLINGS SHALL BE "FLUID-TITE" AS MANUFACTURED BY KEASBEY & MATTISON COMPANY OR "RING-TITE" AS MANUFACTURED BY JOHNS-MANVILLE COMPANY, OR EQUAL.
3.2. FITTINGS: SPECIALS AND FITTINGS SHALL BE CAST IRON AS SPECIFIED IN THESE SPECIFICATIONS.
4. STEEL PIPE: STEEL PIPE SHALL BE BLACK STEEL CONFORMING TO AWWA SPECIFICATION C-202, AND SHALL HAVE A MINIMUM WALL THICKNESS EQUAL TO THE REQUIREMENTS OF GENERAL ORDER NO. 103 OF THE PUBLIC UTILITIES COMMISSION, STATE OF CALIFORNIA.
4.1. TEMPORARY PIPE: TEMPORARY TRANSMISSION STEEL PIPE SHALL BE DOUBLE DIPPED WITH ASPHALT AND WRAPPED WITH ASBESTOS FELT OR FIBERGLASS IN CONFORMANCE WITH APPENDIX B OF SAID GENERAL ORDER NO. 103.
4.2. PERMANENT PIPE: PERMANENT TRANSMISSION STEEL PIPE SHALL BE LINED AND COATED IN ACCORDANCE WITH SECTION 5.15 OF THESE SPECIFICATIONS.
4.3. SMALL SIZE PIPE FOR BLOW-OFFS OR SIMILAR USES SHALL BE GALVANIZED STEEL CONFORMING TO ASTM DESIGNATION A-120.
4.4. STEEL PIPE JOINTS: FITTINGS AND SPECIAL FABRICATION, "SPECIALS", FOR PIPES 4 INCHES AND LARGER IN DIAMETER SHALL BE OF THE SAME MATERIAL AND THICKNESS AS THE PIPE. "SPECIALS" AND FITTINGS SHALL BE MADE OF STANDARD STEEL TUBE TURNS WITH ENDS TO ACCOMMODATE THE TYPE OF COUPLING SPECIFIED FOR THE PIPE. FITTINGS SHALL BE LINED, COATED AND WRAPPED AS SPECIFIED FOR THE PIPE. "SPECIALS" AND FITTINGS THAT CANNOT BE MECHANICALLY LINED, COATED AND WRAPPED, SHALL BE LINED, COATED AND WRAPPED AS SPECIFIED FOR THE PIPE. "SPECIALS" AND FITTINGS THAT CANNOT BE MECHANICALLY LINED, COATED AND WRAPPED, SHALL BE LINED, COATED AND WRAPPED BY HAND, USING THE SAME MATERIALS AS SPECIFIED FOR THE PIPE, WITH THE SAME NUMBER OF APPLICATIONS OR EACH MATERIAL, CAREFULLY AND SMOOTHLY APPLIED. CAST-IRON FITTINGS CONFORMING TO THESE SPECIFICATIONS MAY BE USED WITH TRANSITION FITTINGS OR ADAPTERS.
4.5. WELDED FITTINGS: STEEL WELDED FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A-234.
4.6. FLANGES: STEEL PIPE FLANGES SHALL CONFORM TO THE REQUIREMENTS OF AWWA SPECIFICATION C-207.
4.7. BOLTS: MATERIAL FOR BOLTS SHALL CONFORM TO THE REQUIREMENTS FOR OPEN HEARTH, FREE CUTTING GRADE BAR STEEL, ASTM DESIGNATION A-107. BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 60,000 PSI. BOLT HEADS SHALL BE EITHER SQUARE OR HEXAGON AND NUTS SHALL BE COLD PRESSURED SEMI-FINISHED HEXAGON.
4.8. GASKETS: FLANGED JOINTS SHALL BE PROVIDED WITH 1/16TH-INCH THICK GASKETS, GRANITE, OR EQUAL.
4.9. VICTAULIC COUPLINGS: WHEN VICTAULIC COUPLINGS ARE INDICATED ON THE DRAWINGS, STYLE 77 DRESSER VICTAULIC COUPLINGS, OR AN APPROVED EQUAL, SHALL BE FURNISHED. THE VICTAULIC COUPLING SHALL BE DESIGNED FOR 150 PSI, WORKING PRESSURE.
4.10. SLEEVE-TYPE COUPLINGS: SLEEVE-TYPE COUPLINGS SHALL BE STYLE 38 DRESSER OR SMITH-BLAIR ADAPTER COUPLINGS OR APPROVED EQUAL, AND SHALL BE OF STEEL WITH STEEL BOLTS, WITHOUT CENTERING RING. THE MIDDLE RING SHALL BE NOT LESS THAN 1/4 INCH IN THICKNESS.
5. VALVES: ALL VALVES SHALL BE CAST-IRON BODY, BRONZE MOUNTED, SOLID BRONZE INTERNAL WORKING PARTS WITH NON-RISING STEMS, AND SHALL BE OPERED BY TURNING COUNTER-CLOCKWISE. BRONZE SHALL BE GRADE 1 AND SHALL CONFORM TO ASTM-B-62 (85-5-5-5) BRONZE (85% COPPER, 5% ZINC, 5% LEAD, AND 5% TIN). VALVES SHALL BE DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150 PSI. VALVES 2 INCHES AND LARGER SHALL CONFORM TO THE REQUIREMENTS OF AWWA C500, EXCEPT AS OTHERWISE PROVIDED IN THESE SPECIFICATIONS. VALVES SMALLER THAN 2 INCHES SHALL CONFORM TO THE REQUIREMENTS OF FEDERAL SPECIFICATION WW-V-54.
5.1. TESTS: EACH VALVE SHALL HAVE THE MANUFACTURER'S INITIALS, PRESSURE RATING, AND YEAR OF MANUFACTURE CAST IN THE BODY. VALVES SHALL BE TESTED IN THE FACTORY AT A HYDRAULIC PRESSURE EQUAL TO TWICE THE SPECIFIED WATER WORKING PRESSURE. FACTORY TEST RESULTS SHALL BE SUPPLIED TO THE DEPARTMENT UPON REQUEST.
5.2. COATING: ALL VALVE BODIES AND CAST-IRON PORTIONS OF THE HOUSINGS AND EXTENSIONS SHALL BE COATED IN ACCORDANCE WITH THESE SPECIFICATIONS.
5.3. GATE VALVES: GATE VALVES SHALL BE DOUBLE-DISC, PARALLEL FACED AND SHALL HAVE A CLEAR WATERWAY EQUAL TO THE FULL NOMINAL DIAMETER OF THE PIPE. RESILIENT SEALED GATE VALVES IN ACCORDANCE WITH AWWA C509-87, ARE APPROVED FOR USE BY THE DEPARTMENT.
5.4. BUTTERFLY VALVES: BUTTERFLY VALVES SHALL BE RUBBER-SEATED AND SHALL COMPLY WITH AWWA C-504, CLASS 125-16 GEAR OPERATED UNLESS OTHERWISE APPROVED BY THE DEPARTMENT. THE DISC SHALL BE OF NI-RESIST ALLOY CAST-IRON AND SHALL ROTATE 90 DEGREES BETWEEN THE FULLY OPEN AND FULLY CLOSED POSITIONS. RUBBER SEATS SHALL BE SECURELY HELD IN-PLACE BY NICKEL CAST-IRON OR TYPE 316 STAINLESS STEEL RETAINING SEGMENTS, AND SHALL NOT REQUIRE BONDING OR CEMENTING TO THE BODY.
5.5. AIR AND VACUUM RELEASE VALVES: AIR AND VACUUM RELIEF VALVES SHALL BE EQUAL TO NO. 31 AUTOMATIC DIAPHRAGM VALVE AS MANUFACTURED BY CLA-VAL CO., NEWPORT BEACH, CALIFORNIA.
6. VALVE BOXES: VALVE BOXES IN SIDEWALKS, PARKWAYS, AND OTHER AREAS SHALL CONSIST OF A CAST IRON VALVE BOX AND RISER AND A CAST IRON LOCKING COVER IN ACCORDANCE WITH THE STANDARD DETAILS. THE CAST-IRON COVERS SHALL BE HOT-DIPPED ASPHALT-COATED AND SHALL HAVE THE WORD "WATER" CAST IN THE TOP. IN ANY AREAS SUBJECT TO TRAFFIC, A CLASS "B" CONCRETE PAD SHALL BE POURED AROUND THE RISER IN ACCORDANCE WITH THE STANDARD DETAILS.
7. WATER SERVICE PIPE AND TUBING: RESIDENTIAL WATER SERVICE PIPE SHALL BE COPPER WATER TUBING, COPPER WATER PIPE, OR POLYETHYLENE PLASTIC TUBING IN ACCORDANCE WITH THE STANDARD DETAILS AND THE FOLLOWING SPECIFICATIONS:
7.1. COPPER WATER TUBING: COPPER WATER TUBING SHALL COMPLY WITH ASTM B88-58, TYPE "K".
7.2. COPPER PIPE: COPPER PIPE SHALL BE SEAMLESS COPPER CONFORMING TO ASTM B42-58.
7.3. POLYETHYLENE PLASTIC TUBING: POLYETHYLENE PLASTIC TUBING SHALL COMPLY WITH ASTM D2239-67-PE 3306 - TYPE II - GRADE 3 (FLARABLE).
7.4. WATER SERVICE PIPE FOR SERVICES LARGER THAN 2 INCHES SHALL COMPLY WITH THE REQUIREMENT OF A.C., P.V.C. AND STEEL PIPE HEREIN.
8. CORPORATION STOPS: ALL CORPORATION STOPS SHALL BE BRONZE OR BRASS, ROUND, WITH INLET FOR EITHER CORPORATION STOP (C.S.) THREAD FOR ASBESTOS-CEMENT, PVC OR CAST-IRON PIPE, OR IRON PIPE STANDARD (I.P.S.) THREAD FOR STEEL PIPE, AND OUTLET FOR THE TYPE OF SERVICE PIPE USED.
9. METER STOPS: ALL METER STOPS SHALL BE BRONZE OR BRASS, WITH INLET FOR THE TYPE OF SERVICE PIPE USED, AND OUTLET FOR THE TYPE OF SERVICE PIPE OR METER COUPLING USED.
10. FIRE HYDRANTS: FIRE HYDRANTS SHALL BE PURCHASED DIRECTLY FROM THE CITY OF BAKERSFIELD FIRE DEPARTMENT. FIRE HYDRANTS SHALL BE MUELLER COMPANY NO. A-24009 COMPLETE WITH PROPER BURY LENGTH, EXCEPT FIRE HYDRANTS SHALL BE JONES COMPANY J-344 WHERE ANGLE FIRE PLUGS HAVE BEEN INDICATED. HOSE THREADS SHALL BE NATIONAL STANDARD HOSE THREADS.
11. 5.12 PORTLAND CEMENT CONCRETE: PORTLAND CEMENT CONCRETE SHALL BE CLASS "B" AND SHALL CONTAIN A MINIMUM OF 5 SACKS (470 POUNDS) OF CEMENT PER CUBIC YARD. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS.
11.1. 5.12.1 MATERIALS FOR CONCRETE SHALL BE PORTLAND CEMENT CONFORMING TO ASTM SPECIFICATIONS FOR TYPE I OR TYPE II, WELL GRADED, SOUND, NON-REACTIVE AGGREGATE, AND CLEAN WATER.
12. STORAGE FACILITIES: STORAGE FACILITIES SHALL BE CONSIDERED A SPECIAL DESIGN FEATURE AND SHALL BE REVIEWED IN LIGHT OF SPECIAL REQUIREMENTS.
13. VERTICAL TURBINE PUMPS: VERTICAL TURBINE PUMPS SHALL BE CONSIDERED A SPECIAL DESIGN FEATURE AND SHALL BE REVIEWED IN LIGHT OF SPECIAL REQUIREMENTS.
14. PROTECTIVE COATINGS: ALL VALVES, FLANGES, BOLTS, FITTINGS AND PIPING FOR INSTALLATION SHALL BE SHOP COATED AND FIELD REPAIRED AS NECESSARY PRIOR TO BACKFILLING IN CONFORMANCE WITH THE FOLLOWING SCHEDULE:
14.1. EXTERIOR SURFACES OF BURIED COAL TAR EPOXY OR AWWA C 205 STEEL PIPE TO A POINT 4 CEMENT MORTAR INCHES ABOVE FINISH GRADE.
14.2. INTERIOR SURFACES OF STEEL COAL TAR EPOXY OR AWWA C 205 PIPE. FUSION EPOXY
14.3. ALL EXPOSED FERROUS METAL RED PRIMER 2 COATS SURFACES.
14.4. BURIED VALVES, COUPLINGS COAL TAR ENAME 2 COATS AND OTHER SURFACES NOT 16 MILS OTHERWISE DESIGNATED TO BE CEMENT MORTAR COATED. ALL SURFACES TO BE PAINTED OR COATED SHALL BE PROPERLY CLEANED WITH APPROVED EQUIPMENT BEFORE APPLICATION OF COATING MATERIALS. THE REMOVAL OF OIL OR GREASE SHALL BE ACCOMPLISHED WITH SUITABLE SOLVENTS BEFORE MECHANICAL CLEANING IS STARTED. ANY GRIT OR DUST REMAINING ON THE SURFACE FROM THE CLEANING OPERATIONS SHALL BE REMOVED BEFORE COATING MATERIALS ARE APPLIED.
15. MISCELLANEOUS: MATERIALS OR EQUIPMENT NOT INCLUDED IN THESE SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE STANDARD DETAILS.
15.1. SPECIAL EQUIPMENT OR MATERIALS NOT INCLUDED IN THE SPECIFICATIONS OR STANDARD DETAIL SHALL BE SUBMITTED TO THE DEPARTMENT FOR REVIEW AND APPROVAL.
16. 6.2 TRENCHING: THE MINIMUM WIDTH OF TRENCH SHALL BE OUTSIDE DIAMETER OF THE PIPE PLUS 12 INCHES. A MINIMUM OF 6 INCHES OF CLEARANCE SHALL BE PROVIDED FROM THE OUTSIDE FACE OF THE PIPE TO THE TRENCH WALL. EXCESSIVE TRENCH WIDTHS GREATER THAN 16 INCHES MORE THAN THE PIPE OUTSIDE DIAMETER SHALL BE AVOIDED WHENEVER POSSIBLE.
16.1. PIPE DEPTH: FOR WATER MAINS AND SERVICES 12 INCHES AND LESS IN INSIDE DIAMETER, A MINIMUM OF 30 INCHES OF COVER FROM TOP OF PIPE TO FINISHED GRADE, OR FOR PIPE LOCATED WITHIN STREETS, A MINIMUM OF 30 INCHES OF COVER FROM TOP OF PIPE TO GUTTER FLOWLINE, SHALL BE MAINTAINED. FOR WATER MAINS LARGER THAN 12 INCHES IN DIAMETER, 36 INCHES OF COVER SHALL BE MAINTAINED, MEASURED FOR THE VARIOUS PIPE LOCATIONS AS DEFINED IN THIS SECTION.
16.2. WHEN WATER MAINS CROSS ROADWAYS THAT HAVE NOT BEEN CONSTRUCTED TO FULL ULTIMATE WIDTH, ADEQUATE TRENCH DEPTH SHALL BE PROVIDED SUCH THAT MINIMUM COVER REQUIREMENTS AS STATED ARE SATISFIED WHEN THE ROADWAY IS CONSTRUCTED TO ITS ULTIMATE WIDTH.
16.3. TRENCH BOTTOM: THE BOTTOM OF TRENCH SHALL BE EXCAVATED TO THE ESTABLISHED GRADE LINE OF THE PIPE AND SHALL BE SMOOTH, EVEN AND FLAT FOR THE ENTIRE WIDTH OF TRENCH. AT EACH JOINT OF PIPE THE BOTTOM OF THE TRENCH SHALL BE RECESSED IN SUCH A MANNER AS TO BELIEVE THE PIPE BALL OR COUPLING OF ALL LOAD AND TO ENSURE CONTINUOUS BEARING ALONG THE PIPE BARREL. WHERE EXCAVATION ENCOUNTERS BOULDERS, ROCK, HARDPAN, OR OTHER HARD OR UNYIELDING MATERIAL, THE TRENCH SHALL BE EXCAVATED A MINIMUM OF 6 INCHES BELOW THE ESTABLISHED GRADE, AND BACKFILLED TO PROPER GRADE WITH MATERIAL ACCEPTABLE TO THE DEPARTMENT. BACKFILL MATERIAL SHALL BE COMPACTED TO 90% OF RELATIVE COMPACTION, WHERE EXCAVATION ENCOUNTERS SOFT, UNSTABLE, OR EXCESSIVELY WET MATERIAL, SUCH MATERIAL SHALL BE REMOVED TO A DEPTH AS DIRECTED BY THE ENGINEER, AND REPLACED WITH MATERIAL ACCEPTABLE TO THE DEPARTMENT.
16.4. NUISANCE WATER: PIPE TRENCH AND ANY OTHER EXCAVATION SHALL BE KEPT ENTIRELY FREE OF WATER UNTIL ALL PIPE HAS BEEN PLACED AND APPROVED. WATER SHALL BE DISPOSED IN SUCH A MANNER AS TO NOT CAUSE INJURY TO PUBLIC OR PRIVATE PROPERTY, NOR CREATE A PUBLIC NUISANCE.
16.5. BACKFILL: BACKFILL SHALL BE INITIALLY PLACED AND COMPACTED FROM THE PIPE BED OR FOUNDATION TO THE "SPRINGLINE" OF THE PIPE. BACKFILL SHALL BE SUFFICIENTLY RODDED OR HAND-TAMPED TO ENSURE REQUIRED COMPACTION IS OBTAINED ON ALL SIDES OF THE PIPE. SUBSEQUENT BACKFILL SHALL BE PLACED IN LAYERS NOT EXCEEDING 6 INCHES IN COMPACTED THICKNESS, AND SHALL BE COMPACTED BY APPROVED METHOD SO AS TO NOT CAUSE INJURY OR DISTURBANCE OF THE PIPE. FLOODING OF TRENCHES MAY BE PERMITTED BY THE DEPARTMENT PROVIDED FOUNDATION AND BACKFILL MATERIAL IS SUFFICIENTLY GRANULAR AND OPEN GRADED IN NATURE SUCH THAT REQUIRED COMPACTION MAY BE OBTAINED. BACKFILL MATERIAL SHALL BE FREE OF ALL TRASH, DEBRIS, ROCKS LARGER THAN 3/4" IN ANY DIMENSION, ORGANIC OR OTHER DELETERIOUS MATERIAL. COMPACTION SHALL BE OBTAINED IN ACCORDANCE WITH THE STANDARD DETAILS. MAXIMUM DENSITY AND OPTIMUM MOISTURE SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D-1557. COSTS OF COMPACTION TESTING SHALL BE BORNE BY THE DEVELOPER AND SHALL BE PERFORMED BY A COMPANY OR INDIVIDUAL PROPERLY LICENSED TO PERFORM SUCH WORK.
16.6. TRENCH SAFETY: EXCAVATIONS SHALL BE SUPPORTED IN CONFORMANCE WITH THE RULES, ORDERS, AND REGULATIONS OF THE INDUSTRIAL ACCIDENT COMMISSION AND THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA.
17. PIPE PLACEMENT & MATERIAL HANDLING: ALL PIPE AND PIPE MATERIAL SHALL BE HANDLED, STORED, LAID, BLOCKED AND JOINED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS EXCEPT AS OTHERWISE PROVIDED IN THE STANDARD DETAILS AND THESE SPECIFICATIONS.
17.1. EVERY PRECAUTION SHALL BE TAKEN TO PREVENT FOREIGN MATERIAL FROM ENTERING THE PIPE DURING INSTALLATION. ALL OPEN ENDS OF PIPE SHALL BE PROPERLY COVERED AT THE END OF THE DAY TO PREVENT THE ENTRY OF FOREIGN MATTER, ANIMALS OR CHILDREN. NO TOOLS, RAGS, OR OTHER EQUIPMENT SHALL BE PLACED IN THE PIPE DURING INSTALLATION.

- 17.2. HANDLING: HOISTING OF PIPE BY MECHANICAL MEANS SHALL REQUIRE USE OF A CLOTH BELT OR CONTINUOUS FIBER ROPE THAT DOES NOT SCRATCH THE PIPE SURFACE. PIPE SHALL BE CAREFULLY LOWERED INTO TRENCH SUCH THAT PIPE BEDDING OR FOUNDATION WILL NOT BE DISTURBED AND PIPE WILL NOT BE INJURED. ANY PIPE THAT IS MARRED, CRACKED, OR SCRATCHED FORMING A CLEAR DEPRESSION SHALL BE REJECTED.
17.3. CAST IRON FITTINGS: CAST IRON FITTINGS SHALL BE LOWERED INTO TRENCH BY MECHANICAL MEANS. CAST IRON FITTINGS SHALL BE RUNG WITH A LIGHT HAMMER WHILE SUSPENDED TO DETECT CRACKS AND SHALL BE INSPECTED FOR SCRATCHES OF THE SURFACE COATING AND OTHER DEFECTS. ANY MATERIAL REJECTED SHALL BE PROMPTLY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH SUITABLE MATERIAL. WHEN THE SEAL BETWEEN THE PIPE AND THE BELL END OF THE FITTING IS MADE WITH A RIGID JOINTING MATERIAL, THE LENGTH OF THE PIPE SHALL NOT EXCEED 3 FEET, 3 INCHES FOR PIPE 6 INCHES AND LESS IN INSIDE DIAMETER. WHEN THE PIPE IS 9 INCHES AND MORE IN DIAMETER, THE LENGTH OF THE PIPE SHALL NOT EXCEED 6 FEET, 6 INCHES. WHEN A RUBBER RING-TYPE CAST-IRON FITTING IS USED TO MAKE THE JOINT, LENGTHS OF PIPE UP TO 13 FEET MAY BE USED FOR ENTERING BELLS OF FITTINGS.
17.4. STORAGE: PVC PIPE SHALL NOT BE STACKED HIGHER THAN 4 FEET NOR STACKED WITH WEIGHT ON THE BELLS. IF PVC PIPE IS STORED FOR PROLONGED PERIODS IT SHALL BE PROTECTED FROM ULTRAVIOLET LIGHT BY COVERING.
17.5. A.C. PIPE INSTALLATION: THE MANUFACTURER'S INSTALLATION PROCEDURES FOR A.C. PIPE SHALL BE STRICTLY ADHERED TO EXCEPT AS OTHERWISE PROVIDED HEREIN. A SPECIALLY PREPARED NON-TOXIC WATER SOLUBLE LUBRICANT SHALL BE APPLIED TO THE MACHINED PIPE ENDS JUST PRIOR TO INSTALLATION OF COUPLINGS. RUBBER RINGS SHALL BE THOROUGHLY WIPED CLEAN JUST PRIOR TO LUBRICATION AND COUPLING. PROPER LOCATION OF RUBBER RINGS SHALL BE CHECKED WITH A FEELER GAGE AT ALL POINTS AROUND THE CIRCUMFERENCE OF THE PIPE. THE FINAL POSITION OF THE COUPLING OR SLEEVE SHALL BE CENTERED OVER THE PIPE ENDS. PIPE ENTERING OR PASSING THROUGH RIGID STRUCTURES SUCH AS CONCRETE VAULTS OR BUILDING FOUNDATIONS SHALL NOT HAVE A LENGTH EXTENDING MORE THAN 3 FEET, 3 INCHES BEYOND THE FACE OF THAT STRUCTURE. WHEN THE PIPE IS 6 INCHES OR LESS IN DIAMETER, AND NOT MORE THAN 6 FEET, 6 INCHES WHEN THE PIPE SIZE IS 8 INCHES AND MORE IN DIAMETER, PIPE SHALL NOT BE DEFLECTED MORE THAN THE MAXIMUM ANGLE SPECIFIED BY THE MANUFACTURER.
17.6. P.V.C. PIPE INSTALLATION: THE MANUFACTURER'S RECOMMENDATIONS SHALL BE STRICTLY ADHERED TO EXCEPT AS OTHERWISE PROVIDED HEREIN. THE BELL AND SPIGOT SHALL BE THOROUGHLY WIPED CLEAN JUST PRIOR TO COUPLING. THE RUBBER GASKET SHALL BE INSERTED, AND THE SPIGOT END SHALL BE LUBRICATED JUST PRIOR TO JOINING PIPES. THE RUBBER RING GASKET SHALL BE CHECKED FOR PROPER PLACEMENT WITH A FEELER GAGE AFTER JOINING PIPE. SPECIFICATIONS FOR LENGTHS OF P.V.C. PIPE ENTERING AND EXITING STRUCTURES, DEFLECTING PIPE, AND CUTTING PIPE SHALL CONFORM TO THE REQUIREMENTS OF A.C. PIPE IN THESE SPECIFICATIONS.
17.7. SETTING VALVES AND VALVE BOXES: VALVES SHALL BE SET TRULY PLUMB WITH VALVE BOXES DIRECTLY OVER THE WRENCH NUT OF THE VALVE. THE VALVE BOX SHALL NOT TRANSMIT SHOCK OR STRESS TO THE VALVE. AFTER BEING CORRECTLY POSITIONED FOR LINE AND GRADE, EARTH FILL SHALL BE CAREFULLY TAMPED AROUND THE VALVE BOX.
17.8. SETTING AIR AND VACUUM RELIEF VALVE INSTALLATIONS: THE GATE VALVE IMMEDIATELY BELOW THE RELIEF VALVE SHALL BE SET TO THE GRADE INDICATED ON THE DRAWINGS OR APPROVED BY THE ENGINEER. SUFFICIENT CLEARANCE SHALL BE PROVIDED BELOW THE VALVE FOR THE INSTALLATION OF A FIRE PLUG PAD TO SUPPORT A PROTECTIVE ENCLOSURE.
17.9. SETTING HYDRANTS AND ANGLE FIRE PLUGS: ALL HYDRANTS SHALL STAND PLUMB AND SHALL HAVE THEIR NOZZLES PARALLEL WITH OR AT RIGHT ANGLES TO THE CURB, WITH THE PUMPER NOZZLE FACING THE CURB. EXCEPT THAT HYDRANTS HAVING TWO HOSE NOZZLES 90 DEGREES APART SHALL BE SET WITH EACH NOZZLE FACING THE CURB AT AN ANGLE OF 45 DEGREES. HYDRANTS SHALL BE SET TO THE ESTABLISHED GRADE EXCEPT THAT WHERE NOT SHOWN, NOZZLES SHALL BE AT LEAST 18 INCHES ABOVE GROUND. UNLESS OTHERWISE NOTED ON THE DRAWINGS OR DIRECTED, EACH HYDRANT SHALL BE CONNECTED TO THE MAIN WITH A 6 INCH BRANCH LINE CONTROLLED BY AN INDEPENDENT 6 INCH GATE VALVE. THE BOWL OF EACH HYDRANT SHALL BE WELL BRACED AGAINST UNDISTURBED EARTH AT THE END OF THE TRENCH WITH CONCRETE BACKING. EACH ANGLE FIRE PLUG SHALL BE CONNECTED TO THE MAIN WITH A 4 INCH BRANCH LINE, CONTROLLED BY AN INDEPENDENT 4 INCH GATE VALVE. ANGLE FIRE PLUG SHALL BE SET WITH THE 2-1/2 INCH OUTLET FACING THE CURB AND SHALL BE SET TO ESTABLISHED GRADE EXCEPT, THAT WHERE NOT SHOWN, NOZZLE SHALL BE AT LEAST 18 INCHES ABOVE GROUND.
17.10. CONCRETE THRUST BLOCKS: CONCRETE THRUST BLOCKS SHALL BE INSTALLED ACCORDING TO THE STANDARD DETAILS AND SHALL BE POURED BETWEEN UNDISTURBED GROUND AND THE FITTING TO BE ANCHORED. THE CONCRETE SHALL BE PLACED SUCH THAT THE PIPE, VALVES, AND FITTINGS WILL BE ACCESSIBLE FOR REPAIRS.
18. HYDROSTATIC (LEAKAGE) TEST: AFTER COMPLETION OF THE PIPELINE INSTALLATION, THE LINE SHALL BE TESTED UNDER THE HYDROSTATIC PRESSURE TEST OF 150 PSI FOR A PERIOD OF NOT LESS THAN 4 HOURS FOR EACH SECTION OF PIPE TESTED. THE PRESSURE SHALL BE MAINTAINED BY RESTORING THE TEST PRESSURE WHENEVER IT FALLS AN AMOUNT OF 25 PSI. AT THE CONCLUSION OF THE 4 HOURS, THE TEST PRESSURE SHALL BE RESTORED AND ALL WATER USED DURING THE TESTS SHALL BE ACCURATELY MEASURED TO DETERMINE THE ACTUAL LEAKAGE.
18.1. THE DEVELOPER OR DEVELOPER'S CONTRACTOR SHALL PROVIDE SUITABLE CALIBRATED TANKS FOR MEASUREMENT OF LEAKAGE AND SHALL FURNISH NECESSARY BULKHEADS, PIPING, PUMPS, POWER, LABOR, AND SHALL PERFORM ALL WORK REQUIRED FOR FILLING THE PIPELINE AND FOR MAINTAINING THE REQUIRED WATER PRESSURE. THE DEPARTMENT OR INSPECTOR WILL PROVIDE CALIBRATED GAGES AND WILL MAKE NECESSARY READINGS.
18.2. THE DEVELOPER, AT HIS OWN EXPENSE SHALL MAKE ALL NECESSARY REPAIRS OF THE WATER SYSTEM UNTIL THE PIPE IS FOUND TO BE SATISFACTORY.
18.3. ALLOWABLE LEAKAGE RATE: REGARDLESS OF THE RATE OF LEAKAGE, A DETECTABLE LEAKAGE POINT SOURCE SHALL BE FIXED. THE FOLLOWING ARE MAXIMUM ACCEPTABLE LEAKAGE RATES FOR A.C. AND P.V.C. PIPE OVER A 24 HOUR PERIOD. P.V.C. PIPE - MAXIMUM ACCEPTABLE LEAKAGE RATE IS 10 GALLONS PER DAY PER INCH PIPE DIAMETER PER MILE OF PIPE OVER A 24 HOUR PERIOD. A.C. PIPE: MAXIMUM ACCEPTABLE LEAKAGE RATE IS 25 GALLONS PER DAY PER INCH PIPE DIAMETER PER MILE OF PIPE OVER A 24 HOUR PERIOD.
19. DISINFECTON OF WATER LINES: AFTER HYDROSTATIC TESTING HAS BEEN COMPLETED, THE ENTIRE NEWLY CONSTRUCTED WATER SYSTEM INCLUDING PIPE, VALVES, FITTINGS, HYDRANTS, AND OTHER ACCESSORIES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C-601 AND AS SPECIFIED HEREIN.
19.1. CHLORINE APPLICATION: THE DISINFECTING AGENT SHALL BE CHLORINE IN LIQUID OR "TABLET" FORM APPLIED IN A QUANTITY SUFFICIENT TO PRODUCE A SOLUTION OF AT LEAST 50 PARTS PER MILLION BY WEIGHT IN SAMPLES TAKEN AT THE MOST DISTANT POINTS OF THE SYSTEM. AFTER THE REQUIRED SOLUTION OF CHLORINE IS OBTAINED THE PIPES SHALL REMAIN CLOSED FOR 24 HOURS. AFTER A 24 HOUR DURATION, SAMPLES SHALL BE TAKEN AT THE SAME LOCATION AS THE INITIAL SAMPLE AND SHALL SHOW NO LESS THAN 10 PARTS PER MILLION BY WEIGHT, FAILING SHALL REQUIRE ADDITIONAL DISINFECTON AS DIRECTED BY THE DPT.
19.2. DURING THE DISINFECTON PROCESS, ALL VALVES AND OTHER APPURTENANCES SHALL BE OPERATED WHILE THE SYSTEM IS FILLED WITH HEAVILY CHLORINATED WATER.
19.3. FLUSHING: AFTER THE 24 HOUR STERILIZATION PERIOD THE LINE SHALL BE THOROUGHLY FLUSHED TO REMOVE ALL STRONGLY CHLORINATED WATER UNTIL SAMPLES TAKEN AT VARIOUS POINTS ARE DIRECTED TEST NOT IN EXCESS OF 1 PART PER MILLION. FOR THE PROTECTION OF PROPERTY DURING FLUSHING, THE ENGINEER MAY REQUIRE THE CONTRACTOR TO USE HOSES OR PIPE TO CONVEY THE WASTE WATER TO LOCATIONS WHERE NO DAMAGE WILL RESULT. CARE SHALL BE TAKEN TO PREVENT STRONG CHLORINE SOLUTION IN THE LINE BEING TREATED FROM FLOWING BACK INTO THE EXISTING SYSTEM.
20. BACTERIOLOGICAL TESTS: THE DEPARTMENT SHALL REQUIRE A BACTERIOLOGICAL TEST. BACTERIOLOGICAL TESTS SHALL BE PERFORMED BY A QUALIFIED LABORATORY AND THE REQUIREMENTS OF SUCH TESTS SHALL BE IN ACCORDANCE WITH STANDARDS ESTABLISHED BY THE STATE DEPARTMENT OF HEALTH SERVICES.
21. FIRE FLOW TESTS: THE CITY OF BAKERSFIELD FIRE DEPARTMENT WILL TEST NEWLY CONSTRUCTED WATER SYSTEMS TO DETERMINE IF MINIMUM STANDARDS FOR THE FIRE FLOW HAVE BEEN MET.
22. COSTS FOR TESTING: THE DEVELOPER OR DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE VARIOUS ACCEPTANCE TESTS AND ANY NECESSARY REPAIRS, EXCEPT AS OTHERWISE STATED IN THESE SPECIFICATIONS.

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02/01/16 DATE
MATTHEW K. VOIVILA RCE 43130 EXP. 3/31/16
REVISIONS
IDENTIFICATION STAMP
DW. OF THE STATE ARCHITECT
APR 03 11 68 AM '10
DATE 02/10/16

GENERAL NOTES & SPECIFICATIONS
GRADING & SITE IMPROVEMENT PLANS
FOR HEALTH CLINIC
MCKINLEY ELEMENTARY SCHOOL
604 4TH STREET
BAKERSFIELD, CALIFORNIA

BCSD
BAKERSFIELD CITY SCHOOL DISTRICT

JOB No.: 15-677
DWG NO.: BM01
DATE: 02/01/2016
DRAWN BY: ADA
CHECKED BY: MKV
SHEET 3 OF 8 SHEETS



**PLUMBING SPECIFICATIONS FOR BAKERSFIELD CITY SCHOOL DISTRICT:**

**WATER PIPING AND FITTINGS BELOW GRADE**

1. ALL GATE VALVES 2 INCH AND LARGER SHALL BE FLANGED / MECHANICAL JOINT RESILIENT SEAT GATE VALVES.
2. ALL GATE VALVES 1 1/2 INCHES AND SMALLER SHALL BE 150 NIBCO/STOCKHAM/CRANE OR EQUAL.
3. NO BALL VALVES PERMITTED BELOW GRADE.
4. ALL WATER LINES 2 INCH AND LARGER SHALL BE SCHEDULE 80 PVC, 4 INCH AND LARGER MAY BE PVC C900.
5. ALL WATER LINES 1 1/2 INCHES AND SMALLER MAY BE SCHEDULE 40 PVC.
6. ALL SOLVENT WELDED JOINTS TO BE MADE WITH GRAY, HEAVY-BODIED, MEDIUM-SETTING INDUSTRIAL GRADE PVC SOLVENT CEMENT.
7. ALL PIPING THAT RISES UP FROM BELOW GRADE SHALL BE TYPE L COPPER WITH BRAZED JOINTS AND WRAPPED WITH 40 MILS OF PIPE WRAP TAPE. THE USE OF FEMALE PVC ADAPTERS IS PROHIBITED.
8. ALL VALVE BOXES SHALL BE CHRISTY G5 OR EQUAL.
9. ALL VALVES ARE TO BE SLEEVED WITH 6 INCH PIPE FROM VALVE TO 6 INCHES FROM THE TOP OF THE YARD BOX.

**WATER PIPING AND FITTINGS ABOVE GRADE**

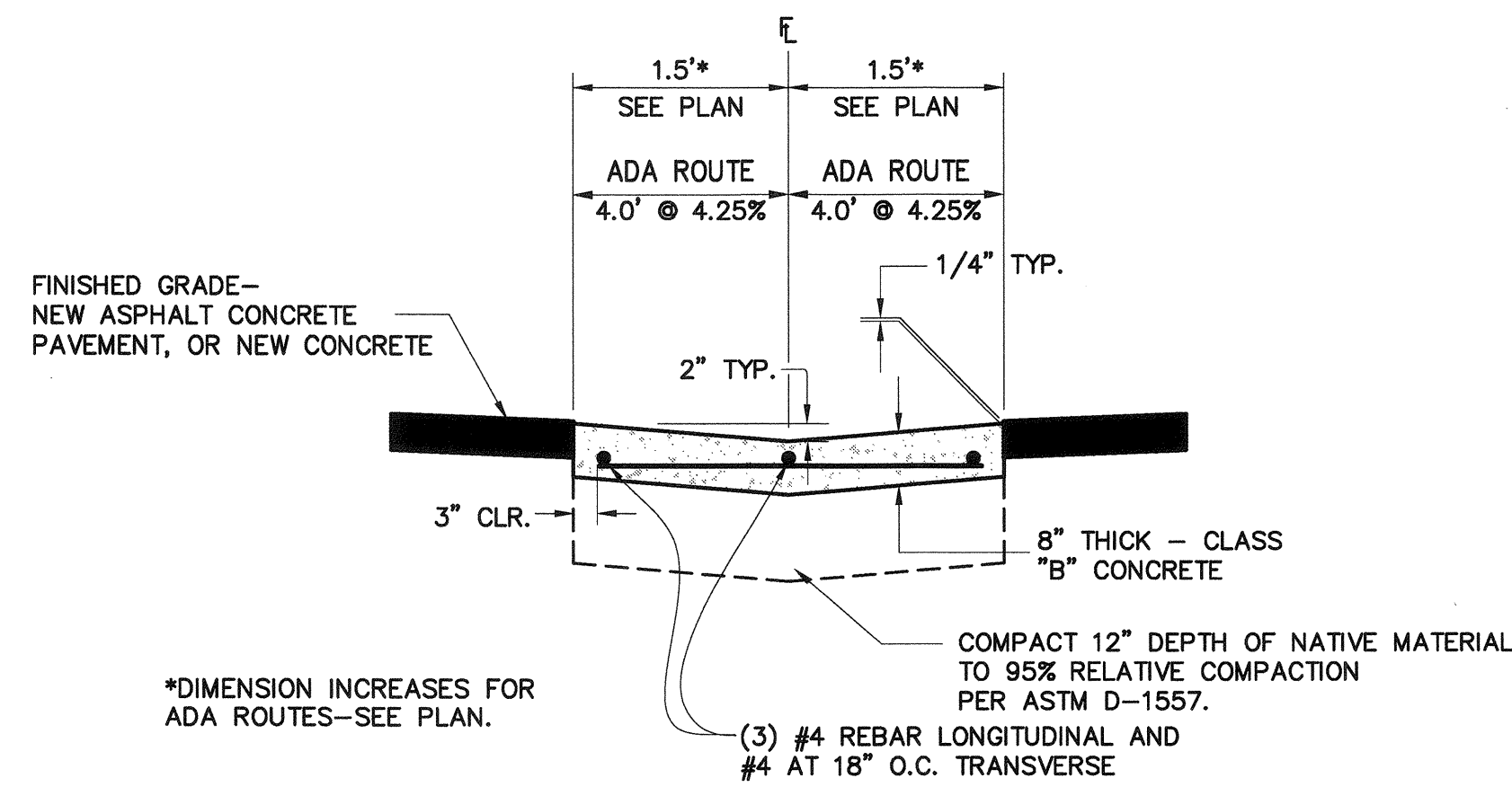
1. GATE VALVES TO BE NIBCO / STOCKHAM / CRANE OR EQUAL.
2. BALL VALVES ARE TO HAVE LEVER HANDLES, TFE SEAT AND O-RING SEALS.
3. ALL WATER LINE SHALL BE TYPE L COPPER PIPE WITH SOLDERED JOINTS/PRO PRESS OR EQUAL.
4. ALL STUB OUT NIPPLES SHALL BE RED BRASS OR TYPE K COPPER.

**SANITARY SEWER AND STORM DRAIN LINES BELOW GRADE**

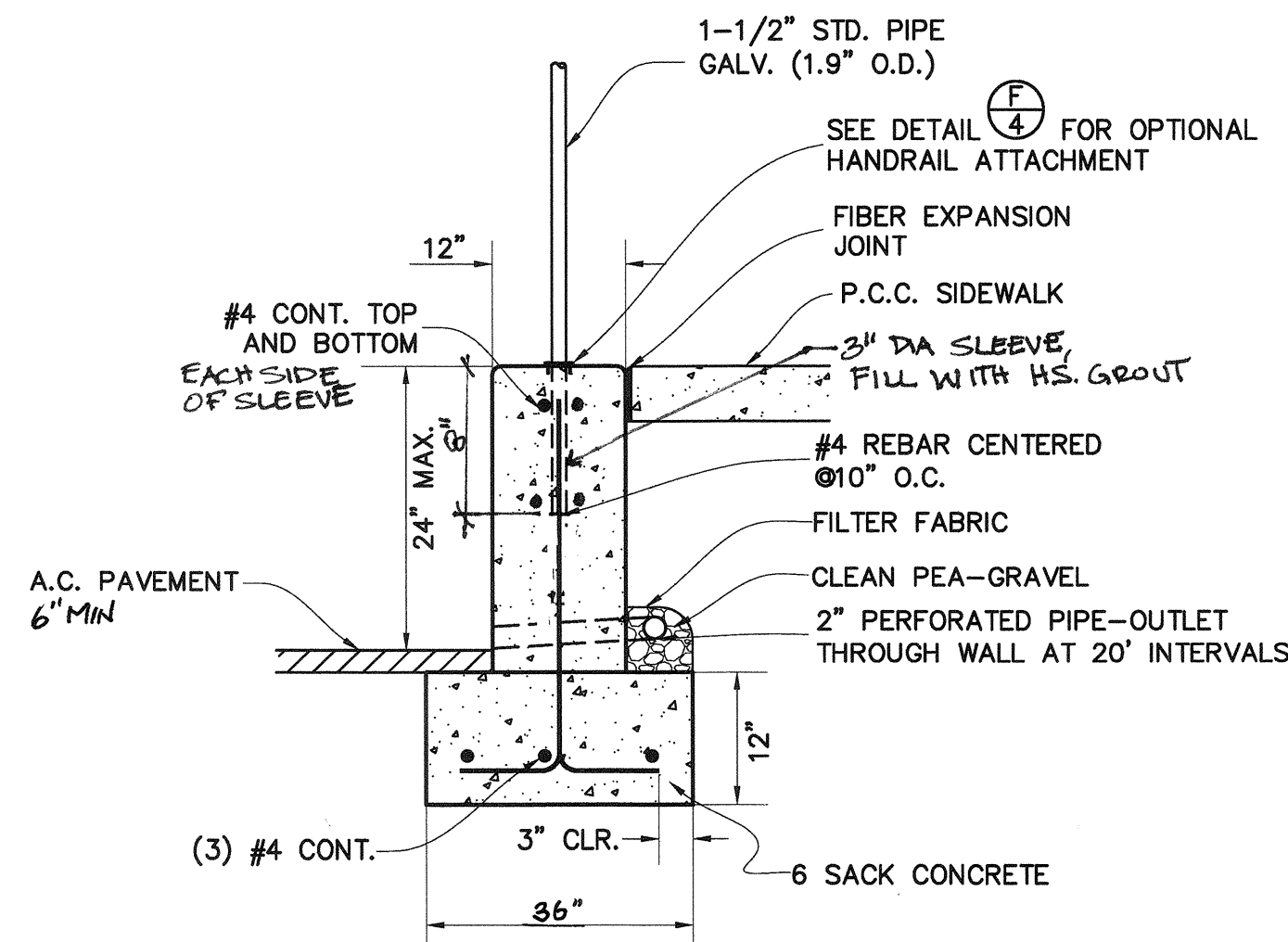
1. ALL SEWER AND STORM DRAIN PIPING SHALL BE CAST IRON, SCHEDULE 40 PVC DWV, SCHEDULE 40 ABS DWV OR SDR 35 PIPE AND FITTINGS.
2. ALL CLEAN OUTS SHALL BE INSTALLED WITH A WYE 1/8 BEND COMBINATION. ALL END OF RUN CLEAN OUTS AND CLEAN OUTS INSTALLED AT CHANGE OF DIRECTION SHALL BE INSTALLED WITH (2) 1/8 BENDS OR LONG SWEEP 1/4 BEND.
3. ALL CLEAN OUT BOXES SHALL BE CHRISTY G5 OR EQUAL.

**MISCELLANEOUS VALVES AND MATERIALS**

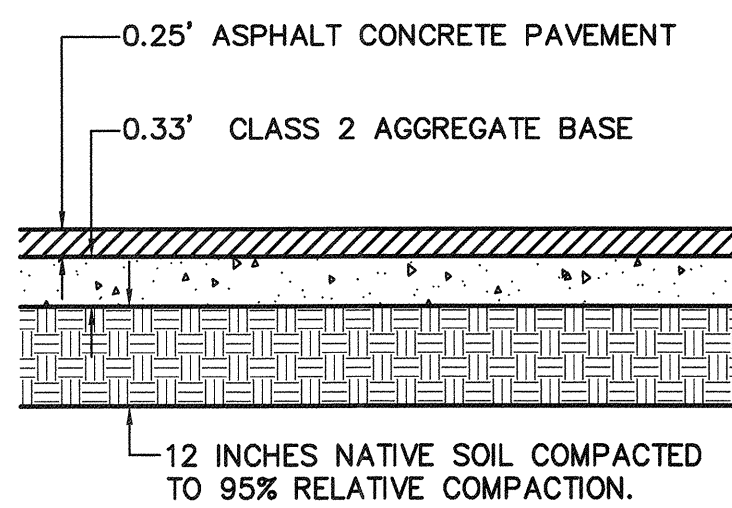
4. GAS VALVES SHALL BE RESIN LUBRICATED PLUG STYLE VALVE, DEZURIK SERIES 400 OR EQUAL.
5. AT LOCATIONS WHERE CONSTRUCTION CHANNEL IS USED WITH COPPER PIPE, THE PIPING SHALL BE SECURED WITH CUSH-A CLAMP BRAND STRAP WITH INSERT OR EQUAL.
6. CONDENSATE LINES SHALL BE TYPE M COPPER PIPE WITH SOLDERED OR PRO PRESS FITTINGS AND SHALL BE INSTALLED WITH PLUGGED CLEAN OUT TEES AT EVERY CHANGE OF DIRECTION. PROVIDE TRAPS AT ALL AIR CONDITIONING EQUIPMENT.
7. ALL PIPING SHALL RUN PARALLEL WITH BUILDING SURFACES UNLESS APPROVED BY DISTRICT.



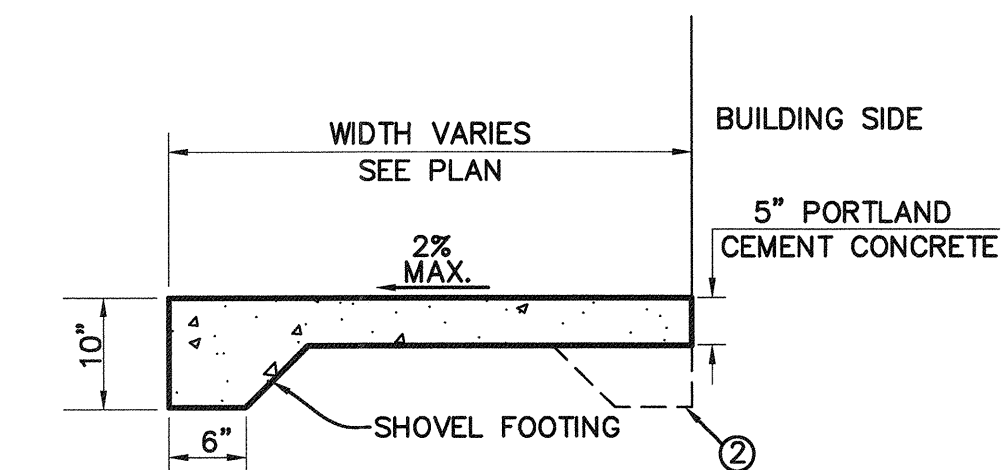
**D CONCRETE "V" GUTTER**  
N.T.S.



**E P.C.C. RETAINING WALL**  
N.T.S.



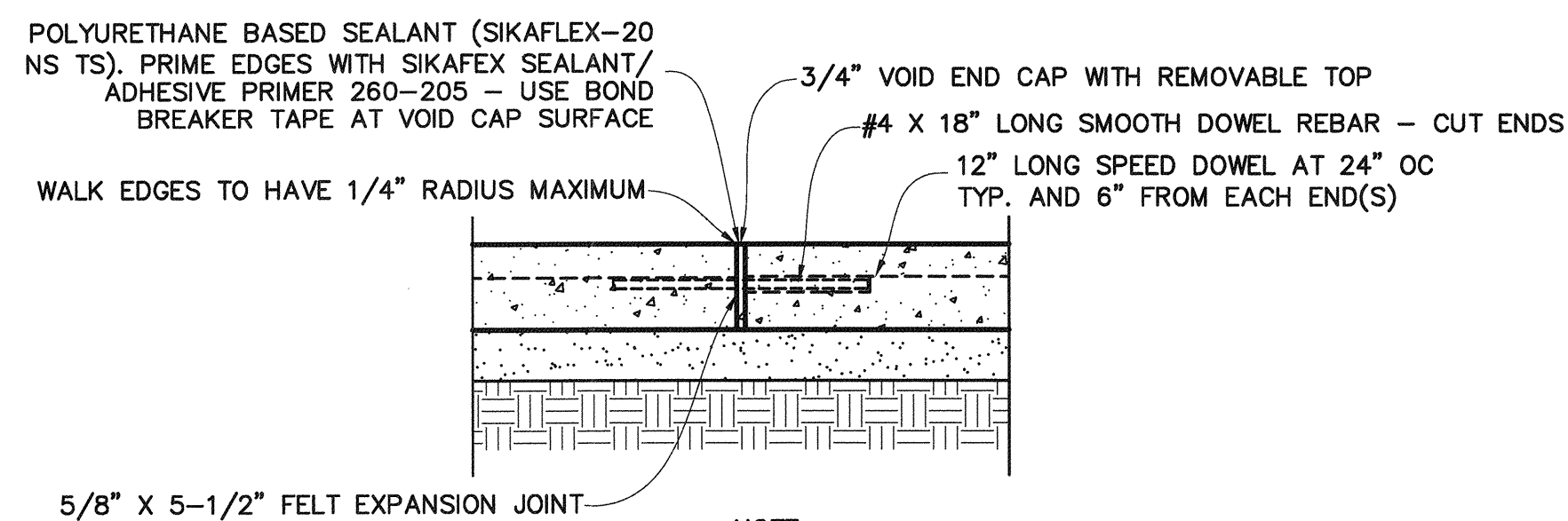
**A A.C. PAVING SECTION**  
N.T.S.



**DETAIL NOTES:**

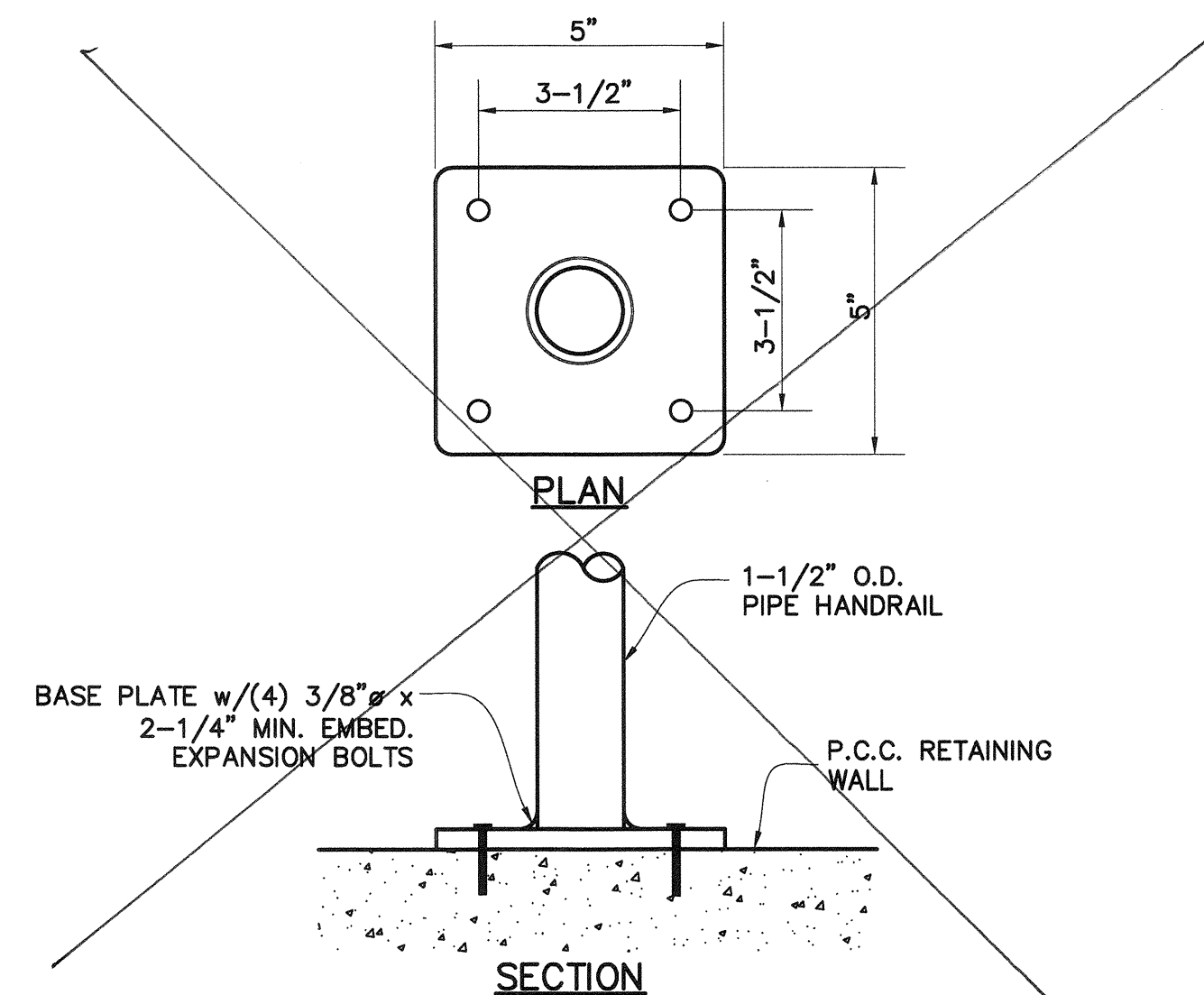
1. OBTAIN 95% RELATIVE COMPACTION FOR A DEPTH OF 12\"/>

**B PORTLAND CEMENT CONCRETE SIDEWALK**  
N.T.S.

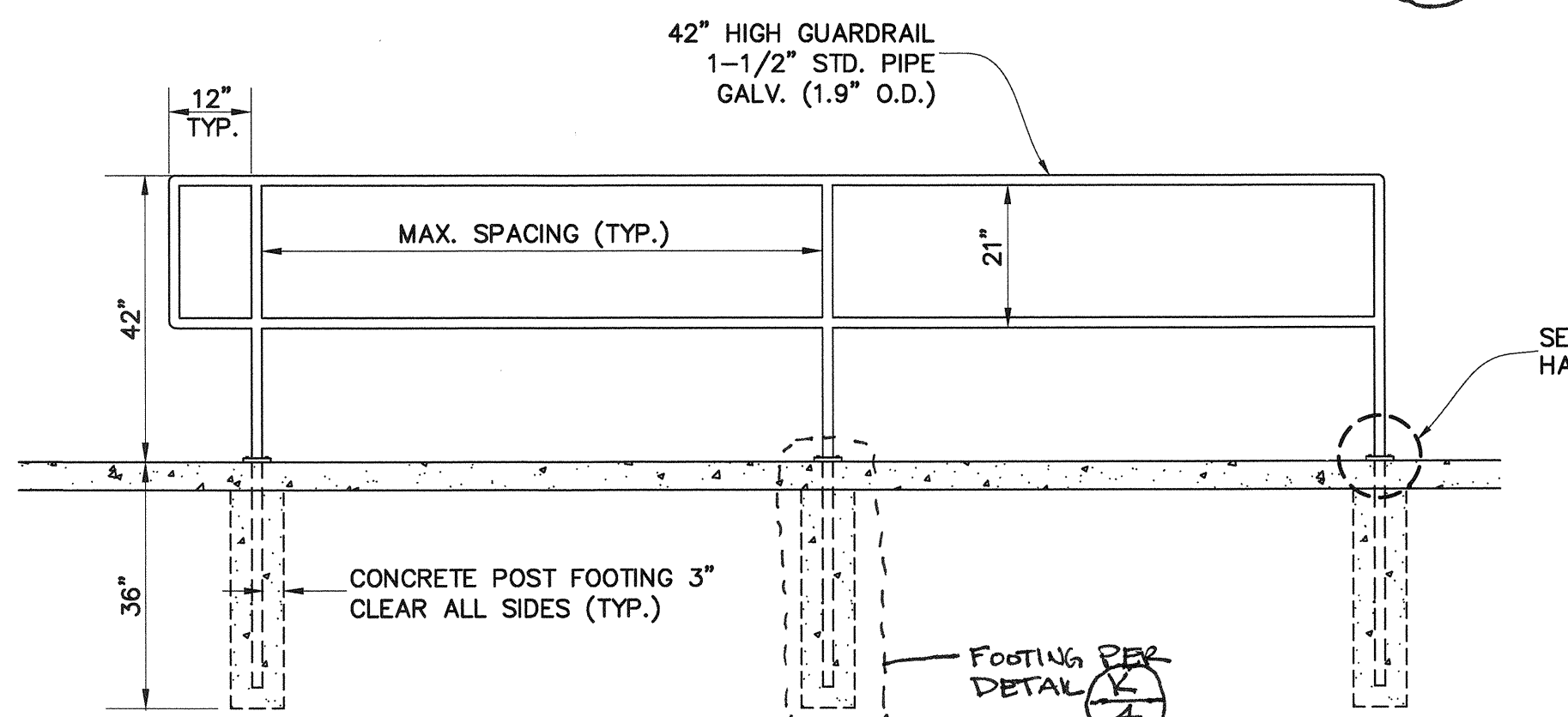


NOTE: EXPANSION JOINTS SHALL BE INSTALLED AT ALL "JOINS" WITH EXISTING PORTLAND CEMENT CONCRETE, AND AT 20' INTERVALS EACH WAY.

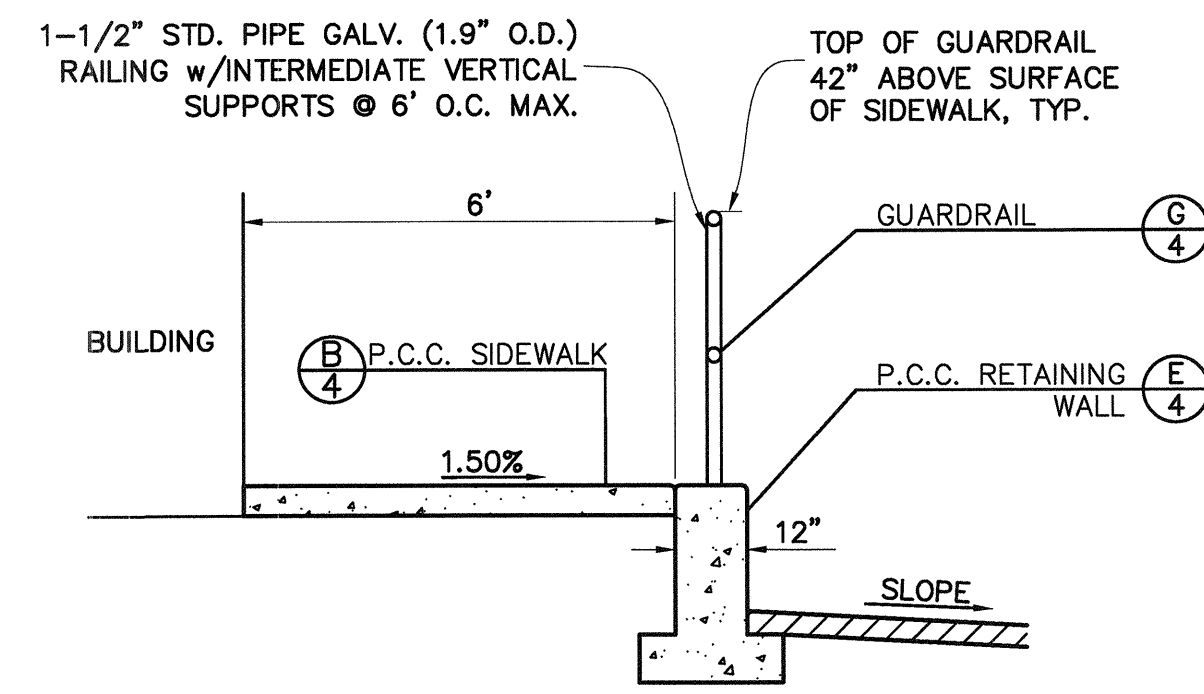
**C EXPANSION JOINT AT CONCRETE "JOINS"**  
N.T.S.



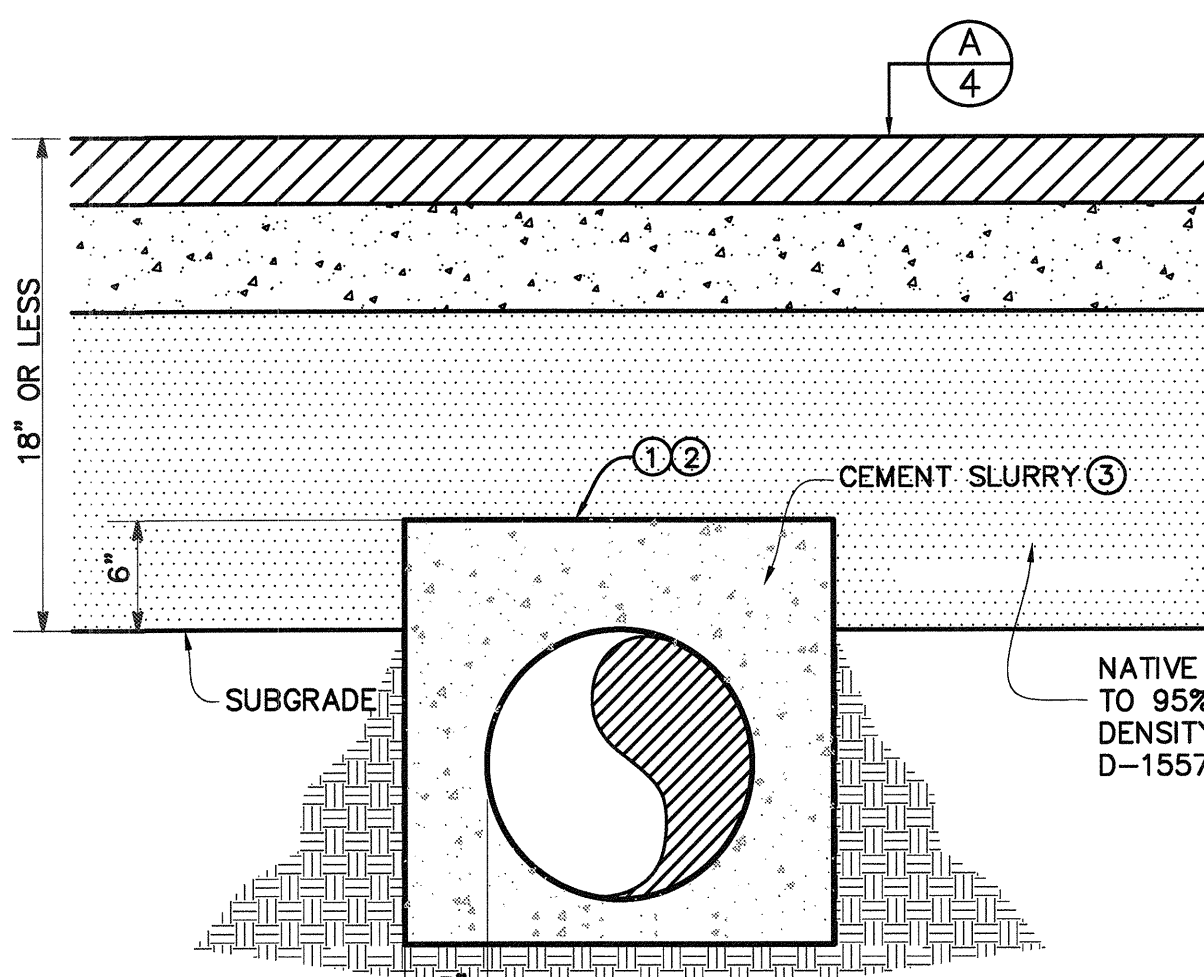
**F HANDRAIL ATTACHMENT (OPTIONAL)**  
N.T.S.



**G GUARD RAIL DETAIL**  
N.T.S.



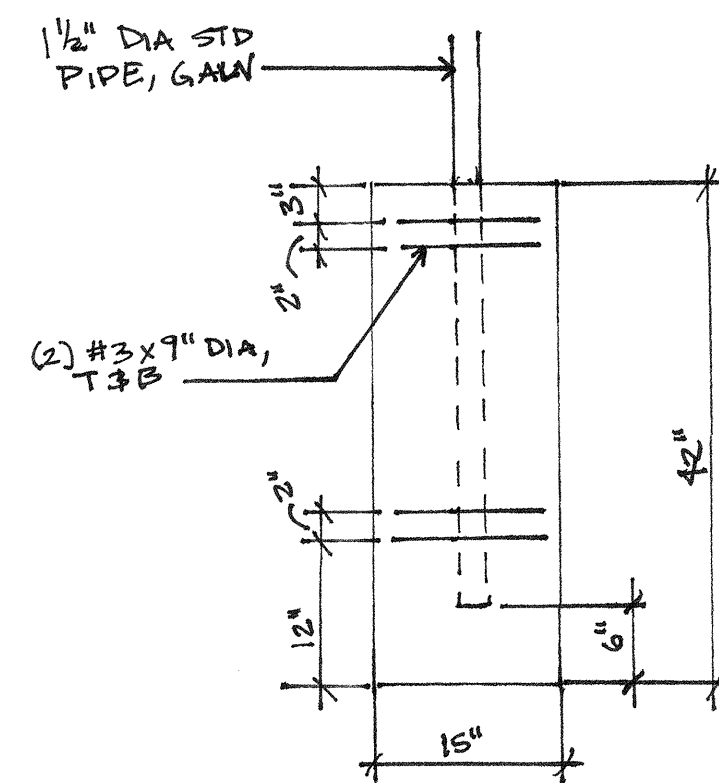
**H SIDEWALK & RETAINING WALL**  
N.T.S.



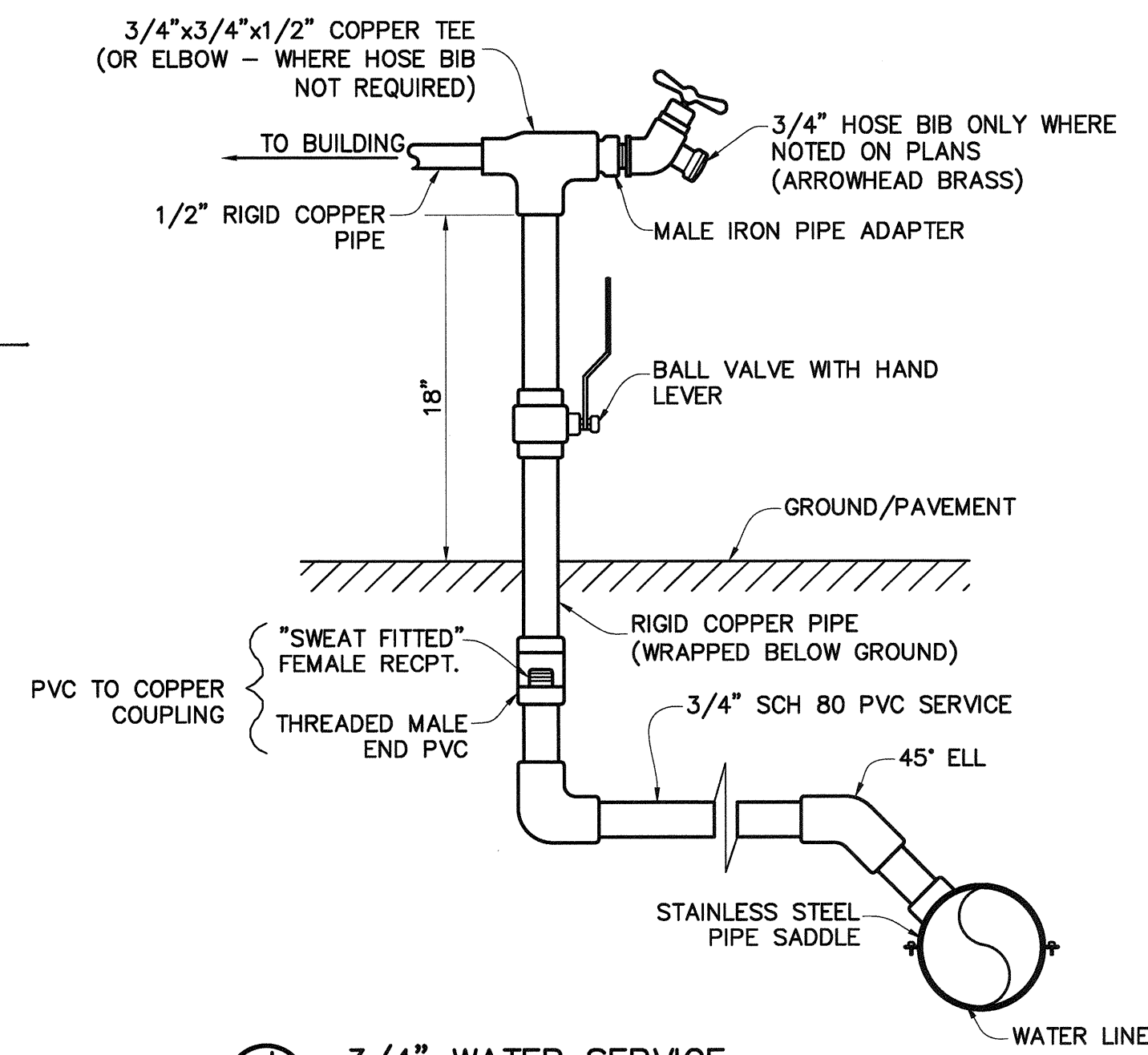
**DETAIL NOTES:**

1. SLURRY BACKFILL TO BE USED IN PAVED AREAS WHERE COVER IS 18\"/>

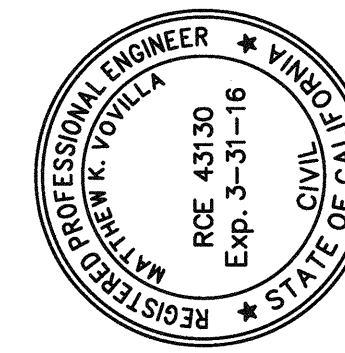
**I TRENCH SLURRY BACKFILL**  
N.T.S. (WHEN LESS THAN 18" OF COVER)



**K FOOTING DETAIL**  
3/4" = 1'-0"



**J 3/4" WATER SERVICE**  
N.T.S.



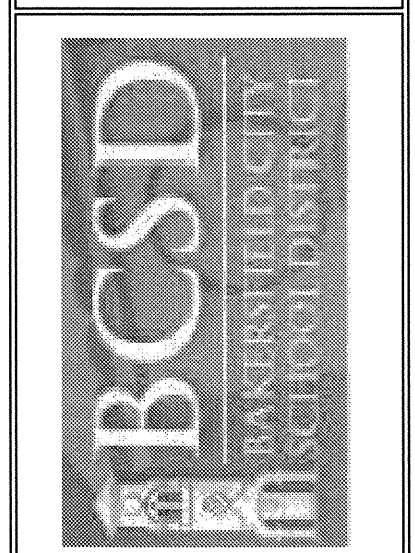
IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT

APP03 116810  
AC: [Signature] FL: [Signature] SS: [Signature] ELL  
DATE: 02/16/16

**LAV//Pinnacle Engineering**  
5401 Business Park South, Suite 204, Bakersfield, CA 93309  
Phone: (661) 869-0184 Fax: (661) 377-0076

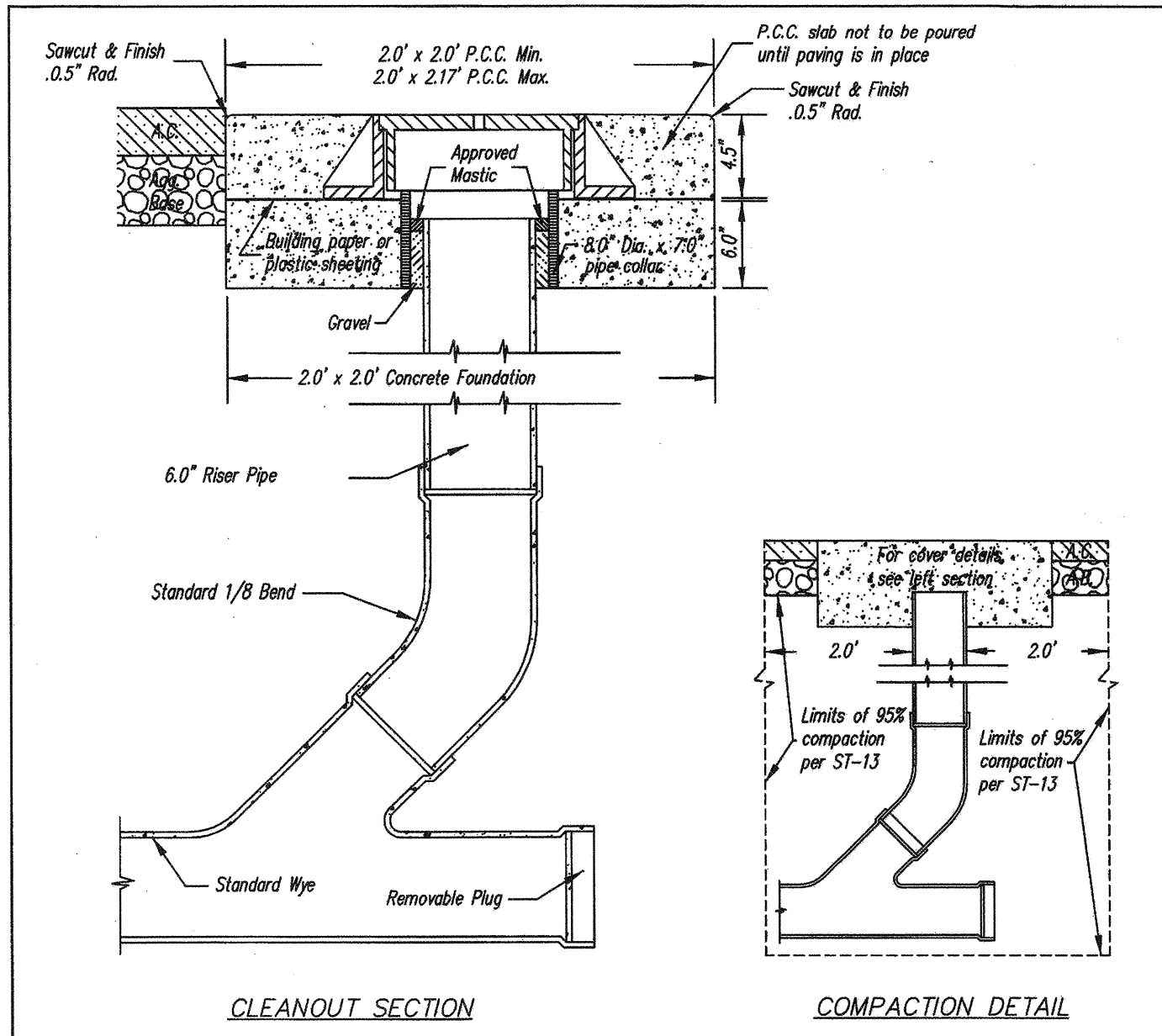
|                    |                        |
|--------------------|------------------------|
| 02/01/16           | DATE                   |
| REVISIONS          |                        |
| MATTHEW K. NOVILLA | RCE 43130 EXP. 3/31/16 |

**DETAILS & TYPICAL SECTIONS GRADING & SITE IMPROVEMENT PLANS FOR HEALTH CLINIC MCKINLEY ELEMENTARY SCHOOL 604 4TH STREET BAKERSFIELD, CALIFORNIA**



|             |             |
|-------------|-------------|
| JOB No.:    | 15-677      |
| DWG NO.:    | BM01        |
| DATE:       | 02/01/2016  |
| DRAWN BY:   | ADA         |
| CHECKED BY: | MKV         |
| SHEET       | 4           |
|             | OF 8 SHEETS |

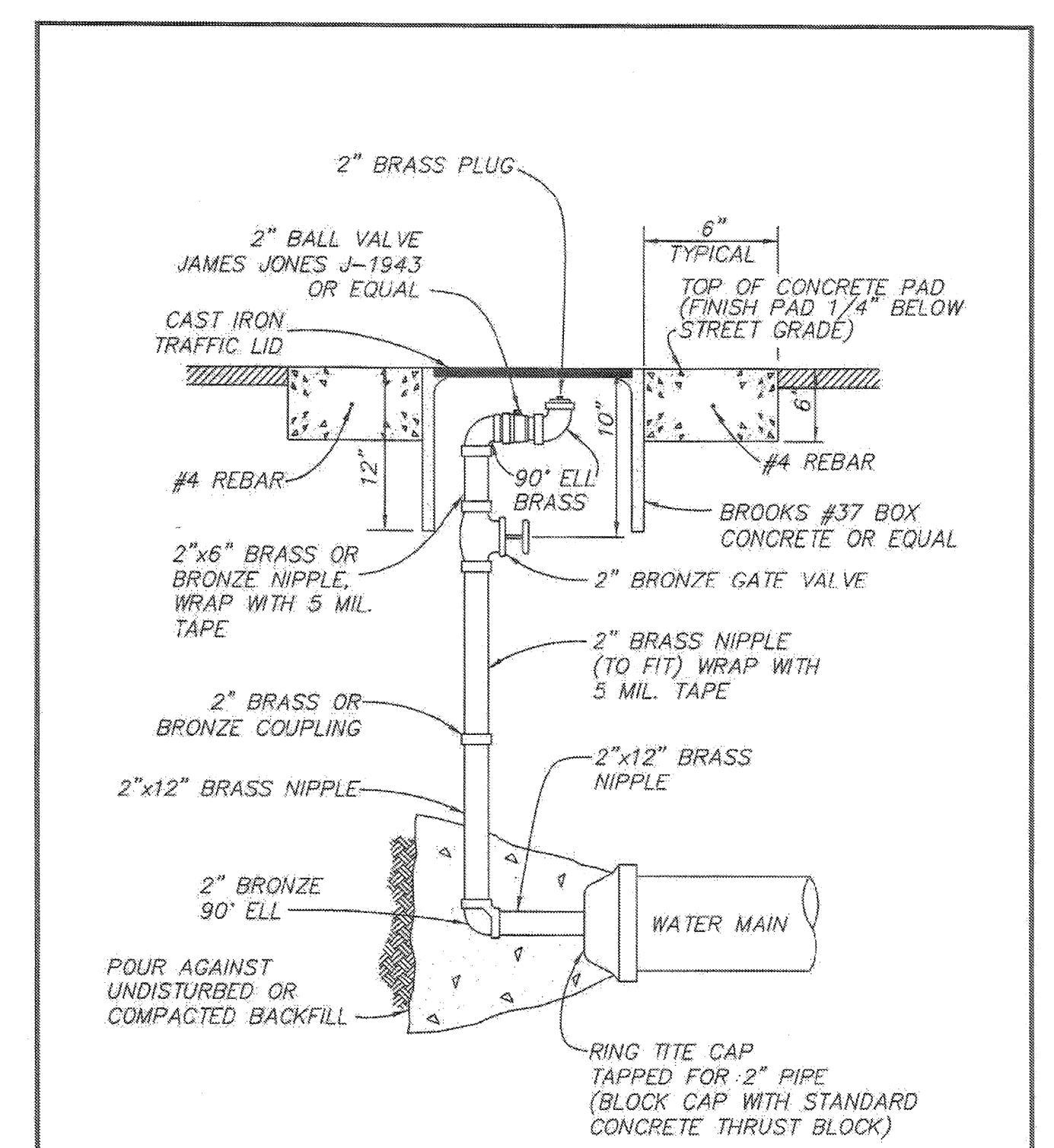




- NOTES:
- All work shall conform to the applicable sections of the specifications entitled "Standard Specifications, State of California, Business and Transportation Agency, Department of Transportation", approved current edition.
  - Pipe material shall meet 1.4.2
  - All concrete shall be Class "A".
  - Cleanout frame and cover shall conform to the City of Bakersfield standard SW-6.
  - Concrete shall have no additives unless prior written approval is obtained from the City Engineer.
  - Concrete shall be cured with a white pigmented curing compound per Sec. 90-7.01B of the standard specs.
  - Top of slab shall be troweled smooth and given a light broom finish.
  - 95% relative compaction is required per city std. ST-13.
  - Building paper or plastic shall be placed between the 0.5" concrete foundation and 4.5" slab.
  - Fill cavity between pipe and collar with gravel to within 0.5" of top of pipe. Caulk remaining 0.5" with approved mastic to top of pipe for water tight seal.
  - Collar shall be VCP, ABS, or PVC pipe.
  - Finished PCC slab to be 0.125" min. and 0.25" max. below finished paving surface.

|   |  |                                |
|---|--|--------------------------------|
| FILENAME: SW-SREV                               |  | DATE: 6/2/99                   |
| DRAWN: JCU                                      |  | CHECKED: M. SHAW               |
| SCALE: N.T.S.                                   |  | SHEET NO. SW-5                 |
| APPROVED: CITY ENGINEER PUBLIC WORKS DEPARTMENT |  | CITY OF BAKERSFIELD CALIFORNIA |

**A**  
**5** STANDARD CLEANOUT  
N.T.S.

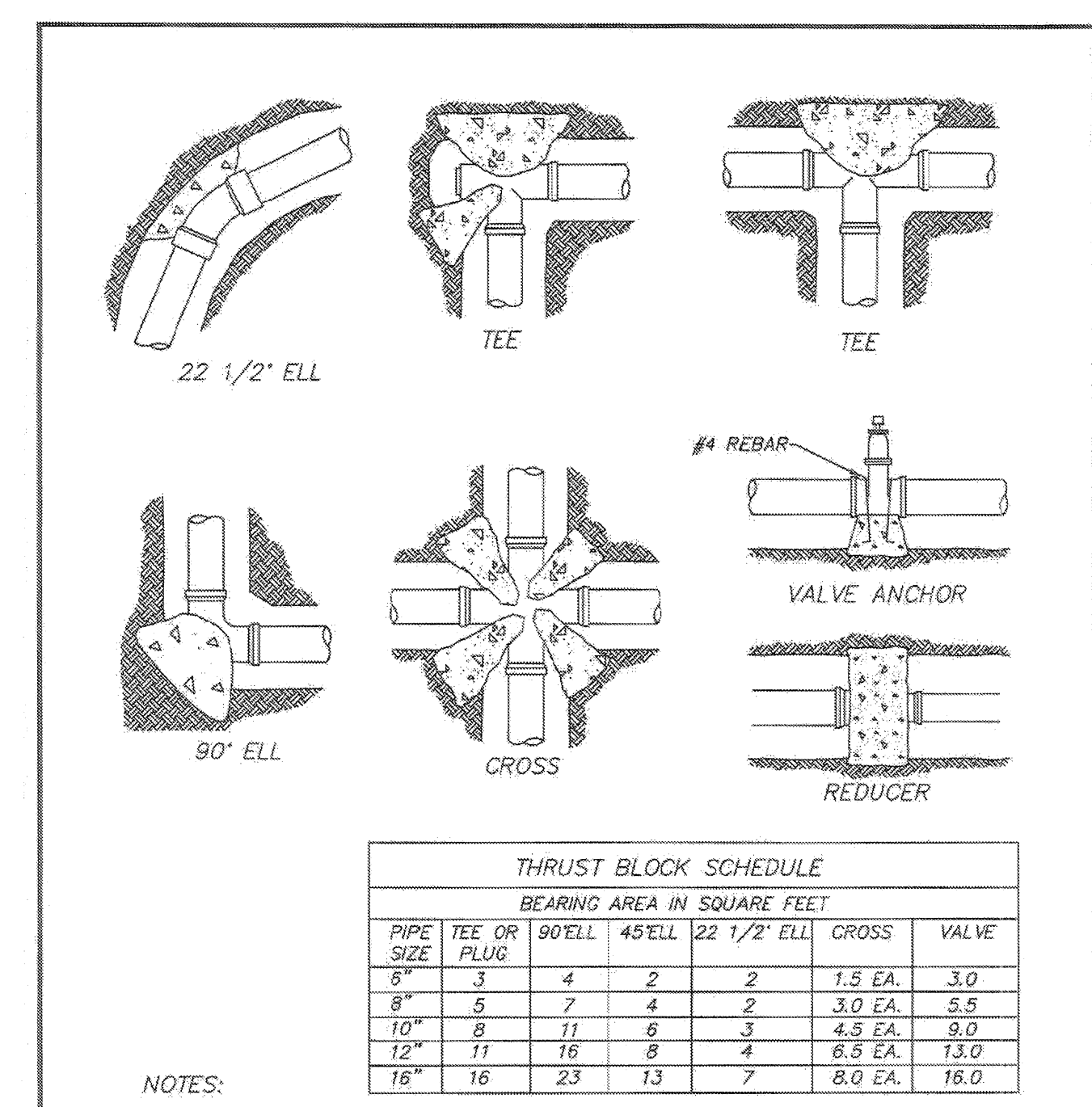


WATER RESOURCES DEPARTMENT  
CITY OF BAKERSFIELD, CALIFORNIA

BLOWOFF ASSEMBLY - PAVED AREA

APPROVED: *John R. Cas* DATE: *April 27, 2009* PLATE No. W-4  
MANAGER - WATER RESOURCES DEPARTMENT DATE REV. 1-9-09

**B**  
**5** BLOWOFF ASSEMBLY  
N.T.S.



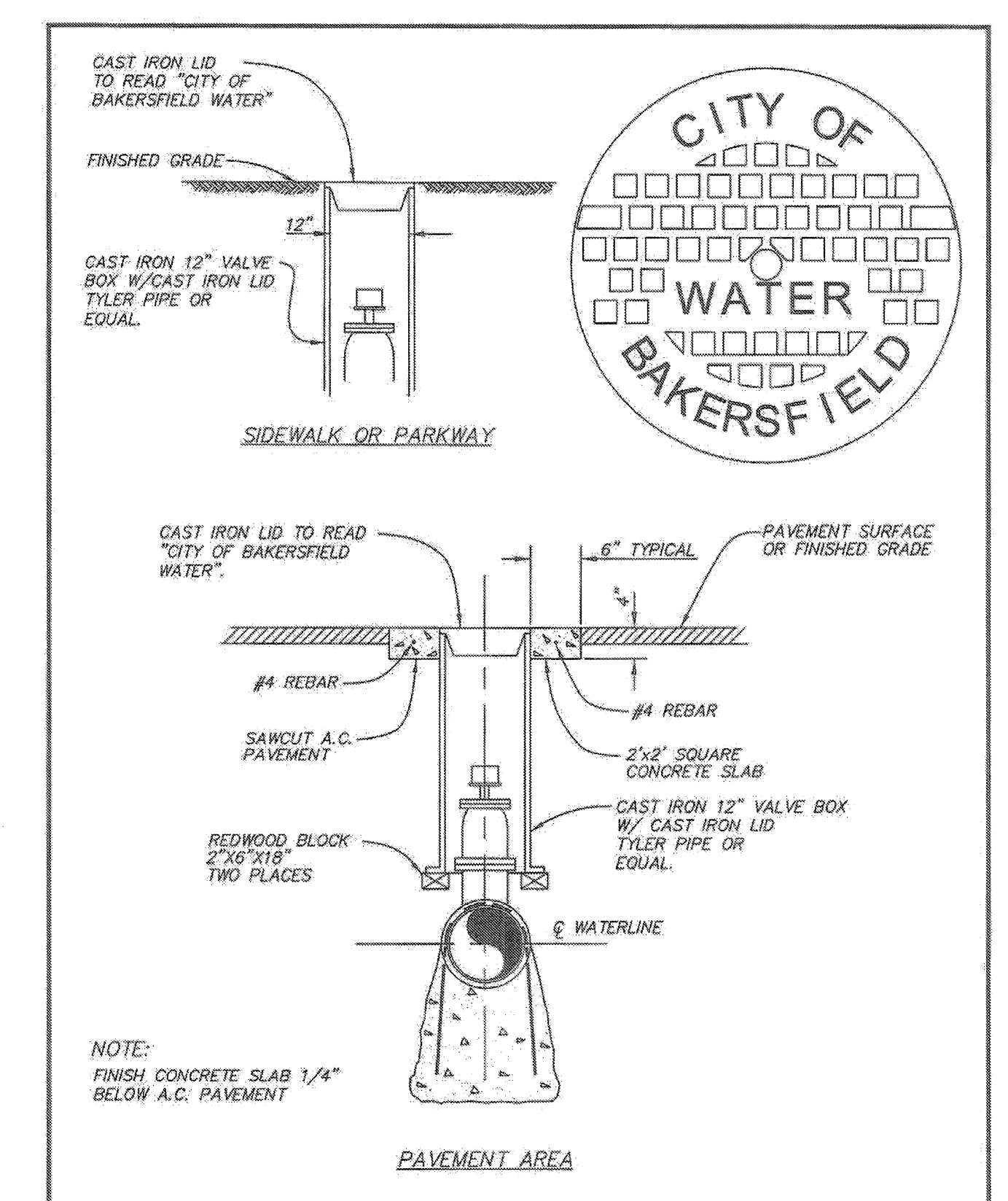
- NOTES:
- ALL VALVES, FITTINGS, AND DIRECTIONAL CHANGES ARE TO BE HELD IN PLACE BY CONCRETE THRUSTS BLOCKS.
  - BEARING AREAS INDICATED ARE BASED ON ALLOWABLE SOIL PRESSURE OF 1500 PSF.
  - CONCRETE IS NOT TO BEAR AGAINST PIPE. THRUST BLOCK TO ONLY BE IN CONTACT WITH FITTING.
  - THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
  - JOINTS SHALL BE KEPT CLEAR OF CONCRETE.

WATER RESOURCES DEPARTMENT  
CITY OF BAKERSFIELD, CALIFORNIA

THRUST BLOCK DETAIL

APPROVED: *John R. Cas* DATE: *April 27, 2009* PLATE No. W-2  
MANAGER - WATER RESOURCES DEPARTMENT DATE REV. 1-9-09

**C**  
**5** THRUST BLOCKS  
N.T.S.



WATER RESOURCES DEPARTMENT  
CITY OF BAKERSFIELD, CALIFORNIA

VALVE BOX DETAIL

APPROVED: *John R. Cas* DATE: *May 4, 2009* PLATE No. W-12  
MANAGER - WATER RESOURCES DEPARTMENT DATE REV. 1-9-09

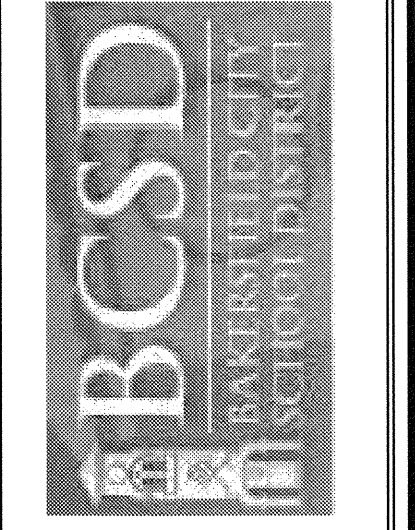
**D**  
**5** VALVE BOX  
N.T.S.

PROFESSIONAL ENGINEER  
MATTHEW K. VOYLLA  
RCE 43130  
Exp. 3-31-16  
DIV. OF THE STATE ARCHITECT  
IDENTIFICATION STAMP  
AP03 116810  
ACA FLS SS ELL  
DATE 02/16/16

**LAV//Pinnacle Engineering**  
5401 Business Park South, Suite 204, Bakersfield, CA 93309  
Phone: (661) 869-0184 Fax: (661) 377-0076

|                        |           |
|------------------------|-----------|
| 02/01/16               | DATE      |
| RCE 43130 EXP. 3/31/16 | DATE      |
| MATTHEW K. VOYLLA      | REVISIONS |

DETAILS & TYPICAL SECTIONS  
GRADING & SITE IMPROVEMENT PLANS  
FOR HEALTH CLINIC  
MCKINLEY ELEMENTARY SCHOOL  
604 4TH STREET  
BAKERSFIELD, CALIFORNIA



|             |            |
|-------------|------------|
| JOB No.:    | 15-877     |
| DWG NO.:    | BM01       |
| DATE:       | 02/01/2016 |
| DRAWN BY:   | ADA        |
| CHECKED BY: | MKY        |
| SHEET       | 5          |
| OF 8 SHEETS |            |

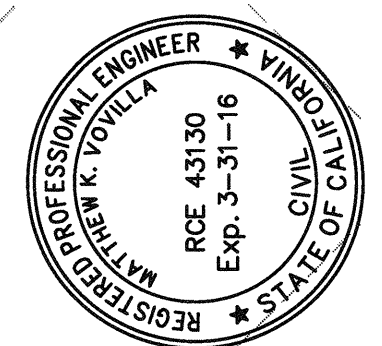
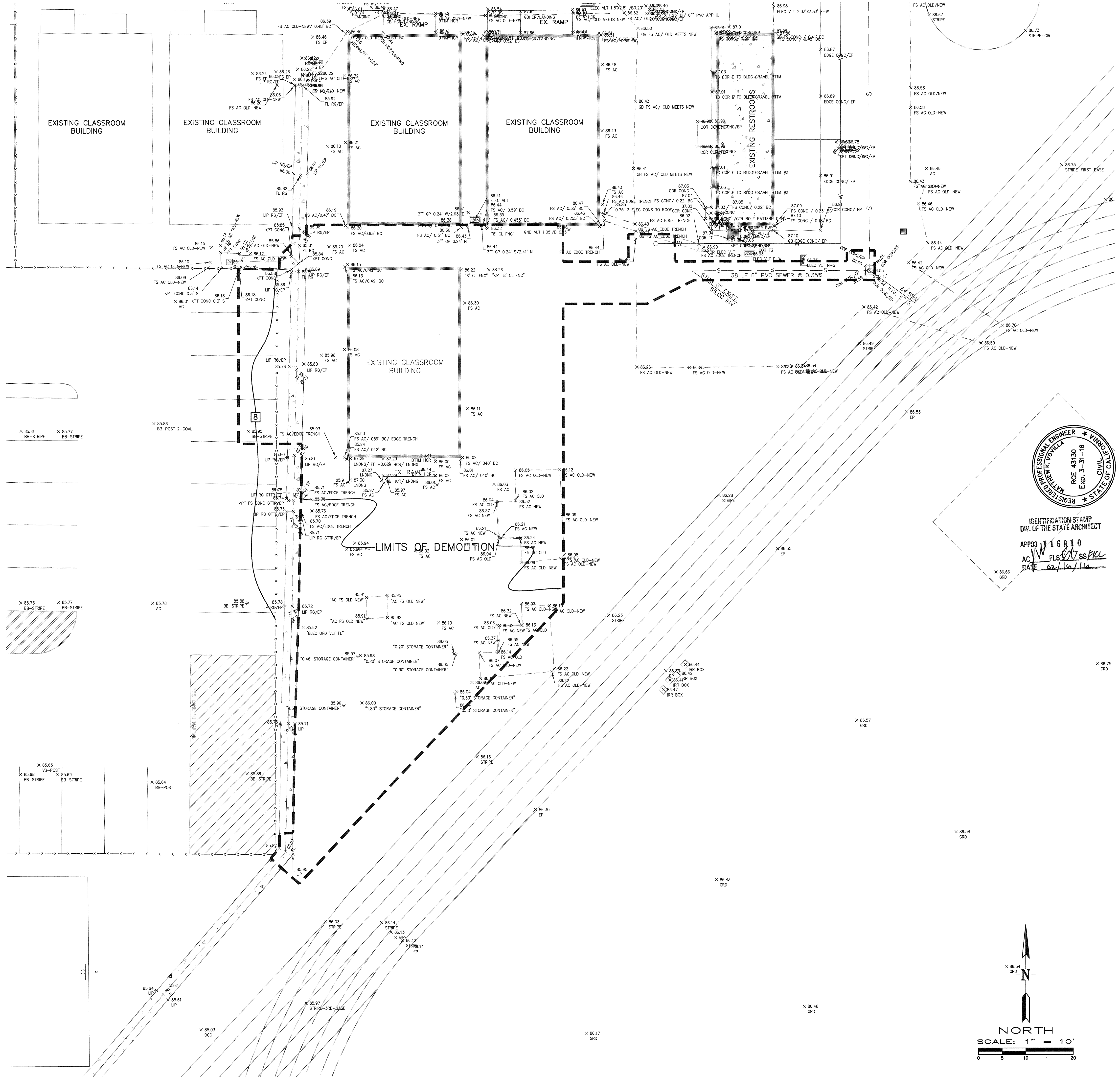


**LEGEND - DEMOLITION PLAN**

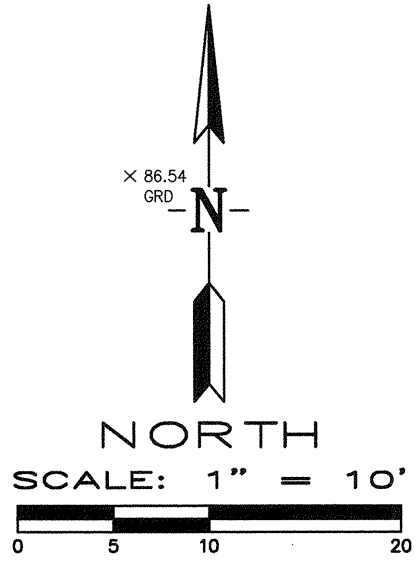
- 101.00' X TOE
- EXISTING "TOPO" SHOT WITH SURVEYOR'S DESCRIPTION
- EXISTING PC CONCRETE SURFACE
- EXISTING CHAIN LINK FENCE
- PROPOSED LIMITS OF DEMOLITION
- DEMOLITION NOTE - THIS SHEET ONLY
- WATER VALVE
- SEWER CLEAN OUT
- AC ASPHALT CONCRETE PAVEMENT
- AP ANGLE POINT
- BC BEGINNING OF CURVE
- BM BENCHMARK
- CB CATCH BASIN
- EC END OF CURVE
- EG EDGE OF GUTTER
- EP EDGE OF PAVEMENT
- ER END OF ROAD
- EX EXISTING
- FL FLOWLINE
- FS FINISHED SURFACE
- FNC FENCE
- GRD GROUND
- GB GRADE BREAK
- FP HINGE POINT
- INV INVERT
- NG NATURAL GROUND
- POC POINT ON CURVE
- POL POINT ON LINE
- TC TOP OF CURB
- TOE TOE OF SLOPE
- TOP TOP OF SLOPE
- W VALVE WATER VALVE

**DEMOLITION NOTES (THIS SHEET ONLY)**

- 1 THIS SHEET PROVIDED TO SHOW LIMITS OF DEMOLITION AND EXISTING CONDITIONS CLEARLY.
- 2 THE EXACT DEPTH AND LOCATION OF UNDERGROUND UTILITIES SHALL BE DETERMINED PRIOR TO ANY GROUND DISTURBANCE.
- 3 CONTRACTOR SHALL RESEARCH ALL EXISTING UTILITIES, AND SHALL "POTHOLE" TO VERIFY THEIR LOCATIONS. ALL EXISTING UTILITIES SHALL BE PROTECTED IN-PLACE.
- 4 SEE ALSO CONTRACT SPECIFICATIONS AND GENERAL NOTES FOR DEMOLITION REQUIREMENTS.
- 5 PROTECT EXISTING UTILITIES IN-PLACE. SEE IMPROVEMENT PLANS FOR UTILITY BOX ADJUSTMENTS AND CONCRETE COLLARS.
- 6 ALL VOIDS CREATED BY DEMOLITION SHALL BE BACKFILLED WITH ENGINEERED FILL. ENGINEERED FILL SHALL BE PLACED IN LAYERS NOT EXCEEDING 6-INCHES IN COMPACTED THICKNESS, AND COMPACTED TO 95% RELATIVE DENSITY PER ASTM D-1557.
- 7 EXACT LIMITS OF DEMOLITION SHALL BE AS NECESSARY TO ACCOMMODATE NEW CONSTRUCTION, BUILDINGS, CONCRETE AND PAVEMENT PATCHES.
- 8 REMOVE EXISTING FENCE WITHIN LIMITS SHOWN.



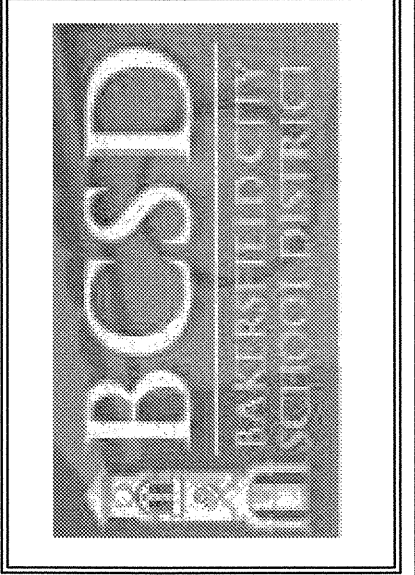
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 DIV. OF THE STATE ARCHITECT  
 APPROX 116810  
 AC: FLS/VZ/SS/PLC  
 DATE: 02/10/16



**LAV//Pinnacle Engineering**  
 5401 Business Park South, Suite 204, Bakersfield, CA 93309  
 Phone: (661) 869-0184 Fax: (661) 377-0076

|                     |              |
|---------------------|--------------|
| 02/01/16            | DATE         |
| MAATTHEW K. NOVILLA | REVISIONS    |
| RCE 43130           | EXP. 3-31-16 |

**DEMOLITION PLAN**  
**GRADING & SITE IMPROVEMENT PLANS**  
**FOR HEALTH CLINIC**  
**MCKINLEY ELEMENTARY SCHOOL**  
**604 4TH STREET**  
**BAKERSFIELD, CALIFORNIA**



|             |            |
|-------------|------------|
| JOB No.:    | 15-677     |
| DWG NO.:    | BM01       |
| DATE:       | 02/01/2016 |
| DRAWN BY:   | ADA        |
| CHECKED BY: | MKY        |
| SHEET       | 6          |
| OF 8 SHEETS |            |

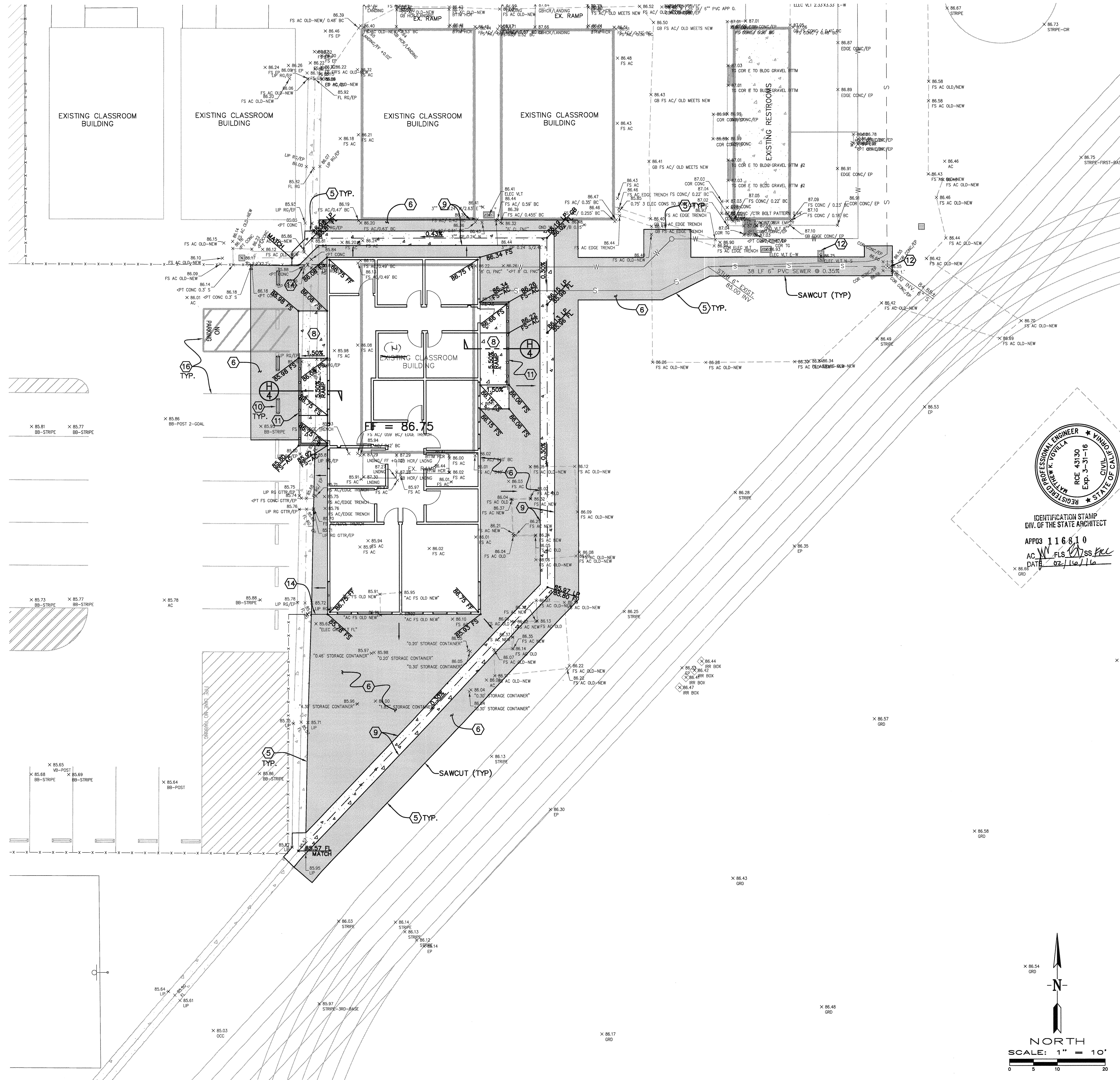


**LEGEND: -- GRADING PLAN**

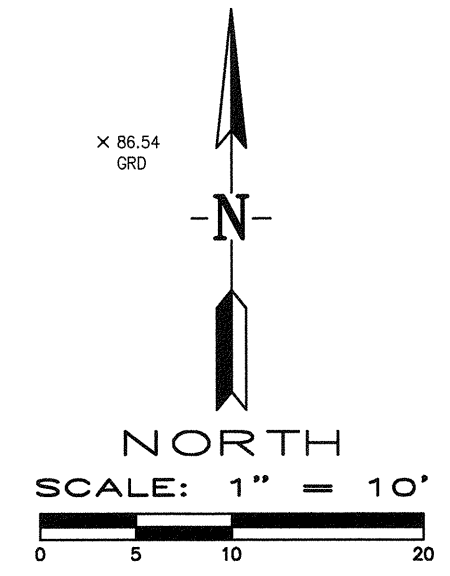
|  |  |  |                              |
|--|--|--|------------------------------|
|  | PROPOSED ASPHALT CONCRETE SURFACE                |  | PROPOSED PC CONCRETE SURFACE |
|  | DESIGN ELEVATION                                 |  | DESIGN SLOPE                 |
|  | PROPOSED HAND RAIL                               |  | PROPOSED CHAIN LINK FENCE    |
|  | 3' CONCRETE PARKING BUMPER (FURNISH & INSTALL)   |  | ADA ROUTE                    |
|  | EXISTING "TOPO" SHOT WITH SURVEYOR'S DESCRIPTION |  | EXISTING PC CONCRETE SURFACE |
|  | EXISTING CHAIN LINK FENCE                        |  | GRADE BREAK                  |
|  | ASPHALT CONCRETE PAVEMENT                        |  | ANGLE POINT                  |
|  | BENCHMARK  |  | INVERT                       |
|  | CATCH BASIN                                      |  | LIP OF GUTTER                |
|  | END OF CURVE                                     |  | NATURAL GROUND               |
|  | EDGE OF GUTTER                                   |  | POINT ON CURVE               |
|  | EDGE OF PAVEMENT                                 |  | POINT ON LINE                |
|  | END OF ROAD                                      |  | TOP OF CURB                  |
|  | EXISTING   |  | TOP OF GRATE                 |
|  | FLOWLINE   |  | TOP OF SLOPE                 |
|  | FINISHED FLOOR                                   |  | TOP OF WALL                  |
|  | FINISHED SURFACE                                 |  | TYPICAL                      |
|  | FENCE  |  | WATER VALVE                  |
|  | GROUND   |  |                              |

**CONSTRUCTION NOTES--GRADING & SITE IMPROVEMENTS:**  
(SEE ALSO UTILITY PLANS HEREIN)

- 1) PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL SUBMIT A PLAN TO THE DISTRICT FOR SAFE PASSAGE OF VEHICLES AND PEDESTRIANS AROUND WORK LIMITS. PLAN SHALL CORDON OFF WORK AREAS WITH CAUTION TAPE, DELINEATORS AND BARRICADES. PLAN SHALL INCLUDE TRAFFIC CONTROL ON PUBLIC STREETS, PARKING CONTROL, AND SHALL NOT INTERRUPT STUDENT DROP-OFFS. PLAN IS SUBJECT TO APPROVAL BY DISTRICT.
- 2) PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL RESEARCH ALL UTILITIES AND POINTS OF CONNECTION. CONTRACTOR SHALL "POTHOLE" EXISTING UTILITIES AT ALL POINTS OF CONNECTION, AND AT OTHER LOCATIONS OF POTENTIAL CONFLICT. DEPTH AND LOCATION SHALL BE VERIFIED AND REPORTED TO THE ENGINEER. DISCREPANCIES WITH THE PLANS OR AS-BUILTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER SUCH THAT ADJUSTMENTS CAN BE MADE PRIOR TO INSTALLATION.
- 3) CONTRACTOR SHALL PERFORM ALL NECESSARY DEMOLITION WITHIN THE LIMITS OF WORK. PROTECT EXISTING UTILITIES AND IMPROVEMENTS THAT ARE TO REMAIN. CUT AND CAP EXISTING IRRIGATION LINES, SEWER, AND WATER LINES AT DEMOLITION LIMITS. CONTRACTOR SHALL RECORD DEPTH AND LOCATION OF CAP. ALL IMPROVEMENTS TO BE REMOVED SHALL BE SAWCUT.
- 4) BUILDING PAD AREAS SHALL BE OVER-EXCAVATED AND RECOMPACTED IN ACCORDANCE WITH THE RECOMMENDATION OF THE SOILS REPORT. AS NECESSARY SAWCUT AND REMOVE EXISTING PAVEMENT, CONCRETE FLATWORK, AND OTHER IMPROVEMENTS TO PERMIT PAD PREPARATION.
- 5) GRADE SITE TO THE LINES AND ELEVATIONS INDICATED ON THE PLANS. ANY EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
- 6) WHERE INDICATED ON THE PLANS, REMOVE EXISTING PAVEMENT OR CONCRETE FLATWORK AND REPLACE WITH ASPHALT CONCRETE STRUCTURAL SECTION PER DETAIL (4) HEREIN. REGRADE AND IMPORT CLASS II AGGREGATE BASE TO ACHIEVE PLAN ELEVATION AND POSITIVE DRAINAGE.
- 7) PATCH ASPHALT CONCRETE PAVEMENT PER CITY OF BAKERSFIELD STANDARD S-6. AC PAVEMENT SHALL BE 3" MIX IN ACCORDANCE WITH DISTRICT STANDARDS.
- 8) CONSTRUCT PC CONCRETE WALKS IN ACCORDANCE WITH DETAIL (8) HEREIN. NEW WALKS SHALL MEET ALL STATE AND FEDERAL REQUIREMENTS INCLUDING THE AMERICANS WITH DISABILITIES ACT (ADA). FORMS SHALL BE CHECKED FOR ADA COMPLIANCE PRIOR TO POURING CONCRETE.
- 9) CONSTRUCT 3-FOOT WIDE PC CONCRETE VEE GUTTER PER DETAIL (9) HEREIN. IF NECESSARY, WIDEN GUTTER TO 8-FOOT AT DESIRED ADA ROUTE CROSSING.
- 10) FURNISH AND INSTALL 3-FOOT CONCRETE PARKING BUMPER.
- 11) CONSTRUCT REINFORCED PC CONCRETE RETAINING WALL WITH HANDRAILS, PER DETAIL (5) HEREIN.
- 12) ADJUST ALL EXISTING UTILITY BOXES TO FINISHED GRADE. CONCRETE COLLARS SHALL BE POURED AROUND CLEAN-OUTS, BLOW-OFFS AND ANY OTHER UTILITY BOXES. NEW ASPHALT CONCRETE SHALL BE SAWCUT FOR CONCRETE COLLARS.
- 13) FURNISH AND INSTALL PC CONCRETE EXPANSION JOINTS BETWEEN ALL PC STRUCTURES, AND IN ACCORDANCE WITH THE INTERVALS SPECIFIED IN THE STANDARD SPECIFICATIONS.
- 14) FURNISH AND INSTALL 6-FOOT TALL CHAIN LINK FENCE IN ACCORDANCE WITH DISTRICT STANDARDS.
- 15) ALL "JOINS" SHALL BE SAWCUT. PC CONCRETE "JOINS" SHALL BE DOWELLED IN ACCORDANCE WITH DETAIL (6) HEREIN.
- 16) RE-STRIPE PARKING STALL AFFECTED BY THE WORK. RE-STRIPE PEDESTRIAN ACCESS ROUTE AS SHOWN ON THE PLAN.



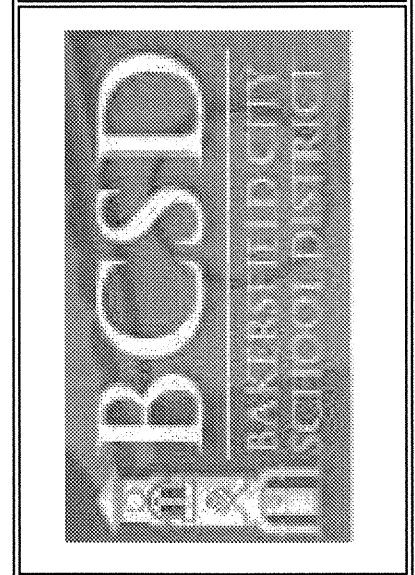
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APPROVED 116810  
AC W. FLS. JSS/PCL  
DATE 02/16/16



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|                        |           |
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| 02/01/16               | DATE      |
| RCE 43130 EXP. 3/31/16 | REVISIONS |
| MATTHEW K. VOVILLA     |           |

**GRADING & SITE IMPROVEMENT PLANS**  
FOR HEALTH CLINIC  
MCKINLEY ELEMENTARY SCHOOL  
604 4TH STREET  
BAKERSFIELD, CALIFORNIA



|             |            |
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| JOB No.:    | 15-677     |
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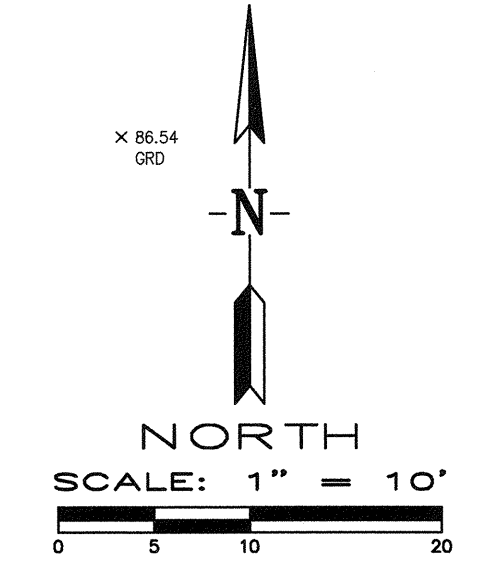
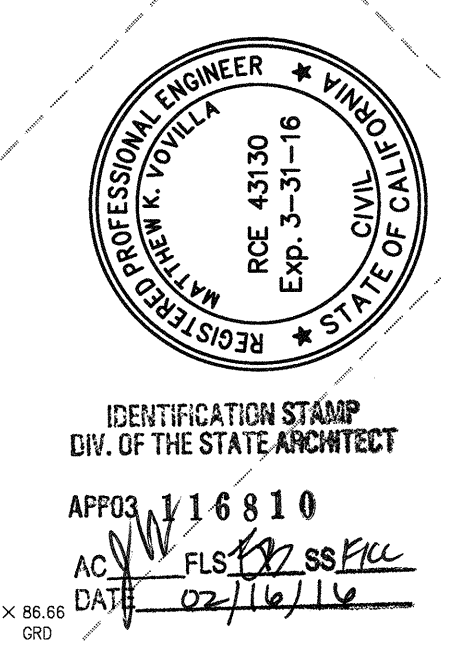
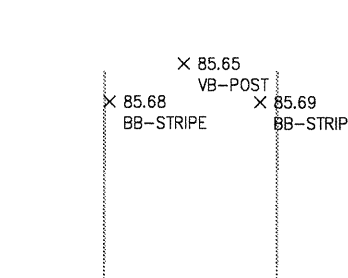
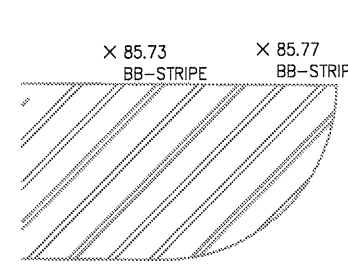
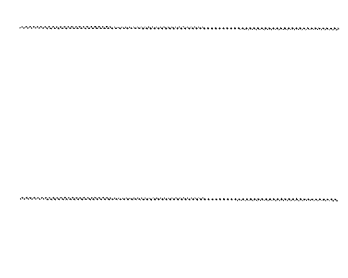
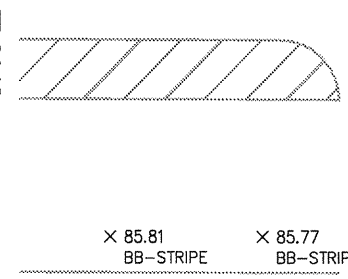
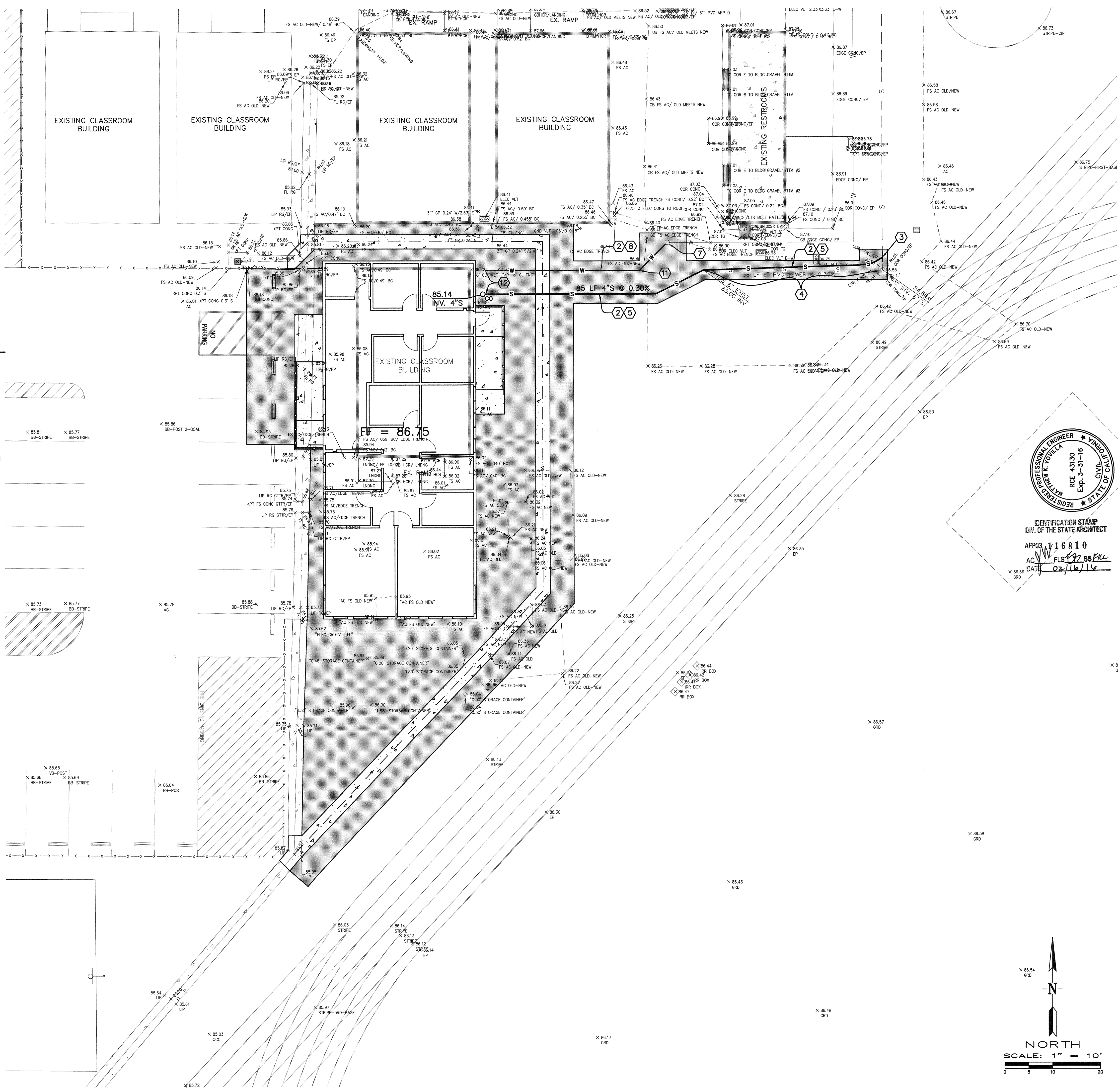
**LEGEND - UTILITY PLAN**

- S— PROPOSED SEWER
- Oco— PROPOSED SEWER CLEANOUT
- W— PROPOSED DOMESTIC PVC WATER LINE
- X— PROPOSED GATE VALVE AND VALVE BOX
- S— EXISTING SEWER LINE
- W— EXISTING WATER LINE
- CO CLEANOUT
- INV INVERT
- LF LINEAR FEET
- S SEWER
- SD STORM DRAIN
- TOG TOP OF GRATE
- W WATER
- WV WATER VALVE

\*\*SEE ALSO GRADING PLAN LEGEND - SHEET 7

**CONSTRUCTION NOTES - UTILITY PLAN:**

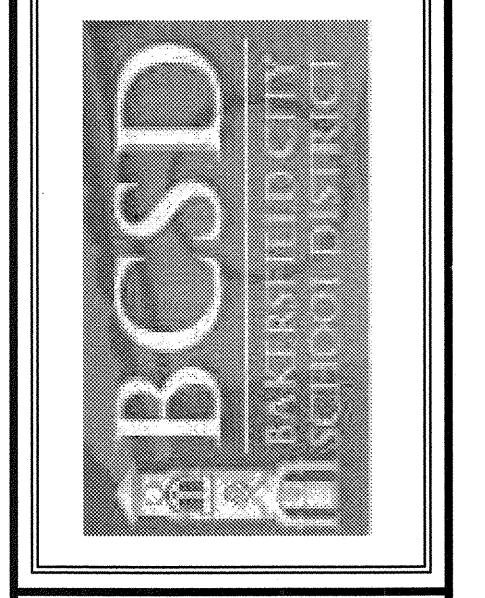
- 1) PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL RESEARCH ALL UTILITIES AND POINTS OF CONNECTION. CONTRACTOR SHALL "POTHOLE" EXISTING UTILITIES AT ALL POINTS OF CONNECTION, AND AT OTHER LOCATIONS OF POTENTIAL CONFLICT. DEPTH AND LOCATION SHALL BE VERIFIED AND REPORTED TO THE ENGINEER. DISCREPANCIES WITH THE PLANS OR AS-BUILTS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER SUCH THAT ADJUSTMENTS CAN BE MADE PRIOR TO INSTALLATION.
- 2) ALL UTILITIES WITH LESS THAN 18-INCHES OF COVER SHALL BE ENCASED IN A CONCRETE SLURRY PER DETAIL 1.
- 3) FURNISH AND INSTALL SEWER WYE AND JOIN EXISTING SEWER LINE.
- 4) REMOVE EXISTING 6-INCH PVC SEWER AS NECESSARY FOR INSTALLATION OF NEW 4-INCH PVC SEWER.
- 5) FURNISH AND INSTALL 4-INCH PVC SEWER, SDR 35.
- 6) FURNISH AND INSTALL SEWER CLEAN-OUT WITH CONCRETE COLLAR PER CITY OF BAKERSFIELD STANDARD SW-5.
- 7) REMOVE EXISTING BLOW-OFF AND JOIN EXISTING WATER LINE. COORDINATE WITH DISTRICT FOR ACCEPTABLE TIMES TO SHUT OFF WATER SERVICE.
- 8) FURNISH AND INSTALL 2-INCH DOMESTIC WATER LINE. SEE DISTRICT'S PLUMBING STANDARDS.
- 9) INSTALL 2-INCH GATE VALVE AND VALVE BOX IN ACCORDANCE WITH DISTRICT STANDARDS.
- 10) FURNISH AND INSTALL 3/4-INCH SERVICE PER DISTRICT STANDARDS AND DETAIL 4. HEREIN, INSTALL SHALL INCLUDE HOSE BIB, BALL VALVE, AND CONCRETE THRUST BLOCKS.
- 11) INSTALL THRUST BLOCKS AT ALL WATERLINE ANGLE POINTS PER CITY OF BAKERSFIELD STANDARD W-2.
- 12) SEE BUILDING PLUMBING PLANS FOR SEWER AND WATER CONNECTIONS TO BUILDING.



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 Phone: (661) 869-0184 Fax: (661) 377-0076

|           |          |
|-----------|----------|
| DATE      | 02/01/16 |
| REVISIONS |          |
| DATE      | 02/01/16 |
| REVISIONS |          |

**UTILITY PLAN FOR HEALTH CLINIC**  
**MCKINLEY ELEMENTARY SCHOOL**  
 604 4TH STREET  
 BAKERSFIELD, CALIFORNIA



|             |            |
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| DRAWN BY:   | ADA        |
| CHECKED BY: | MKY        |
| SHEET       | 8          |
| OF 8 SHEETS |            |



































# RELOCATABLE SLAB ON GRADE BUILDING MODEL

32' WIDE BUILDINGS - 2 MODULES TO 10 MODULES. MODULE LENGTH  
INCREMENTS OF 15'-0" FOR USE IN CLASSROOM.

PROJECT DATA - THIS PC IS APPROVED FOR ALL CLIMATE ZONES

## SHEET INDEX

|               |  |
|---------------|--|
| ARCHITECTURAL | TITLE PAGE   |
| T-1.00        | TEXT & INSPECTION GUIDELINES                         |
| T-1.01        | FLOOR PLAN LAYOUTS 2 - 5 MODULES                     |
| A-1.01        | CEILING DETAILS                                      |
| A-1.10        | 2M - 5M CEILING PLANS                                |
| A-1.11        | DOOR AND WINDOW SCHEDULES, GENERAL NOTES AND DETAILS |
| A-1.12        | INTERIOR ELEVATIONS 2M - 5M                          |
| A-1.20        | INTERIOR ELEVATIONS 2M - 5M                          |
| A-1.21        | INTERIOR ELEVATIONS 2M - 5M                          |
| A-1.22        | INTERIOR ELEVATIONS RESTROOMS                        |
| A-2.00        | ACCESSIBILITY DETAILS                                |
| A-2.01        | ACCESSIBILITY DETAILS                                |
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| A-5.00        | ACCESSIBILITY DETAILS                                |

**BUILDING DATA**

**DESIGN LOADS:** PER 2013 CBC  
**ROOF:** DEAD LOAD = 20 psf  
 LIVE LOAD = 20 psf (REDUCIBLE)

**WALLS:** DEAD LOAD = 15 psf

**SNOW:**  GROUND SNOW LOAD, P<sub>g</sub> = 23.8 psf  
 FLAT ROOF SNOW LOAD, P = 20 psf (OPTION U)  
 SNOW EXPOSURE FACTOR, C<sub>e</sub> = 1.2 (SEE 511)  
 SNOW LOAD IMPORTANCE FACTOR, I = 1.00  
 THERMAL FACTOR, C<sub>t</sub> = 1.00

**WIND:** BASIC WIND SPEED (3-sec GUST), V = 110 mph  
 WIND IMPORTANCE FACTOR, I = 1.00  
 OCCUPANCY CATEGORY, II  
 WIND EXPOSURE, C

**SEISMIC:** SEISMIC IMPORTANCE FACTOR, I = 1.00  
 OCCUPANCY CATEGORY, II  
 MAPPED SPECTRAL RESPONSE ACCELERATION, S<sub>s</sub> = 1.00g  
 MAPPED SPECTRAL RESPONSE ACCELERATION, S<sub>1</sub> = 1.00g  
 SITE CLASS, D  
 SPECTRAL RESPONSE COEFFICIENT, S<sub>ps</sub> = 1.00  
 SPECTRAL RESPONSE COEFFICIENT, S<sub>1s</sub> = 1.00  
 SEISMIC DESIGN CATEGORY, D  
 BASIC SEISMIC FORCE-RESISTING SYSTEM, ORDINARY STEEL METAL FRAME  
 DESIGN BASE SHEAR, V = 0.24M  
 RESPONSE MODIFICATION FACTOR, R = 3.5  
 ANALYSIS PROCEDURE USED, EQUIVALENT LATERAL FORCE PROCEDURE

**OCCUPANCY:** E - CLASSROOMS  
**TYPE OF CONSTRUCTION:** VB  
**BUILDING AREA PROPOSED:** 460 SF. - 4600 SF.  
**SPRINKLER SYSTEM:** PER FIRE MARSHALL

**ONLY CHECKED BOXES APPLY TO THIS PROJECT**

§110(a) INSTALLED INSULATING MATERIAL SHALL HAVE BEEN CERTIFIED BY THE MANUFACTURER TO COMPLY WITH THE CALIFORNIA QUALITY STANDARDS FOR INSULATING MATERIAL, TITLE 20, CHAPTER 4, ARTICLE 5.

§110(c) SPREAD RATINGS AND SMOKE DENSITY REQUIREMENTS OF CHAPTER 7 AND 719 OF TITLE 24, PART 2.

§117(c) ALL EXTERIOR JOINTS AND OPENINGS IN THE BUILDING THAT ARE OBSERVABLE SOURCES OF AIR LEAKAGE SHALL BE CAULKED, GASKETED, WEATHERSTRIPPED, OR OTHERWISE SEALED.

§110(b) SITE CONSTRUCTED DOORS, WINDOWS AND SKYLIGHTS SHALL BE CAULKED BETWEEN THE UNIT AND THE BUILDING, AND SHALL BE WEATHERSTRIPPED (EXCEPT FOR UNFRAMED GLASS DOORS AND FIRE DOORS).

§110(d) MANUFACTURED DOORS AND WINDOWS INSTALLED SHALL HAVE AIR INFILTRATION RATES NOT EXCEEDING THOSE SHOWN IN TABLE NUMBER 1-E OF THE STANDARDS. MANUFACTURED VENTILATION PRODUCTS MUST BE LABELED FOR U-VALUE ACCORDING TO NFRC PROCEDURES.

§110(e) DEMISING WALLS IN NON-RESIDENTIAL BUILDINGS:  
 THE OPAQUE PORTIONS OF FRAMED DEMISING WALLS IN NON-RESIDENTIAL BUILDINGS SHALL HAVE INSULATION WITH AN INSTALLED R-VALUE NO LESS THAN R-11 BETWEEN FRAMING MEMBERS.

**SITE SPECIFIC PROVISIONS:**  
 LOCATION OF BUILDING SHALL COMPLY WITH C.B.C CHAPTER(S) 5, 5.1, 7A, 10, II, & 14 RELATIVE TO THE BUILDING'S PROXIMITY TO ADJACENT STRUCTURES AND PROPERTY LINES, EXTERIOR WALL AND OPENING PROTECTION, ALLOWABLE FLOOR AREA AND ACCESS TO PUBLIC RIGHT OF WAY. SEPARATE APPLICATION SHALL BE FILED WITH DSA WHEN THIS BUILDING IS TO BE PLACED UPON A SPECIFIC SITE. IT SHALL BE THE RESPONSIBILITY OF THE SITES ARCHITECT OR ENGINEER OF RECORD TO PLACE THE PROPOSED STRUCTURES IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES AND TO DETERMINE EXTERIOR WALL AND OPENING PROTECTION IN ACCORDANCE WITH THE C.B.C. IF A CHANGE OF OCCUPANCY OR IF MULTIPLE OCCUPANCIES ARE REQUIRED FOR A SPECIFIC SITE, DRAWINGS MUST BE SUBMITTED TO DSA FOR APPROVAL.

THIS BUILDING IS DESIGNATED AS:  
 PERMANENT  
 TEMPORARY  
 DAY CARE USE

\*When the Pre-check building is site adapted, the building and site features need to comply with the CALGreen Code, Section 5.507.4 for the specific site location, and when PC building is placed adjacent to another PC building, the adjoining wall section for interior sound transmission must meet the minimum requirement of a STC rating of 40 (per 2013 CALGreen Code, Section 507.4.3.)

**GENERAL NOTES**

NOTHING IN THE DRAWINGS AND/OR THE SPECIFICATIONS SHALL BE CONSTRUED TO PERMIT AN INSTALLATION THAT COULD BE IN VIOLATION OF THE APPLICABLE CODES, ORDINANCES, REGULATIONS, RESTRICTIONS, ETC.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY. DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE DRAWINGS SHALL CAUSE THE CONTRACTOR TO NOTIFY THE ARCHITECT PRIOR TO MAKING ANY CHANGES IN THE WORK.

THE DRAWINGS, IDEAS, DESIGNS AND ARRANGEMENTS REPRESENTED HEREBY ARE AND SHALL REMAIN THE PROPERTY OF THE ARCHITECT/OWNER AND NO PART THEREOF SHALL BE COPIED OR DISCLOSED TO OTHERS OR USED IN CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THE SPECIFIC PROJECT FOR WHICH THESE DOCUMENTS HAVE BEEN PREPARED AND DEVELOPED WITHOUT THE WRITTEN CONSENT OF JTS MODULAR INC. VISUAL CONTACT WITH THESE DRAWINGS CONSTITUTES CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS.

WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND JTS MODULAR INC. MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.

MISPLACEMENT, ADDITION, OR OMISSION OF ANY WORD, LETTER, FIGURE PUNCTUATION MARK, ETC., SHALL IN NO WAY CHANGE OR ALTER THE TRUE INTENT, SPIRIT, OR MEANING OF THE DRAWINGS.

THE CONTRACTOR SHALL STUDY AND COMPARE ALL DRAWING SHEETS AND SHALL REPORT ANY ERRORS, OMISSIONS, OR INCONSISTENCIES TO JTS MODULAR INC. BEFORE COMMENCING WORK IN THAT AREA.

IF CONFLICTS BETWEEN VARIOUS ELEMENTS (ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL) OF THE WORK OF THE DRAWINGS ARE DISCOVERED, THEY SHALL BE BROUGHT TO THE ATTENTION OF JTS MODULAR INC. IN ACCORDANCE WITH THE CONDITIONS OF THE CONTRACT.

EXISTING DIMENSIONS INDICATED ON THESE DRAWINGS HAVE BEEN PROVIDED FROM INFORMATION OBTAINED FROM THE DISTRICT. THE CONTRACTOR SHALL USE WHAT MEANS NECESSARY TO VERIFY THE DIMENSIONS IN THE AREAS OF DESIGNATED WORK. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO STARTING WORK IN THE AREA OF QUESTION.

ALL WORK SHALL CONFORM TO TITLE 24, 2013 CALIFORNIA CODE OF REGULATIONS (C.C.R.)

CHANGES TO THE APPROVED DRAWINGS AND SPECIFICATIONS SHALL BE MADE BY AN ADDENDUM OR A CHANGE ORDER APPROVED BY THE DIVISION OF THE STATE ARCHITECT AS REQUIRED BY SECTION 4-338, PART I, TITLE 24, C.C.R.

A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) AND APPROVED BY THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-342, PART I, TITLE 24, C.C.R.

ARCHITECT OF RECORD TO VERIFY WITH LOCAL AUTHORITY THAT FOUNDATION DEPTH IS BELOW FROST LINE WHEN BUILDING IS LOCATED IN SNOW CONDITION.

**APPLICABLE CODES**

EFFECTIVE JANUARY 1, 2018

TITLE 19 CCR, PUBLIC SAFETY, STATE FIRE MARSHALL REGULATIONS  
 TITLE 24 CCR, PART 1 - 2013 BUILDING STANDARDS ADMINISTRATIVE CODE  
 TITLE 21, CCR, PART 2 - 2013 CALIFORNIA BUILDING CODE, VOL. 1 & 2 (CBC)(2009 IBC, AS AMENDED BY CA)

TITLE 24 CCR, PART 3 - 2013 CALIFORNIA ELECTRICAL CODE (CEC)(2013 NEC, AS AMENDED BY CA)sd

TITLE 24 CCR, PART 4 - 2013 CALIFORNIA MECHANICAL CODE (CMC) (2013 IAPMO UMC, AS AMENDED BY CA)

TITLE 24 CCR, PART 5 - 2013 CALIFORNIA PLUMBING CODE (CPC)(2013 IAPMO UPC, AS AMENDED BY CA)

TITLE 24 CCR, PART 6 - 2013 CALIFORNIA ENERGY CODE

TITLE 24 CCR, PART 7 - 2013 CALIFORNIA FIRE CODE (CFC)(2013 IFC, AS AMENDED BY CA)

TITLE 24 CCR, PART 11 - 2013 CALIFORNIA GREEN BUILDING CODE

TITLE 24 CCR, PART 12 - 2013 CALIFORNIA REFERENCED STANDARDS (PARTIALS LIST - SEE CBC CH. 35 AND CFC CH. 45)

2013 NFPA 13, INSTALLATION OF SPRINKLER SYSTEMS (CA AMENDED)

2013 NFPA 14, INSTALLATION OF STANDPIPE AND HOSE SYSTEMS

2013 NFPA 17, DRY CHEMICAL EXTINGUISHING SYSTEMS

2013 NFPA 17A, WET CHEMICAL EXTINGUISHING SYSTEMS

2013 NFPA 20, INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION

2013 NFPA 22, WATER TANKS FOR PRIVATE FIRE PROTECTION

2013 NFPA 24, INSTALLATION OF PRIVATE FIRE SERVICE MAINS

2013 NFPA 72, NATIONAL FIRE ALARM CODE (CA AMENDED); SEE UL STD 1971 FOR "VISUAL DEVICES"

2013 NFPA 80, FIRE DOOR AND OTHER OPENING PROTECTIVES

2013 NFPA 2001, CLEAN AGENT FIRE EXTINGUISHING SYSTEMS

2013 UL 300, CLASS I HOOD FIRE SUPPRESSION SYSTEMS

2013 UL 464, AUDIBLE SIGNAL APPLIQUES

2013 UL 521, HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS

2013 ICC 300, BLEACHERS, FOLDING AND TELESCOPIC SEATING, AND GRANDSTANDS (ICC/ANSI 300-2002)

**STATEMENT OF GENERAL CONFORMANCE**

FOR ARCHITECTS/ENGINEERS WHO UTILIZE PLANS, INCLUDING BUT NOT LIMITED TO SHOP DRAWINGS, PREPARED BY OTHER LICENSED DESIGN PROFESSIONALS AND/OR CONSULTANTS.

(APPLICATION NO. 02-113899 FILE NO. PC-JTS)

THE DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET  
 THIS DRAWING, PAGE OF SPECIFICATIONS/CALCULATIONS

HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. IT HAS BEEN EXAMINED BY ME FOR:

DESIGN INTENT AND APPEARS TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME, AND  
 2) COORDINATION WITH MY PLANS AND SPECIFICATIONS AND IS ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT.

THE STATEMENT OF GENERAL CONFORMANCE SHALL NOT BE CONSTRUED AS RELIEVING ME OF MY RIGHTS, DUTIES, AND RESPONSIBILITIES UNDER SECTIONS 17902 AND 8103 OF THE EDUCATION CODE AND SECTIONS 4-336, 4-341 AND 4-344 OF TITLE 24, PART I, (TITLE 24PART I, SECTION 4-317(B))

I CERTIFY THAT:  ALL DRAWINGS OR SHEETS LISTED ON THE COVER OR INDEX SHEET  
 THIS DRAWING OR PAGE

IS/ARE IN GENERAL CONFORMANCE AND



# MODULAR STEEL FRAME SHEARWALL TEST & INSPECTION GUIDELINE

(X INDICATES TEST OR INSPECTION TO BE DONE, --- INDICATES NOT APPLICABLE)

THE EXAMPLE FORM DSA-103'S SHOWN ON THIS SHEET ARE FOR ILLUSTRATION PURPOSES ONLY TO ASSIST IN THE COMPLETION OF FUTURE PROJECTS - SPECIFIC FORM DSA-103'S, A FORM DDSA-103 IS TO BE COMPLETED FOR EACH APPLICATION THAT THIS PC IS BEING INCORPORATED INTO AND ALL EXAMPLE FORM DSA-103'S ARE TO BE CROSSED OUT ON THIS DRAWING

| MATERIAL TYPE   | DSA-103 ITEM #                    | DESCRIPTION | STOCKPILE       |                | CONSTRUCTION OF (DIAPHRAGM MATERIAL, FOUNDATION MATERIAL) |                        | RELOCATION OF CERTIFIED BUILDING |                        |     |
|---|-----------------------------------|-------------|-----------------|----------------|---|------------------------|----------------------------------|------------------------|-----|
|   |                                   |             | A               | B              | C   | D                      | E                                | F                      | G   |
|   |                                   |             | WOOD FLOOR ONLY | CONCRETE FLOOR | PLYWOOD FLOOR ONLY  | CONCRETE SLAB ON GRADE | WOOD FOUNDATION                  | CONCRETE SLAB ON GRADE |     |
| SOILS<br>Verify the necessity of the test and/or inspection with the requirements of the Application that this PC is part of. | GENERAL                           | 1           | ---             | ---            | ---   | X                      | ---                              | ---                    | X   |
|   | COMPACTED FILL                    | 2a          | ---             | ---            | ---   | X                      | ---                              | ---                    | X   |
|   |                                   | 2b          | ---             | ---            | ---   | X                      | ---                              | ---                    | X   |
|   |                                   | 2c          | ---             | ---            | ---   | X                      | ---                              | ---                    | X   |
| CONCRETE<br><br>N/A   | LIGHT WEIGHT FILL OVER METAL DECK | 7a          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   |                                   | 7c          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   |                                   | 7d          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   | FOUNDATION                        | 7e          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   |                                   | 7f          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   |                                   | 7g          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   | FOUNDATION                        | 7h          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   |                                   | 7i          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   |                                   | 7j          | ---             | ---            | ---   | ---                    | ---                              | ---                    | --- |
|   | POST INSTALLED ANCHORS - NOTE 2   | 11a         | ---             | ---            | ---   | X                      | ---                              | ---                    | X   |
|   |                                   | 11b         | ---             | ---            | ---   | X                      | ---                              | ---                    | X   |

| MATERIAL TYPE                                       | DSA-103 ITEM #        | DESCRIPTION | STOCKPILE      |     | CONSTRUCTION OF (DIAPHRAGM MATERIAL, FOUNDATION MATERIAL) |                 | RELOCATION OF CERTIFIED BUILDING |     |   |
|---|-----------------------|-------------|----------------|-----|---|-----------------|----------------------------------|-----|---|
|   |                       |             | A              | B   | C   | D               | E                                | F   | G |
|   |                       |             | CONCRETE FLOOR |     | CONCRETE SLAB ON GRADE                                    | WOOD FOUNDATION | CONCRETE SLAB ON GRADE           |     |   |
| STRUCTURAL STEEL                                    | MATERIAL VERIFICATION | 17a         | X              | --- | X   | ---             | ---                              | --- |   |
|   |                       | 17b         | X              | --- | X   | ---             | ---                              | --- |   |
|   |                       | 17c         | ---            | --- | ---   | ---             | ---                              | --- |   |
|   |                       | 17d         | X              | --- | X   | ---             | ---                              | --- |   |
|   |                       | 17e         | X              | --- | X   | ---             | ---                              | --- |   |
| VERIFICATION OF MATERIALS, EQUIPMENT, WELDERS, ETC. | 19a                   | X           | ---            | X   | ---   | ---             | ---                              |     |   |
|   | 19b                   | X           | ---            | X   | ---   | ---             | ---                              |     |   |
|   | 19c                   | X           | ---            | X   | ---   | ---             | ---                              |     |   |
| SHOP WELDING  | 19.1a                 | X           | ---            | X   | ---   | ---             | ---                              |     |   |
|   | 19.1b                 | X           | ---            | X   | ---   | ---             | ---                              |     |   |
|   | 19.1c                 | X           | ---            | X   | ---   | ---             | ---                              |     |   |
| FIELD WELDING SEE NOTE 3                            | 19.2a                 | ---         | ---            | X   | ---   | ---             | X                                |     |   |
|   | 19.2b                 | ---         | ---            | X   | ---   | ---             | X                                |     |   |
|   | 19.2f                 | ---         | ---            | --- | ---   | ---             | ---                              |     |   |
| OTHER   | 24a                   | ---         | X              | --- | X   | ---             | ---                              |     |   |
|   | 24b                   | ---         | ---            | --- | ---   | ---             | ---                              |     |   |
| OTHER - SHOT PINS (Two Story Modular)               | 24c                   | ---         | X              | --- | ---   | ---             | ---                              |     |   |

|  | STOCKPILE  | CONSTRUCTION   | RELOCATION  |
|--|--|--|---|
| INSPECTOR CLASS (MINIMUM REQUIREMENTS)                                 | RBIP OR CLASS 1  | IN PLANT: RBIP OR CLASS 1<br>SITE: CLASS 4                                       | SITE: CLASS 4   |
| SELECTION OF PROJECT INSPECTOR AND TEST AGENCY                         | BY THE OWNER AND APPROVED BY DSA A/E OF RECORD AND STRUCTURAL ENGINEER   | BY THE SCHOOL DISTRICT AND APPROVED BY DSA A/E OF RECORD AND STRUCTURAL ENGINEER |   |
| COST OF THE PROJECT INSPECTOR AND TEST AGENCY (CA ADMIN CODE 4-33 (b)) | BY THE OWNER   | BY THE SCHOOL DISTRICT   |   |
| COPIES OF THE REPORT TO:   | DSA (ORIGINAL)<br>I.O.R./P.I.<br>MANUFACTURER<br>ARCHISENOTED ON DSA-1   | ARCHITECT<br>SCHOOL DISTRICT<br>I.O.R./P.I.<br>DSA                               | STRUCTURAL ENGINEER<br>DSA (ORIGINAL)<br>MANUFACTURER |
| NOTES:   | 1) REINFORCING STEEL TESTS MAY BE WAIVED FOR ONE-STORY BUILDINGS, PER TITLE 24, PART 2, SECTION 1916A.2 (1916.1.0*).<br>2) REQUIRED ONLY WHERE THE DETAILS OF THE PC SPECIFY THE USE OF THIS TYPE OF ANCHOR.<br>3) REQUIRED ONLY WHERE THE DETAILS OF THE PC SPECIFY THIS WELDING. |  |   |
|  | * INDICATES ALTERNATIVE 2013 CBC SECTIONS THAT COMMUNITY COLLEGES MAY USE PER 2013 SECTION 1.9.2.2.  |  |   |

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STRUCTURAL ENGINEER OF RECORD

**ORION**  
Structural Engineering, Inc.

12257 OLD POMERADO ROAD, SUITE A  
POWAY, CA 92506  
PHONE (658) 679-1974  
FAX (658) 679 1975



SOG-32 RE-LOCATABLE BUILDING PC

FILE: PC-JTS  
IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
PRE CHECK (PC) DOCUMENT  
CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

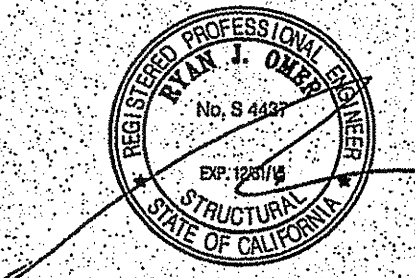
APPROVALS

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT

FILE # PC-JTS  
APPL # 02-113899  
DATE 3/19/15

DATE  
PROJECT 06-0140

PC

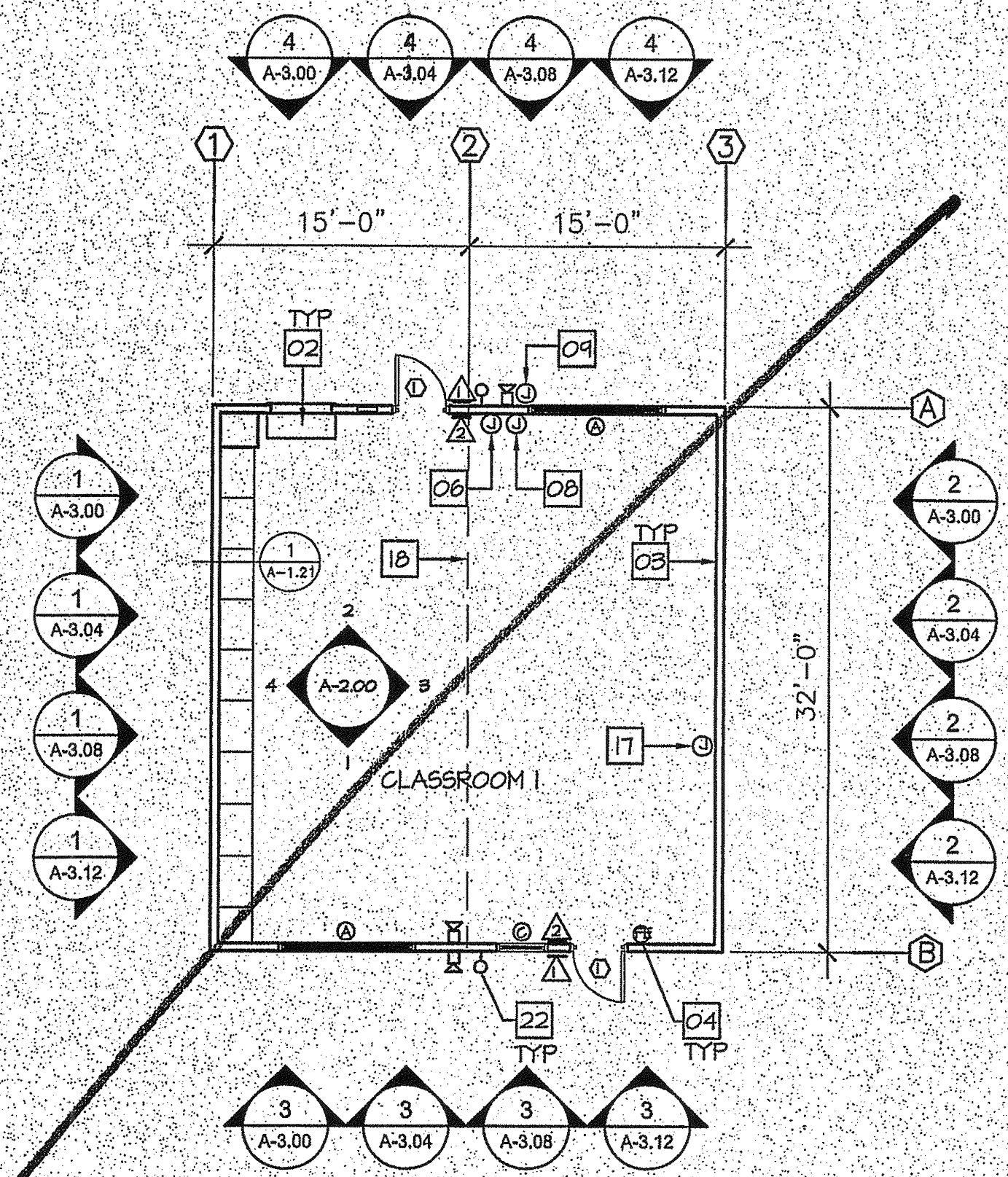


SHEET NAME  
**TEST & INSPECTION GUIDELINES**

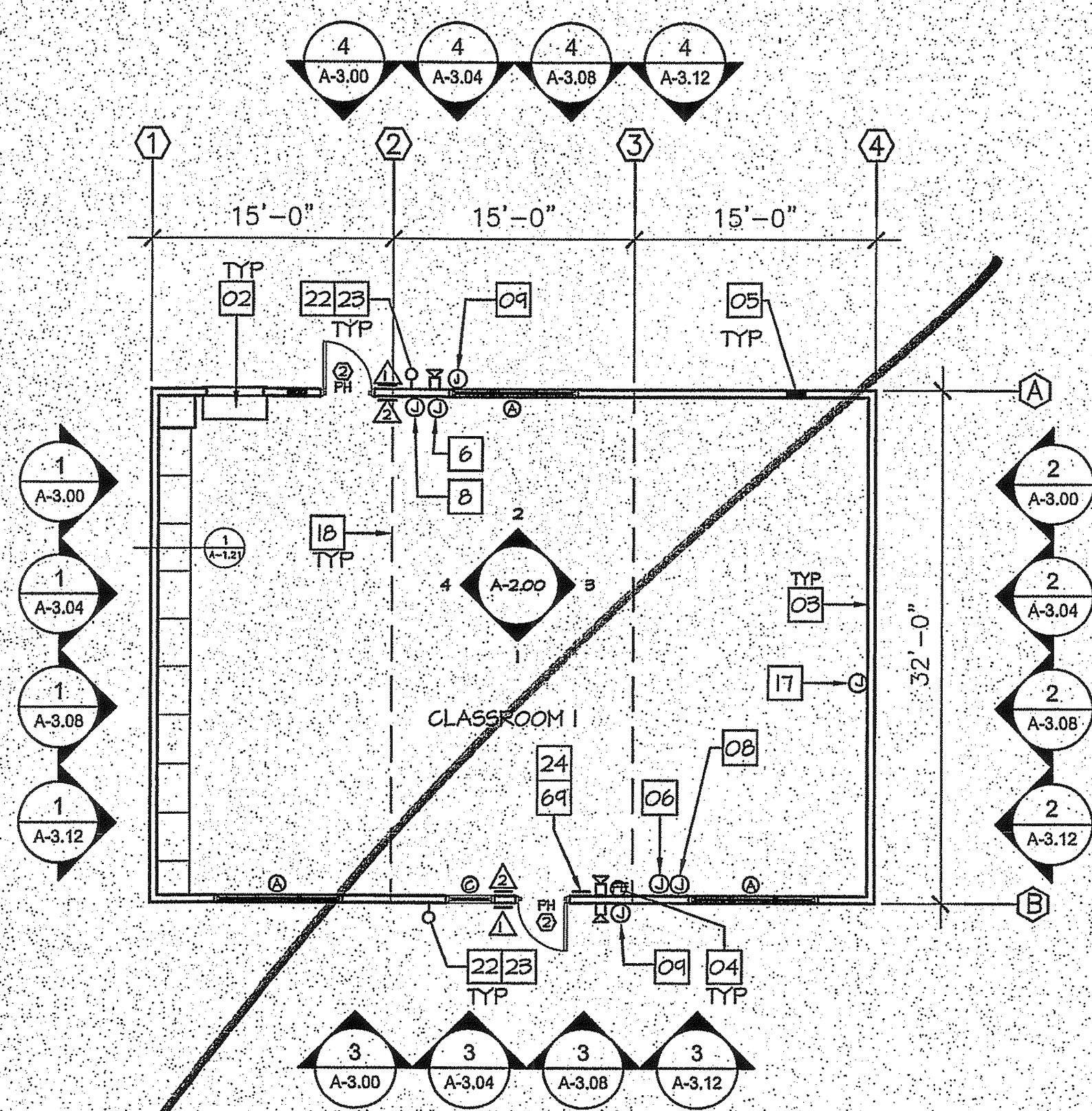
SHEET NUMBER  
**T-1.01**

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPROX 116810  
AC W FLS MSSEK  
DATE 02/16/16

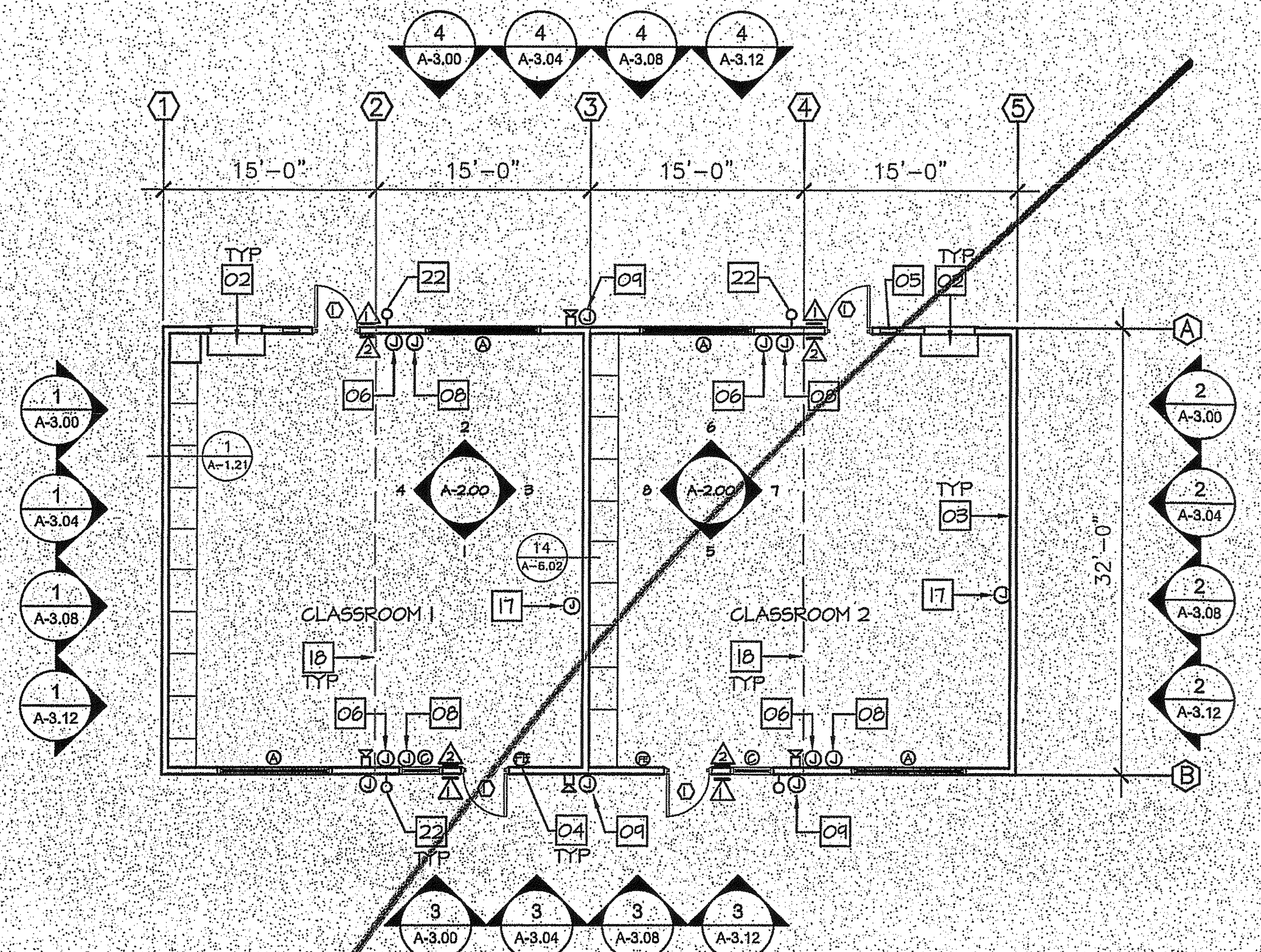




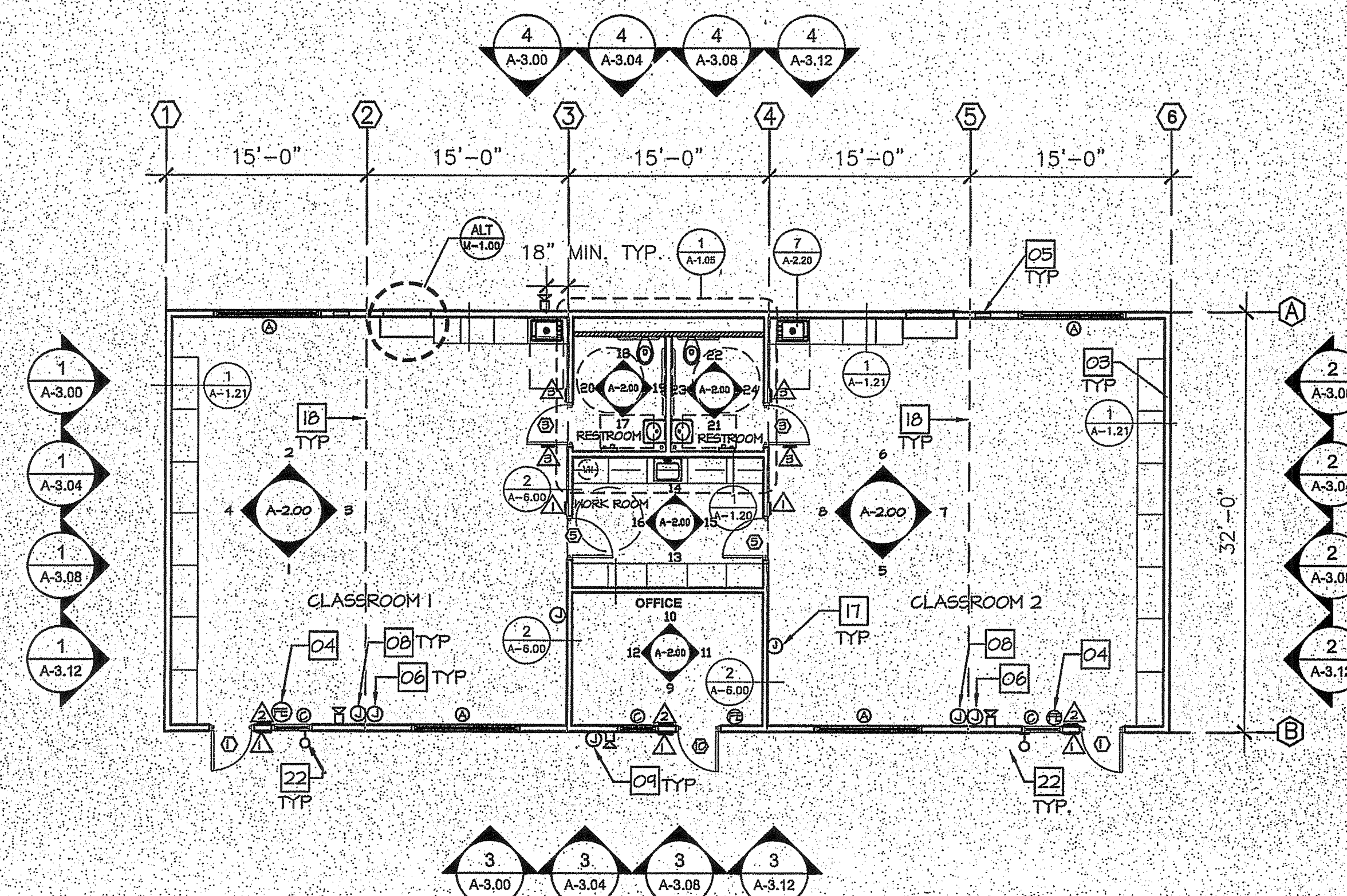
2 SOG-32 - 2 Modules  
1/8" = 1'-0"



3 SOG-32 - 3 Modules  
1/8" = 1'-0"



4 SOG-32 - 4 Modules  
1/8" = 1'-0"



5 SOG-32 - 5 Modules  
1/8" = 1'-0"

### KEYNOTES

- 01 NOT USED
- 02 HVAC UNIT-SEE SHEET M-1
- 03 2 X 6 EXTERIOR STUD WALL
- 04 FIRE EXTINGUISHER - #5 DRY CHEMICAL WITH 2A-10BC UL RATINGS ON WALL SEMI-RECESSED-HANDLE AT +48"FF MAX 4" MAX PROJ.
- 05 ELECTRICAL PANEL-SEE ELECTRICAL DRAWINGS
- 06 JUNCTION BOX FOR FIRE ALARM FULL STATION @ 128" MAX FF WITH CONDUIT STUBBED TO ATTIC-SEE ELECTRICAL DRAWINGS.
- 07 NOT USED
- 08 JUNCTION BOX FOR FIRE ALARM VISUAL DEVICE @ +80"FF WITH CONDUIT STUBBED TO ATTIC-SEE ELECTRICAL DRAWINGS
- 09 JUNCTION BOX FOR FIRE ALARM EXTERIOR HORN @ +80"FF-SEE ELECTRICAL DRAWINGS
- 10 NOT USED
- 11 NOT USED
- 12 NOT USED
- 13 NOT USED
- 14 NOT USED
- 15 NOT USED
- 16 NOT USED
- 17 ADD JUNCTION BOX FOR WALL CLOCK @ +80" AFF WITH CONDUIT STUBBED SCHOOL OR DAYCARE PURPOSES.
- 18 LINE OF MODULAR BUILDING JOINT
- 19 NOT USED
- 20 NOT USED
- 21 NOT USED
- 22 ENERTRON COMPACT EXTERIOR FLUORESCENT FIXTURE OR EQUAL
- 23 90 MIN. EMERGENCY BATTERY BACKUP LIGHTING
- 24 MAX OCCUPANT LOAD SIGN
- XX NUMBER INDICATES MAXIMUM OCCUPANT LOAD FOR AREA

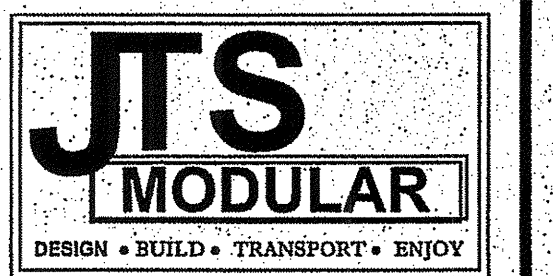
### LEGEND

- ⊙ WINDOW SYMBOL - SEE WINDOW SCHEDULE SHEET A-1.21
- ⊡ DOOR SYMBOL - SEE DOOR SCHEDULE SHEET A-1.21
- ⚠ SEE SIGN SCHEDULE SHEET A-1.21
- ⊕ FIRE EXTINGUISHER

### GENERAL NOTES

1. REFER TO SITE DRAWINGS FOR ACCESSIBLE DOOR LANDINGS AND PATH OF TRAVEL.
2. STANDARD CLASSROOM MAY REQUIRE ADDITIONAL PROVISIONS - SEE SITE ADAPTATION DRAWINGS FOR ADDITIONAL REQUIREMENTS EX: FIREWALL AND SPRINKLERS.
3. FOR VARIOUS MODULE WIDTH LAYOUTS SEE SHEET A-1.01, A-1.02, A-1.03 AND A-1.04
4. OCCUPANT LOAD SHALL BE POSTED IN A CONSPICUOUS PLACE NEAR THE MAIN EXIT. OCCUPANT LOAD SIGN SHALL BE PROVIDED BY THE SCHOOL DISTRICT U.O.N. FOR ANY AREA EXCEEDING 49 OCCUPANTS.
5. OVERHANG MAY BE USED IN VARYING WIDTHS - UP TO 1'-0" FOR BASIC CLASSROOM CONFIGURATION SEE SHEET A-1.00, A-1.11, A-1.12, A-1.13 AND A-1.14 FOR REFLECTED CEILING PLAN AND NOTES SEE SHEET A-1.10.
6. ANY SITE ADAPTATIONS SHALL BE ENCLOSED. THIS FC IS NOT APPROVED FOR SCIENCE VOCATIONAL SPECIAL HAZARDS.
7. CLASSROOM USED FOR DAYCARE SHALL SUBMITTED FOR REVIEW FOR EXITING ON SITE SPECIFIC PLANS.
8. Two permanent metal identification labels shall be placed on each building module, one mechanically fastened to the exterior and the other mechanically fastened to the interior frame above the ceiling, at the end of the module. The labels shall show the DSA application number and CBC edition under which the building construction was authorized, the manufacturer or builder's name, the serial number, the design climate zones (per Title 24, Part 6, Section 1431(a)8), the design live loads for the roof and floor framing, the design wind speed and exposure category, and seismic design parameter Ss.

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPROS 116810  
ACR FLS M SSS PRC  
DATE 02/14/18



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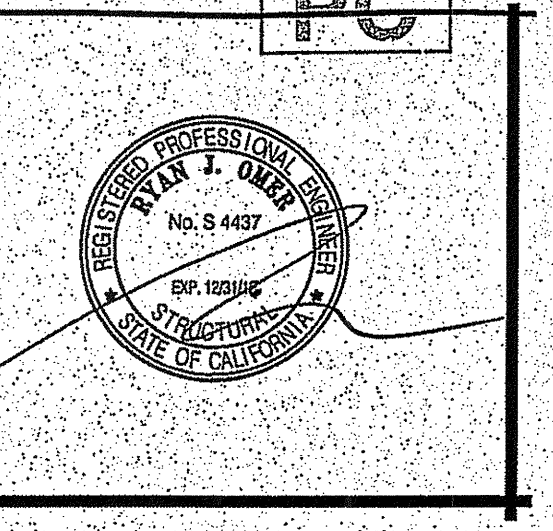


SOG-32  
RE-LOCATABLE  
BUILDING PC

APPROVALS  
IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
PRE CHECK (PC) DOCUMENT  
CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION  
FOR CONSTRUCTION IS REQUIRED.

FILE # PC-JTS  
APPL # 113871  
DATE 3/19/15

PROJECT XX-XXX



SHEET NAME  
**FLOOR PLAN  
LAYOUTS  
2 - 5 MODULES**

SHEET NUMBER  
**A-1.01**



IR-25-2.13

METAL SUSPENSION SYSTEMS FOR LAY-IN PANEL CEILINGS

**PURPOSE:** The purpose of this Interpretation of Regulations (IR) is to provide guidelines for the installation of metal suspension systems for lay-in ceilings on projects approved under the 2013 California Building Code (CBC). For projects submitted to the DSA for review under the 2007 or 2010 CBC, see IR 25-2.07 or IR 25-2.10, respectively.

**1. GENERAL REQUIREMENTS:** CBC Section 1616A.1.20 (1616.10.16\*) requires the design and installation to be in compliance with ASTM C635, C636, and E580, Section 5, as amended by 2013 CBC Section 1616A.1.20 (1616.10.16\*).

**Note:** Amendments in CBC Section 1616A.1.20 (1616.10.16\*) replace ASCE 7, Section 13.5.6.

The requirements in this IR apply to flat and level ceiling systems whose total weight, including ceiling mounted air terminals, services and light fixtures, does not exceed four (4) psf. Heavier systems, systems that are not flat and level, and those supporting lateral loads from partitions are beyond the scope of this IR and will require special design and details.

**2. SUSPENSION SYSTEM COMPONENTS:** Shall comply with ASTM C635 and Section 5.1 of ASTM E580.

**2.1** The ceiling grid system must be rated heavy duty as defined by ASTM C635.

**2.2** Ceiling wire shall be Class 1 zinc coated (galvanized) carbon steel conforming to ASTM A641. Wire shall be #12 gage (0.106" diameter) with soft temper and minimum tensile strength = 70 ksi.

**2.3** Main runners, cross runners, splices, expansion devices, and intersection connectors shall be designed to carry a mean ultimate test load of not less than 180 lbs. in compression and tension per ASTM E580 Section 5.1.2.

**3. SUSPENSION SYSTEM INSTALLATION:** Shall comply with ASTM C636 and Section 5.2 of ASTM E580.

**3.1** #12 gage hanger wires may be used for up to and including a 4 foot by 4 foot grid spacing and shall be attached to main runners.

**3.2** Provide #12 gage hanger wires at the ends of all main and cross runners within eight (8) inches of the support or within one-fourth (1/4) of the length of the end tee, whichever is least, for the perimeter of the ceiling area (see Figure 2). Perimeter wires are not required when the length of the end tee is eight (8) inches or less.

**3.3** Ceiling grid members shall be attached to two (2) adjacent walls per ASTM E580, Section 5.2.3. Ceiling grid members shall be at least 3/4 inch clear of other walls. If walls run diagonally to ceiling grid system runners, one end of main and cross runners should be free, and a minimum of 3/4 inch clear of wall.

**3.4** The width of the perimeter supporting closure angle shall be not less than two inches. Grid systems with specialty or proprietary angles and support clips may be acceptable in accordance with Section 11 below.

**3.5** At the perimeter of the ceiling area, where main or cross runners are not connected to the adjacent wall, provide interconnection between the runners at the free end to prevent lateral spreading. A metal spreader strut or a #16 gage wire with a positive mechanical connection to the runner may be used and placed within eight (8) inches of the wall. Where the perpendicular distance from the wall to the first parallel runner is eight (8) inches or less, this interlock is not required.

**4. EXPANSION JOINTS, SEISMIC SEPARATION JOINTS, AND PENETRATIONS:**

**4.1** Expansion joints shall be provided in the ceiling at intersections of corridors and at junctions of corridors and lobbies or other similar areas (see Figure 7, Detail A).

**4.2** For ceiling areas exceeding 2,500 square feet, a seismic separation joint shall be provided in accordance with Figure 7, Detail A, to divide the ceiling into areas not exceeding 2,500 square feet. Alternatively, comply with ASTM E580, Section 5.2.9.

**4.3** Penetrations through the ceiling for sprinkler heads and other similar devices that are not integrally tied to the ceiling system in the lateral direction shall have a two (2) inch oversized ring, sleeve or adapter through the ceiling tile to allow free movement of one (1) inch in all horizontal directions. Alternatively, per ASTM E580, Section 5.2.8.5, a flexible sprinkler hose fitting that can accommodate one (1) inch of ceiling movement shall be permitted to be used in lieu of the oversized ring, sleeve, or adapter.

**5. LATERAL FORCE BRACING:** Lateral force bracing is required per this section for all ceiling areas. The spacing of the bracing assemblies must be shown on the construction documents.

**Exception:** Lateral force bracing may be omitted for suspended acoustical ceiling systems with a ceiling area of 144 square feet or less, when perimeter support, in accordance with Section 3.3 of this IR or with ASTM E580 Sections 5.2.2 and 5.2.3, are provided and perimeter walls are designed to carry the ceiling lateral forces.

**5.1** Provide lateral force bracing assemblies consisting of a compression strut and four (4) #12 gage played bracing wires oriented 90 degrees from each other (see Figure 1).

**5.2** Lateral force bracing assemblies shall be spaced per Table 1 for all values of the component importance factor (I<sub>c</sub>) of the ceiling.

LATERAL FORCE BRACE ASSEMBLY SPACING

| Design Spectral Acceleration Parameter S <sub>DS</sub> | Brace Assembly Spacing                    |
|--|---|
| Less than or equal to 1.15                             | 12'x12' Full building Height              |
| Greater than 1.15                                      | 8'x12' for z/h greater than 0.5           |
| and less than or equal to 1.73                         | 12'x12' for z/h less than or equal to 0.5 |
| Greater than 1.73                                      | 8'x8' for z/h greater than 0.5            |
|  | 8'x12' for z/h less than or equal to 0.5  |

Where, as defined in ASCE 7-10, Section 13.3.1.1:

z = height in structure of point of attachment of ceiling with respect to the base.

h = average roof height of the structure with respect to the base.

Where different brace spacing is specified at various stories, the respective ceiling plan shall clearly indicate the brace spacing.

There shall be a brace assembly a distance of not more than one half of the above spacing from each surrounding wall, expansion joint and at the edges of any ceiling vertical offset. For example, where the brace spacing is 8'x12', the distance shall be 4 feet in the direction of the 8 foot spacing and 6 feet in the direction of the 12 foot spacing.

**5.3** The slope of bracing wires shall not exceed 45 degrees from the plane of the ceiling and wires shall be taut. Splices in wires are not permitted without DSA approval.

**5.4** Compression struts shall be adequate to resist the vertical component induced by the bracing wires, and shall not be more than one (horizontal) in six (vertical) out of plumb.

**6. ATTACHMENT OF HANGER AND BRACING WIRES:**

**6.1** Fasten hanger wires with not less than three (3) tight turns in three (3) inches. Hanger wire loops shall be tightly wrapped and sharply bent to prevent any vertical movement or rotation of the member within the loops (see ASTM E580, Section 5.2.7.2).

**6.2** Fasten bracing wires with four (4) tight turns. Make all tight turns within a distance of one and one-half (1-1/2) inches.

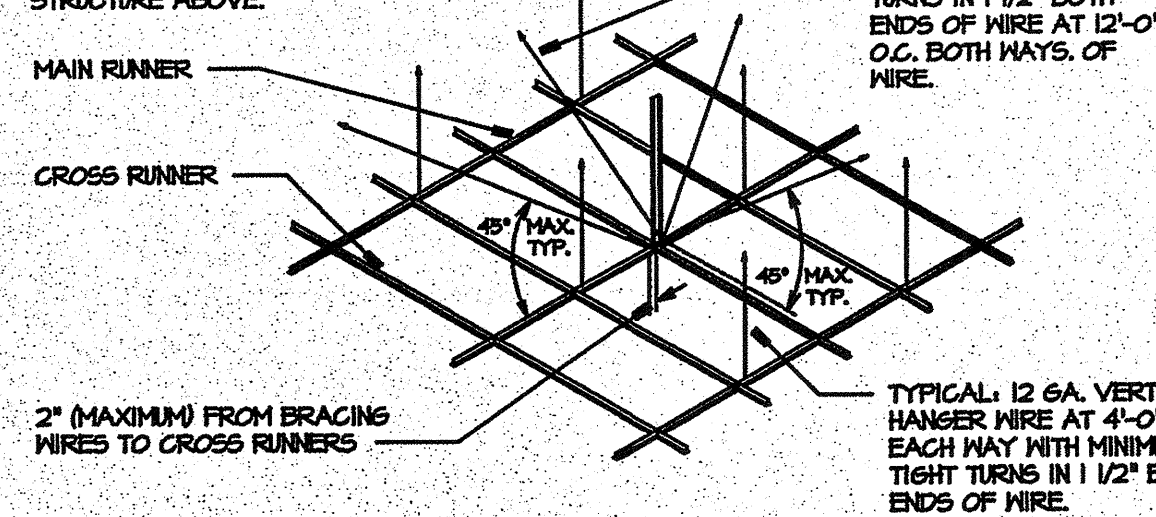
**6.3** Hanger or bracing wire anchored to the structure should be installed in such a manner that the direction of the anchor aligns as closely as possible with the direction of the wire.

**6.4** Separate all ceiling hanger and bracing wires at least six (6) inches from all unbraced ducts, pipes, conduit, etc.

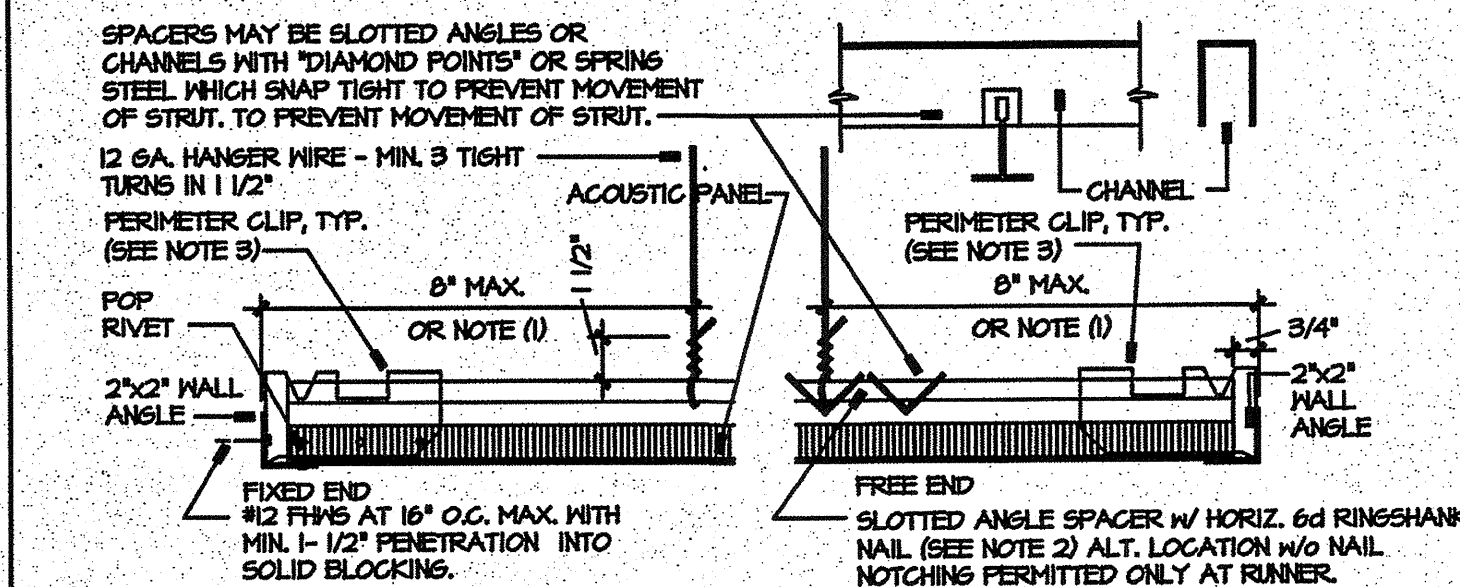
**6.5** Hanger wires shall not attach to or bend around interfering material or equipment. Provide trapeze or other supplementary support members at obstructions to typical hanger spacing (see Figure 3A, Detail F). Provide additional hangers, struts or braces as required at all ceiling breaks, soffits, or discontinuous areas.

COMPRESSION STRUT, MINIMUM 20 GA. x 4" STEEL C STUD STARTING NOT MORE THAN 48" FROM TWO ADJACENT WALLS AND 12" FROM TWO OTHER ADJACENT WALLS TO SUPPORT A TRIANGULAR AREA OF 144 SQUARE FEET MAXIMUM. STRUT TO HAVE L/F RATIO EQUAL TO OR LESS THAN 200. ATTACH TO MAIN RUNNERS WITH 1/4" M.B. AND TO TRUSS JOIST BLOCKING WITH 2 - #12 WOOD SCREWS. SEE DETAIL B. COMPRESSION STRUT SHALL NOT REPLACE HANGER WIRE.

NOTE: SEE DETAILS BELOW FOR CONNECTIONS OF BRACING AND HANGER WIRES TO THE STRUCTURE ABOVE.



A ACOUSTICAL CEILING GRID ATTACHMENT



NOTES: 1) 1/4 OF THE LENGTH OF THE END RUNNER, WHICHEVER IS LESS.  
2) NAILS AT ENDS OF HORIZONTAL STRUTS ARE TO BE PLACED WITH NAIL HEAD TOWARD CENTERLINE OF SPAN OF STRUT.  
3) IF PERIMETER CLIPS ARE USED, POP RIVETS AND SLOTTED ANGLE SPACERS ARE NOT REQUIRED.

C HORIZONTAL STRUT

- 6.6 Hanger wires that are more than one (horizontal) in six (vertical) out of plumb shall have counter-sloping wires. Perimeter hanger wires at main runners that are positively attached to the perimeter closure angle, counter-sloping is optional.  
**Note:** See ASTM C636, Figure 1, for counter-sloping methods.
- 6.7 When connection details differ from those in the attached figures, attachment of bracing wires to the structure above and to the main runners shall be adequate for the load imposed. The weight (W<sub>v</sub>) shall be taken as not less than four (4) psf for calculating seismic forces (F<sub>v</sub>).
- 6.8 When drilled-in concrete anchors or power actuated fasteners are used in reinforced concrete for hanger wires, 1 out of 10 wire/anchor assemblies must be field tested for 200 lbs. In tension. When drilled-in concrete anchors are used for bracing wires, 1 out of 2 wire/anchor assemblies must be field tested for 440 lbs. In tension in the direction of the wire. Power actuated fasteners in concrete are not permitted for bracing wires.

**7. CEILING FIXTURES, TERMINALS, AND DEVICES:** All fixtures, terminals, and other devices shall be mounted in a manner that will not compromise ceiling performance in accordance with Section 13.5.6.2.2(5) of ASCE 7-10 as amended by 2013 CBC Section 1616A.1.20 (1616.10.16\*) and ASTM E580 Sections 5.3 and 5.4.

**7.1** Ceiling panels shall not support any light fixtures, air terminals or devices.

**7.2 Light Fixtures:**

**7.2.1** All light fixtures shall be positively attached to the ceiling suspension systems by mechanical means to resist a horizontal force equal to the weight of the fixture. Screws or approved fasteners are required. A minimum of two attachments are required at each light fixture, per ASTM E580, Section 5.3.1.

**7.2.2** Light fixtures weighing less than or equal to 10 lb. shall have a minimum of one (1) #12 gage slack safety wire connected from the fixture housing to the structure above.

**7.2.3** Light fixtures weighing greater than 10 lb. but less than or equal to 56 lbs. may be supported directly on the ceiling runners, but they shall have a minimum of two (2) #12 gage slack safety wires connected from the fixture housing at diagonal corners and anchored to the structure above.

**7.2.4** Light fixtures weighing greater than 56 lb. shall be independently supported by not less than four (4) taut #12 gage wires attached to the housing and to the structure above. The four (4) taut #12 gage wires, including their attachment to the structure above, must be capable of supporting four (4) times the weight of the unit.

**7.2.5** All four foot x four foot light fixtures must have slack safety wires at each corner unless supported per Section 7.2.4.

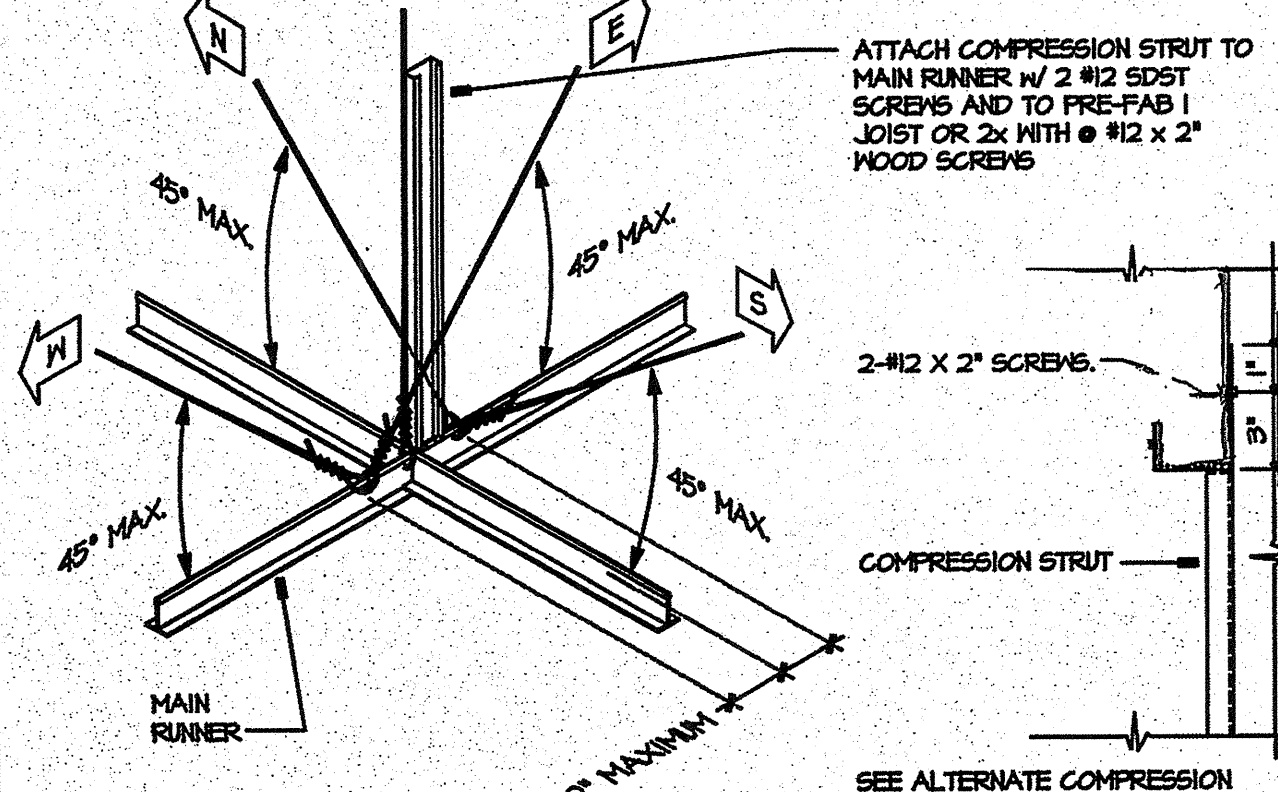
**7.2.6** Surface-mounted fixtures shall be attached to the main runner with at least two positive clamping devices made of material with a minimum #14 gage. Rotational spring catches do not comply. A #12 gage suspension wire shall be attached to each clamping device to the structure above. Provide additional supports when light fixtures are eight (8) feet or longer. Maximum spacing between supports shall not exceed eight (8) feet.

**7.2.7** Support pendant-mounted light fixtures directly from the structure above with hanger wires or cables passing through each pendant hanger and capable of supporting two (2) times the weight of the fixture. See IR 16-9 for additional requirements for pendant mounted fixtures.

If the pendant mounted light fixture is directly and independently braced below the ceiling, i.e., aircraft cables to walls, then a brace assembly is not required above the ceiling.

If the pendant mounted light fixture is not directly and independently braced below the ceiling, then a bracing assembly, per Figure 1, is required where the pendant hanger penetrates the ceiling. Special details are required to attach the pendant hanger to the bracing assembly to transmit the horizontal force. Exception: Where the weight of the fixture is less than 20 pounds, the compression post shown in Figure 1 is not required.

**7.2.8** Rigid conduit shall not be used for attachment of the fixtures.



D HANGER WIRE CONNECTION TO GRID

- 7.3 Services within the Ceiling:
- 7.3.1 All flexible sprinkler hose fittings, ceiling-mounted air terminals or other services shall be positively attached to the ceiling suspension systems by mechanical means to resist a horizontal force equal to the weight of the component. Screws or approved fasteners are required. A minimum of two attachments are required at each component.
- 7.3.2 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing less than or equal to 20 lb. shall have one (1) #12 gage slack safety wire attached to the terminal or service to the structure above.
- 7.3.3 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 20 lb. but less than or equal to 56 lb. shall have two (2) #12 gage slack safety wires attached to the terminal or service to the structure above.
- 7.3.4 Flexible sprinkler hose fittings, ceiling-mounted air terminals or other services weighing more than 56 lb. shall be supported directly from the structure above by not less than four (4) taut #12 gage wires attached to the terminal or service and to the structure above. The four (4) taut #12 gage wires, including their attachment to the structure above, must be capable of supporting four (4) times the weight of the unit.

**7.4 Other Devices within the Ceiling:**

**7.4.1** All lightweight miscellaneous devices, such as strobe lights, occupancy sensors, speakers, exit signs, etc., shall be attached to the ceiling grid per Section 7.3.1 of this IR. In addition, devices weighing more than 10 lbs. shall have a #12 gage slack safety wire anchored to the structure above per Section 7.2.2 of this IR. Devices weighing more than 20 lbs. shall be supported from the structure above per Section 7.3.4 of this IR.

**8. ADDITIONAL REQUIREMENTS:**

**8.1 Fire Rated Ceilings:**

Provide a detail and design number for rated ceiling assemblies from an authorized testing agency. The components and installation details must conform in every respect with the listed detail and number. Details shall clearly depict all components, including insulation materials, framing and attachment of the design so that the assembly can be constructed and inspected accordingly.

Pop rivets, screws, or other attachments are not acceptable unless specifically detailed on the drawings and approved by U.L. and State Fire Marshal (SFM) recognized laboratories.

**8.2 Metal and Other Panels:**

Metal panels and panels weighing more than one-half (1/2) psf, other than mineral fiber acoustical tile, are to be positively attached to the ceiling suspension runners.

**8.3 Essential Services Buildings:**

Exitways shall be installed in accordance with Section 13.5.6.2.2(1) of ASCE 7-10 as amended by 2013 CBC Section 1616A.1.20 (1616.10.16\*). A main or cross runner shall be installed on all sides of each piece of tile, board or panel and each light fixture or grill (see Figure 7, Detail B). Splices or intersection of such runners shall be attached with through connectors such as pop rivets, screws, pins, plates with end tabs or other approved connectors.

**8.4 Suspended Acoustical Ceilings Below Gypsum Board Ceilings:**

Where gypsum board or other ceiling finishes are attached to the framing, specific details will be required for the vertical hanger wire and lateral-bracing wire support connections to the framing.

**9. RE-USE OF EXISTING CEILING HANGER WIRES AND BRACING WIRES:**

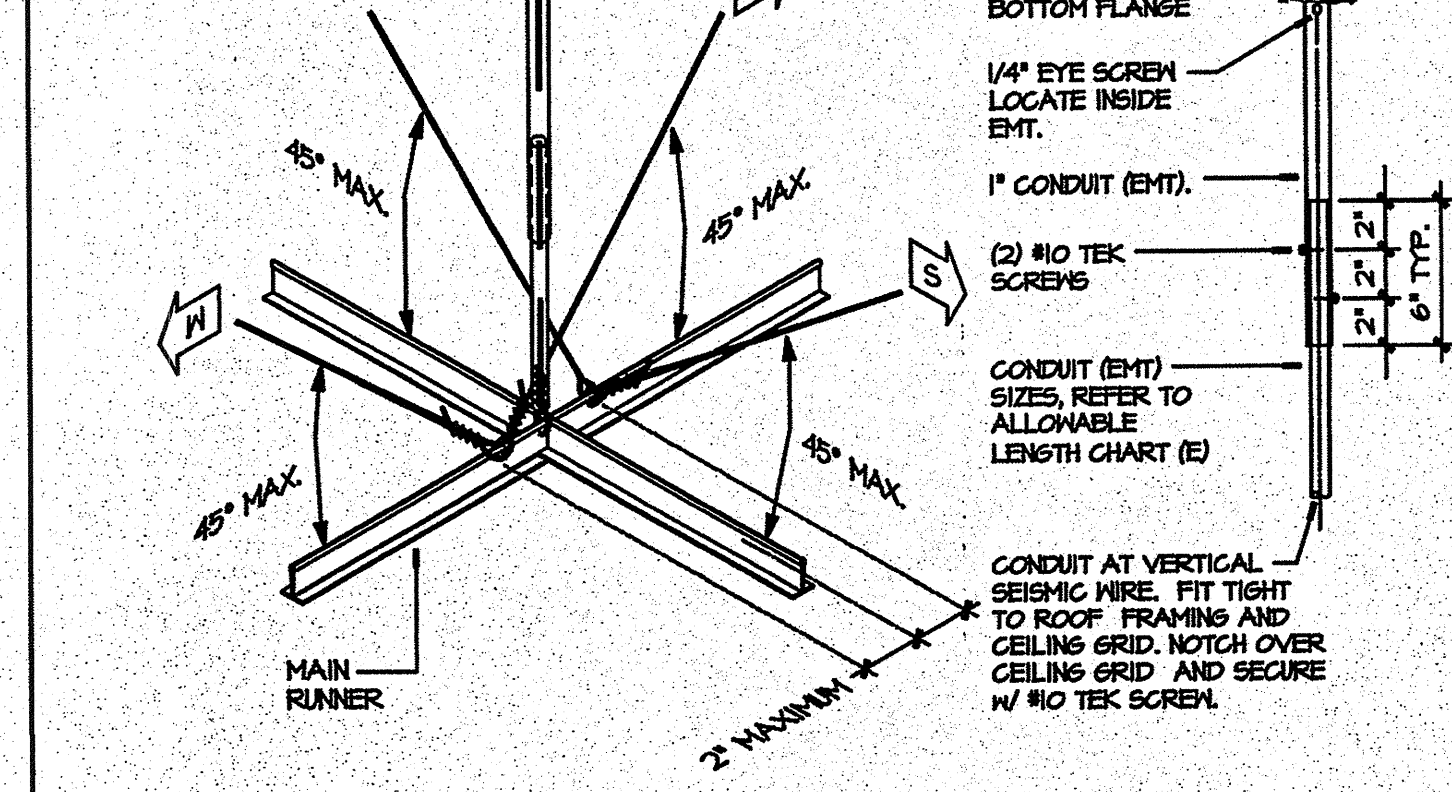
**9.1** The gage and spacing of the wires must comply with the current applicable codes.

**9.2** All existing ceiling hanger wire/anchor assemblies must be tested to 200 lbs.

**9.3** All existing bracing wire/anchor assemblies must be field tested to 440 lbs.

**9.4** If a new wire is to be spliced to an existing wire, the following is required:

- The architect or structural engineer in general responsible charge must submit to the DSA for approval a detail and specification describing how the splice is to be made.
- All new wires, after being spliced to the existing wires, must be field tested per Sections 9.2 and 9.3 above.
- All field tests must be performed in the presence of the project inspector.



E ALLOWABLE LENGTH CHART

| EMT SIZE | AREA  | R   | MAXIMUM HEIGHT |           |
|----------|-------|-----|----------------|-----------|
|          |       |     | sq. in.        | ft. - in. |
| 1/2"     | 0.088 | 235 | 41             | 5'-11"    |
| 3/4"     | 0.184 | 304 | 62             | 5'-2"     |
| 1"       | 0.198 | 312 | 78             | 6'-6"     |
| 1 1/4"   | 0.245 | 311 | 102            | 8'-6"     |
| 1 1/2"   | 0.342 | 348 | 114            | 9'-11"    |
| 2"       | 0.435 | 344 | 151            | 12'-7"    |

| SINGLE STUD     | AREA | R <sub>y</sub> | MAXIMUM HEIGHT |           |
|-----------------|------|----------------|----------------|-----------|
|                 |      |                | sq. in.        | ft. - in. |
| 20 ga. x 2 1/2" | 228  | 624            | 125            | 10'-5"    |

| DOUBLE STUDS    | AREA | R <sub>y</sub> | MAXIMUM HEIGHT |           |
|-----------------|------|----------------|----------------|-----------|
|                 |      |                | sq. in.        | ft. - in. |
| 20 ga. x 2 1/2" | 446  | 265            | 171            | 14'-4"    |

**10. MODERNIZATION AND ALTERATION:** The entire ceiling shall be upgraded to meet the current requirements of the CBC and this IR if any portion of the grid system is cut or altered.

**Exception:** The replacement of existing ceiling panels with panels of the same materials and light fixtures of the same size, locations, and weights does not require an upgrade to the ceiling grid and suspension system.

**11. DSA ACCEPTANCE OF EVALUATION REPORTS:** Ceiling grid systems or components, with valid evaluation reports issued by qualified evaluation agencies, in accordance with DSA IR A-5, are accepted by the DSA, provided the system or component meets the requirements of CBC Section 1616A.1.20 (1616.10.16\*), ASTM C635, C636 and E580. Where a qualified evaluation report is utilized, the installation shall comply with all the requirements specified in the evaluation report, i.e. connections, member sizes, perimeter details, special clips to wall angles, etc.

In accordance with DSA IR A-5, DSA will accept OSHPD Preapproved Details (OPD) "2013 CBC Standard Suspended Ceiling Details for Acoustical Tile or Lay-in Panel Ceilings."

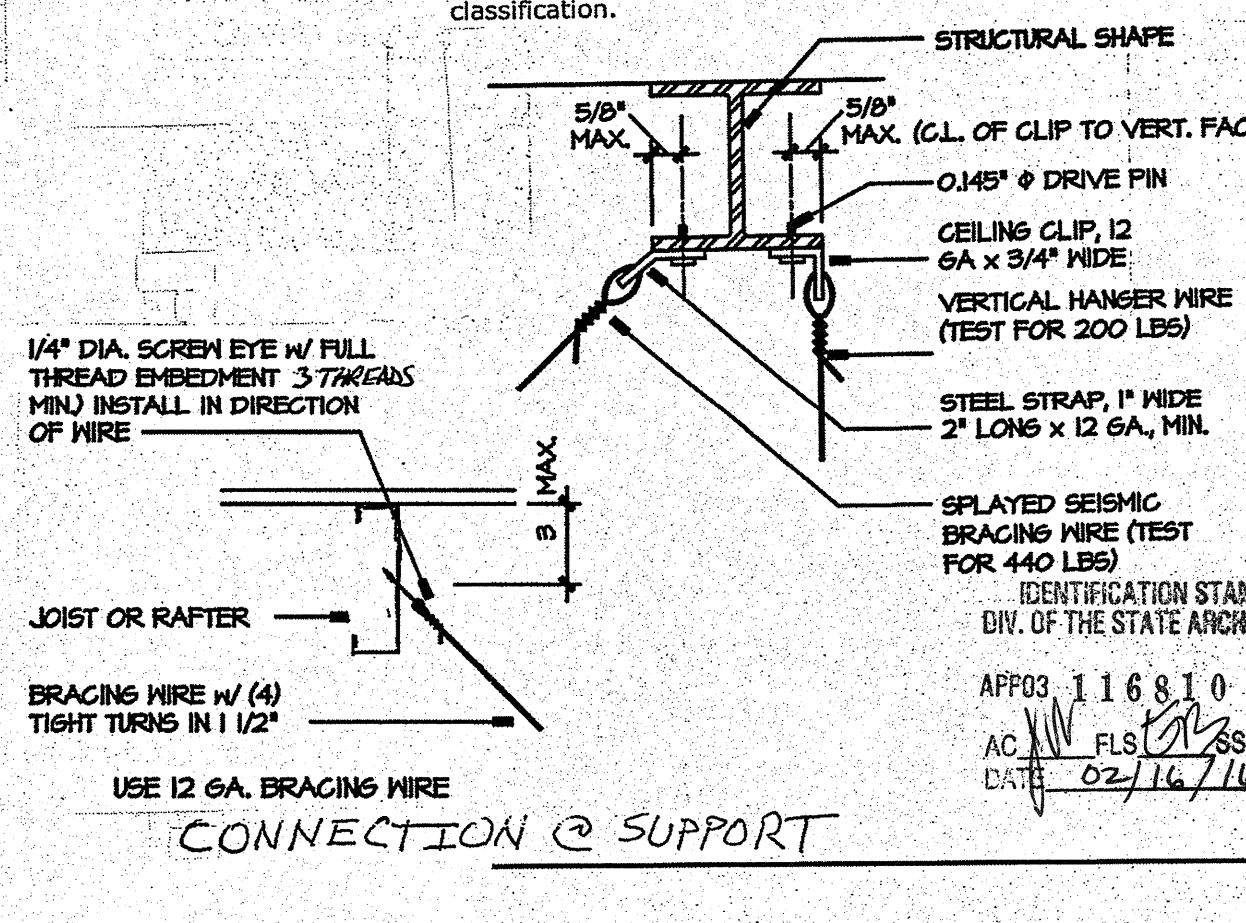
**12. CONSTRUCTION DOCUMENTS:** Drawings and specifications shall clearly identify all systems and shall define or show all supporting details, lighting fixture attachment, lateral force bracing, partition bracing, seismic separations, etc.

Where accepted proprietary devices, clips, wall angles, etc. are utilized, the details on the approved construction documents shall clearly indicate the installation details as necessary to show compliance with all evaluation report requirements.

Where differences occur between provisions of this IR and the CBC, the provisions of the CBC shall apply.

A list of acceptable grid systems must be shown on the drawings. The grid systems specified shall have valid evaluation reports in accordance with IR A-5. The following information shall be included on the drawings for each acceptable grid system specified:

- Classification of ceiling grid is heavy duty.
  - Manufacturer's catalog number - main runner (1), (2).
  - Manufacturer's catalog number - cross runner (2), (3).
  - Manufacturer's catalog numbers of detail for runner splice (2).
- Notes:** (1) Main runners must be rated as heavy duty.  
(2) Show manufacturer, duty classification and catalog numbers.  
(3) If a cross runner supports light fixtures, air terminals, or other cross runners, it shall be considered a main runner for the purpose of structural classification.



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SOG-32 RE-LOCATABLE BUILDING PC

FILE: PC-ITS

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PRE CHECK (PC) DOCUMENT  
CODE 2013 CBC  
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APPL # 02-113899  
DATE 3/19/15

PROJECT 06-0140

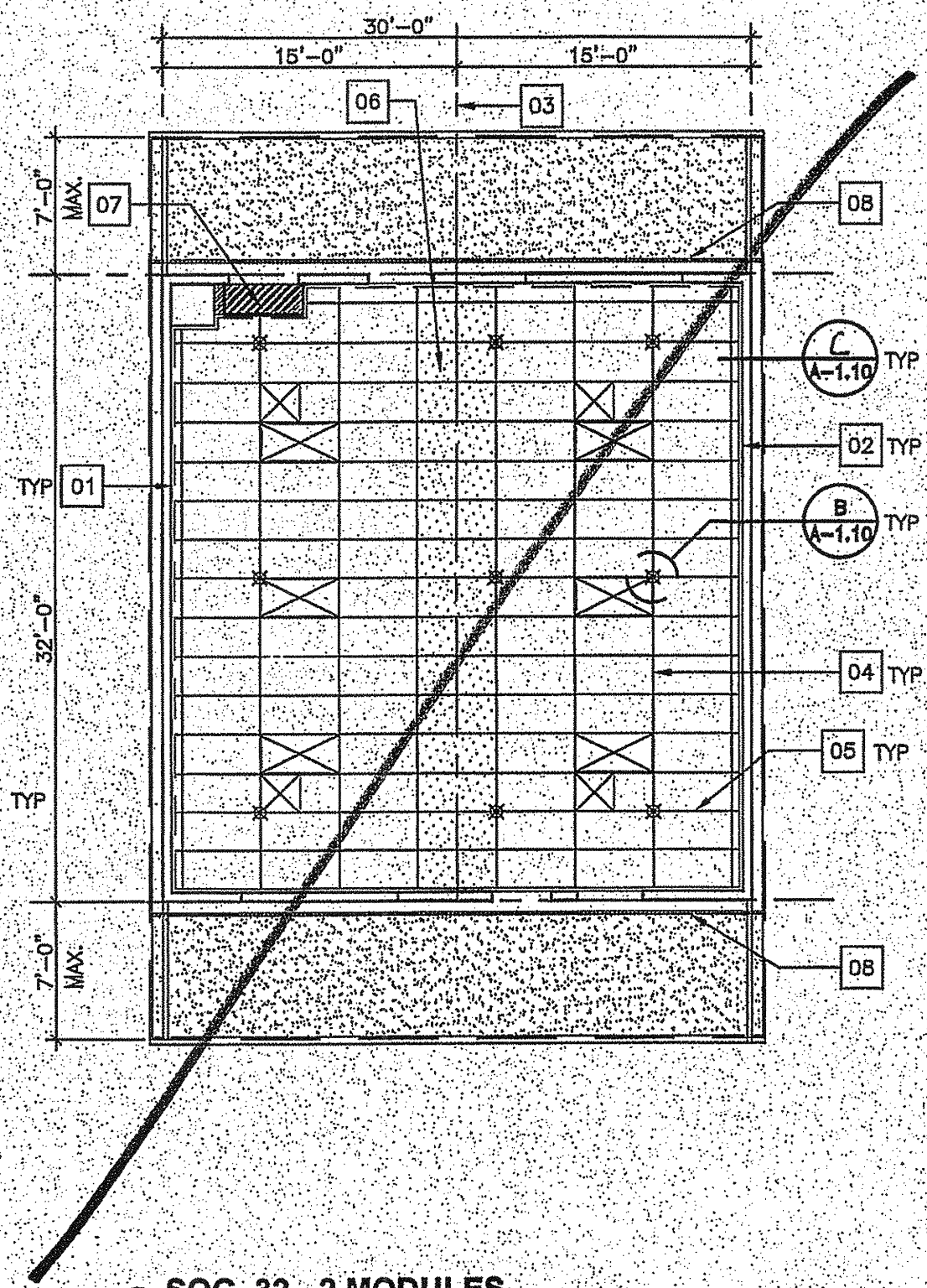
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PROFESSIONAL ENGINEER  
No. S 4437  
EXPIRES 02/28/16  
DATE 02/16/16

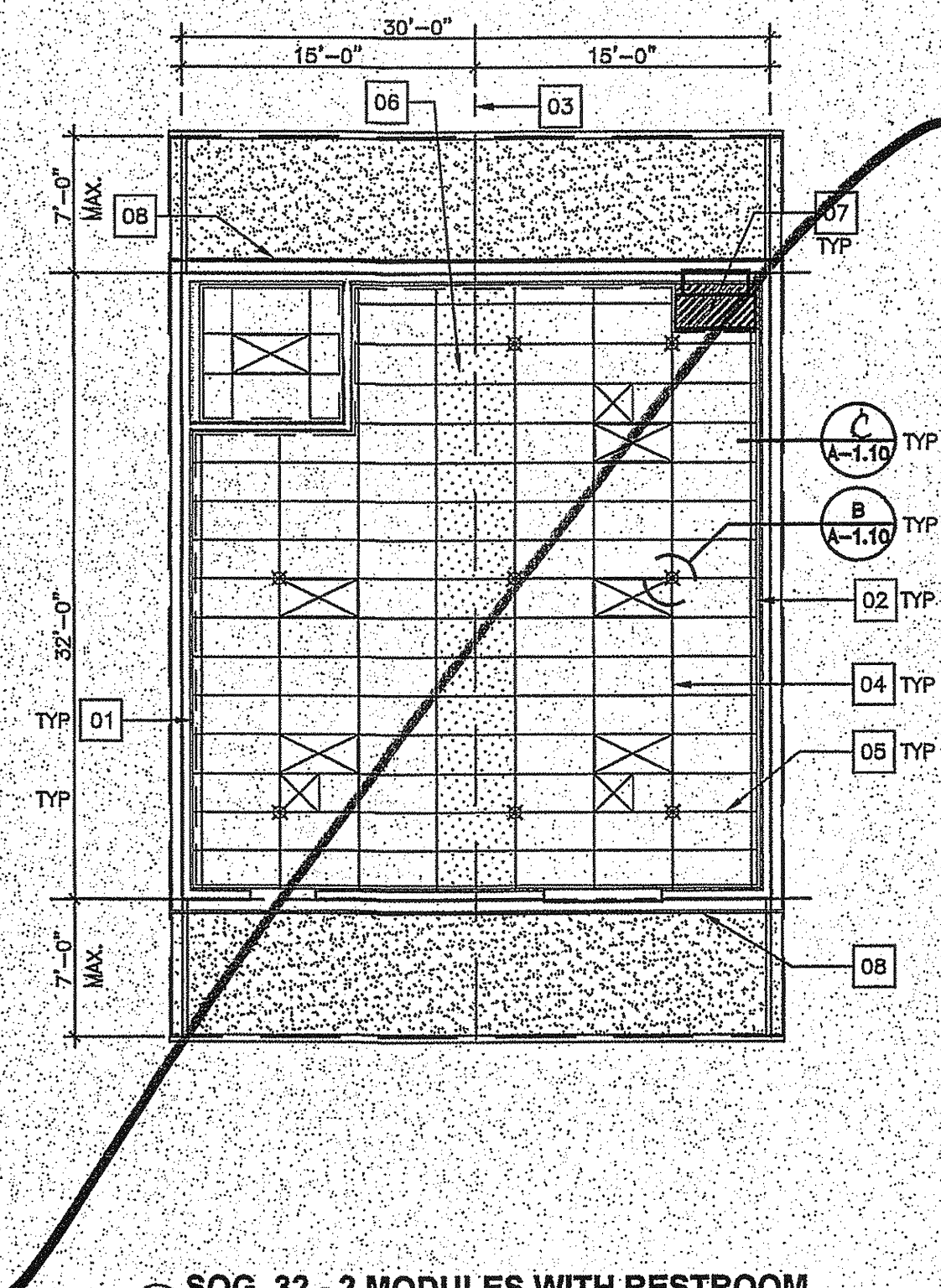
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**CEILING DETAILS**

SHEET NUMBER  
**A-1.10**

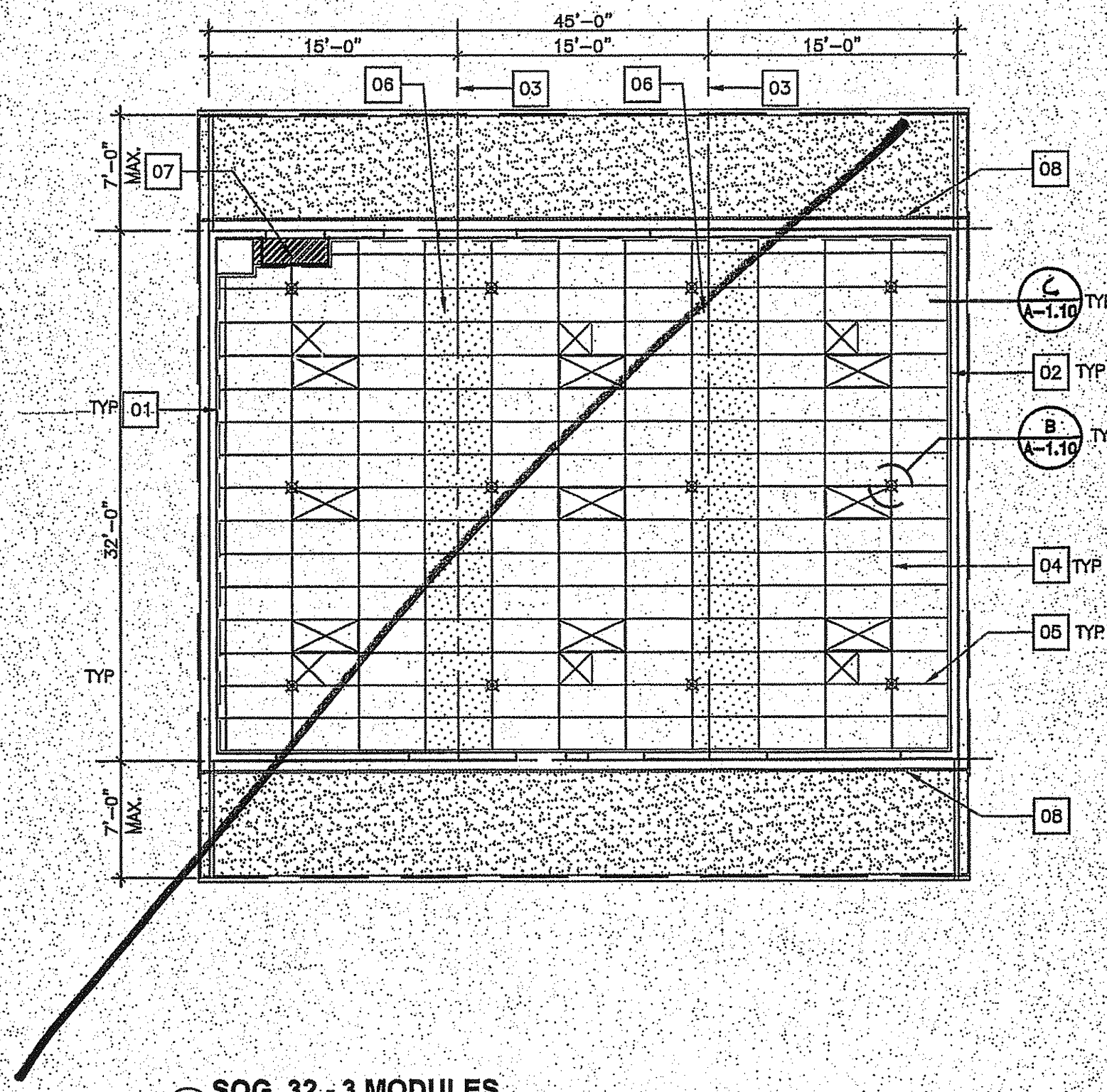




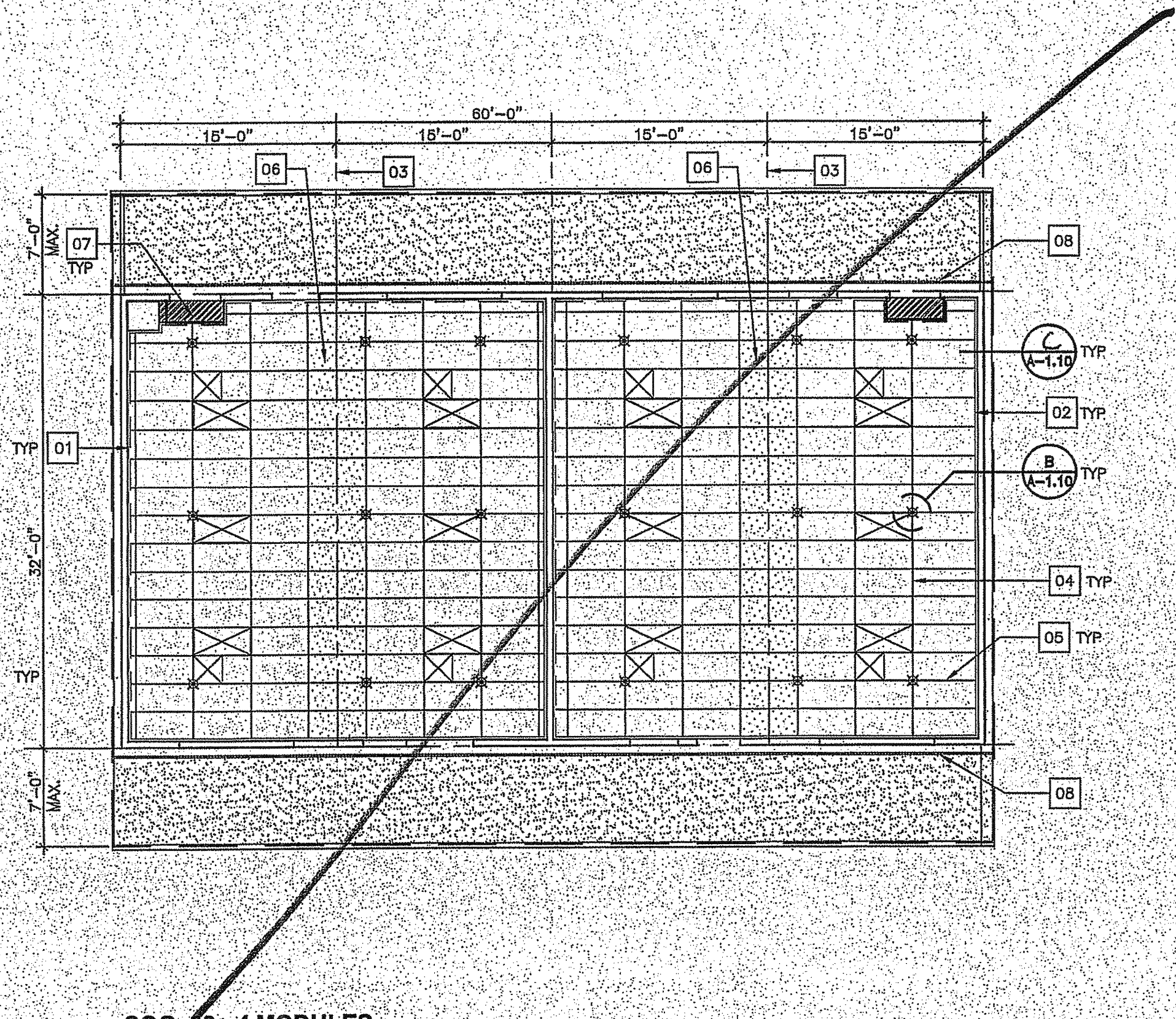
1 SOG 32 - 2 MODULES  
SCALE: 1/8" = 1'-0"



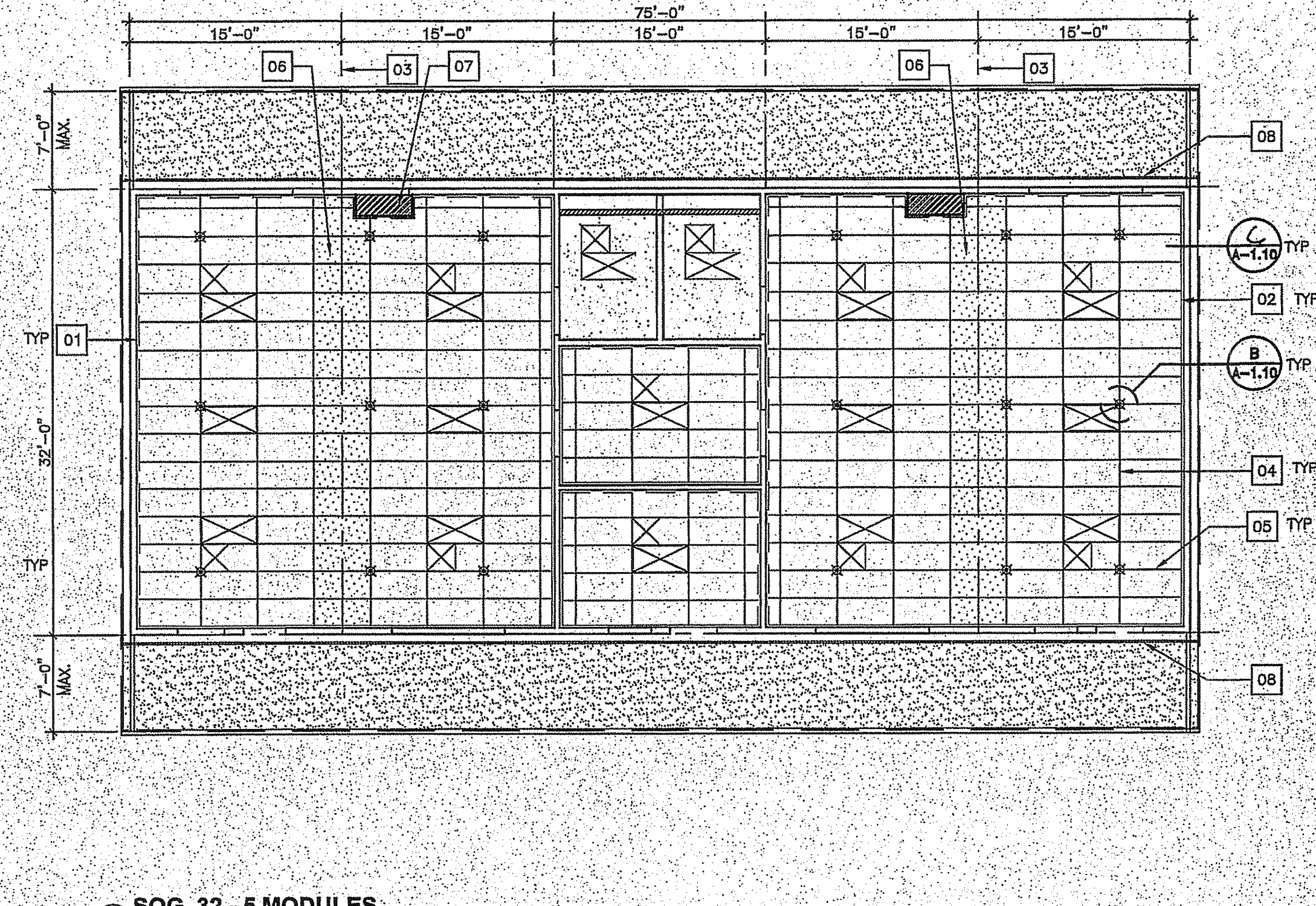
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2 SOG 32 - 3 MODULES  
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3 SOG 32 - 4 MODULES  
SCALE: 1/8" = 1'-0"



4 SOG 32 - 5 MODULES  
SCALE: 1/8" = 1'-0"

NOTE: LIGHT FIXTURE LAYOUT FOR REFERENCE ONLY EXACT LOCATIONS OF LIGHT FIXTURES SEE E-1.01 & E-1.02

### KEYNOTES

- 01 DASHED LINE INDICATES FREE END CONDITION
- 02 SOLID LINE INDICATES FIXED END CONDITION
- 03 MODLINE TYP.
- 04 MAIN RUNNERS TYP. AT 48" O.C.
- 05 CROSS RUNNERS TYP. AT 24" O.C.
- 06 SHADING INDICATES FIELD INSTALLED TILES.
- 07 SOFFIT FOR HVAC DUCT
- 08 2" HIDE VENTILATING SCREED - SECURE TO EACH ROOF JOIST W/1/2" WOOD SCREWS - TYP.

### CEILING LEGEND

- SUSPENDED TEE BAR CEILING SYSTEM WITH A MINIMUM CLASSIFICATION OF HEAVY DUTY-REFER TO CEILING NOTES AND DETAILS 5 AND 6 SHEET A-1.10
- CEILING TILES SHALL BE AS FOLLOWS: 2 X 4 LAY-IN PANELS PER ASTM FLAME SPREAD CLASS 1 (0-25). FLAME SPREAD SMOKE DEVELOPMENT NOT USED DENSITY LESS THAN 450 (TYPICAL).
- 1/2" DENS GLASS GOLD OVER 1/2" FLYWOOD
- FLUORESCENT LIGHT FIXTURES- SEE A-1.00 AND ELECTRICAL PLANS LIGHTING AND REGISTER NOTES FOR MOUNTING AND T-BAR INSTRUCTIONS
- SUPPLY AIR DIFFUSER - POSITIVELY SEE LIGHTING AND REGISTER NOTES FOR MOUNTING AND T-BAR INSTRUCTIONS
- SUSPENSION WIRE - SEE A-1.10

### LIGHTING/REGISTER NOTES:

FOR USE WITH HEAVY DUTY GRID:  
FLUSH OR RECESSED LIGHT FIXTURES AND AIR TERMINALS, WEIGHING LESS THAN 55 LBS, MAY BE SUPPORTED DIRECTLY ON THE RUNNERS OF A HEAVY DUTY GRID SYSTEM BUT, IN ADDITION, THEY MUST HAVE A MINIMUM OF TWO (2) #12 GALV BLACK SAFETY WIRES ATTACHED TO THE FIXTURE AT DIAGONAL CORNERS AND ANCHORED TO THE STRUCTURE ABOVE. ALL 4 FT. X 4 FT. LIGHT FIXTURES MUST HAVE SLACK SAFETY WIRES AT EACH CORNER.  
FOR HEIGHT 55LBS OR MORE, SEE DSA IR ON A-1.10

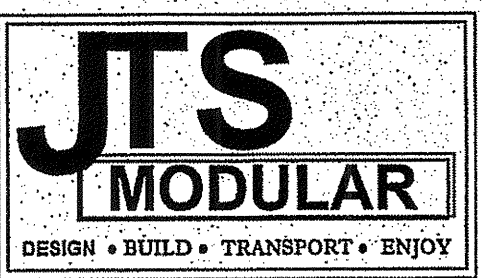
### CEILING NOTES:

CLASSIFICATION OF CEILING GRID IS: HEAVY DUTY  
ACCEPTABLE MANUFACTURERS: USG-OR-ARMSTRONGS  
MANUFACTURER'S CATALOG NUMBERS:  
MAIN RUNNERS: HEAVY DUTY GRID  
USG DX-26 FH - OR - EQUAL  
CROSS RUNNERS: HEAVY DUTY GRID  
USG DX-422 FH - OR - EQUAL  
WALL ANGLE TRIM USG 5824 OR EQUAL  
NOTE: SUSPENDED CEILING(S) SHALL BE INSTALLED IN FULL COMPLIANCE WITH DSA "IR-25-2.13" A COPY OF THIS DOCUMENT SHALL BE MAINTAINED AT THE MANUFACTURING FACILITY AT ALL TIMES.

### GENERAL NOTES:

1. OVERHANGS CAN BE VARYING LENGTHS UP TO 7'-0"
2. THIS CEILING SYSTEM IS APPROVED FOR A SYSTEM WHOSE TOTAL WEIGHT DOES NOT EXCEED 4 LBS. PSF, INCLUDING AIR CONDITIONING GRILLS AND LIGHT FIXTURES. SEPARATE ALL CEILING HANGER AND BRACING WIRES AT LEAST 6" FROM UN-BRACED DUCTS, PIPES, CONDUITS, ETC. IT IS ACCEPTABLE TO ATTACH ELECTRICAL CONDUIT NOT EXCEEDING 3/4" TO HANGER WIRE USING APPROVED CONNECTIONS.

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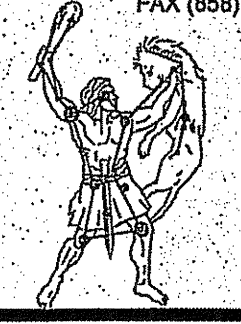
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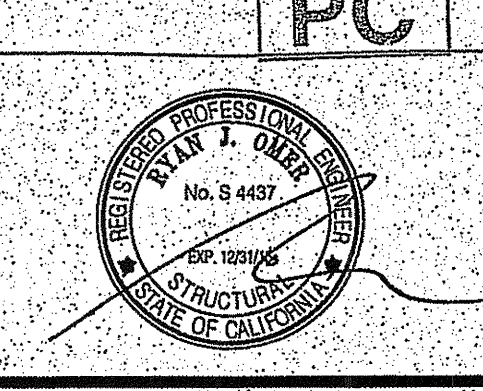
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DATE: 2/19/15  
DATE: \_\_\_\_\_  
PROJECT: 08-0140



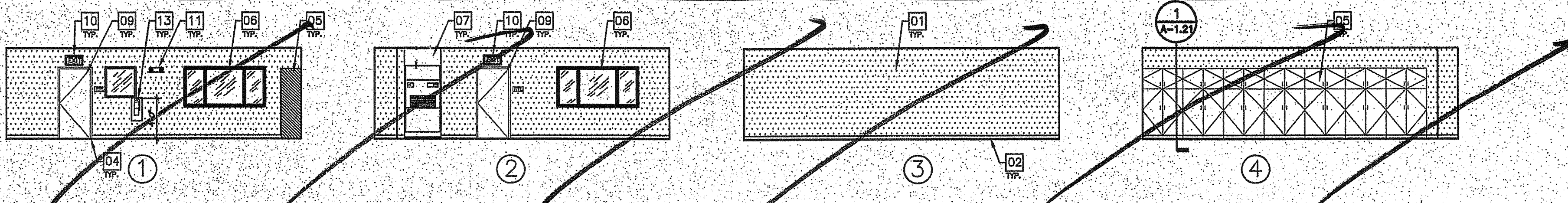
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2M - 5M  
CEILING PLANS

SHEET NUMBER  
A-1.11

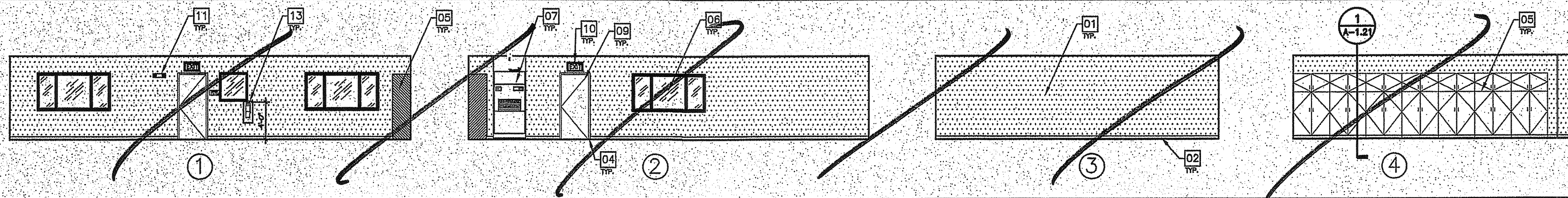






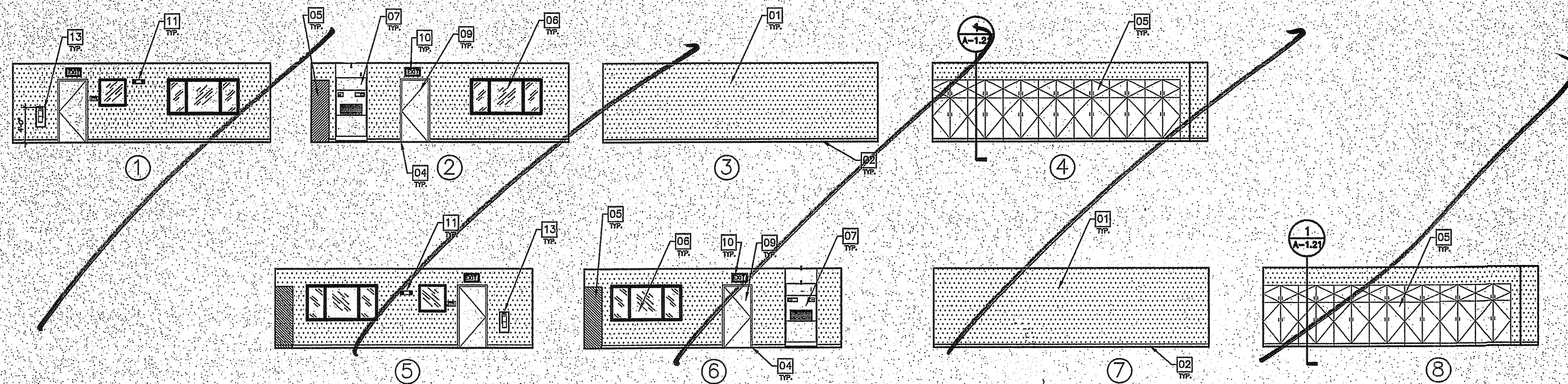


2 MODULAR INTERIOR ELEVATION



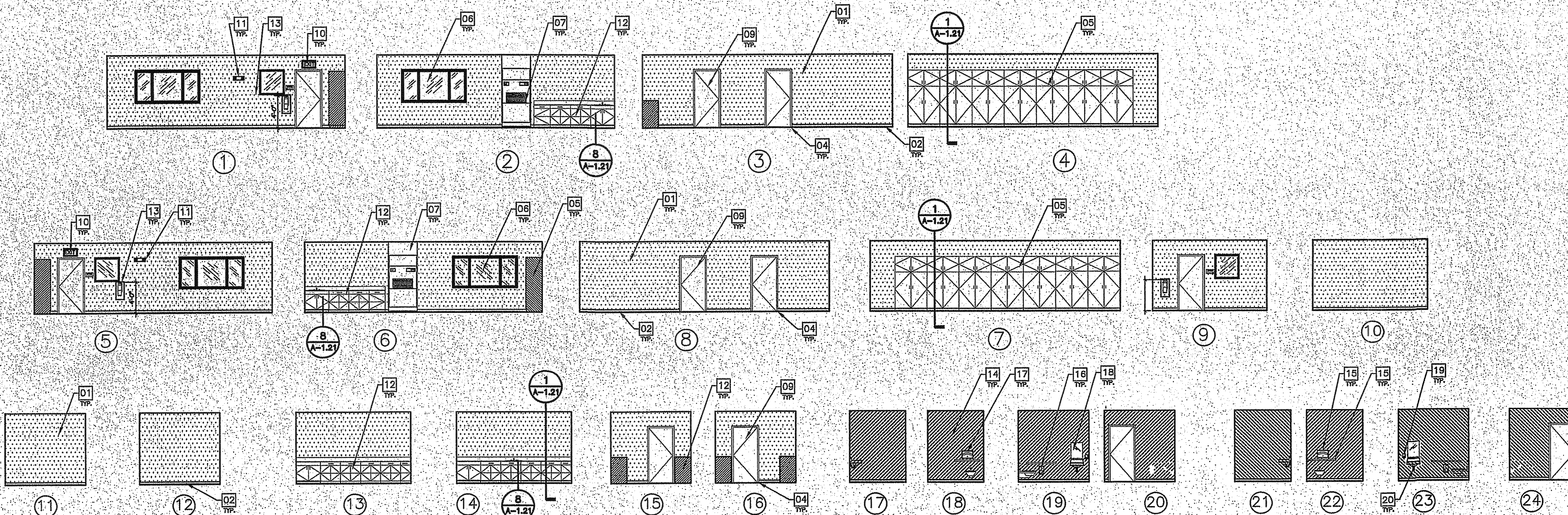
3 MODULAR INTERIOR ELEVATION

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



4 MODULAR INTERIOR ELEVATION

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

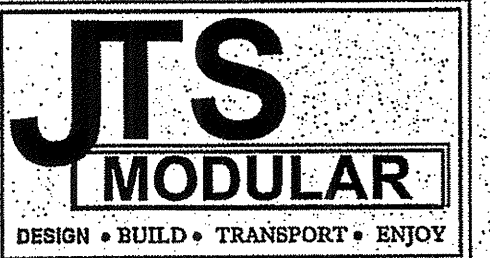


5 MODULAR INTERIOR ELEVATION

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

**KEYNOTES**

- 01 TACKBOARD OVER 1/2" GYPSUM BOARD WALLS TYPICAL WHERE SHADED
- 02 4" RUBBER TOP SET BASE
- 03 NOT USED
- 04 HOLLOW METAL DOOR FRAME
- 05 WALL CABINETS TYP. SEE A-1.21 DETAIL #1 FOR ATTACHMENT DETAILS
- 06 8'-0" X 4'-0" SLIDING ALUMINUM WINDOW
- 07 HVAC UNIT
- 08 RETURN GRILL OF WALL PAK UNIT
- 09 DOOR TYP. SEE SHEET A-1.21
- 10 EXIT SIGN
- 11 90 MIN. EMERGENCY BATTERY BACKUP LIGHTING
- 12 BASE CABINETS TYP. FOR ATTACHMENT DETAIL SEE A-1.21 DETAIL #2. BASE CABINET HEIGHT: 28" MIN. - 34" MAX. CABINETS SIZED FOR HIGH SCHOOL USE U.N.O.
- 13 PORTABLE FIRE EXTINGUISHER MOUNTED AT 48" A.F.F. AND WITHIN 5'-0" OF EXIT EGRESS
- 14 FRP ON WALLS
- 15 GRAB BAR
- 16 TOILET PAPER DISPENSER
- 17 TOILET SEAT COVER DISPENSER
- 18 MIRROR
- 19 SOAP DISPENSER
- 20 INSULATE ALL EXPOSED HOT WATER & WASTE PIPES



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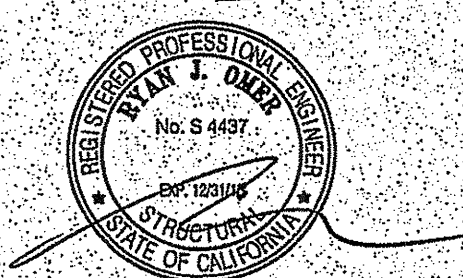
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PROJECT 06-0140

**PC**



SHEET NAME

**INTERIOR  
ELEVATIONS  
2M - 5M**

SHEET NUMBER

**A-2.00**

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**ENTRANCES & EXITS**

ALL ENTRANCES AND ALL EXTERIOR GROUND FLOOR EXIT DOORS TO BUILDINGS AND FACILITIES SHALL BE MADE ACCESSIBLE TO PERSONS WITH DISABILITIES. IN COMPLIANCE WITH 11B-206.4.

EXITS DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. SEC 100B.1.9.

MANUALLY OPERATING EDGE OR SURFACE-MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED. SECTION 100B.1.9.4

LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE. LOCKED EXIT DOORS SHALL OPERATE AS ABOVE IN EGRESS DIRECTION. SEC 100B.1.9.1 & 11B-404.2.7

HAND-ACTIVATED DOOR OPENING HARDWARE SHALL BE CENTERED BETWEEN 30" AND 44" ABOVE THE FLOOR. SEC 100B.1.9.2 & 11B-404.2.7

MINIMUM MANEUVERING CLEARANCES AT DOORS SHALL BE AS SHOWN IN FIGURE 11B-404.2.4.1 THE FLOOR OR GROUND AREA WITHIN THE REQUIRED CLEARANCES SHALL BE LEVEL AND CLEAR. SEC 11B-404.2.4

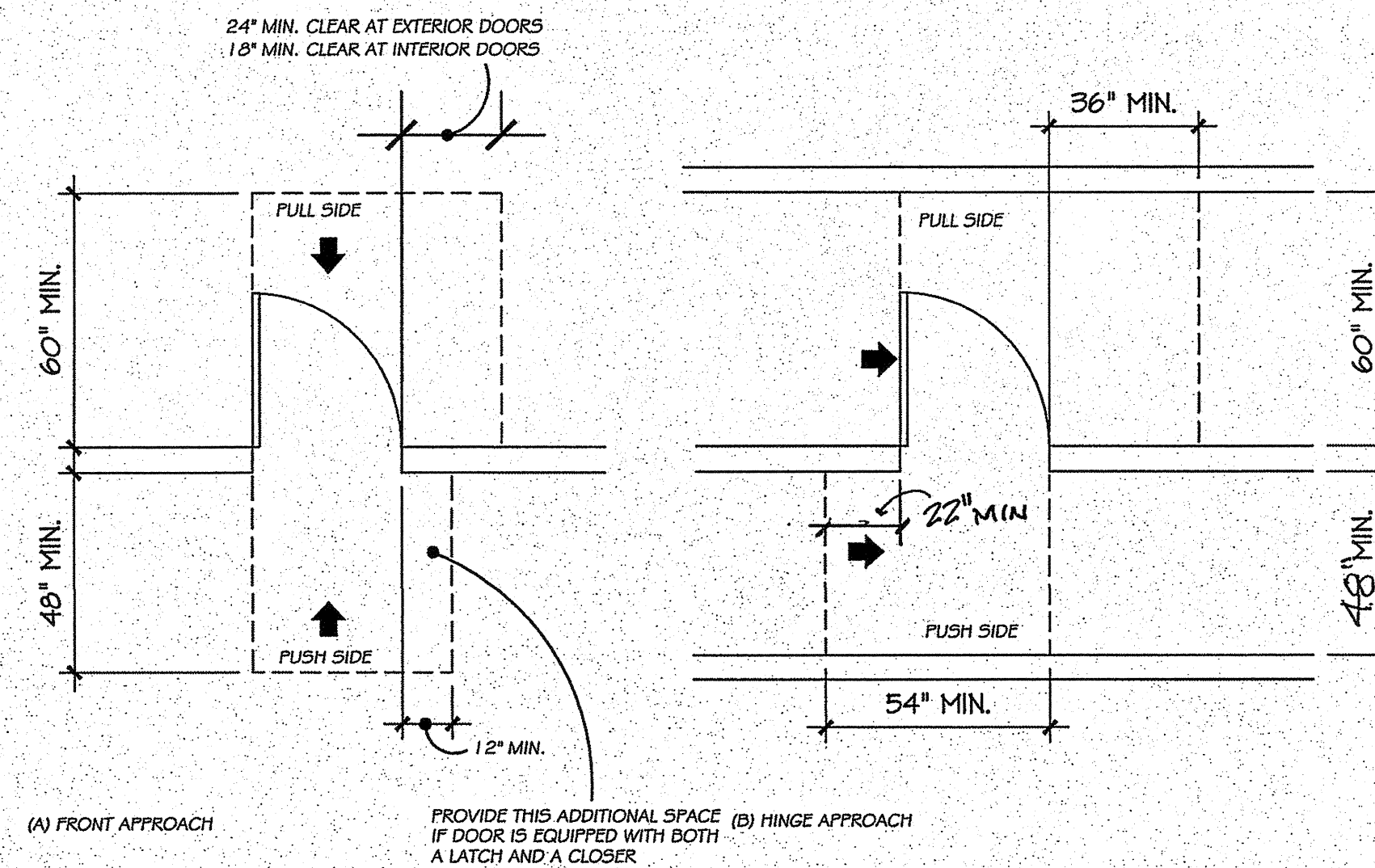
THERE SHALL BE A LEVEL AND CLEAR FLOOR OR LANDING ON EACH SIDE OF A DOOR. THE LEVEL AREA SHALL HAVE A LENGTH IN THE DIRECTION OF DOOR SWING OF AT LEAST 60" AND THE LENGTH OPPOSITE THE DIRECTION OF DOOR SWING OF 48" AS MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN THE CLOSED POSITION. SEC 11B-404.2.4 FIGURE 11B-404.2.4.1 & TABLE 11B-404.2.1

THE WIDTH OF THE LEVEL AREA ON THE SIDE TO WHICH THE DOOR SWINGS SHALL EXTEND A MINIMUM OF 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND A MINIMUM OF 18" PAST THE STRIKE EDGE FOR INTERIOR DOORS. SEC 11B-404.2.4 FIGURE 11B-404.2.4.1 & TABLE 11B-404.2.1

THE FLOOR OR LANDING SHALL BE NOT MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOORWAY. SEC 11B-404.2.5

THE BOTTOM 10" OF ALL DOORS EXCEPT AUTOMATIC AND SLIDING SHALL HAVE A SMOOTH, UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. WHERE NARROW FRAME DOORS ARE USED, A 10" HIGH SMOOTH PANEL SHALL BE INSTALLED ON THE PUSH SIDE OF THE DOOR, WHICH WILL ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. SEC 11B-404.2.10

MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 5 POUNDS FOR EXTERIOR DOORS AND 5 POUNDS FOR INTERIOR DOORS. SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHERE FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO THE MAXIMUM ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, NOT TO EXCEED 15 POUNDS. SEC 11B-404.2.9



**4 ENTRANCES & EXITS**

CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, FINCHING, OR TWISTING OF THE WRIST. NO GREATER THAN 5 LBS. OF FORCE SHALL BE REQUIRED TO ACTIVATE CONTROLS. SEE ALSO SECTIONS 210-7(G), 380-8(C) AND 760-9, CALIFORNIA ELECTRICAL CODE, FOR ELECTRICAL INSTALLATION (11B-309.4).

GENERAL CONTROLS AND OPERATING MECHANISMS REQUIRED TO BE ACCESSIBLE BY SECTION 10B.1 SHALL COMPLY WITH THE REQUIREMENTS OF THIS SECTION (11B-205.1).

CLEAR FLOOR SPACE. CLEAR FLOOR SPACE COMPLYING WITH SECTION 11B-305 THAT ALLOWS A FORWARD OR PARALLEL APPROACH BY A PERSON USING A WHEELCHAIR SHALL BE PROVIDED AT CONTROLS, DISPENSERS, RECEPTACLES AND OTHER OPERABLE EQUIPMENT (11B-309.2)

THE ELECTRICAL AND COMMUNICATION SYSTEM RECEPTACLE OUTLETS ON BRANCH CIRCUITS OF 30 AMPERES OR LESS SHALL BE INSTALLED NOT MORE THAN 48" TO TOP OF BOX NOR LESS THAN 15" ABOVE THE FLOOR OR WORKING PLATFORM TO BOTTOM OF BOX. SEC 11B-308.1.2

THE TOP OF BOX OF CONTROLS OR SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES, OR COOLING, HEATING, AND VENTILATING EQUIPMENT SHALL NOT BE MORE THAN 48" ABOVE THE FLOOR OR WORKING PLATFORM, NOR LESS THAN 15" SEC 380-9(C). SEC 11B-308.1.1

THE TOP OF FIRE ALARM INITIATING DEVICES (BOXES) SHALL BE LOCATED 48" MAX AND 42" MIN. TO TOP OF BOX ABOVE THE LEVEL OF THE FLOOR, WORKING PLATFORM, GROUND SURFACE, OR SIDEWALK. SEC 907.4.2.2 & 907.5.2.3.

THE INSTALLATION OF FIRE ALARM EQUIPMENT AND SYSTEMS IN ANY OCCUPANCY WITHIN THE SCOPE OF THESE REGULATIONS SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE CALIFORNIA ELECTRICAL CODE. SECTION 720.1.

THE HIGHEST OPERABLE PART OF ALL CONTROLS, DISPENSERS, RECEPTACLES, AND OTHER OPERABLE EQUIPMENT SHALL BE PLACED WITHIN AT LEAST ONE OF THE REACH RANGES SPECIFIED IN SECTIONS 11B-308.2 AND 11B-308.3. SECTION 11B-309.3

**SANITARY FACILITY FIXTURES & ACCESSORIES**

THE HEIGHT OF ACCESSIBLE WATER CLOSETS SHALL BE A MINIMUM OF 17" AND A MAXIMUM OF 19" MEASURED TO THE TOP OF A MAXIMUM 2" HIGH TOILET SEAT. SECTION 11B-604.4

A CLEAR FLOOR SPACE 30" BY 48" SHALL BE PROVIDED IN FRONT OF A LAVATORY TO ALLOW A FORWARD APPROACH. SUCH CLEAR FLOOR SPACE SHALL ADJOIN OR OVERLAP AN ACCESSIBLE ROUTE AND SHALL EXTEND A MAXIMUM OF 19" INTO KNEE AND TOE SPACE UNDERNEATH THE LAVATORY. SECTION 11B-606.2

LAVATORIES ADJACENT TO A WALL SHALL BE MOUNTED WITH A MINIMUM DISTANCE OF 18" TO THE CENTER LINE OF THE FIXTURE. SECTION 11B-606.6

LAVATORIES SHALL BE MOUNTED WITH THE RIM OR COUNTER SURFACE NO HIGHER THAN 34" ABOVE THE FINISHED FLOOR AND WITH A CLEARANCE OF AT LEAST 29" FROM THE FLOOR TO THE BOTTOM OF THE APRON WITH KNEE CLEARANCE UNDER THE FRONT LIP EXTENDING A MINIMUM OF 30" IN WIDTH AND 8" MINIMUM DEPTH AT THE TOP. TOE CLEARANCE SHALL BE THE SAME WIDTH AND SHALL BE A MINIMUM OF 9" HIGH FROM THE FLOOR AND A MINIMUM OF 17" DEEP FROM THE FRONT OF THE LAVATORY. SECTION 11B-606.3 AND SECTIONS 11B-306.3 (KNEE CLEARANCE) AND 11B-306.2 (TOE CLEARANCE).

HOT WATER AND DRAIN PIPES ACCESSIBLE UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE COVERED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES. SEC 11B-606.5.

CONTROLS FOR WATER CLOSET FLUSH VALVES SHALL BE MOUNTED ON THE WIDE SIDE OF TOILET AREAS. SEC 11B-604.6.

WATER CLOSET AND URINAL FLUSH VALVE CONTROLS, AND FAUCET AND OPERATING MECHANISM CONTROLS, SHALL BE OPERABLE WITH ONE HAND, SHALL NOT REQUIRE TIGHT GRASPING, FINCHING, OR TWISTING OF THE WRIST, AND SHALL BE MOUNTED NO MORE THAN 44" ABOVE THE FLOOR. SEC 11B-604.6, 11B605.4, 11B-606.4.

HAND-OPERATED METERING FAUCETS ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS. SEC 11B-606.4.

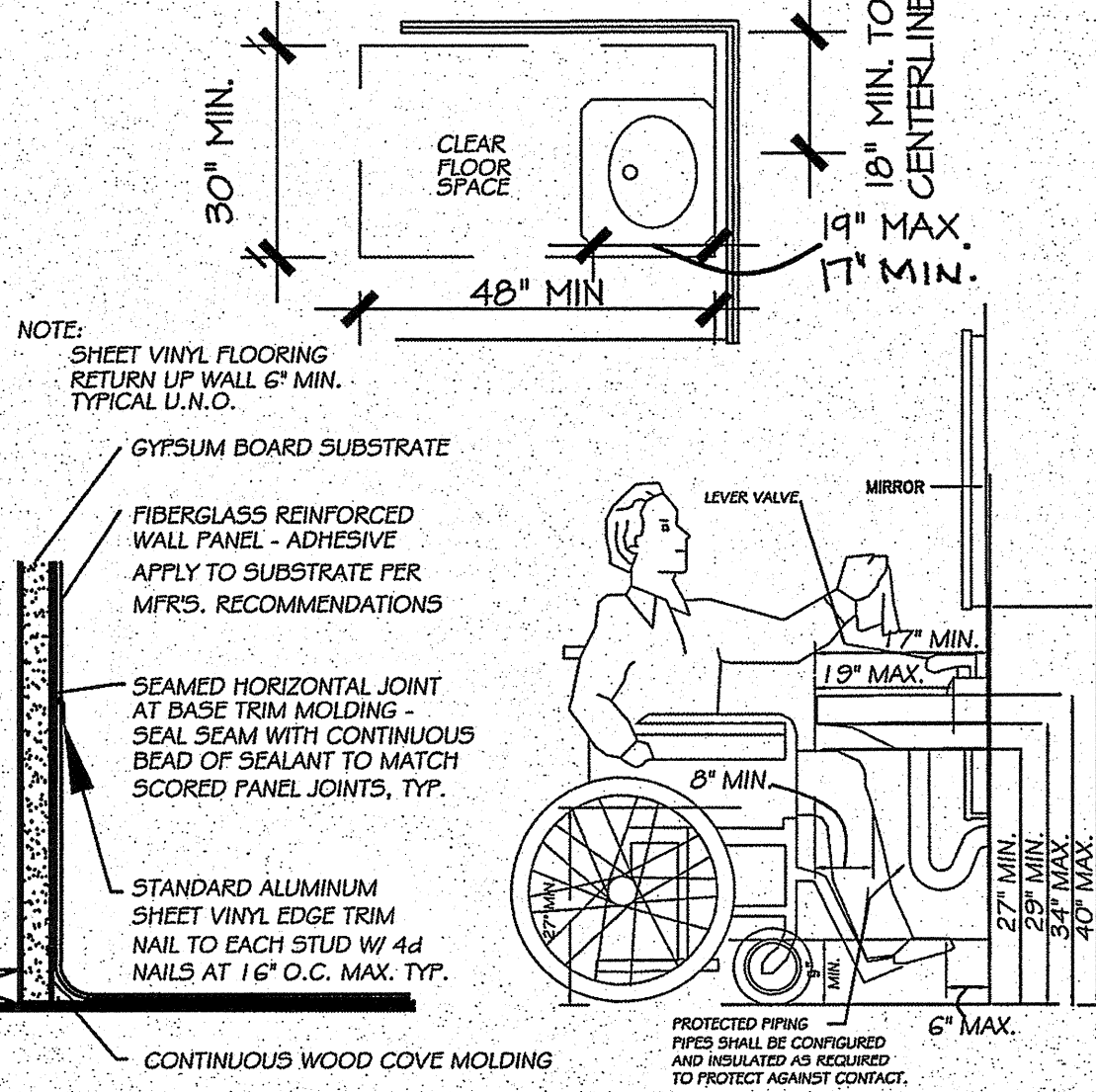
MIRRORS SHALL BE MOUNTED WITH THE BOTTOM EDGE OF REFLECTIVE SURFACE NO HIGHER THAN 40" FROM THE FLOOR. SEC 11B-603.3.

WHERE TOWEL, SANITARY NAPKINS, WASTE RECEPTACLES, AND OTHER SIMILAR DISPENSING AND DISPOSAL FIXTURES ARE PROVIDED, AT LEAST ONE OF EACH TYPE SHALL BE LOCATED WITH ALL OPERABLE PARTS, INCLUDING COIN SLOTS, WITHIN 40" FROM THE FINISHED FLOOR AND SHALL COMPLY WITH SECTION 11B-603.5

CENTER LINE OF TOILET TISSUE DISPENSERS SHALL BE LOCATED ON THE WALL BETWEEN 7'-9" OF THE FRONT EDGE OF THE TOILET SEAT AND NO LOWER THAN 19" FROM THE FLOOR. DISPENSERS THAT CONTROL DELIVERY OR THAT DO NOT PERMIT CONTINUOUS PAPER FLOW SHALL NOT BE USED. SEC 11B-604.7.

URINALS, AT LEAST ONE SHALL HAVE A CLEAR FLOOR SPACE 30 INCHES BY 48 INCHES (762 MM BY 1219 MM) IN FRONT OF THE URINAL TO ALLOW FORWARD APPROACH. THIS CLEAR SPACE SHALL COMPLY WITH SECTION 11B-305.4. SEC 11B-603.5.

IN OTHER THAN DWELLING UNITS, TOILET ROOM FLOORS SHALL HAVE A SMOOTH, HARD, NON-ABSORBENT SURFACE SUCH AS PORTLAND CEMENT, CONCRETE, CERAMIC TILE OR OTHER APPROVED MATERIAL WHICH EXTENDS UPWARD ONTO THE WALLS AT LEAST 5". WALLS WITHIN WATER CLOSET COMPARTMENTS AND WALLS WITH 24" OF THE FRONT AND SIDES OF URINALS SHALL BE SIMILARLY FINISHED TO A HEIGHT OF 48" AND, EXCEPT FOR STRUCTURAL ELEMENTS, THE MATERIALS USED IN SUCH WALLS SHALL BE A TYPE WHICH IS NOT ADVERSELY AFFECTED BY MOISTURE. SEC 1210.2.1 THRU 1210.2.4.



**6 ELECTRICAL NOTES**

NOTES: 1) THESE DIMENSIONS ARE FOR TYPICAL MOUNTING HEIGHTS FOR ACCESSIBLE FIXTURES AND ACCESSORIES, UNLESS OTHERWISE NOTED. REFER TO FLOOR PLANS, INTERIOR ELEVATIONS, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2) REFER TO THE SPECIFICATIONS FOR TOILET ROOM ACCESSORIES.

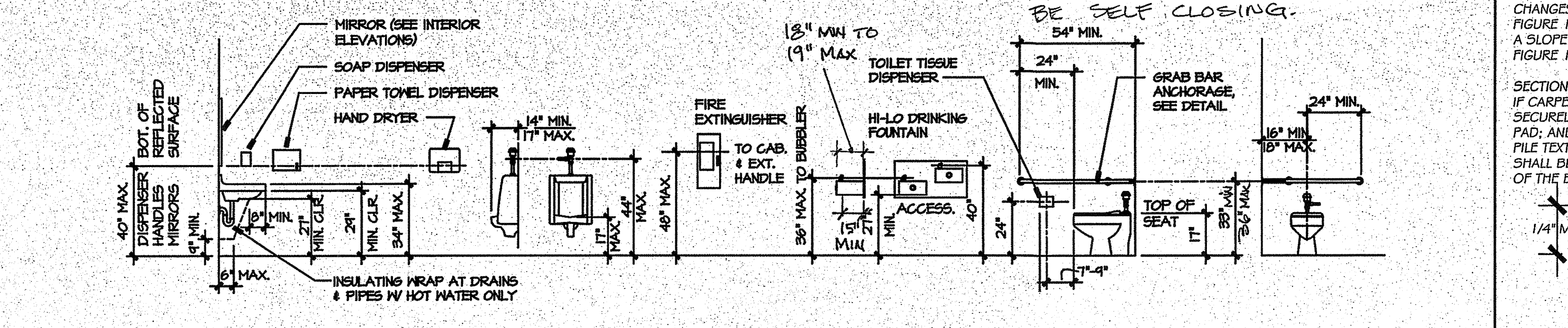
**5 SANITARY FACILITIES FIXTURES**

NOTE: THE FIXTURES AND ACCESSORIES SHOWN HEREIN ARE NOT NECESSARILY INCLUDED IN THIS PROJECT. REFER TO PLANS AND SPECIFICATIONS FOR FIXTURE OR ACCESSORY TYPE AND LOCATIONS.

1. THE NAMED ITEMS IN THIS DETAIL SHALL BE MOUNTED AT HEIGHTS ACCESSIBLE TO PERSONS WITH DISABILITIES.

2. MOUNT ALL FIXTURES AND ACCESSORIES AT HEIGHTS ILLUSTRATED IN THIS DETAIL UNLESS NOTED OTHERWISE ON THE PLANS.

3. ALL TOILET PARTITION DOORS TO BE SELF CLOSING.



**3 GROUND AND FLOORING SURFACES**

SECTION 11B-302.1 GENERAL FLOOR OR GROUND SURFACES GENERAL FLOOR OR GROUND SURFACES ALONG ACCESSIBLE ROUTES AND IN ACCESSIBLE ROOMS AND SPACES, INCLUDING FLOORS, WALKS, RAMPS, STAIRS, AND CURB RAMPS, SHALL BE STABLE, FIRM, AND SLIP-RESISTANT, AND SHALL COMPLY WITH THIS SECTION.

11B-303 CHANGE IN LEVEL CHANGES IN LEVEL UP TO 1/4" MAY BE VERTICAL AND WITHOUT EDGE TREATMENT (SEE FIGURE 11B-303.2. CHANGES IN LEVEL BETWEEN 1/4" AND 1/2" SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 1:2. FIGURE 11B-303.3

SECTION 11B-302.2 CARPET IF CARPET OR CARPET TILE IS USED ON A GROUND OR FLOOR SURFACE, IT SHALL BE SECURELY ATTACHED; HAVE A FIRM CUSHION, PAD OR BACKING OR NO CUSHION OR PAD; AND HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT FILE, OR LEVEL CUT/ANGLICUT PILE TEXTURE. THE MAXIMUM PILE HEIGHT SHALL BE 1/2". EXPOSED EDGES OF CARPET SHALL BE FASTENED TO FLOOR SURFACES AND HAVE TRIM ALONG THE ENTIRE LENGTH OF THE EXPOSED EDGE. CARPET EDGE TRIM SHALL COMPLY WITH SECTION 11B-303.

(C) CHANGE IN LEVEL (D) CHANGE IN LEVEL

**1 COUNTER WORKSPACE**

**GRAB BARS**

GRAB BARS SHALL BE LOCATED ON EACH SIDE, OR ON ONE SIDE AND THE BACK OF THE ACCESSIBLE TOILET STALL OR COMPARTMENT. SEC 11B-604.5. FIG. 11B-604.5.1 & 11B-604.5.2

GRAB BARS AT THE SIDE SHALL BE AT LEAST 42" LONG WITH THE FRONT END POSITIONED 24" IN FRONT OF THE WATER CLOSET STOOL AND WITH THE BACK END POSITIONED NO MORE THAN 12" FROM THE REAR WALL. GRAB BARS AT THE BACK SHALL BE NOT LESS THAN 36" LONG. SEC 11B-604.5.1 & 11B-604.5.2. FIG. 11B-604.5.1 & 11B-604.5.2

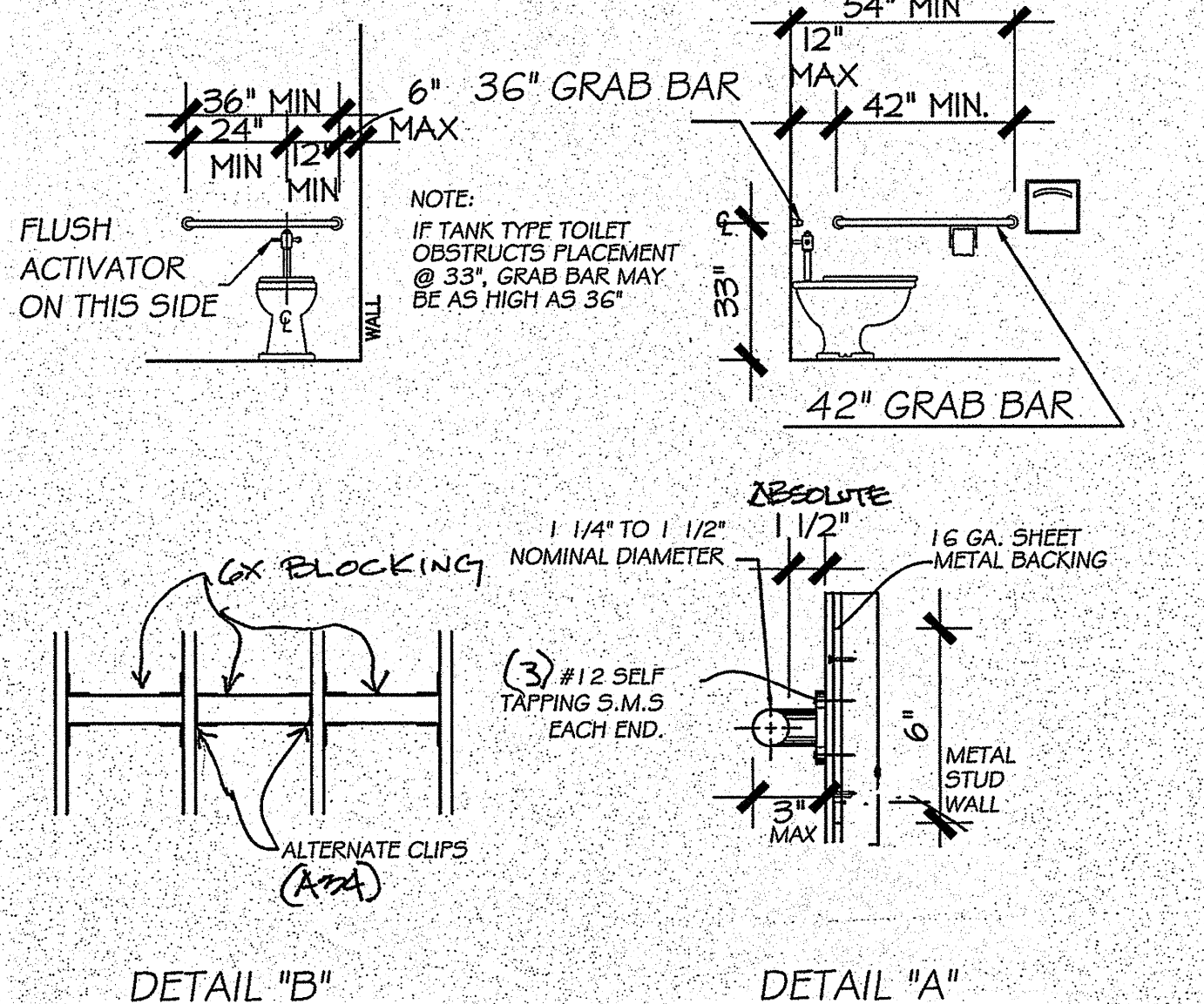
GRAB BARS SHALL BE SECURELY ATTACHED 33" ABOVE AND PARALLEL TO THE FLOOR. EXCEPT THAT WHERE A TANK-TYPE TOILET IS USED WHICH OBSTRUCTS PLACEMENT AT 33", THE GRAB BAR MAY BE AS HIGH AS 36". SEC 11B-609.4.

THE DIAMETER OR WIDTH OF THE GRIPPING SURFACES OF A GRAB BAR SHALL BE 1-1/4" TO 2" OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE. IF GRAB BARS ARE MOUNTED ADJACENT TO A WALL, THE SPACE BETWEEN THE WALL AND THE GRAB BARS SHALL BE 1-1/2". SEC 11B-609.2 & 11B-609.3 FIG. 11B-609.2.2 & 11B-609.3

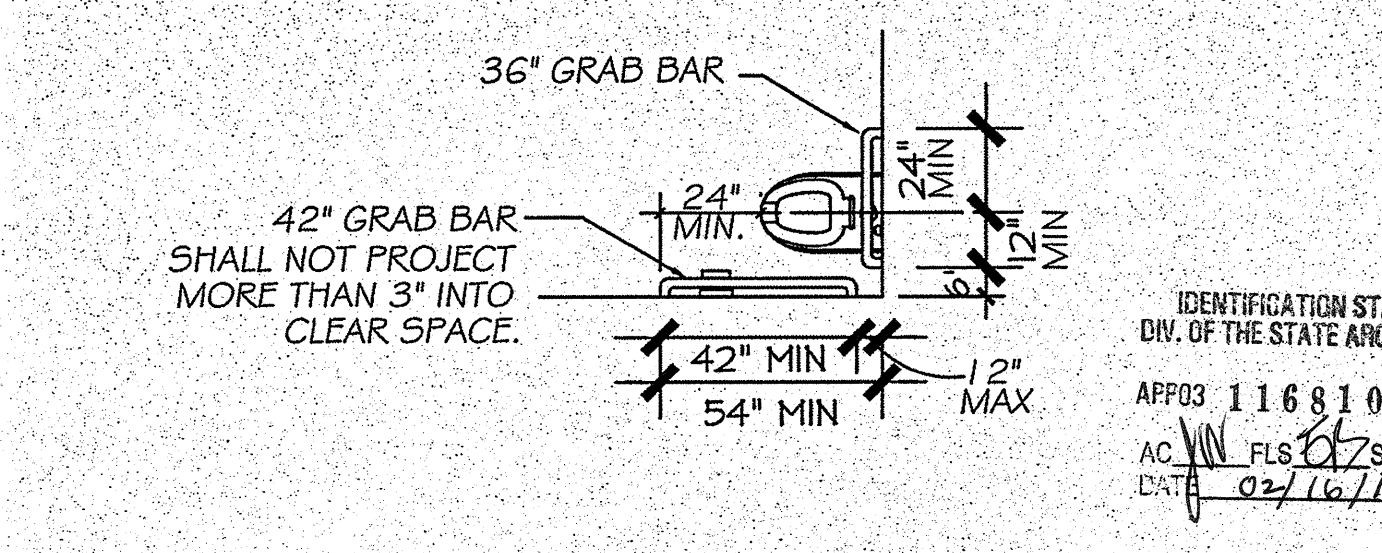
THE STRUCTURAL STRENGTH OF GRAB BARS, TUB AND SHOWER SEATS, FASTENERS, AND MOUNTING DEVICES SHALL MEET THE FOLLOWING SPECIFICATIONS: 250 LBS. IN ANY DIRECTION. SEC 11B-609.6.

A GRAB BAR AND ANY WALL OR OTHER SURFACE ADJACENT TO IT SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS. EDGES SHALL HAVE A MINIMUM RADIUS OF 1/8". SEC 11B-609.5.

GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS. SEC. 11B-609.6.



**2 GRAB BARS**



**7 TYPICAL ACCESSIBLE MOUNTING HEIGHTS**

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JAMES J. OBER  
No. 54497  
REGISTERED PROFESSIONAL STRUCTURAL ENGINEER  
STATE OF CALIFORNIA

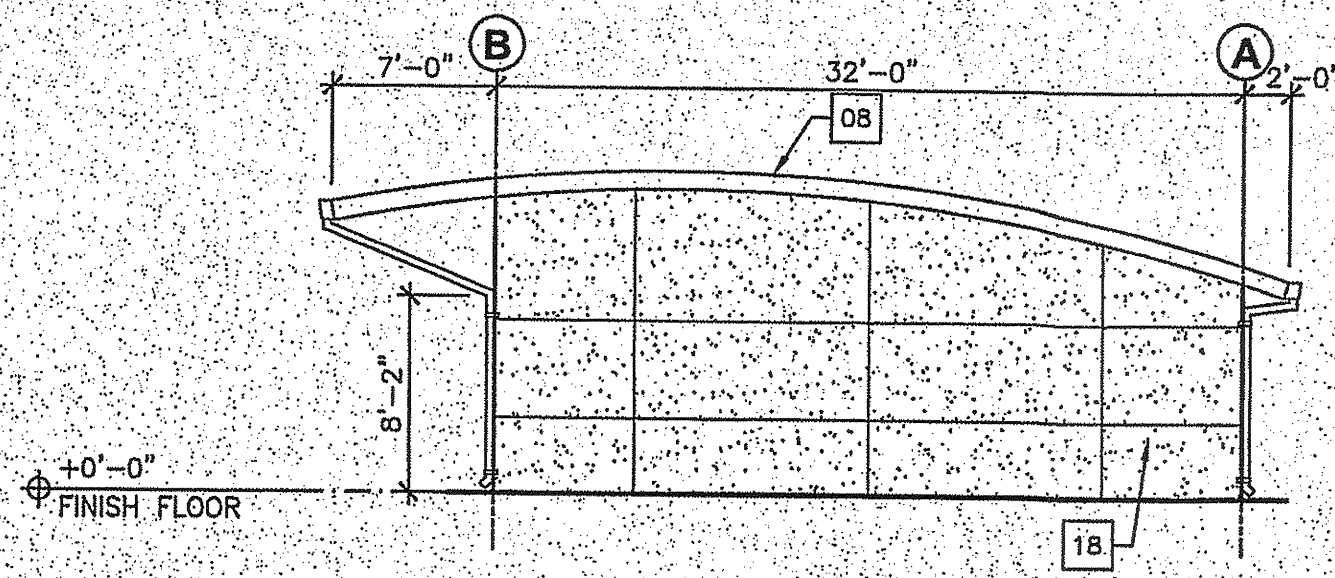
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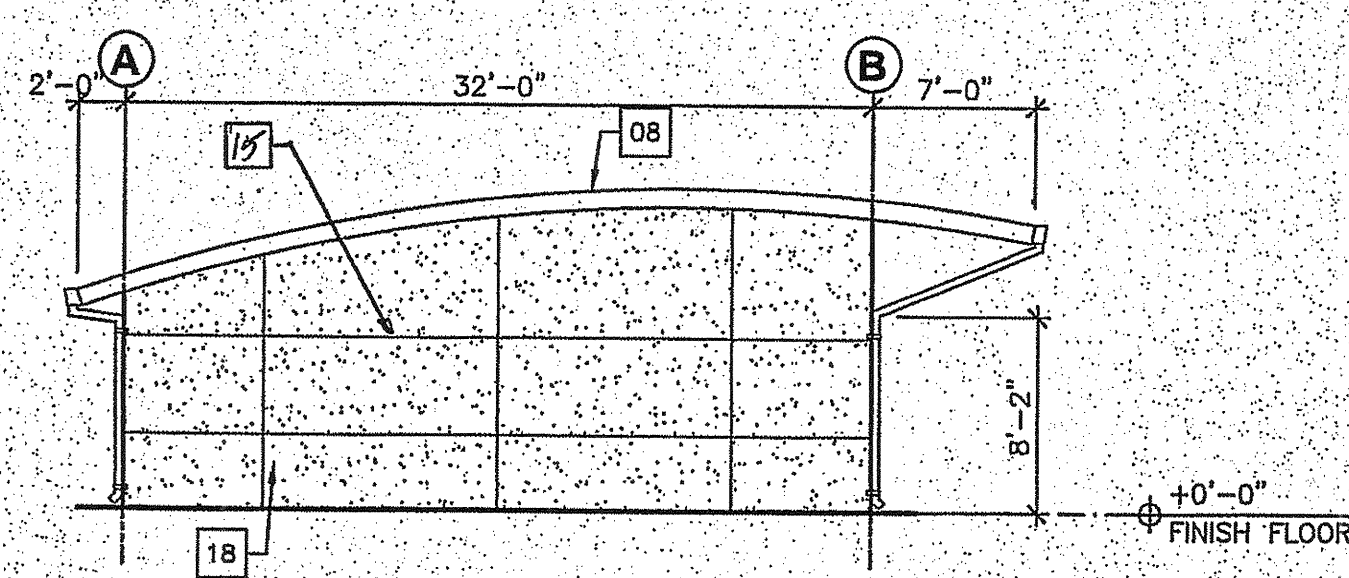
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**A-2.20**



**BARREL ROOF TYPICAL SIDE ELEVATION**



2 TYPICAL RIGHT SIDE ELEVATION SCALE: 1/8" = 1'-0"

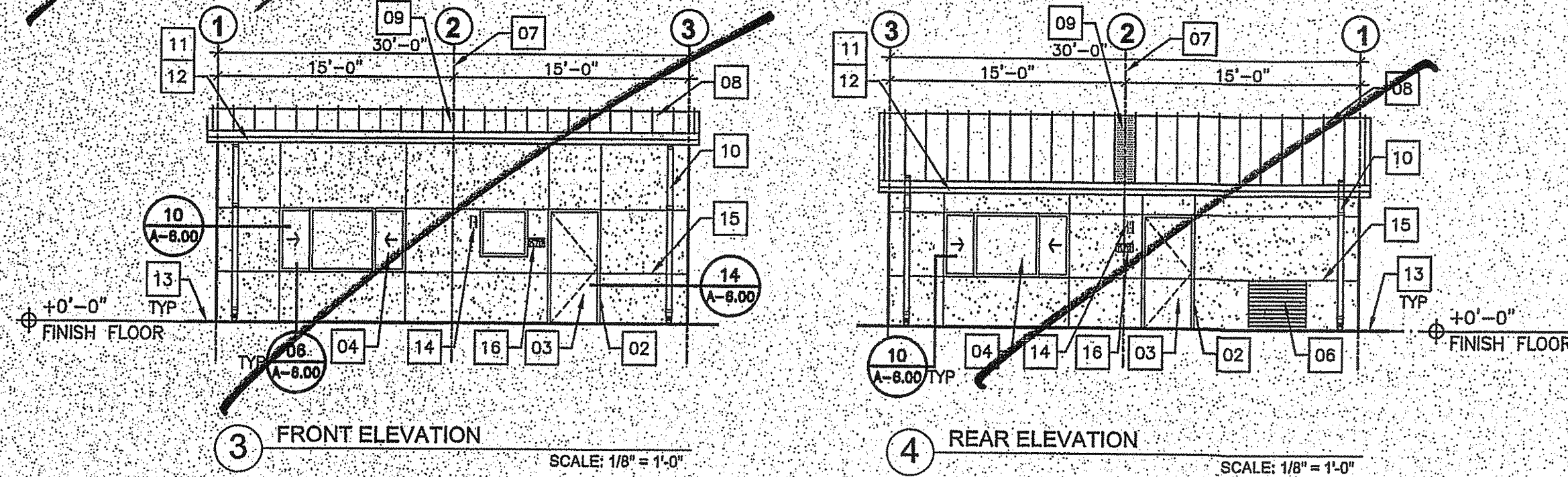


1 TYPICAL LEFT SIDE ELEVATION SCALE: 1/8" = 1'-0"

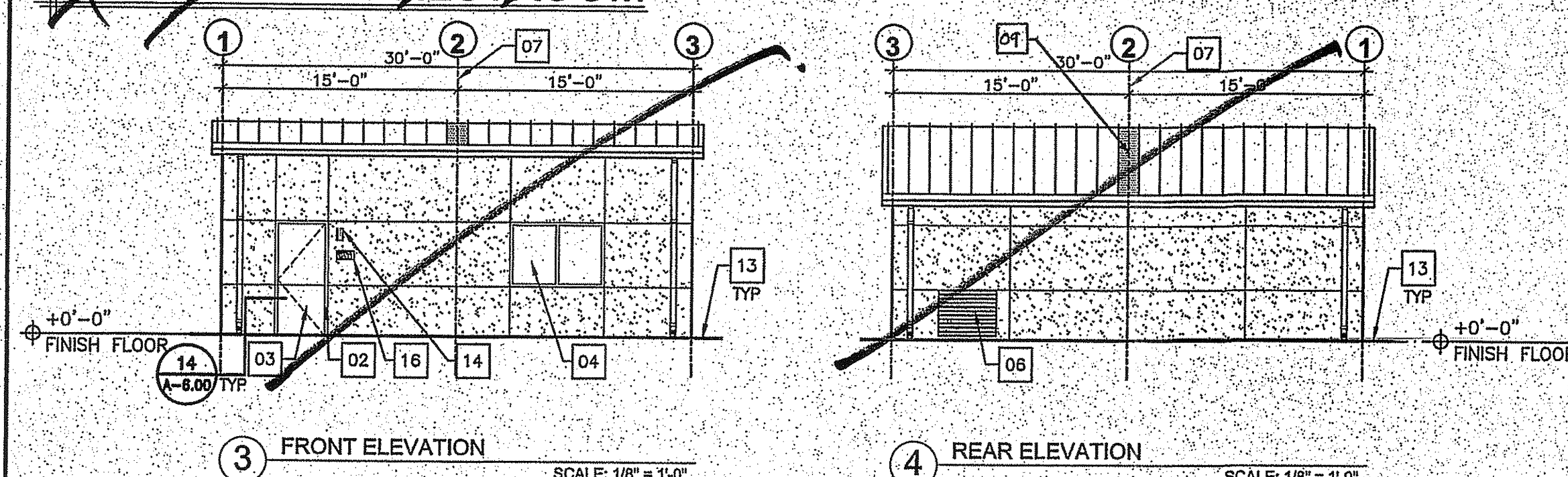
**KEYNOTES**

- 01 T-11 MOOD PANELS OVER 1/2" EXTERIOR DENS GLASS GOLD OVER PLYWOOD PER STRUCT.
- 02 16 GAUGE PRESSED METAL FRAME WITH LOCK-IN ANCHORS 14 A-8.00
- 03 1 3/4" THICK 16 GAUGE INSULATED METAL DOOR
- 04 NAIL-IN ALUMINUM WINDOW ASSEMBLY - INSTALL OVER 6" WIDE BUILDING PAPER FLASHING WITH 2d @ 24" o.c. 08 10 A-8.00 A-8.00
- 05 NOT USED
- 06 HVAC MAKEUP AIR AND DISCHARGE GRILLE
- 07 MODULE LINE
- 08 26 GA STANDING SEAM METAL ROOFING
- 09 FIELD INSTALL ROOF PANEL SHOWN SHADED
- 10 26 GA DOWNSPOUT 13 09 A-8.00 A-8.00
- 11 26 GA GUTTER WITH CLOSED ENDS 07 A-8.00
- 12 1 1/4" X 12" HARDBOARD FASCIA
- 13 CONCRETE FLATWORK BY OTHERS
- 14 ENERTRON 1800L COMPACT FLUORESCENT LIGHT FIXTURE OR EQUAL. 11 A-8.00
- 15 STUCCO CONTROL JOINT #1555X OR EQUAL- CONFORMS TO ASTM D1184-01 11 A-8.00
- 16 CBC COMPLIANT DOOR SIGH-Locate 9" MIN STRIKE SIDE OF DOOR JAMB PROVIDED AND INSTALLED BY OWNER 5 A-1.21
- 17 PLYWOOD PER STRUCTURAL WITH FACTORY APPLIED ELASTOMERIC COATING
- 18 FACTORY APPLIED ELASTOMERIC STUCCO FINISH. COLOR TO BE SELECTED BY ARCHITECT.

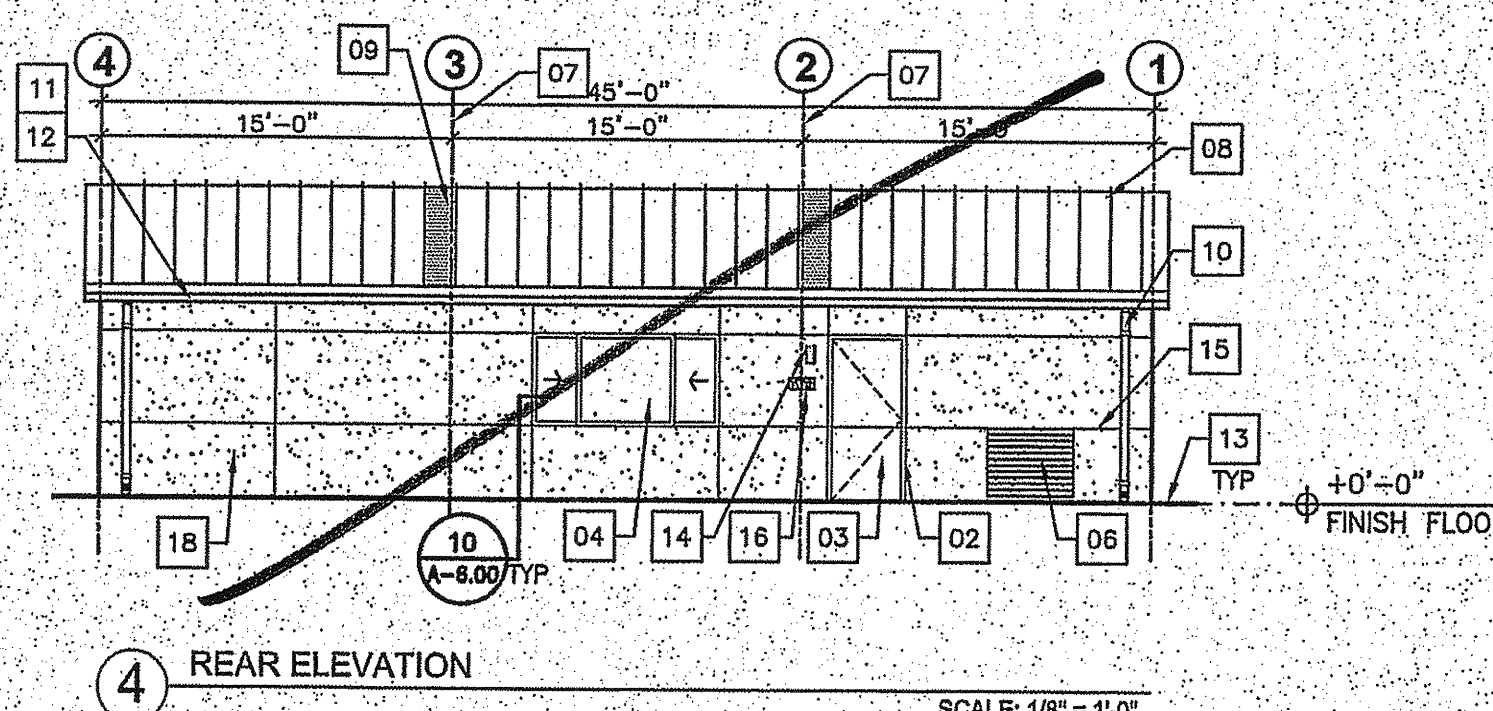
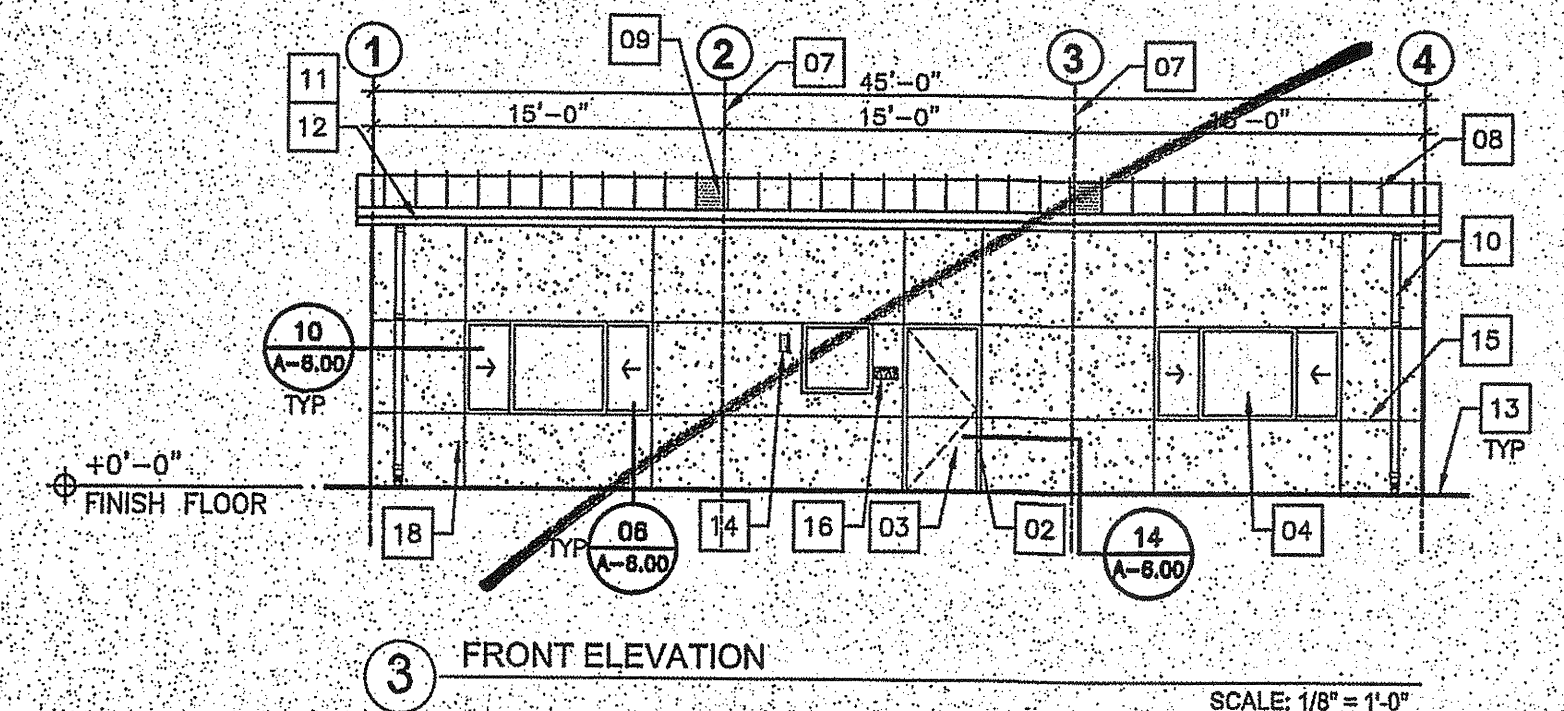
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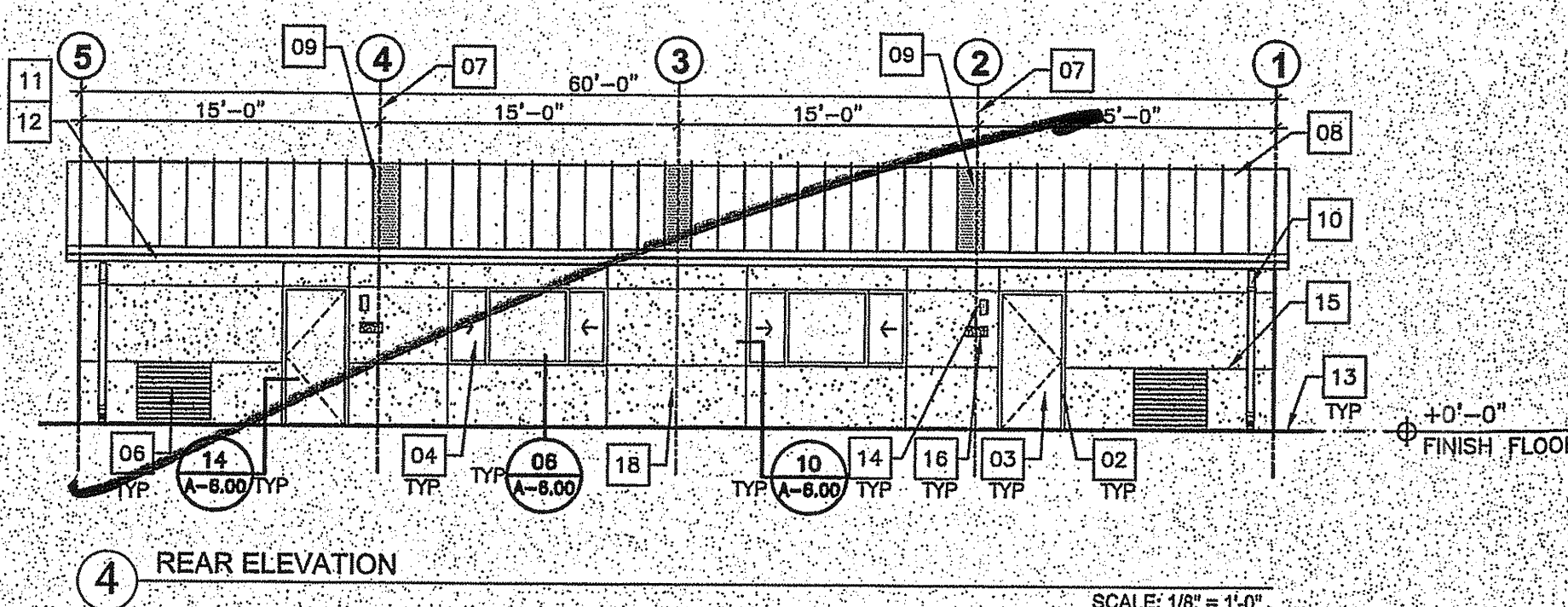
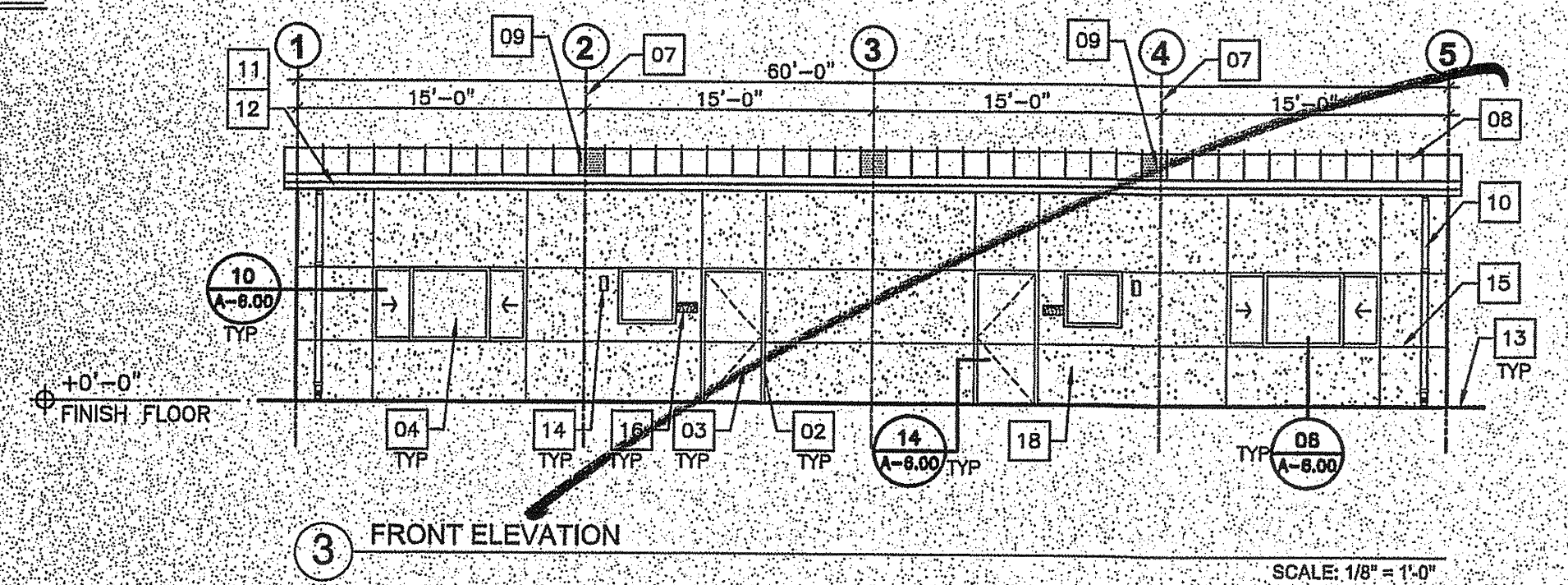
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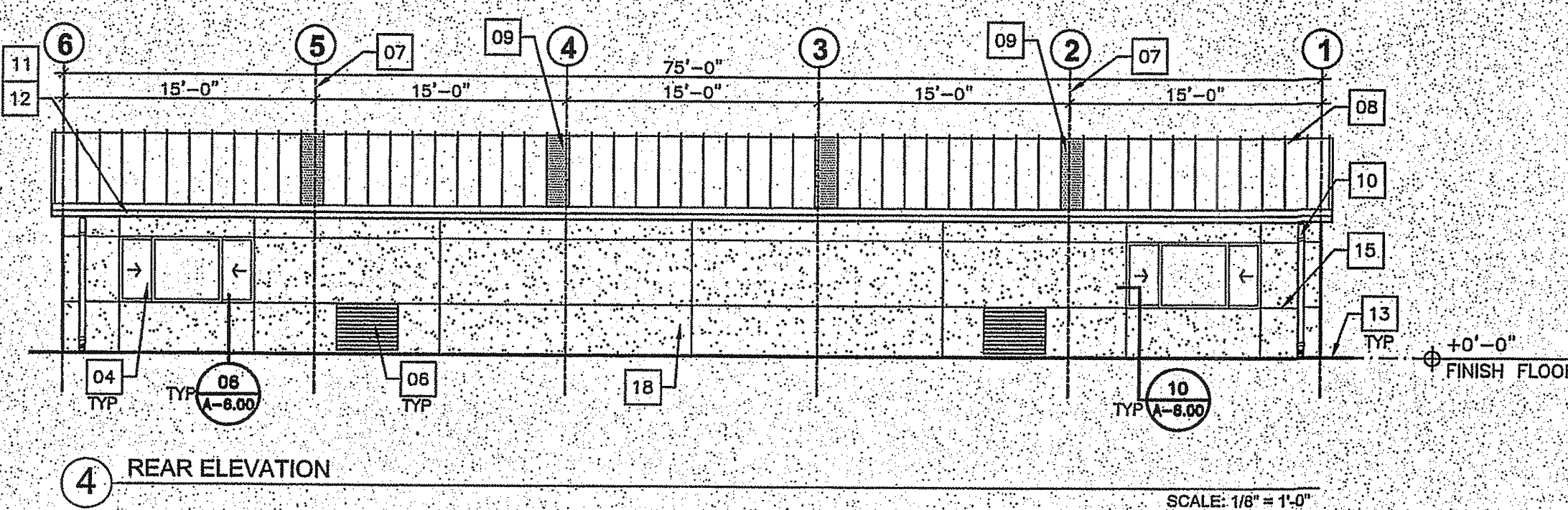
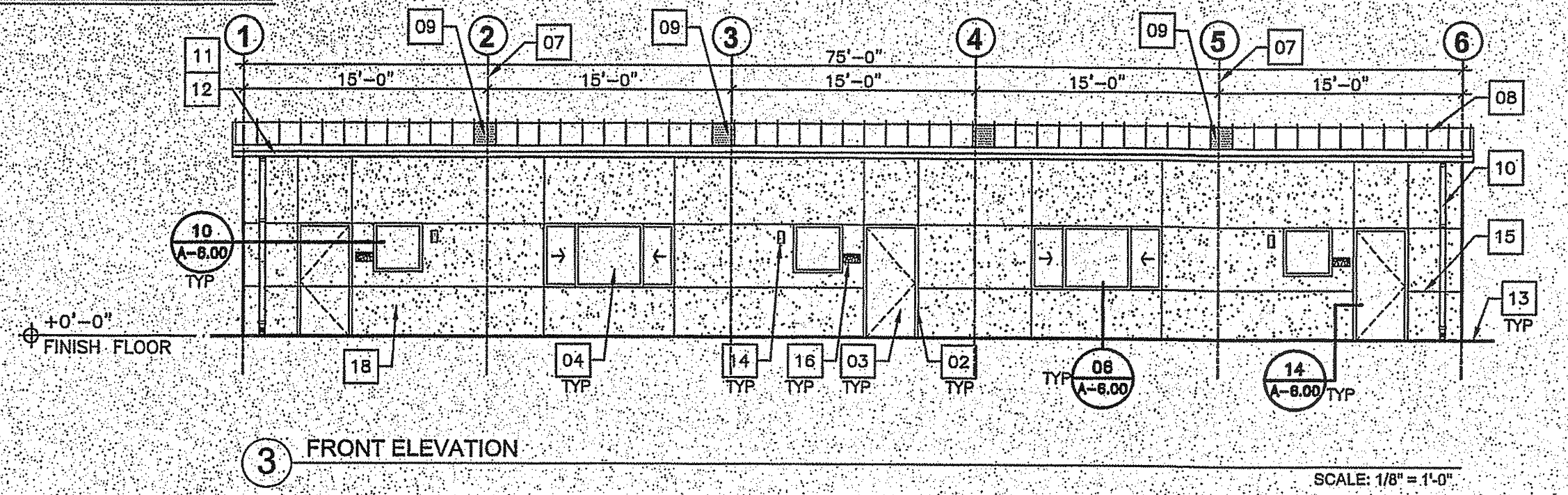
**3 MODULES**



**4 MODULES**



**5 MODULES**



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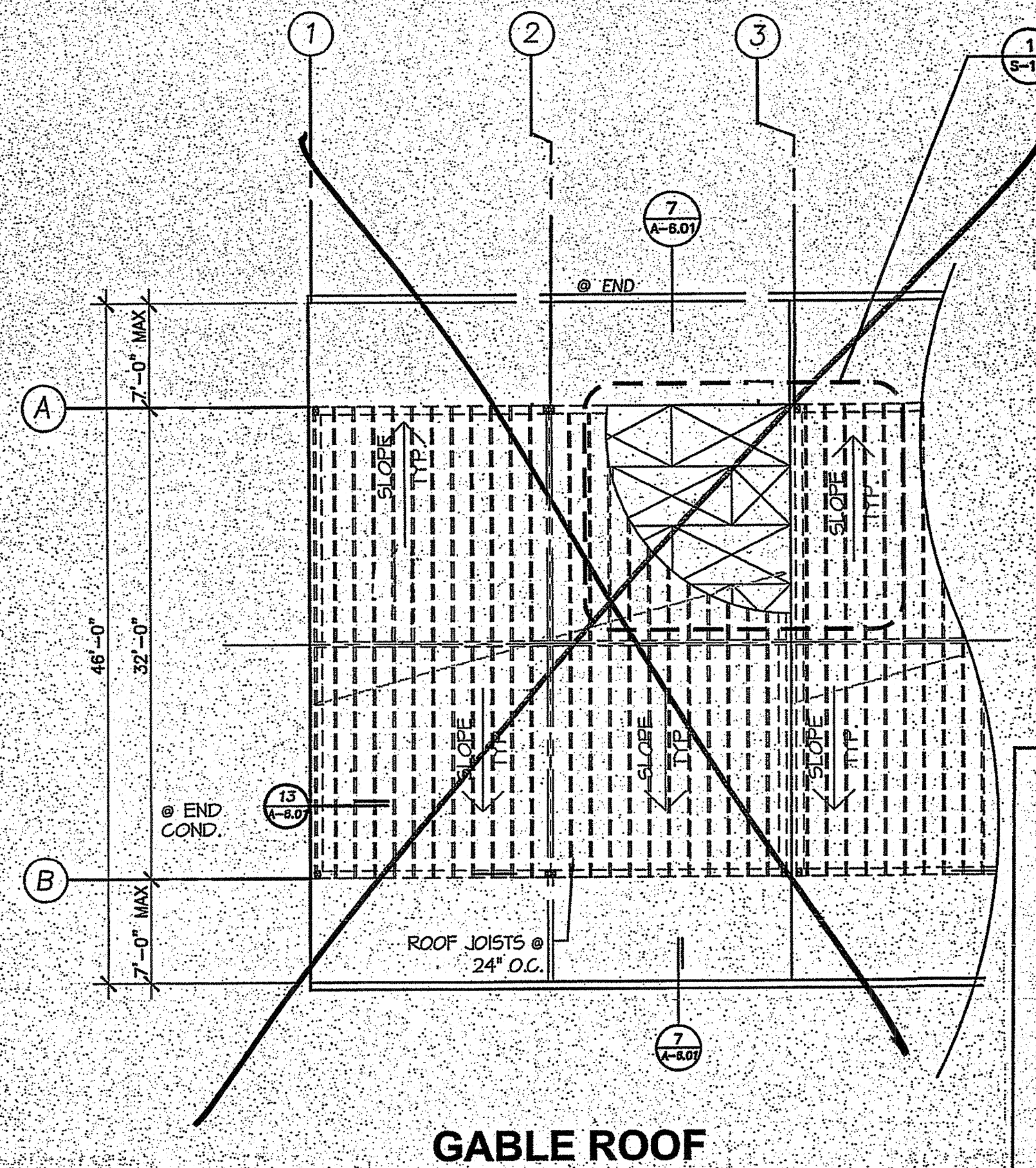
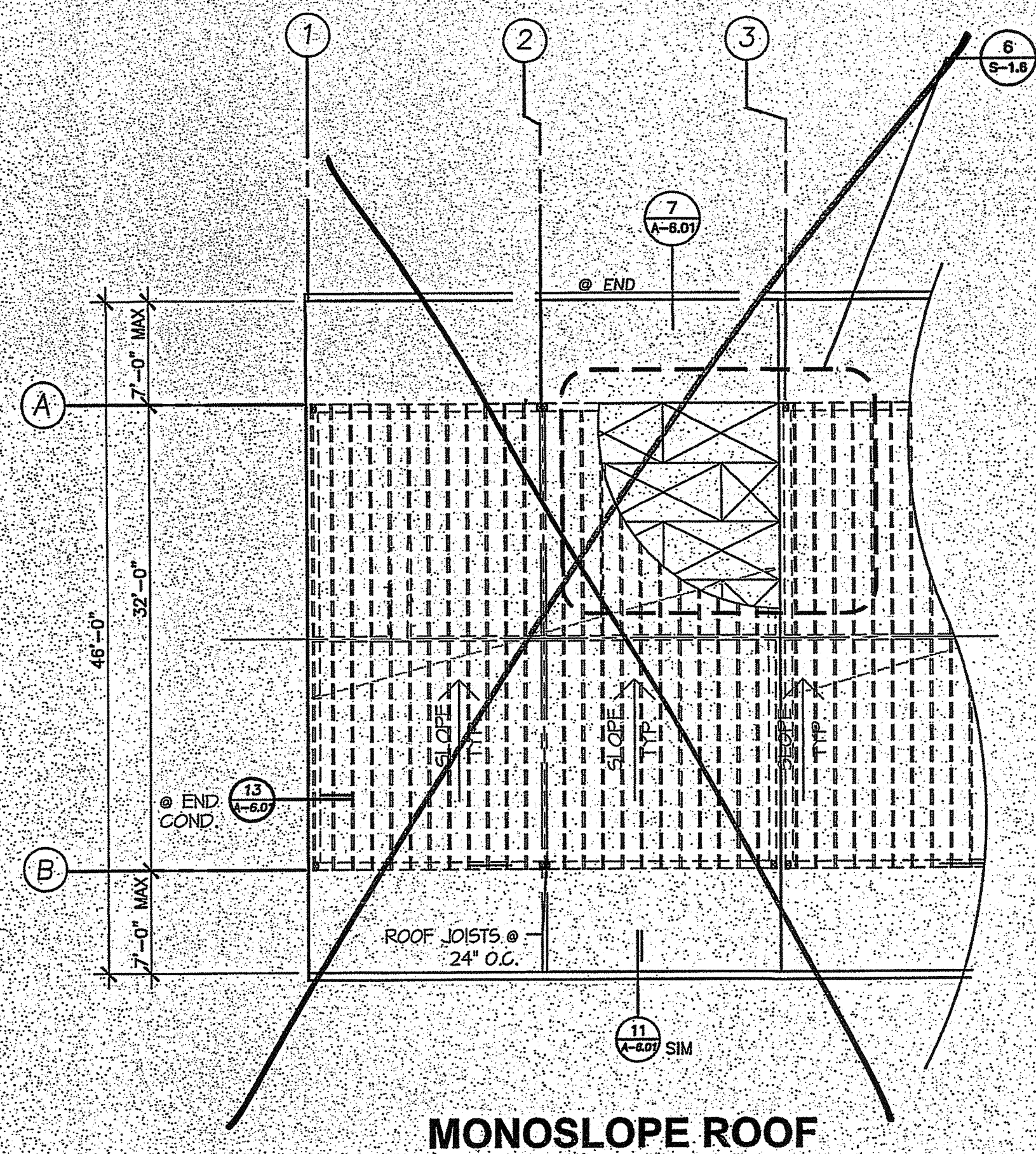
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SHEET NUMBER  
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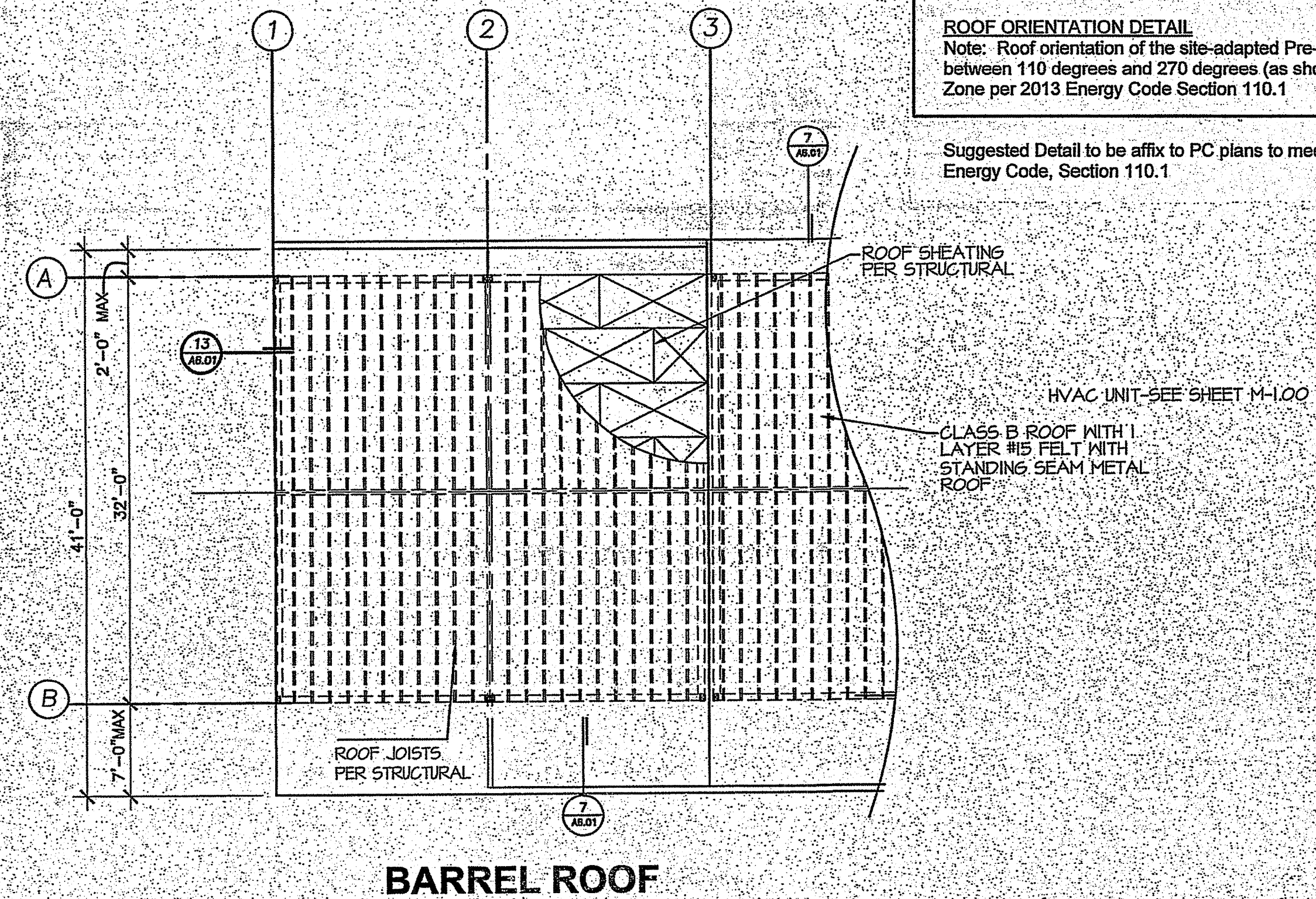
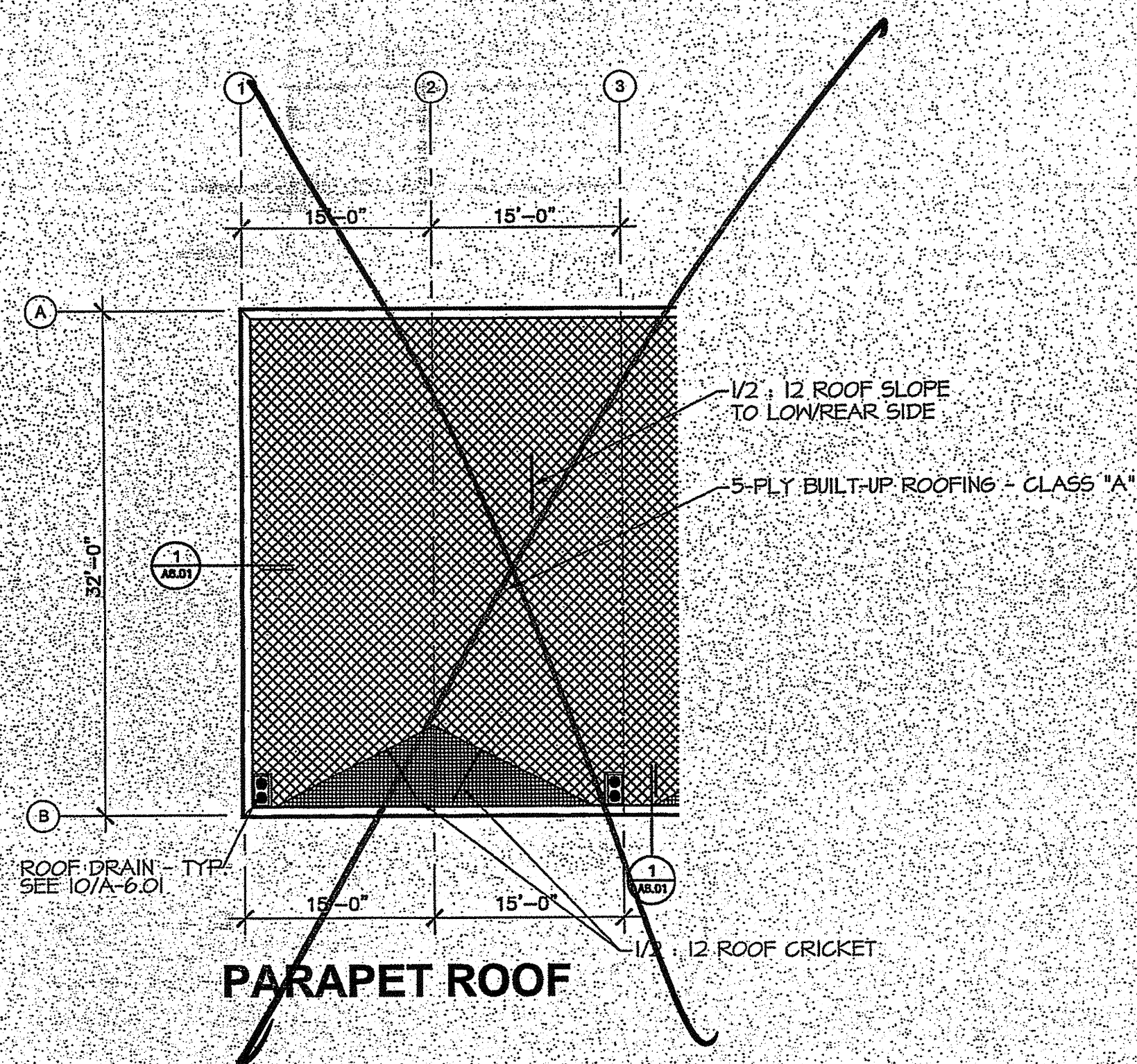
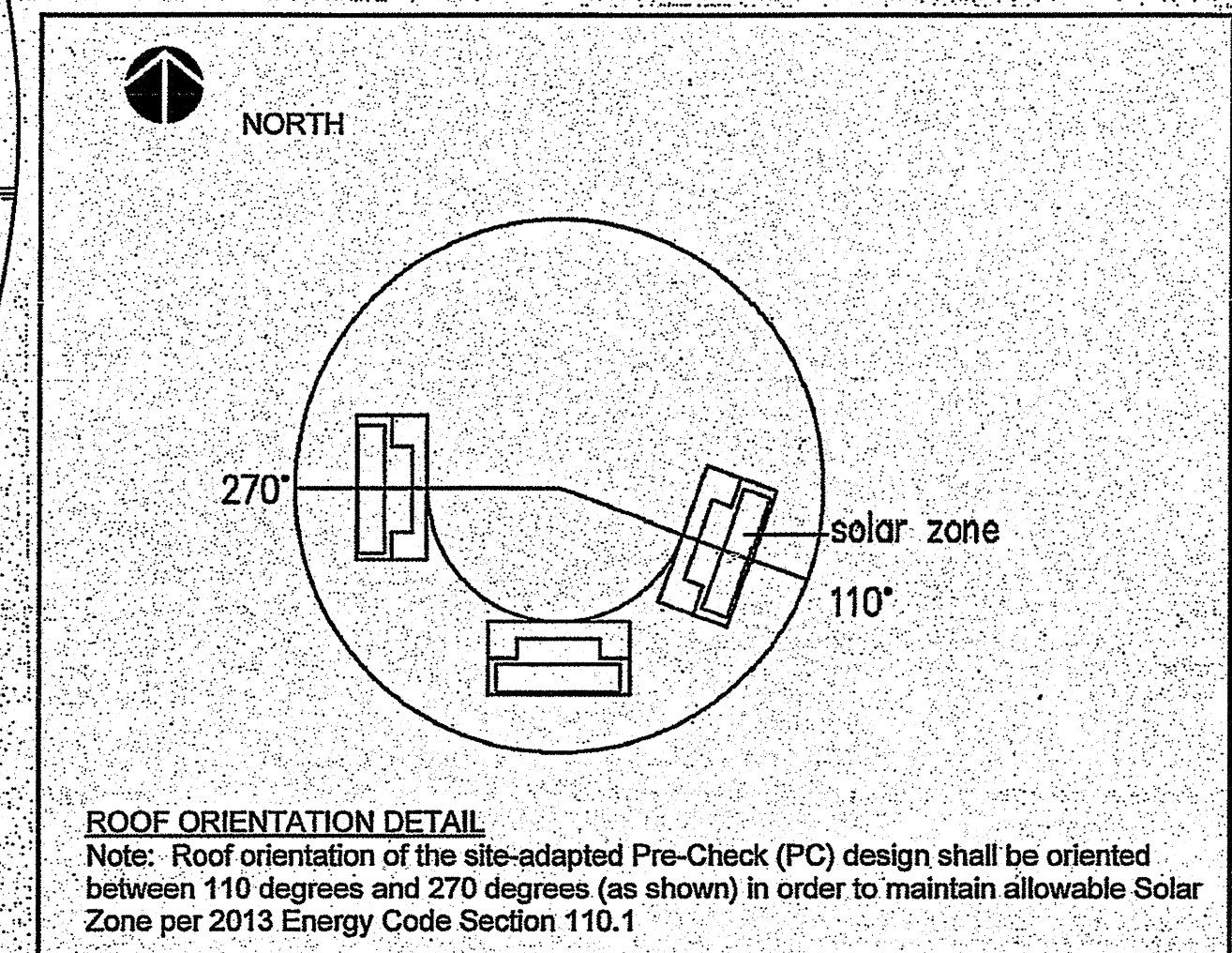
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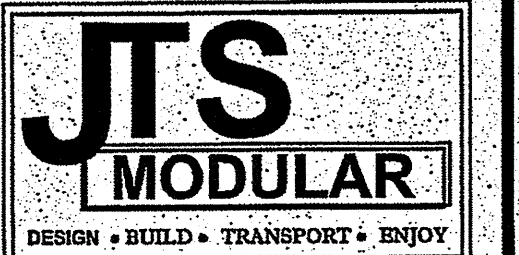
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|--------------|---|----------------------------|
| 2M           | 960   | 144                        |
| 2M+RR        | 960   | 144                        |
| 5M           | 1440  | 216                        |
| 4M           | 1920  | 288                        |
| 10M          | 4800  | 720                        |

SOLAR ZONE TABLE



NOTE: CLIPS OVER 1/2" WOOD DECK - UL-90 24" O.C. - USE # 10 X 1" PAN HEAD WOOD - 2 FASTENERS SEE STRUCTURAL PLANS FOR ROOF MEMBER SIZES

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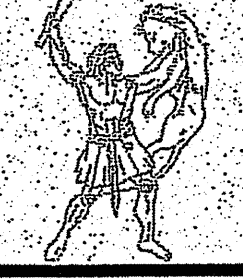


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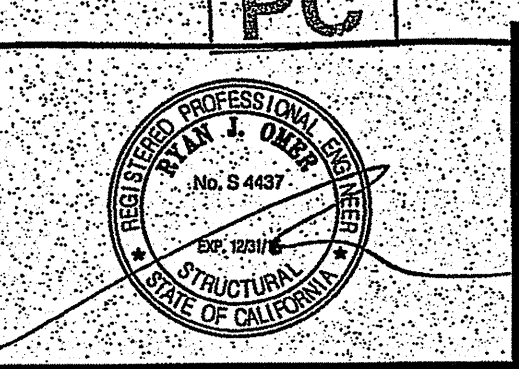
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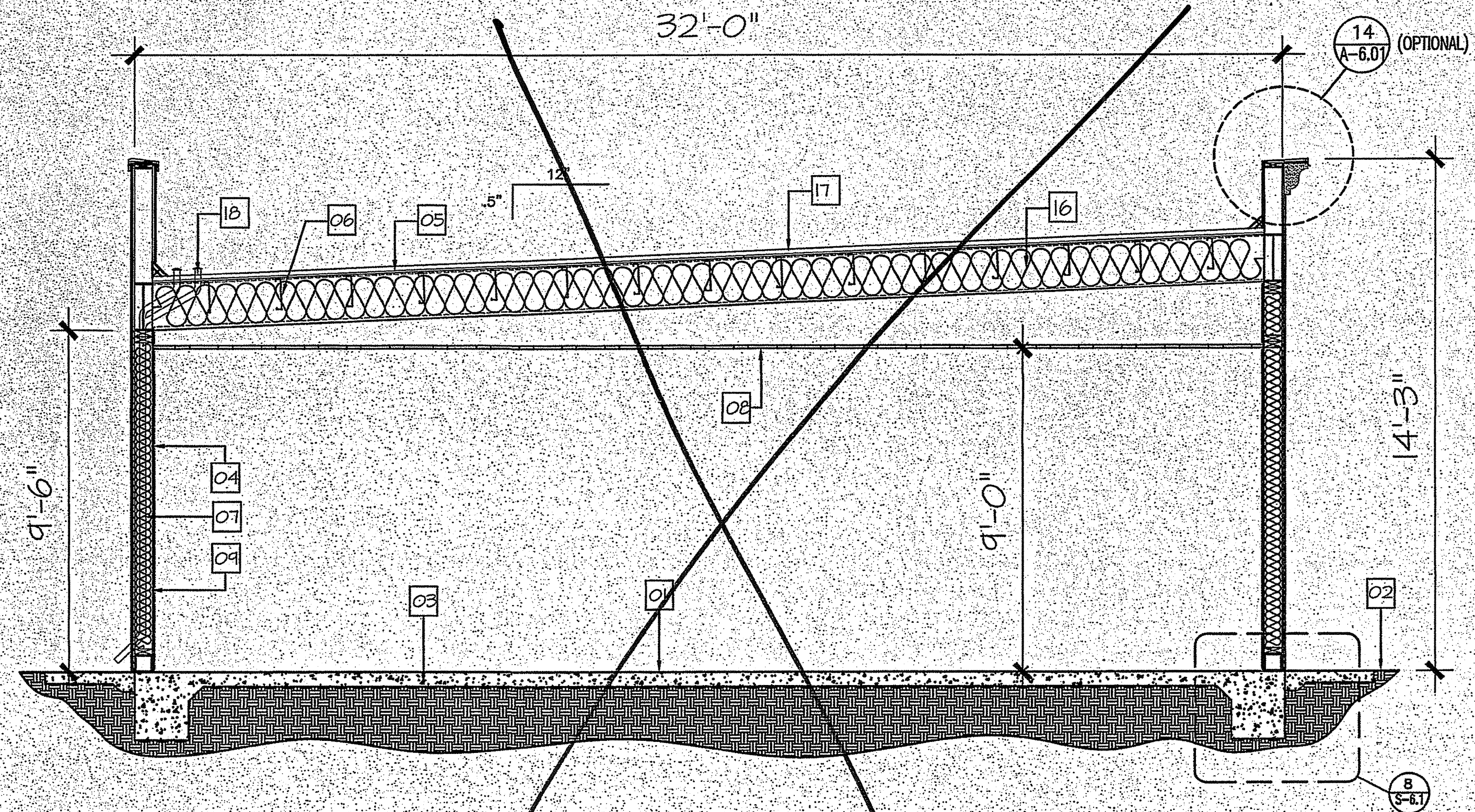
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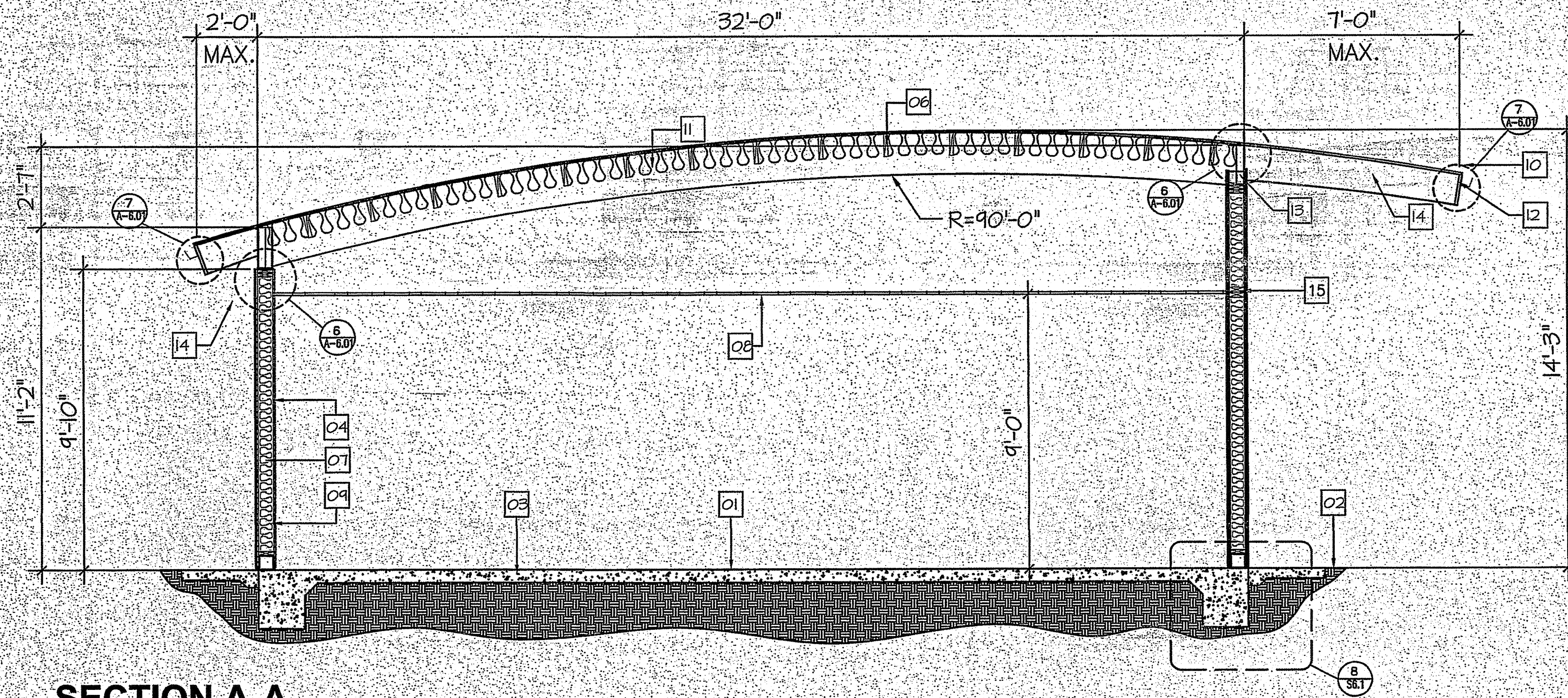
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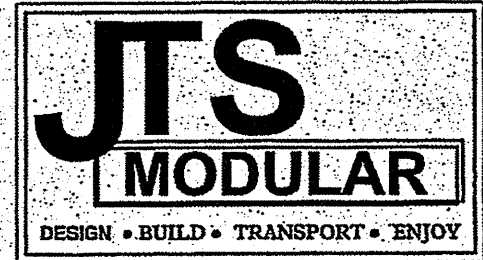
**SECTION B-B**  
**SLAB ON GRADE BUILDING SECTION (PARAPET ROOF)**  
 SCALE: 3/8" = 1'-0"



**SECTION A-A**  
**SLAB ON GRADE BUILDING SECTION (BARREL ROOF)**  
 SCALE: 3/8" = 1'-0"

**KEYNOTES**

- 01. FLOOR LINE
- 02. NATURAL GRADE
- 03. SLAB ON GRADE
- 04. LIGHT GAUGE WALL STUD @ 16" O.C.
- 05. PLYWOOD ROOF SHEATHING
- 06. PURLIN @ 24" O.C. SEE STRUCTURAL FOR DETAILS
- 07. R-14 INSULATION AT EXT. WALLS
- 08. SUSPENDED ACOUSTICAL TILE TEE BAR CEILING SYSTEM
- 09. 1/2" VINYL COVERED WALLBOARD OVER 1/2" GYPSUM WALLBOARD
- 10. 26 GAUGE GALVANIZED STEEL GUTTER WITH CLOSED ENDS (SLOPE 1/8 INCH PER FOOT)
- 11. 26 GAUGE FACTORY FINISHED STANDING SEAM METAL ROOFING-INSTALL w/24 GAUGE STEEL PANEL CLIPS FURNISHED BY THE MANUFACTURER-ATTACH CLIPS @ 24" O.C. ALONG LEADING EDGE OF EACH PANEL w/ ONE #10x1" PANCAKE HEAD WOOD SCREW INTO ROOF SHEATHING-NEXT PANEL LOCKS OVER CLIP AND FIRST PANEL.
- 12. 1 1/4" x 1 1/2" HARDBOARD FASCIA
- 13. 26 GAUGE COUNTER-FLASHING CONTINUOUS- SECURE TO ROOF JOISTS @ 32" O.C. WITH #12 WOOD SCREWS AND GROMMETS
- 14. 1/2" DENS GLASS GOLD OVER 1/2" PLYWOOD SOFFIT, ELASTOMERIC FINISH.
- 15. FIRE BLOCKING
- 16. R-38 INSULATION
- 17. PARAPET CORING
- 18. ROOF DRAINS

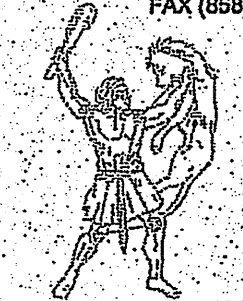


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 Structural Engineering, Inc.

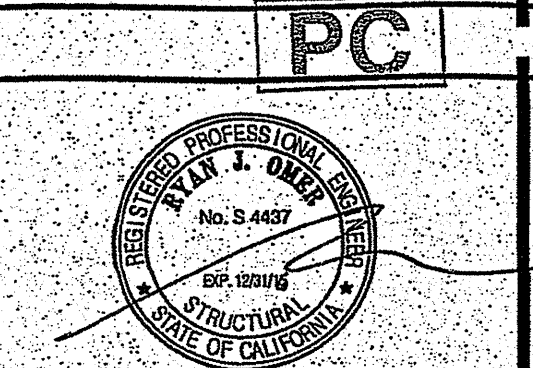
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 POMONA, CA 92664  
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 FAX (951) 679-1975



**SOG-32  
 RE-LOCATABLE  
 BUILDING PC**

FILE: PC-JTS  
 IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT  
 PRE CHECK (PC) DOCUMENT  
 CODE 2013-085  
 A SEPARATE PROJECT APPLICATION  
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APPROVALS  
 IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT  
 FILE # PC-JTS  
 APPL. # 02-112889  
 AC AP-1/15 JLS SS SP  
 DATE 3/19/15  
 DATE \_\_\_\_\_  
 PROJECT 08-0140

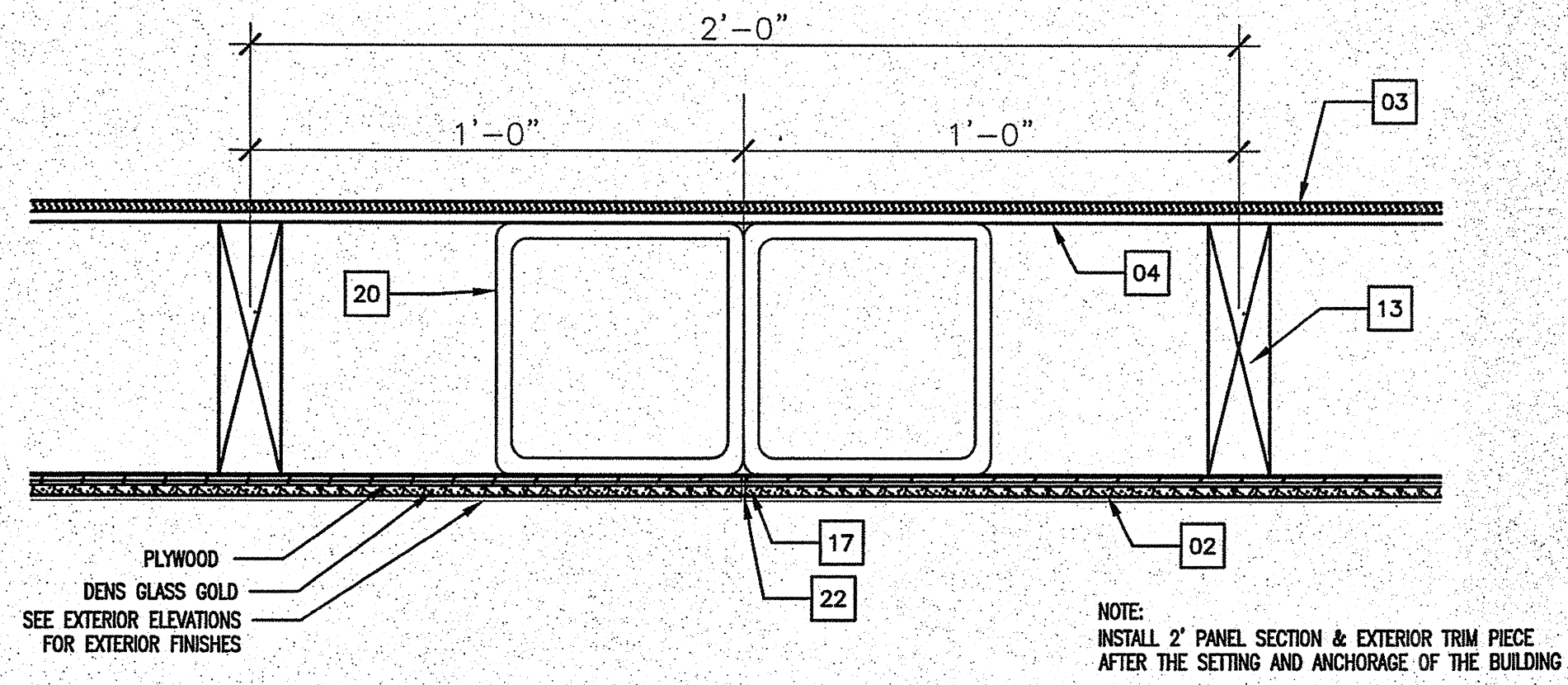
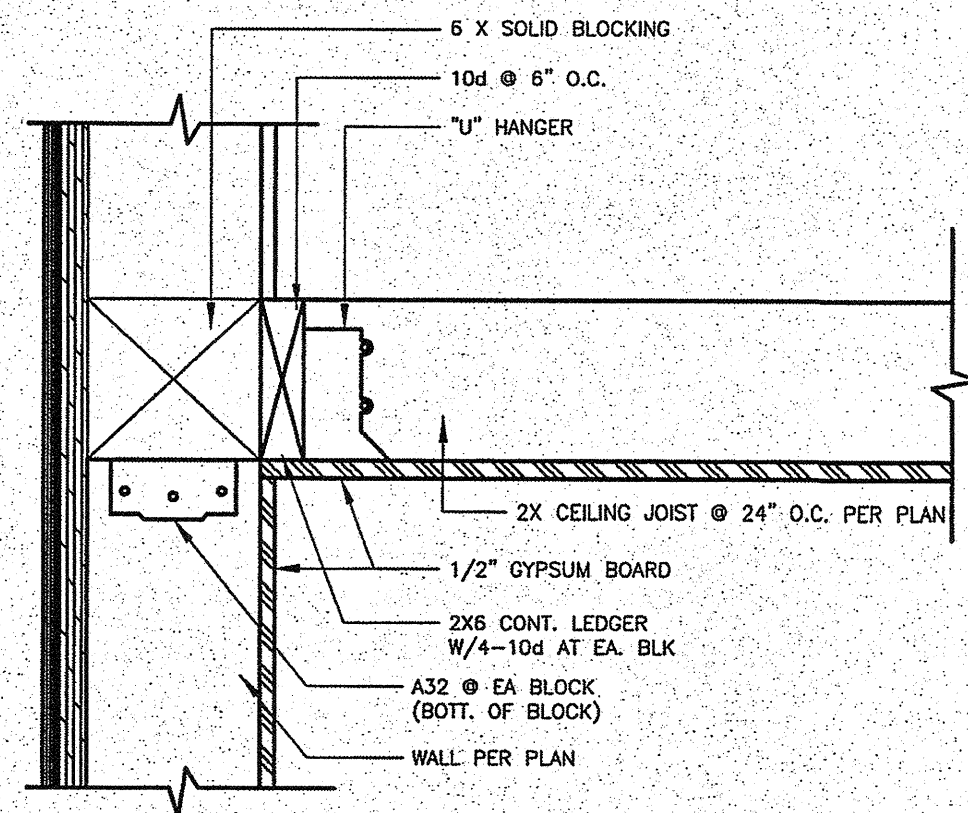
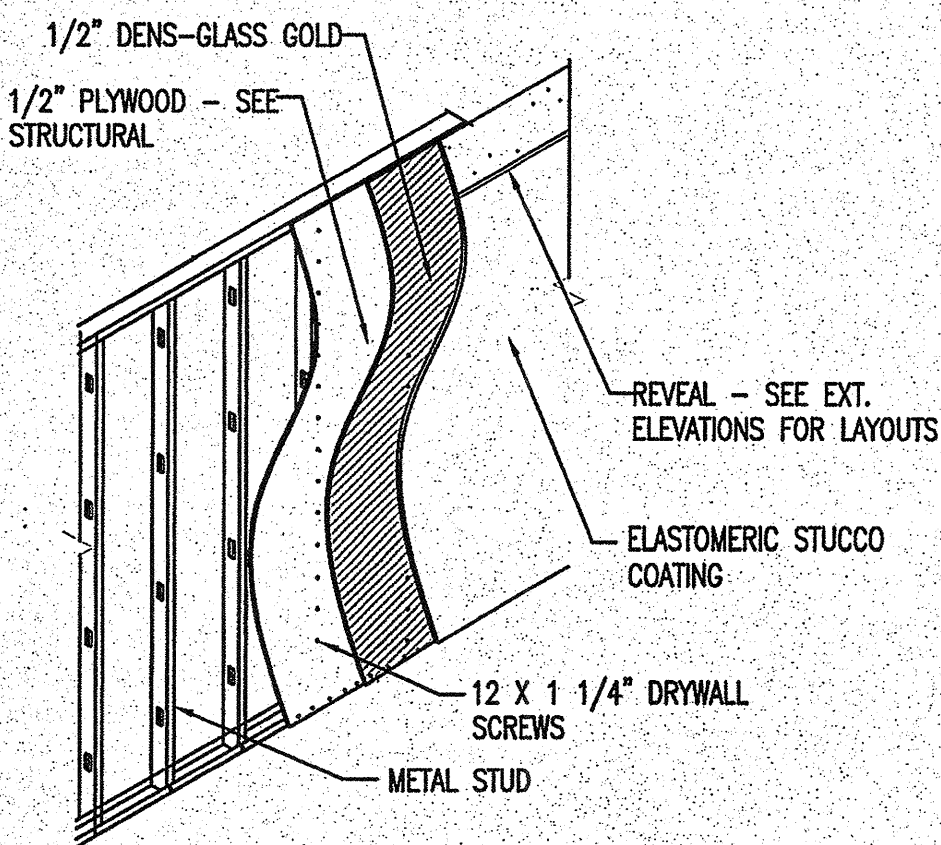


SHEET NAME  
**BUILDING  
 SECTIONS**

SHEET NUMBER  
**A-5.01**

IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT  
 APPROX. 116810  
 AC JLS SS SP  
 DATE 02/16/16





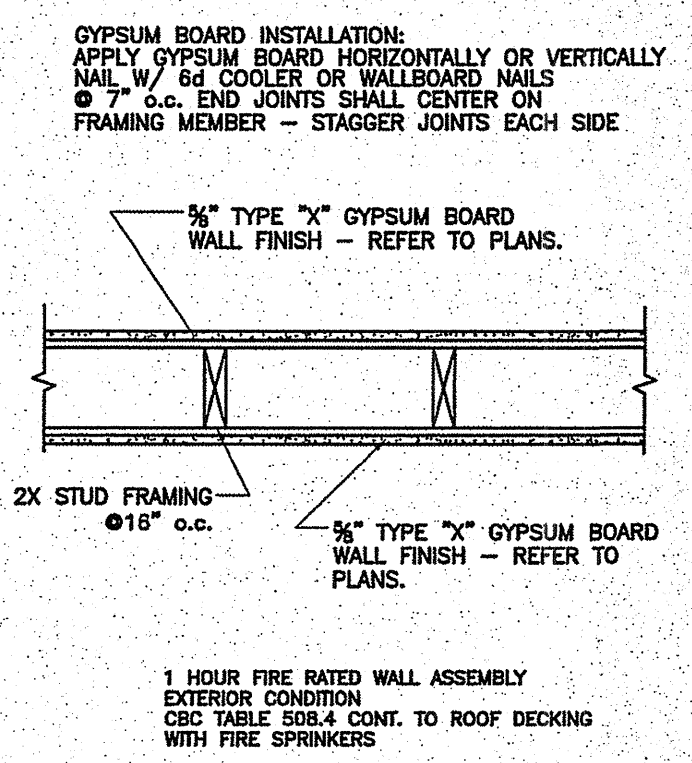
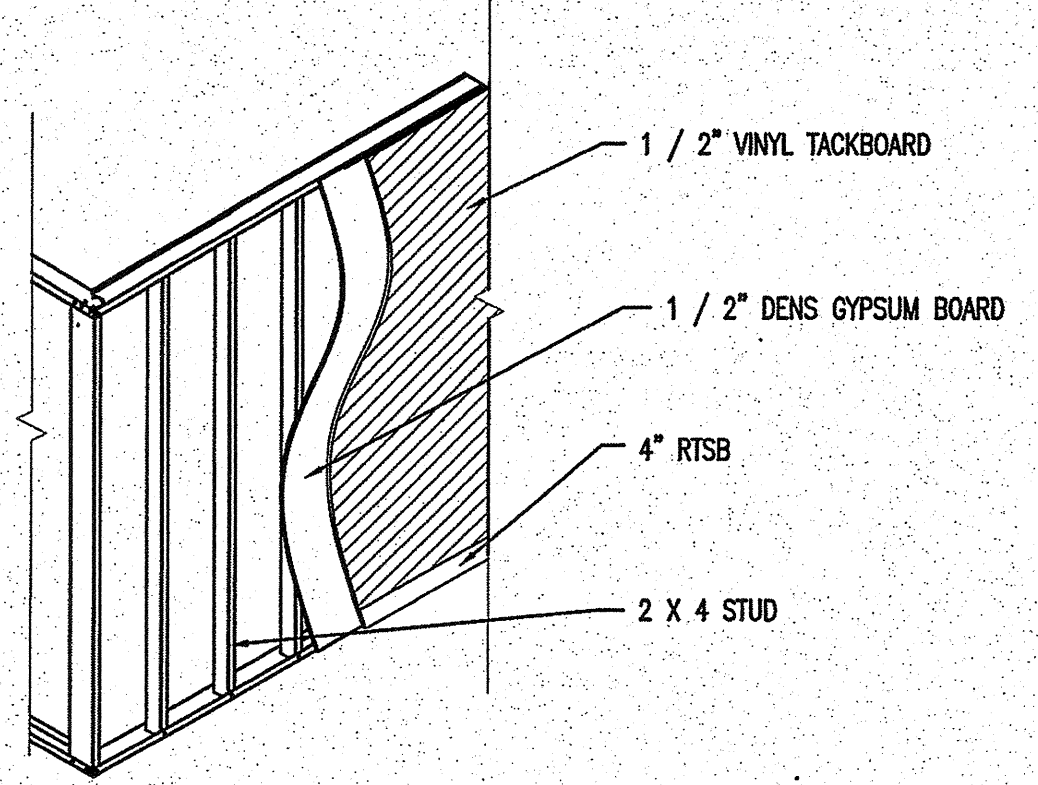
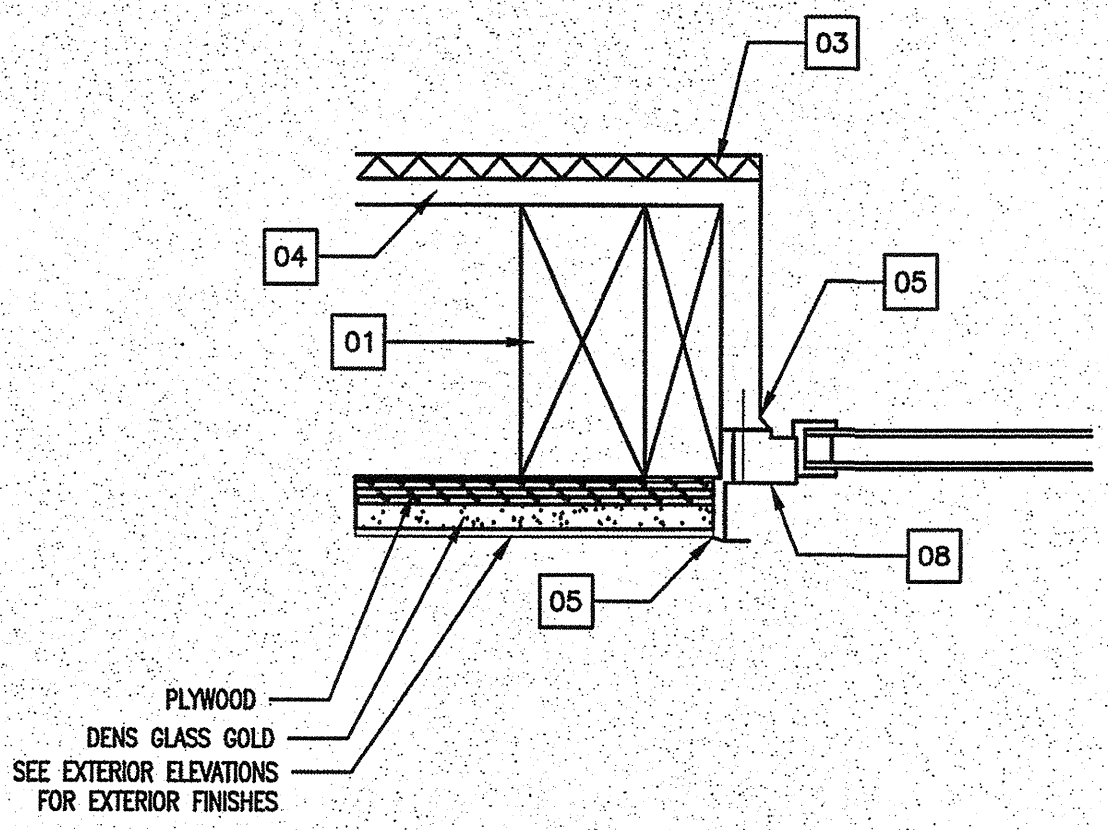
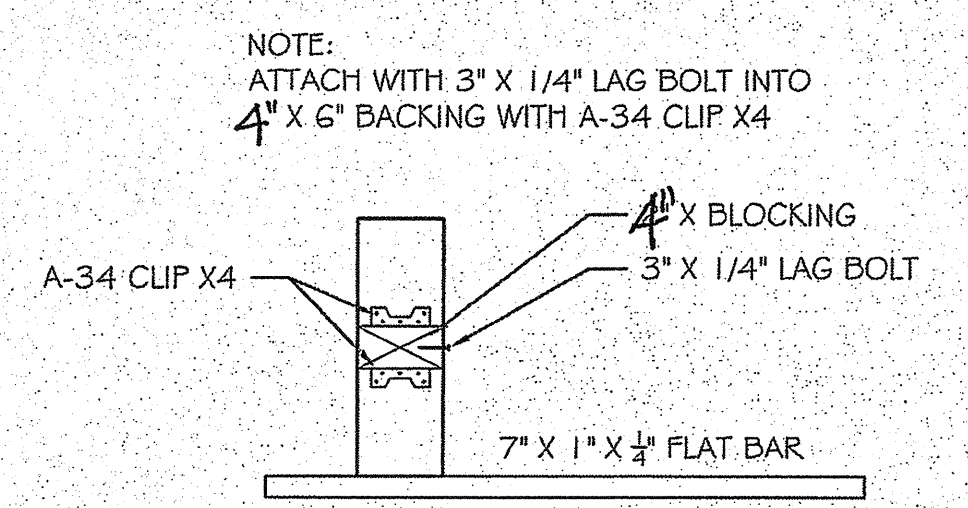
**KEYNOTES**

- NOT ALL KEYNOTES APPLY TO THIS SHEET
01. 2 x 6 POST AND TRIMMER STUD
  02. 1/2" DENS GLASS GOLD OVER 1/2" PLYWOOD
  03. 1/2" VINYL COVERED TACKBOARD
  04. 1/2" GYPSUM WALLBOARD
  05. CONTINUOUS BEAD OF WATERPROOF SEALANT
  06. 16 GAUGE PRESSED METAL FRAME WITH LOCK-IN ANCHORS
  07. 1 3/4" THICK 18 GAUGE INSULATED METAL DOOR
  08. NAIL-IN ALUMINUM WINDOW ASSEMBLY - INSTALL OVER 6" WIDE BUILDING PAPER FLASHING WITH 8d @ 24" o.c.
  09. NOT USED
  10. 3/4" LAMINATED PLASTIC CASING
  11. PLYWOOD PER STRUCTURAL WITH FACTORY APPLIED ELASTOMERIC COATING.
  12. NOT USED
  13. 2 X 6 STUDS @ 16" o.c.
  14. NOT USED
  15. NOT USED
  16. NOT USED
  17. METAL CASING TRIM
  18. NOT USED
  19. EXPANDED METAL VENTILATING CLOSURE SCREEN-SECURE TO BUILDING WITH #12 WOOD SCREWS AND GROMMETS @ 24" o.c. EA SIDE
  20. 6 X 6 TUBE STEEL @ MODULE LINE, SEE STRUCTURAL.
  21. NOT USED
  22. CONTINUOUS BEAD OF WATERPROOF SEALANT
  23. 26 GA STANDING SEAM METAL ROOFING
  24. FIELD INSTALL ROOF PANEL
  25. NOT USED
  26. NOT USED
  27. 26 GA DOWNSPOUT 4" Ø MIN.
  28. NOT USED
  29. 26 GA GUTTER WITH CLOSED ENDS
  30. HARDBOARD FASCIA
  31. NOT USED
  32. NOT USED
  33. NOT USED
  34. NOT USED
  35. NOT USED
  36. NOT USED
  37. NOT USED
  38. NOT USED
  39. NOT USED
  40. ENTERON 7800L COMPACT FLUORESCENT LIGHT FIXTURE.
  41. NOT USED
  42. ELASTOMERIC STUCCO CONTROL JOINT PRE MANUFACTURED
  43. NOT USED
  44. NOT USED
  45. NOT USED

15 CUT-AWAY SECTION-EXTERIOR WALL

11 HARD LID CEILING -OPTIONAL

04 MODULE ACCESS PANEL

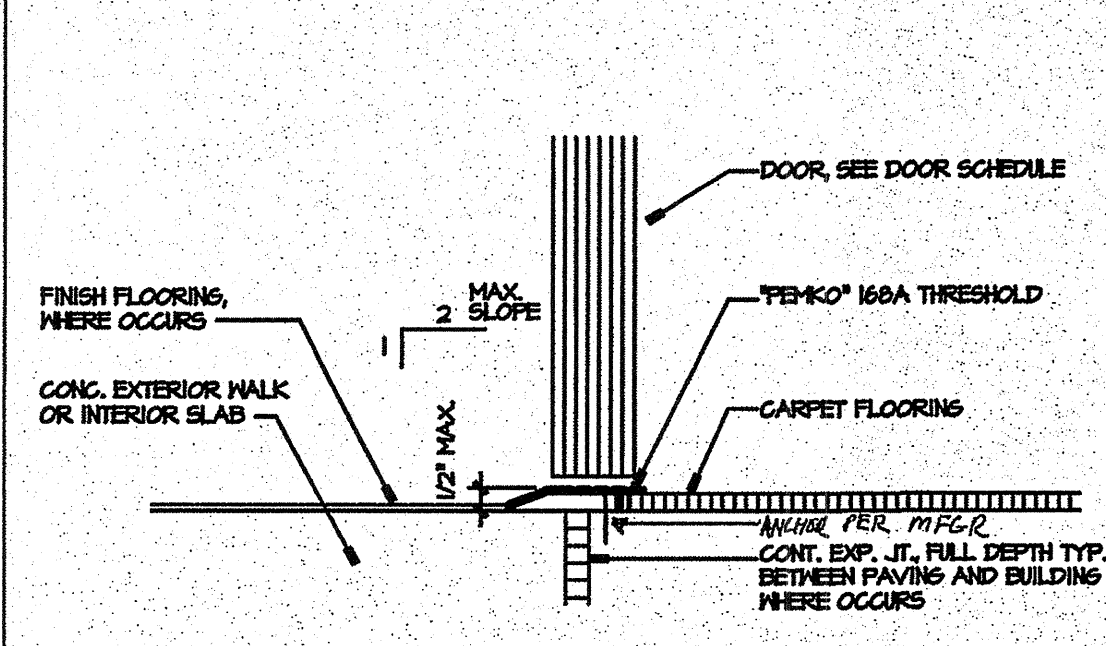
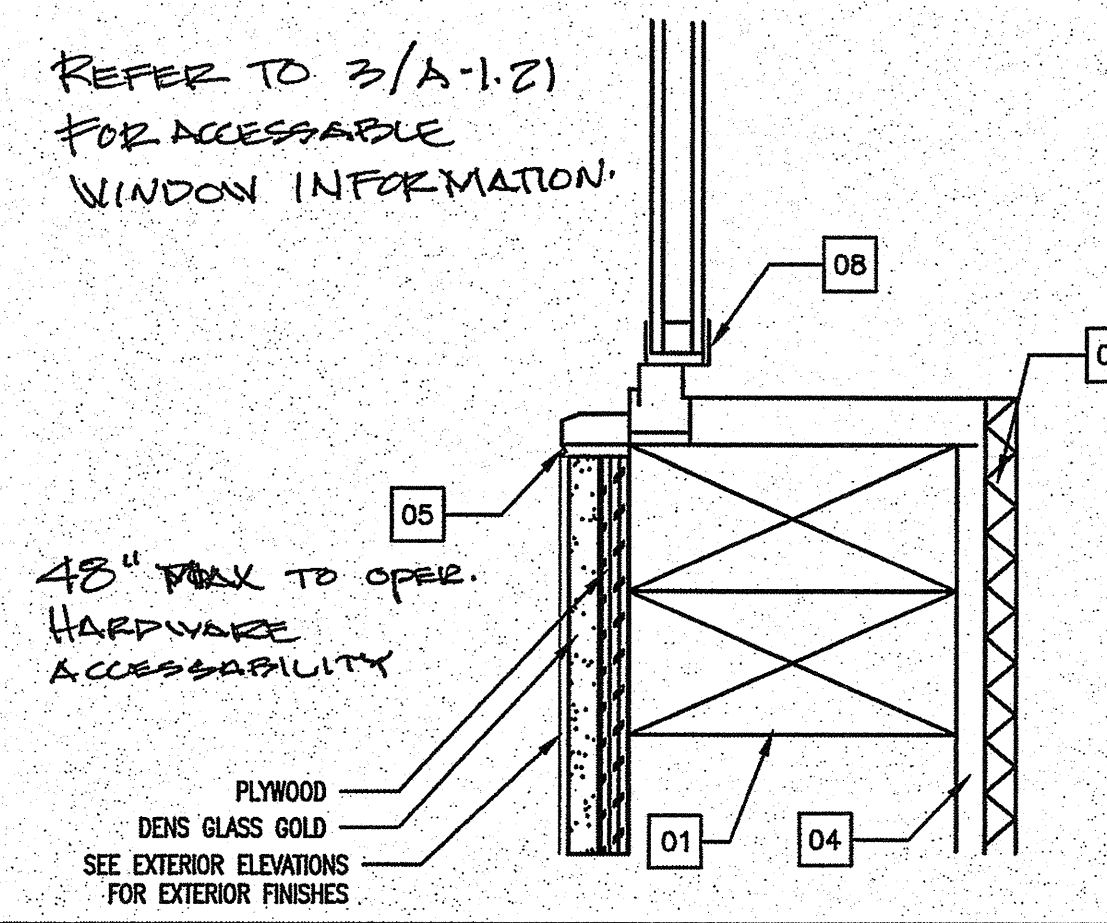
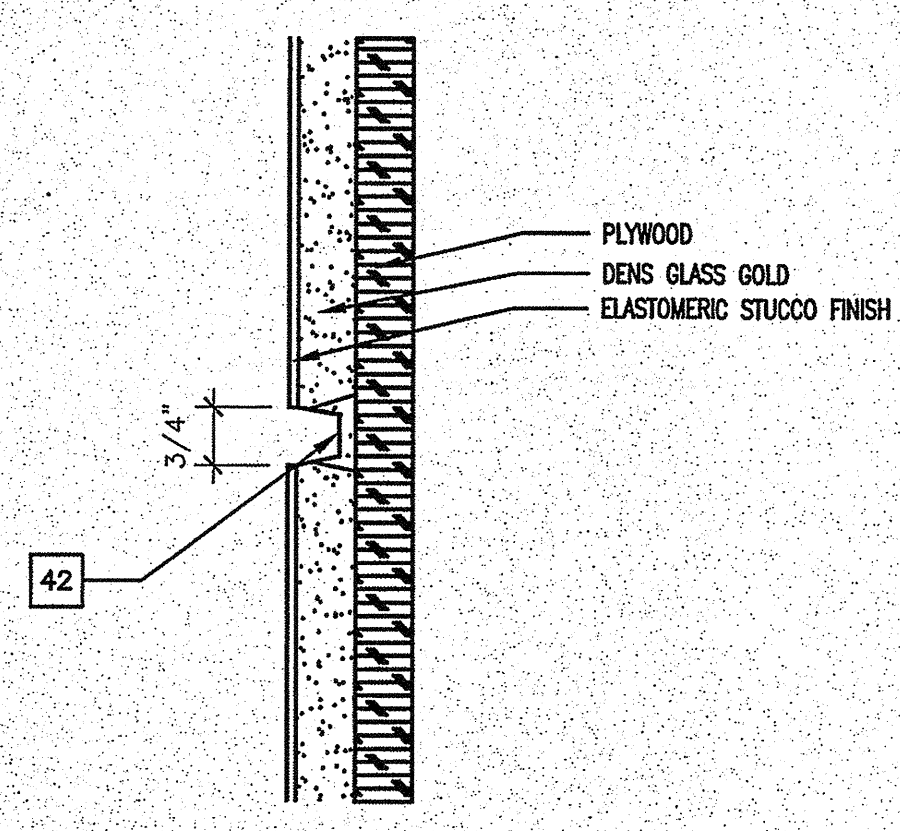
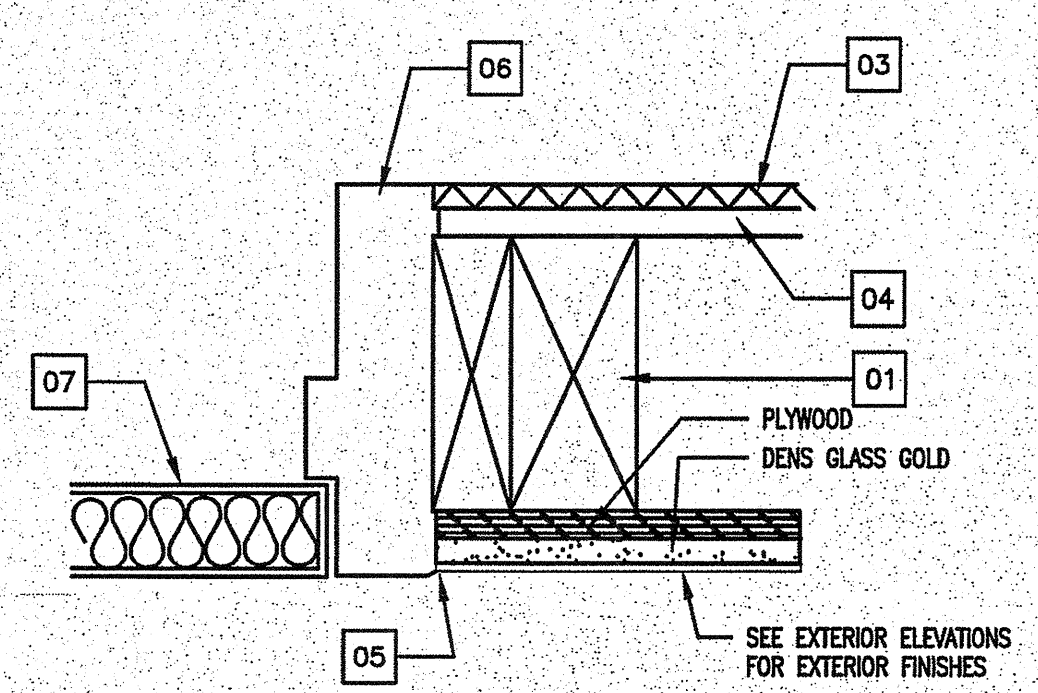


14 CLIP DETAIL

10 EXTERIOR WINDOW JAMB

07 CUT-AWAY SECTION - INTERIOR WALL

03 1-HOUR WALL CONSTRUCTION

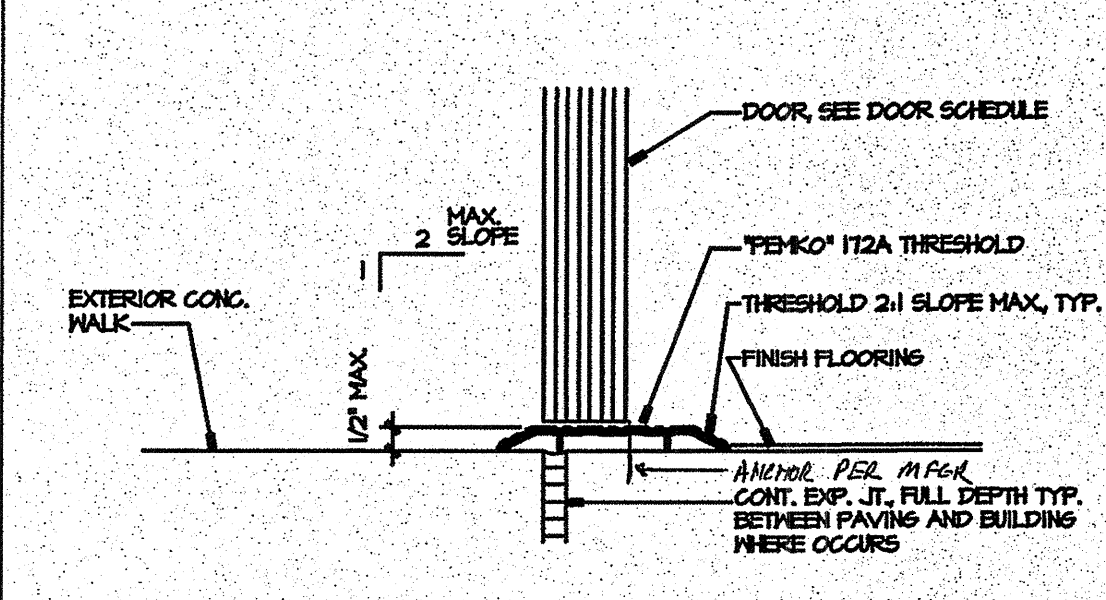
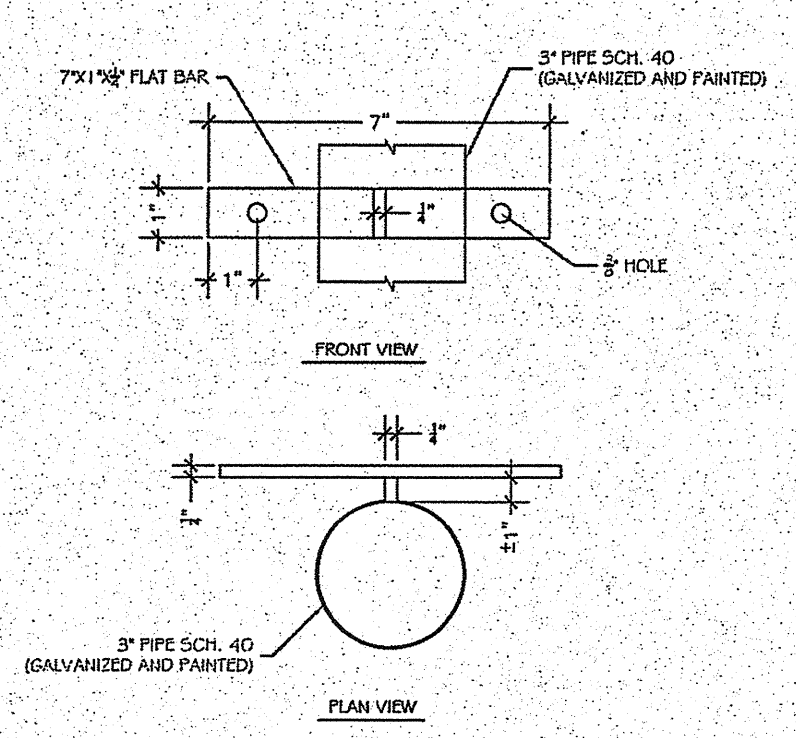
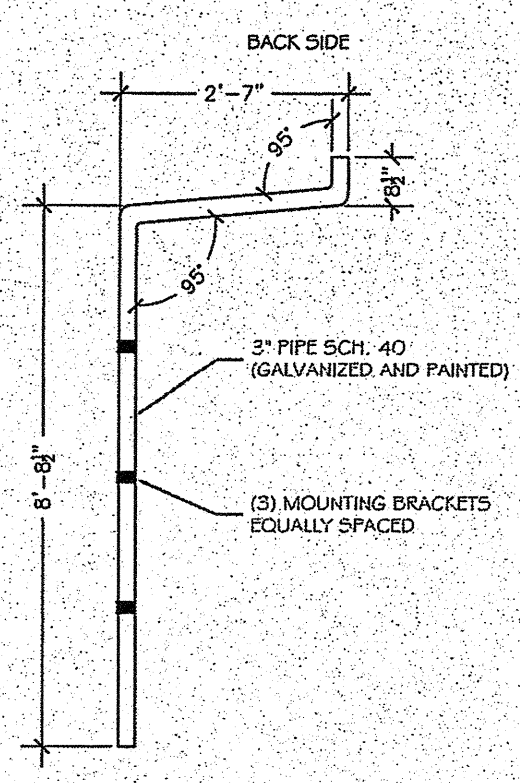
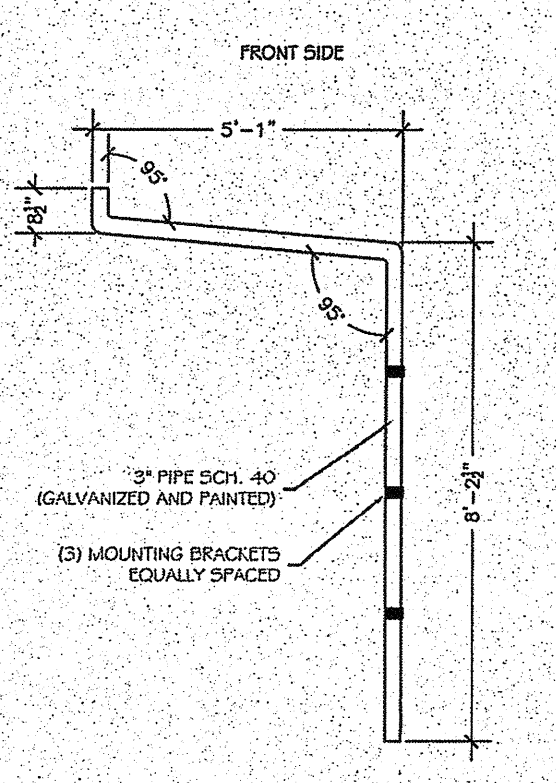


13 EXTERIOR DOOR JAMB

09 ELASTOMERIC JOINT

06 EXTERIOR WINDOW SILL

02 THRESHOLD



12 FRONT SIDE DOWNSPOUT DETAIL

08 BACK SIDE DOWNSPOUT DETAIL

05 PLAN VIEW DOWNSPOUT DETAIL

01 THRESHOLD

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**SOG-32 RE-LOCATABLE BUILDING PC**

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A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

APPROVALS

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DATE: \_\_\_\_\_  
PROJECT: 06-0140

**PC**

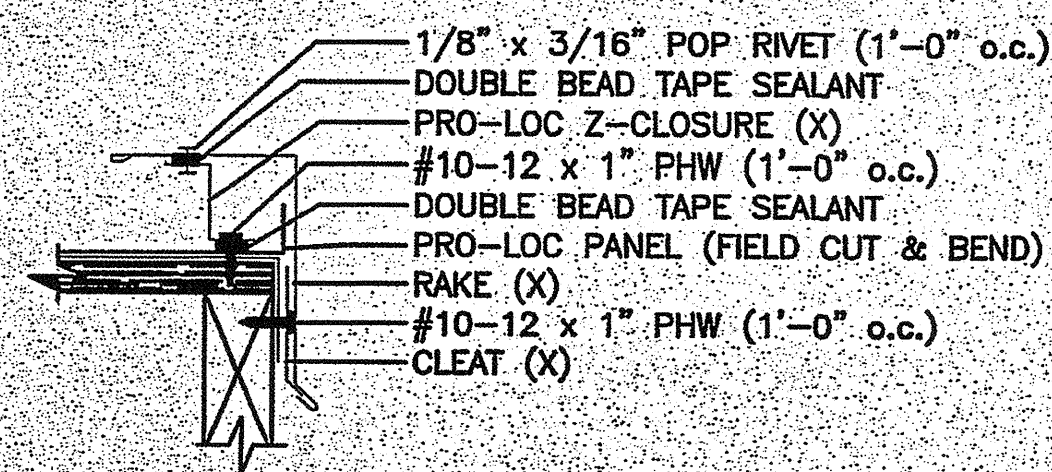
REGISTERED PROFESSIONAL ARCHITECT  
No. S 4437  
Exp. 12/31/16  
STATE OF CALIFORNIA

SHEET NAME  
DETAILS

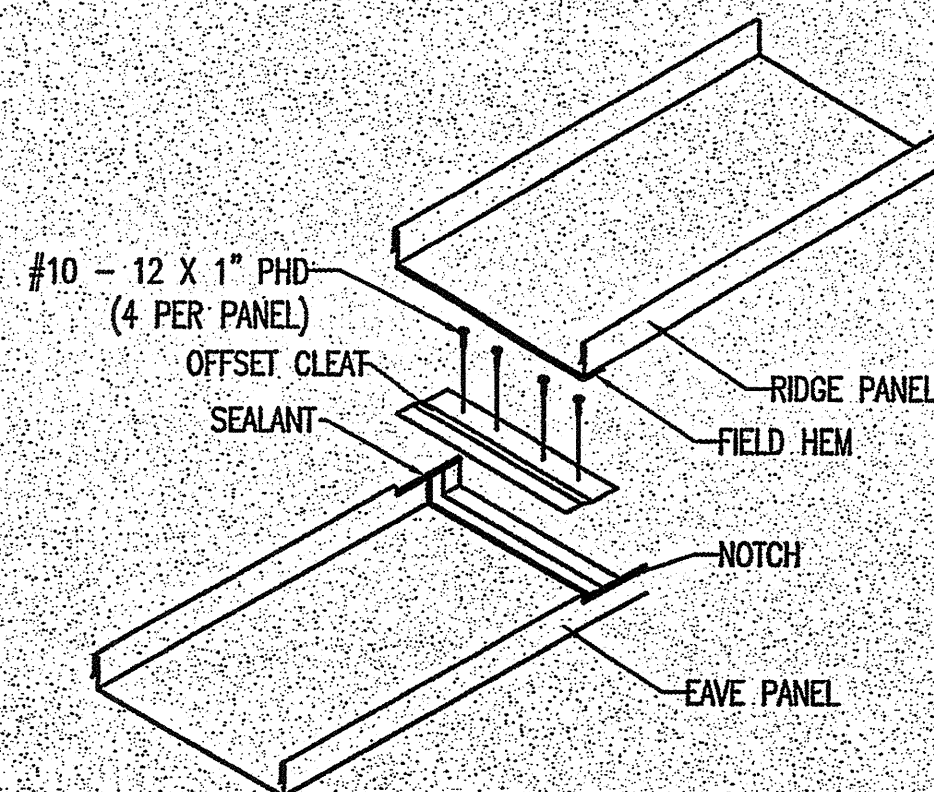
SHEET NUMBER  
A-6.00

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
AFF03 116810  
AC: [Signature]  
DATE: 02/16/16

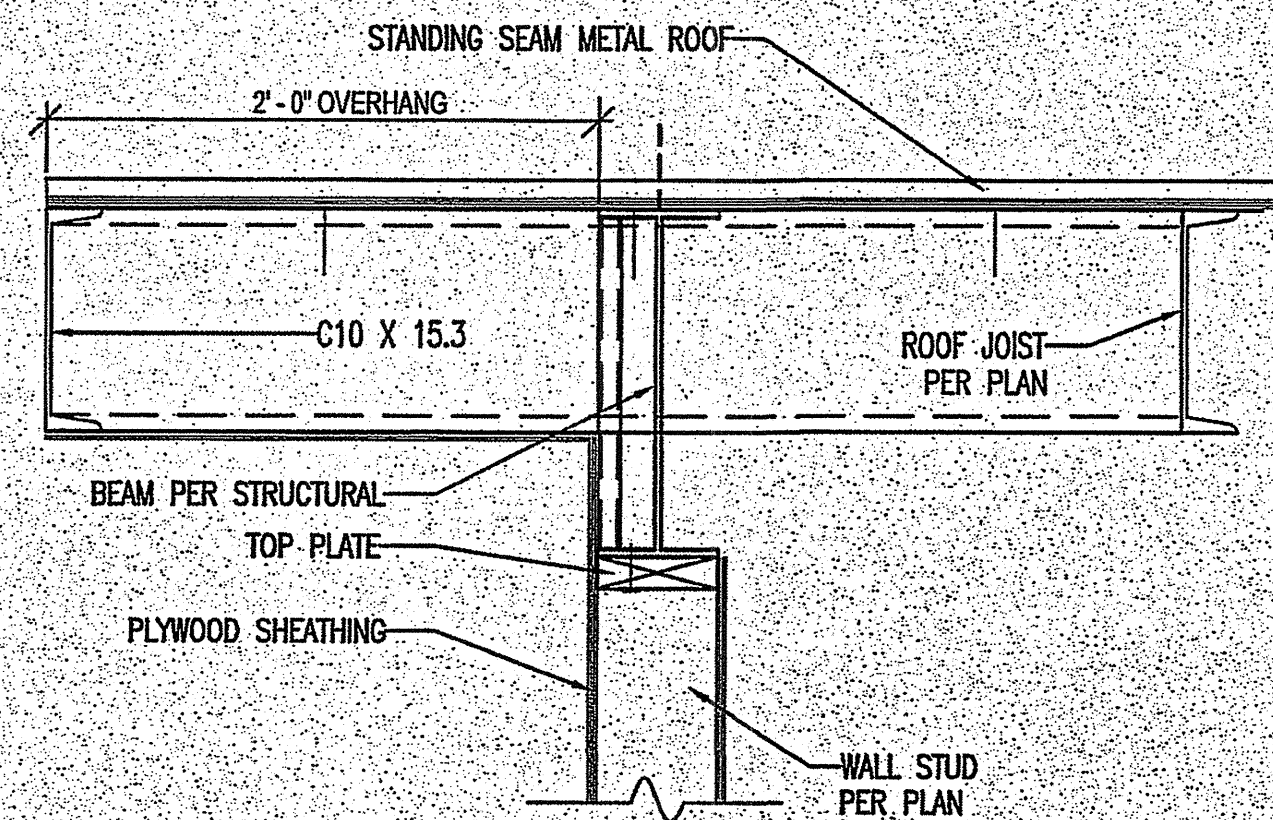




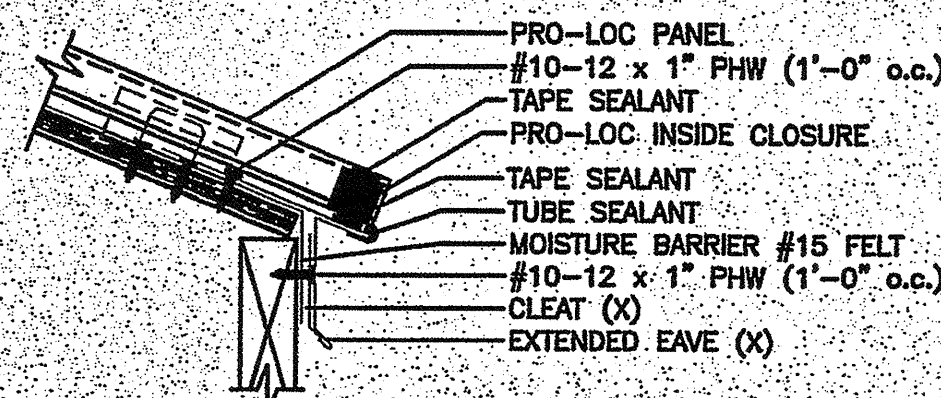
13 RAKE FORMED



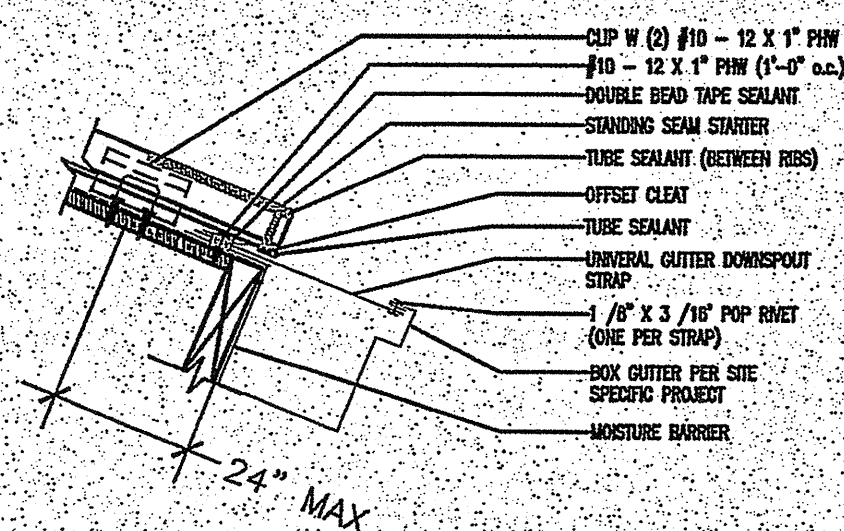
08 ENDLAP



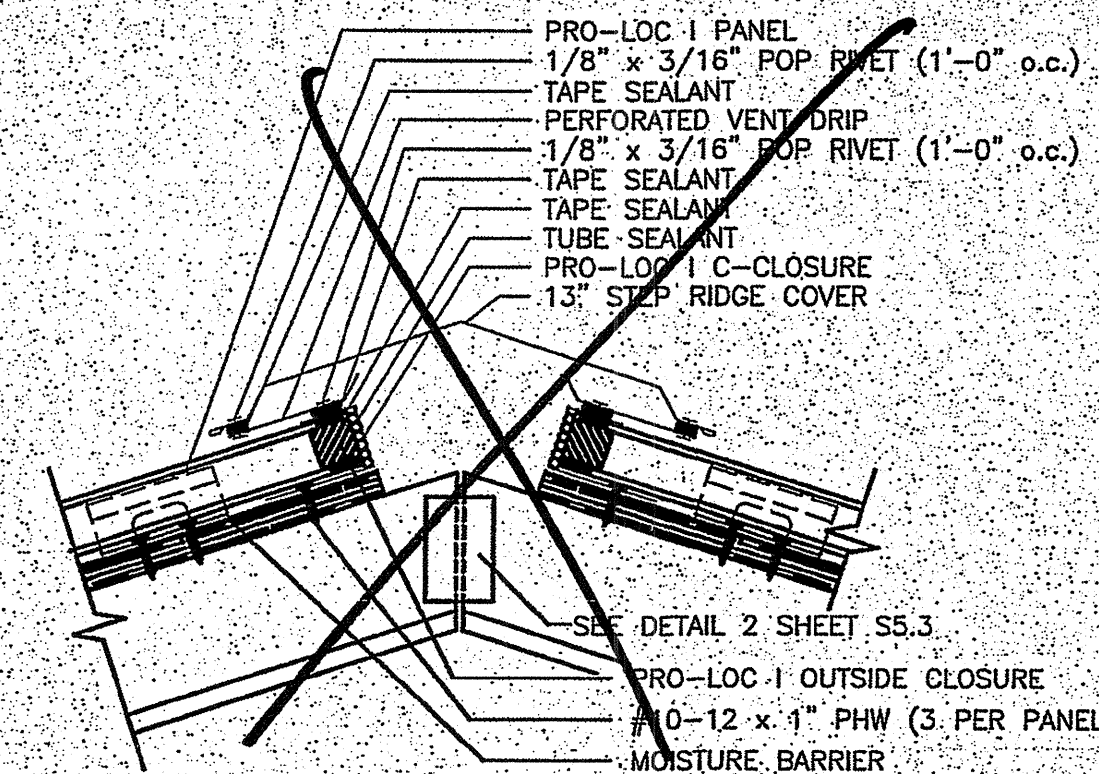
04 ENDWALL OVERHANG - OPTIONAL



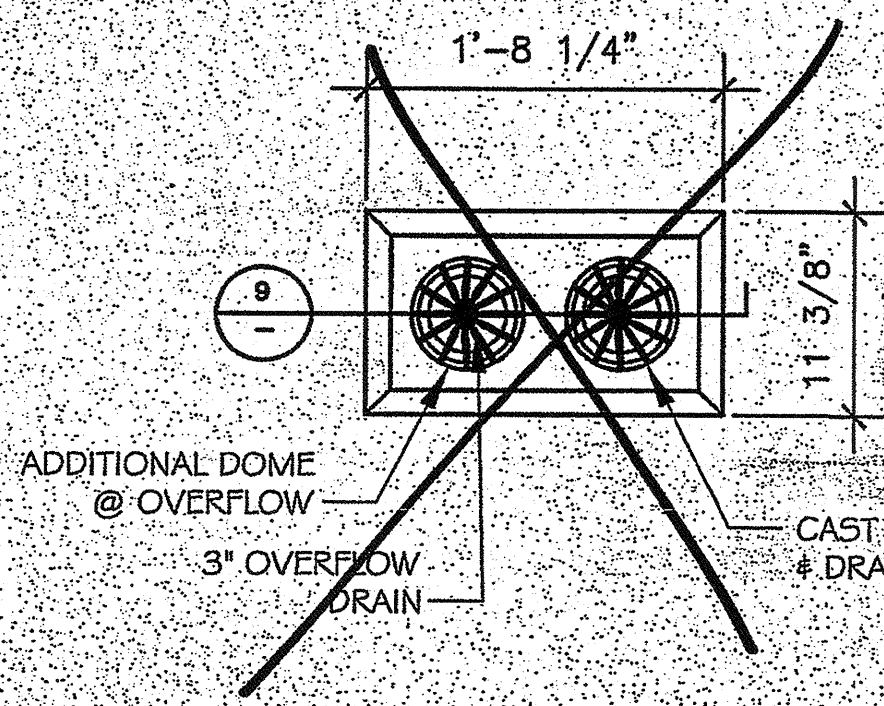
11 EXTENDED EAVE



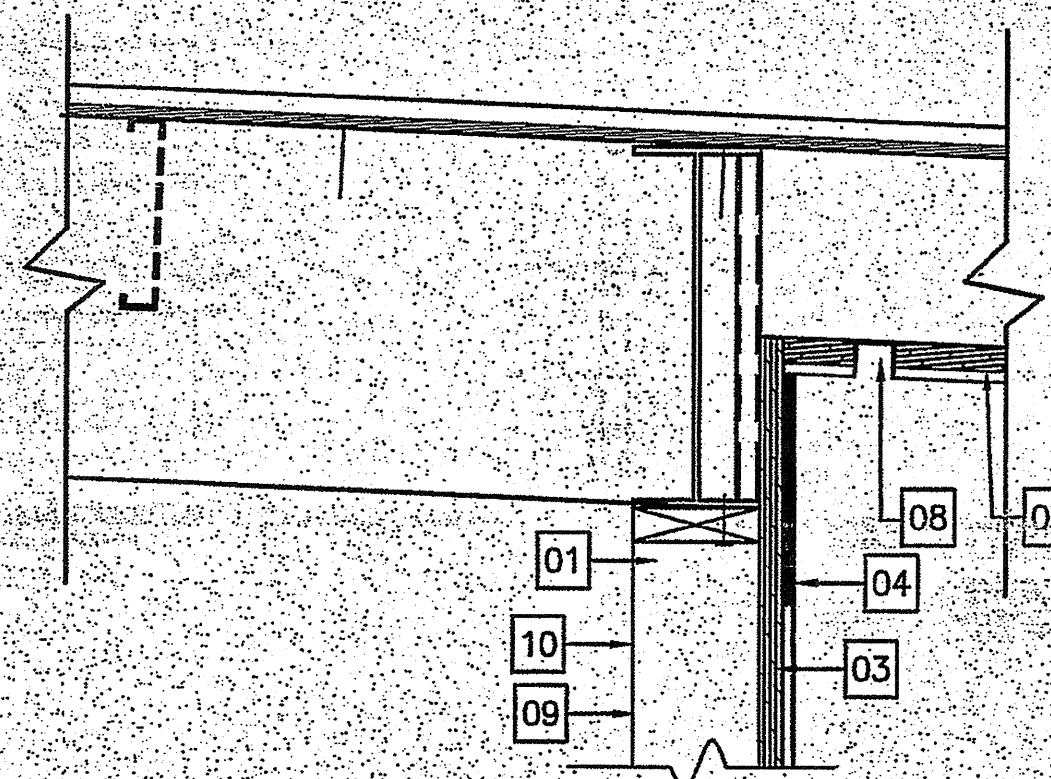
07 GUTTER DETAIL



03 RIDGE CONNECTION

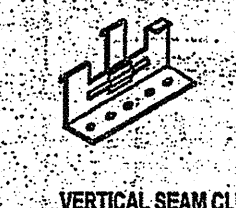


10 ROOF DRAIN



06 EAVE VENT

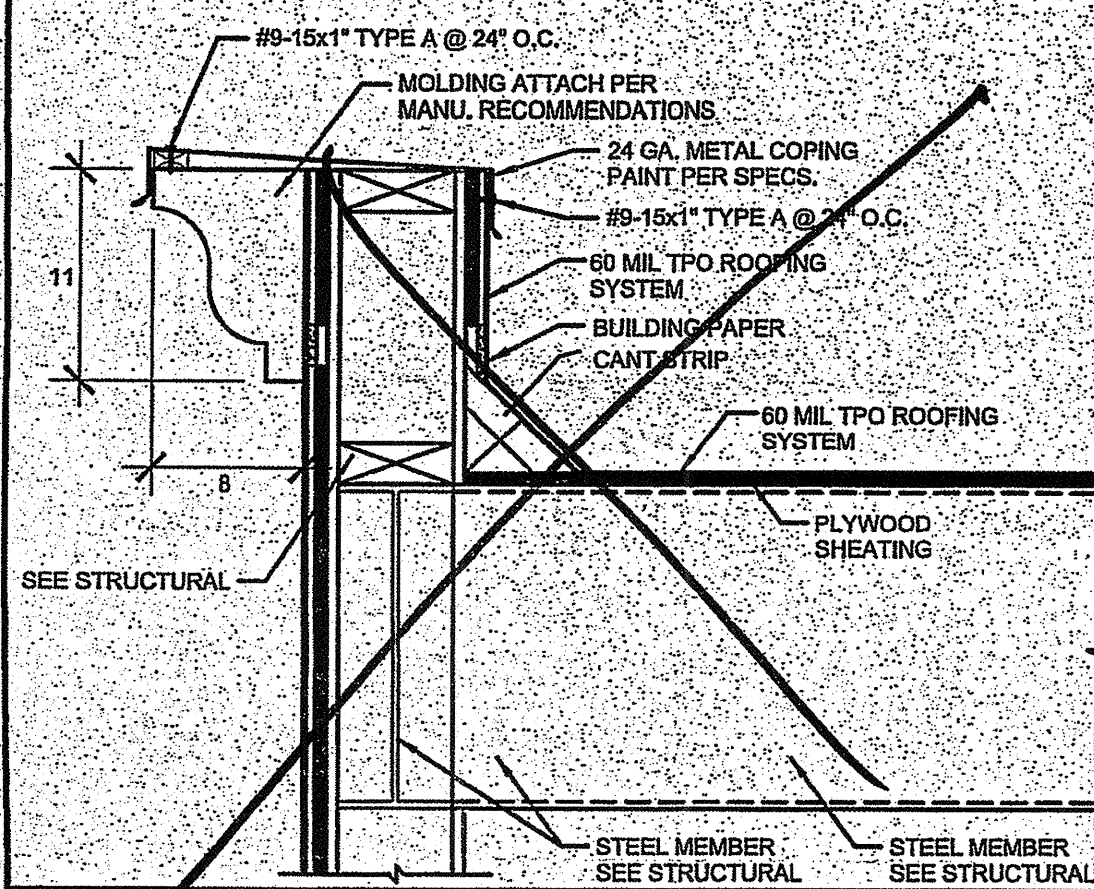
VERTICAL SEAM PANEL CLIP clips are placed along the male leg of each panel prior to installing adjacent panel. Design wind uplift must be considered for proper clip spacing.



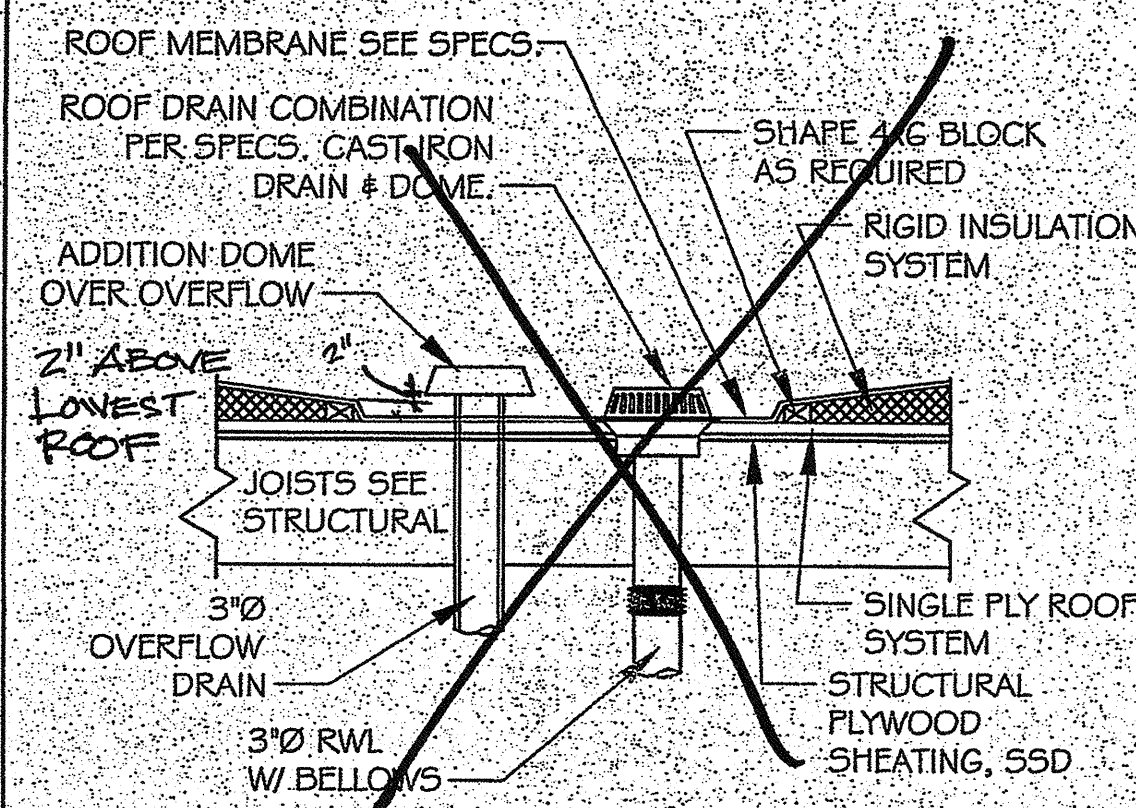
VERTICAL SEAM UL-90 CLIP  
2 fasteners required

| APPLICATION      | INSTALLATION REQUIREMENTS | CLIP SPACING | TYPE OF FASTENER | # REQ'D. |
|------------------|---------------------------|--------------|------------------|----------|
| CLIPS OVER 3\"/> |                           |              |                  |          |

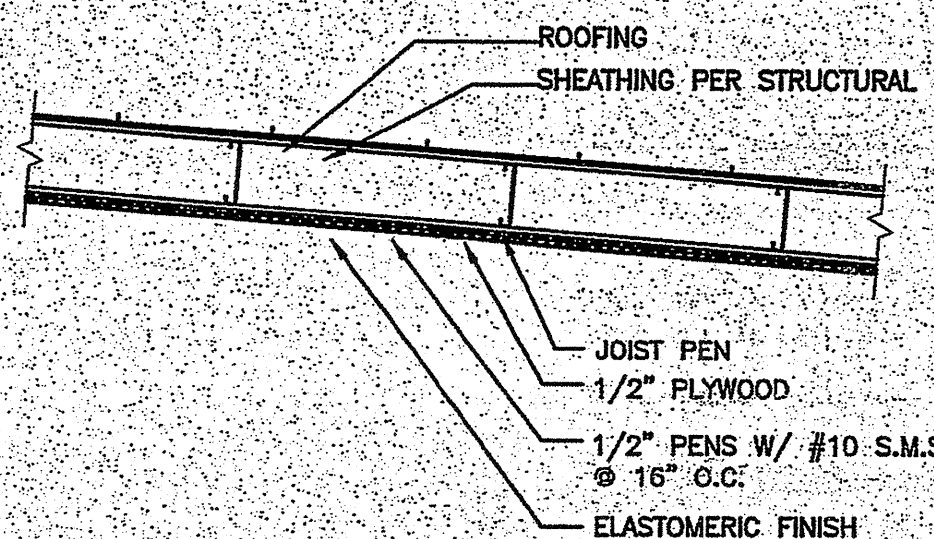
02 VERTICAL SEAM SPECIFICATIONS



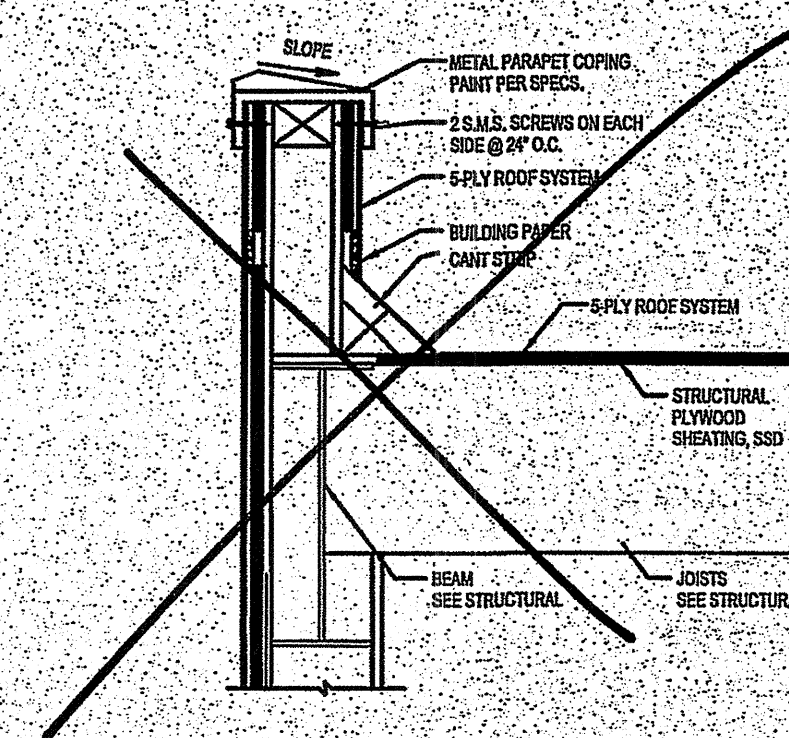
14 PARAPET (OPTIONAL)



09 ROOF DRAIN



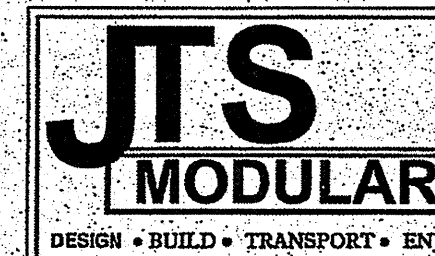
05 OVERHANG DETAIL



01 PARAPET

KEYNOTES

01. 2 X 6 WALL STUD @ 16\"/>
- 02. DOUBLE 2X6 TOP PLATE
- 03. 1/2\"/>
- 04. ELASTOMERIC STUCCO OR WOOD SIDING
- 05. 2X6 BLOCKING
- 06. NOT USED
- 07. 1/2\"/>
- 08. 2\"/>
- 09. 1/2\"/>
- 10. 1/2\"/>
- 11. 2 X 6 STUDS @ 16\"/>



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SOG-32  
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CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION  
FOR CONSTRUCTION IS REQUIRED

APPROVALS

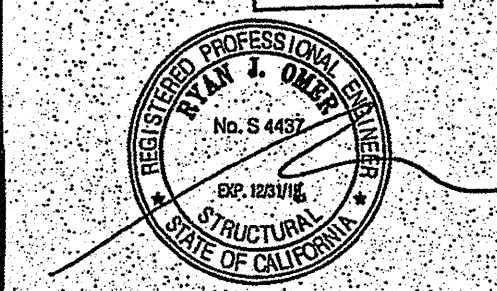
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DIV. OF THE STATE ARCHITECT

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APPL # 02-113888  
AC: APR/LS: [Signature] SS: [Signature]  
DATE: 3/19/15

DATE

PROJECT 08-0140

PC



SHEET NAME

DETAILS

SHEET NUMBER

A-6.01

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPROX: 116810  
AC: [Signature] PLS: [Signature] SS: [Signature]  
DATE: 02/16/16







**CONCRETE:**

- ALL CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF THE 2013 C.B.C. AND THE A.C.I. 318.11 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", AND PCI MANUAL MNL-116-A LATEST EDITION FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF STRUCTURAL PRECAST CONCRETE PRODUCTS WITH AN ARCHITECTURAL FINISH.
- SLAB AND FOUNDATION CONCRETE SHALL BE 150 P.C.F. HARDROCK, MIXED PER A.S.T.M. C-94, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I. AT 28 DAY. EXCEPT AS NOTED PER A.C.I. 318-11, SECTION 4.3.
- THE MAXIMUM SIZE AGGREGATE IN FOUNDATION AND MASS CONCRETE WORK SHALL BE 1 INCH. THE MAXIMUM SIZE AGGREGATE IN SLABS ON GRADE, WALLS SHALL BE 3/4 INCH. ALL OTHER CONCRETE SHALL BE 3/4 INCH.
- CEMENT SHALL CONFORM TO A.S.T.M. C-150, TYPE V, LOW ALKALI AGGREGATES FOR NORMAL WEIGHT SHALL CONFORM TO A.S.T.M. C-33.
- ADMIXTURES AND COLORS (EXCEPT AS NOTED HEREIN) SHALL NOT BE USED UNLESS SUBSTANTIATING DATA IS SUBMITTED TO AND ACCEPTED BY THE ENGINEER AND ARCHITECT OF RECORD AND DSA.
- CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY. THE MIX DESIGNS SHALL CONFORM TO C.B.C. SEC. 1905A. UNLESS NOTED OTHERWISE.
- NON-STRUCTURAL STEEL EMBEDDED IN CONCRETE SHALL BE GALVANIZED OR PAINTED. ALL DAMAGED GALVANIZED AREAS SHALL BE REPAIRED PRIOR TO EMBEDMENT.
- PROVIDE 1- #5 DIAGONAL BARS AT CORNERS OF WALL, FLOOR, AND ROOF OPENINGS AND INSIDE CORNERS OF FLOORS.
- READY MIXED CONCRETE SHALL CONFORM TO (A.S.T.M. C-94).
- PLACEMENT OF CONCRETE SHALL CONFORM THE 2013 C.B.C. AND THE TO A.C.I. 304. CLEAN AND ROUGHEN TO BY REMOVING THE ENTIRE SURFACE AND EXPOSING CLEAN AGGREGATE SOLIDLY EMBEDDED IN THE MORTAR MATRIX AGAINST ALL CONCRETE SURFACES AGAINST WHICH CONCRETE IS TO BE POURED.
- ALL EXPOSED CONCRETE SHALL HAVE A SMOOTH FORM FINISH USING B-B PLYFORM, CLASS I, EXT-A.P.A. PLYWOOD.
- ALL SLABS SHALL HAVE A TROWELED FINISH EXCEPT AS NOTED ON THE DRAWINGS.
- ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS AND INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
- IF THE CONTRACTOR DESIRES TO MAKE ANY CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THESE DRAWINGS, HE SHALL SUBMIT DETAILS OF CHANGES TO THE ENGINEER OF RECORD FOR REVIEW BEFORE STARTING WORK AND THE ENGINEER OF RECORD TO OBTAIN DSA APPROVAL PRIOR TO STARTING WORK.
- NO BRICK OR POROUS MATERIAL SHALL BE USED TO SUPPORT FOUNDATION STEEL OFF THE GROUND.
- PROVIDE 1/2 INCH CHAMFER ON ALL EXPOSED CONCRETE CORNERS, U.N.O.
- MINIMUM CONCRETE COVERAGES
 

|   |        |
|---|--------|
| FOOTINGS CAST AGAINST EARTH                 | 3"     |
| FORMED CONCRETE EXPOSED TO EARTH OR WEATHER | 2"     |
| BEAMS AND GIRDERS                           | 1 1/2" |
| WALLS                                       | 3/4"   |
| COLUMN TIES                                 | 3/4"   |
| SLABS (#11 AND SMALLER)                     | 3/4"   |

**CONCRETE CURING:**

A) SLAB AND FDN; TYPICALLY REQUIRED FOR 10 DAYS TO ACHIEVE A MINIMUM OF 2500 PSI STRENGTH PRIOR TO INSTALLATION OF OTHER MAJOR STRUCTURAL COMPONENTS.

**FOUNDATION:**

- THIS P.C. IS DESIGN TO THE C.B.C. MINIMUM. WHERE SOIL REPORT ARE AVAILABLE; ATTACH ONE COPY OF SOILS REPORT TO THE APPROVED SET OF CONSTRUCTION DOCUMENTS. SOILS REPORT SHALL BE PART OF THESE NOTES. PRIOR TO THE POURING OF CONCRETE AND PRIOR TO THE CONTRACTOR REQUESTING A DSA FOUNDATION INSPECTION, THE GEOTECHNICAL ENGINEER SHALL INSPECT AND APPROVE THE FOOTING EXCAVATIONS. HE SHALL POST NOTICE ON THE JOB SITE AND ADVISE THE DSA INSPECTOR IN WRITING THAT THE WORK SO INSPECTED MEETS THE CONDITIONS OF THE REPORT. A WRITTEN CERTIFICATION TO VERIFY THAT:
  - THE BUILDING PAD WAS PREPARED IN ACCORDANCE WITH THE SOIL REPORT.
  - THE UTILITY TRENCHES HAVE BEEN PROPERLY BACKFILLED AND COMPACTED, AND
  - THE FOUNDATION EXCAVATIONS COMPLY WITH THE INTENT OF THE SOILS REPORT.
- SOIL REMOVAL AND RECOMPACTION SHALL BE DONE PER SOILS REPORT RECOMMENDATIONS UNDER GEOTECHNICAL ENGINEER'S SUPERVISION AND INSPECTION.
- TYPE OF FOOTING:
  - SHALLOW FOOTING SYSTEM MINIMUM EMBEDMENT 18" BELOW LOWEST ADJACENT GRADE. DESIGN SOIL PRESSURE:
 

| FOOTING TYPE       | STATIC BEARING PRESSURE |
|--------------------|-------------------------|
| SPREAD FOOTING     | 1,500                   |
| CONTINUOUS FOOTING | 1,500                   |
- SLAB BASE AND COMPACTION TO BE IN ACCORDANCE WITH SOILS REPORT.
- NO PIPES OR DUCTS SHALL BE PLACED IN SLABS OR WALLS UNLESS SPECIFICALLY DETAILED AND APPROVED BY THE ENGINEER AND DSA.
- FOR ALL DIMENSIONS, CURBS, SLAB DEPRESSIONS, STEPS, FLOOR DRAINS, FLOOR SINKS, TRENCHES, UNDER FLOOR DUCTS AND CONDUITS, SEE ARCHITECTURAL, MECHANICAL, AIR CONDITIONING, PLUMBING, AND ELECTRICAL DRAWINGS, TRENCH BACKFILL AS PER SOILS REPORT REQUIREMENTS.
- ALL ABANDONED FOOTINGS, UTILITIES, ETC., THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.
- THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN AREAS TO BE EXCAVATED BEFORE BEGINNING EXCAVATION. EXERCISE EXTREME CAUTION IN EXCAVATING AND TRENCHING. DAMAGE CAUSED AS A RESULT OF FAILING TO EXACTLY LOCATE AND PRESERVE ALL EXISTING UNDERGROUND UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE FOR THE DESIGN, APPROVALS, PERMITS, INSTALLATION AND MONITORING OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY RETAIN TEMPORARY EXCAVATIONS.
- ALL PLANTERS IN CLOSE PROXIMITY TO THE STRUCTURE SHALL HAVE ADEQUATE DRAINAGE OF SURFACE WATER TO PREVENT SATURATION OF SOIL UNDER FOUNDATION.
- 2013 C.B.C. SEISMIC SITE CLASS A, B, C, D AND E (SECTION 1613A.3.2)

**GENERAL NOTES:**

- THE PROJECT SPECIFICATIONS SHALL BE PART OF THE CONTRACT DOCUMENTS.
- THE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS.
- THE CONTRACTOR SHALL REVIEW EXISTING CONDITIONS ON THE SITE DURING THE BIDDING. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING WORK. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES PRIOR TO PROCEEDING.
- ALL PHASES OF WORK ARE TO CONFORM TO THE MINIMUM STANDARDS OF THE CALIFORNIA BUILDING CODE (2013 EDITION C.B.C.), RELATED CALIFORNIA BUILDING CODE STANDARDS, AND ANY A.S.T.M. SPECIFICATIONS ON WHICH THESE STANDARDS ARE BASED. WHERE CONFLICT BETWEEN BUILDING CODES AND SPECIFICATIONS OCCURS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN.
- ALL A.S.T.M. DESIGNATIONS REFERRED TO ON THESE DRAWINGS SHALL BE THE LATEST ADOPTED OR REVISED SPECIFICATION, AS OF THE DATE OF THESE DRAWINGS.
- ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS. DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.
- NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
- THE STRUCTURAL DRAWINGS SHOW ONLY THE BASIC STRUCTURAL REQUIREMENTS. REFER TO CIVIL, ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR NON-STRUCTURAL ITEMS, SUCH AS:
  - SIZE AND LOCATION OF ALL OPENINGS.
  - SIZE AND LOCATION OF ALL NON-BEARING WALLS.
  - SIZE AND LOCATION OF ALL CONCRETE CURBS, WALKS, ROOF AND FLOOR DRAINS, SLOPES, DEPRESSED SLAB AREAS, ETC.
  - FLOOR, ROOF AND WALL FINISHES.
  - DIMENSIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
- THE STRUCTURAL CONTRACT DOCUMENTS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION.
- NEITHER THE OWNER NOR THE ARCHITECT/STRUCTURAL ENGINEER WILL ENFORCE SAFETY MEASURES OR REGULATIONS. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE SAFETY ITEMS.
- SATISFACTORY EXECUTION OF CONSTRUCTION IS DEPENDENT UPON CONFORMANCE WITH THE INTENT OF THESE DRAWINGS. OWNER OR CONTRACTOR SHALL RETAIN A CALIFORNIA LICENSED STRUCTURAL ENGINEER DURING CONSTRUCTION TO OBSERVE THE CONSTRUCTION AND FILE A REPORT (DSA 6A) STATING THE "THE CONSTRUCTION HAS, IN EVERY MATERIAL RESPECT, BEEN PERFORMED IN COMPLIANCE WITH THE DSA APPROVED DOCUMENTS".
- CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED DESIGN LIVE LOAD FOR EACH PARTICULAR LEVEL. WHEN WEIGHT OF MATERIALS OR EQUIPMENT MAY EXCEED DESIGN LOAD, STRUCTURAL SYSTEMS SHALL BE SHORED.
- WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF THE WORK. THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK.

**REINFORCING STEEL:**

- ALL REINFORCING STEEL SHALL BE PLACED IN CONFORMANCE WITH THE C.B.C., AND THE "MANUAL OF STANDARD PRACTICE" BY THE C.R.S.I.
- REINFORCING BARS SHALL CONFORM TO A.S.T.M. A-615, DEFORMED GRADE 60. REINFORCING BARS THAT ARE TO BE WELDED SHALL CONFORM TO A.S.T.M. A-706, DEFORMED GRADE 60.
- WELDING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH A.S.T.M. A-706 WITH LOW HYDROGEN ELECTRODES AND SHALL CONFORM TO THE STRUCTURAL WELDING CODE REINFORCING STEEL BY A.N.S.I. / A.W.S. D1.4. MINIMUM TENSILE STRENGTH OF WELD METAL SHALL BE 90 K.S.I. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS.
- ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE LAPPED WITH THE SAME GRADE, SIZE, SPACING AND NUMBER AS THE VERTICAL REINFORCEMENT, RESPECTIVELY.
- REINFORCING SPLICES SHALL BE MADE AS INDICATED ON THE DRAWINGS.
- ALL VERTICAL REINFORCING SHALL BE CONTINUOUS BETWEEN TWO LEVELS, UNLESS NOTED OTHERWISE.
- SLAB ON GRADE REINFORCING SHALL BE POSITIONED AT MID-DEPTH, UNLESS NOTED OTHERWISE.
- PROVIDE #3 SPACER TIES AT 2'-6" ON CENTER IN ALL BEAMS AND FOOTINGS TO SECURE REINFORCING BARS IN PLACE, U.N.O.
- PIPING AND CONDUIT SHALL BE SO FABRICATED AND INSTALLED THAT CUTTING, BENDING, OR DISPLACEMENT OF REINFORCEMENT FROM ITS PROPER LOCATION WILL NOT BE REQUIRED. A.C.I. #318-11

**DESIGN BASIS:**

CODE: 2013 C.B.C. (CALIFORNIA BUILDING CODE CCR, TITLE 24, PART 2)

**GRAVITY LOADS:**

- ROOF LIVE LOAD 20 P.S.F. (REDUCIBLE)  
ROOF DEAD LOAD 22 P.S.F. (MAX.)
- SNOW LOAD  $P_g$  23.8 P.S.F.  
 $P_f$  20.0 P.S.F.  
 $P_s$  20.0 P.S.F.  
SNOW EXPOSURE FACTOR 1.2  
SNOW IMPORTANT FACTOR 1.0  
THERMAL FACTOR 1.0

**LATERAL LOADS:**

- SEISMIC DESIGN  
SITE CLASS D  
 $S_s = 1.875$  (USE 1.5 PER SECTION 1616A.1.12 OF 2013 CBC)  
 $S_1 = 1.0$   
 $F_a = 1.0$   
 $I = 1.0$   
 $R = 3.5$  STEEL OMRF  
OCCUPANCY CATEGORY = II  
 $S_{os} = 1.0$   
 $S_{o1} = 1.5$   
SEISMIC DESIGN CATEGORY = D  
ANALYSIS METHOD = EQUIVALENT LATERAL FORCE ANALYSIS.  
SEISMIC BASE SHEAR:  
 $C_s = 0.286W$

**2. WIND DESIGN DIRECTIONAL PROCEDURE:**

110 M.P.H.  
EXPOSURE "C"  
 $K_{zt} = 1.0$   
 $I = 1.0$

| ELEMENTS | ZONE | $P_p$       |
|----------|------|-------------|
| ROOF     | 1    | 26.8 P.S.F. |
|          | 2    | 44.6 P.S.F. |
|          | 3    | 65.9 P.S.F. |
| WALL     | 4    | 30.4 P.S.F. |
|          | 5    | 37.5 P.S.F. |
| OVERHANG | 2    | 52.2 P.S.F. |
|          | 3    | 87.8 P.S.F. |

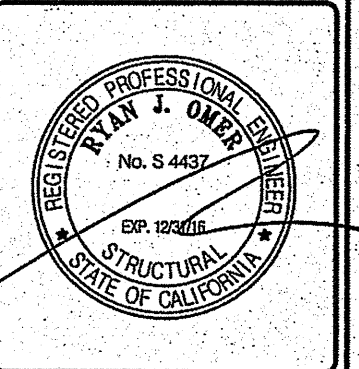
  

| M.F.R.S. | ZONE     | P            |
|----------|----------|--------------|
| ROOF     | WINDWARD | -22.0 P.S.F. |
|          | LEEWARD  | 22.0 P.S.F.  |
| WALL     | WINDWARD | 20.0 P.S.F.  |
|          | LEEWARD  | -14.0 P.S.F. |
| OVERHANG |          | -39.0 P.S.F. |

FLOOD HAZARD: DESIGN DOES NOT ACCOUNT FOR FLOOD HAZARD.

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DATE 02/16/16

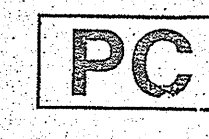
STRUCTURAL ENGINEER OF RECORD  
**ORION**  
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02-115899  
AC FLS SR  
DATE 03/19/15

CLIENT NAME: B.N.  
DRAWN BY: R.J.O.  
CHECKED BY: R.J.O.  
JOB NUMBER: 09122014  
DATE: 09/12/2014  
SCALE: AS NOTED

SHEET NAME  
**GENERAL NOTES**

SHEET NO.  
**S1.1**





**STRUCTURAL OBSERVATION:**

- PER C.B.C. CHAPTER 17A, 1704A.5 THE OWNER SHALL EMPLOY A LICENSED ENGINEER OR ARCHITECT RESPONSIBLE FOR THE STRUCTURAL DESIGN, OR HIS DESIGNATED ENGINEER OR ARCHITECT TO MAKE SITE VISITS TO OBSERVE GENERAL COMPLIANCE WITH THE APPROVED STRUCTURAL PLANS, SPECIFICATIONS AND CHANGE ORDERS. THE ENGINEER OR ARCHITECT SHALL SUBMIT A STATEMENT IN WRITING TO THE BUILDING OFFICIAL STATING THAT THE SITE VISIT HAS BEEN MADE AND THAT ANY DEFICIENCIES NOTED HAVE BEEN CORRECTED.

**AUTOMATIC END WELDED STUDS:**

**A. MATERIAL:**

AUTOMATIC END WELDED STUDS SHALL BE NELSON GRANULAR FLUX FILLED SHEAR CONNECTOR OR ANCHOR STUDS (OR APPROVED EQUAL).

STUDS SHALL BE MANUFACTURED OF C-1015 COLD ROLLED STEEL WHICH CONFORMS TO A.S.T.M. SPEC. A-108-58-T.

**B. INSTALLATION:**

THE STUDS SHALL BE AUTOMATICALLY END WELDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE STUD AND THE PLATE. THERE SHOULD BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE. THE STUD SHALL DECREASE IN LENGTH DURING WELDING APPROXIMATELY 1/8" FOR 5/8" AND UNDER, AND 3/16" FOR OVER 5/8" DIAMETER. WELDING SHALL BE DONE ONLY BY QUALIFIED WELDERS APPROVED BY THE WELDING INSPECTOR.

**C. INSPECTION AND TESTS:**

INSPECTION, IN ACCORDANCE WITH TITLE 24, SECTION 1704A.3.1.1, OF ALL THE SHOP AND FIELD OPERATIONS FOR THE AUTOMATIC END WELDED STUDS SHALL BE MADE BY A QUALIFIED WELDING INSPECTOR (APPROVED BY THE DIVISION OF THE STATE ARCHITECT). THE TYPE AND CAPACITY OF THE WELDING EQUIPMENT SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE CHECKED AND APPROVED BY A WELDING INSPECTOR.

AT THE BEGINNING OF EACH DAY'S WORK, A MINIMUM OF TWO (2) TEST STUD WELDS SHALL BE MADE WITH THE EQUIPMENT TO BE USED TO METAL WHICH IS THE SAME AS THE ACTUAL WORK PIECE. THE TEST STUDS SHALL BE SUBJECTED TO A 90° BEND TEST BY STRIKING THEM WITH A HEAVY HAMMER. AFTER THE ABOVE TEST, THE WELD SECTION SHALL NOT EXHIBIT ANY TEARING OUT OR CRACKING.

TESTING OF END-WELDING STUDS SHALL BE IN ACCORDANCE WITH SECTION 2212A.2, PART 2, TITLE 24.

**LUMBER:**

- STRUCTURAL LUMBER SHALL BE STRESS-MARKED DOUGLAS FIR-LARCH OR HEM FIR. S4S IN ACCORDANCE WITH GRADING AND DRESSING RULE NO. 16 OF THE WEST COAST LUMBER INSPECTION BUREAU (LATEST EDITION).
- LUMBER SHALL NOT BE BORE OR NOTCHED, EXCEPT WHERE DETAILED.
- SILLS AND PLATES IN CONTACT WITH CONCRETE OR MASONRY WITHIN 48 INCH OF GROUND SHALL BE PRESSURE TREATED DOUGLAS FIR-LARCH OR HEM FIR.
- PROVIDE 2x FIRE BLOCKING AT MID-HEIGHT OF STUD PARTITIONS OVER 8'-6" IN HEIGHT.
- PROVIDE 2x SOLID BLOCKING AT ALL SUPPORTS FOR CEILING JOISTS EXCEPT WHERE JOISTS ARE SUPPORTED BY JOIST HANGERS.
- ROOF SHEATHING INSPECTIONS SHALL BE MADE PRIOR TO COVERING. ALL STRUT CONNECTIONS SHALL BE COMPLETED PRIOR TO INSPECTION.
- SEE DRAWINGS FOR SHEAR WALL SCHEDULE, HOLDOWN DETAILS, PANEL LOCATIONS, ETC. SHEAR PANEL NAILING SHALL BE SPACED AT LEAST 3/8 INCH FROM ALL EDGES.
- METAL CONNECTORS SHALL BE "SIMPSON STRONG-TIE" OR EQUAL, EXCEPT AS SHOWN. FILL ALL HOLES OF THE PREFAB. CONNECTORS AS SPECIFIED BY MANUFACTURER.
- LUMBER MINIMUM GRADE:
 

|                            |              |
|----------------------------|--------------|
| A. TOP PLATES              | #2           |
| B. 2x4 STUDS, 8'-0" MAX.   | #2           |
| 2x4 STUDS, 8'-1" TO 14'-0" | #2           |
| 2x6 STUDS AND LARGER POST  | #1 OR BETTER |
- ALL BOLTS AND LAG SCREWS SHALL HAVE STANDARD CUT WASHERS BETWEEN THE WOOD AND THE NUTS. SEE DRAWINGS FOR LOCATIONS OF PLATE WASHERS AS REQUIRED.
 

|            |                |
|------------|----------------|
| BOLTS      | A.S.T.M. A-307 |
| LAG SCREWS | A.N.S.I. B-18  |
| NUTS       | A.S.T.M. A-563 |
| WASHERS    | A.S.T.M. F-844 |
- LEAD HOLES FOR LAG SCREWS SHALL HAVE THE SAME DIAMETER OF THE SHANK FOR THE UNTHREADED PORTION OF THE SHANK, AND 70% OF THE SHANK DIAMETER FOR THE THREADED PORTION. ALL LAG SCREWS SHALL BE INSERTED BY TURNING WITH A WRENCH AND NOT BY DRIVING WITH A HAMMER.
- TOP PLATES OF ALL WOOD STUD WALLS SHALL BE TWO PIECE SAME SIZE AS STUDS EXCEPT AS NOTED OTHERWISE, LAP 4'-0" MINIMUM WITH NO LESS THAN 12-16d AND NO MORE THAN SIX INCHES BETWEEN NAILS AT EACH LAP.
- STRUCTURAL PLYWOOD FOR ROOF AND WALLS SHALL BE A.P.A. RATED AS INDICATED ON THE DRAWINGS IN ACCORDANCE WITH U.S. PRODUCT STANDARD P1 AND P2, LATEST EDITION.
- ALL BOLTS, LAG SCREWS, AND WOOD SCREWS SHALL BE TIGHTENED PRIOR TO THE APPLICATION OF DRYWALL, PLYWOOD, PLASTER, ETC..
- ALL FASTENERS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE HOT DIPPED GALVANIZED.
- ALL NAILING SHALL CONFORM NAILING SCHEDULE, USING COMMON WIRE NAILS. PREDRILL ALL-NAILS 20d AND LARGER AND WHERE REQUIRED TO PREVENT SPLITTING.
- THE MOISTURE CONTENT OF WOOD MEMBERS SHALL NOT EXCEED 19%, DURING INSTALLATION. IT WILL BE THE RESPONSIBILITY OF THE INSPECTOR OF RECORD TO VERIFY THAT THE CONTRACTOR HAS SUPPLIED LUMBER OF THE PROPER MOISTURE CONTENT BEFORE INSTALLATION. THE USE OF A HAND HELD MOISTURE CONTENT METER IS ACCEPTABLE.

**COLD FORMED STRUCTURAL STEEL:**

- ALL LIGHT GAUGE METAL FRAMING SHALL BE THE TYPE, SIZE AND GAUGE AS SHOWN ON THE PLANS AND BE FABRICATED AND ERECTED IN ACCORDANCE WITH 2007 A.I.S.I. SPECIFICATIONS.
- ALL GALVANIZED STUDS AND JOISTS 12, 14 AND 16 GAUGE SHALL CONFORM TO A.S.T.M. A-1011 GRADE D (Fy = 50 K.S.I.) AND A.S.T.M. A-1011 GRADE A (Fy = 33 K.S.I.) FOR 18 AND 20 GAUGE.
- ALL GALVANIZED TRACK BRIDGING, END ENCLOSURES AND ACCESSORIES SHALL CONFORM TO A.S.T.M. A-1011 GRADE A (Fy = 33 K.S.I.).
- GALVANIZED COATINGS MUST MEET A.S.T.M. A-525 SPECIFICATION.
- CARBON SHEET STEEL MUST MEET THE MINIMUM REQUIREMENTS OF A.S.T.M. A1011 GRADE 50 K.S.I. FOR 12, 14, AND 16 GAUGE, AND GRADE 33 K.S.I. FOR 18 GAUGE, AND LIGHTER MEMBERS. CARBON SHEET STEEL PRODUCTS MUST BE THOROUGHLY COATED WITH A RUST INHIBITIVE PAINT.
- ALL STRUCTURAL MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH THE 2007 AMERICAN IRON AND STEEL INSTITUTE (A.I.S.I.) "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" LATEST EDITION.
- METAL STUDS AND/OR JOIST:
  - FOR METAL STUD WALLS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS, PROVIDE STANDARD PUNCHED STEEL MEMBERS OF THE GAUGES SHOWN ON THE DRAWINGS.
  - USE ONLY ONE TYPE THROUGHOUT THE WORK, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR SPECIFICALLY APPROVED IN ADVANCE BY THE ARCHITECT/ENGINEER.
- PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, TRACKS, CLIPS, WEB STIFFENERS, ANCHORS, FASTENING DEVICES, RESILIENT CLIPS AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AND AS RECOMMENDED BY THE MANUFACTURER FOR THE STEEL MEMBERS USED.
- FASTENINGS OF COMPONENTS SHALL BE WITH SELF-DRILLING SCREWS OR WELDING. SCREWS OR WELDS SHALL BE OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION. ALL WELDS OF GALVANIZED STEEL SHALL BE TOUCHED UP WITH ZINC-RICH PAINT. ALL WELDS OF CARBON SHEET STEEL SHALL BE TOUCHED UP WITH PAINT.
- ALL METAL STUDS SHALL BE BY S.S.M.A. APPROVED SUPPLIER, ALTERNATE METAL STUDS MUST BE OF EQUAL OR GREATER SECTIONS PROPERTIES AND SHALL BE APPROVED BY THE ENGINEER.
- PROVIDE SHOP DRAWINGS INDICATING MEMBER GAUGES, SHAPES, SIZES, SPACING, LOCATIONS AND CONNECTIONS.
- STUDS SHALL BE INSTALLED WITH THEIR BEARING ENDS POSITIONED FLUSH AGAINST THE INSIDE TRACK WEB.
- FULL-HEIGHT DOUBLE STUDS SHALL BE PROVIDED AT THE ENDS OF PARTITIONS, AT ALL WALL OPENINGS, AND AT OTHER LOCATIONS SHOWN ON THE PLANS.
- BRIDGING SHALL BE COLD FORMED CHANNEL, MINIMUM 1-1/2" DEEP WITH 9/16" FLANGE SPACED AT 4'-0" ON CENTER MAXIMUM VERTICALLY. DOUBLE UP STUDS AT ALL DOOR JAMBS, WALL ENDS AND WALL CORNERS.
- SHEATHING SHALL BE ATTACHED TO BOTH FACES OF METAL WALL STUDS THROUGHOUT THEIR LENGTH, U.O.N.
- TRACK AT TOP AND BOTTOM OF STUD WALLS SHALL AT A MINIMUM MATCH THE STUD GAUGE, U.N.O.
- ALL SHEET METAL SCREWS SHALL E THREAD FORMING OR THREAD CUTTING WITH OR WITHOUT A SLF DRILLING POINT, PER AISI.
- ALL WELDING OR MATERIAL LESS THAN 0.18 INCHES IN THICKNESS SHALL BE MADE IN ACCORDANCE WITH THE A.W.S. D1.3 WELDERS AND WELDING PROCEDURES AND SHALL BE QUALIFIED AS SPECIFIED IN A.W.S. D1.3.
- TOUCH UP COLD GALVANIZING USING ZRC CHEMICAL PRODUCTS CO., ZRC COLD GALVANIZING COMPOUND OR EQUAL.
- SPLICES IN STUDS SHALL NOT BE PERMITTED.

**WELDING:**

- ALL WELDING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY CODE D1.1. (LATEST EDITION).
- ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS.
- ALL WELDING SHALL BE DONE BY THE SHIELDED ARC PROCESS USING APPROVED ELECTRODES PER A.W.S. SPECIFICATIONS E70XX (LOW HYDROGEN ELECTRODES).
- ALL WELDS SHALL HAVE A WELD CONTROLLED SEQUENCE AND TECHNIQUE IN ORDER TO MINIMIZE SHRINKAGE, STRESSES AND DISTORTION.
- ALL ELECTRODES FILLER MATERIAL SHALL BE A MINIMUM OF E70XX.
- WELDING OF REINFORCING BARS TO BE IN ACCORDANCE WITH A.W.S. D1.4. REINFORCING STEEL TO BE WELDED SHALL HAVE A CARBON EQUIVALENT (CE) OF 0.75. SPECIAL INSPECTION IS REQUIRED.
- WELDING OF SHEET METAL SHALL BE IN ACCORDANCE WITH A.W.S. D1.3.
- SPECIAL INSPECTION IS REQUIRED FOR ALL WELDING.
- ALL SHOP AND FIELD WELDING OF MOMENT CONNECTIONS OR MOMENT RESISTING FRAMES, AND ALL COLUMN SPLICE WELDS, SHALL BE TESTED AS PER C.B.C.

**STEEL:**

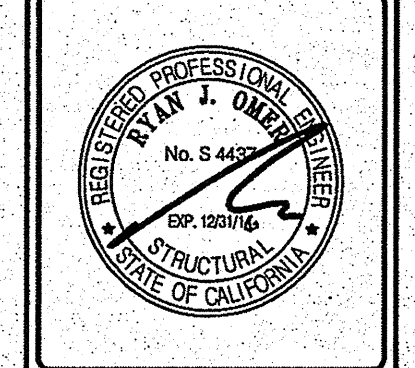
- FABRICATION AND ERECTION TO CONFORM TO A.I.S.C. 360-10 "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL BUILDINGS" AND "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" EXCEPT AS OTHERWISE SHOWN OR SPECIFIED.
- QUALIFIED AND CERTIFIED WELDERS SHALL BE USED FOR ALL WELDING. ALL WELDING TO CONFORM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE A.W.S. D1.1.
- MATERIALS:
 

|                                |  |
|--------------------------------|--|
| ROLLED STRUCTURAL STEEL SHAPES | A.S.T.M. A-992, GRADE 50                               |
| ANGLES, MISC. STEEL            | A.S.T.M. A36   |
| MISCELLANEOUS PLATES           | A.S.T.M. A-572 GRADE 36                                |
| STRUCTURAL STEEL PIPES         | A.S.T.M. A53 TYPE E OR S, GRADE B                      |
| WELDING ELECTRODES             | A.W.S. STRUCTURAL STEEL E70XX, REINFORCING STEEL E90XX |
| ANCHOR BOLTS                   | A.S.T.M. A-1554F GRADE 36                              |
| TYPICAL STEEL CONNECTION BOLTS | A.S.T.M. A-325   |
| MISCELLANEOUS BOLTS            | A.S.T.M. A-307   |
| GALVANIZING                    | A.S.T.M. A-123   |
| RUST-INHIBITING PRIMER         | TT-P-645 A.S.T.M.                                      |
| STEEL TUBING                   | A.S.T.M. A-500, GRADE B (Fy = 46 K.S.I.)               |
- PRIMER AND PAINT GALVANIZE AFTER FABRICATION ALL STRUCTURAL STEEL AND CONNECTORS EXPOSED TO WEATHER. TOUCH UP DAMAGED PRIMER AND PAINT AFTER ERECTION IS COMPLETE.
- CONNECTED MEMBERS SHALL BEAR ONLY UPON UNTHREADED PORTIONS OF BOLTS.
- BURNING OF HOLES IS NOT ALLOWED.
- INSPECTION OF WELDING SHALL CONFORM TO C.B.C. REQUIREMENTS (CHAPTER 17A).
- THE STRUCTURAL STEEL FABRICATOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
- BOLT HOLES SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED, UNLESS NOTED OTHERWISE.
- ALL STRUCTURAL STEEL SURFACES TO RECEIVE SPRAY-APPLIED FIREPROOFING, OR TO BE ENCASED IN CONCRETE OR MASONRY, SHALL BE LEFT UNPAINTED.
- STRUCTURAL STEEL SHALL BE DELIVERED TO THE JOB SITE FREE OF EXCESSIVE RUST, MILL SCALE, GREASE, ETC.
- OPENINGS SHALL NOT BE PLACED IN STEEL MEMBERS UNLESS SPECIFICALLY DETAILED.

| GAUGE EQUIVALENTS |                  |
|-------------------|------------------|
| GAUGE             | MILS (MIN. THCK) |
| 10                | 118              |
| 11                | 105              |
| 12                | 97               |
| 14                | 68               |
| 16                | 54               |
| 18                | 43               |
| 20                | 33               |

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| CLIENT NAME:       |  |
| DRAWN BY: B.N.     |  |
| CHECKED BY: R.J.O. |  |
| JOB NUMBER:        |  |
| DATE: 01/22/06     |  |
| SCALE: AS NOTED    |  |

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 AC: [initials] FLS: [initials] SSK: [initials]  
 DATE: 02/16/16

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 OFFICE OF REGULATION SERVICES  
 02-113899

**PC**

AC: [initials] FLS: [initials] SSK: [initials]  
 DATE: 3/19/16

SHEET NAME  
**GENERAL NOTES**  
 SHEET NO.  
**S1.2**



ABBREVIATIONS:

|          |  |          |                           |
|----------|--|----------|---------------------------|
| &        | AND                                      | KIPS     | KILOPOUNDS (1,000 POUNDS) |
| ⊙        | AT                                       | K.O.     | KNOCK OUT                 |
| ⊕        | CENTER LINE                              | LB       | POUND                     |
| ℙ        | PLATE, PROPERTY LINE                     | L.B.     | LAG BOLT                  |
| A.B.     | ANCHOR BOLT                              | L.F.     | LINEAR FOOT               |
| ADJ.     | ADJACENT                                 | L.G.     | LONG                      |
| A.F.F.   | ABOVE FINISH FLOOR                       | L.L.     | LIVE LOAD                 |
| ARCH'L   | ARCHITECTURAL                            | L.L.H.   | LONG LEG HORIZONTAL       |
| BD       | BOARD                                    | L.L.V.   | LONG LEG VERTICAL         |
| BLD'G    | BUILDING                                 | L.S.     | LAC SCREW                 |
| BLK      | BLOCK                                    | LT.      | LIGHT                     |
| BLK'G    | BLOCKING                                 | MAS      | MASONRY                   |
| BLW      | BELOW                                    | MAT.     | MATERIAL                  |
| BM       | BEAM                                     | MAX.     | MAXIMUM                   |
| B.N.     | BOUNDARY NAIL                            | M.B.     | MACHINE BOLT              |
| BOT.     | BOTTOM                                   | MECH'L   | MECHANICAL                |
| BRG      | BEARING                                  | MEZZ.    | MEZZANINE                 |
| B.S.     | BOTH SIDE                                | MIN.     | MINIMUM                   |
| BTWN     | BETWEEN                                  | M.H.     | MANHOLE                   |
| C.B.     | CARRIAGE BOLT                            | MANUF.   | MANUFACTURER              |
| C.F.     | CUBIC FOOT                               | MTL.     | METAL                     |
| CHAM     | CHAMFER                                  | N.S.     | NEAR SIDE                 |
| C.I.     | CAST-IRON                                | N.I.C.   | NOT IN CONTRACT           |
| C.I.P.   | CAST-IN-PLACE                            | NOM.     | NOMINAL                   |
| C.J.     | CONTROL JOINT                            | N.T.S.   | NOT TO SCALE              |
| CLG      | CEILING                                  | O.C.     | ON CENTER                 |
| CLK      | CAULK                                    | O.D.     | OUTSIDE DIAMETER          |
| CLK'G    | CAULKING                                 | O.H.     | OPPOSITE HAND             |
| CLR      | CLEAR                                    | OPN'G    | OPENING                   |
| C.M.U.   | CONCRETE MASONRY UNIT                    | OPP      | OPPOSITE                  |
| CNTR     | CENTER                                   | O.W.J.   | OPEN WEB JOIST            |
| COL      | COLUMN                                   | P.C.     | PRECAST                   |
| CONC     | CONCRETE                                 | PERP.    | PERPENDICULAR             |
| CONN     | CONNECTION                               | PLYWD    | PLYWOOD                   |
| CONT     | CONTINUOUS                               | PNL      | PANEL                     |
| CNTRSINK | COUNTERSINK                              | PREFAB   | PREFABRICATED             |
| d        | PENNY                                    | P.S.F.   | POUNDS PER SQUARE FOOT    |
| DBL      | DOUBLE                                   | P.S.I.   | POUNDS PER SQUARE INCHES  |
| DEP      | DEPRESSED                                | PT       | POINT                     |
| DET      | DETAIL                                   | P.T.     | PRESSURE TREATED          |
| D.F.     | DOUGLAS FIR                              | P.V.C.   | POLYVINYL CHLORIDE        |
| D.F.L.   | DOUGLAS FIR/LARCH                        | RAD      | RADIUS                    |
| DIA      | DIAMETER                                 | R.D.     | ROOF DRAIN                |
| DIAG     | DIAGONAL                                 | REF      | REFERENCE                 |
| DIAM.    | DIMENSION                                | REINF    | REINFORCED / REINFORCING  |
| D.L.     | DEAD LOAD                                | REQ'D    | REQUIRED                  |
| DN       | DOWN                                     | REV      | REVISION                  |
| DIV      | DIVISION                                 | RF       | ROOF                      |
| DR       | DOOR                                     | RFTR     | RAFTER                    |
| DWG      | DRAWING                                  | R.H.     | ROUGH OPENING             |
| DWL      | DOWEL                                    | RM       | ROOM                      |
| EA       | EACH                                     | R.O.     | ROUGH OPENING             |
| E.F.     | EACH FACE                                | R.S.     | ROUGH SAWN                |
| EL       | ELEVATION                                | SCHED.   | SCHEDULE                  |
| ELEV.    | ELEVATION / ELEVATOR                     | SECT.    | SECTION                   |
| EMBED    | EMBEDMENT                                | S.F.     | SQUARE FOOT               |
| E.N.     | EDGE NAIL                                | SHT      | SHEET                     |
| EQ.      | EQUAL                                    | SHT'G    | SHEETING                  |
| EQUIP    | EQUIPMENT                                | SIM.     | SIMILAR                   |
| E.S.     | EACH SIDE                                | S.M.S.   | SHEET METAL SCREW         |
| E.W.     | EACH WAY                                 | SPEC.    | SPECIFICATION             |
| EXIST'G  | EXISTING                                 | SQ.      | SQUARE                    |
| EXP      | EXPANSION                                | S.S.     | STAINLESS STEEL           |
| EXT      | EXTERIOR                                 | STAGG.   | STAGGERED                 |
| F.D.     | FLOOR DRAIN                              | STD      | STANDARD                  |
| FDN      | FOUNDATION                               | STIFF.   | STIFFENER                 |
| F.F.     | FINISH FLOOR                             | STL      | STEEL                     |
| FIN.     | FINISH                                   | STRUCT'L | STRUCTURAL                |
| FLR.     | FLOOR                                    | S.T.S.   | SELF TAPPING SCREW        |
| F.N.     | FIELD NAIL                               | SYM      | SYMMETRICAL               |
| F.O.     | FACE OF                                  | SYS      | SYSTEM                    |
| FRM'G    | FRAMING                                  | T & B    | TOP AND BOTTOM            |
| F.S.     | FAR SIDE                                 | T & G    | TONGUE AND GROOVE         |
| FT       | FEET / FOOT                              | TEMP     | TEMPORARY                 |
| FTG      | FOOTING                                  | THK      | THICK                     |
| GA       | GAUGE                                    | THKN'D   | THICKENED                 |
| GALV     | GALVANIZED                               | THRU     | THROUGH                   |
| G.I.     | GALVANIZED IRON                          | T.L.     | TOTAL LOAD                |
| GLB      | GLU-LAMINATED BEAM                       | T.O.     | TOP OF                    |
| GRD      | GRADE                                    | T.S.G.   | TAPERED STEEL GIRDER      |
| GYP      | GYPSONUM                                 | TYP.     | TYPICAL                   |
| H.D.     | HOLDOWN                                  | U.N.O.   | UNLESS NOTED OTHERWISE    |
| HDR      | HEADER                                   | U.T.     | ULTRASONIC TESTING        |
| HGR      | HANGER                                   | VERT.    | VERTICAL                  |
| HORIZ    | HORIZONTAL                               | W/       | WITH                      |
| HRD      | HARD                                     | W/O      | WITHOUT                   |
| H.S.B.   | HIGH STRENGTH BOLT                       | WD       | WOOD                      |
| HT.      | HEIGHT                                   | WIN      | WINDOW                    |
| HVAC     | HEATING, VENTILATION, & AIR CONDITIONING | W.P.     | WATERPROOF / WORK POINT   |
| IN.      | INCH                                     | W.P.J.   | WEAKENED PLANE JOINT      |
| INSP.    | INSPECTION / INSPECTOR                   | WT.      | WEIGHT                    |
| INT.     | INTERIOR                                 | W.W.F.   | WELDED WIRE FABRIC        |
| JST      | JOIST                                    | W.W.M.   | WELDED WIRE MESH          |
| JT       | JOINT                                    |          |                           |

MINIMUM NAILING SCHEDULE

| CONNECTION   | NAILING <sup>1</sup>  |
|--|---|
| JOIST to sill or girder, toenail                             | 3-8d  |
| BRIDGING to joist, toenail each end                          | 2-8d  |
| 1" X 6" SUBFLOOR or less to each joist, face nail            | 2-8d  |
| WIDER than 1" X 6" SUBFLOOR or less to each joist, face nail | 3-8d  |
| 2" SUBFLOOR to joist or girder, blind and face nail          | 2-16d   |
| SOLE PLATE to joist or blocking, typical face nail           | 16d at 16" o.c.   |
| SOLE PLATE to joist or blocking, at braced wall panels       | 3-16d at 16" o.c.   |
| TOP PLATE to stud, end nail                                  | 2-16d   |
| STUD to sole plate   | 4-8d toenail, or 2-16d end nail   |
| DOUBLE STUD, face nail                                       | 16d at 24" o.c.   |
| DOUBLE TOP PLATES, typical face nail                         | 16d at 16" o.c.   |
| DOUBLE TOP PLATE, lap splice                                 | 8-16d   |
| BLOCKING between joists or rafters to top plate, toenail     | 3-8d  |
| RIM JOIST to top plate, toenail                              | 8d at 6" o.c.   |
| TOP PLATE, lap at intersections, face nail                   | 2-16d   |
| CONTINUOUS HEADER, two pieces                                | 16d at 16" o.c. along each edge   |
| CEILING JOISTS to plate, toenail                             | 3-8d  |
| CONTINUOUS HEADER to stud, toenail                           | 4-8d  |
| CEILING JOISTS, laps over partitions, face nail              | 3-16d   |
| CEILING JOISTS to parallel rafters, face nail                | 3-16d   |
| RAFTERS to plate, toenail                                    | 3-8d  |
| 1" DIAGONAL BRACE to each stud and plate, face nail          | 2-8d  |
| 1" X 8" SHEATHING or less to each bearing, face nail         | 3-8d  |
| WIDER than 1" X 8" SHEATHING to each bearing, face nail      | 3-8d  |
| BUILD-UP CORNER studs  | 16d at 24" o.c.   |
| BUILD-UP GIRDERS and BEAMS                                   | 20d at 32" o.c. at top and bottom and staggered on opposite side 2-20d at ends and at each splice |
| 2" PLANKS  | 2-16d at each bearing   |
| COLLAR TIE to rafter, face nail                              | 3-10d   |
| JACK RAFTER to hip   | 3-10d toe nail or 2-16d face nail   |
| ROOF RAFTER to 2x ridge beam                                 | 2-10d toe nail or 2-16d face nail   |
| JOIST to band joist, face nail                               | 3-16d   |
| LEDGER STRIP, face nail                                      | 3-16d   |

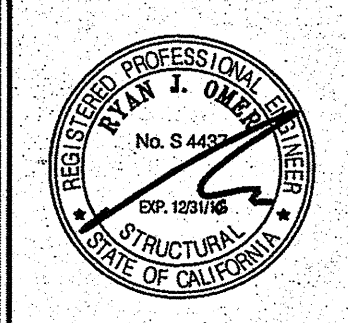
- COMMON NAILS SHALL BE USED EXCEPT WHERE OTHERWISE STATED.  
 6d NAIL - 2" x 0.113"  
 8d NAIL - 2 1/2" x 0.131"  
 10d NAIL - 3" x 0.148"  
 16d NAIL - 3 1/2" x 0.162"  
 20d NAIL - 4" x 0.192"
- 1" (INCH) = 25.4 mm

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APPROX. 116810  
 AC: W FLS: SS ELC  
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STRUCTURAL ENGINEER OF RECORD

**ORION**  
 Structural Engineering, Inc.  
 12257 OLD POMEREO ROAD, SUITE A  
 POWER RIVER, CA 92354  
 PHONE: (951) 276-1974  
 FAX: (951) 276-1975

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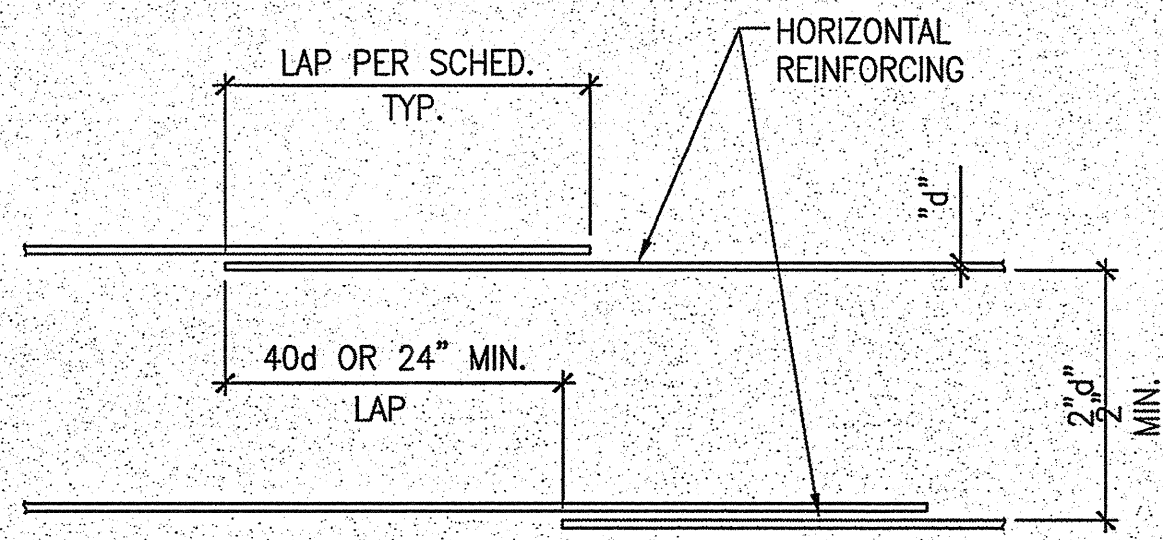
AC: W FLS: SS ELC  
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|--------------------|--|
| CLIENT NAME:       |  |
| DRAWN BY: B.N.     |  |
| CHECKED BY: R.J.O. |  |
| JOB NUMBER:        |  |
| DATE: 01/12/2015   |  |
| SCALE: AS NOTED    |  |

SHEET NAME  
**GENERAL NOTES**

SHEET NO.  
**S1.3**



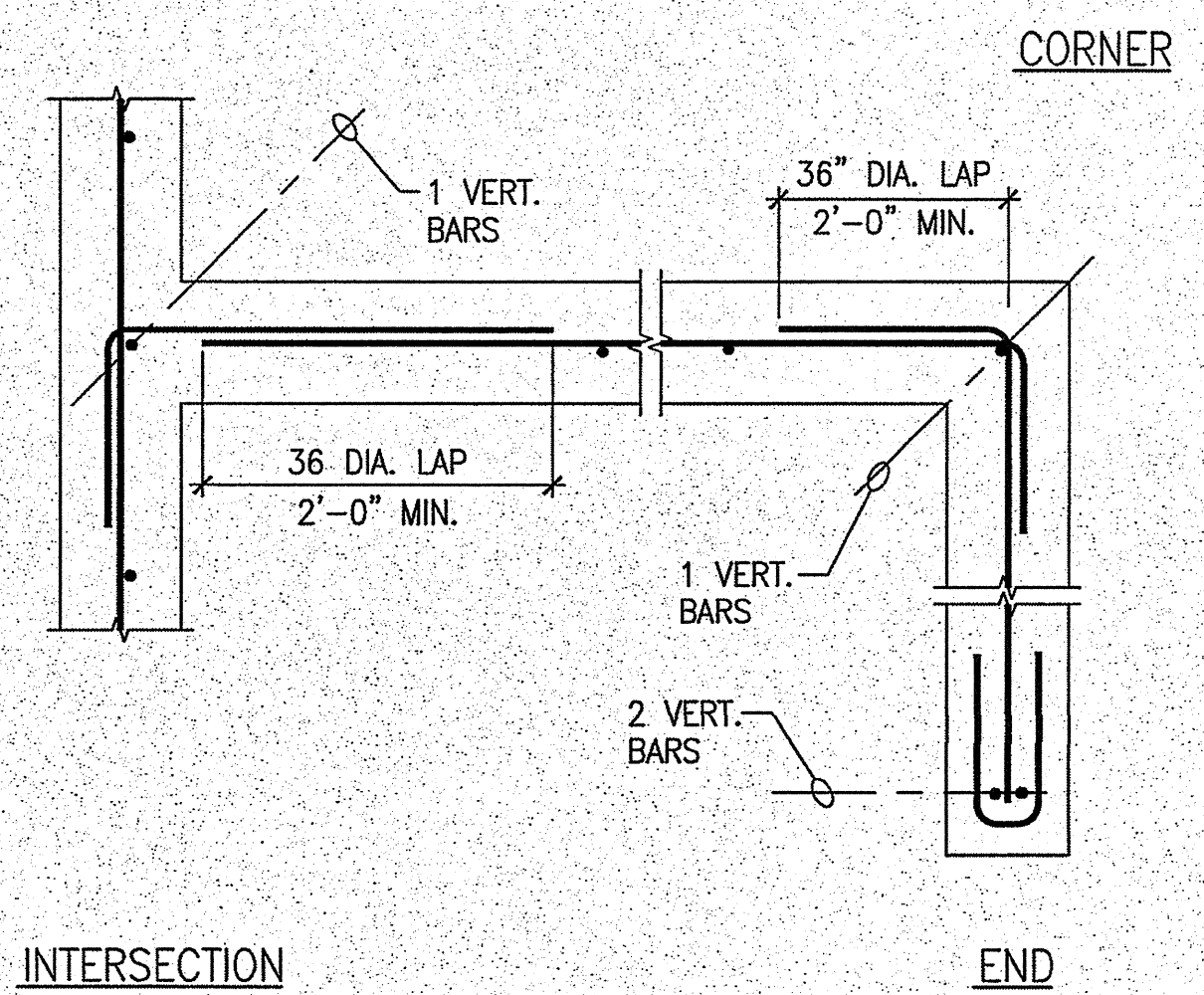
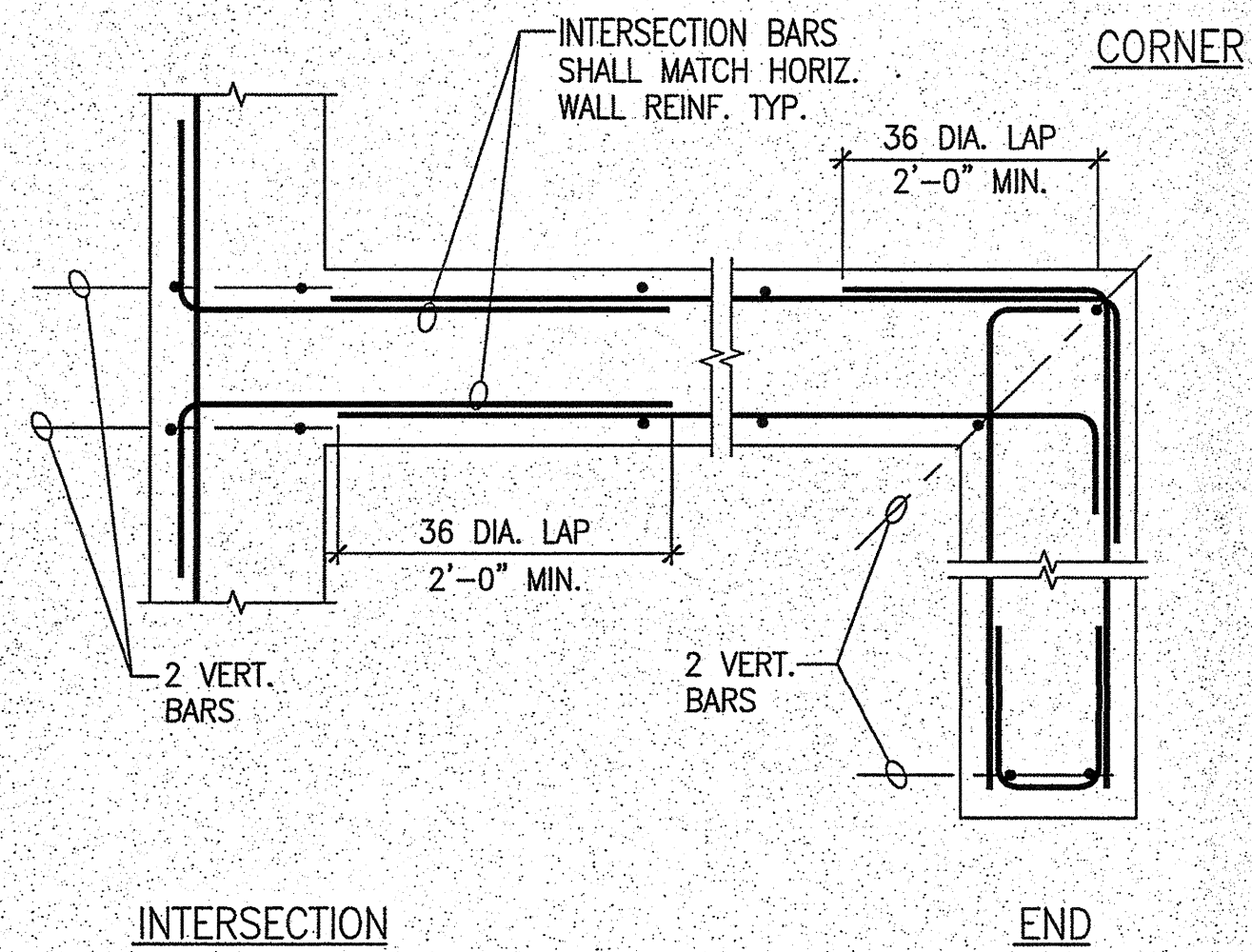


| BAR SIZE |     |
|----------|-----|
| #3       | #4  |
| #5       | #6  |
| #7       | #8  |
| #8       | #10 |
| #10      | #11 |
| #11      | #12 |
| #12      | #14 |
| #14      | #16 |
| #16      | #18 |

HARDROCK CONCRETE  
F<sub>y</sub> = 60,000 P.S.I. (CLASS "B")

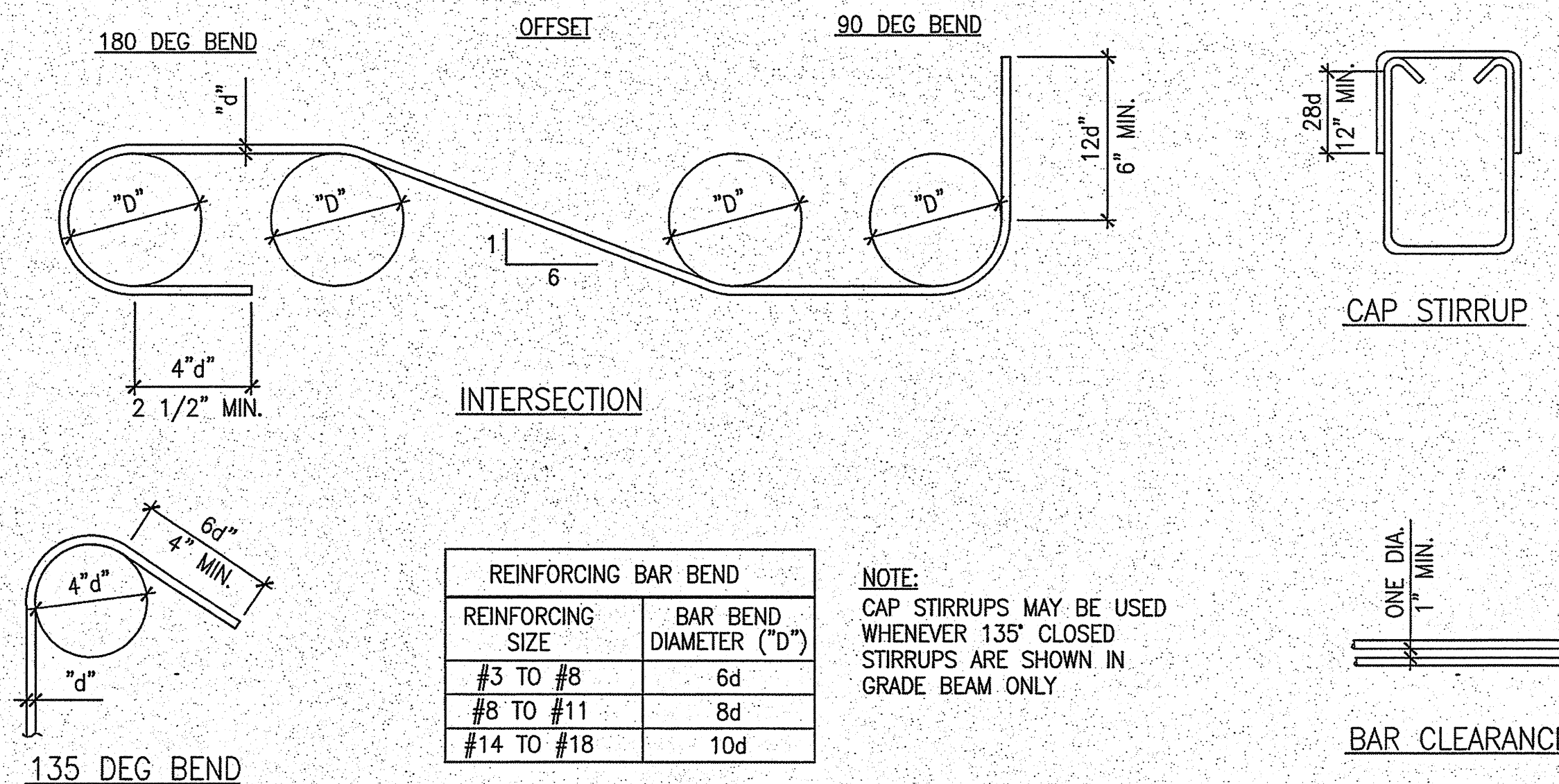
**NOTES:**

1. SPLICE LENGTH SHALL BE DETERMINED FROM THE SIZE OF THE SMALLER BAR SPLICED.



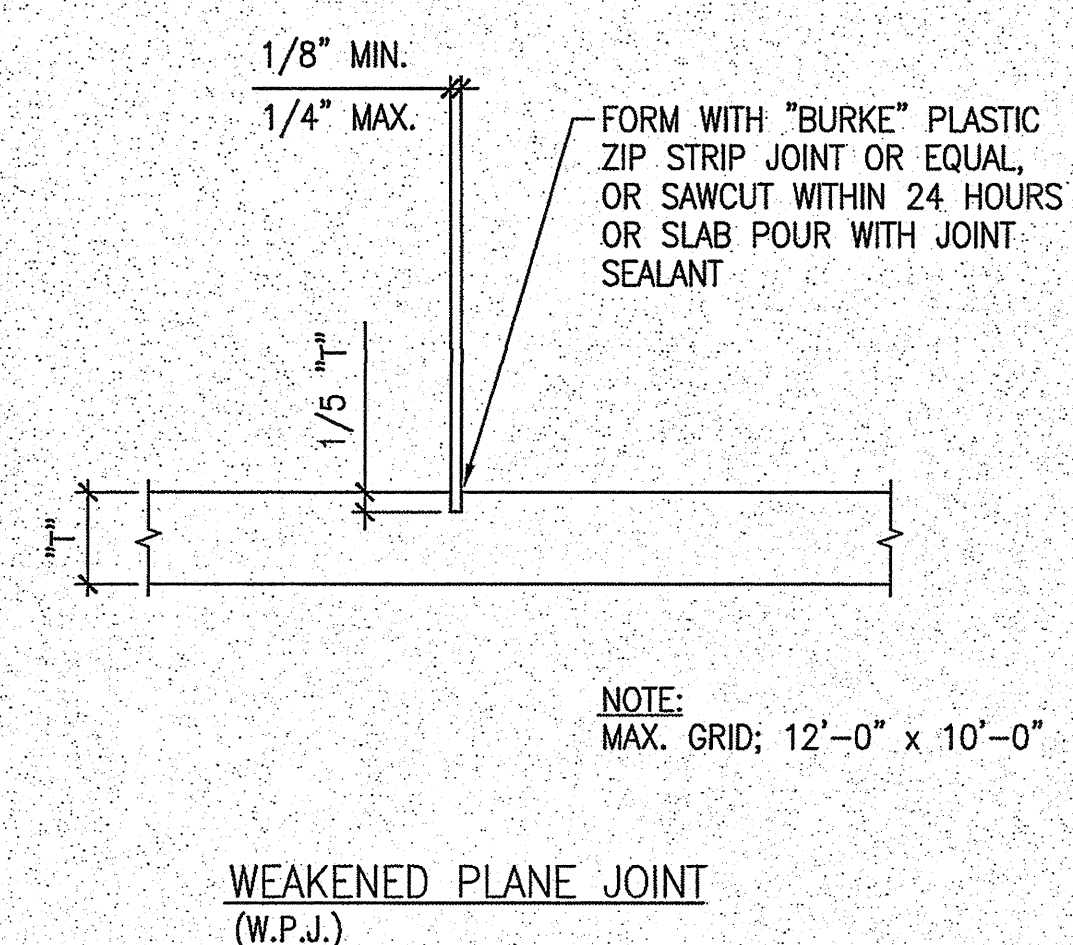
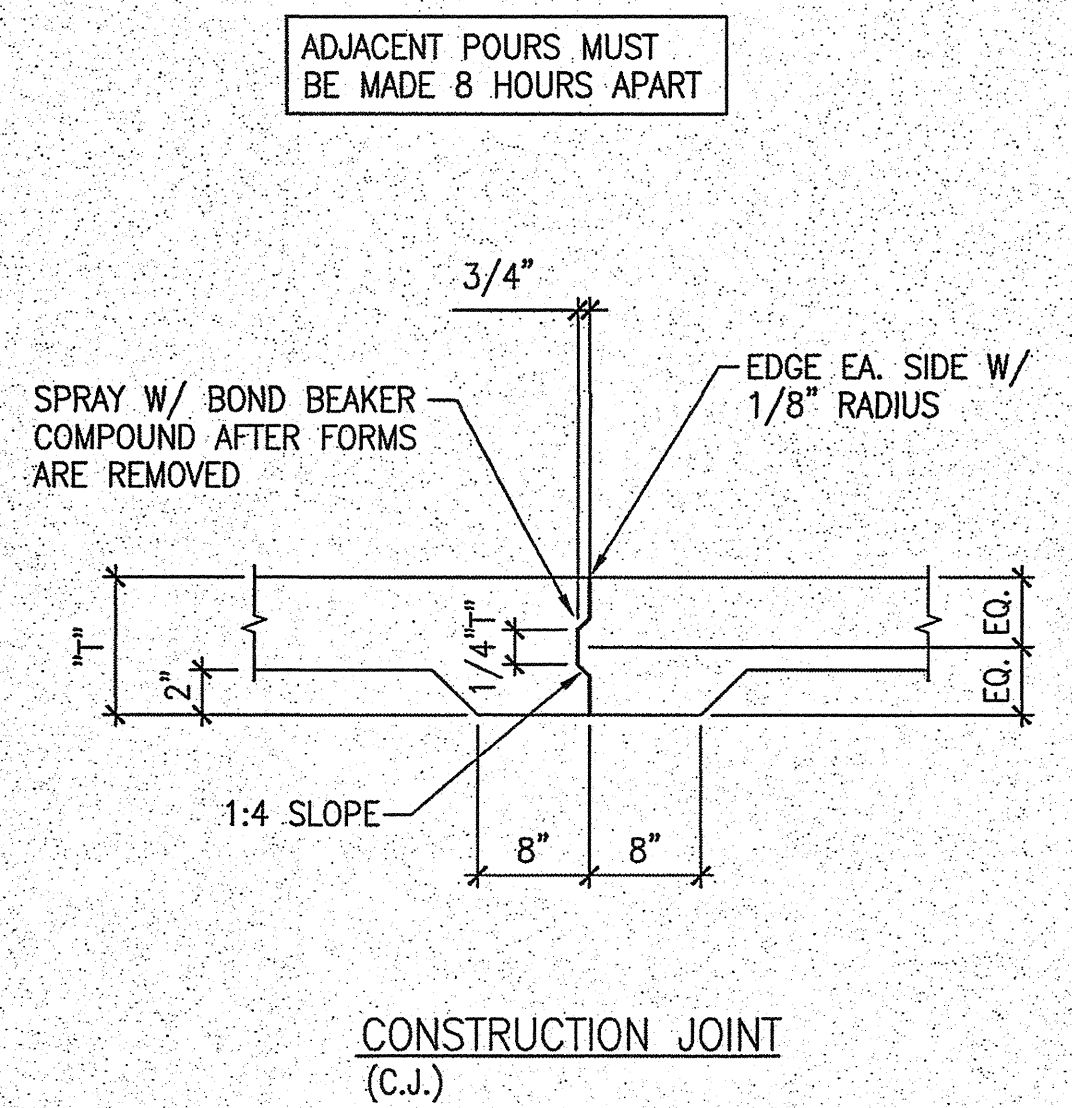
X 4 X

1



X 5 X

2



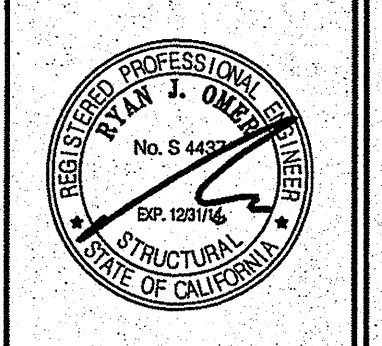
X 7 X

6 X

3

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Structural Engineering Inc.  
12257 OLD POMEROY ROAD, SUITE A  
POWAY, CA 92664  
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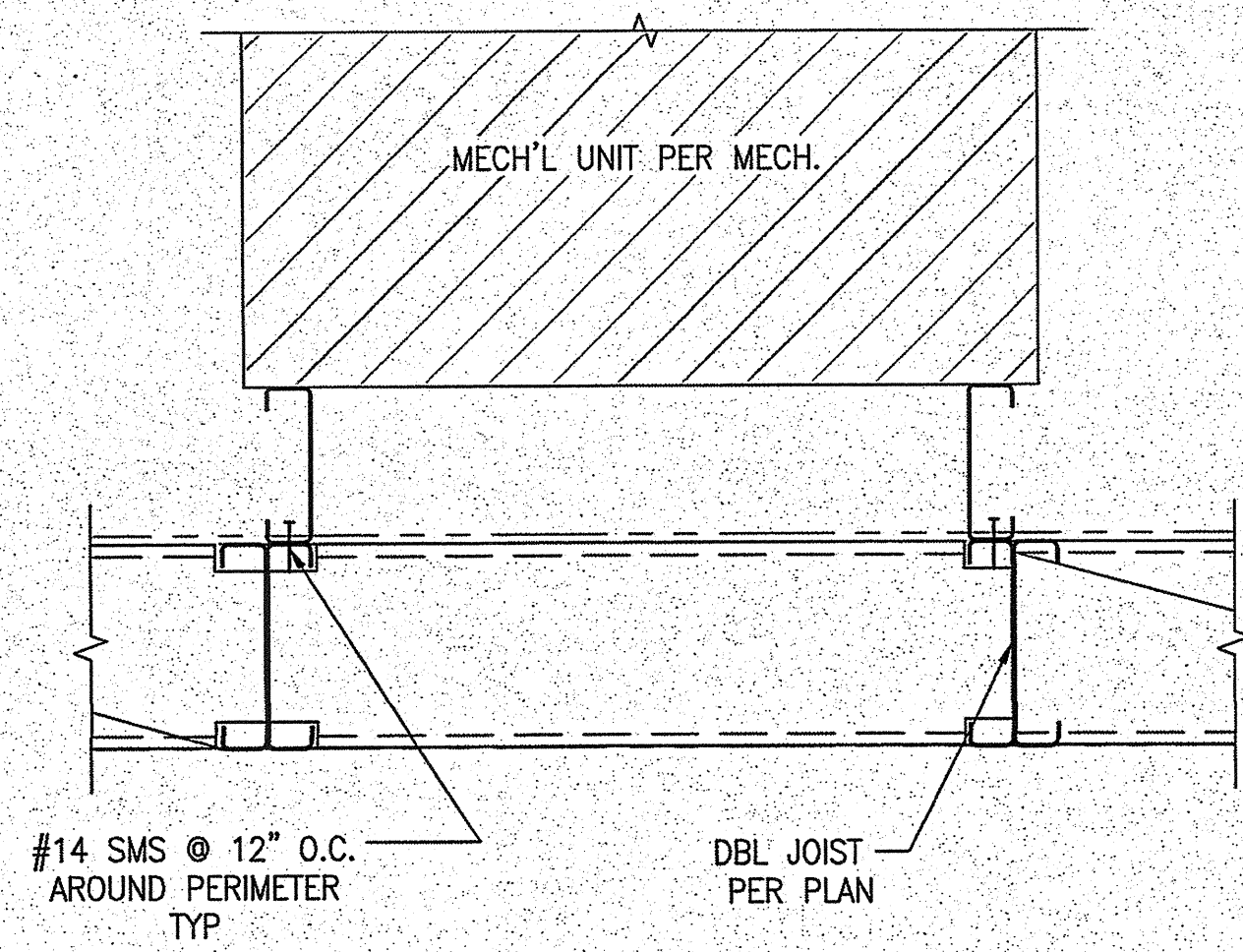
AC FLS SS  
DATE 3/19/15

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| CLIENT NAME:       |  |
| DRAWN BY: B.N.     |  |
| CHECKED BY: R.J.O. |  |
| JOB NUMBER:        |  |
| DATE: 01/22/2015   |  |
| SCALE: AS NOTED    |  |

TYPICAL DETAILS

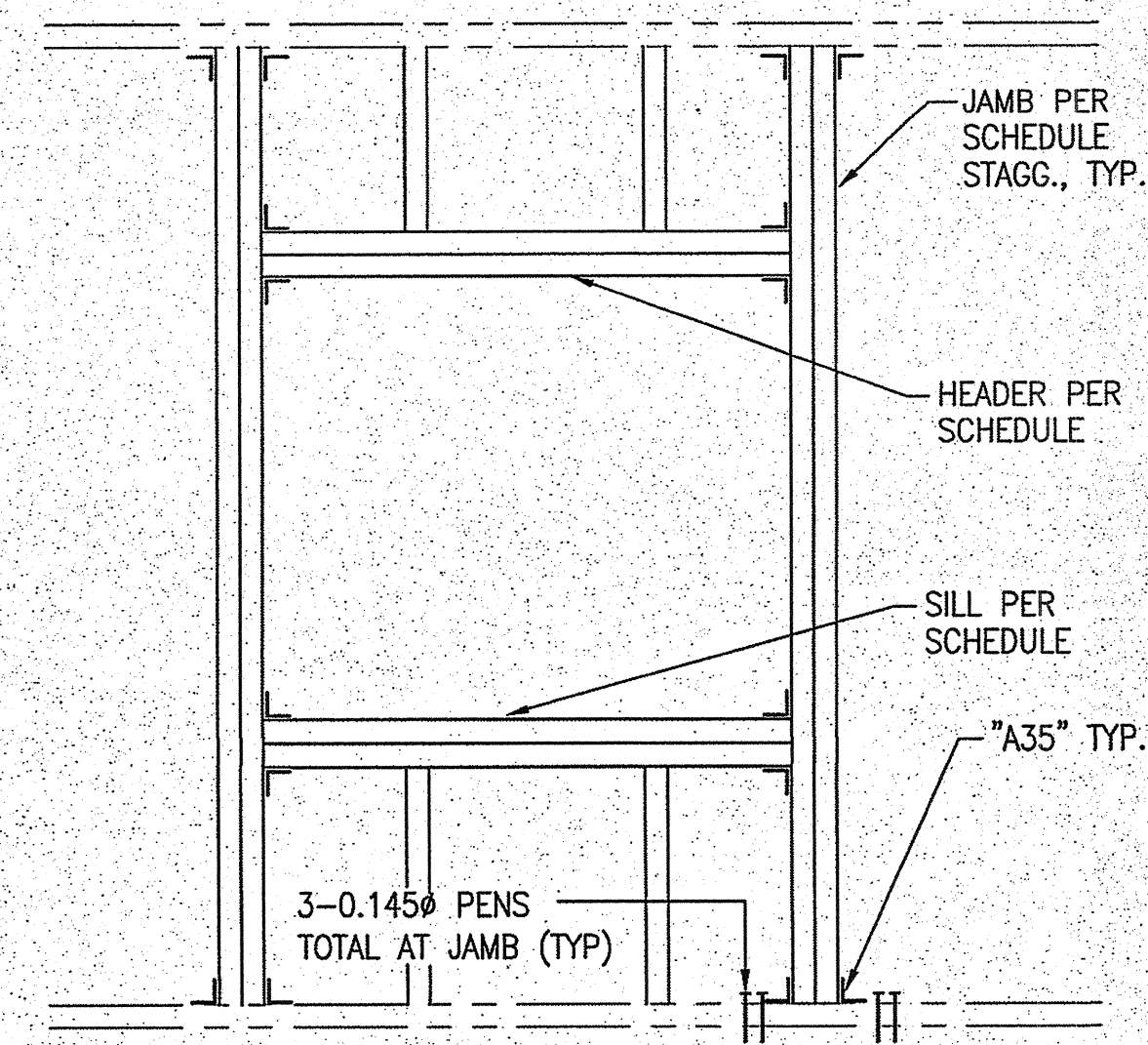
SHEET NO.  
S1.4





MECHANICAL UNIT SUPPORT

7

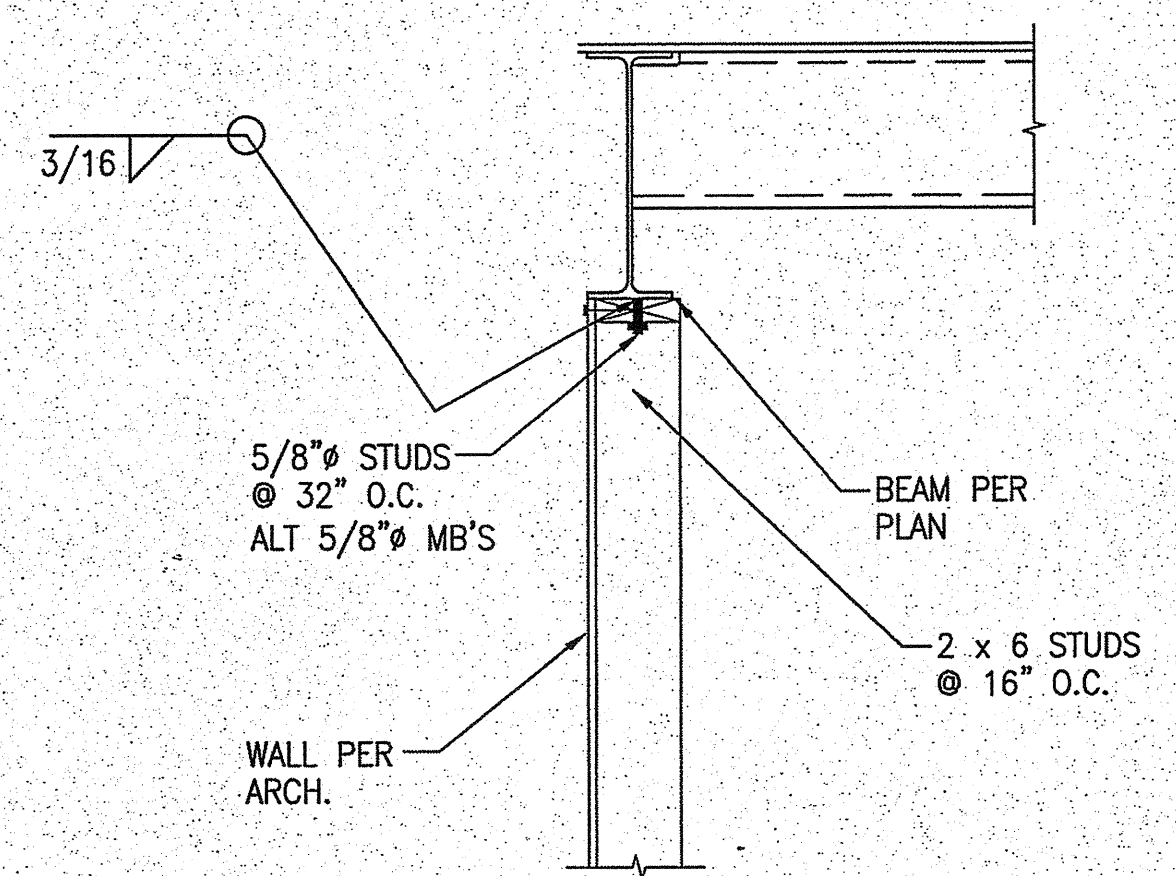


WALL WALL FRAMING DETAIL

4

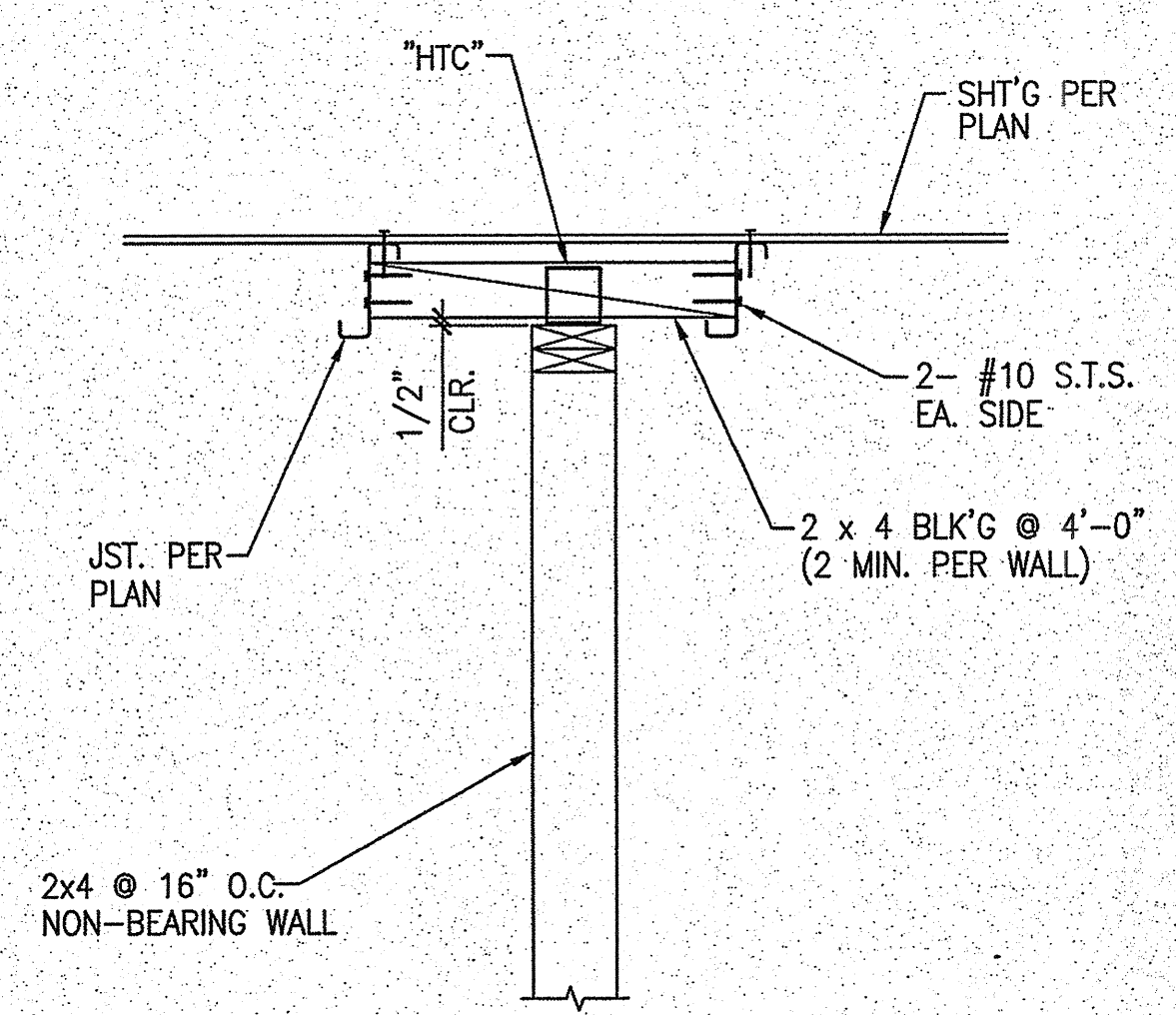
| HEADER SCHEDULE |             |       |
|-----------------|-------------|-------|
| SPAN            | HEADER/SILL | JAMB  |
| 0' TO 6'-0"     | 2- 2x       | 2- 2x |
| 6'-1" TO 8'-0"  | 3- 2x       | 3- 2x |
|                 |             |       |
|                 |             |       |

- NOTES:
1. THIS SCHEDULE APPLIES, UNLESS NOTED OTHERWISE.
  2. NAIL HEADER WITH FACE NAILING @ 12" O.C., TYP.
  3. ATTACH JAMB AND HEADERS W/ "A35" EA. END.
  3. 2 x 6 @ 16" O.C. FRAMING @ EXTERIOR WALLS
  3. 2 x 4 @ 16" O.C. FRAMING (MIN) @ INTERIOR WALLS



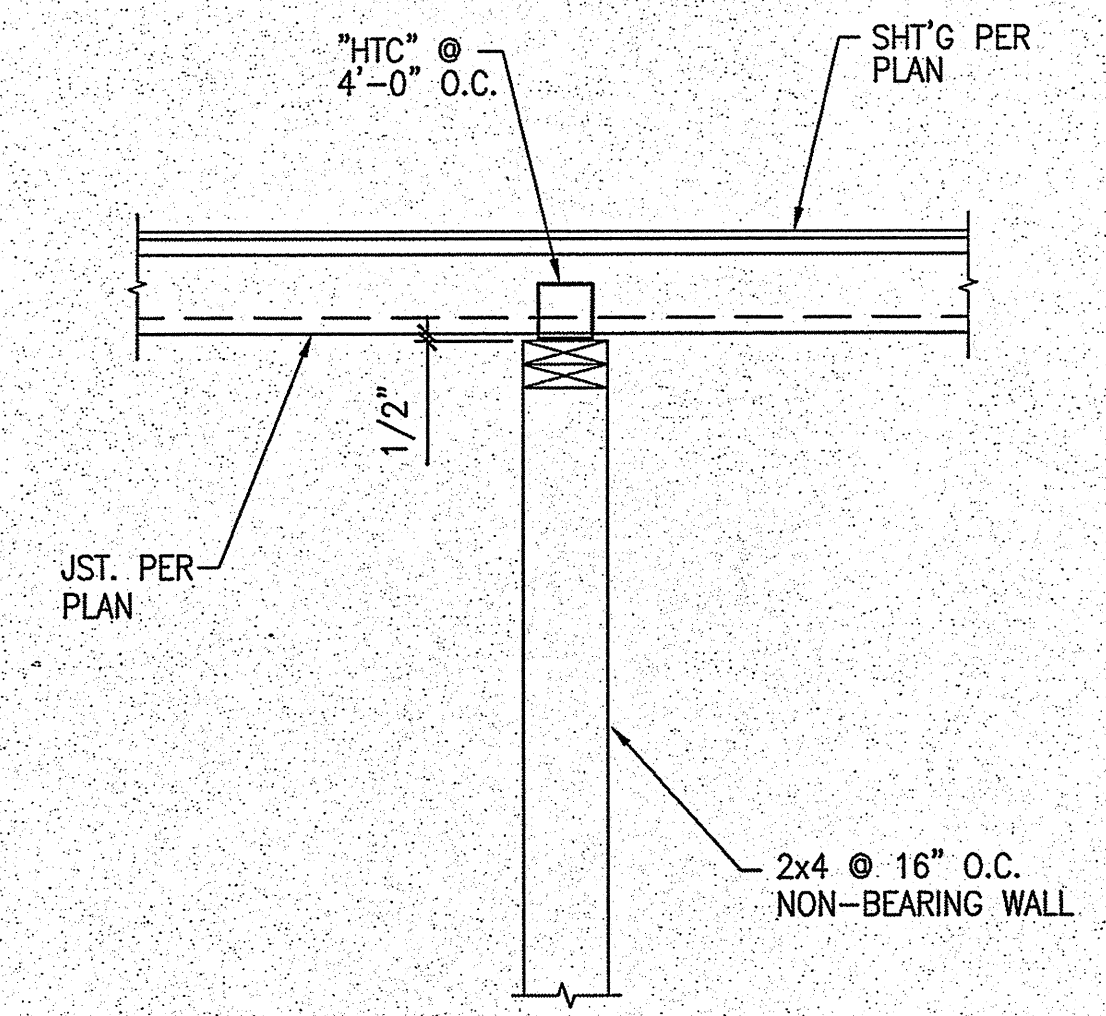
EXTERIOR WALL CONNECTION

8

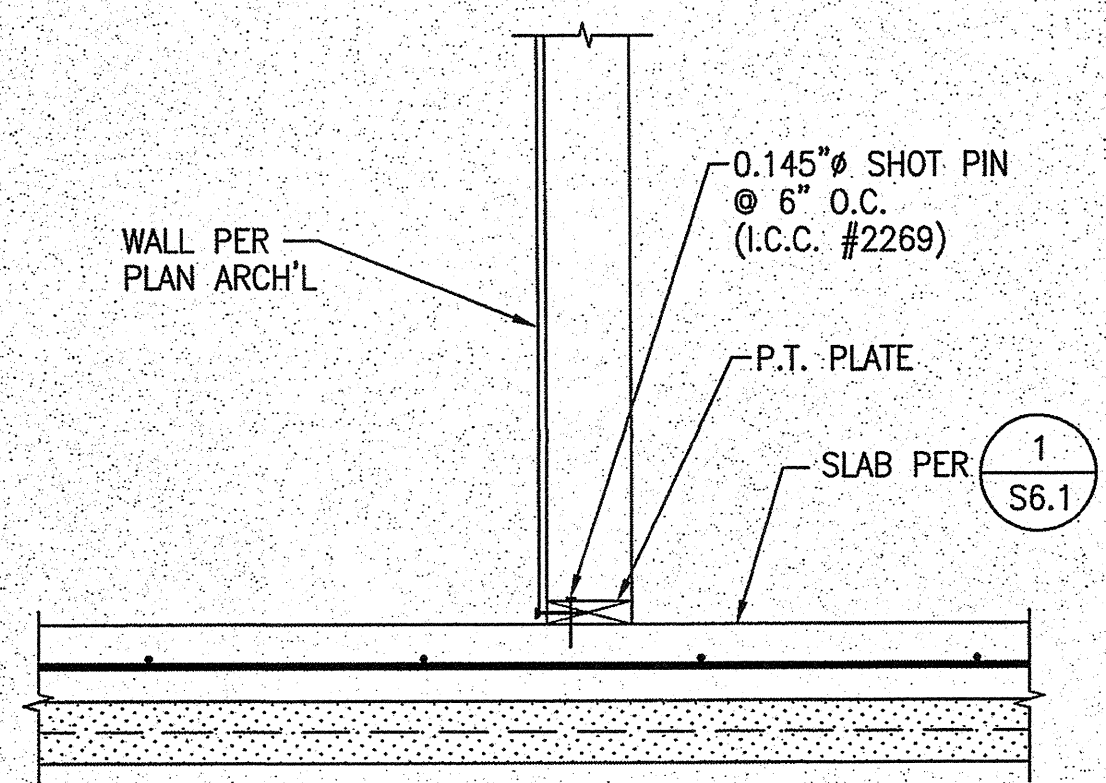


INTERIOR NON-BEARING WALL SUPPORT

5

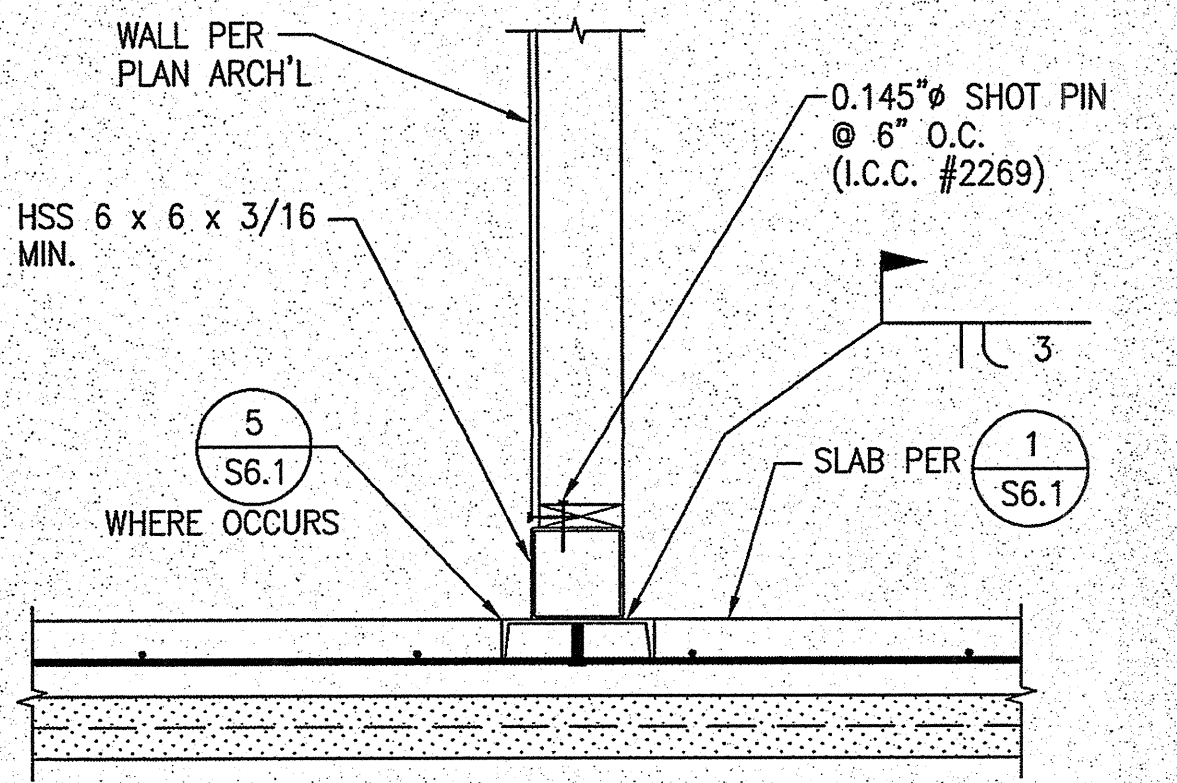


1



WALL SUPPORT AT SLAB

9



WALL SUPPORT AT STEEL TUBE

6

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12257 OLD POMEROY ROAD, SUITE A  
POWAY, CA 92064  
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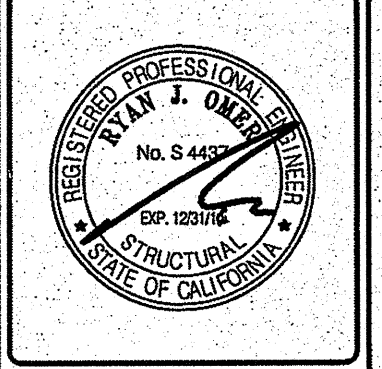
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DRAWN BY: B.N.

CHECKED BY: R.A.O.

JOB NUMBER:  

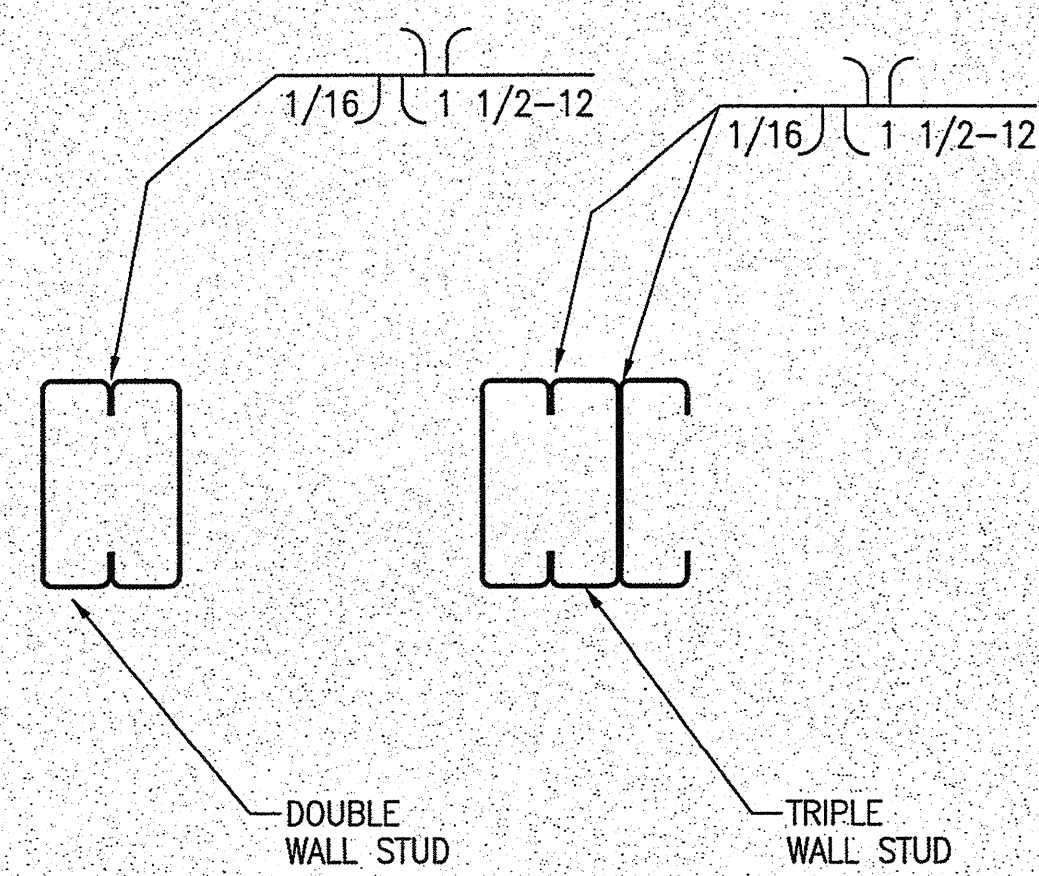
DATE: 01/19/2016

SCALE: AS NOTED

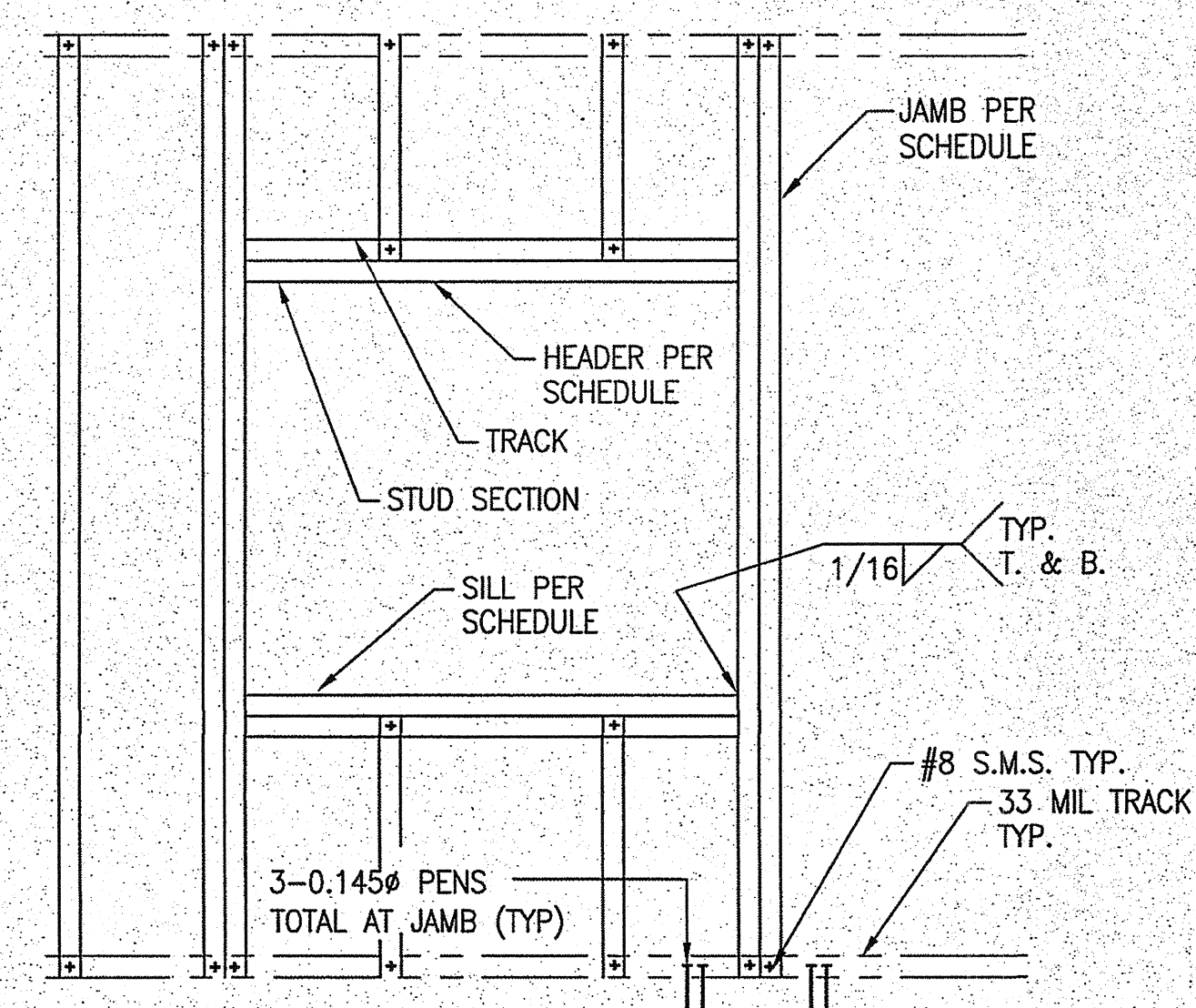
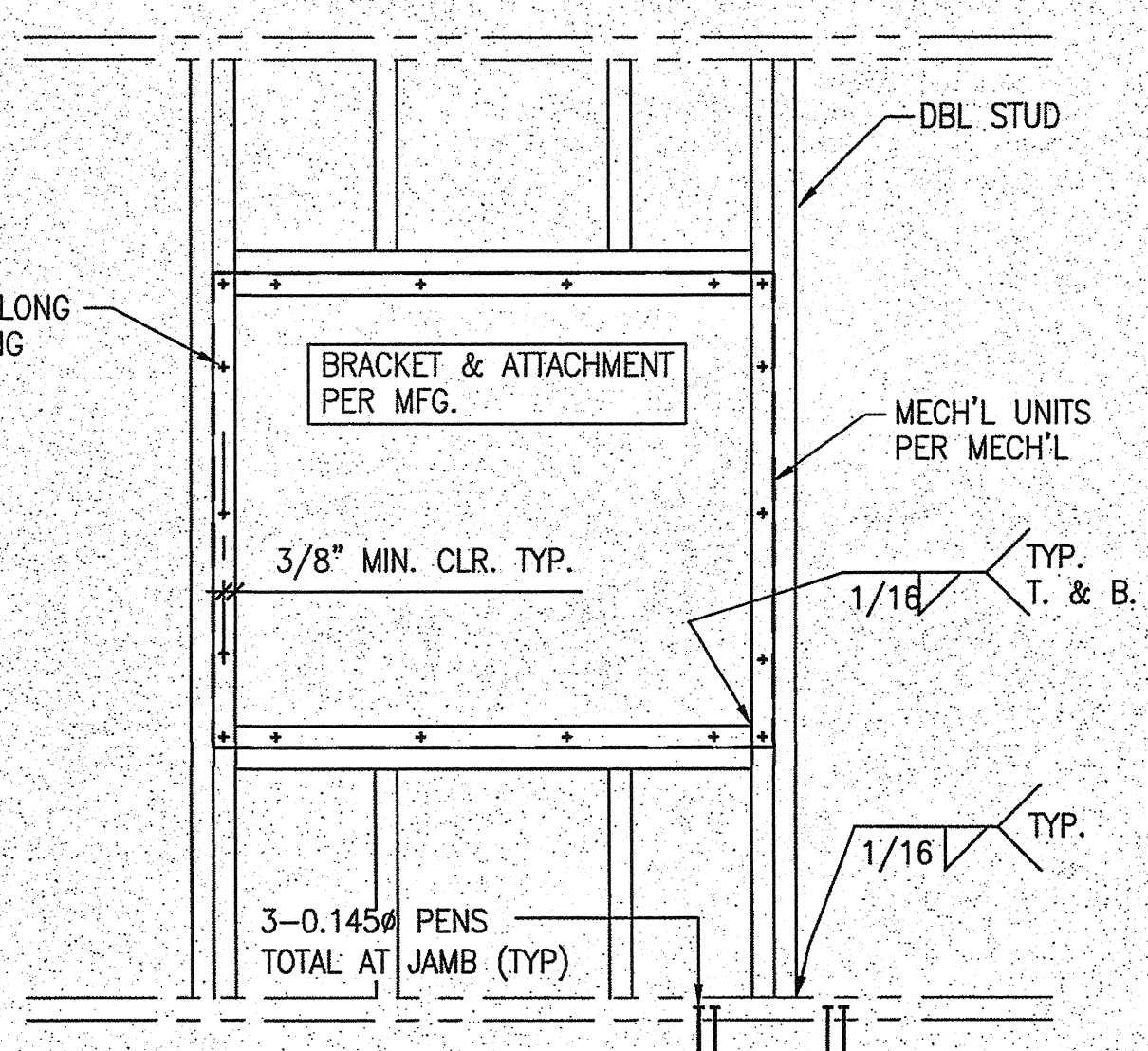
SHEET NAME  
**TYPICAL DETAILS**

SHEET NO.  
**S1.5**





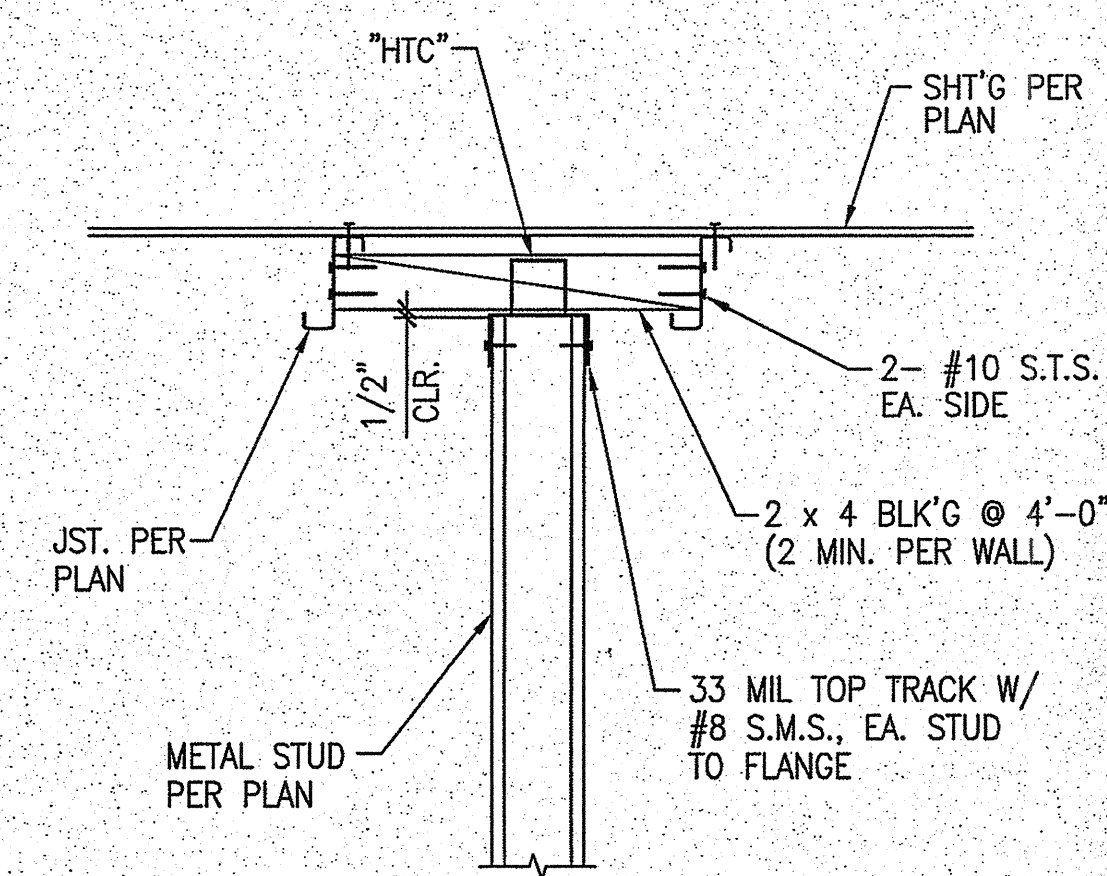
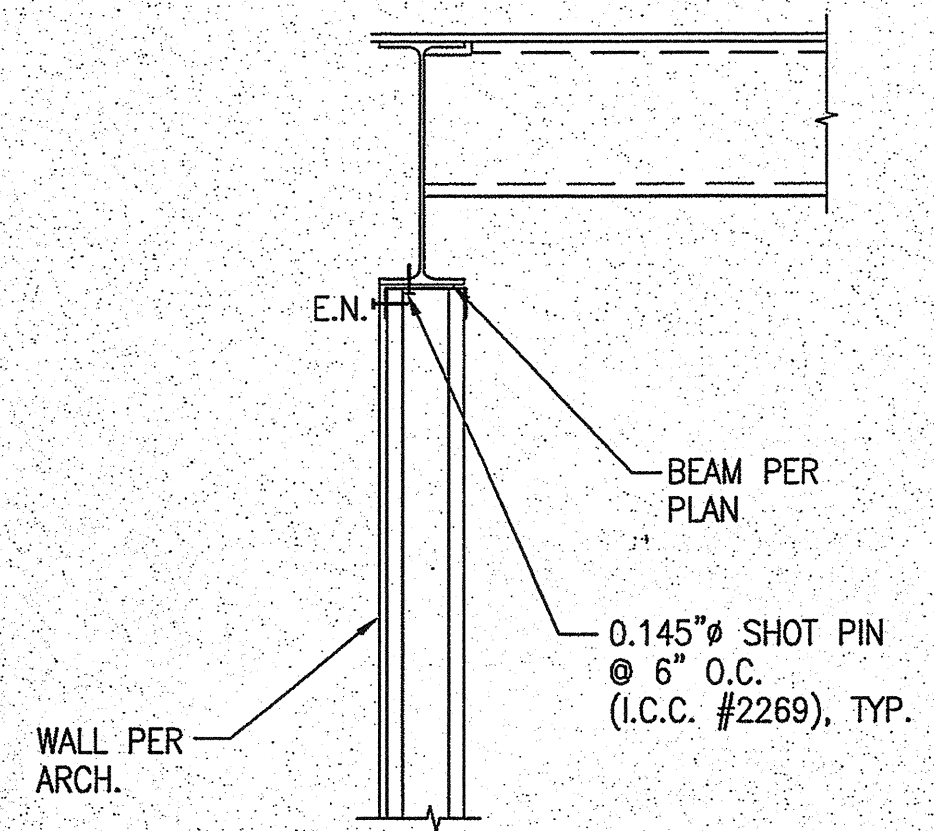
1/4" Ø x 2" LONG  
S.T.S. SPACING  
PER MFG.



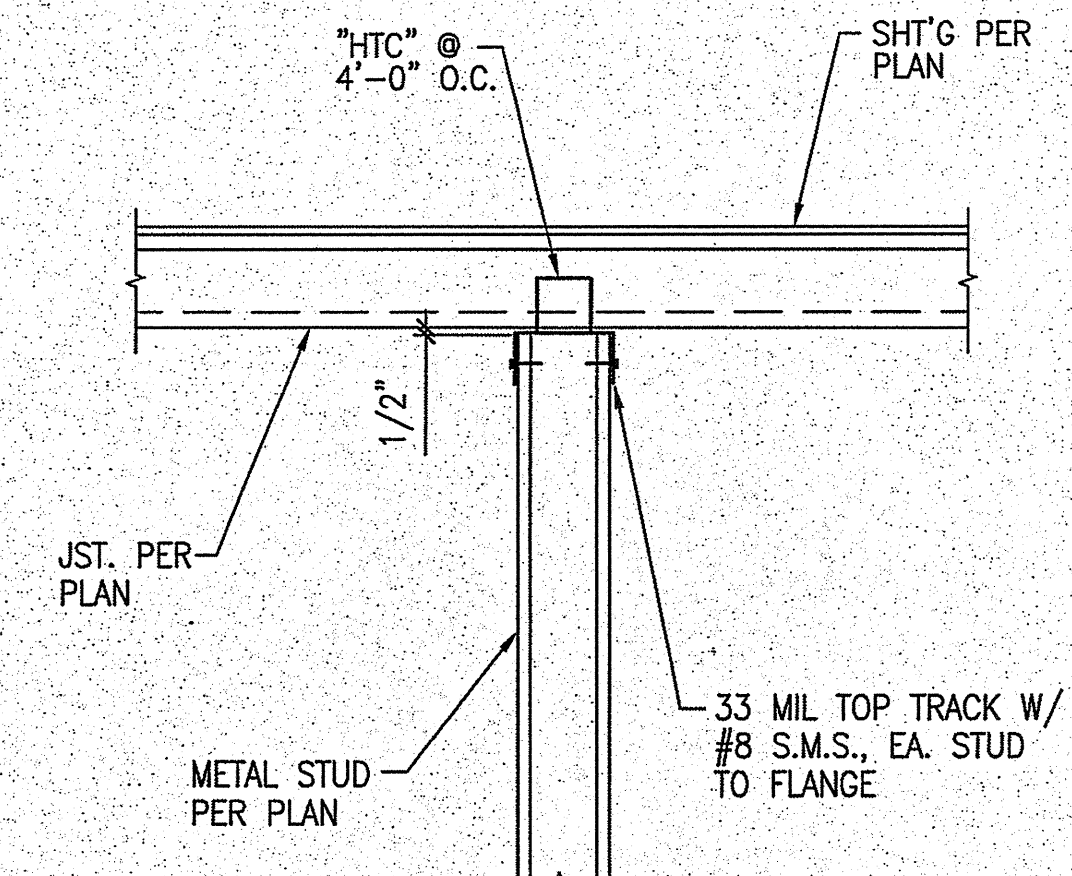
| HEADER SCHEDULE |                  |      |
|-----------------|------------------|------|
| SPAN            | HEADER/SILL      | JAMB |
| 2'-0" TO 6'-0"  | 1 + 33 MIL TRACK | 2    |
| 6'-1" TO 8'-0"  | 2 + 33 MIL TRACK | 3    |
|                 |                  |      |
|                 |                  |      |

- NOTES:
- THIS SCHEDULE APPLIES, UNLESS NOTED OTHERWISE.
  - MATCH STUD SECTIONS FOR BUILT-UP HEADER, SILL, AND JAMB
  - 550S162-33 @ 16" O.C. @ EXTERIOR WALLS
  - 350S162-33 @ 16" O.C. (MIN) @ INTERIOR WALLS

X (7) WALL MOUNTED MECH. UNIT SUPPORT (4) WALL FRAMING DETAIL (1)

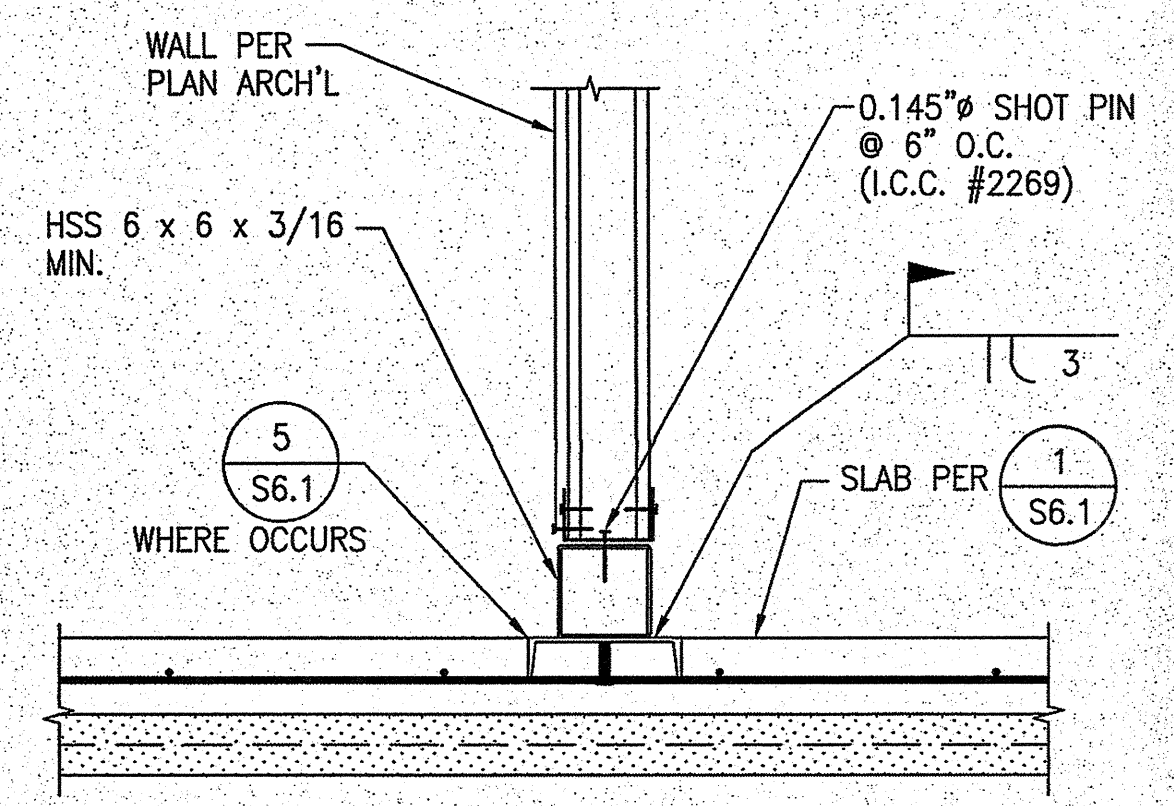
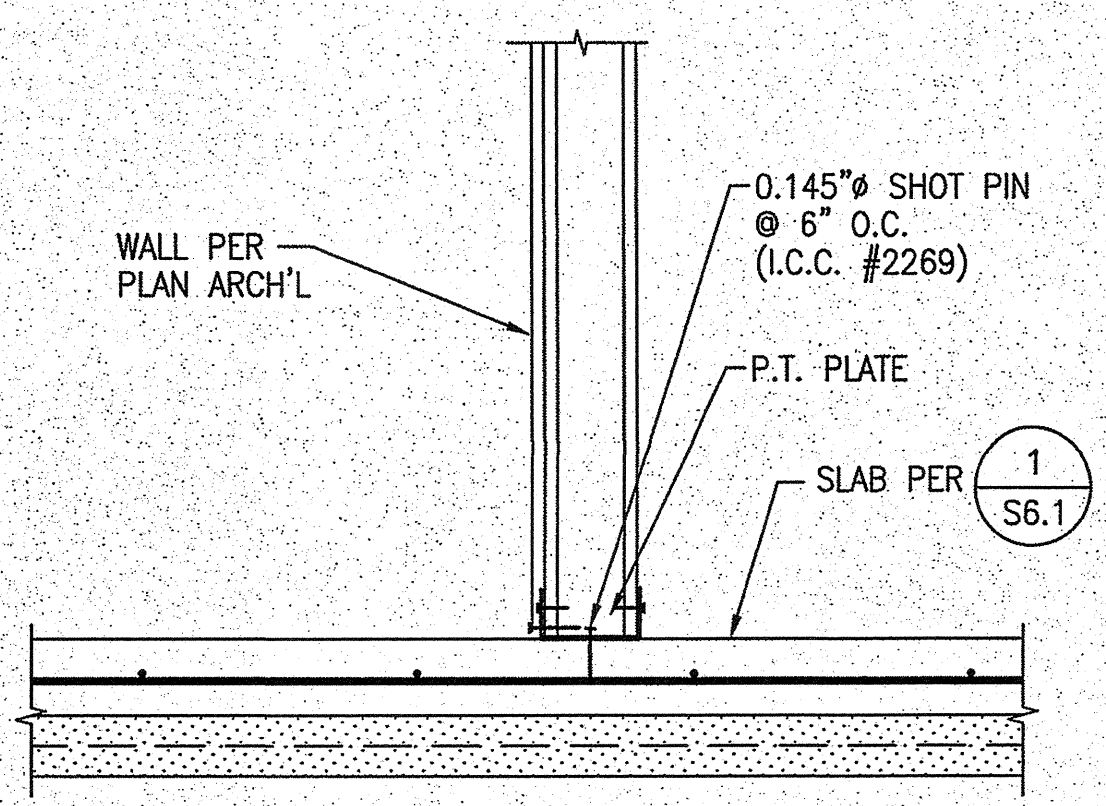


PARALLEL



PERPENDICULAR

X (8) EXTERIOR WALL CONNECTION (5) INTERIOR NON-BEARING WALL SUPPORT (2)



X (9) WALL SUPPORT AT SLAB (6) WALL SUPPORT AT STEEL TUBE (3)

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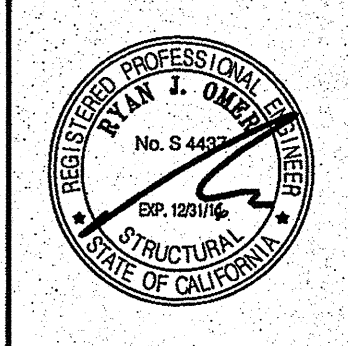
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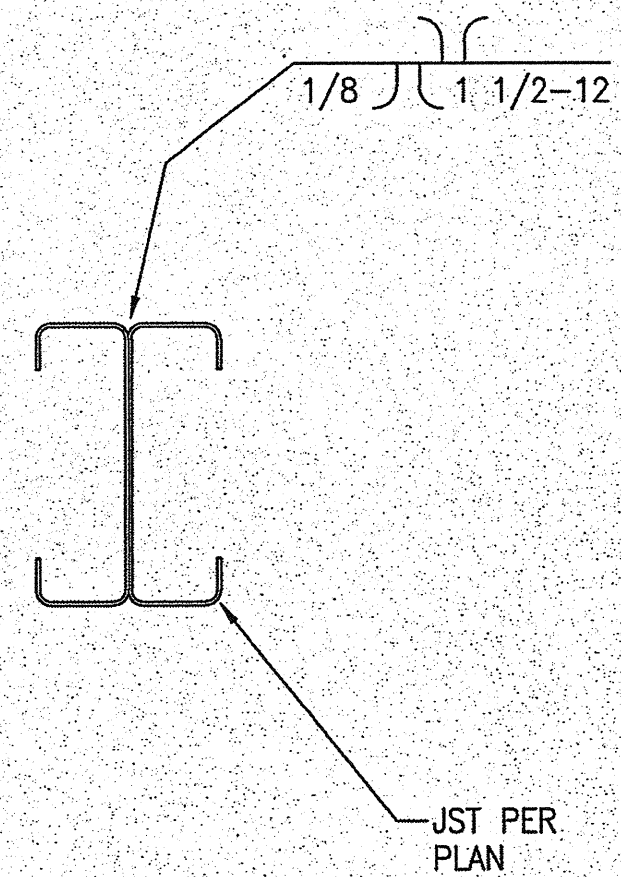


| DATE | REVISIONS DESCRIPTION |
|------|-----------------------|
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|                    |  |
|--------------------|--|
| CLIENT NAME:       |  |
| DRAWN BY: B.N.     |  |
| CHECKED BY: R.J.O. |  |
| JOB NUMBER:        |  |
| DATE: 01/12/2015   |  |
| SCALE: AS NOTED    |  |

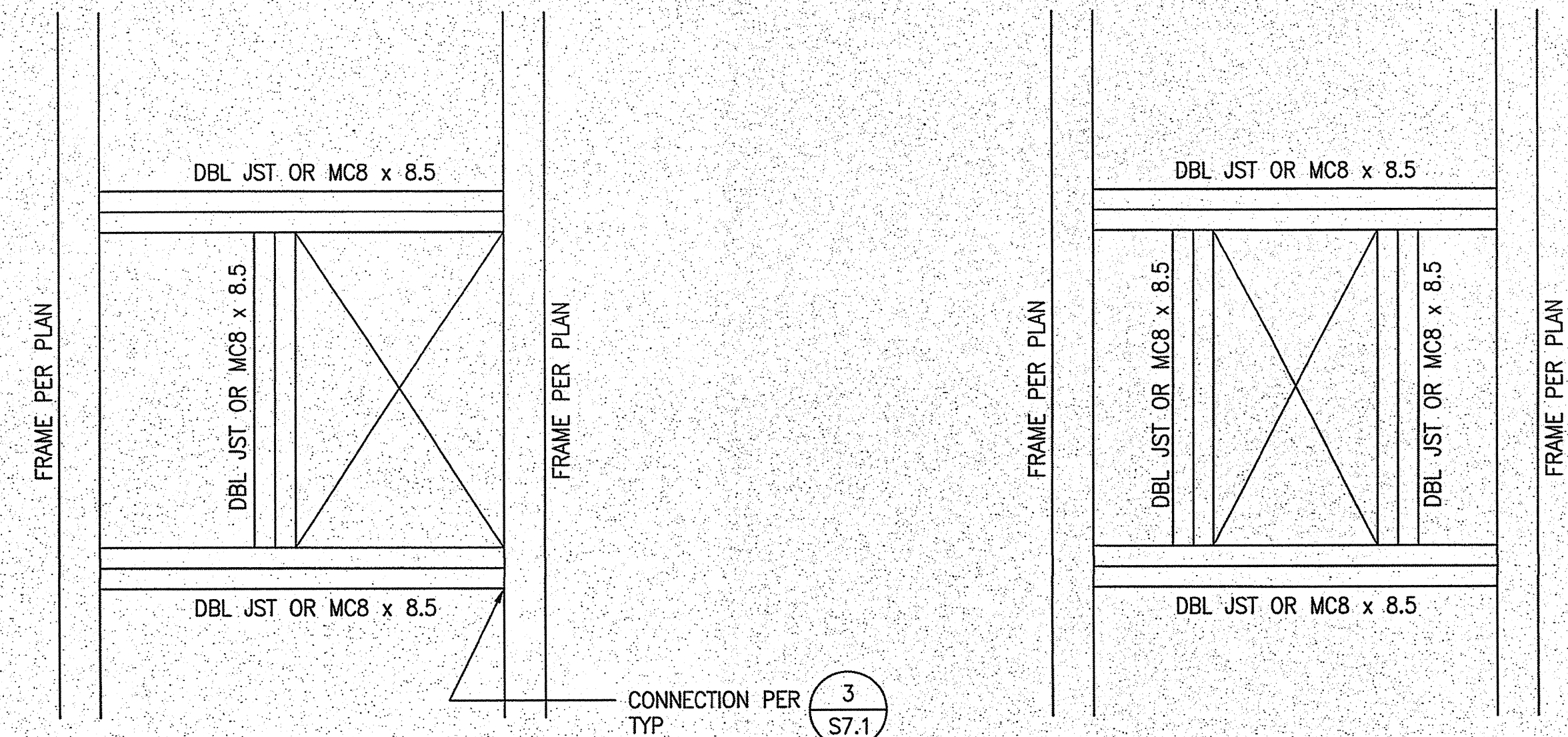
SHEET NAME  
**TYPICAL DETAILS**  
SHEET NO.  
**S1.5A**





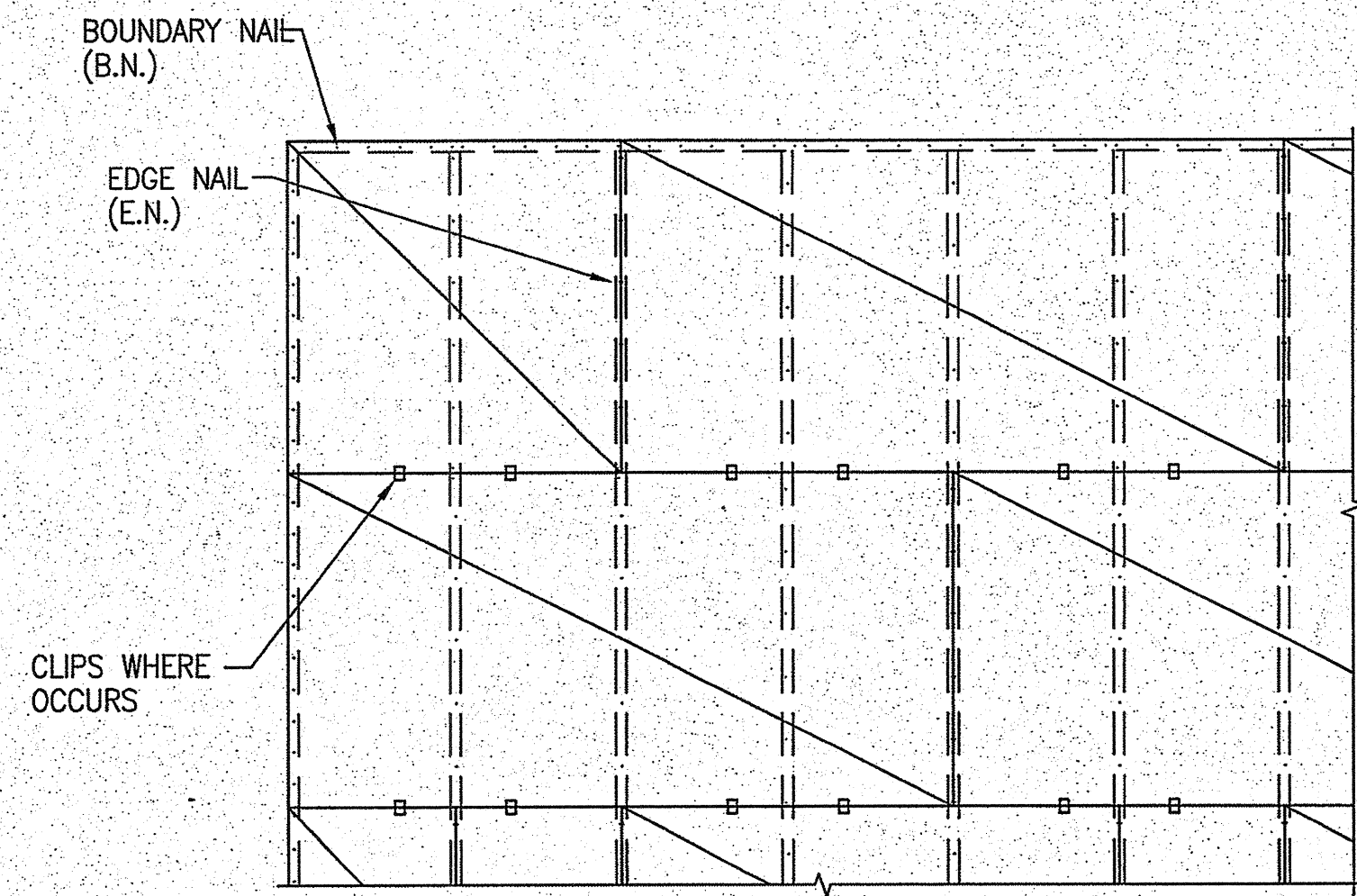
DOUBLE JOIST CONNECTION

8



MECHANICAL UNIT SUPPORT AT ROOF

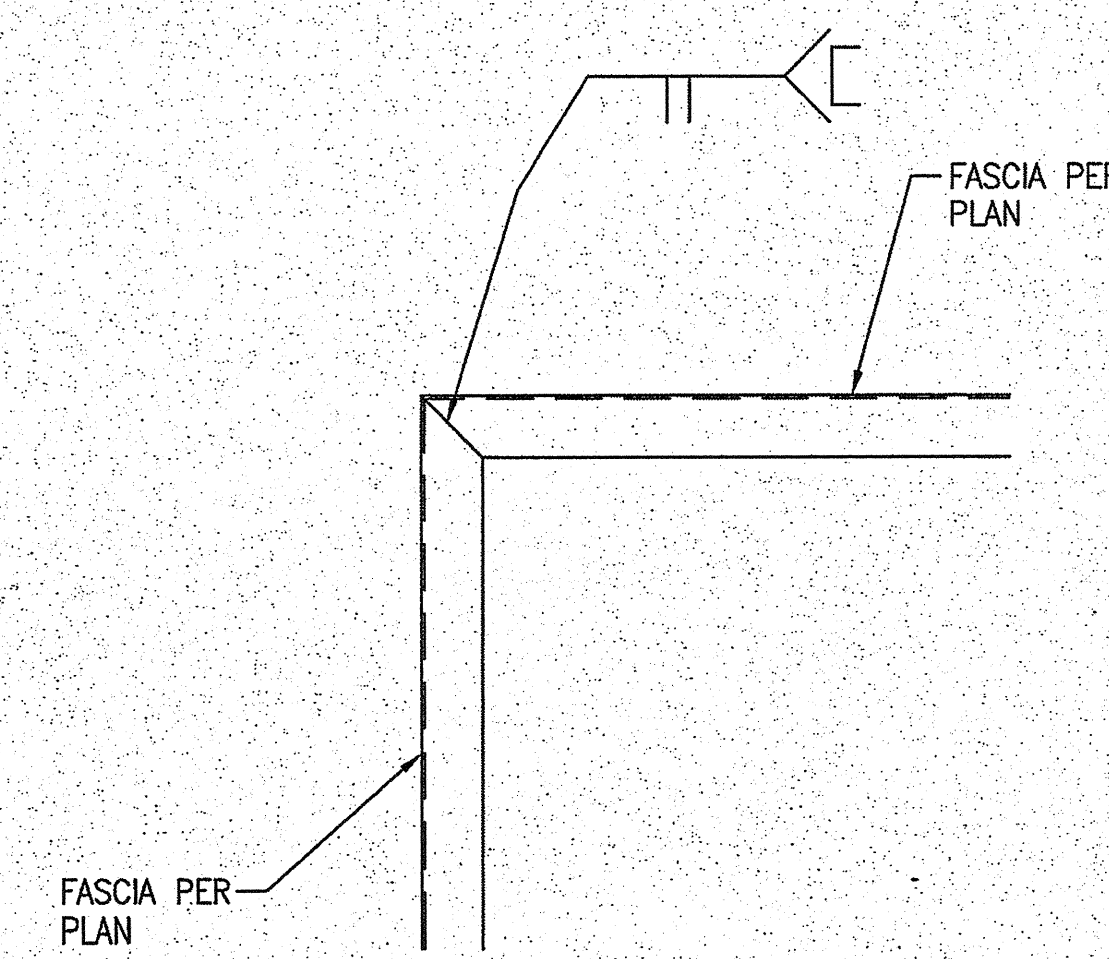
1



- NOTES:
1. PLYWOOD SHEATHING SHALL BE LAID PERPENDICULAR TO FRAMING WITH 4'-0" STAGGERED JOINTS.
  2. MINIMUM PLYWOOD SHEET SIZE SHALL BE 2'-0" x 4'-0".
  3. MINIMUM 3/8" NAILING EDGE DISTANCE.
  4. BOUNDARY NAIL (B.N.) OVER ALL BEAMS, AND AROUND ALL OPENINGS.
  5. PLYWOOD NAILING SHALL BE INSPECTED BY THE GOVERNING BUILDING AUTHORITY PRIOR TO COVERING.

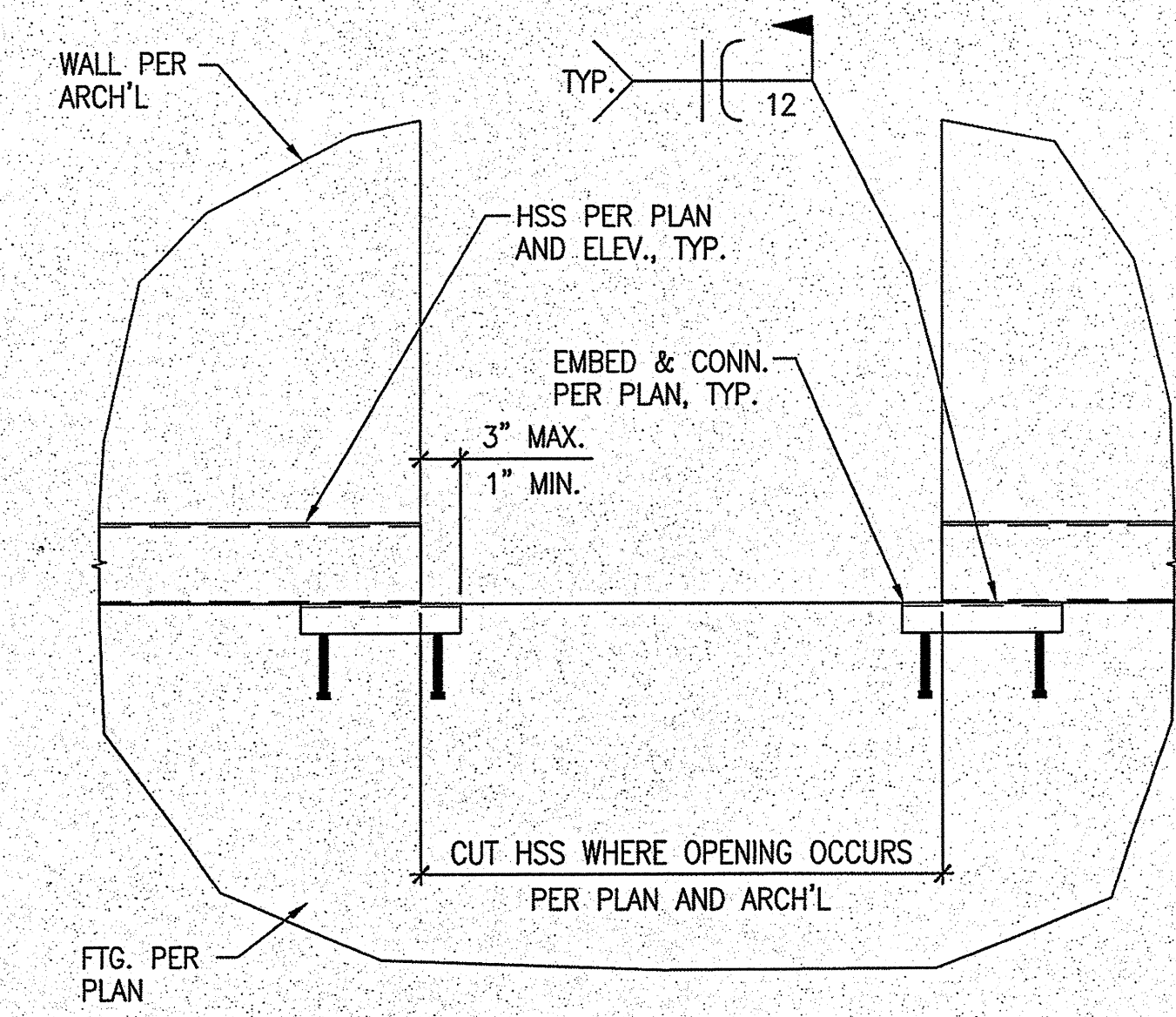
DIAPHRAGM LAYOUT

6



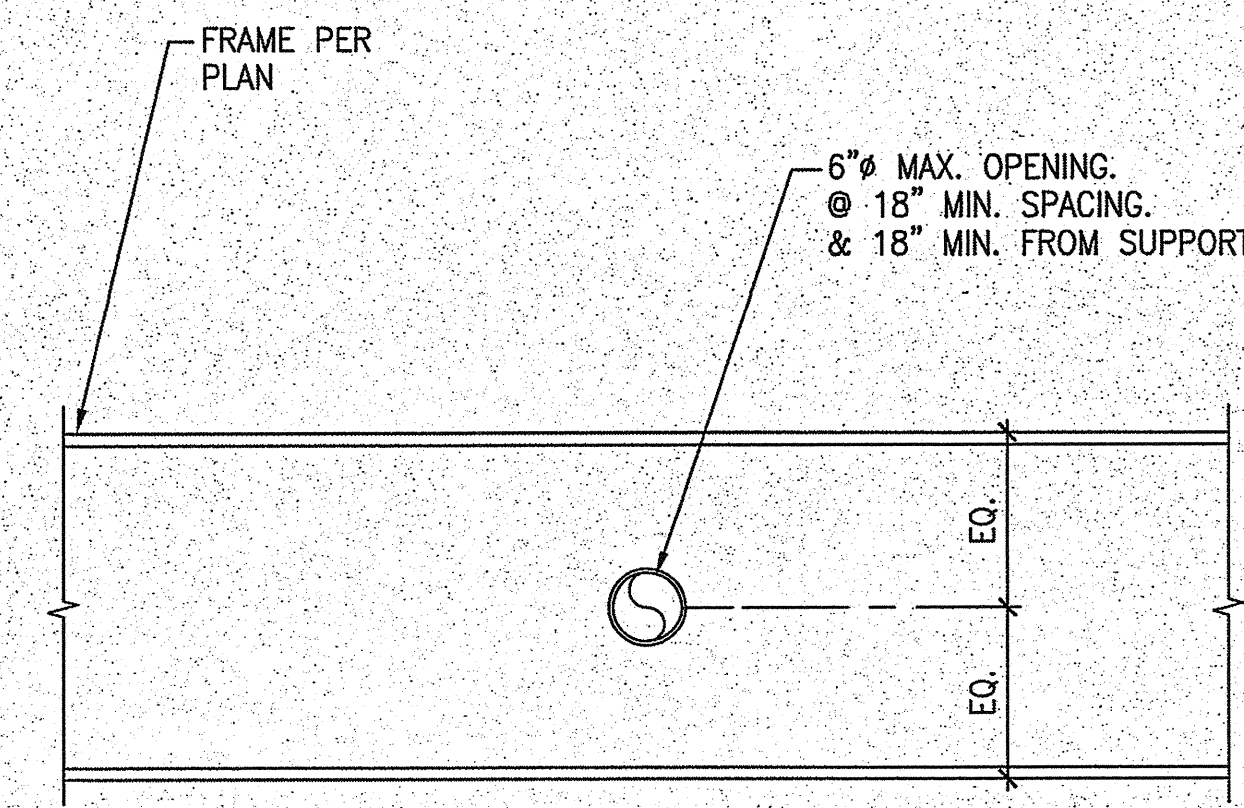
FASCIA BUTT JOINT

3



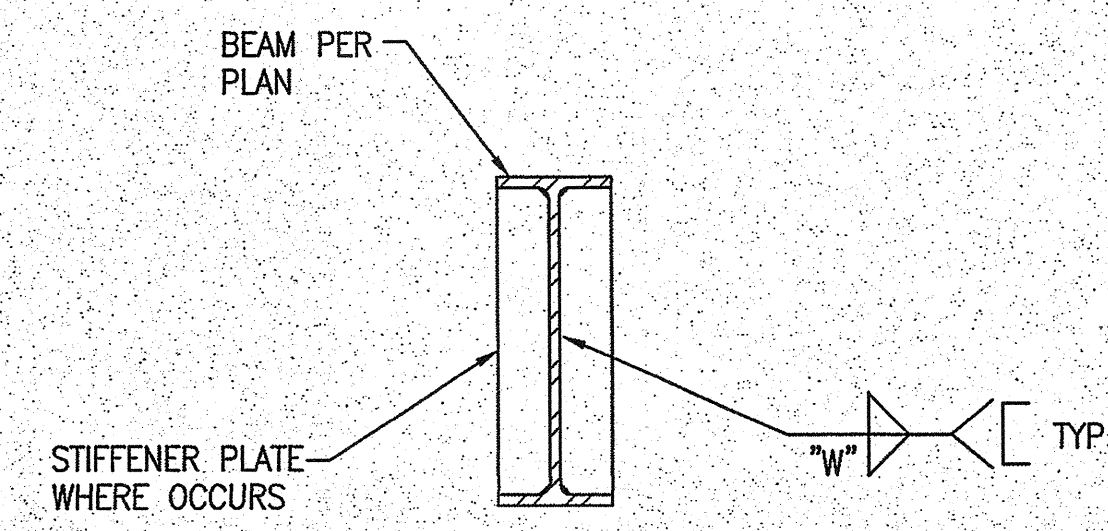
CONNECTION AT DOOR OPENING

2



HOLE THROUGH BEAM

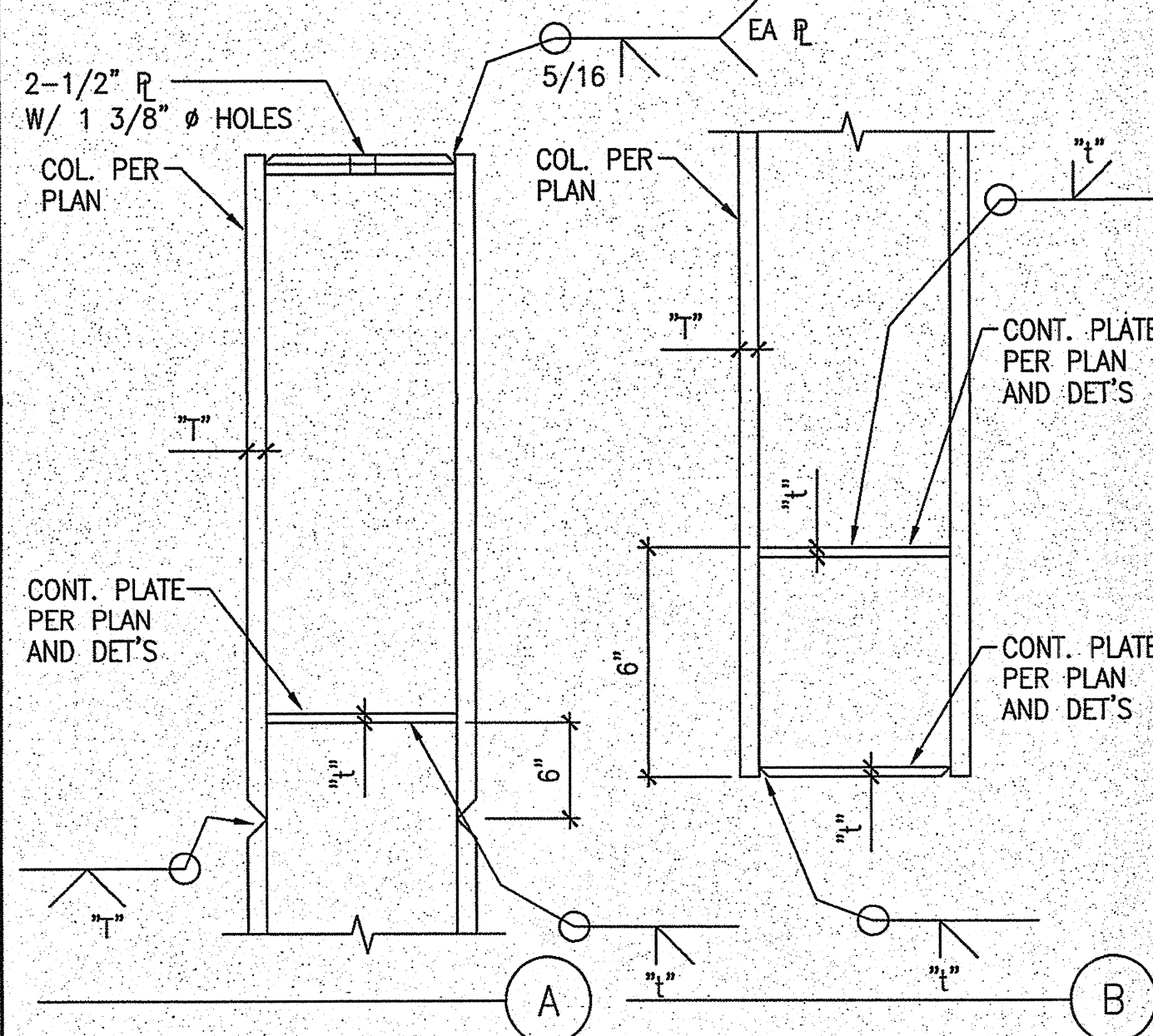
9



| STIFFENER PLATE SCHEDULE  |          |         |
|---------------------------|----------|---------|
| STIFFENER PLATE THICKNESS | WELD "W" | REMARKS |
| 3/16"                     | 3/16"    |         |
| 1/4"                      | 3/16"    |         |
| 5/16"                     | 3/16"    |         |
| 3/8"                      | 3/16"    |         |
| 1/2"                      | 1/4"     |         |

TYP. STIFFENER PLATE

7



TYP. COLUMN PREP.

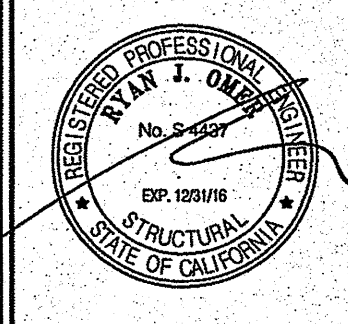
4

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Structural Engineering,  
12257 OLD POMEROY ROAD, SUITE A.  
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FAX: (951) 979-1975

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DRAWN BY: B.N.  
CHECKED BY: R.J.O.  
JOB NUMBER:  
DATE: 09/12/2014  
SCALE: AS NOTED

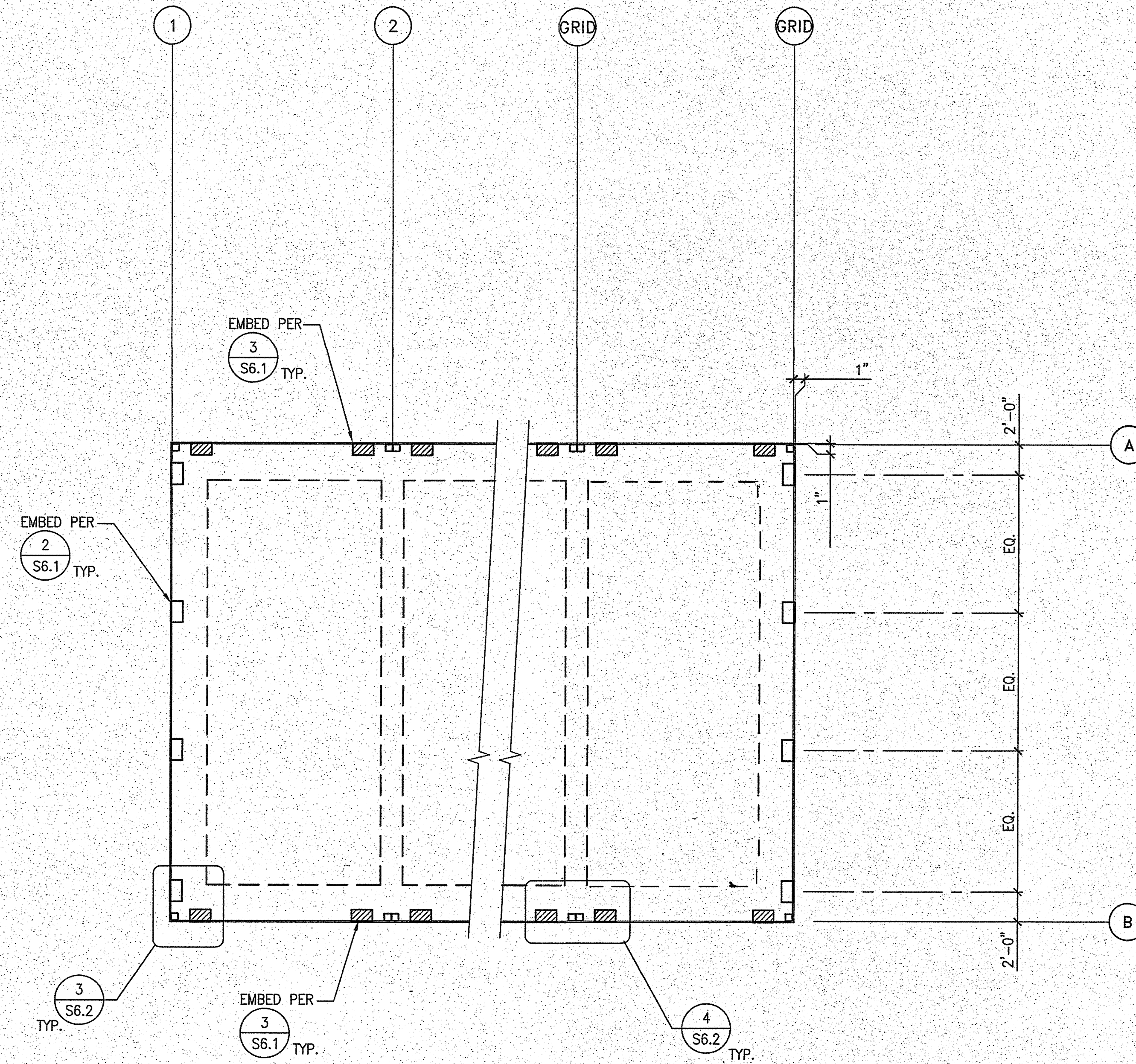
SHEET NAME  
**TYPICAL DETAILS**

SHEET NO.  
**S1.6**



**NOTES:**

1. FOR TYPICAL DETAILS AND GENERAL NOTES, SEE SHEETS S1.1, S1.2, S1.3, S1.4, S1.5, AND S1.6., AND S1.5A
2. FOR DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL.



**EMBEDMENT PLAN**

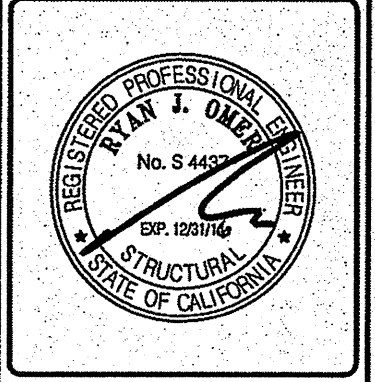
SCALE 3/16" = 1'-0"

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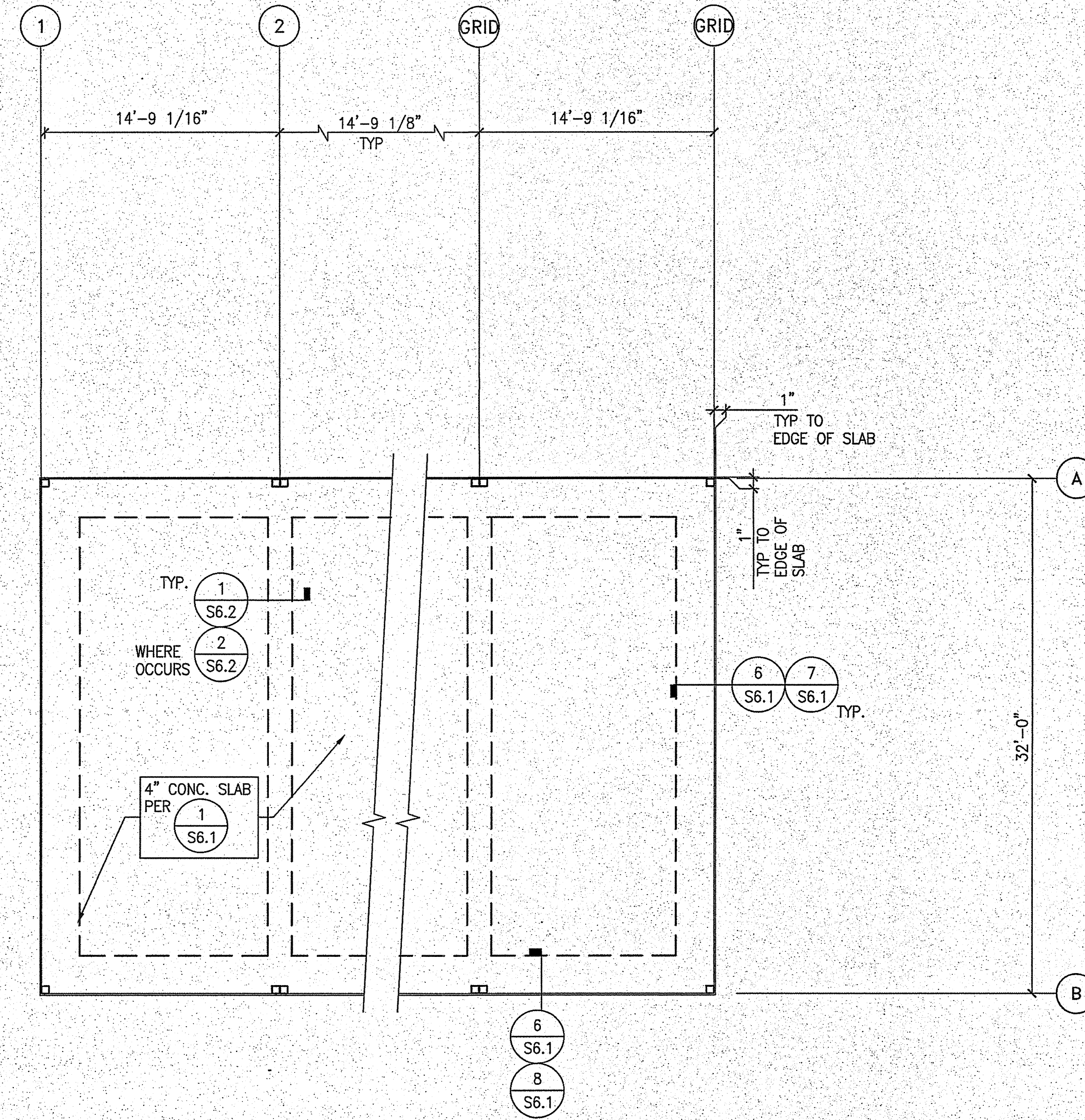
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| CLIENT NAME:             | DRAWN BY: B.N. | CHECKED BY: R.J.O. | JOB NUMBER: | DATE: 01/22/2016 | SCALE: AS NOTED |
| <b>EMBEDMENT PLAN</b>    |                |                    |             |                  |                 |
| SHEET NO.<br><b>S2.1</b> |                |                    |             |                  |                 |



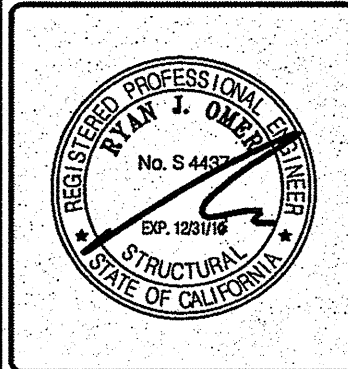
**NOTES:**

1. FOR TYPICAL DETAILS AND GENERAL NOTES, SEE SHEETS S1.1, S1.2, S1.3, S1.4, S1.5, AND S1.6, AND S1.5A
2. FOR DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL.



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| DRAWN BY:    | R.J.O.     |
| CHECKED BY:  | R.J.O.     |
| JOB NUMBER:  | 01/12/2015 |
| DATE:        | AS NOTED   |
| SCALE:       | AS NOTED   |

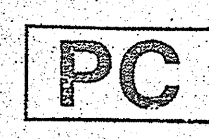
SHEET NAME  
**FOUNDATION PLAN**

SHEET NO.  
**S3.1**

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FOUNDATION PLAN

SCALE 3/16" = 1'-0"

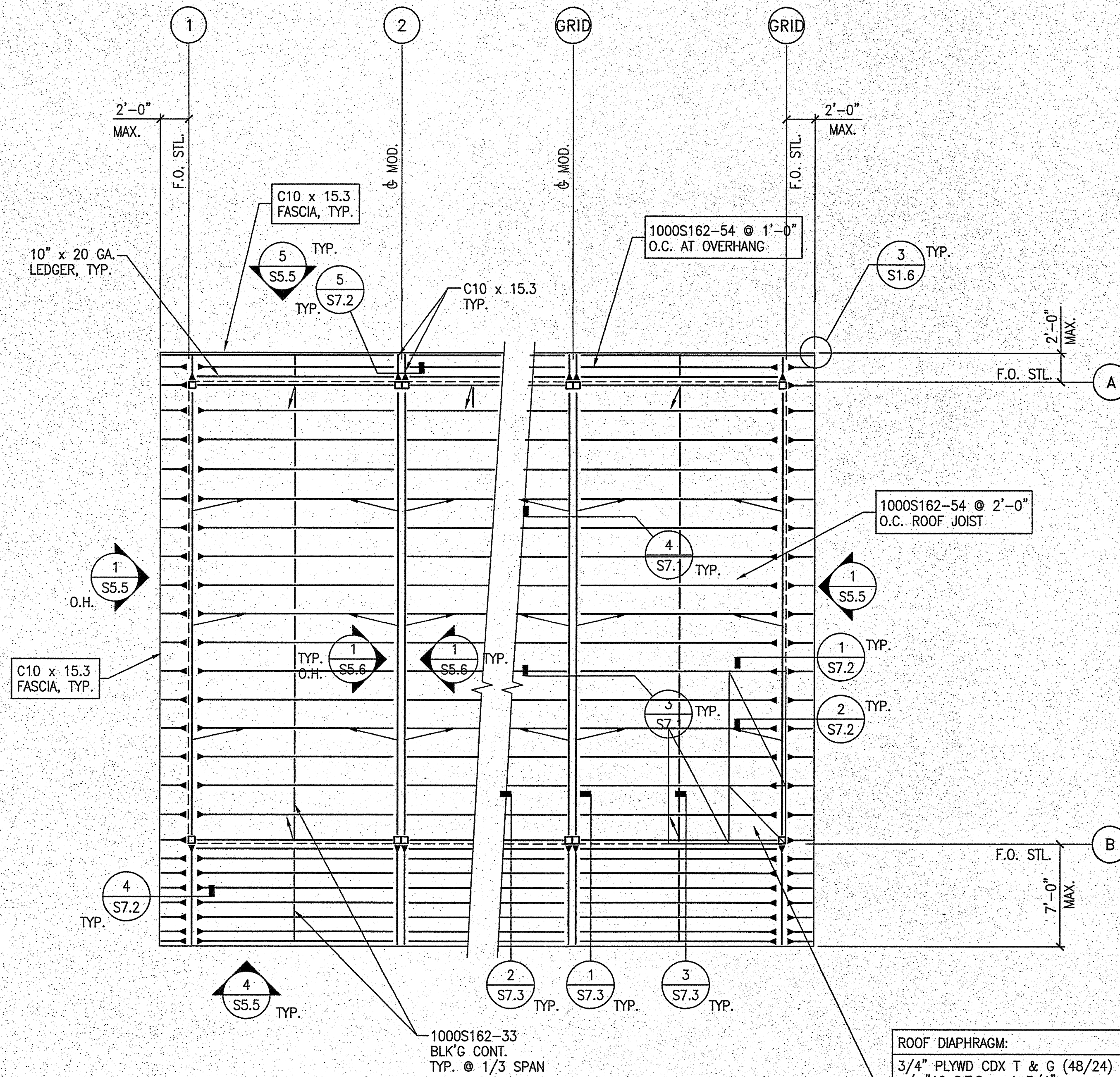


**NOTES:**

1. FOR TYPICAL DETAILS AND GENERAL NOTES, SEE SHEETS S1.1, S1.2, S1.3, S1.4, S1.5, AND S1.6. AND S1.5A
2. FOR DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL.
3. FOR MECH'L SIZE AND LOCATION, SEE MECH'L AND ARCH'L DRAWINGS.

**LEGEND:**

- INDICATES FRAME ELEVATION
- INDICATES MOMENT CONNECTION
- INDICATES BRACE



**ROOF DIAPHRAGM:**  
 3/4" PLYWD CDX T & G (48/24) \*  
 w/ #10 S.T.S. x 1 3/4"  
 @ 6" O.C. B.N.  
 @ 6" O.C. E.N.  
 @ 12" O.C. F.N.  
 \* PLYWD CLIP "PSCL" @ 16" O.C.  
 IN LIEU OF T & G

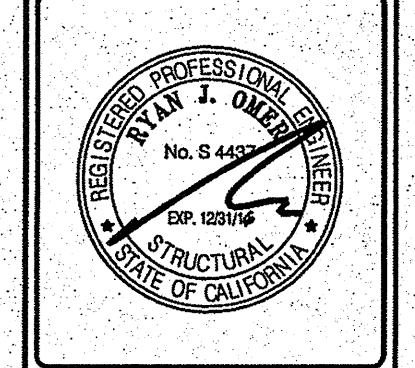
**ROOF FRAMING PLAN - BARREL ROOF - OVERHANG**

SCALE 3/16" = 1'-0"

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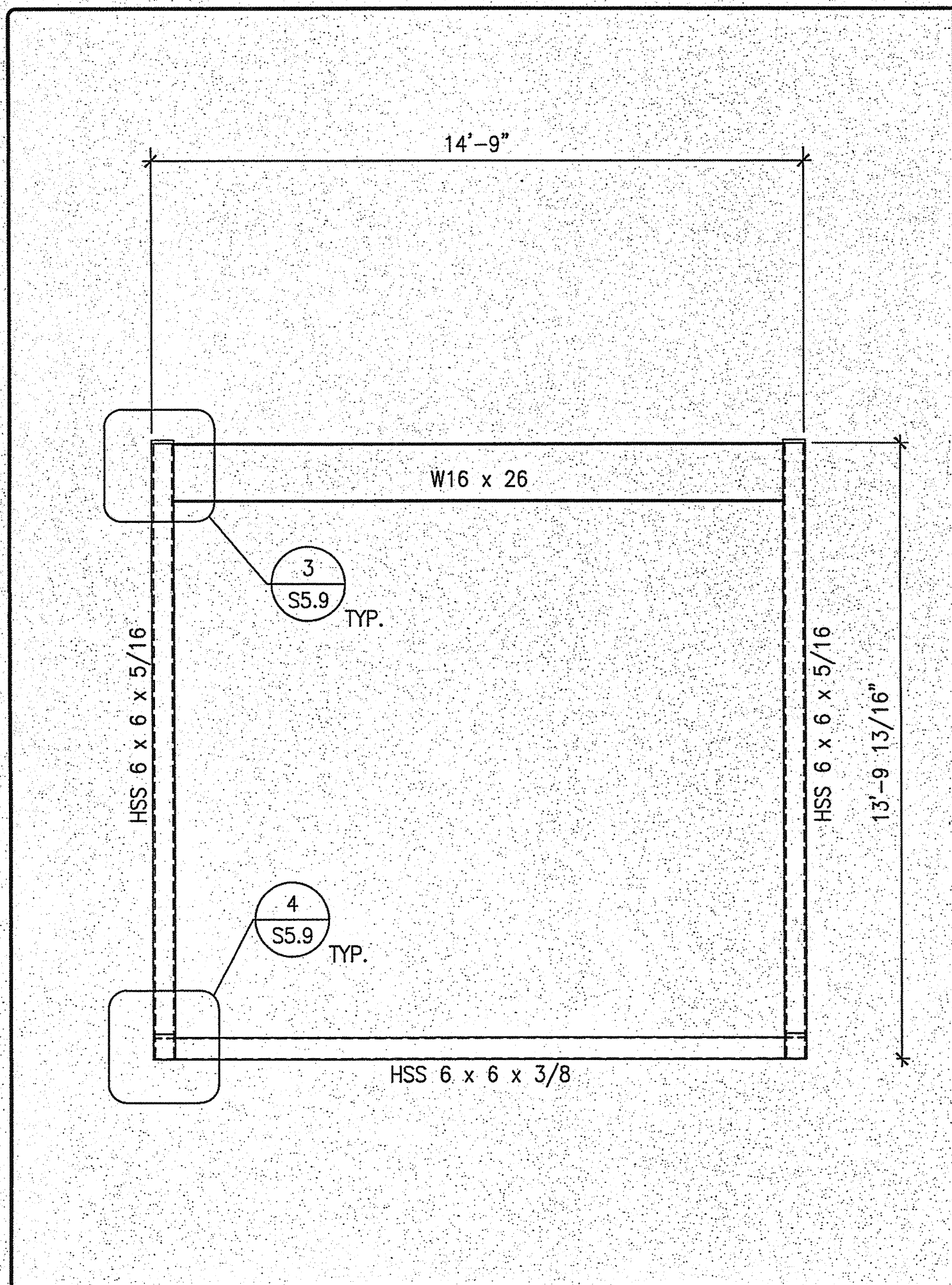
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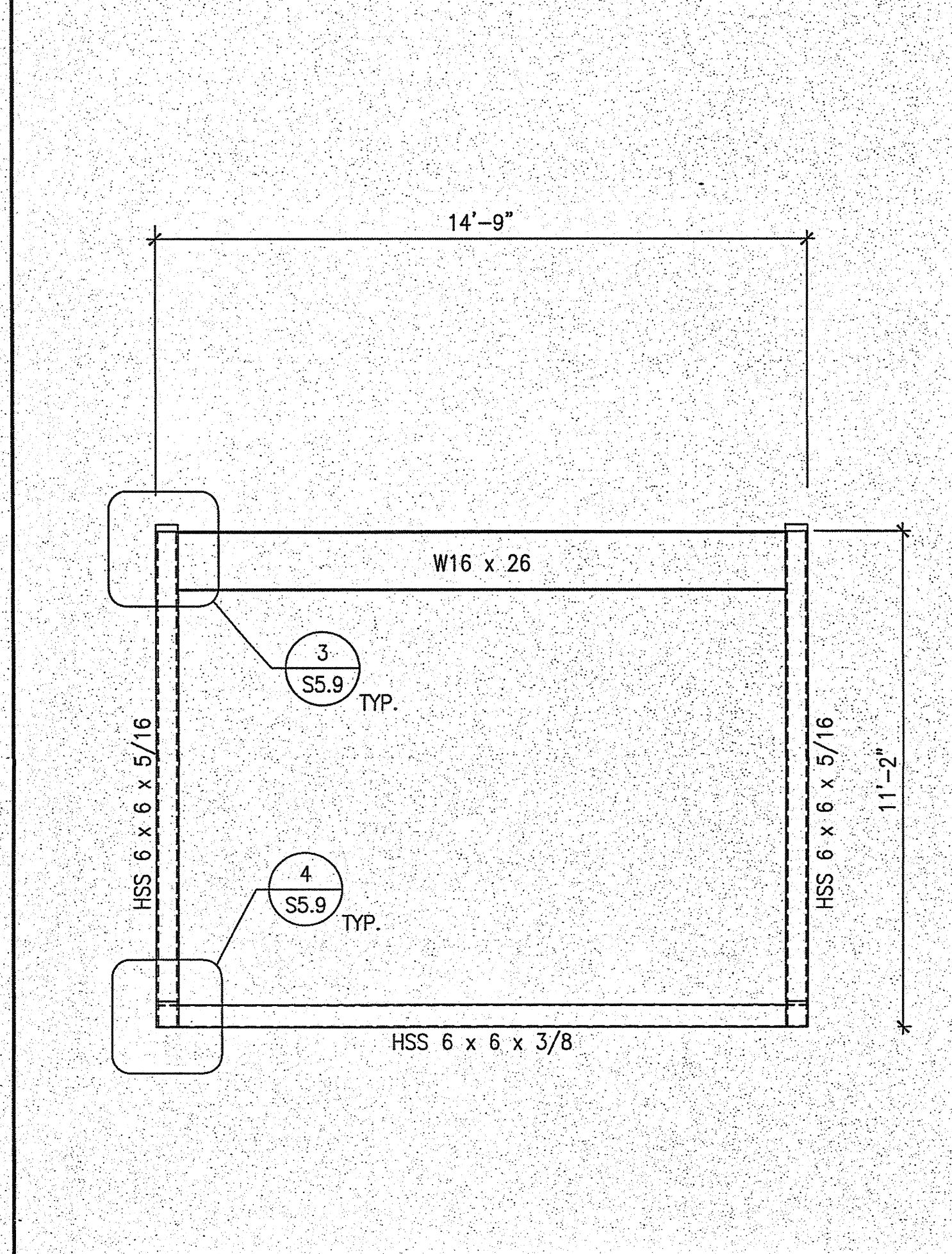
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| DATE: 01/22/16                |  |
| SCALE: AS NOTED               |  |
| SHEET NAME:                   |  |
| <b>ROOF FRM'G PLAN BARREL</b> |  |
| SHEET NO.:                    |  |
| <b>S4.6</b>                   |  |

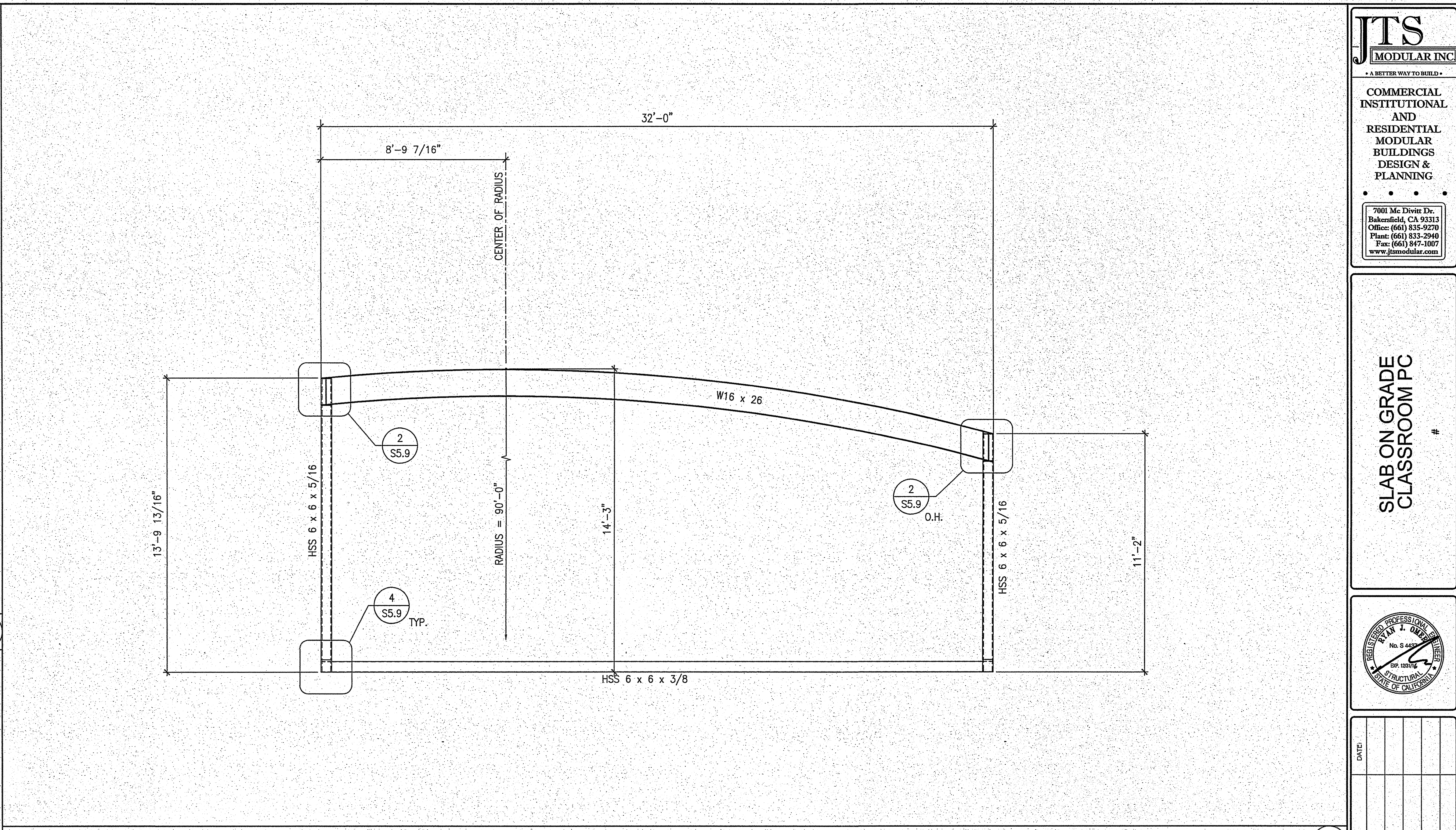




X (4)



X (5)



X (1)



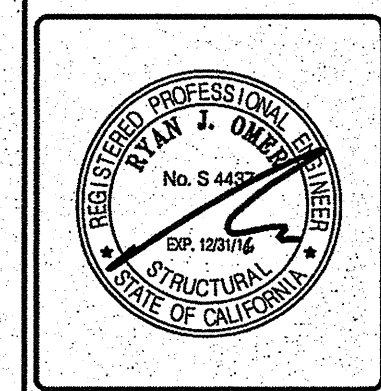
X (3) X (2)

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SHEET NAME  
**FRAME  
ELEVATIONS  
AND DETAILS  
BARREL**

SHEET NO.  
**S5.5**

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DATE: 02/11/11

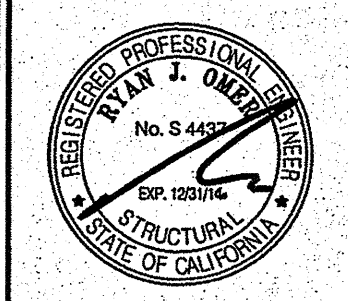
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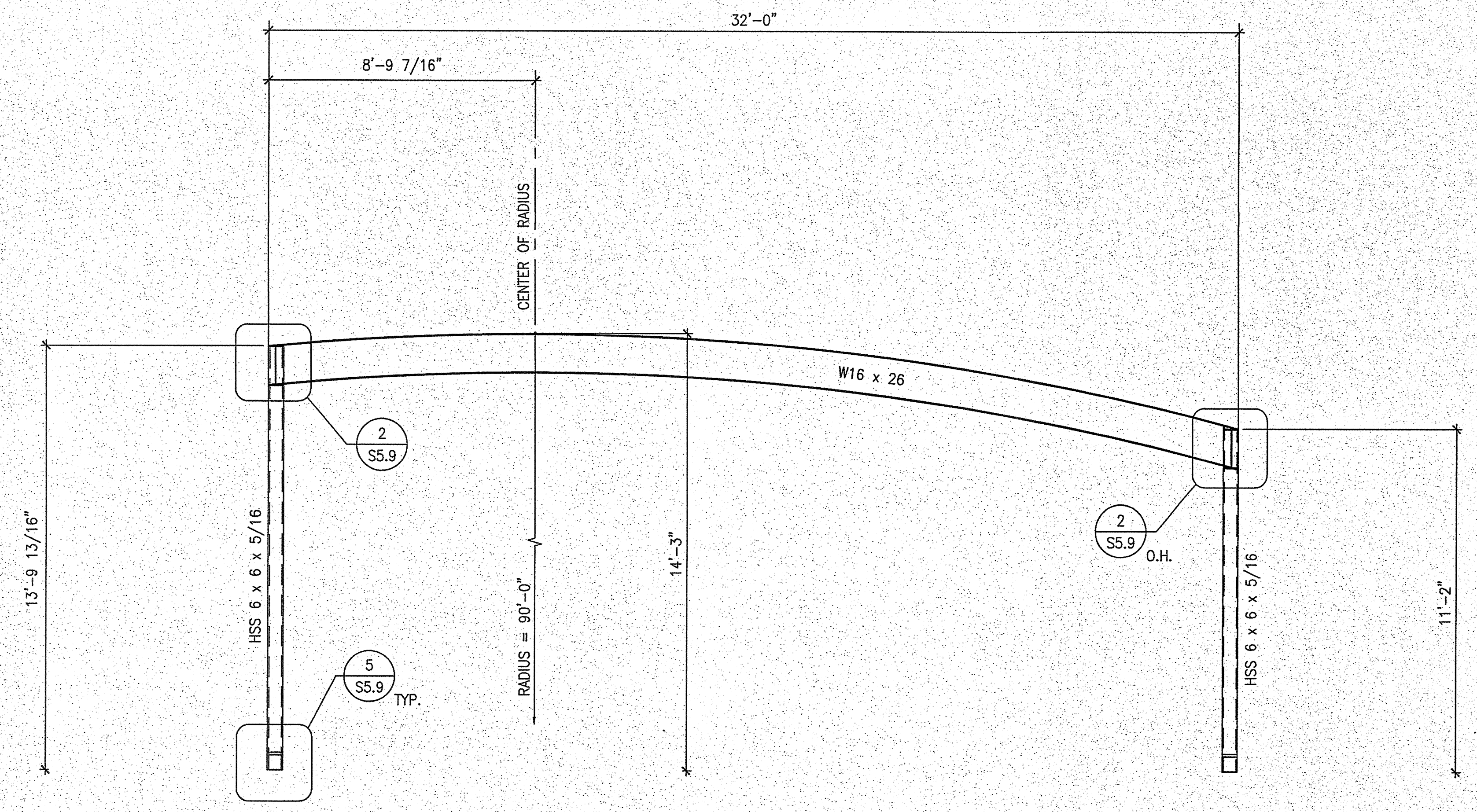
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| CLIENT NAME: | DRAWN BY: B.N.                      | CHECKED BY: R.J.O. | DATE: 01/22/016 | SCALE: AS NOTED |
| SHEET NAME:  | FRAME ELEVATIONS AND DETAILS BARREL |                    |                 |                 |

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X 4

X 1

X 5

X 3

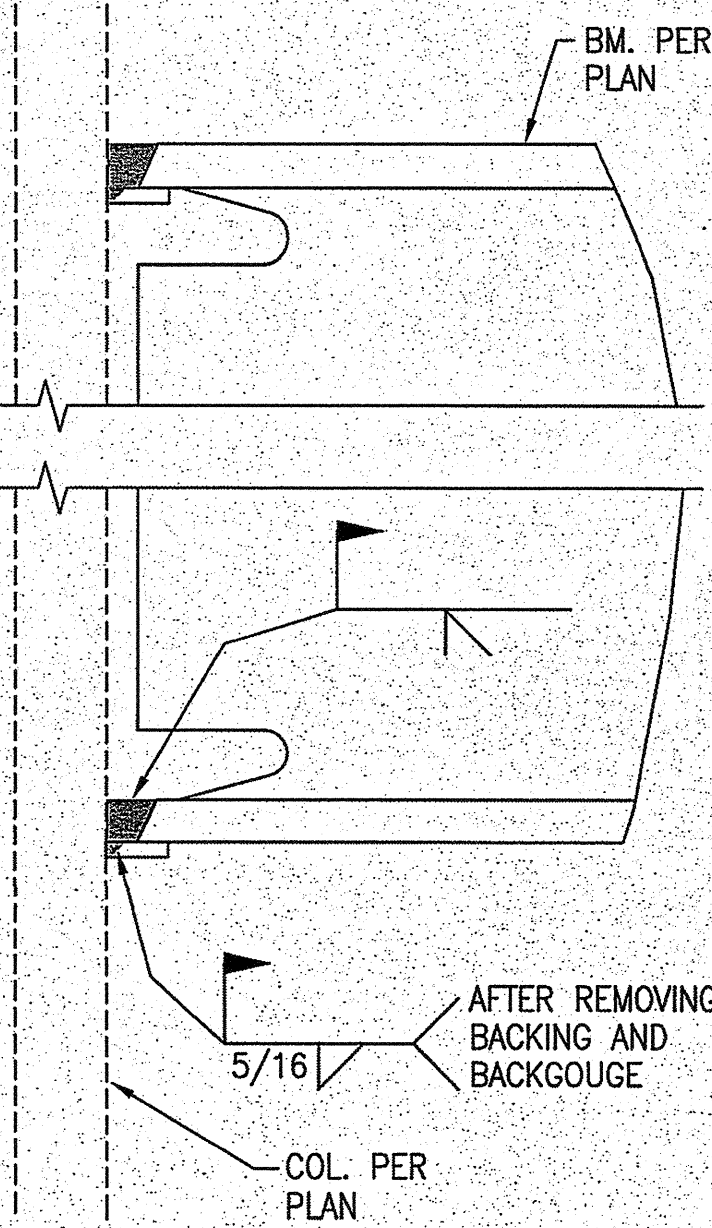
X 2

SHEET NO.  
S5.6



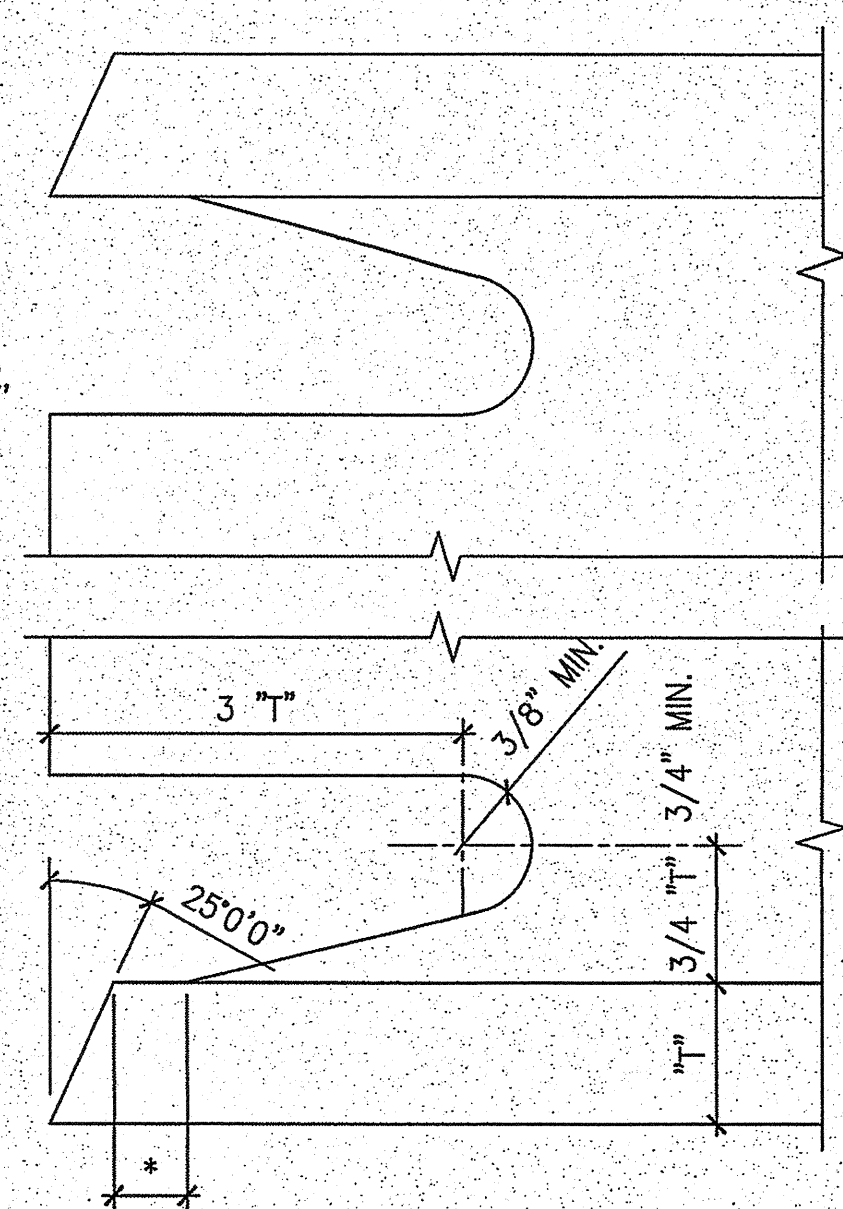
NOTE:  
ALL MOMENT FRAME FILLER  
MATERIAL TO HAVE A MIN.  
CHRPY V THOROUGHNESS OF  
20 FT. @ 0' F

FOR ADD'L INFO.  
SEE  
4  
S1.6



NOTES:  
CUT SHALL BE SMOOTH  
AND REGULAR IN CONTOUR,  
AND FREE OF NOTCHES  
PER FEMA-333

\* GREATER OF "T"  
OR 1/2" MIN.



ALIGN OUTSIDE  
EDGE OF BEAM  
AND COLUMN.

PLAN VIEW

2-1/2" PLATE

3/16

PLATE 3/8

FOR ADD'L INFO.  
SEE  
6 4  
- S1.6

BEAM PER  
ELEV.

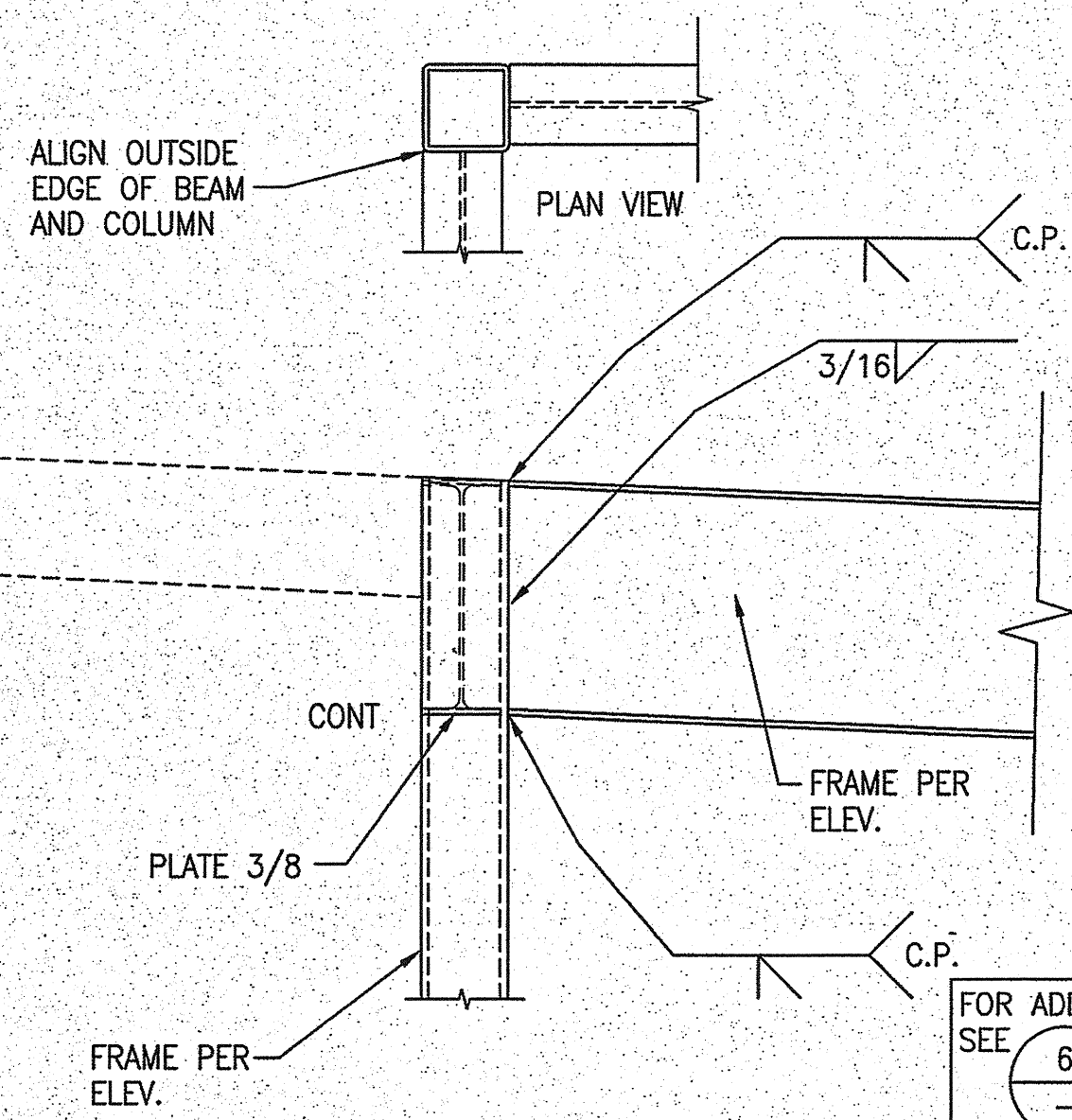
COL. PER  
ELEV.

X

6

3

1



FOR ADD'L INFO.  
SEE  
6 4  
- S1.6

COL. PER  
ELEV.

PLATE 3/8

FOR ADD'L INFO.  
SEE  
4  
S1.6

BEAM PER  
ELEV.

PLATE 3/8

9

7

4

2

COL. PER  
ELEV.

BEAM PER  
FRAME

FOR ADD'L INFO.  
SEE  
4 4  
S1.6 -

X

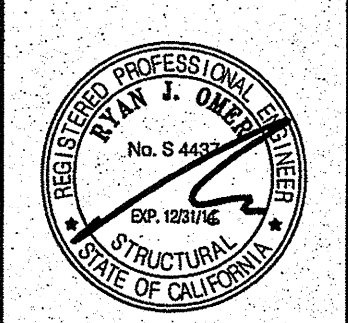
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8

5

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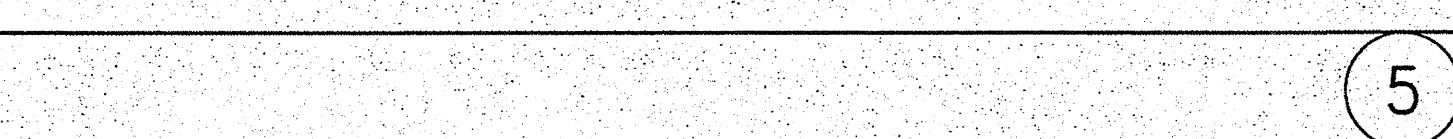
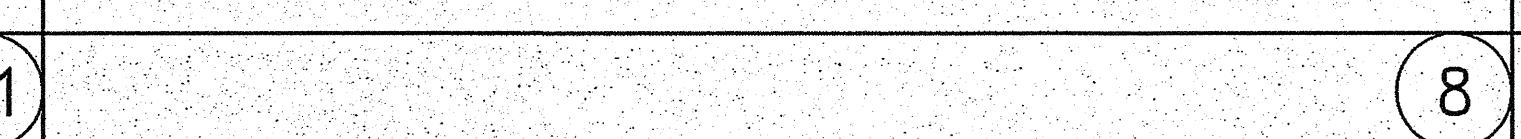
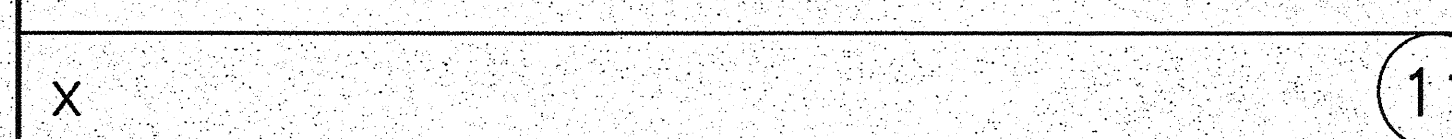
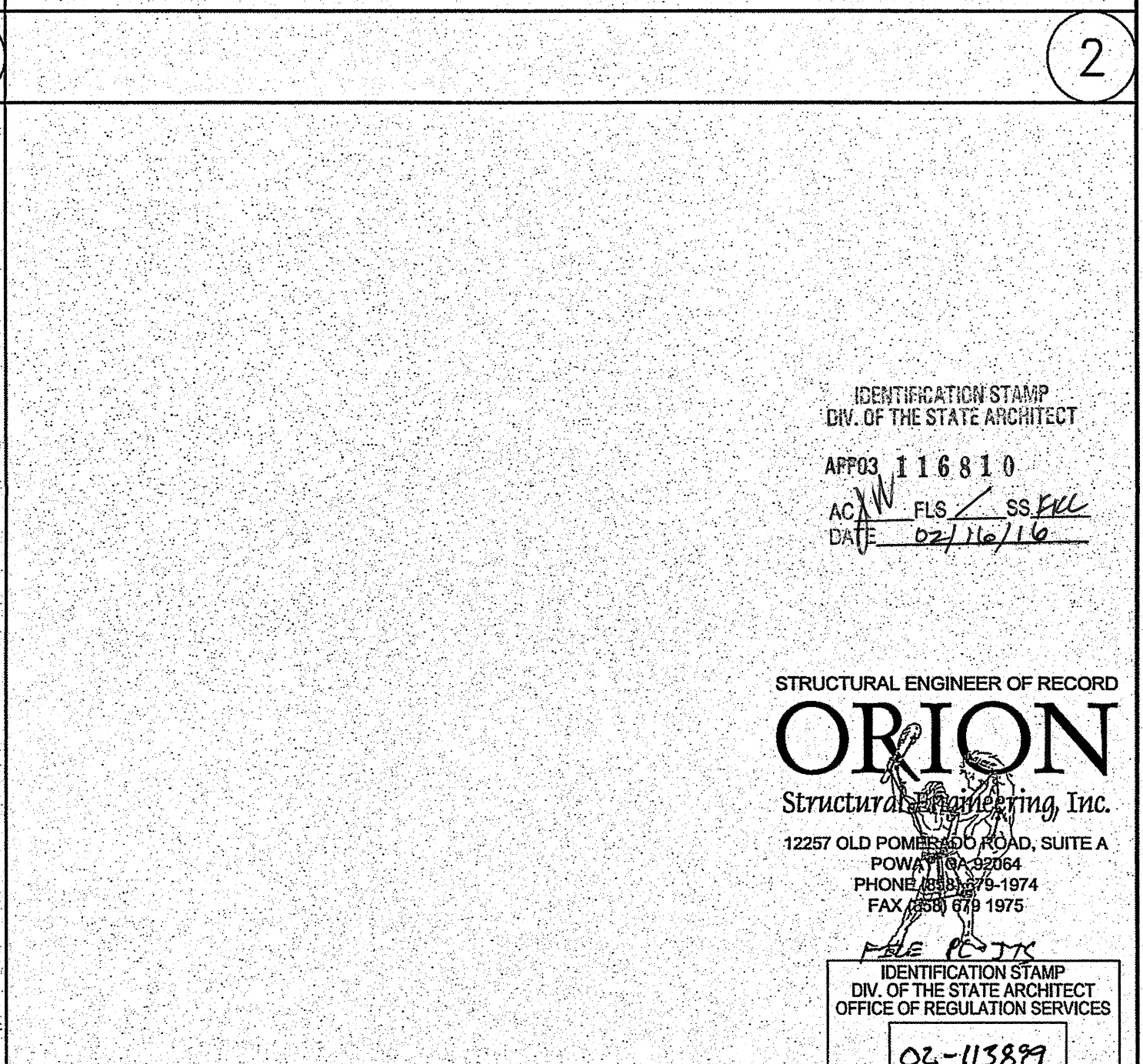
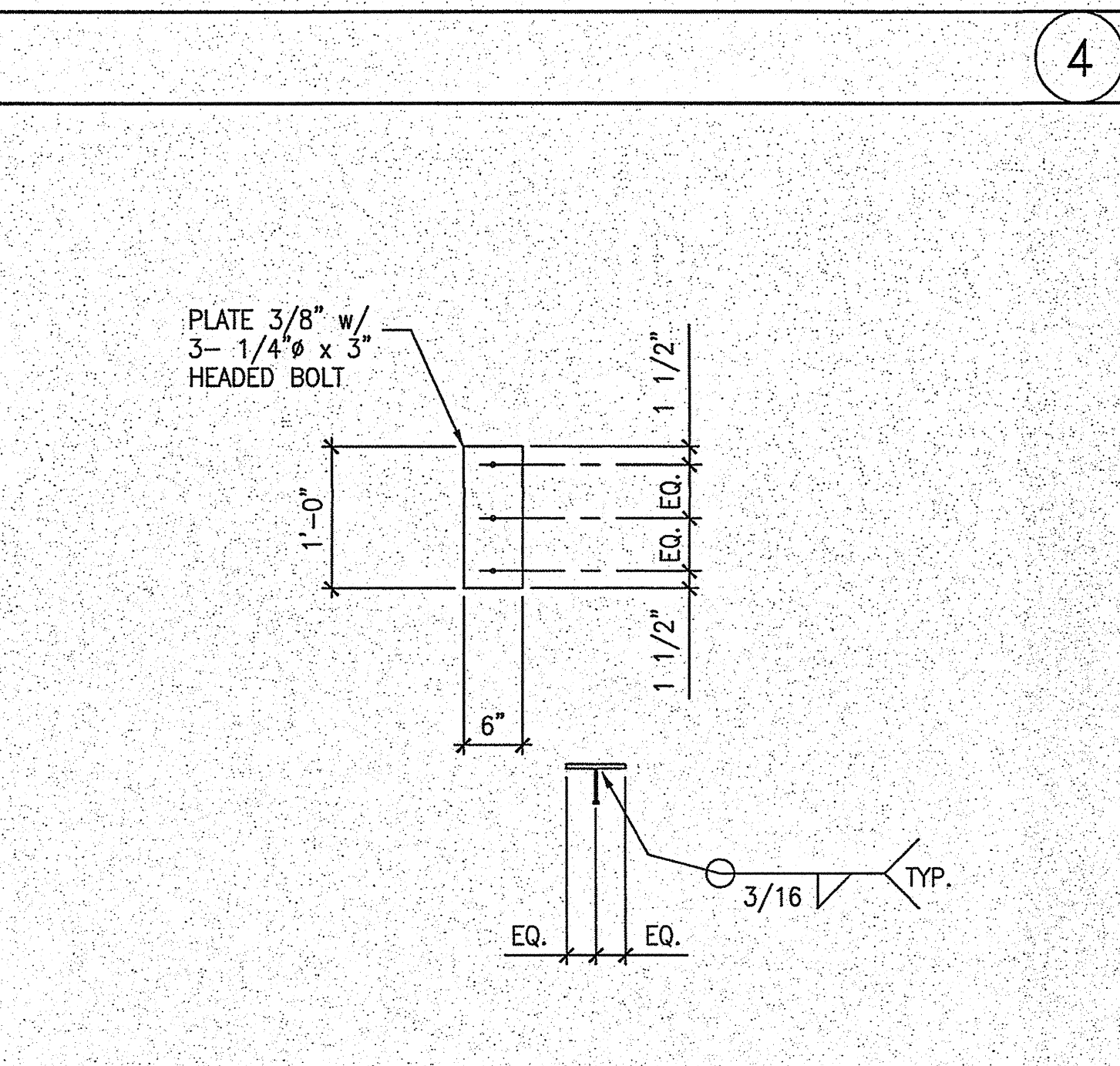
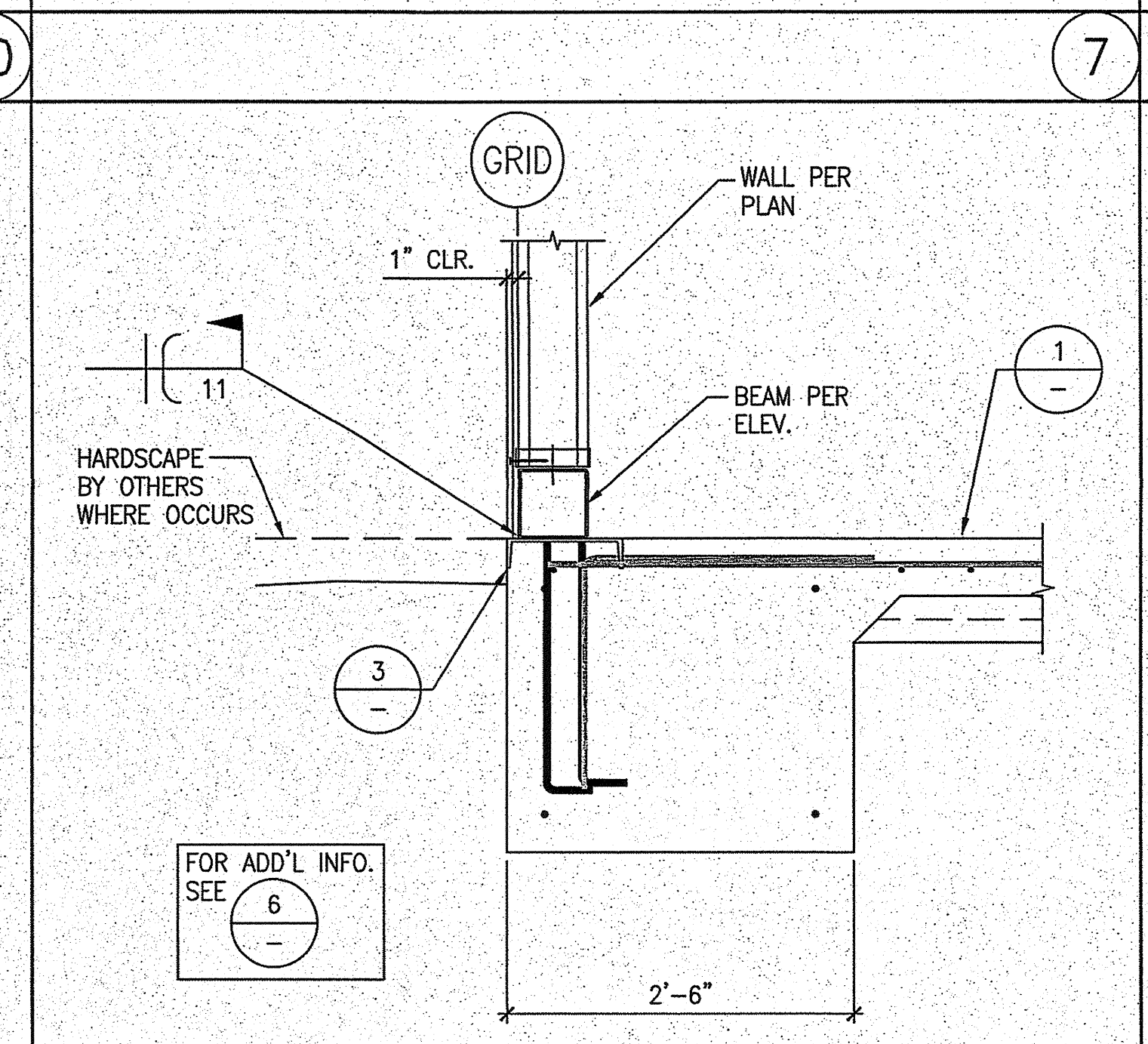
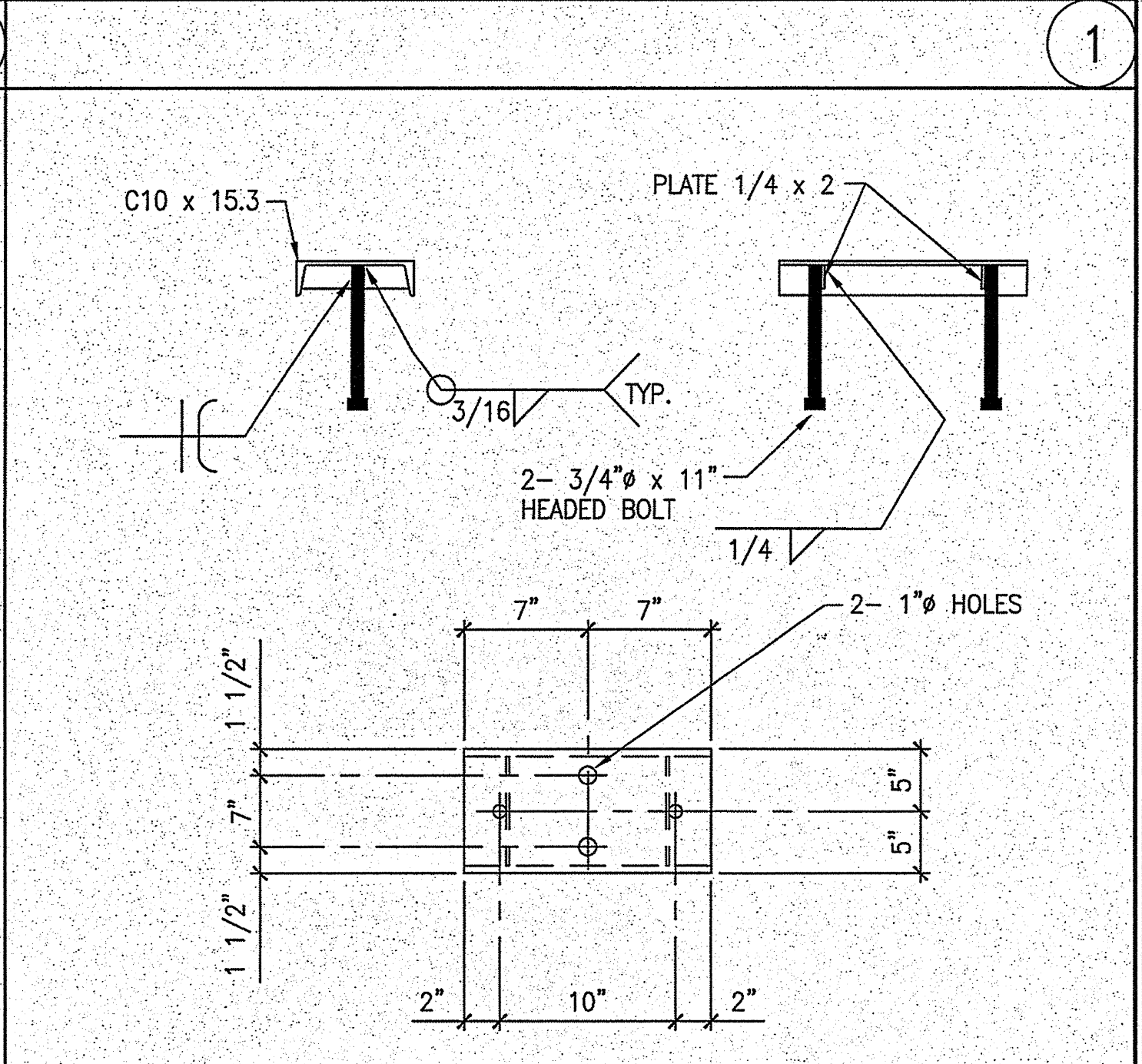
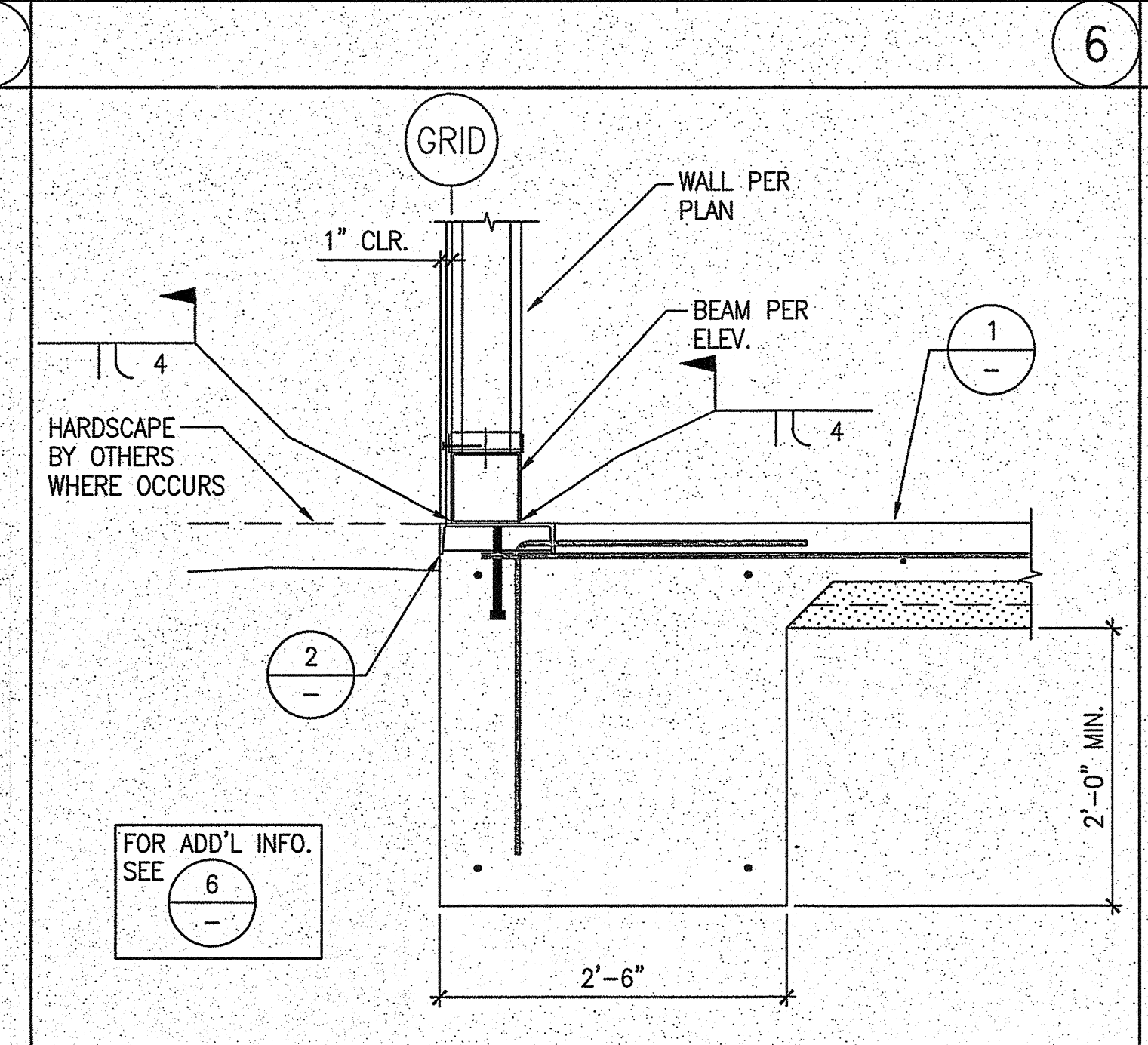
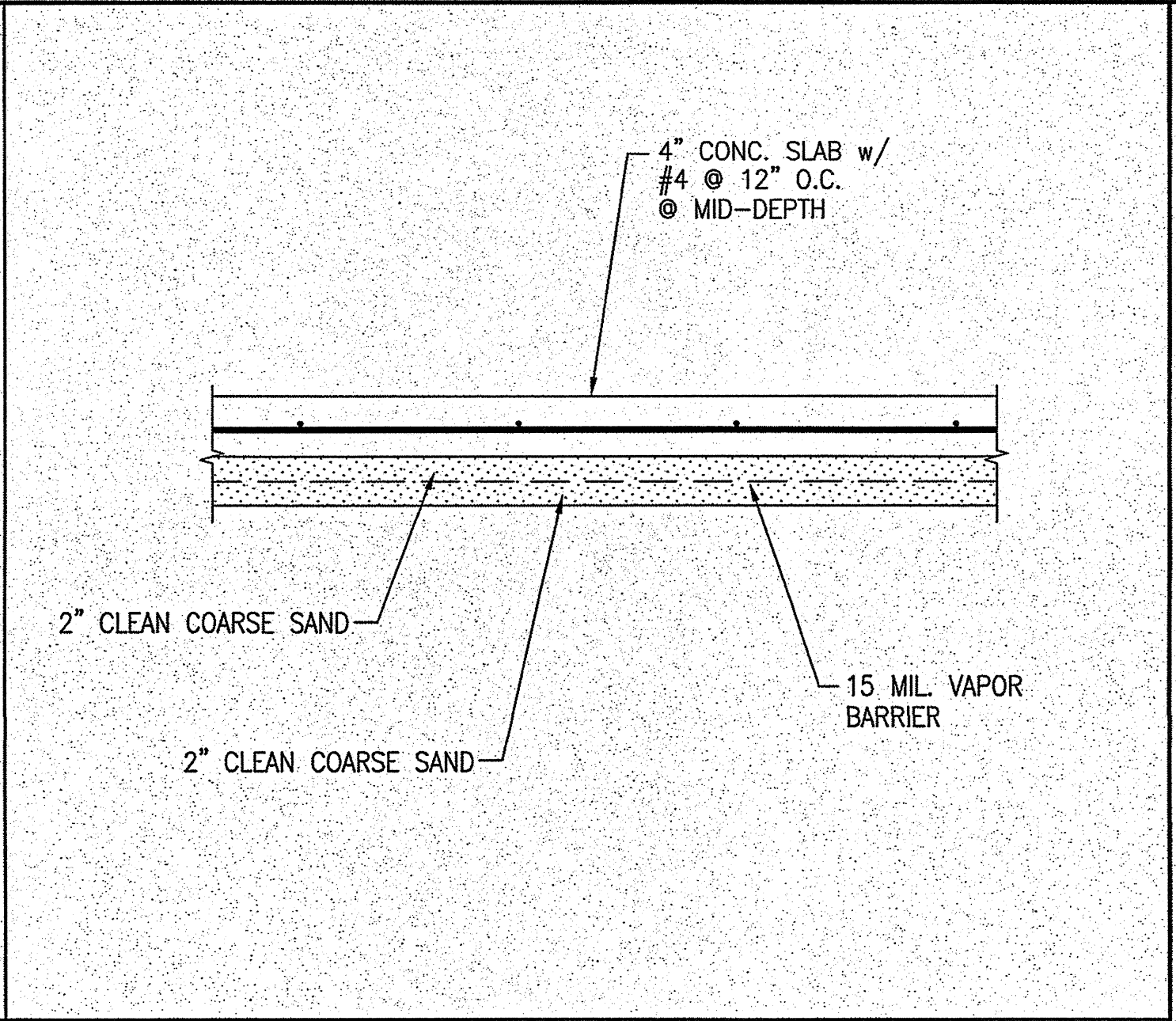
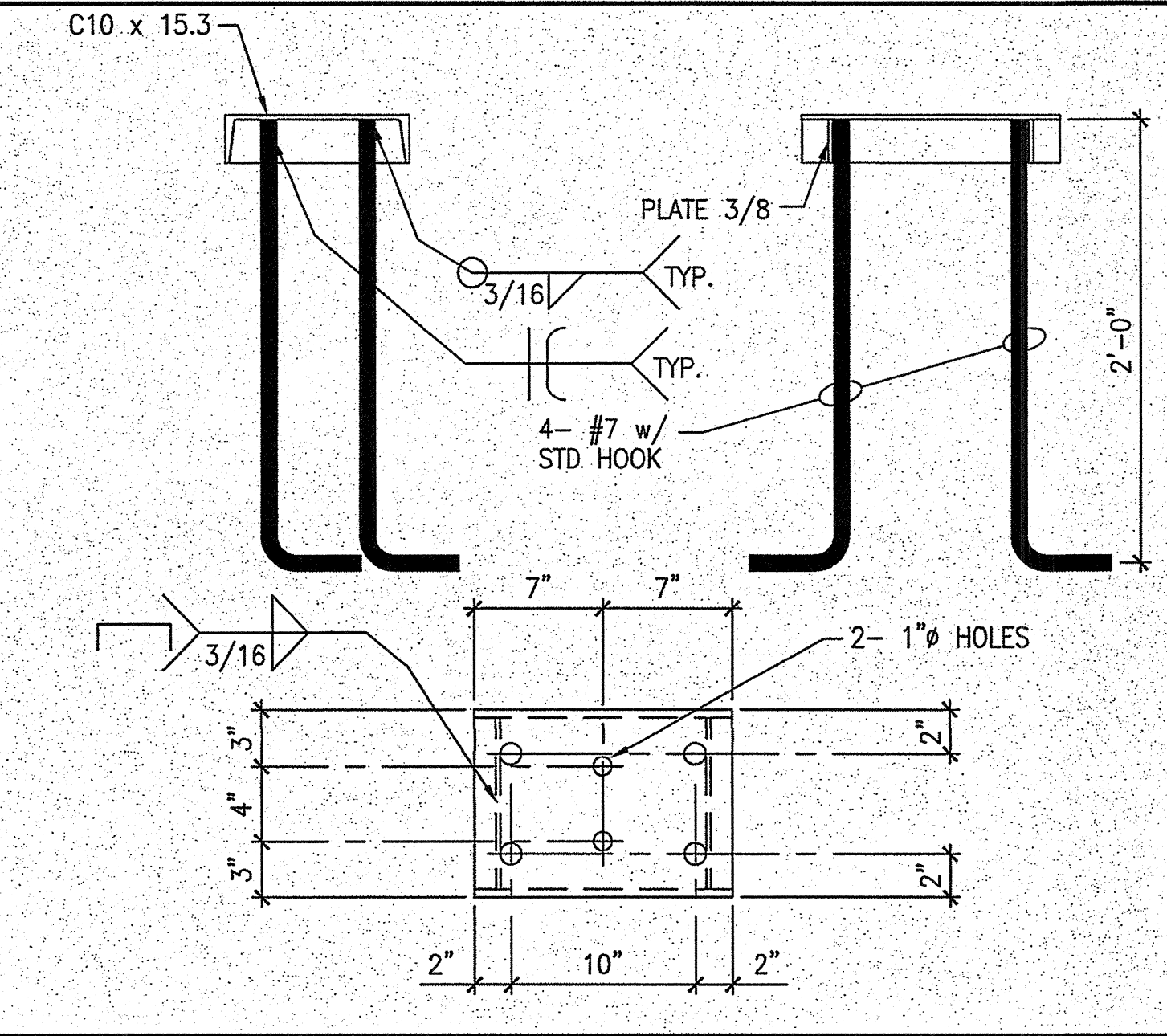
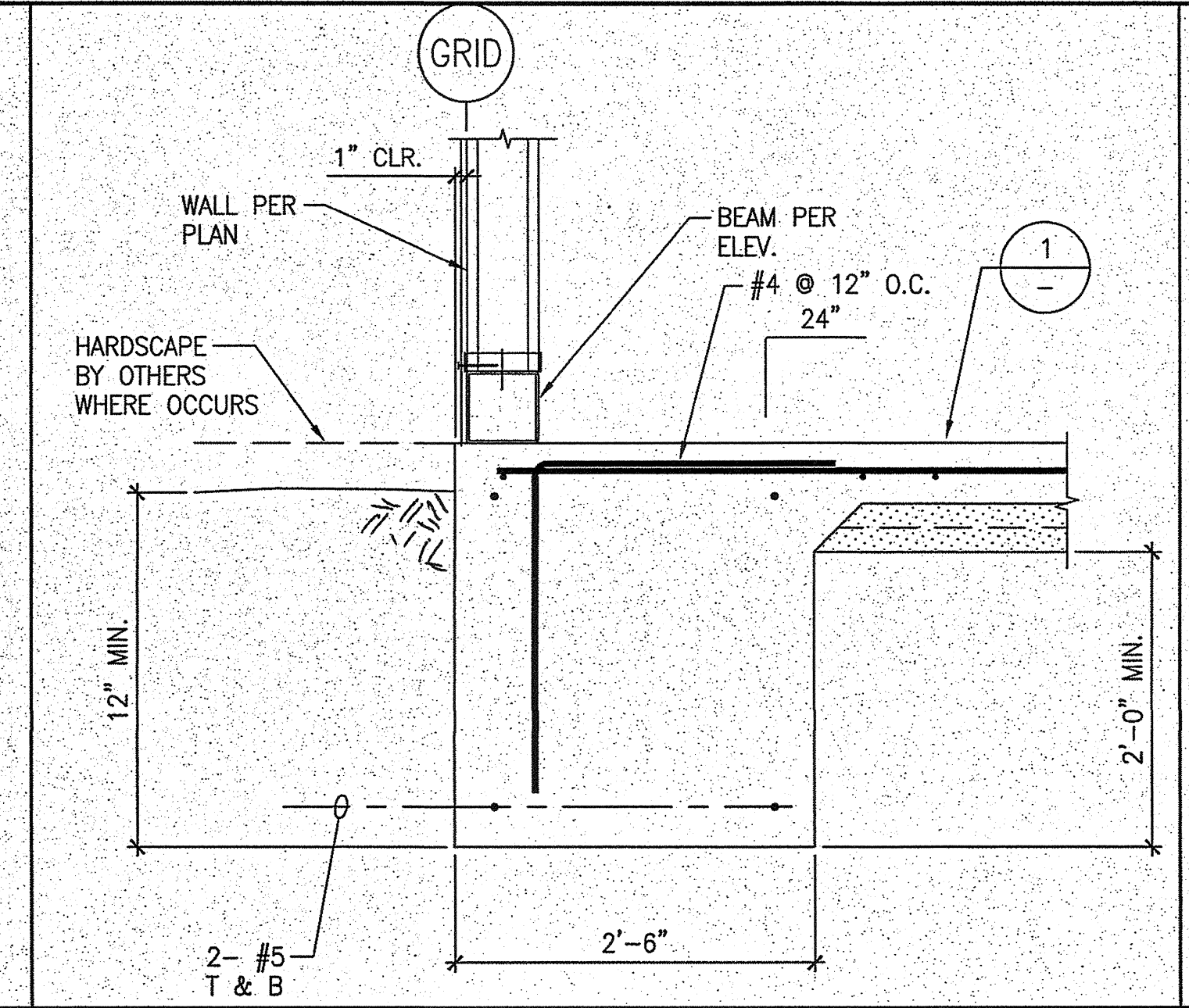
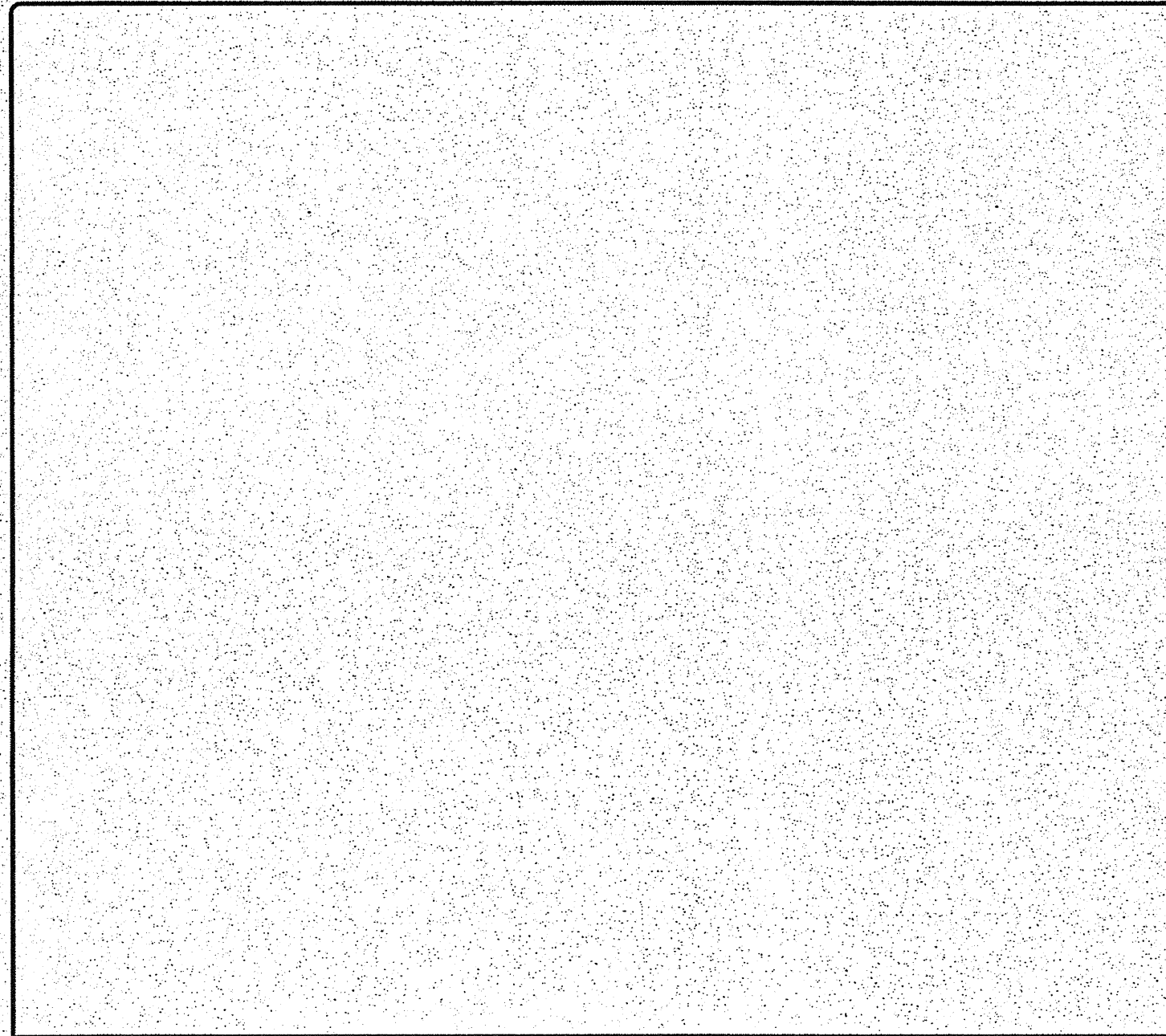
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DRAWN BY: B.N.  
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JOB NUMBER:  
DATE: 01/22/15  
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SHEET NAME:  
**FRAME  
DETAILS**

SHEET NO.  
**S5.9**

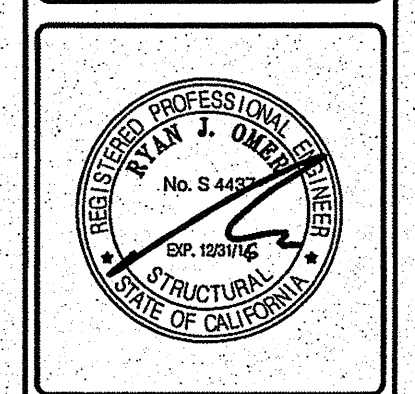




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STRUCTURAL ENGINEER OF RECORD  
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Structural Engineering, Inc.  
12257 OLD POMEREO ROAD, SUITE A  
POWER CENTER  
PHONES: 805/76-1974  
FAX: 805/619-1975

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SCALE: AS NOTED

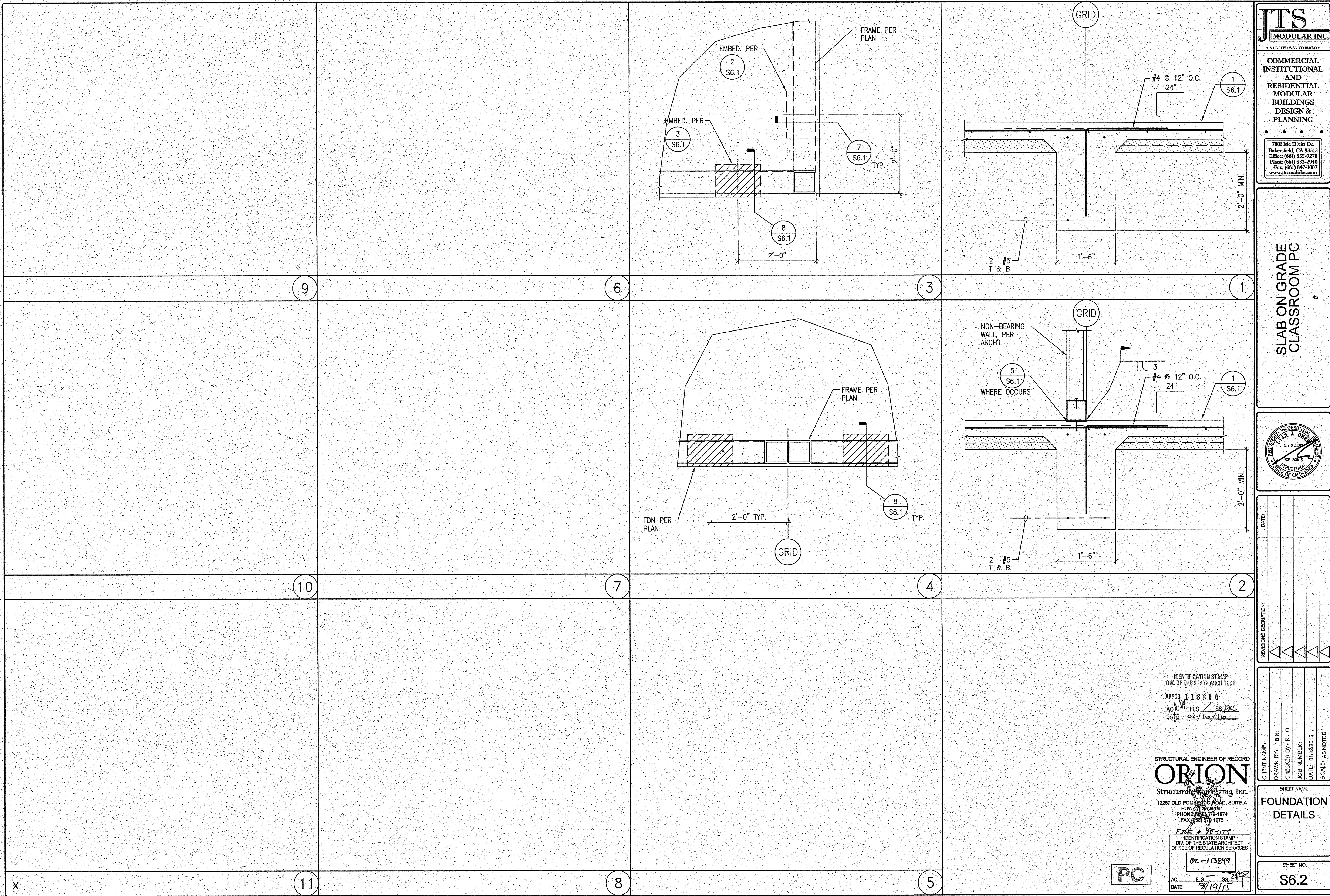
SHEET NO.  
**FOUNDATION  
DETAILS**

SHEET NO.  
**S6.1**

PC

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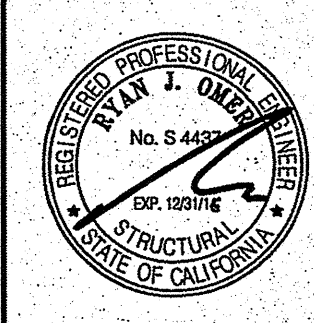




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IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT  
 APPROX 116810  
 AC FLS SS PKL  
 DATE 02/19/16

STRUCTURAL ENGINEER OF RECORD  
**ORION**  
 Structural Engineering, Inc.  
 12257 OLD POMEROY ROAD, SUITE A  
 FOWLER, CA 95634  
 PHONE: (916) 975-1874  
 FAX: (916) 975-1975

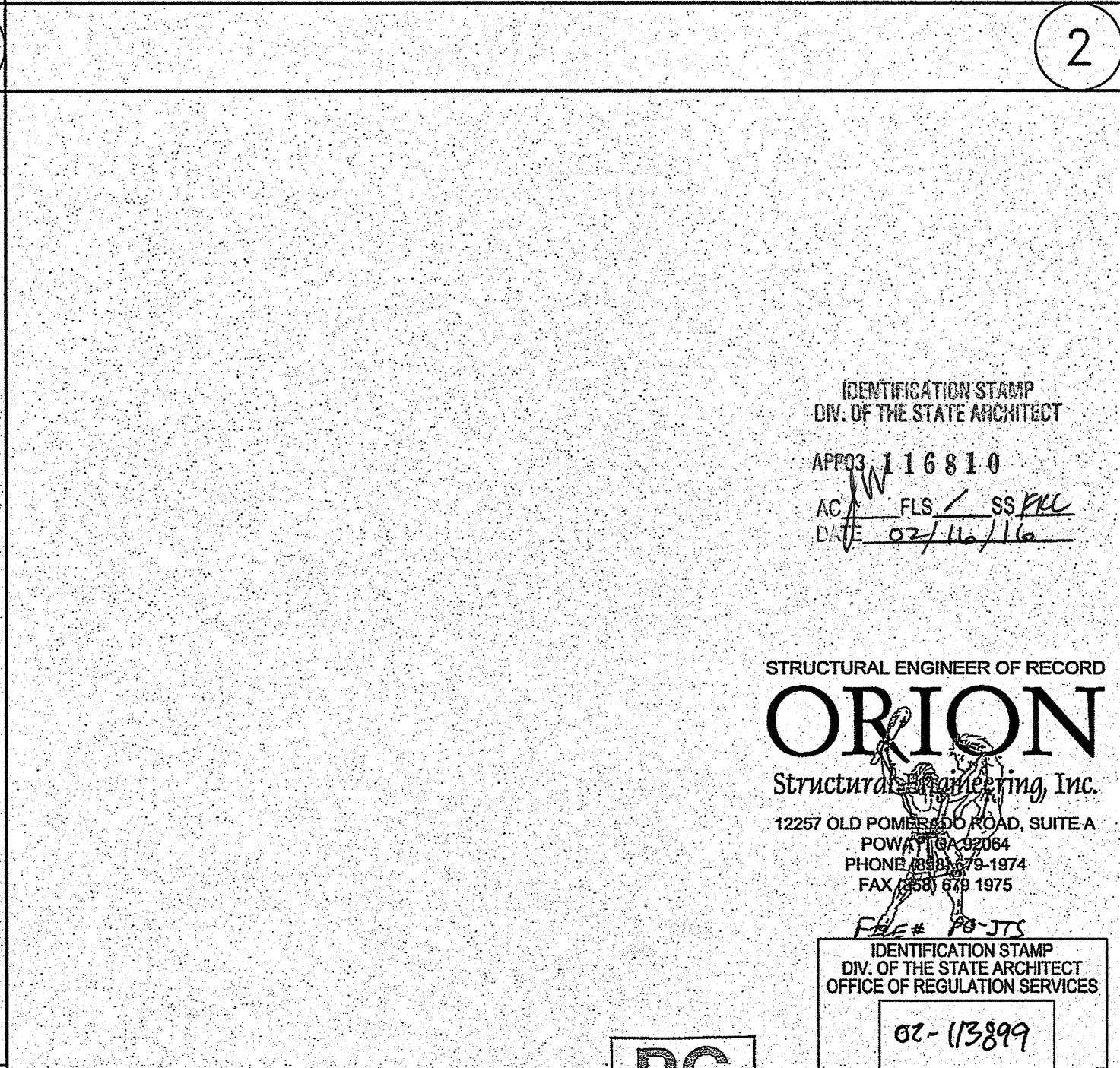
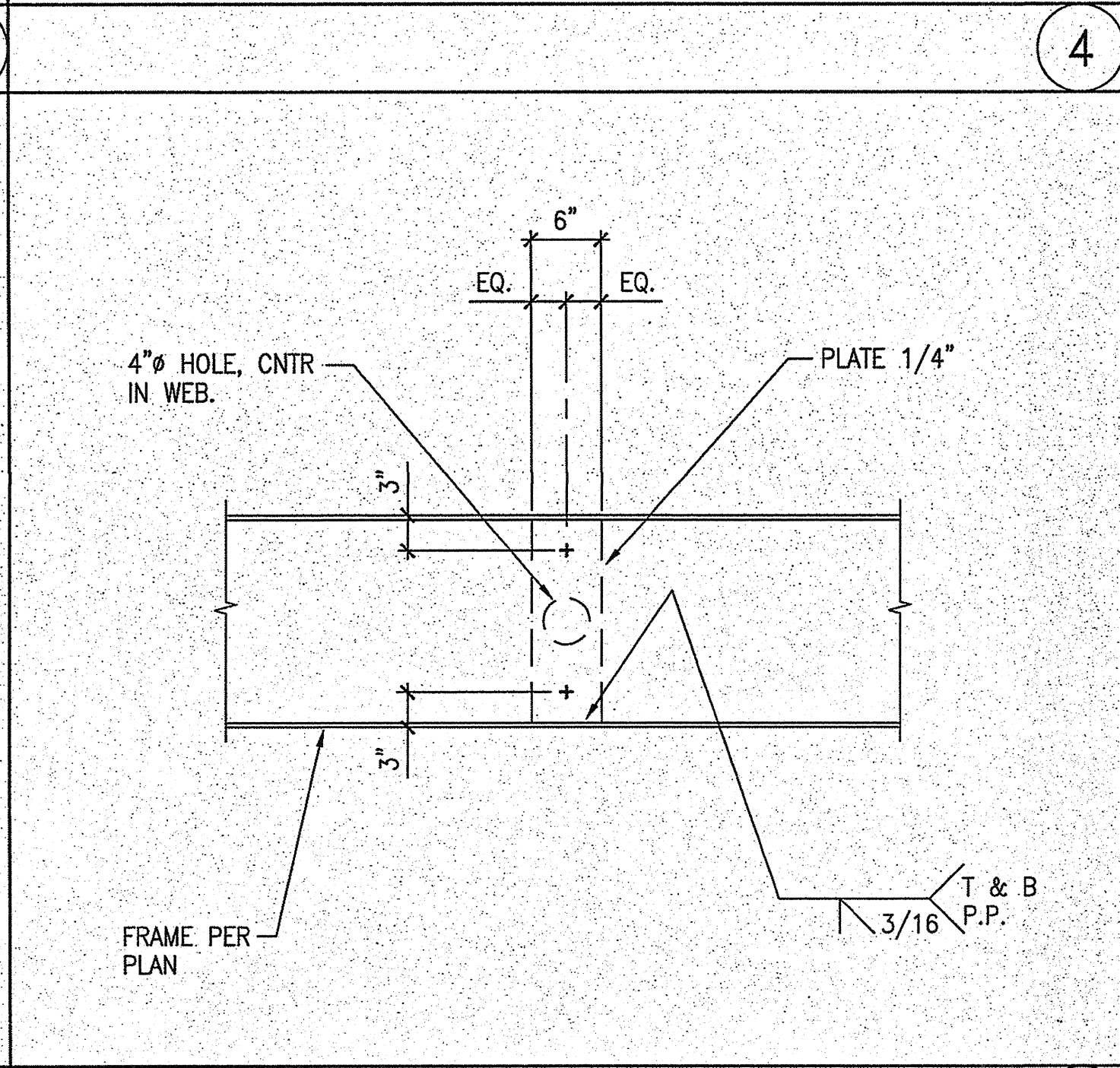
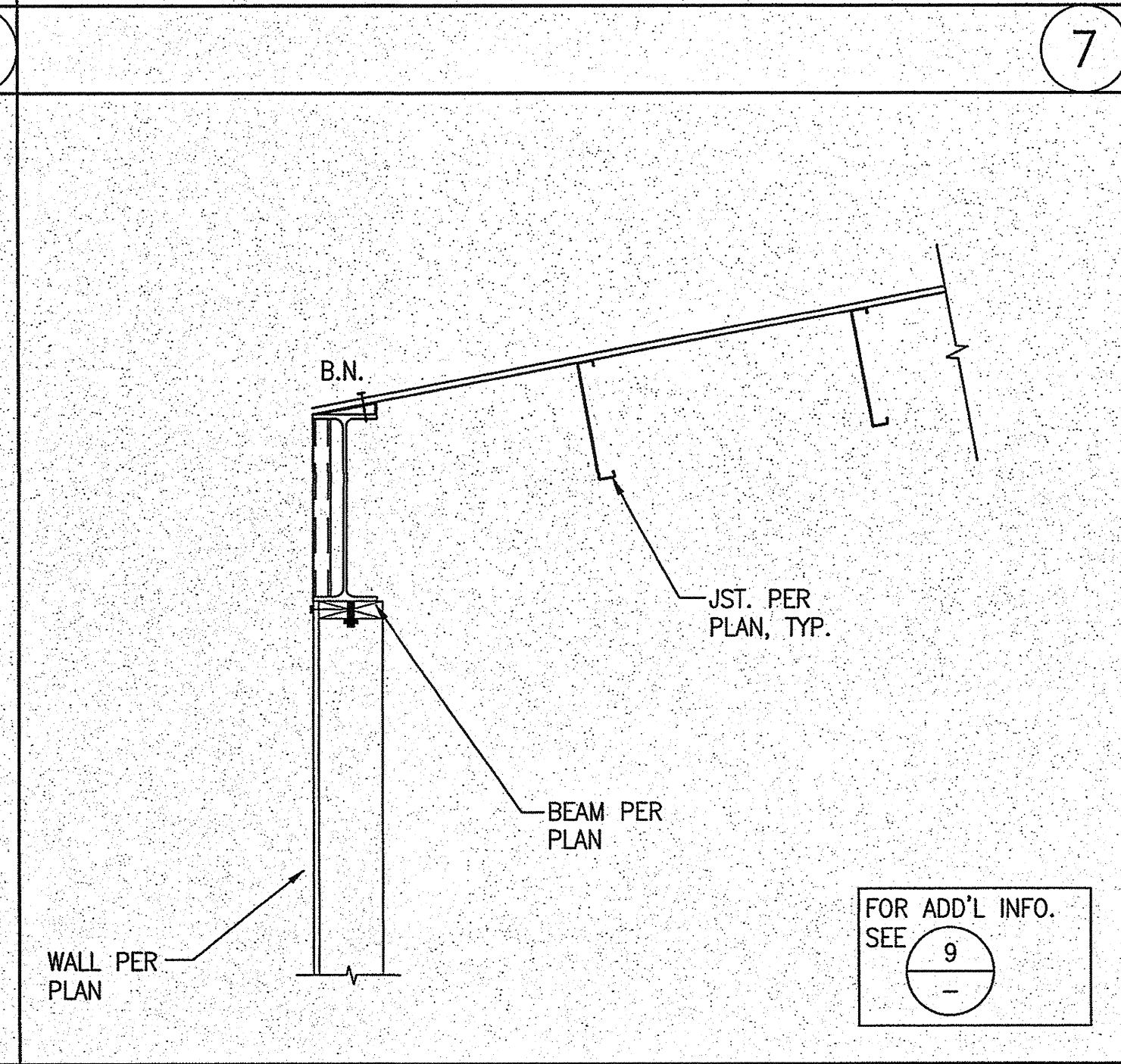
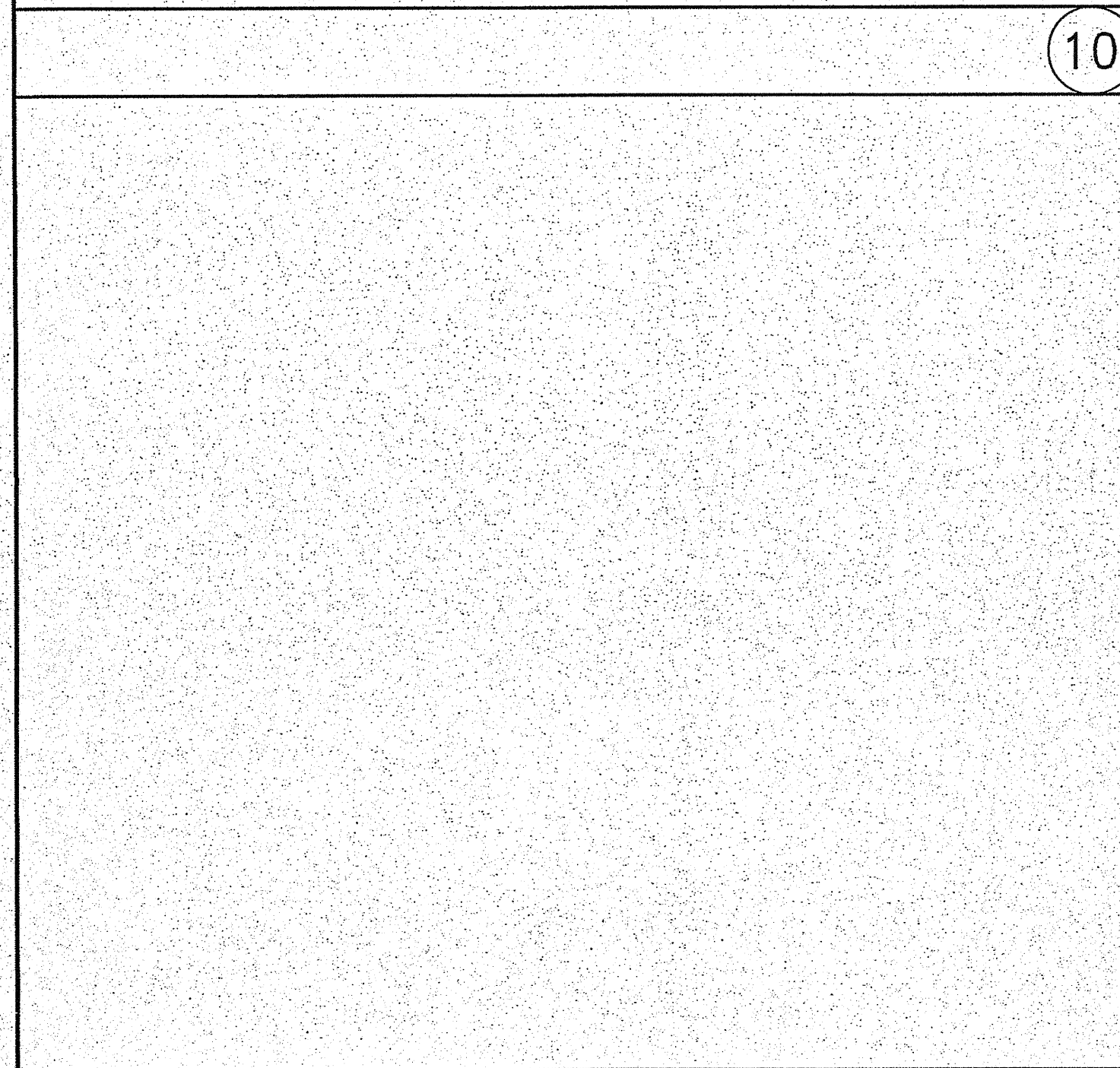
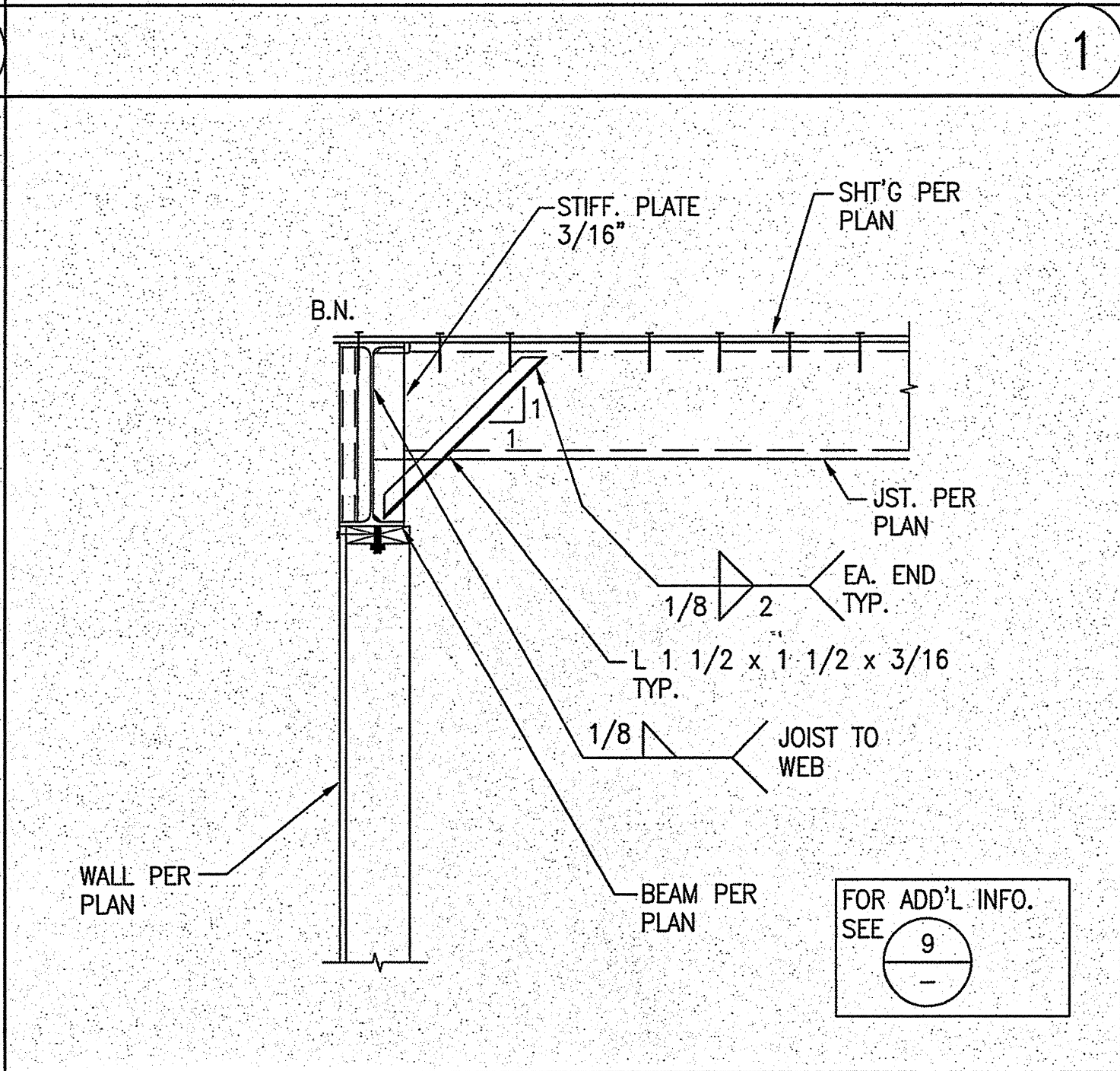
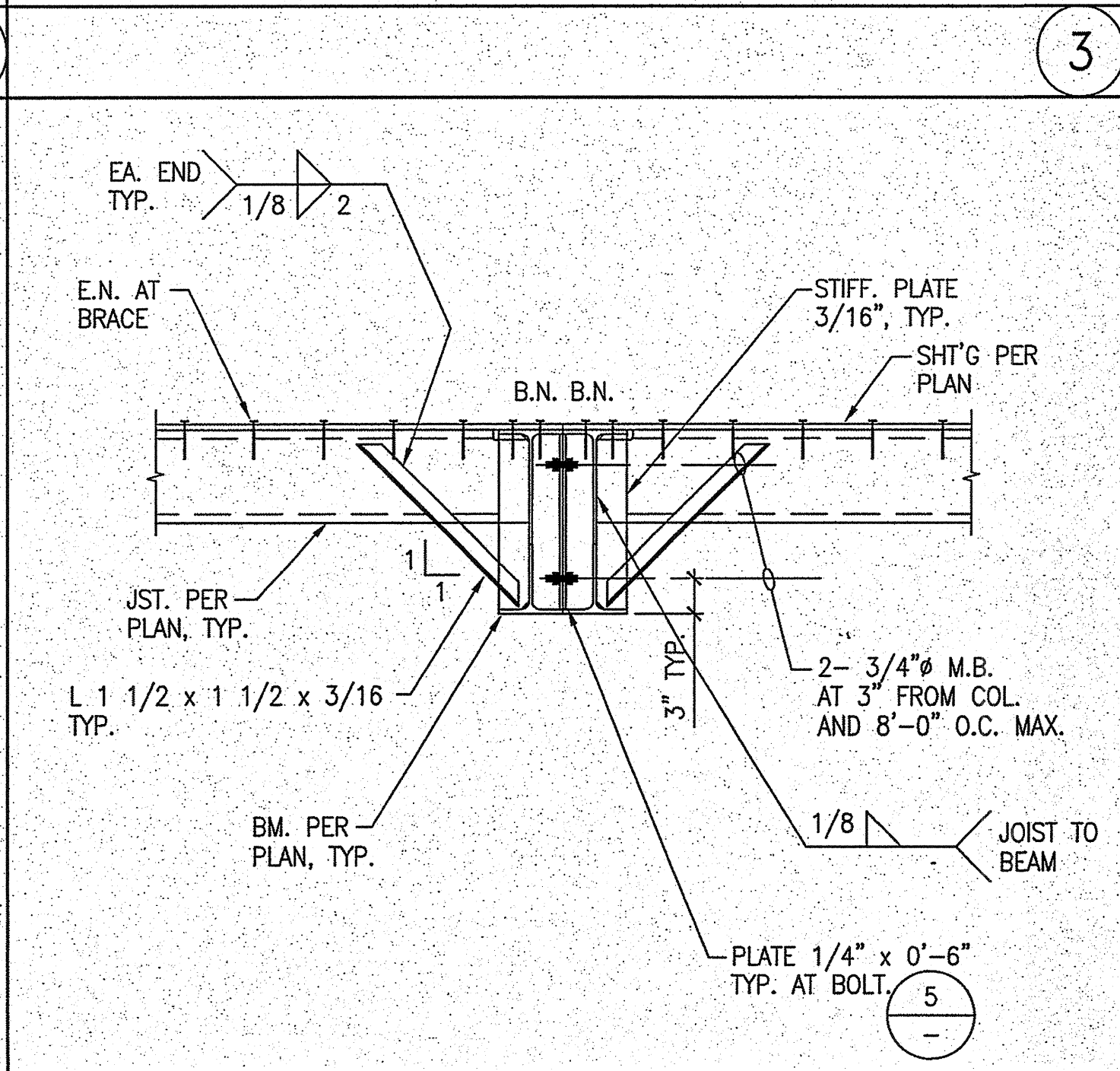
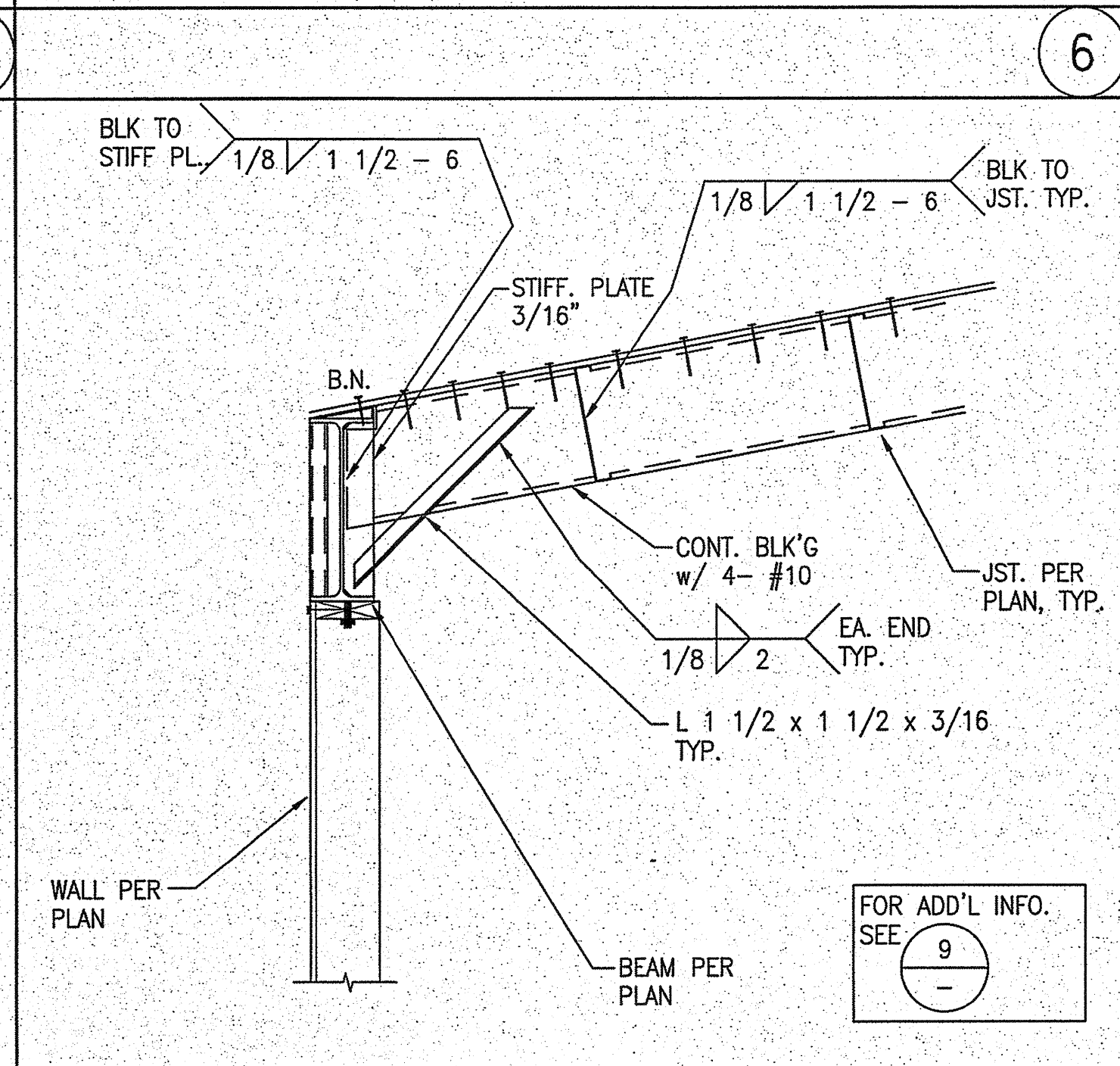
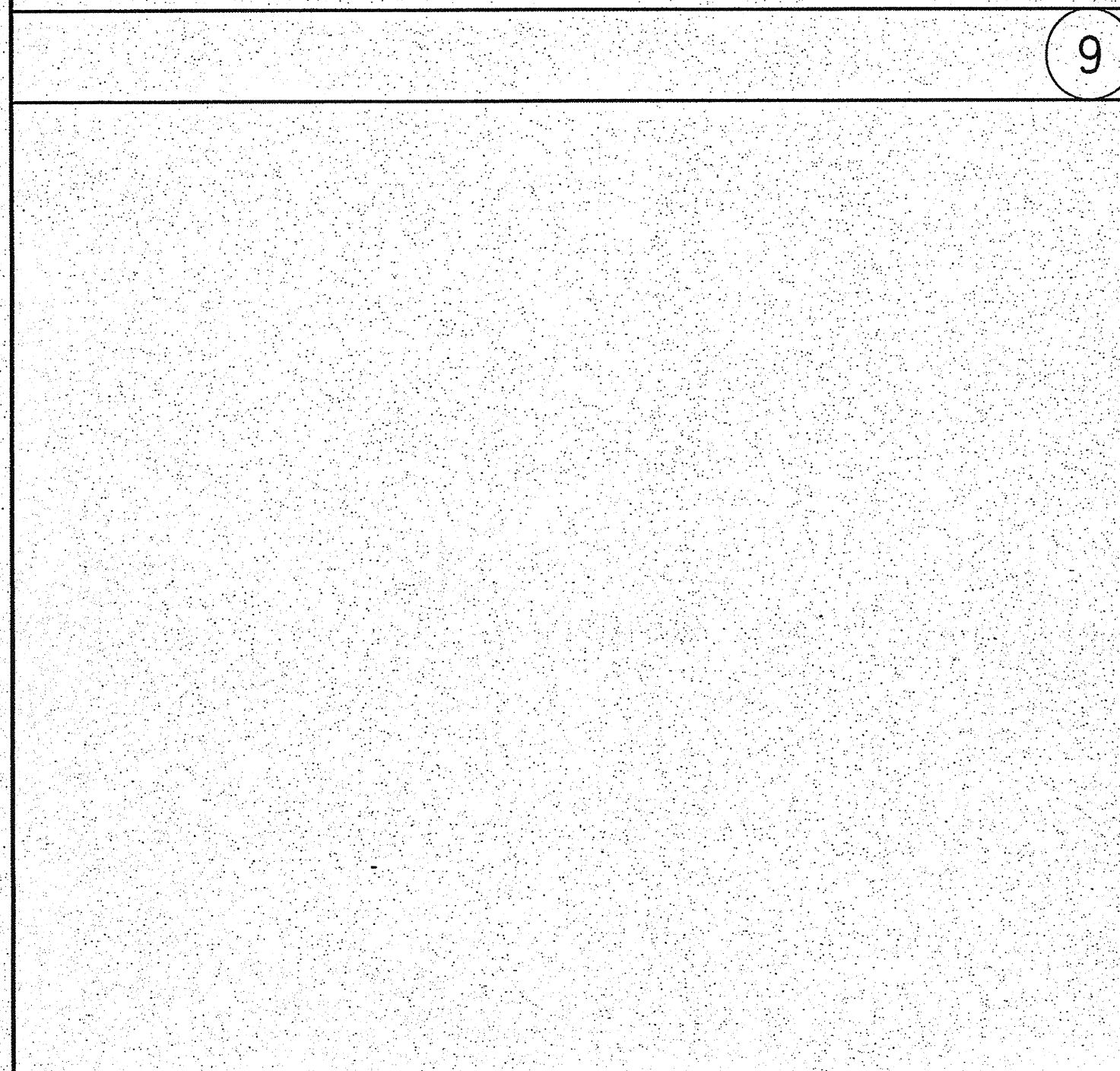
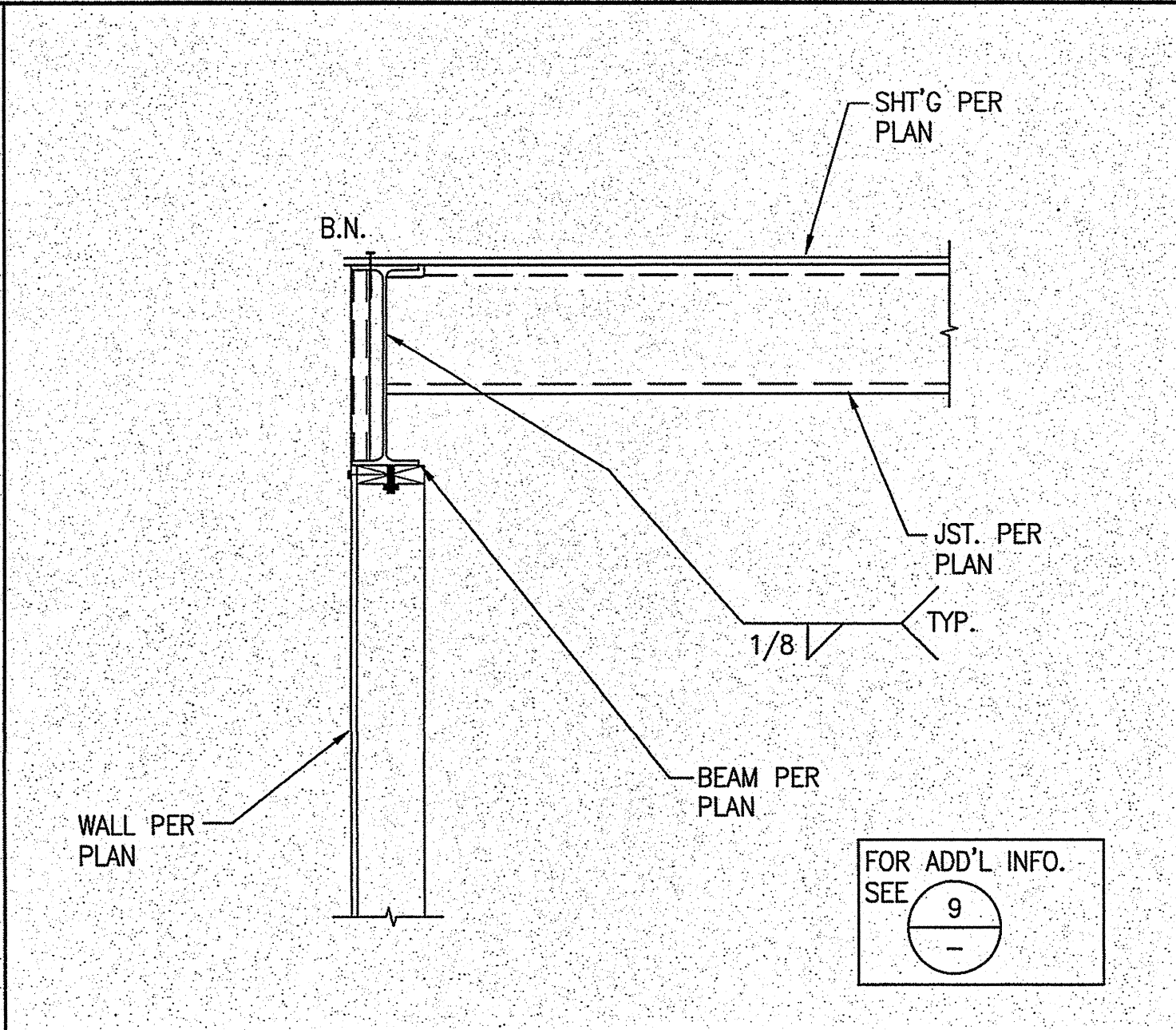
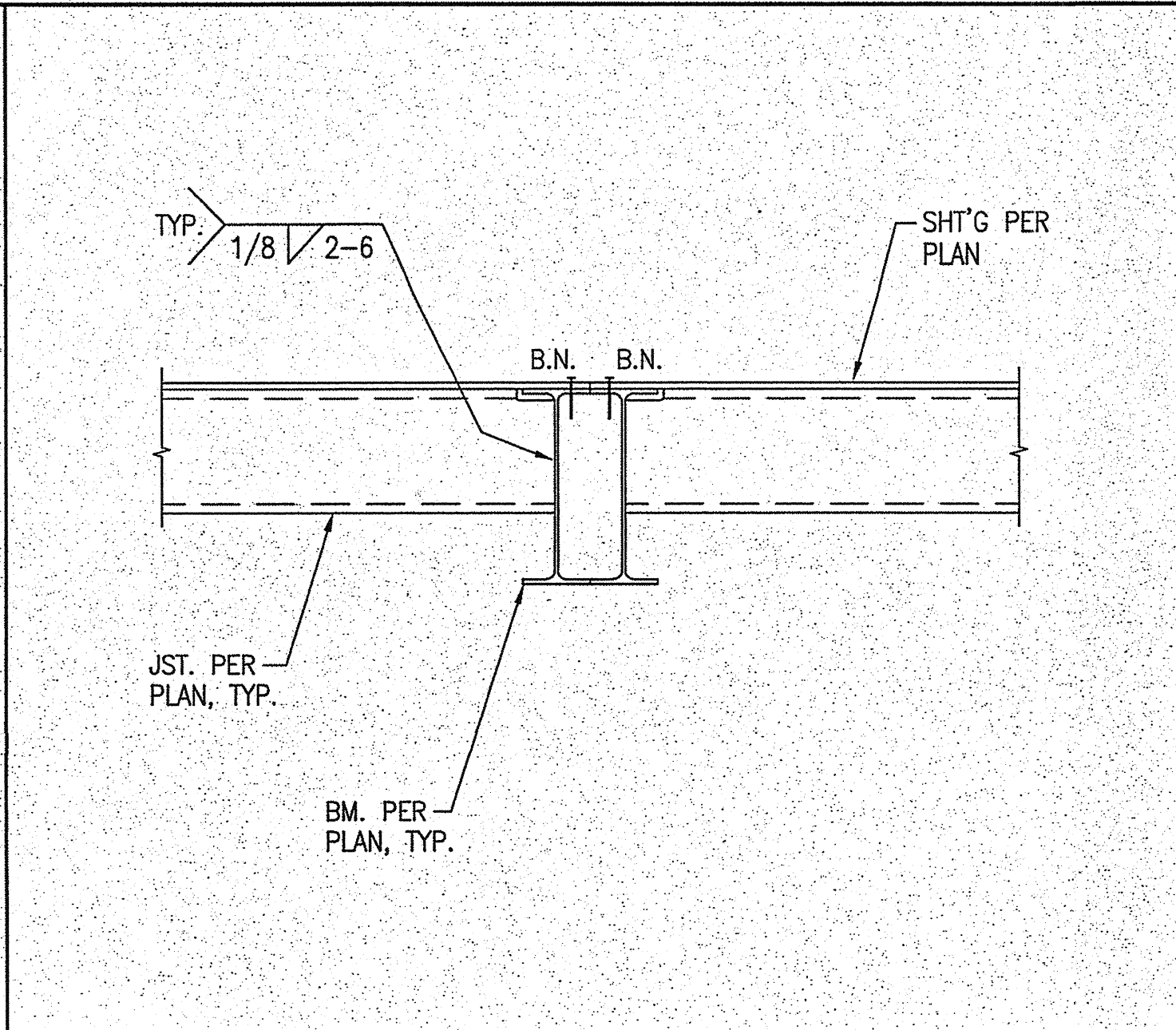
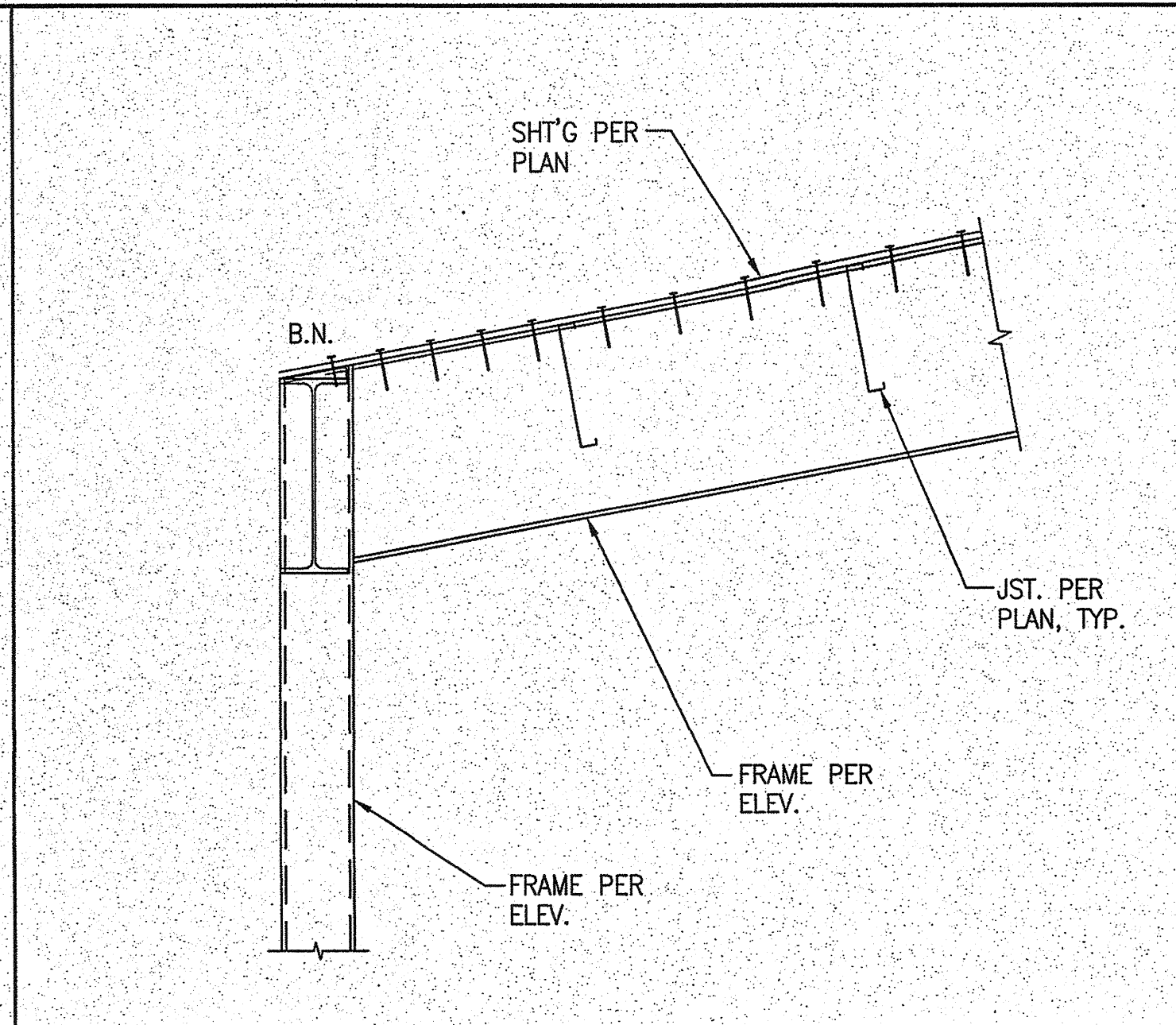
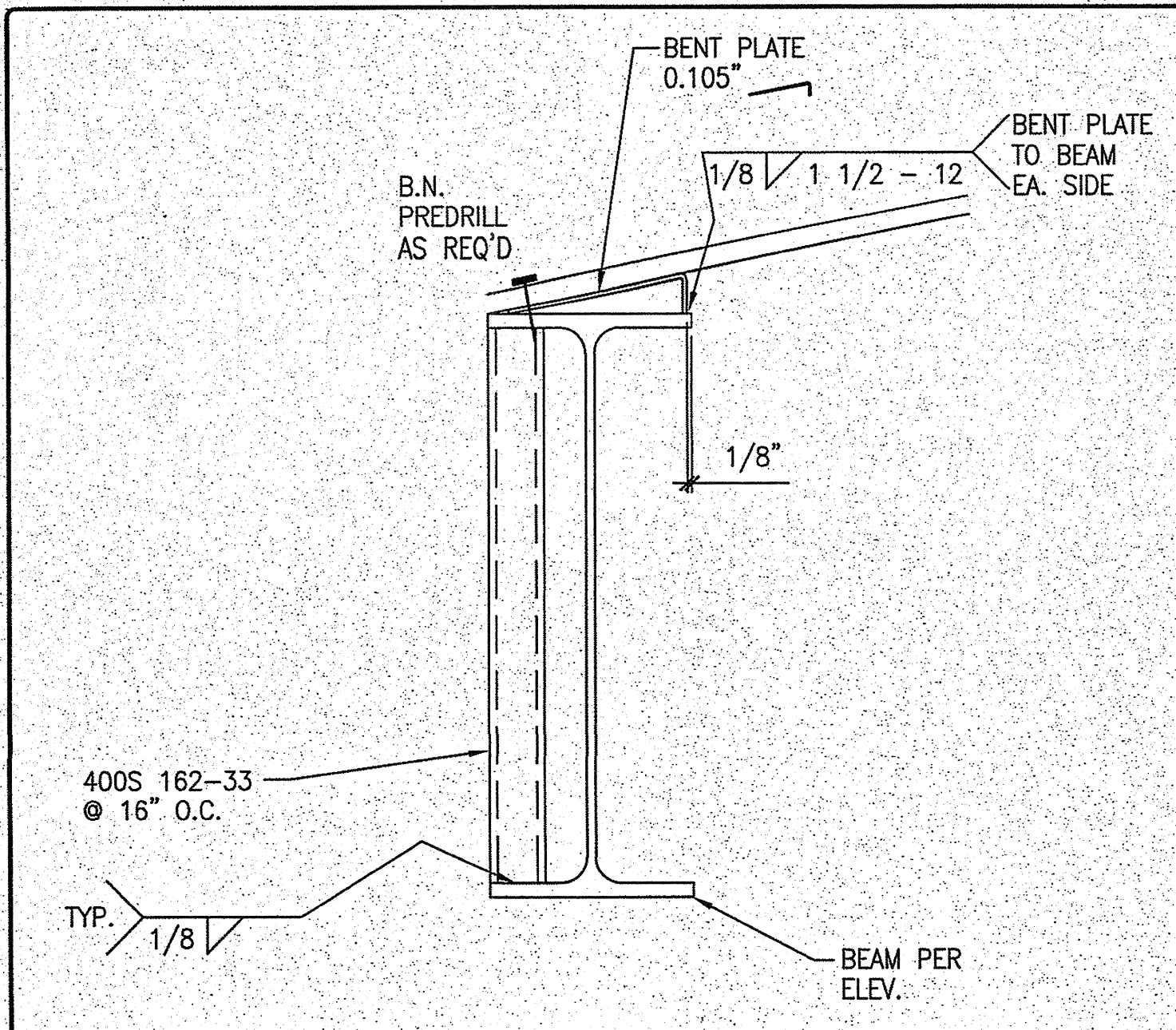
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 OFFICE OF REGULATION SERVICES  
 02-113899  
 AC FLS SS PKL  
 DATE 3/19/15

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| CLIENT NAME: |                    |
| DRAWN BY:    | B.N.               |
| CHECKED BY:  | R.J.O.             |
| JOB NUMBER:  | 01122016           |
| DATE:        | 01/12/2016         |
| SCALE:       | AS NOTED           |
| SHEET NAME:  | FOUNDATION DETAILS |
| SHEET NO.:   | S6.2               |

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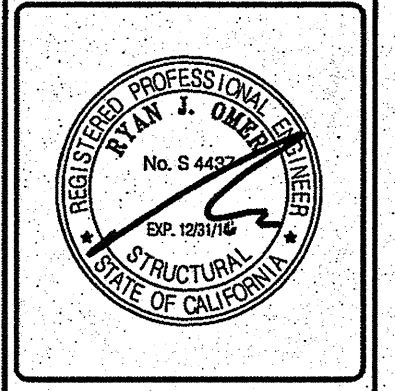




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STRUCTURAL ENGINEER OF RECORD  
**ORION**  
Structural Engineering Inc.  
12257 OLD POMEROY ROAD, SUITE A  
POWAY, CA 92564  
PHONE: (951) 975-1874  
FAX: (951) 975-1975

CLIENT NAME: B.N.  
DRAWN BY: B.N.  
CHECKED BY: R.J.O.  
JOB NUMBER: 01122016  
DATE: 01/12/2016  
SCALE: AS NOTED

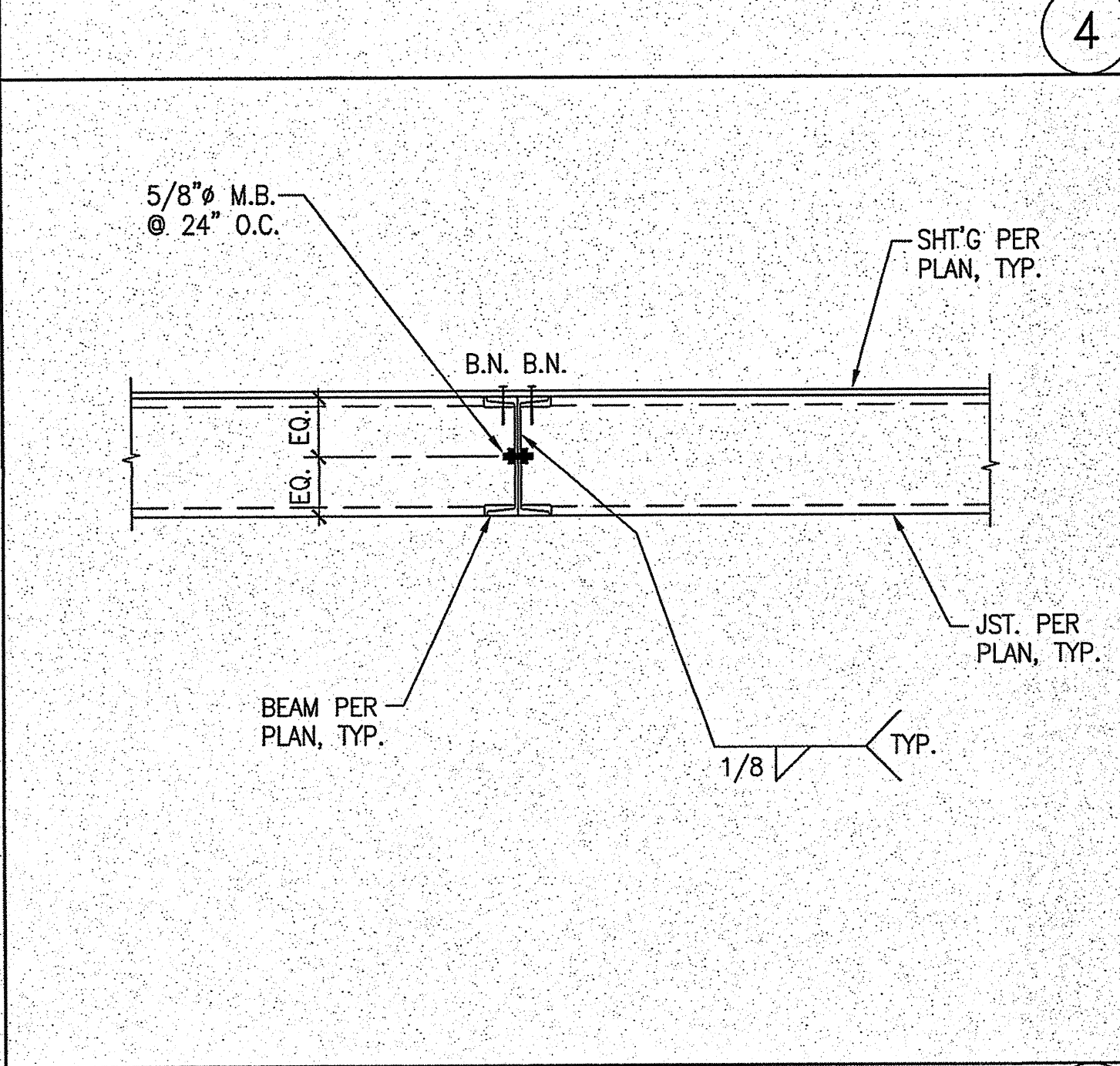
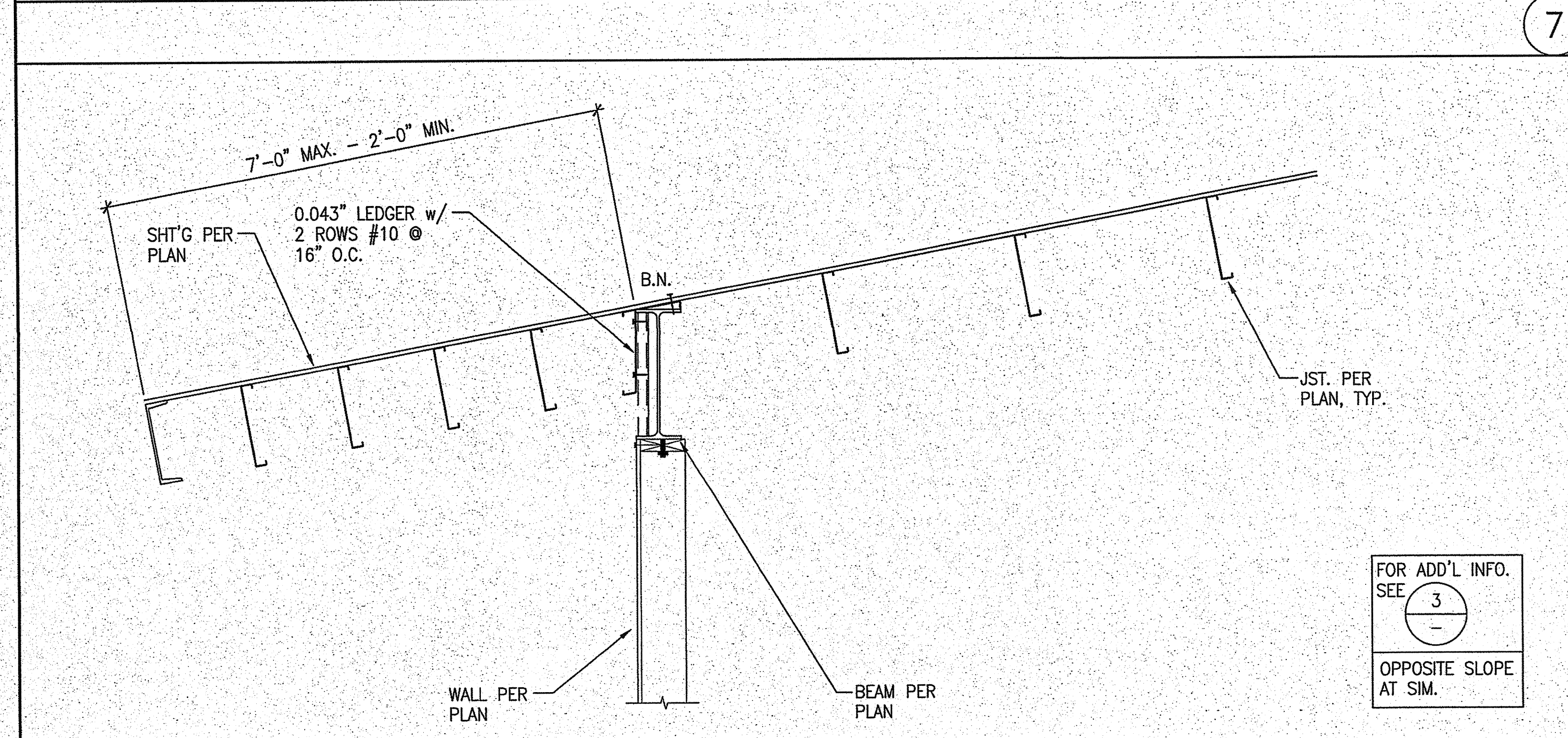
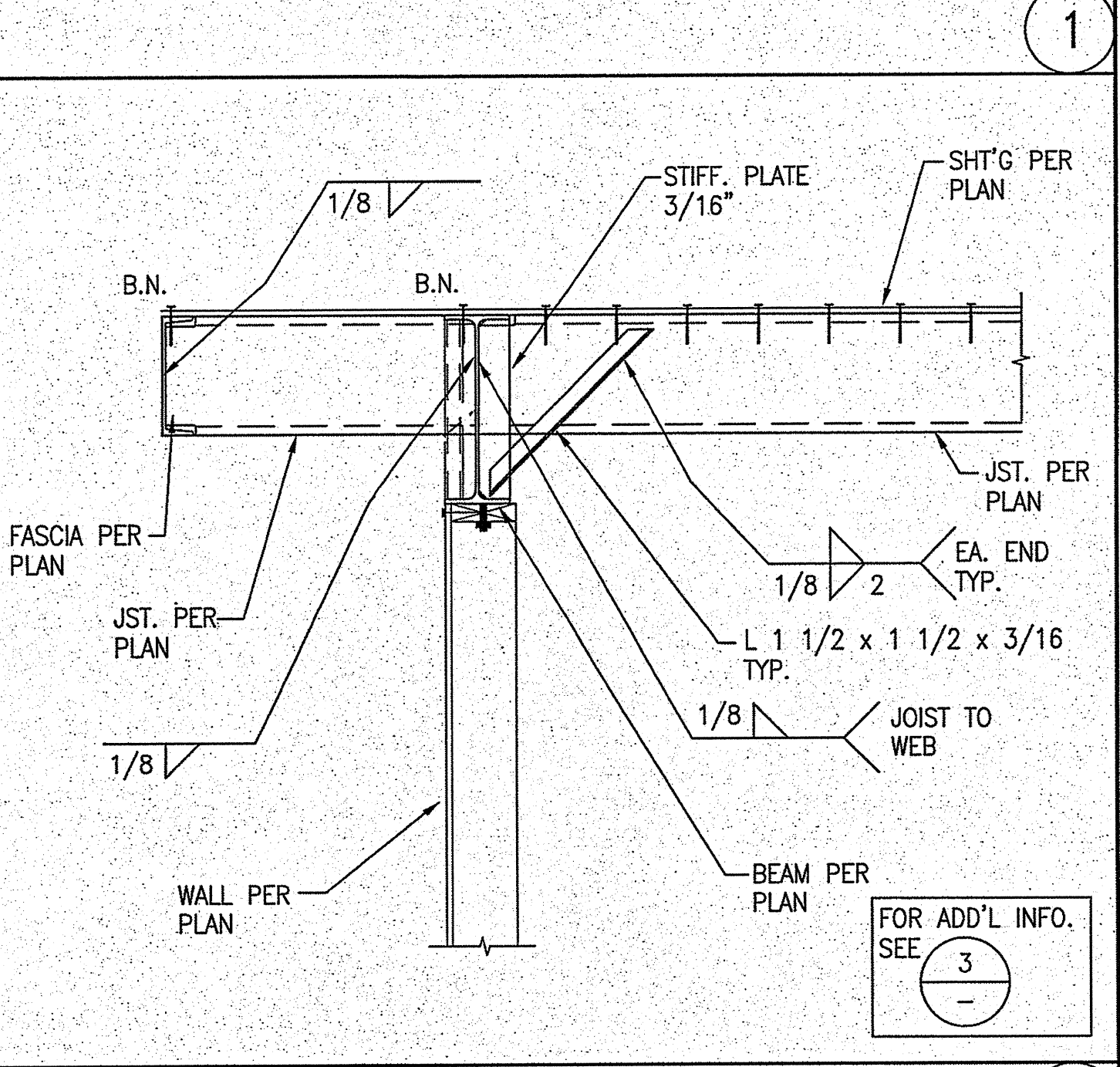
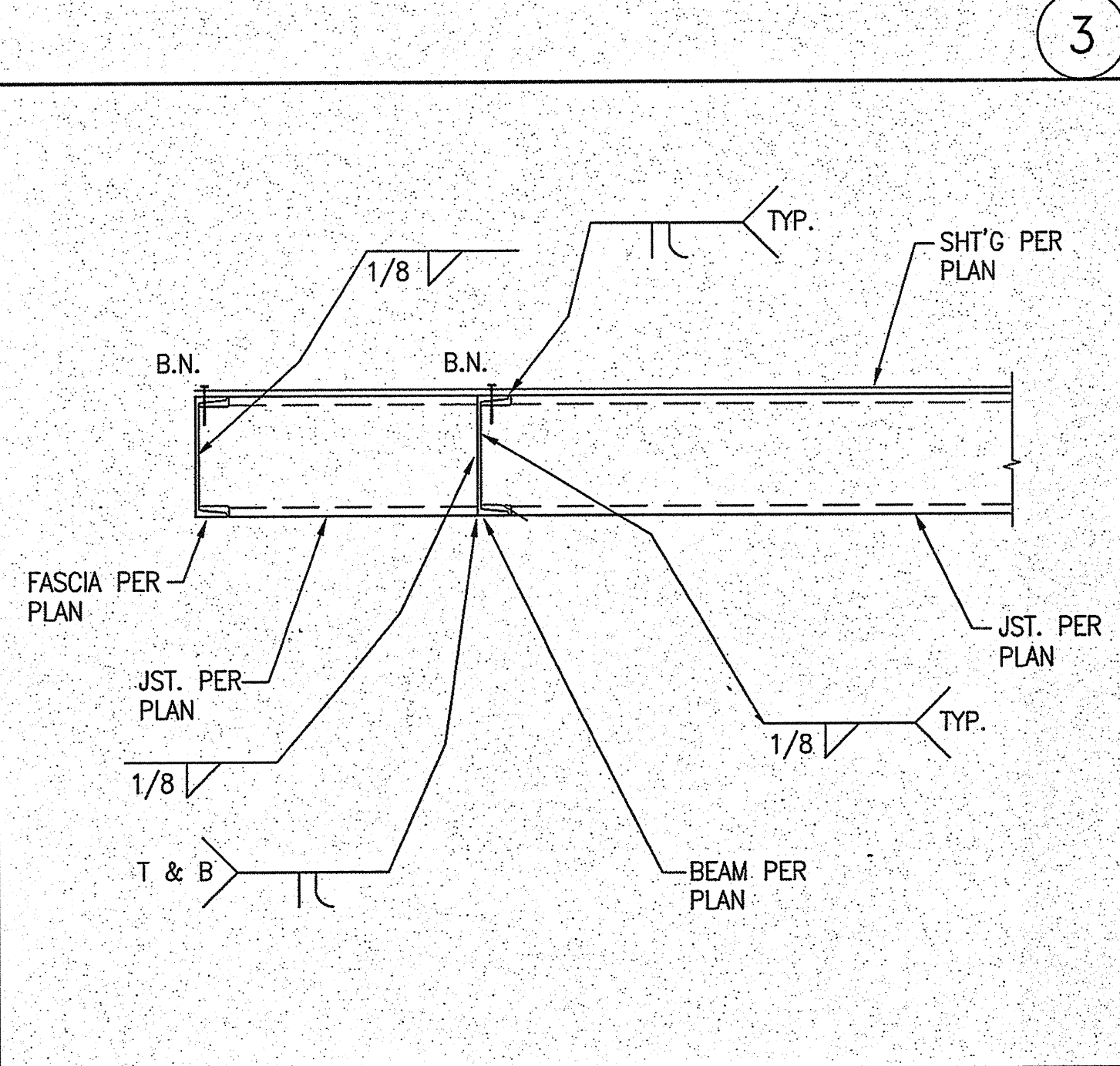
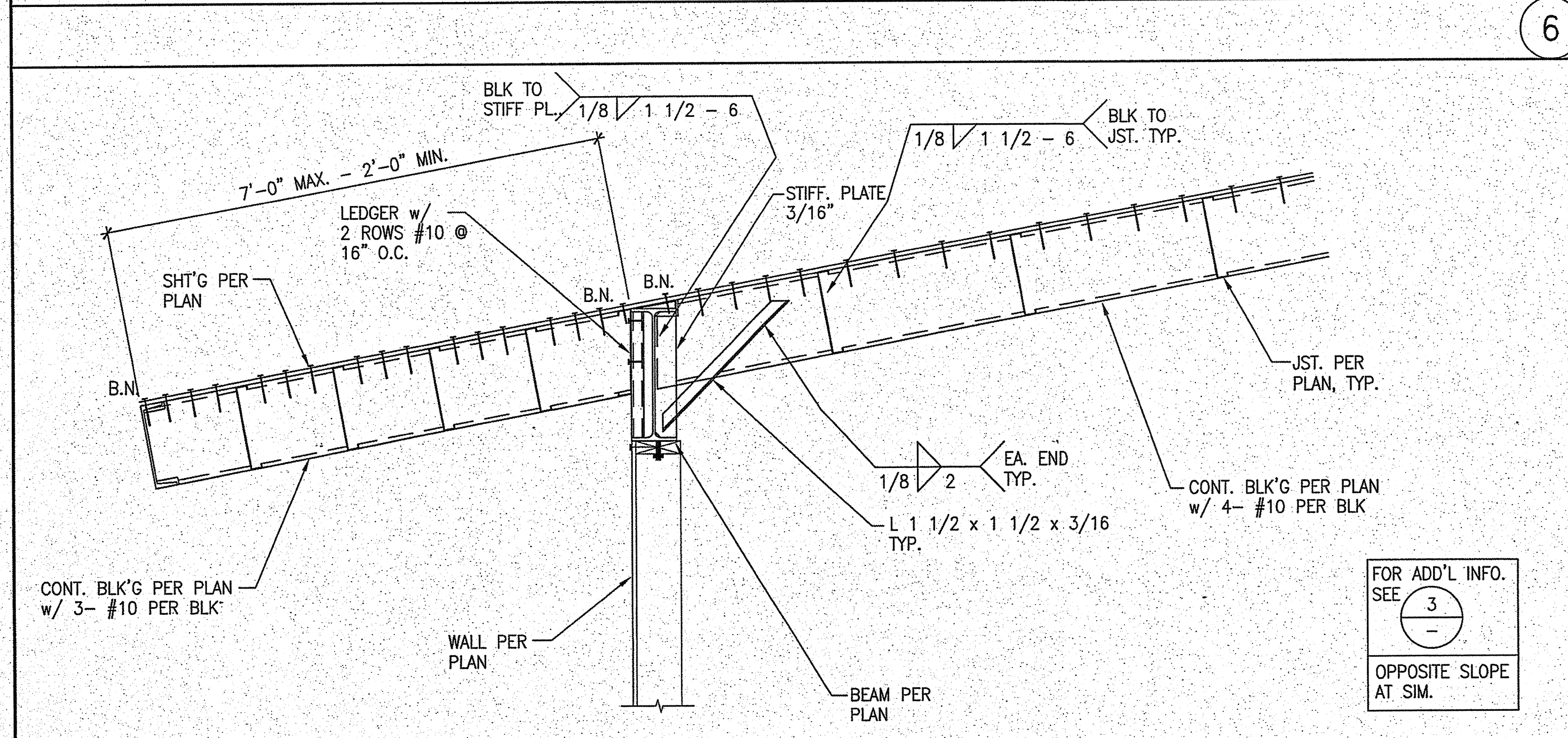
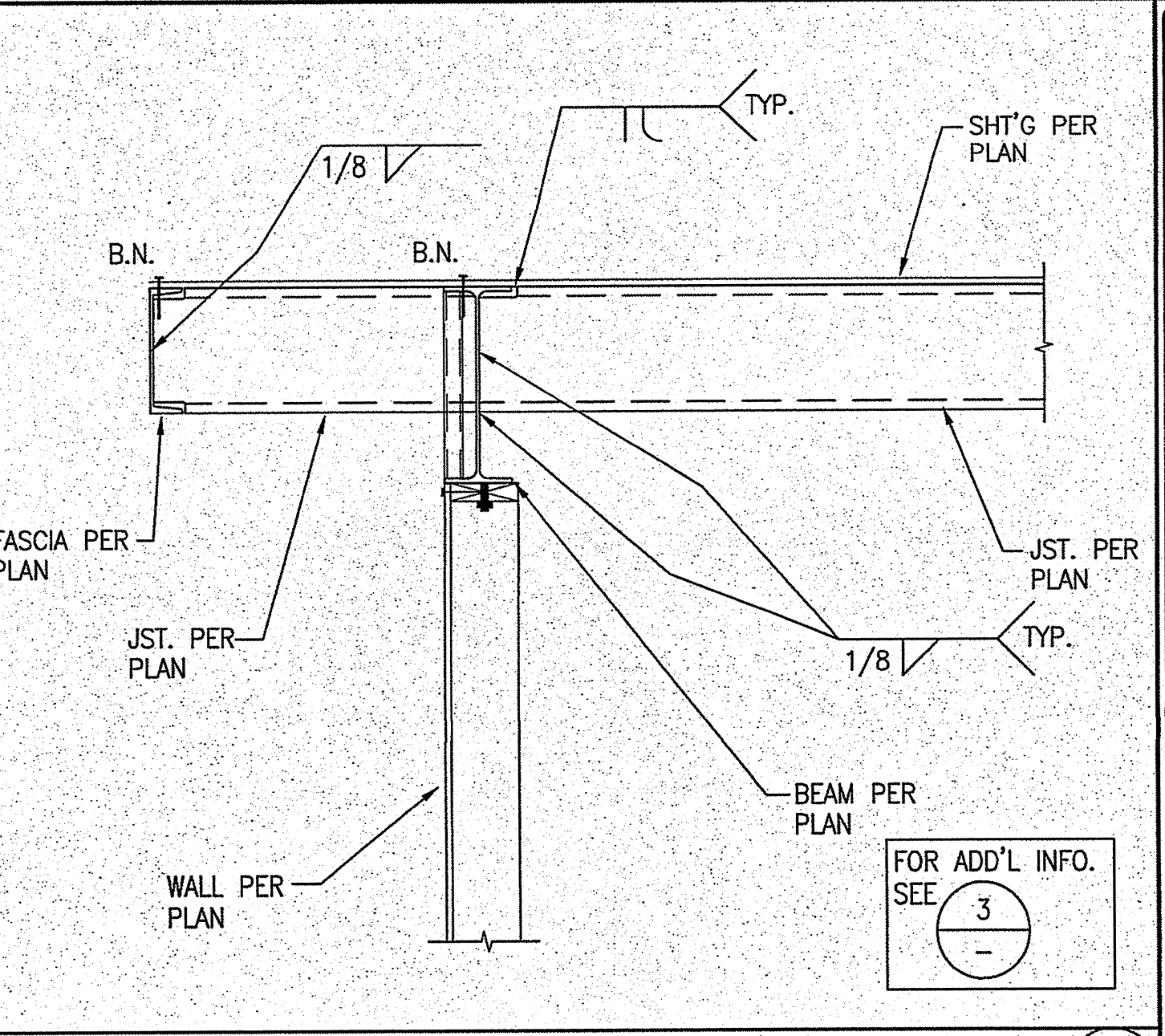
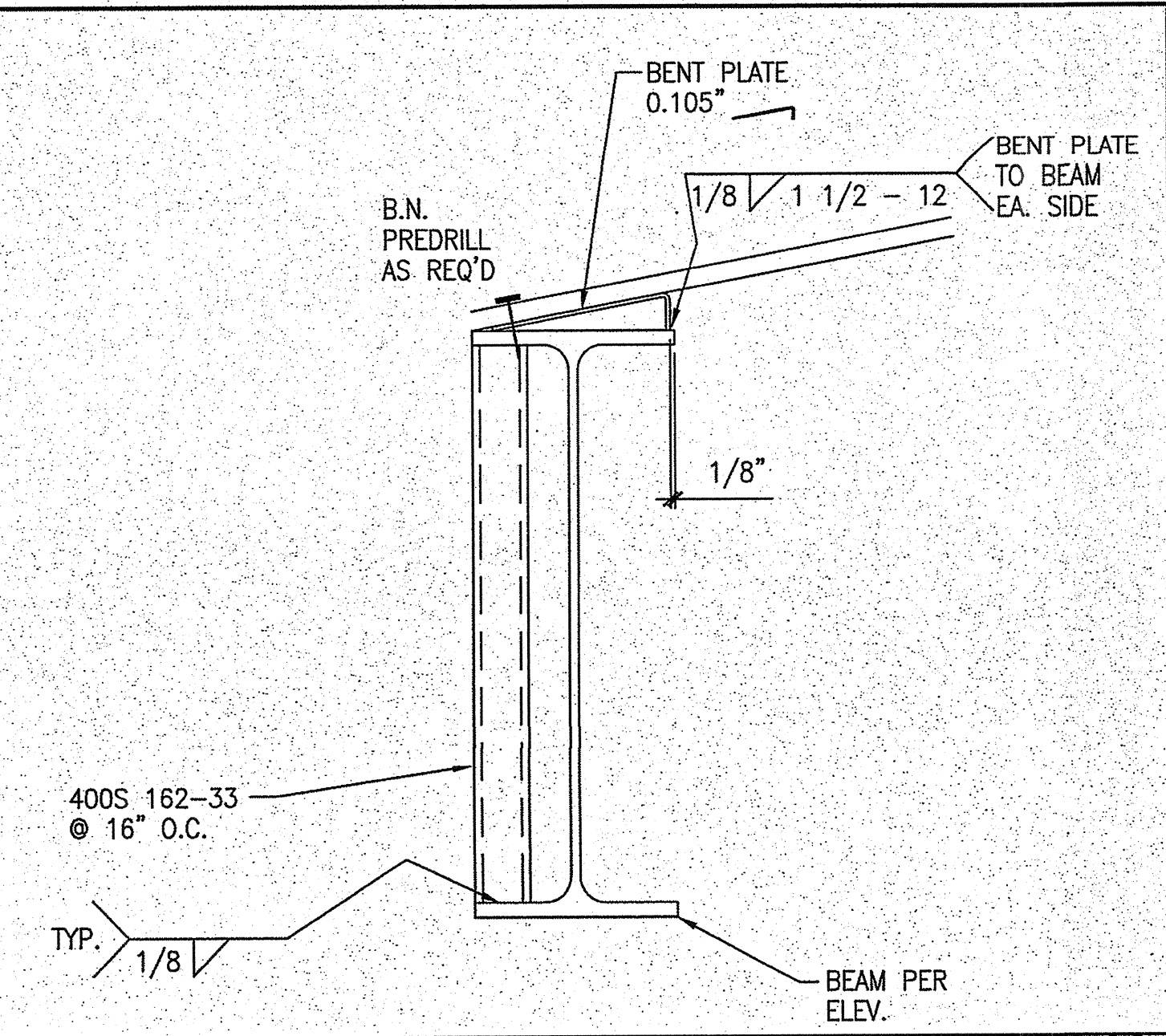
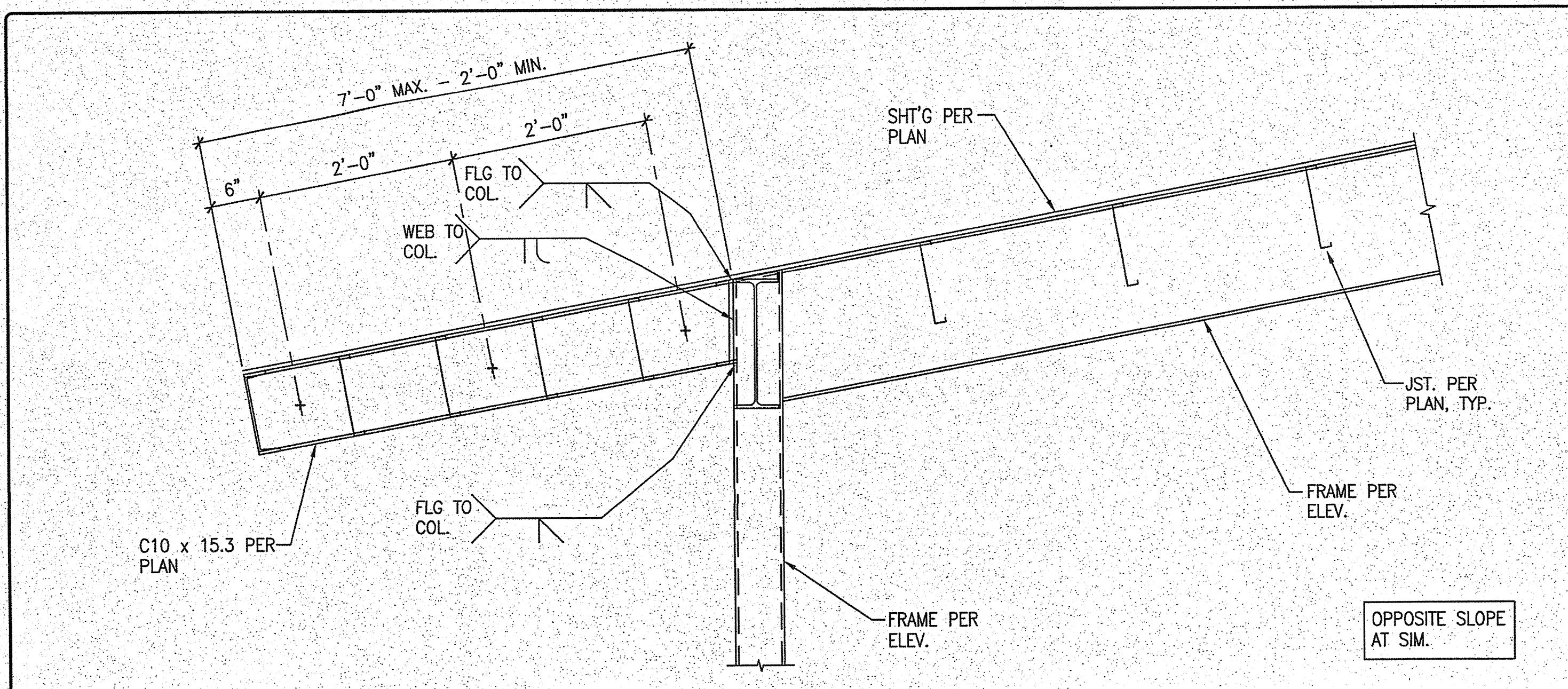
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**FRAMING  
DETAILS**

SHEET NO.  
**S7.1**

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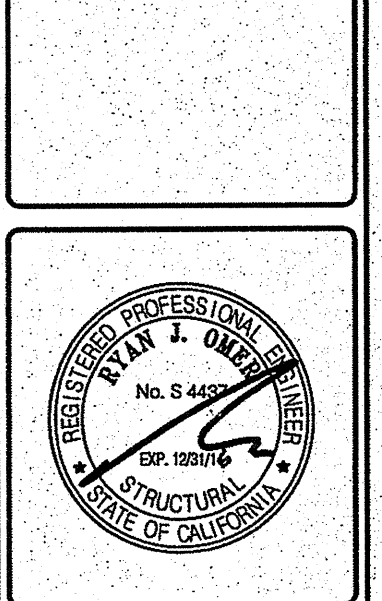


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| CHECKED BY:  | R.J.O.     |
| JOB NUMBER:  |            |
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DATE 02/16/16

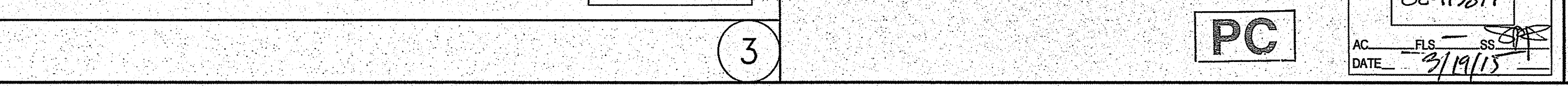
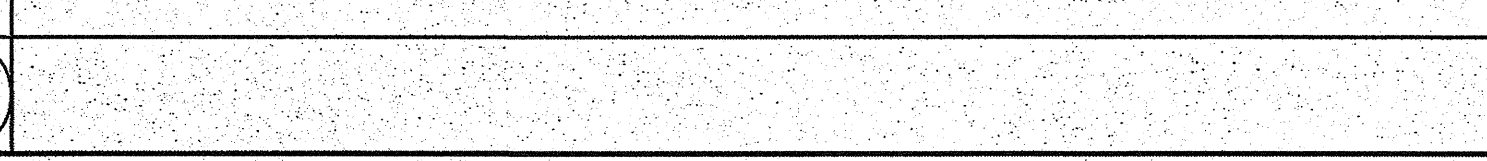
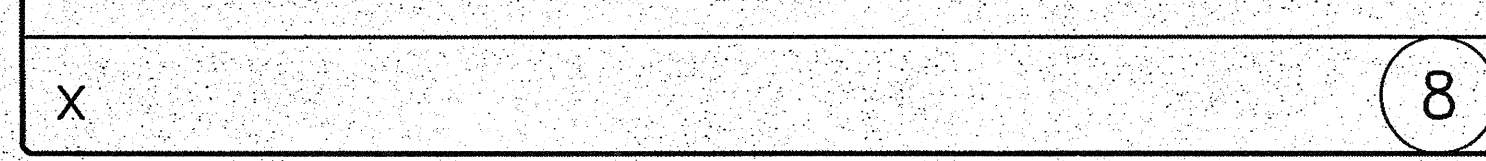
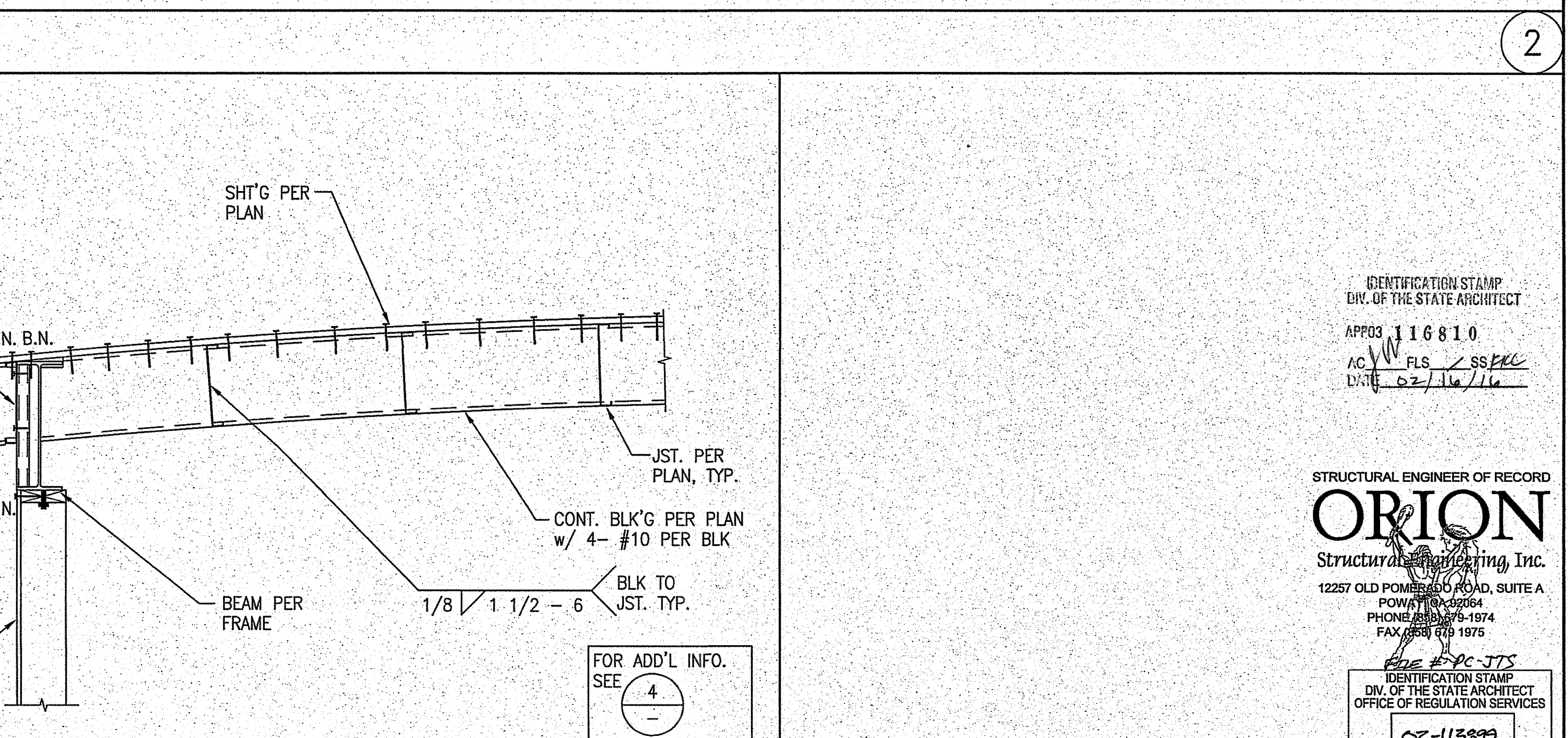
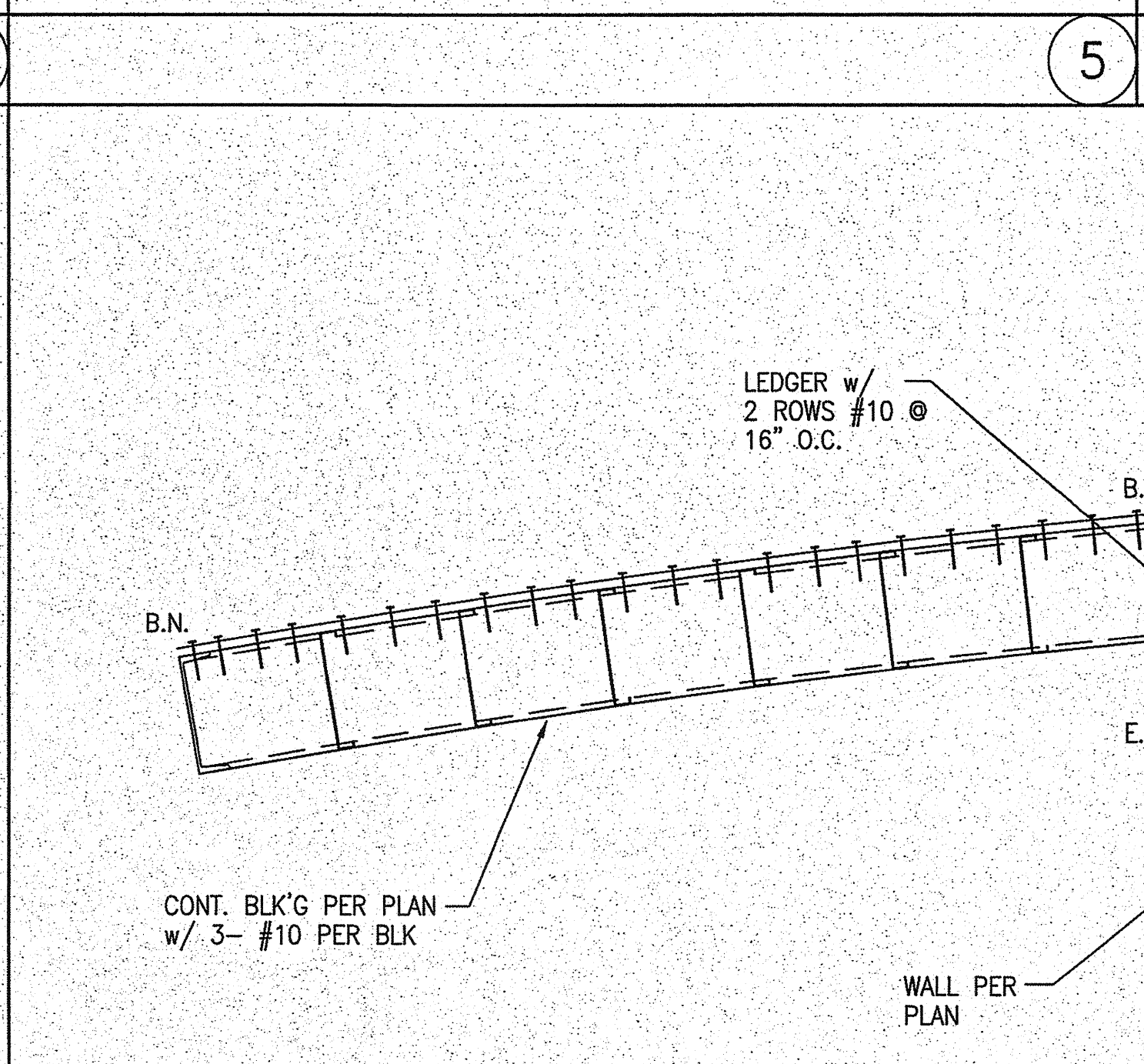
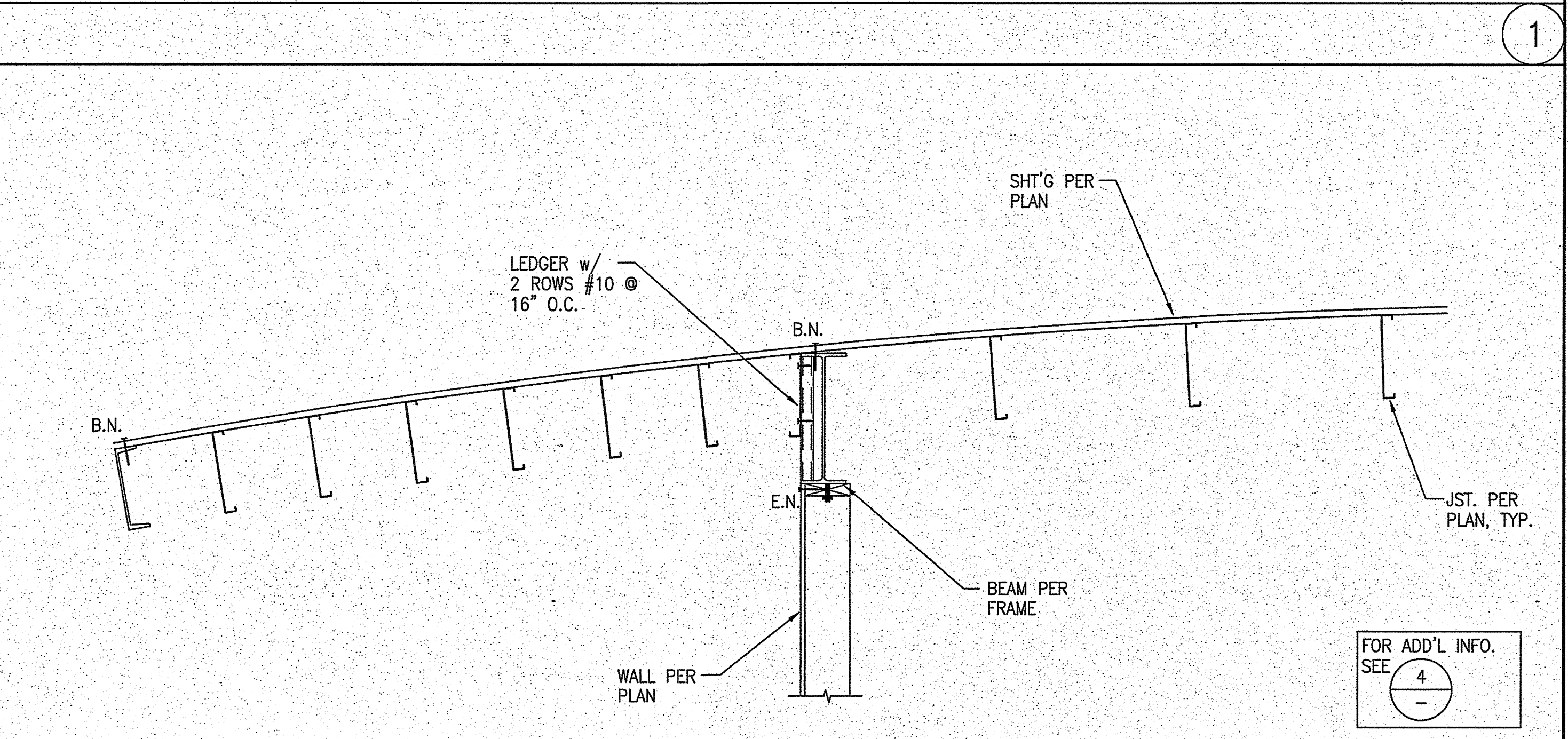
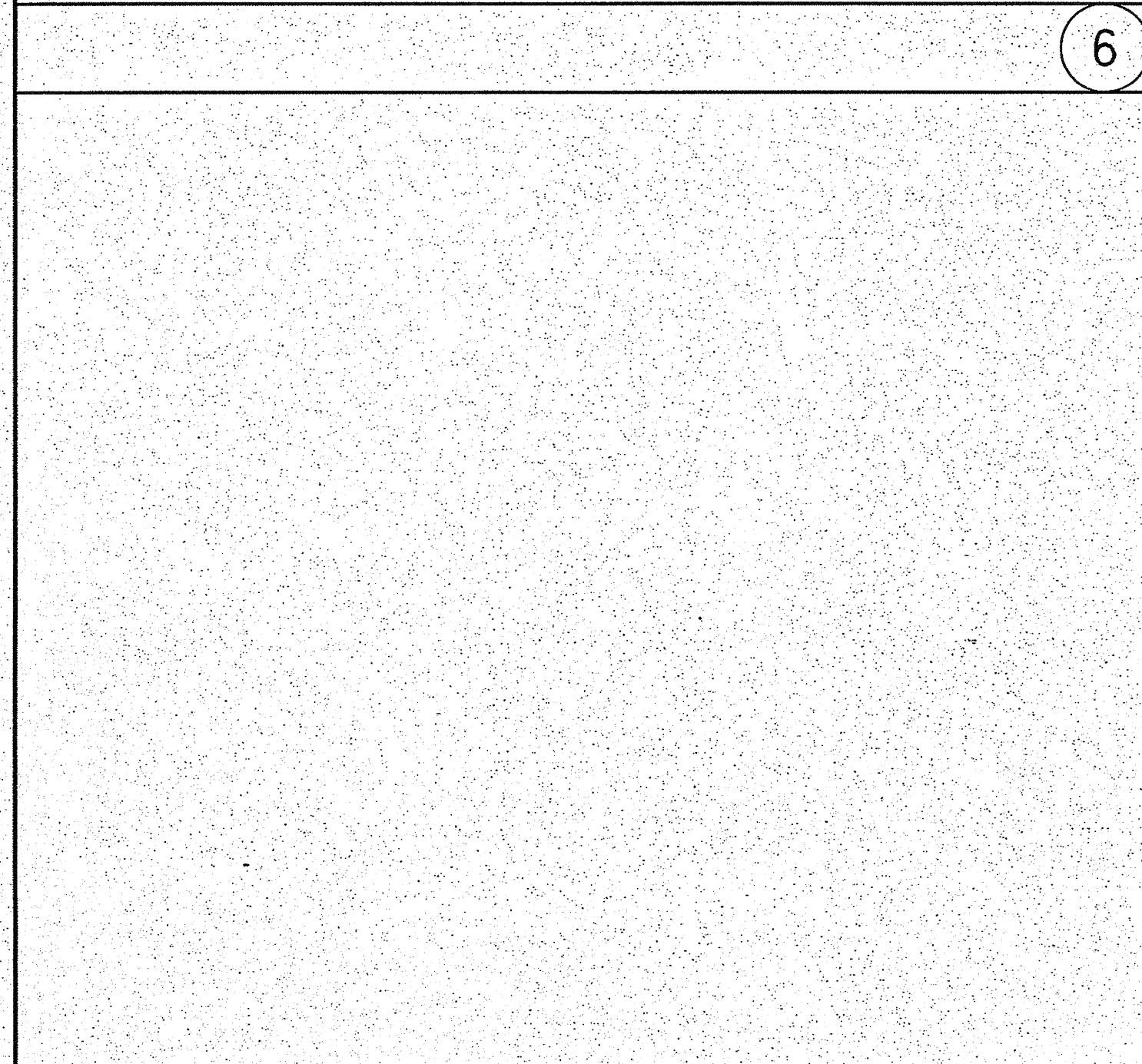
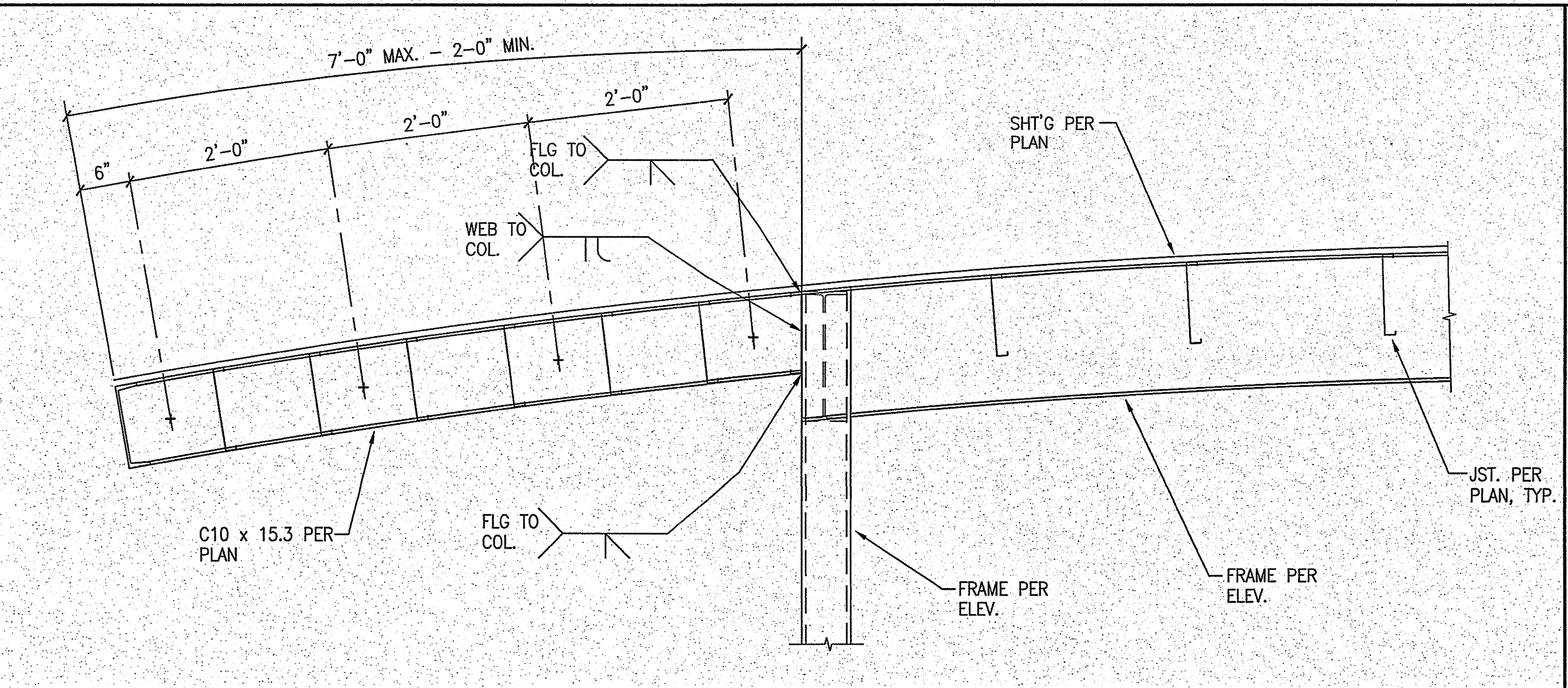
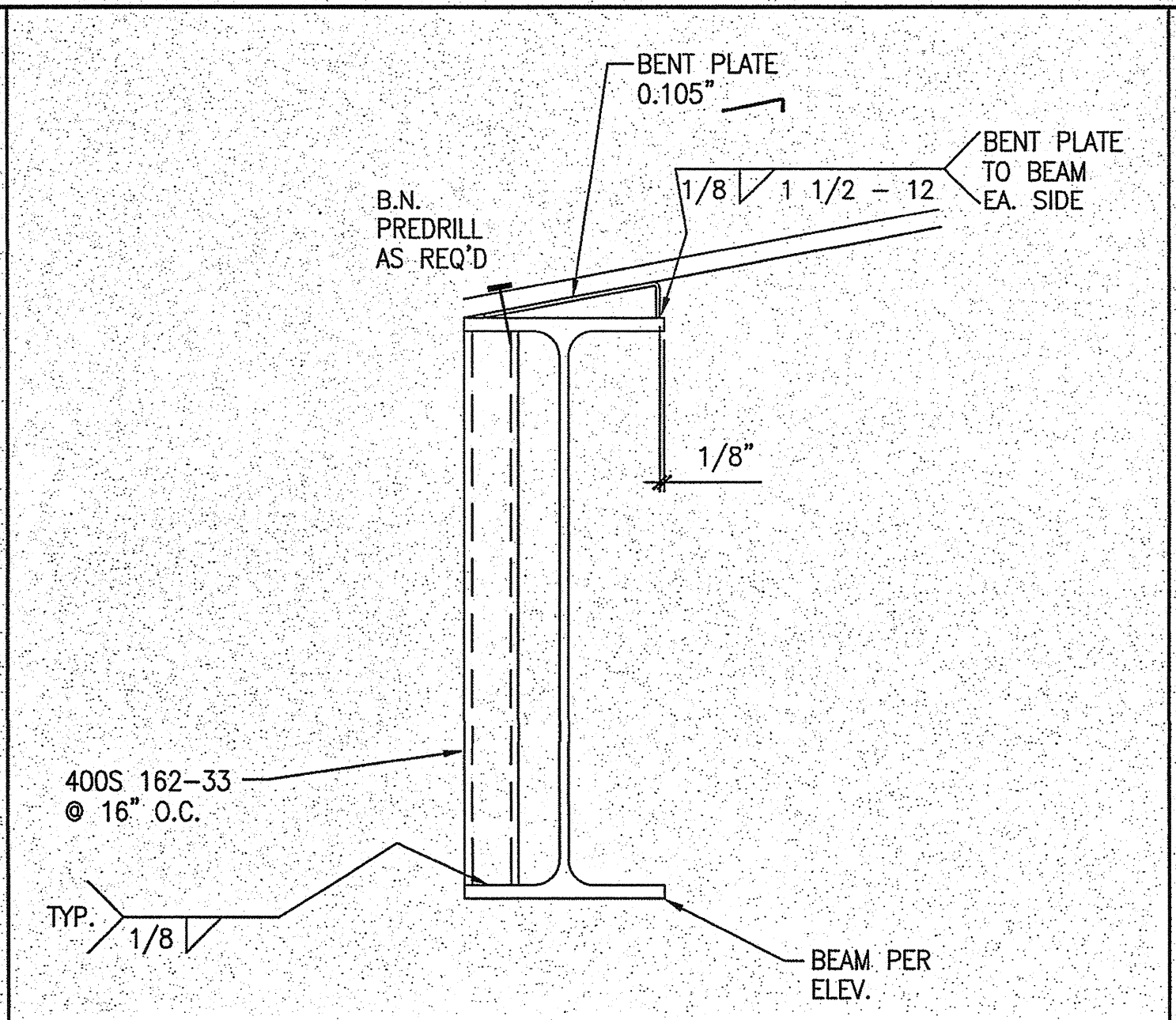
STRUCTURAL ENGINEER OF RECORD  
**ORION**  
Structural Engineering, Inc.  
12257 OLD POMEREO ROAD, SUITE A  
PO BOX 25254  
PHOENIX, AZ 85024  
PHONE (602) 975-1974  
FAX (602) 975-1975

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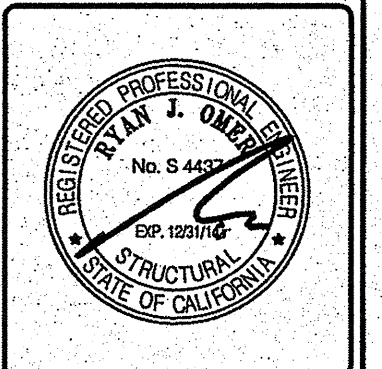




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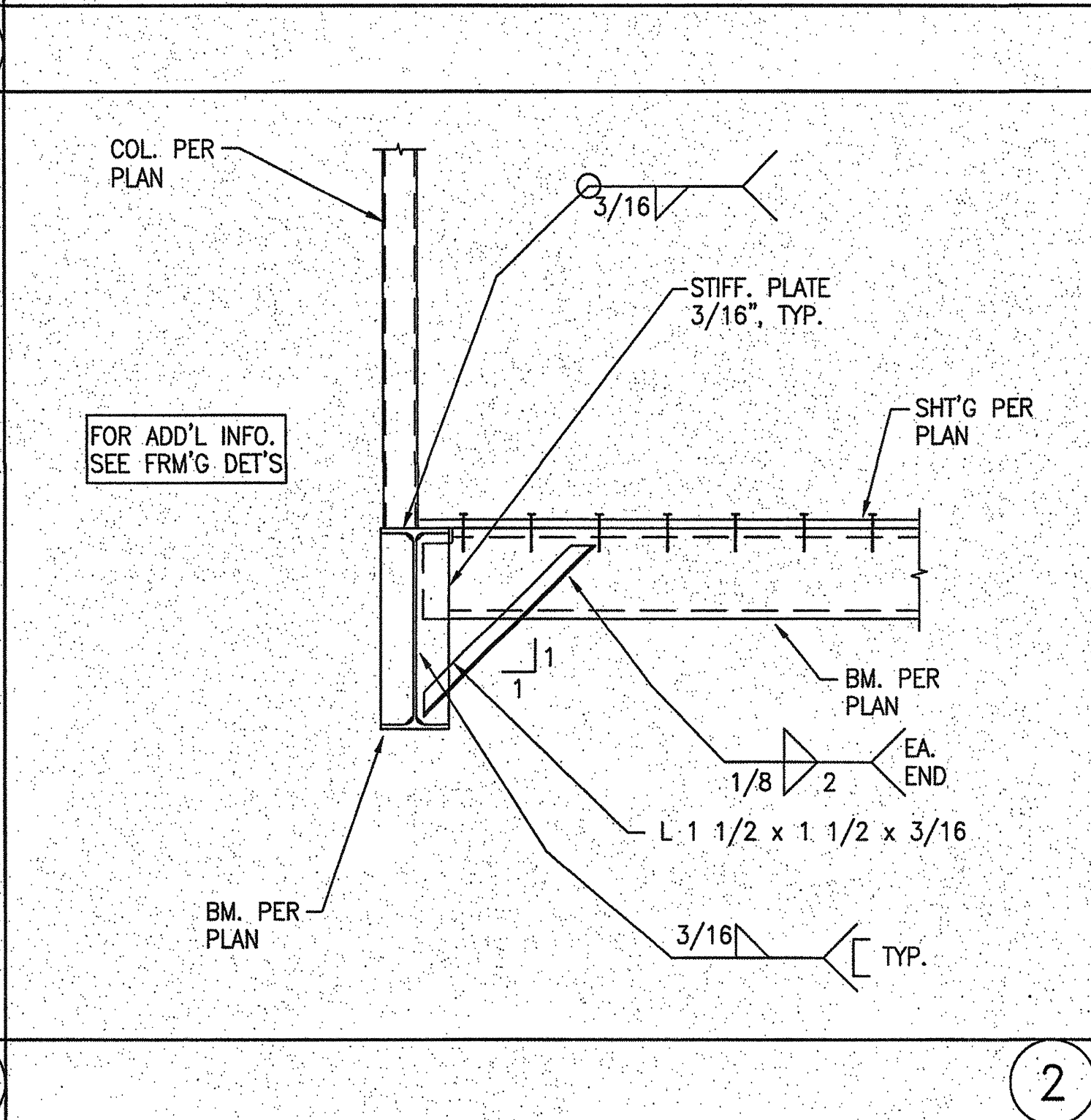
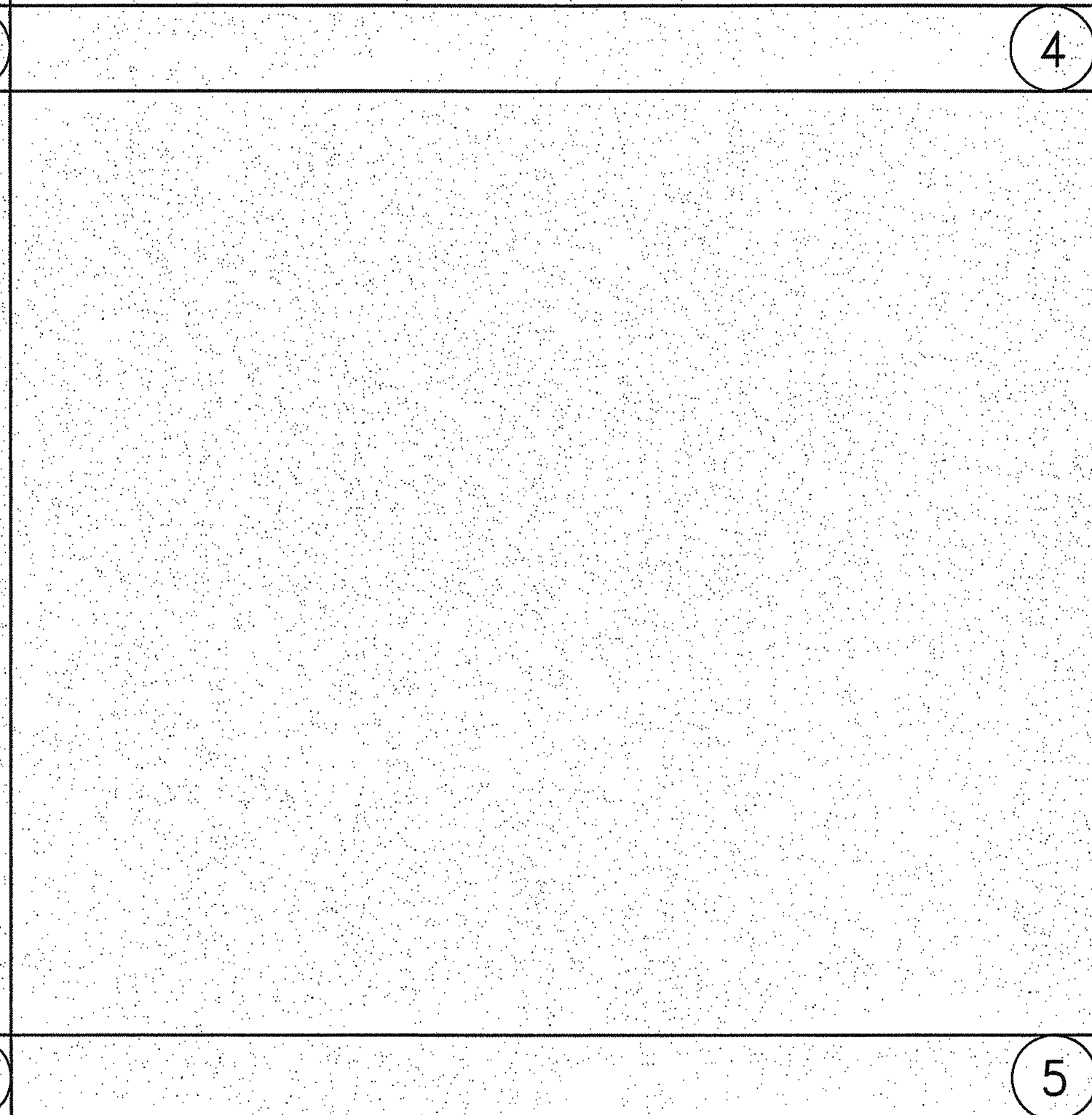
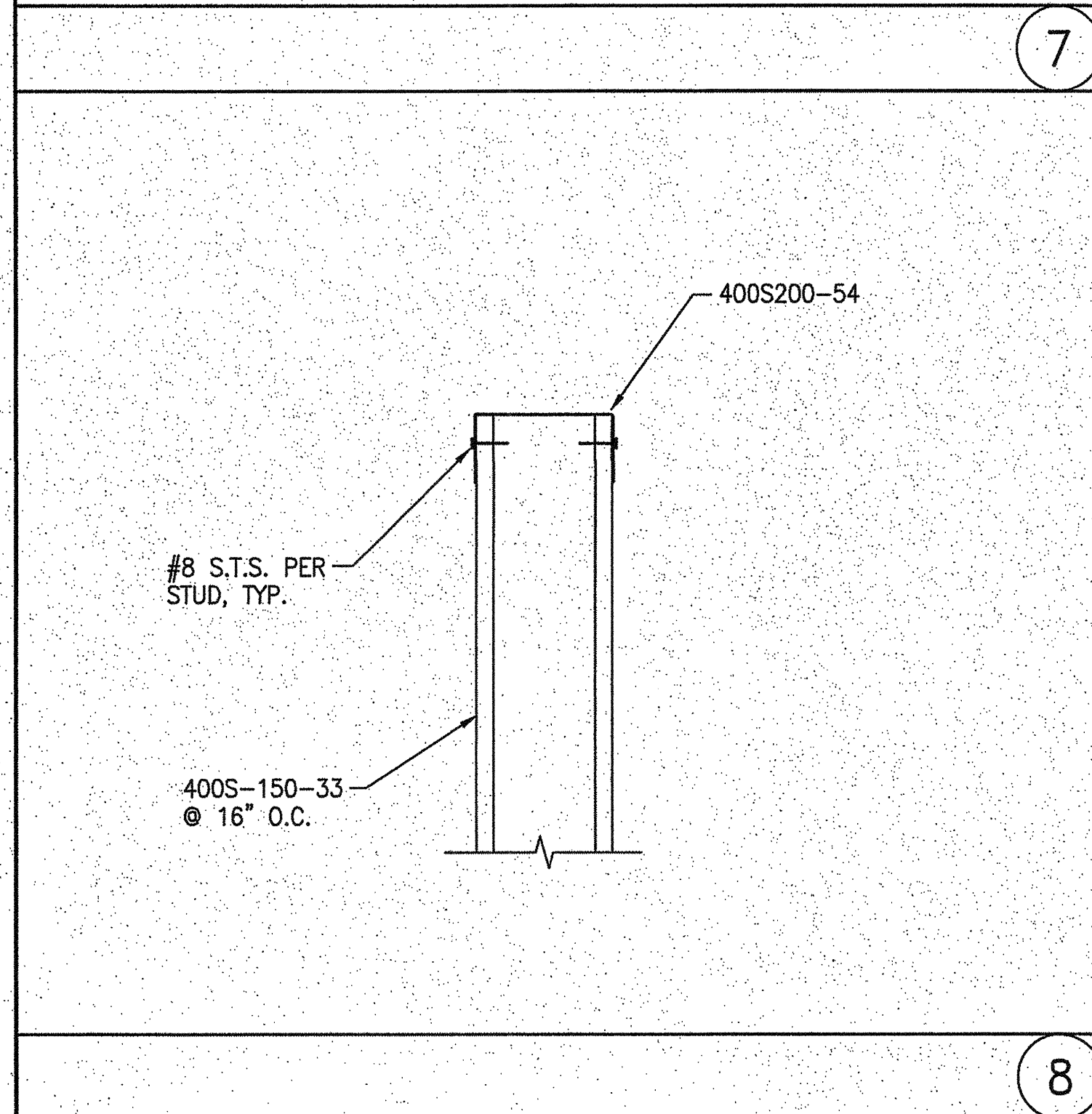
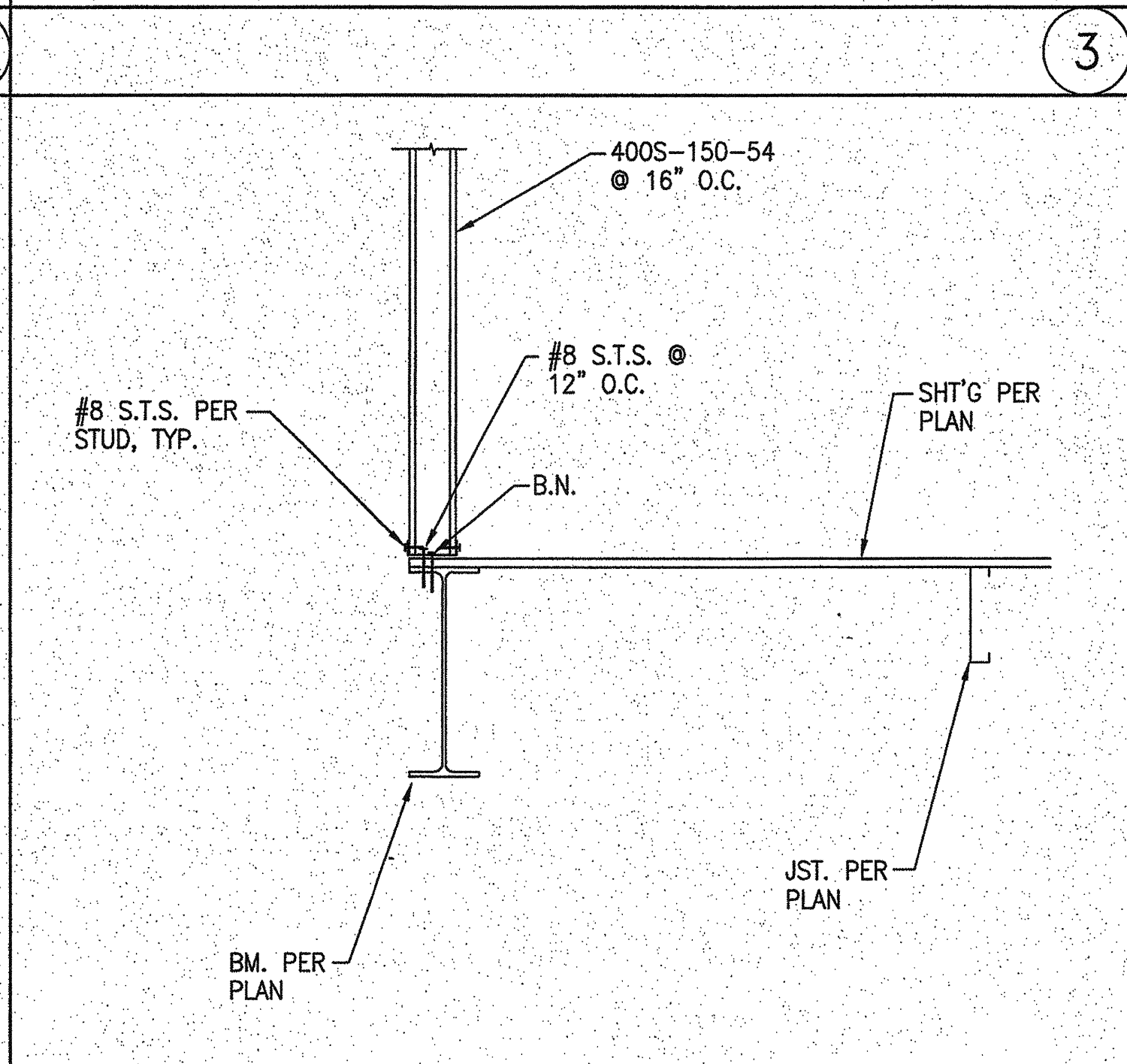
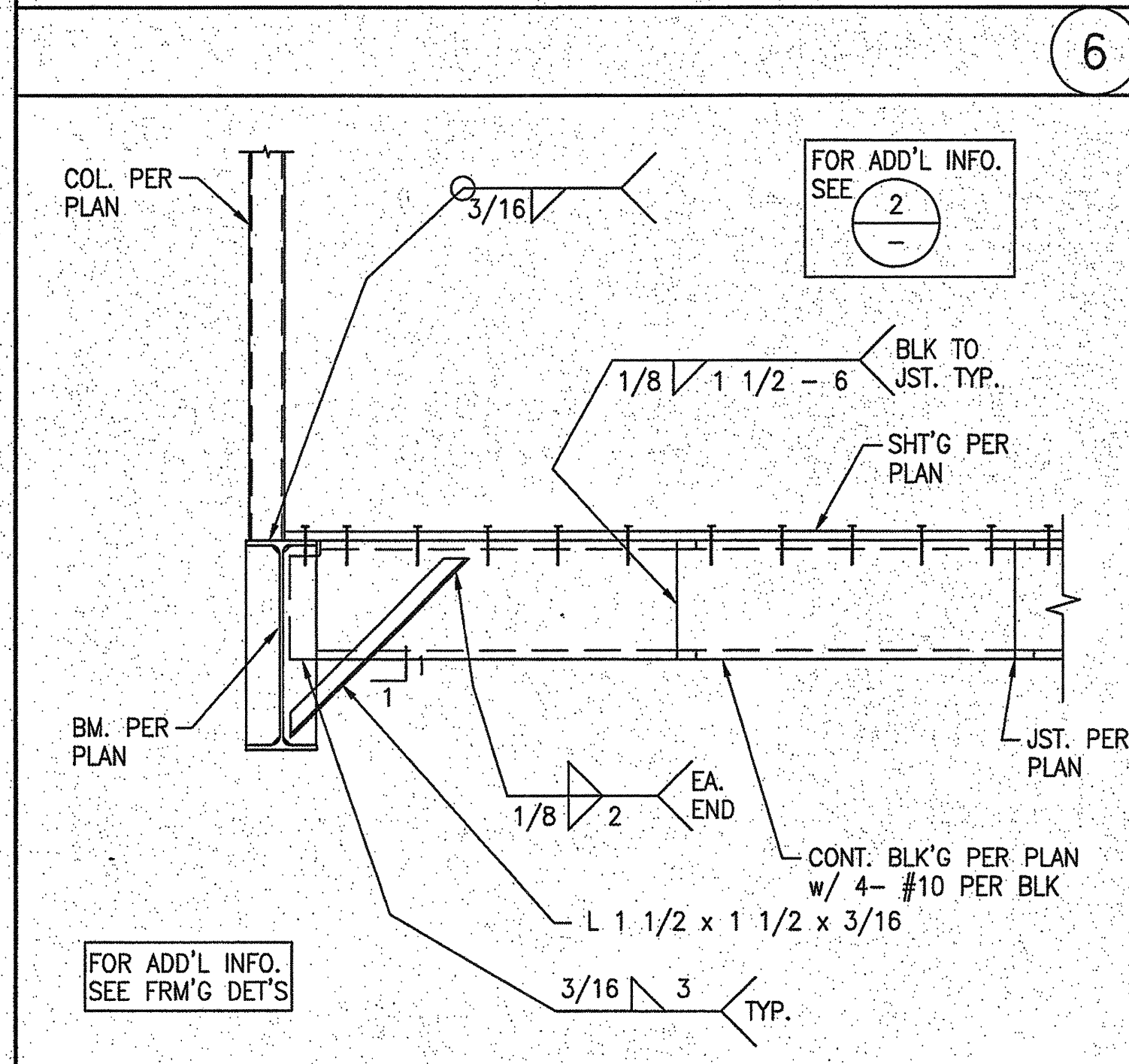
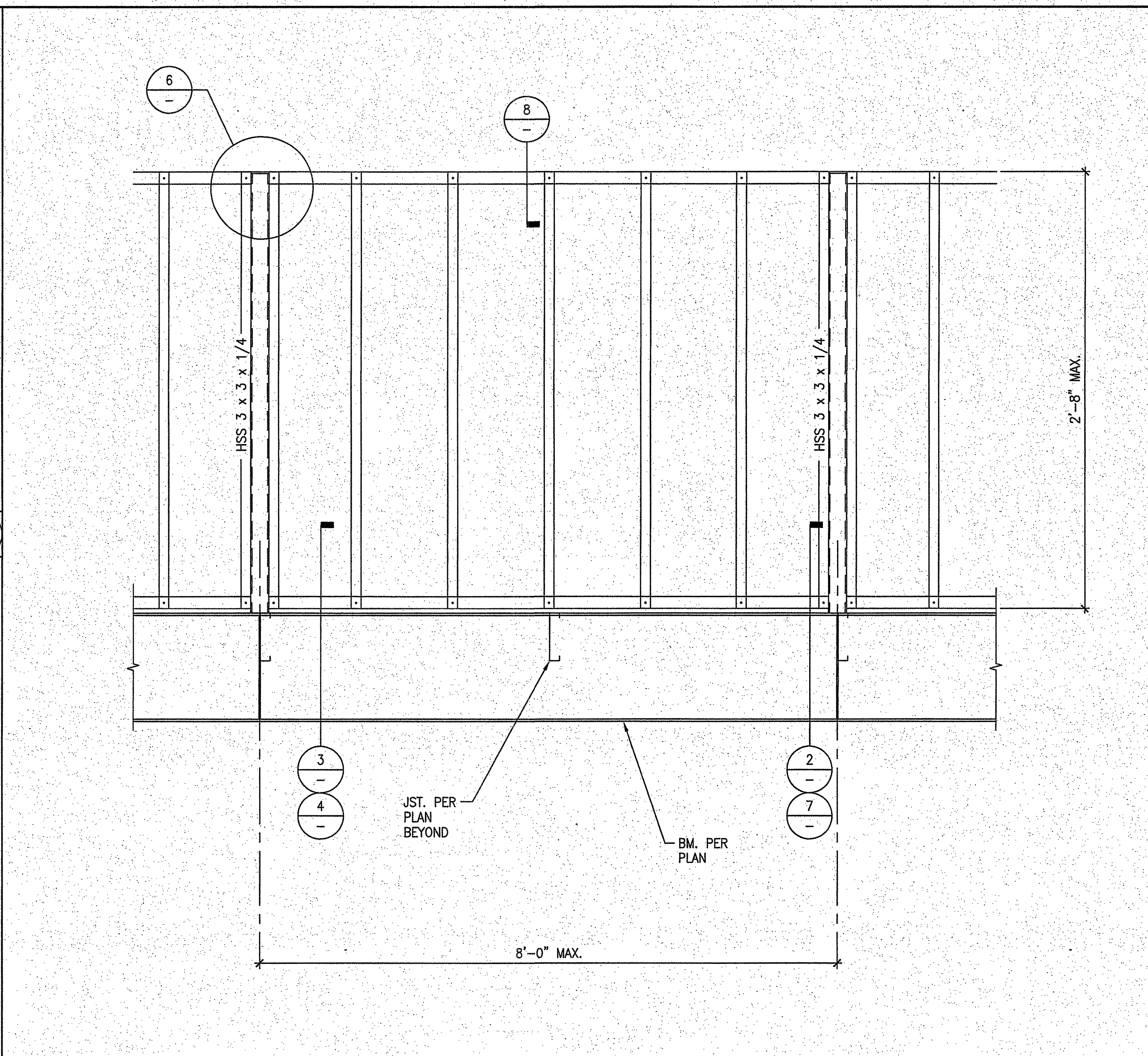
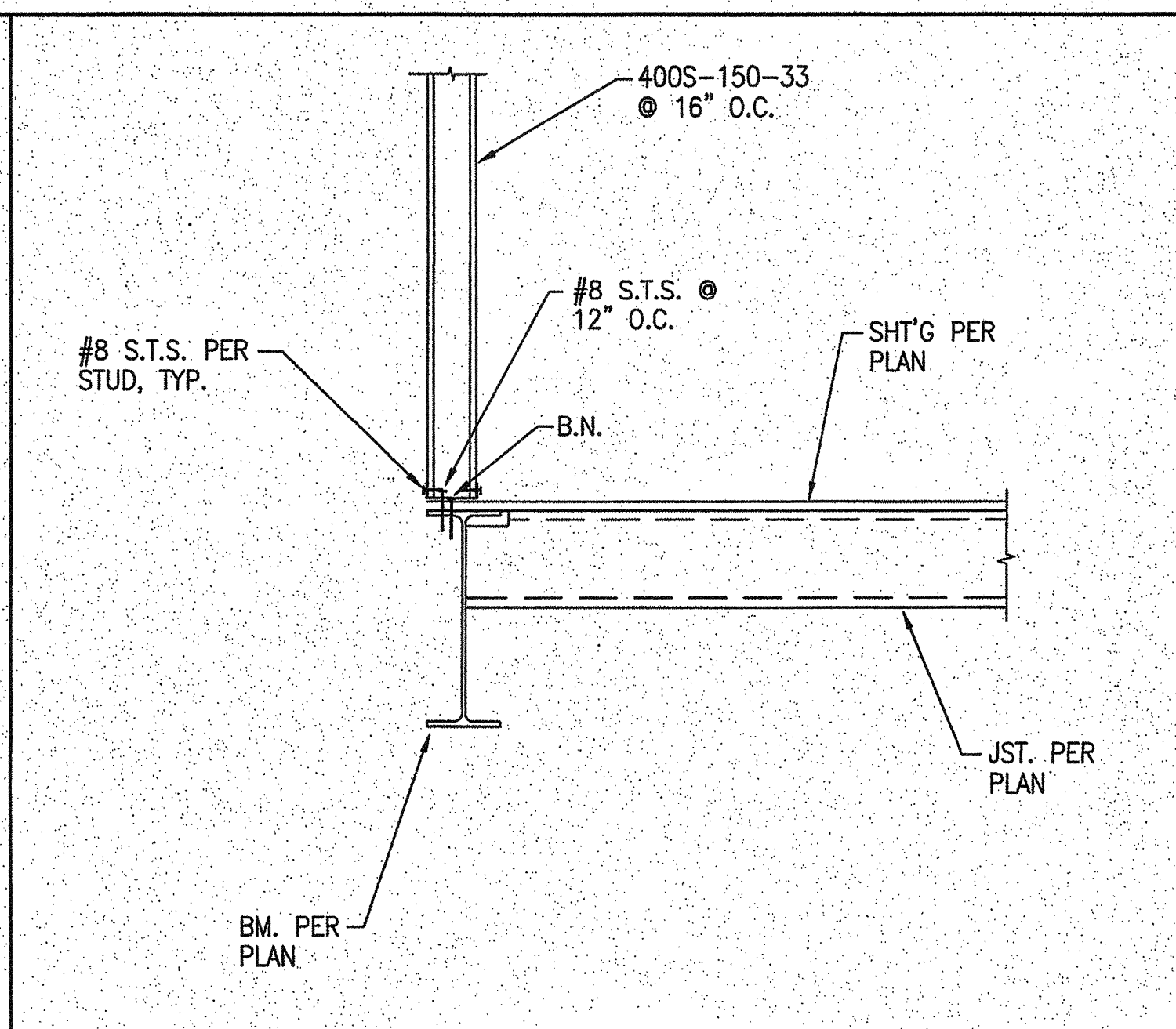
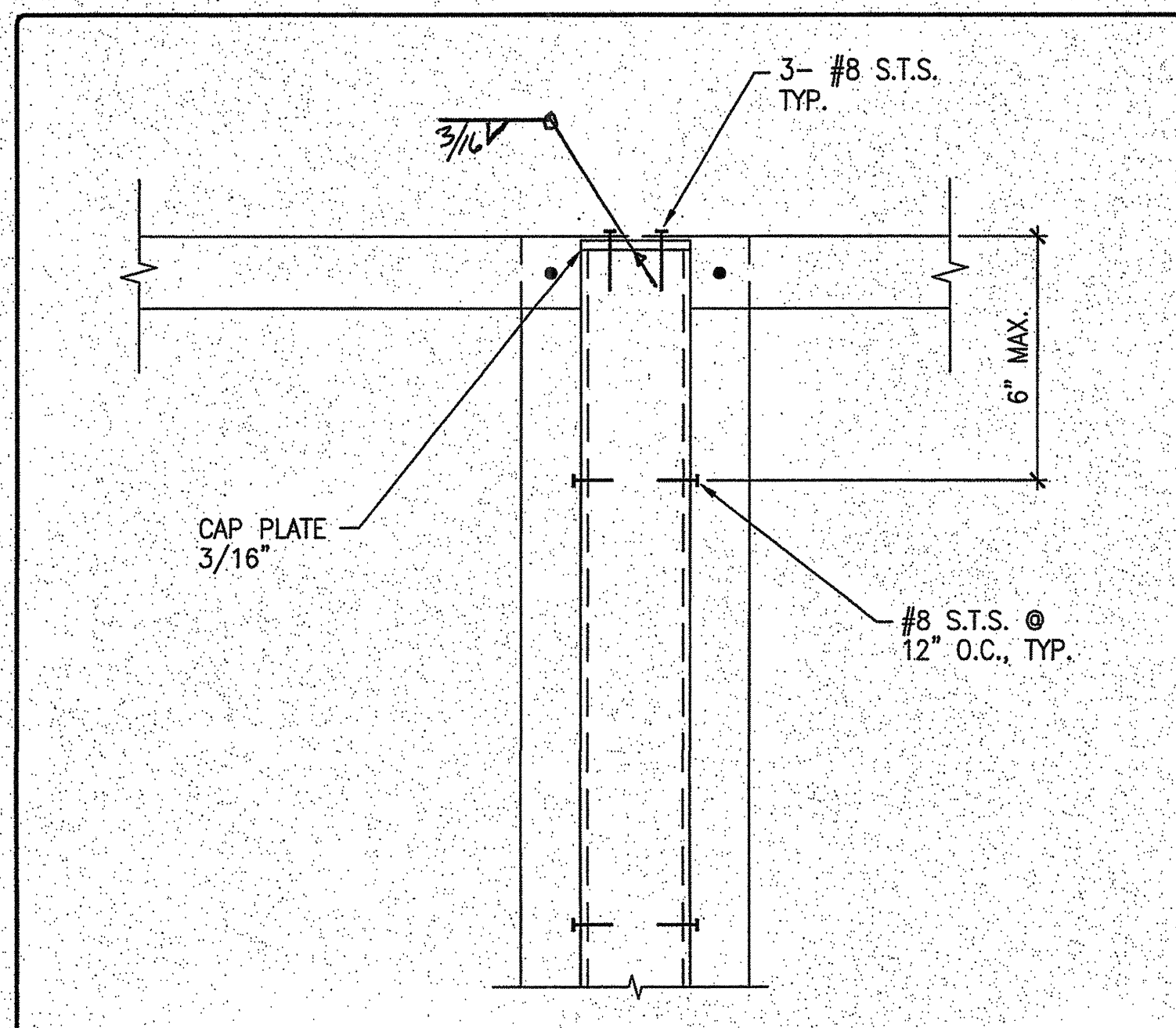
STRUCTURAL ENGINEER OF RECORD  
**ORION**  
Structural Engineering, Inc.  
12257 OLD POMEROY ROAD, SUITE A  
POWER RIVER, CA 92654  
PHONE: (949) 278-1974  
FAX: (949) 618-1975

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| DRAWN BY: B.N.             |  |
| CHECKED BY: R.J.O.         |  |
| JOB NUMBER:                |  |
| DATE: 01/22/2015           |  |
| SCALE: AS NOTED            |  |
| SHEET NAME:                |  |
| <b>FRAMING<br/>DETAILS</b> |  |
| SHEET NO.:                 |  |
| <b>S7.3</b>                |  |





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 STRUCTURAL ENGINEER OF RECORD  
**ORION**  
 Structural Engineering, Inc.  
 12257 OLD POMEROY ROAD, SUITE A  
 POWAY, CA 92064  
 PHONE: (619) 447-1074  
 FAX: (619) 447-1075

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SHEET NO.  
**S7.5**

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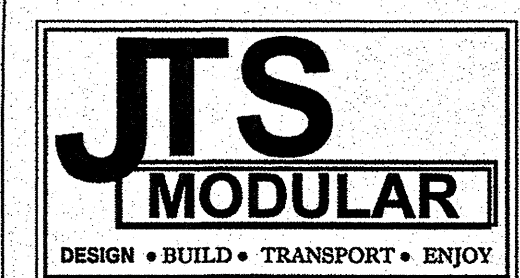
REGISTERED PROFESSIONAL  
 SEAL OF ARCHITECT  
 No. 8443  
 EXP. 12/31/16  
 STRUCTURAL  
 STATE OF CALIFORNIA

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 CHECKED BY: R.J.O.  
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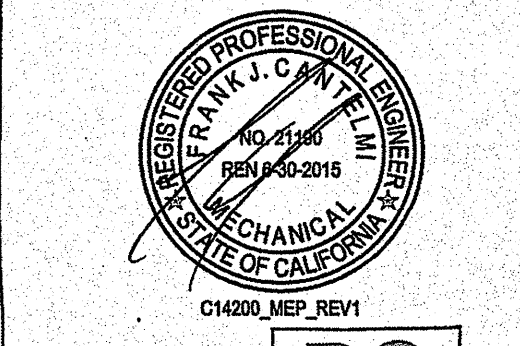
## CANTELM ENGINEERING

MECHANICAL & ELECTRICAL ENGINEERING  
1800 21 STREET, SUITE C BAKERSFIELD, CA 93301  
TEL: (661) 324-5252  
FAX: (661) 324-8439  
Cantelmi@Cantelmi.NET

## SOG-32 RE-LOCATABLE BUILDING PC

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DIV. OF THE STATE ARCHITECT  
PRE CHECK (PC) DOCUMENT  
CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED  
FILE # PC - JTS  
APPL# 11-2297  
DATE 3/19/15

DATE \_\_\_\_\_  
PROJECT **XX-XXX**



02-18-15

SHEET NAME  
**MECHANICAL NOTES**

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPROX 116810  
DATE 02/16/16

SHEET NUMBER  
**M0.01**

### GENERAL MECHANICAL NOTES

**PART 2 - PRODUCTS**

2.1 MATERIALS AND EQUIPMENT  
A. WITHIN THE CONTRACT DOCUMENTS RELATING TO MECHANICAL WORK, MANUFACTURER'S NAMES, CATALOG NUMBERS AND OTHER PROPRIETARY REFERENCES TO MATERIALS AND EQUIPMENT ARE MADE. SUCH REFERENCES ARE MADE TO ESTABLISH THE STANDARDS OF QUALITY AND TYPE REQUIRED, AND NOT TO LIMIT COMPETITION. ACCEPTABLE MANUFACTURERS OF COMPETITIVE PRODUCTS ARE LISTED IN APPLICABLE SECTIONS AS "APPROVED EQUIPMENT." REASONABLE REQUESTS FOR SUBSTITUTION OR ADDITIONS TO "APPROVED EQUIPMENT" WILL BE CONSIDERED, BUT THE MECHANICAL ENGINEER WILL BE THE SOLE JUDGE OF ACCEPTABILITY OF ITEMS PROPOSED AS SUBSTITUTES.  
B. MATERIALS AND EQUIPMENT USED IN CARRYING OUT THESE SPECIFICATIONS SHALL BEAR UL OR OTHER RECOGNIZED TESTING LABORATORY LABEL WHEN SUCH LABELS ARE AVAILABLE.

2.2 DUCTWORK  
A. ALL DUCTS TO BE SPINAL ROUND SHOW QUALITY EXPOSED ASSEMBLES, FABRICATE IN ACCORDANCE WITH SMACNA - HVAC DUCT CONSTRUCTION STANDARDS AND TABLES INCLUDING THEIR ASSOCIATED DETAILS. CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE AND APPLICATIONS, AND JOINT TYPES AND INTERVALS. AN APPROVED FLEXIBLE DUCT MAY BE USED FOR THE LAST 7 FT. CONNECTION TO REGISTER.  
B. DUCT ACCESS PANELS AND DOORS  
1. IN SHEET METAL WORK, HOLLOW CORE DOUBLE CONSTRUCTION OF SAME OR HEAVIER GAGE MATERIAL AS DUCT IN WHICH INSTALLED. PRODUCTS BY CESCO, VENT PRODUCTS, AIR BALANCE, OR EQUIVALENT.  
2. FOR ACCESSIBLE DAMPERS, PROVIDE #444 SELF-LOCKING DAMPERS AND #444 SELF-LOCKING DAMPERS FOR INSULATED DUCTWORK, #437 SQUARE END BEARING, AND #435 SPRING END BEARING, AS APPLICABLE.  
3. FOR INACCESSIBLE DAMPERS, PROVIDE #666 OR #667 CONCEALED LOCKING DAMPER REGULATOR WITH BEARING AS ABOVE. FOR STATIC PRESSURES ABOVE 3" W.G., PROVIDE #640 HVEL DIAL REGULATOR AND #609 HVEL END BEARING FOR ACCESSIBLE DAMPERS.  
4. HANGERS SHALL BE 1/2" DIA. GALVANIZED STEEL. OPPOSED, #6 WIDE, 16 - GAUGE GALVANIZED STEEL BLADES. CONCEALED LINKAGE IN FRAME. RUSKIN #0350 ORB OR EQUAL.  
C. FLEXIBLE CONNECTIONS  
1. PROVIDE FLEXIBLE CONNECTORS AT THE DISCHARGE AND INLET OF FANS, AIR HANDLERS, ROTATING MECHANICAL EQUIPMENT, AND WHERE SHOWN ON THE DRAWINGS FOR PROPER VIBRATION ISOLATION.  
2. NEOPRENE IMPREGNATED CLUST GUM WITH 24 - GAUGE GALVANIZED METAL FRAME. MINIMUM DIMENSIONS - 3" METAL, 3" METAL.  
3. DURO DYNE #NEMA, VENT FABRICS #VENTGLAS, G INDUSTRIES, CONSOLIDATED KINETICS, ELEN, OR EQUAL.  
D. BACKDRIFT DAMPERS  
1. PROVIDE COUNTERWEIGHT TYPE COMPLETE WITH FRAME, END BEARING, COUNTERBALANCE ASSEMBLY, BLADES, AND LINKAGE.  
2. INSTALL AT OUTSIDE AIR INTAKE, EXHAUST OUTLETS, AND WHERE SHOWN ON DRAWINGS.  
3. PACIFIC AIR PRODUCTS #PFD - 100AL, RUSKIN #R35 - 7 WHERE EQUIP. BY AMERICAN WARNING OR VENT PRODUCTS.  
E. TURNING VANES  
1. PROVIDE TURNING VANES AT ALL 90° AND 45° SQUARE ELBOWS. TURNING VANES SHALL BE DOUBLE WALL AIR FOIL TYPE CONSTRUCTED AND INSTALLED AS PER SMACNA.

2.3 DUCT INSULATION  
A. ACCEPTABLE MANUFACTURERS: PROVIDE PRODUCTS OF THE FOLLOWING MANUFACTURERS, COMPLYING WITH SPECIFIED REQUIREMENTS. PROVIDE PRODUCTS OF OTHER MANUFACTURERS WILL BE CONSIDERED.  
1. OWENS - CORNING FIBERGLAS CORP.  
2. MANVILLE PRODUCTS CORP.  
3. CERTAINTED CORP.  
B. ALL INSULATION MATERIAL SHALL COMPLY WITH APPLICABLE ENERGY CONSERVATION REGULATION FOR PROJECT LOCATION.  
C. PROVIDE COMPOSITE MECHANICAL INSULATION (INSULATION JACKET, COVERINGS, SEALERS, MASTICS, AND ADHESIVES) WITH FLAME - SPEED INDEX OF 25 OR LESS, AND SMOKE - DEVELOPED INDEX OF 50 OR LESS, AS TESTED BY ASTM E84 (NFPA 255) METHOD.  
D. PROVIDE STAPLES, BANDS, WIRES, TAPE, ANCHORS, CORNER ANGLES AND SIMILAR ACCESSORIES AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.  
E. PROVIDE CEMENTS, ADHESIVES, COATINGS, SEALERS, PROTECTIVE FINISHES, AND SIMILAR COMPOUNDS AS RECOMMENDED BY INSULATION MANUFACTURER FOR APPLICATIONS INDICATED.

2.4 HVAC CONTROLS  
A. SHALL BE AS INDICATED ON THE DRAWINGS.  
B. ELECTRIC AND ELECTRONIC HVAC CONTROLS - COMPONENTS AND OPERATING FEATURES AS INDICATED ON THE DRAWINGS.

**PART 3 - EXECUTION**

3.1 HVAC SYSTEM INSTALLATION, GENERAL  
SEQUENCE, COORDINATE AND INTEGRATE THE VARIOUS ELEMENTS OF MECHANICAL SYSTEMS, MATERIALS, AND EQUIPMENT. COMPLY WITH THE FOLLOWING REQUIREMENTS:  
A. COORDINATE MECHANICAL SYSTEMS, EQUIPMENT, AND MATERIALS WITH OTHER BUILDING COMPONENTS.  
B. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS.  
C. ARRANGE FOR CRANES, SLITS, AND OPENINGS IN OTHER BUILDING COMPONENTS DURING PROGRESS OF CONSTRUCTION, TO ALLOW FOR MECHANICAL INSTALLATIONS.  
D. COORDINATE THE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND SLEEVES TO BE SET IN POURED IN PLACE CONCRETE AND OTHER STRUCTURAL COMPONENTS, AS THEY ARE CONSTRUCTED.  
E. SEQUENCE, COORDINATE, AND INTEGRATE INSTALLATIONS OF MECHANICAL MATERIALS AND EQUIPMENT FOR EFFICIENT FLOW OF THE WORK. GIVE PARTICULAR ATTENTION TO LARGE EQUIPMENT REQUIRING POSITIONING PRIOR TO CLOSING IN THE BUILDING.  
F. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO PROVIDE THE MAXIMUM HEADROOM POSSIBLE.  
G. COORDINATE CONNECTION OF MECHANICAL SYSTEMS WITH EXTERIOR UNDERGROUND AND OVERHEAD UTILITIES AND SERVICES. COMPLY WITH REQUIREMENTS OF GOVERNING REGULATIONS, FRANCHISED SERVICE COMPANIES, AND CONTROLLING AGENCIES. PROVIDE REQUIRED CONNECTION FOR EACH SERVICE.  
H. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT TO CONFORM WITH DRAWINGS AND SPECS, TO GREATEST EXTENT POSSIBLE. CONFORM TO ARRANGEMENTS INDICATED BY THE CONTRACT DOCUMENTS, RECOGNIZING THAT THE WORK SHALL BE SHOWN ONLY IN DIAGNOSTIC FORM. WHERE COORDINATION REQUIREMENTS CONFLICT WITH INDIVIDUAL SYSTEM REQUIREMENTS, REFER CONFLICT TO THE CONTRACTOR FOR RESOLUTION PRIOR TO INSTALLATION.  
I. INSTALL SYSTEMS, MATERIALS, AND EQUIPMENT LEVEL AND PLUMB, PARALLEL, AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, WHERE INSTALLED EXPOSED IN FINISHED SPACES.  
J. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE, AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS, AS MUCH AS PRACTICAL.

**SECTION 2 HEATING, VENTILATION AND AIR CONDITIONING**

**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS  
A. REFER TO DRAWINGS AND CONTRACT FOR MATERIALS FURNISHED BY OWNER, INSTALLED BY CONTRACTOR OR FURNISHED AND INSTALLED BY OWNER.  
B. EMPLOY COMPETENT, QUALIFIED PERSONNEL IN OPERATION OF THE EQUIPMENT.  
C. PROVIDE FOR PROPER OPERATION AND CLEANING.  
D. CLEAN THE EQUIPMENT AND PERFORM SUCH OTHER MAINTENANCE AS REQUIRED TO PLACE IT IN FIRST CLASS OPERATING CONDITION.

1.2 SCOPE OF WORK  
A. FURNISH ALL LABOR, SUPERVISION, AND EQUIPMENT (UNLESS EQUIPMENT IS SPECIFICALLY NOTED AS "OWNER FURNISHED") FOR THE COMPLETE INSTALLATION OF HEATING, VENTILATION, AND AIR CONDITIONING SYSTEM TOGETHER WITH ALL NECESSARY AUXILIARIES AND APPURTENANCES.

1.3 QUALITY ASSURANCE  
A. MANUFACTURER'S QUALIFICATIONS - INSTALL PACKAGED UNITS, AS INDICATED IN THE DRAWINGS, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND REQUIREMENTS. PROVIDE RELATED PRODUCTS AND ACCESSORIES FROM ONE MANUFACTURER. STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION PROTECTING FROM DIRT, MOISTURE, CONTAMINANTS, AND HEAVY.  
B. CODES AND STANDARDS - PERFORM ALL INSTALLATION IN ACCORDANCE WITH THE LATEST STANDARDS AS RECOGNIZED BY ASHRAE, SMACNA AND ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.  
C. WORKMANSHIP - EMPLOY WELL-TRAINED WORKERS, COMPETENT TO COMPLETE THE WORK AS SPECIFIED. SHALL PERFORM LABOR IN CONFORMANCE WITH GENERALLY ACCEPTED TRADE STANDARDS. INSTALL ALL EQUIPMENT SQUARE AND PLUMB ALLOWING ACCESS FOR PROPER OPERATION, ADJUSTMENT AND SERVICE.  
D. STRUCTURAL AND SPACE CONDITIONS  
1. ALL WORK SHALL AVOID OBSTRUCTIONS AND INTERFERENCE WITH OTHER TRADES, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGeways CLEAR AND FREE.  
E. VIBRATION AND NOISE  
1. INSTALL EACH OF THE VARIOUS PIECES OF EQUIPMENT TO OPERATE WITHOUT OBJECTIONABLE VIBRATION OR NOISE.  
2. CUTTING AND PATCHING NECESSARY TO PERMIT THE INSTALLATION OF ANY WORK UNDER THIS CONTRACT SHALL BE THE RESPONSIBILITY OF THIS TRADE. CUTTING AND PATCHING SHALL BE COORDINATED WITH OTHER TRADES SO AS NOT TO IMPACT OTHER WORK.  
3. BALANCING AND TESTING  
A. TEST AND BALANCE SHALL BE PERFORMED BY A NATIONALLY QUALIFIED TEST AND BALANCE COMPANY. BALANCE COMPANY SHALL BE A NEBB COMPANY.  
B. CONTRACTOR SHALL COORDINATE TESTING WITH THE TESTING AND BALANCE COMPANY. ALL SYSTEMS SHALL BE FULLY OPERATIONAL PRIOR TO COMMENCEMENT OF TESTING. CORRECT ALL DEFICIENCIES NOTED IN THE TEST AND BALANCE REPORT WITHIN THREE DAYS OR PRIOR TO ACCEPTANCE OF THE PROJECT.  
C. ASSUME RESPONSIBILITY FOR CORRECTING ALL ITEMS DETERMINED TO BE THE RESULT OF IMPROPER OR INCOMPLETE INSTALLATION. EXTRA TESTING REQUIRED DUE TO SUCH DEFICIENCIES WILL BE AT CONTRACTOR'S EXPENSE.  
D. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEST REPORTS TO THE LOCAL BUILDING AND HEALTH DEPARTMENTS AS REQUIRED FOR CERTIFICATE OF OCCUPANCY.

**SECTION 1 BASIC MECHANICAL MATERIALS AND METHODS**

**PART 1 - GENERAL**

1.1 SUMMARY  
A. LABOR, MATERIALS, TOOLS, AND SERVICES FOR A COMPLETE INSTALLATION OF EQUIPMENT AND SYSTEM CONTAINED IN THE CONTRACT DOCUMENTS.  
B. PRINCIPAL FEATURES OF THE WORK INCLUDED ARE:  
1. HEATING, VENTILATING, AIR CONDITIONING SYSTEMS, CONTROLS, AND MECHANICAL SYSTEM INSULATION.  
2. ROOF CURBS, INTAKE EXHAUSTS, INTAKE HOODS, LOUVERS, SUPPLY FANS, AND RELIEF VENTS FURNISHED AND SET UNDER THIS DIVISION.  
3. REFRIGERANT PIPING, CONNECTIONS, REFRIGERANT AND REFRIGERANT CHARGES.  
4. EXCAVATING AND BACKFILLING FOR MECHANICAL WORK COORDINATE WITH APPROPRIATE TRADE.  
5. ANCHOR BOLTS, SLEEVES, SUPPORTS AND SIMILAR ITEMS TO BE BUILT INTO CONCRETE OR MASONRY.  
6. PREPARATION FOR TESTING AND BALANCE OF MECHANICAL SYSTEMS AND CORRECTING DEFICIENCIES.  
7. PREPARATION AND SUBMITTAL OF SHOP DRAWINGS AND PRODUCT DATA.  
8. MAINTAINING A RECORD SET OF BLUE LINE PRINTS AND MAKING THEM TO INDICATE LOCATIONS OF CONCEALED ITEMS, AND DEVIATIONS MADE TO SUIT CONDITIONS AND PRODUCTION OF MECHANICAL AS-BUILT (RECORD) DRAWINGS.

1.2 JOB CONDITIONS  
SUBMITTAL OF BID IMPLIES BIDDER HAS READ APPLICABLE PARAGRAPHS OF THE SPECIFICATIONS AND WILL BE BOUND BY THEIR CONDITIONS.

1.3 LOCAL CONDITIONS  
A. CONFORM WITH LOCAL CONDITIONS. COORDINATE WITH LOCAL UTILITIES ON SIZE OF UTILITY SERVICE.

1.4 INTENT  
A. THE CONTRACT DOCUMENTS (DRAWINGS AND SPECIFICATIONS) DESCRIBE THE MECHANICAL WORK OF THIS PROJECT ANY ITEMS MENTIONED IN ONE PART SHALL BE AS BINDING AS THOUGH MENTIONED IN BOTH.  
B. THE CONTRACT DOCUMENTS FORM A GUIDE FOR A COMPLETE MECHANICAL INSTALLATION. WHERE AN ITEM IS REASONABLY NECESSARY BUT NOT SPECIFICALLY MENTIONED, SUCH AS DUCT HANGERS OR TRANSITIONS, PIPING OFFSETS, DRINKS, ETC., FOR A COMPLETE SYSTEM, PROVIDE SAME.  
C. MECHANICAL LAYOUTS INDICATED ON DRAWINGS ARE DIAGNOSTIC ONLY. EXACT LOCATIONS OF DUCTS, AND EQUIPMENT SHALL BE GOVERNED BY THE DRAWINGS AND RELATED TRADES.

1.5 DEVIATIONS  
A. NO DEVIATIONS FROM SPECIFICATIONS AND DRAWINGS SHALL BE MADE WITHOUT FULL KNOWLEDGE AND WRITTEN CONSENT OF THE ARCHITECT. IN CASE OF CONFLICT, OBTAIN A DECISION FROM THE MECHANICAL ENGINEER.  
B. SHOULD CONTRACTOR FIND, DURING PROGRESS OF WORK, CONDITIONS WHICH DICTATE A MODIFICATION OF ANY PARTICULAR REQUIREMENTS, REPORT SUCH ITEM PROMPTLY FOR DECISION OF INSTRUCTIONS.

1.6 QUALITY ASSURANCE  
A. COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL CODES.  
B. CONFORM WITH APPLICABLE REQUIREMENTS OF RECOGNIZED INDUSTRY ASSOCIATIONS WITH PROMULGATE STANDARDS FOR THE VARIOUS TRADES. (SEE INDIVIDUAL SECTIONS OF DIVISION 15)  
C. EMPLOY ONLY QUALIFIED JOURNEMENT FOR THIS WORK. EMPLOY COMPETENT, QUALIFIED MECHANICS TO SUPERVISE THE WORK.

1.7 CODES AND STANDARDS  
A. PERFORM WORK SPECIFIED IN DIVISION 15 IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS LISTED BELOW, AND SUCH STANDARDS THAT MAY BE SPECIFIED IN OTHER SECTIONS, WHEN THESE SPECIFICATIONS ARE MORE STRINGENT, THEY TAKE PRECEDENCE. IN CASE OF CONFLICT, OBTAIN A DECISION FROM THE MECHANICAL ENGINEER.  
1. NFPA 54: NATIONAL FUEL AND GAS CODE.  
2. NFPA 90A: FIRE RESISTING AND VENTILATION SYSTEMS.  
3. NFPA 101: LIFE SAFETY CODE.  
4. APPLICABLE STATE BUILDING CODE.  
5. APPLICABLE STATE MECHANICAL CODE.  
6. HANDICAPPED CODE ANSI A117.1 AND ADA.  
7. APPLICABLE STATE ENERGY CODE.  
8. ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS.  
9. ASHRAE AMERICAN NATIONAL STANDARDS INSTITUTE.  
10. ASHRAE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.  
11. ASHRAE AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS.  
12. ASHRAE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.  
13. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS.  
14. ISA: MANUFACTURERS' STANDARD SOCIETY OF THE VALVE AND FITTING INDUSTRY.  
15. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION.  
16. SMACNA: SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION.  
17. UL: UNDERWRITERS LABORATORIES, INC.

1.8 COORDINATION  
A. CAREFULLY EXAMINE SPECIFICATIONS AND DRAWINGS TO BE THOROUGHLY FAMILIAR WITH ITEMS WHICH REQUIRE HVAC CONNECTIONS AND COORDINATION.  
B. COORDINATE WITH OTHER DIVISIONS TO LEAVE PROPER CHASSES AND OPENINGS, PLACE OUTLETS, ANCHORS, SLEEVES, AND SUPPORTS PRIOR TO POURING CONCRETE OF INSTALLATION OF MASONRY WORK.

1.9 SUBMITTALS  
A. SUBMITTALS ARE ONLY REQUIRED FOR SPECIFIC ITEMS OF EQUIPMENT OR MATERIAL LISTED IN INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS.  
B. WITHIN 15 DAYS AFTER AWARD OF CONTRACT FOR THIS WORK, SUBMIT A LIST OF PROPOSED MANUFACTURERS (OF EQUIPMENT OR MATERIAL TO BE USED) FOR APPROVAL. SUBMIT THIS LIST BEFORE SUBMITTAL OF SHOP DRAWINGS (OF EQUIPMENT OR MATERIAL) AND OBTAIN APPROVAL BEFORE SUBMITTING REQUIRED ITEMS.  
C. SHOP DRAWINGS (NOT REQUIRED FOR OWNER FURNISHED EQUIPMENT).

1.10 DELIVERY AND STORAGE  
A. INSURE AS POSSIBLE DELIVER ITEMS IN MANUFACTURER'S ORIGINAL UNOPENED PACKAGING, WHERE THAT IS NOT PRACTICAL COVER ITEMS WITH PROTECTIVE MATERIALS TO KEEP THEM FROM BEING DAMAGED. USE CARE IN LOADING, TRANSPORT, UNLOADING, AND STORAGE TO KEEP ITEMS FROM BEING DAMAGED.

1.11 FIRE RATINGS  
A. MATERIALS USED ANYWHERE IN THE WORK MUST HAVE NFPA RATINGS AS FOLLOWING:  
1. FLAME SPREAD - NOT OVER 25  
2. SMOKE DEVELOPED - NOT OVER 50  
3. MECHANICAL EQUIPMENT - NOT OVER 25  
B. MATERIALS SHALL BE "SELF EXTINGUISHING".

1.12 PERMITS AND FEES  
A. OBTAIN, PAY FOR, AND DELIVER PERMITS, CERTIFICATION OF INSPECTION, AND OTHER SUCH ITEMS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. DELIVER CERTIFICATION TO THE CONSTRUCTION MANAGER PRIOR TO FINAL ACCEPTANCE OF THE WORK. AN INSPECTION CERTIFICATE FOR EACH CLASS OF WORK REQUIRING INSPECTION MUST BE SUBMITTED PRIOR TO OR WITH THE FINAL PAYMENT INVOICE. THE RESPONSIBLE TRADE CONTRACTOR MUST MAKE APPLICATION FOR THE INSPECTION, COORDINATE SAME AND PAY THE REQUIRED INSPECTION FEE.

1.13 EXTENDED WARRANTIES  
A. WORK FURNISHED UNDER THE CONTRACT SHALL BE WARRANTED AGAINST DEFECTS IN WORKMANSHIP AND (CONTRACTOR FURNISHED) MATERIALS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR OR AS OTHERWISE SPECIFIED, FROM THE DATE OF FINAL ACCEPTANCE OF THE INSTALLATION. DEFECTS OF WORKMANSHIP DEVELOPING DURING THIS PERIOD SHALL BE REMEDIATED AND DEFECTIVE MATERIAL REPLACED, WITHOUT ADDITIONAL COST, WHEN DEFECTS IN A TRADE CONTRACTOR'S WORK CAUSES DAMAGE TO THE WORK OF THE OTHER TRADE CONTRACTORS. SUCH DAMAGE SHALL BE REPAIRED BY THE TRADE CONTRACTOR CAUSING DAMAGE AND WORK RESTORED TO ITS ORIGINAL CONDITION, AT THE EXPENSE OF THE TRADE CONTRACTOR THAT CAUSED THE DAMAGE.

### REGISTER SCHEDULE

|             |   |  |
|-------------|---|--|
| SIZE<br>CFM | SAO - SUPPLY AIR<br>CEILING DIFFUSER        | REGISTERS TO BE TITUS OR EQUAL<br>SUPPLY T-BAR CEILING-#MCD-3 w/OBD<br>SUPPLY HARD SURFACE-#MCD-1 w/OBD<br>SUPPLY SIDE WALL-#300RL w/OBD |
| SIZE<br>CFM | RSAD - ROUND SUPPLY AIR<br>CEILING DIFFUSER | ROUND DIFFUSER TO BE TITUS #TMR<br>ADJUSTABLE WITH INTER CORE RETAINER<br>CABLE  |
| SIZE<br>CFM | RAG - RETURN AIR<br>CEILING REGISTER        | RETURN/EXHAUST T-BAR CEILING-#50R-NI w/OBD<br>RETURN/EXHAUST HARD SURFACE-#50R w/OBD<br>RETURN/EXHAUST SIDE WALL-#350RS w/OBD            |
| SIZE<br>CFM | EAG - EXHAUST AIR<br>CEILING REGISTER       | SEE PLAN FOR ALL SIZES.<br>SEE PLAN FOR SUPPLY AIR THROWS.<br>CORONATE REGISTERS w/CEILING GRID<br>& LIGHTING.                           |
| SIZE<br>CFM | SAG - SUPPLY AIR<br>WALL REGISTER           |  |
| SIZE<br>CFM | RAG - RETURN AIR<br>WALL REGISTER           |  |
| SIZE<br>CFM | EAG - EXHAUST AIR<br>WALL REGISTER          |  |
| SIZE        | TG - TRANSFER<br>GRILLE                     |  |

| MECHANICAL ABBREVIATIONS |                             | SYMBOLS |  |
|--------------------------|-----------------------------|---------|--|
| SYMBOL                   | DESCRIPTION                 | SYMBOL  | DESCRIPTION  |
|                          | AIR CONDITION UNIT          |         | SUPPLY AIR CEILING DIFFUSER  |
|                          | SUPPLY AIR CEILING DIFFUSER |         | SUPPLY VARIABLE AIR CEILING DIFFUSER HEAT & COOL                         |
|                          | RETURN AIR CEILING REGISTER |         | EXHAUST AIR CEILING REGISTER   |
|                          | SUPPLY AIR WALL DIFFUSER    |         | RETURN AIR WALL REGISTER   |
|                          | EXHAUST AIR WALL REGISTER   |         | TRANSFER GRILLE  |
|                          | DUCTWORK (RECTANGULAR)      |         | DUCTWORK (ROUND)   |
|                          | LINED DUCTWORK              |         | TURNING VANE   |
|                          | FLEXIBLE DUCTWORK           |         | FLEXIBLE CONNECTION  |
|                          | MANUAL AIR VOLUME DAMPER    |         | FIRE DAMPER  |
|                          | FIRE DAMPER                 |         | SMOKE FIRE DAMPER  |
|                          | OUTSIDE AIR INTAKE MTL. CFM |         | ROOM THERMOSTAT - SUBSCRIPT INDICATES UNIT CONTROL +48° TO T.O. BOX MAX. |
|                          | BYPASS TIMER                |         | TIME CLOCK   |
|                          | ON/OFF SWITCH               |         | FAN SPEED CONTROL  |
|                          | DUCT SMOKE DETECTOR         |         | POINT OF CONNECTION  |
|                          | CEILING EXHAUST FAN         |         | FURNACE (VERTICAL)   |
|                          | FURNACE (HORIZONTAL)        |         | CONDENSING UNIT  |

### DUCT SIZING REQUIREMENTS

|               |         |                    |       |              |
|---------------|---------|--------------------|-------|--------------|
| 0-90 CFM      | 800 FPM | 0.8 LOSS PER 100FT | 100FT | 8" DIAMETER  |
| 90-200 CFM    | 800 FPM | 0.8 LOSS PER 100FT | 100FT | 8" DIAMETER  |
| 200-375 CFM   | 700 FPM | 0.8 LOSS PER 100FT | 100FT | 10" DIAMETER |
| 375-800 CFM   | 800 FPM | 0.8 LOSS PER 100FT | 100FT | 12" DIAMETER |
| 800-900 CFM   | 875 FPM | 0.8 LOSS PER 100FT | 100FT | 14" DIAMETER |
| 900-1200 CFM  | 900 FPM | 0.8 LOSS PER 100FT | 100FT | 16" DIAMETER |
| 1200-1600 CFM | 900 FPM | 0.8 LOSS PER 100FT | 100FT | 18" DIAMETER |
| 1600-2000 CFM | 900 FPM | 0.8 LOSS PER 100FT | 100FT | 20" DIAMETER |
| 2000-2400 CFM | 900 FPM | 0.8 LOSS PER 100FT | 100FT | 22" DIAMETER |

NOTES:  
1. ALL ELBOWS TO BE SMOOTH RADIIUS  
2. ALL FITTINGS TO BE OF INDUSTRY STANDARD TYPE WITH COEFFICIENTS PUBLISHED IN MANUAL Q



APPROVALS

|   |
|---|
| IDENTIFICATION STAMP<br>DIV. OF THE STATE ARCHITECT   |
| PRE CHECK (PC) DOCUMENT<br>CODE 21190<br>A SEPARATE PROJECT APPLICATION<br>FOR CONSTRUCTION IS REQUIRED |
| FILE # AC-JTS<br>APPL. NO. 113-2-11<br>AC FLS. 12 SS 211<br>DATE 3/19/16                                |
| DATE  |
| PROJECT <b>XX-XXX</b>   |

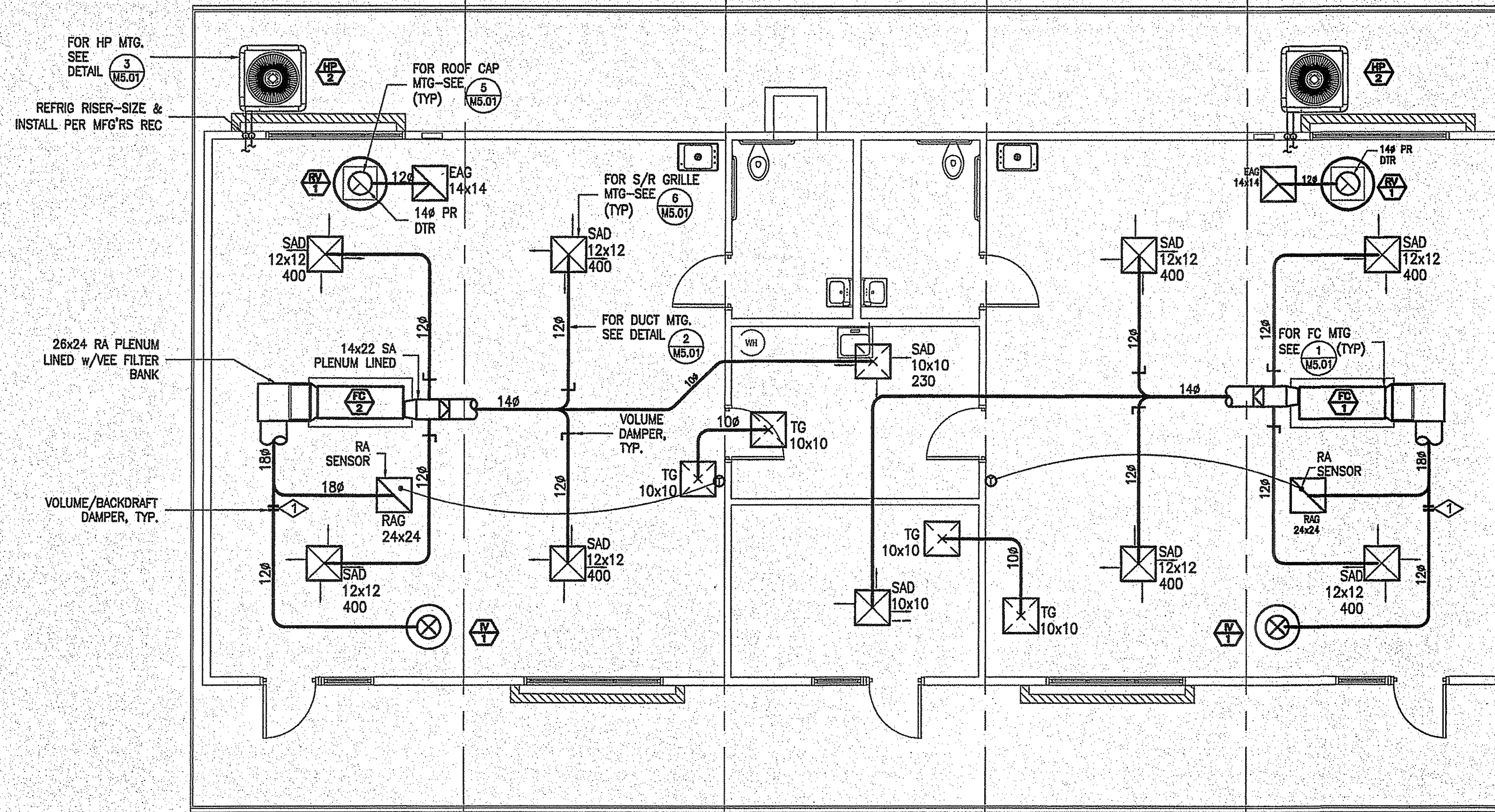


02-18-15

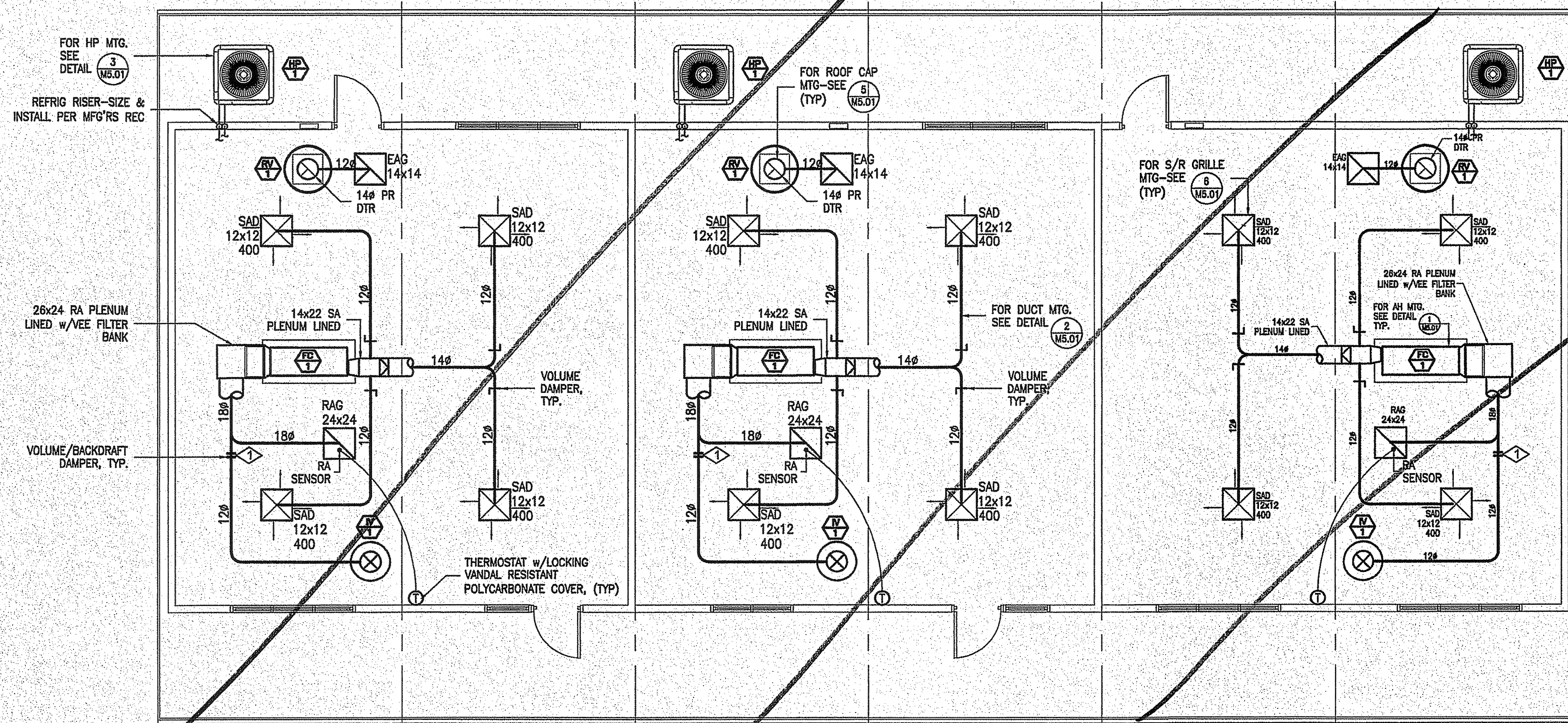
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SHEET NAME  
**MECHANICAL PLANS:  
5M-RR & 6M  
(ALTERNATE 'A')**

SHEET NUMBER  
**M1.02**



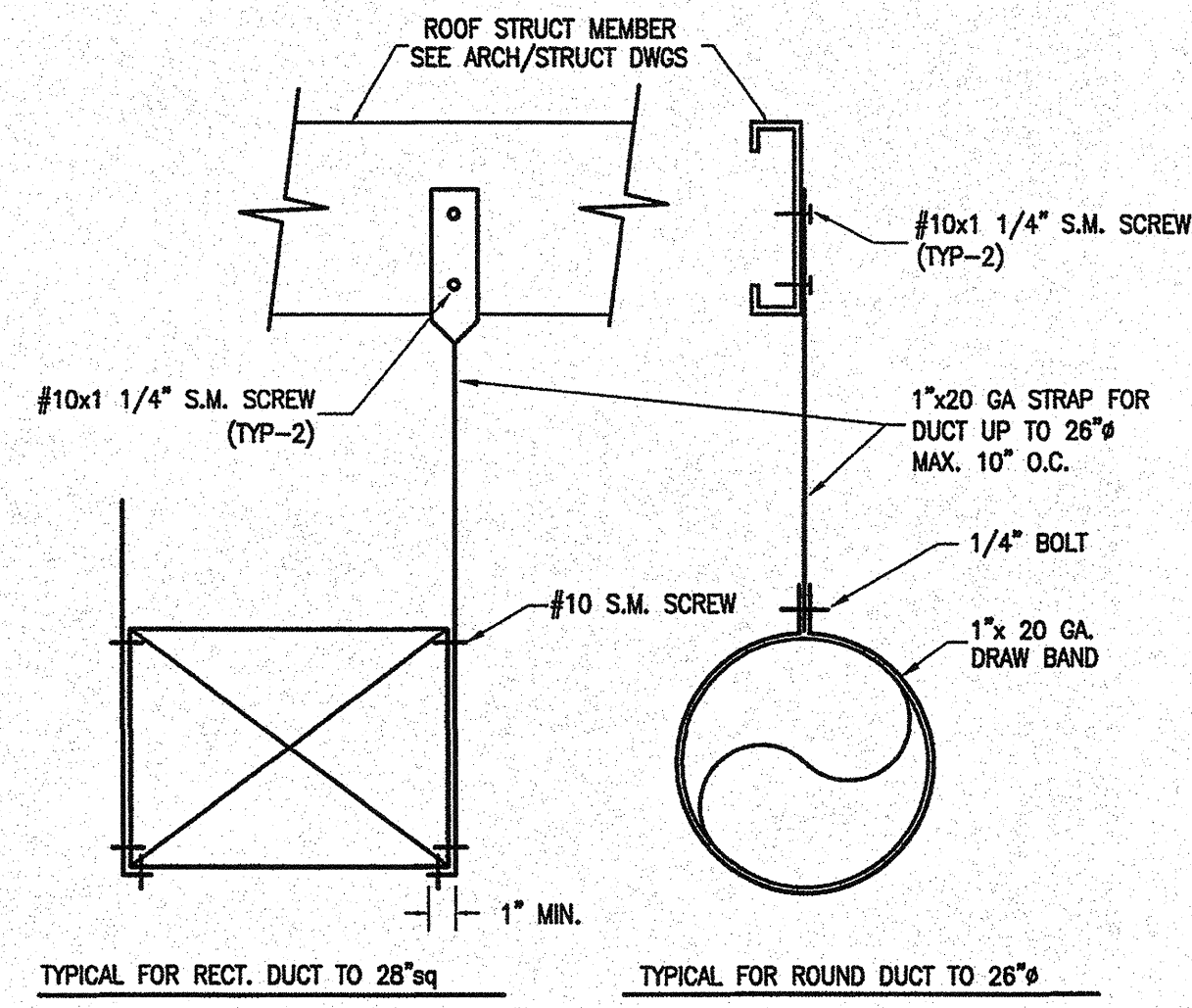
**1 SOG 32 - MECHANICAL PLAN - 5M RESTROOM OPTION (ALTERNATE 'A')**  
SCALE 3/16" = 1'-0"



**2 SOG 32 - MECHANICAL PLAN - 6M (ALTERNATE 'A')**  
SCALE 3/16" = 1'-0"

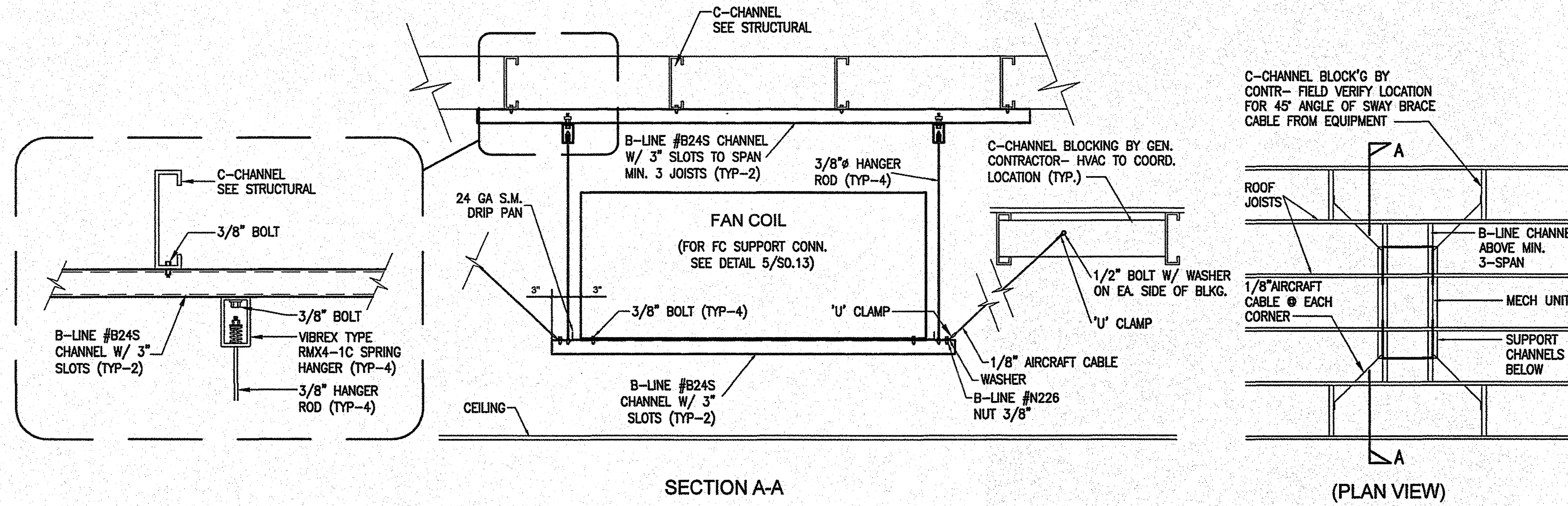
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DIV. OF THE STATE ARCHITECT  
APP03 116810  
AC FLS M SS PC  
DATE 02/16/16





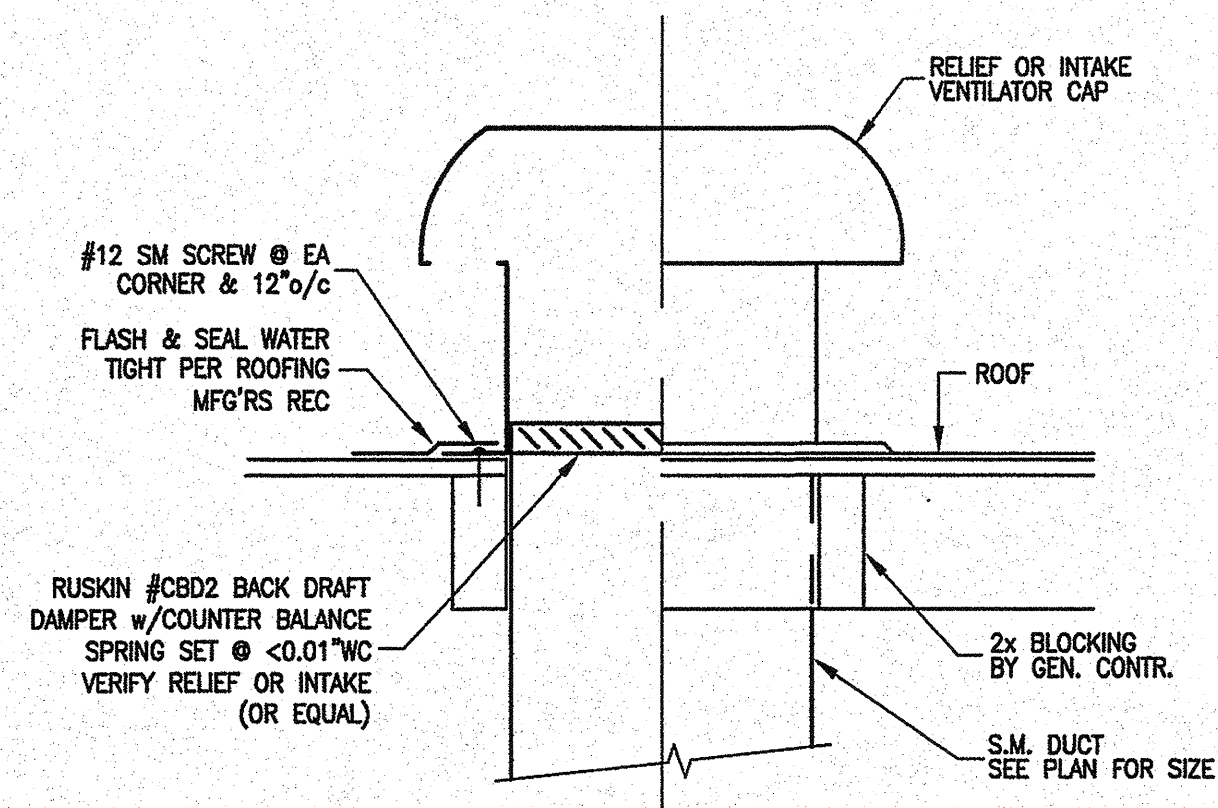
④ DUCT HANGER - TYP. NTS

DETAIL SHOWN FOR REFERENCE ONLY - CONTRACTOR TO INSTALL AS PER SMACNA GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS & PLUMBING PIPING SYSTEMS.

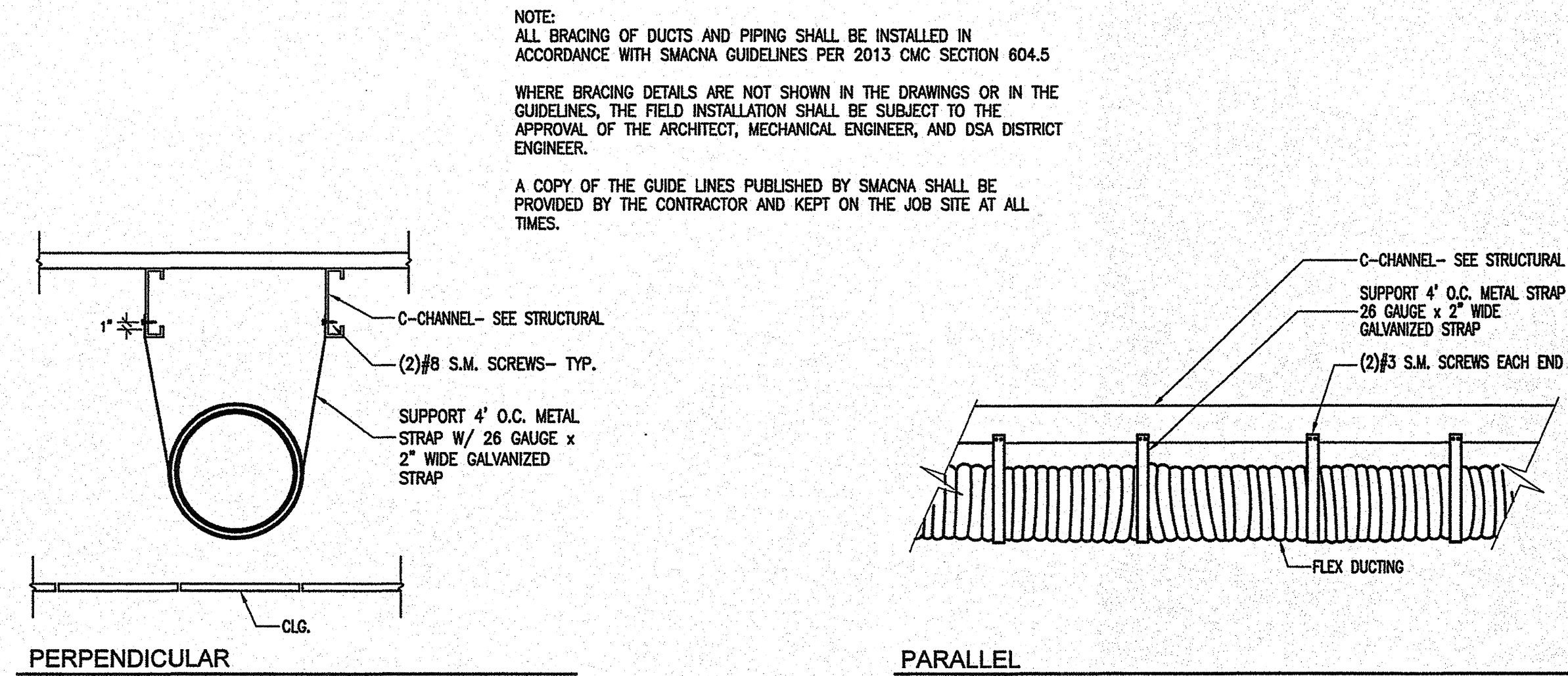


① FAN COIL HORIZONTAL MTG - TYP. (ALT. A) NTS

NOTE: LAYOUT EQUIPMENT, DUCTWORK, PIPING, ETC SUSPENDED ABOVE T-BAR CEILINGS OR MOUNTED ON PLATFORMS TO ALLOW FOR SERVICE & FILTER CHANGEOUT PER MFG'S CLEARANCE RECOMMENDATIONS. PROVIDE ACCESS THRU T-BAR & HARD CEILINGS. KEEP KATWALKS CLEAR FROM CEILING ACCESS TO EQUIPMENT LOCATIONS PER CMC 2013.

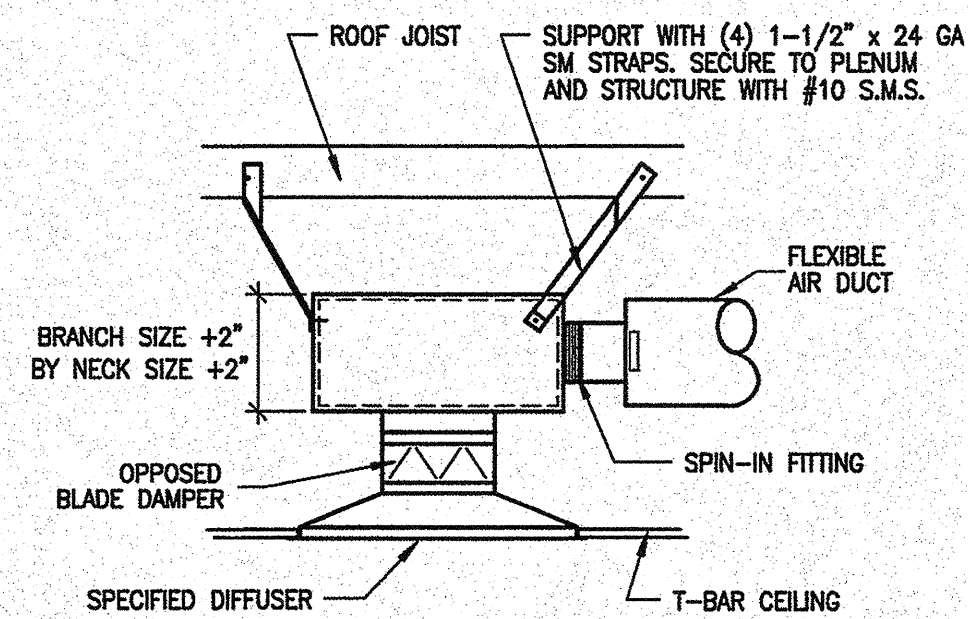


⑤ RELIEF/INTAKE VENTILATOR MTG - TYP. NTS

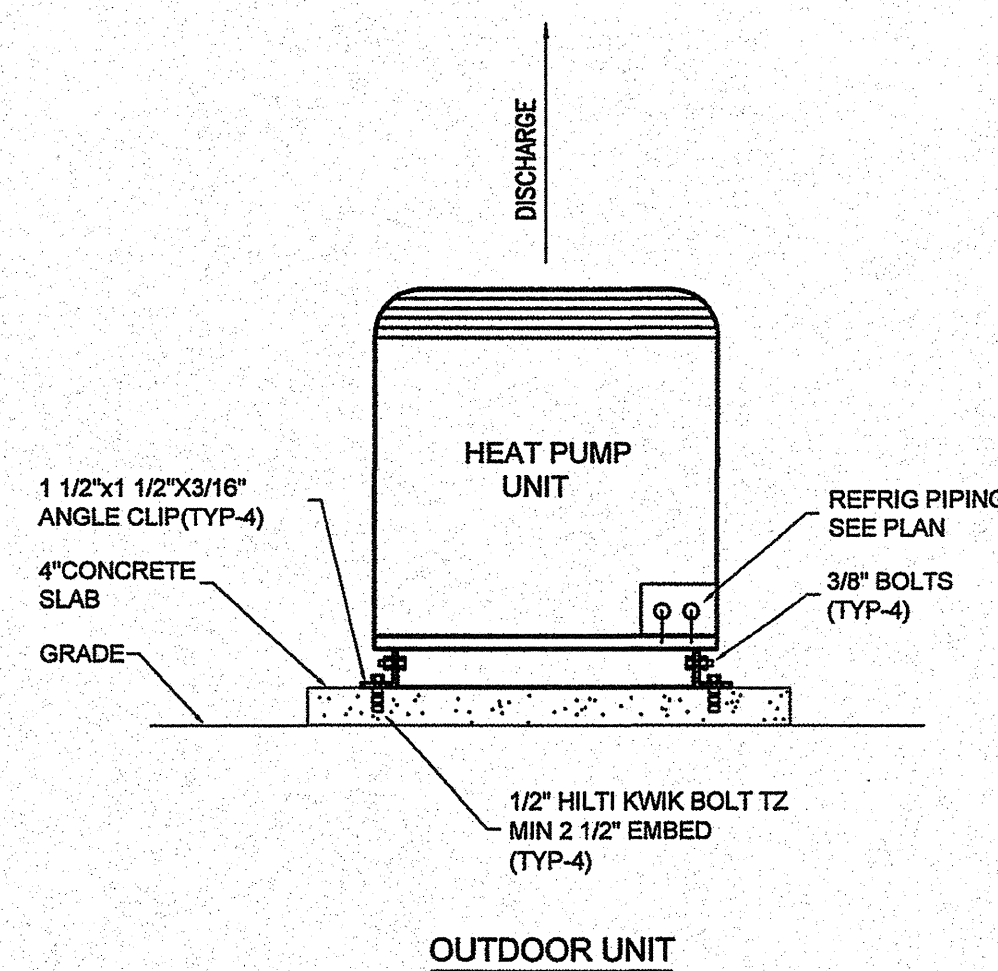


② FLEX DUCT HANGERS - TYP. NTS

NOTE: ALL BRACING OF DUCTS AND PIPING SHALL BE INSTALLED IN ACCORDANCE WITH SMACNA GUIDELINES PER 2013 CMC SECTION 604.5 WHERE BRACING DETAILS ARE NOT SHOWN IN THE DRAWINGS OR IN THE GUIDELINES, THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER, AND DSA DISTRICT ENGINEER. A COPY OF THE GUIDE LINES PUBLISHED BY SMACNA SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE JOB SITE AT ALL TIMES.

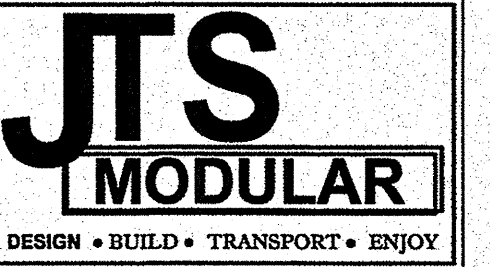


⑥ REGISTER MTG SA & RA - TYP. NTS



③ HEAT PUMP UNIT GROUND MTG - TYP. (ALT. A) NTS

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPROX 116810  
AC: FLS: [Signature]  
DATE: 02/16/16



COMMERCIAL INSTITUTIONAL AND RESIDENTIAL MODULAR BUILDINGS DESIGN & PLANNING

7001 Mc Divitt Dr. Bakersfield, CA 93313  
Office: (661) 835-9270  
Plant: (661) 833-2940  
Fax: (661) 847-1007  
www.jtsmodular.com

LICENSE #21190  
**CANTELM ENGINEERING**

MECHANICAL & ELECTRICAL ENGINEERING

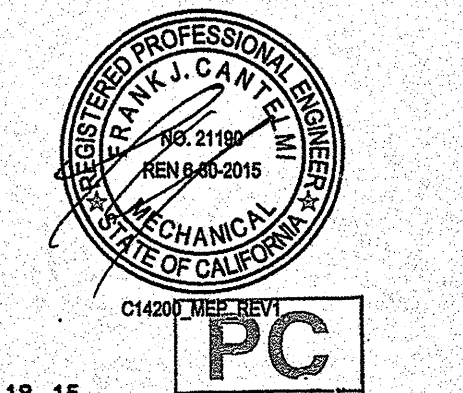
1800 21 STREET, SUITE C BAKERSFIELD, CA 93301  
TEL: (661) 324-5252  
FAX: (661) 324-8439  
Cantelmi@Cantelmi.NET

**SOG-32 RE-LOCATABLE BUILDING PC**

APPROVALS  
IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
PRE CHECK (PC) DOCUMENT CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

FILE # PC-ITS  
APPROX 113829  
AC: FLS: [Signature]  
DATE: 2/19/15

DATE: \_\_\_\_\_  
PROJECT: XX-XXX



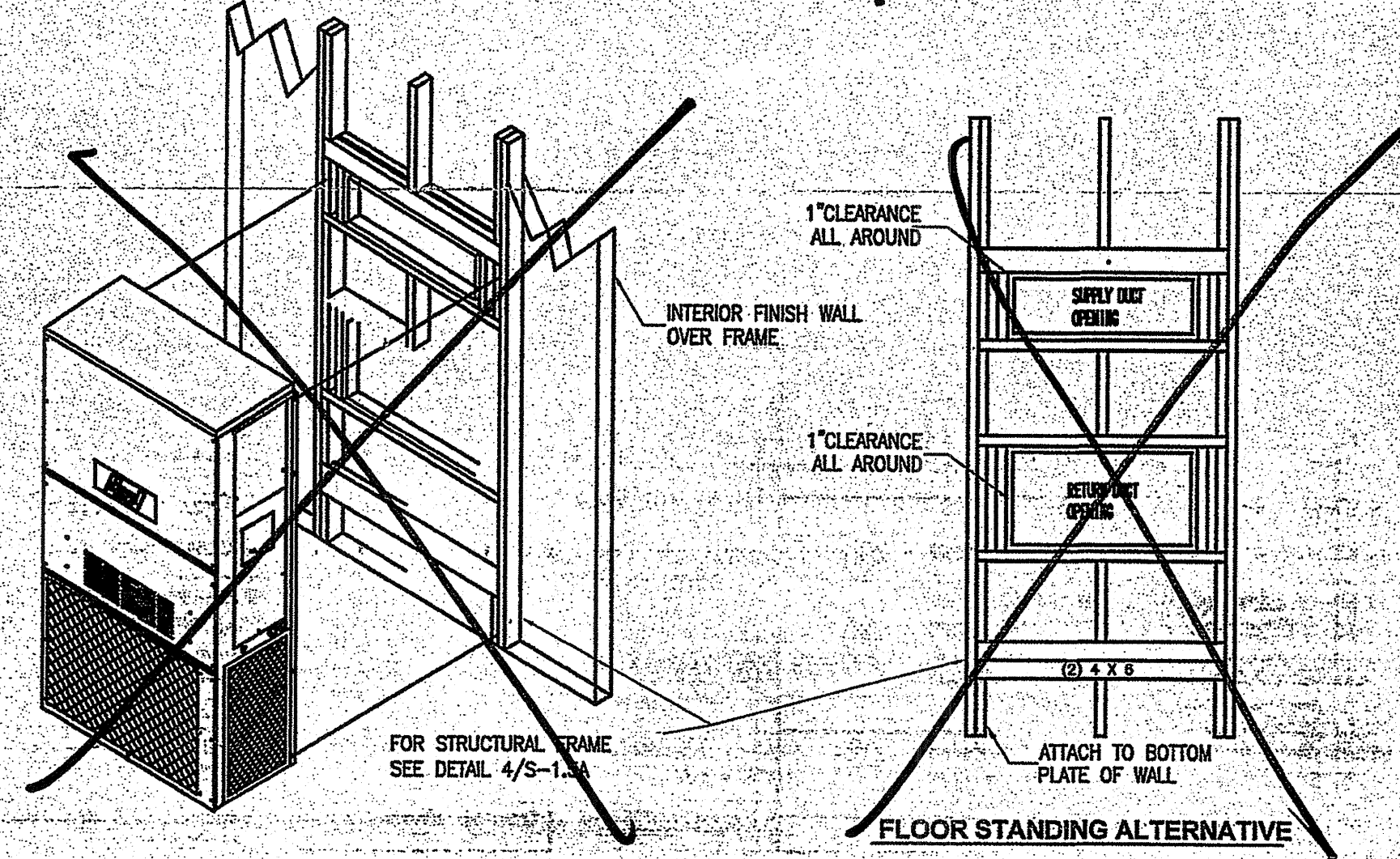
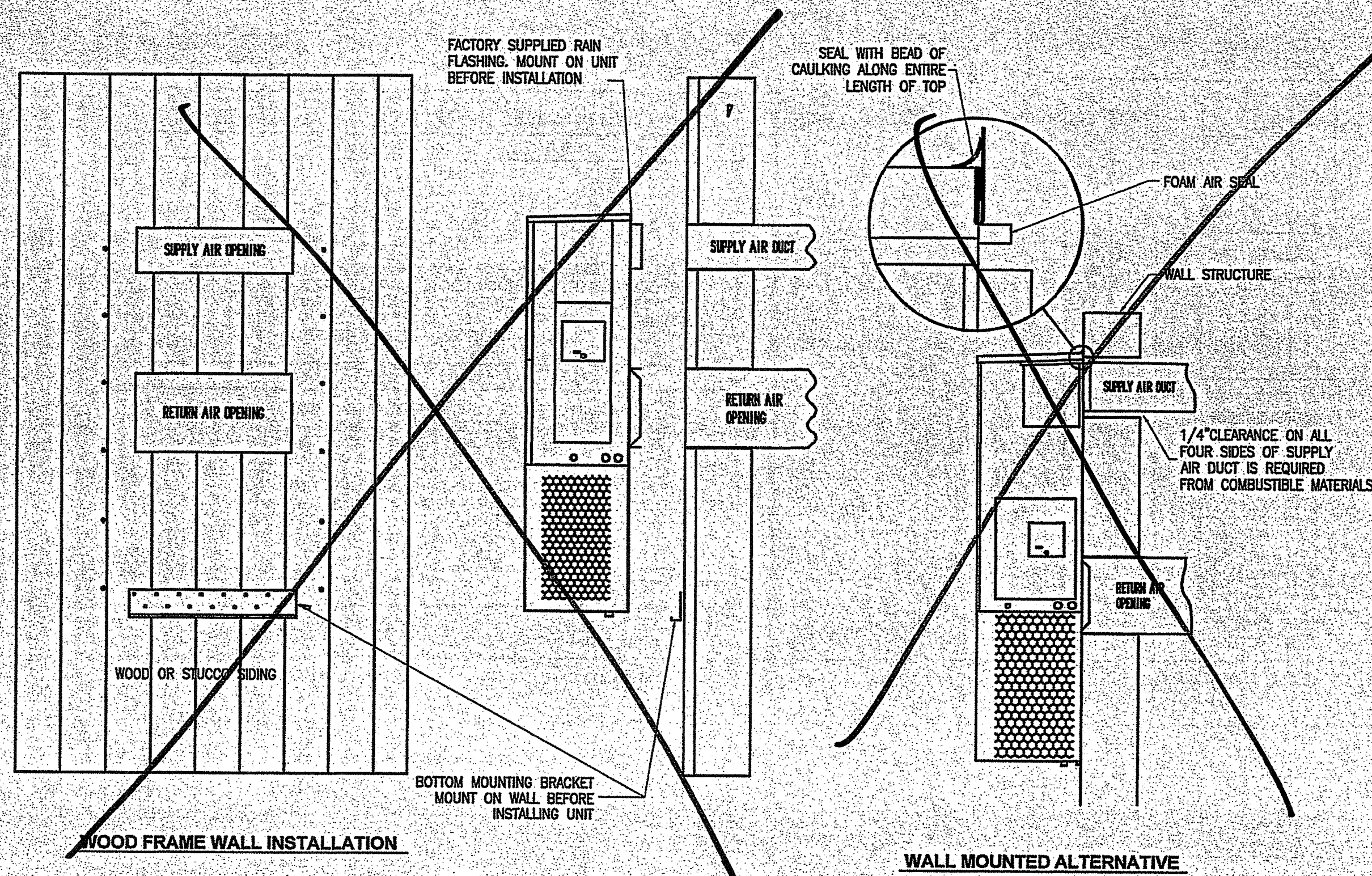
SHEET NAME  
**MECHANICAL DETAILS**

SHEET NUMBER

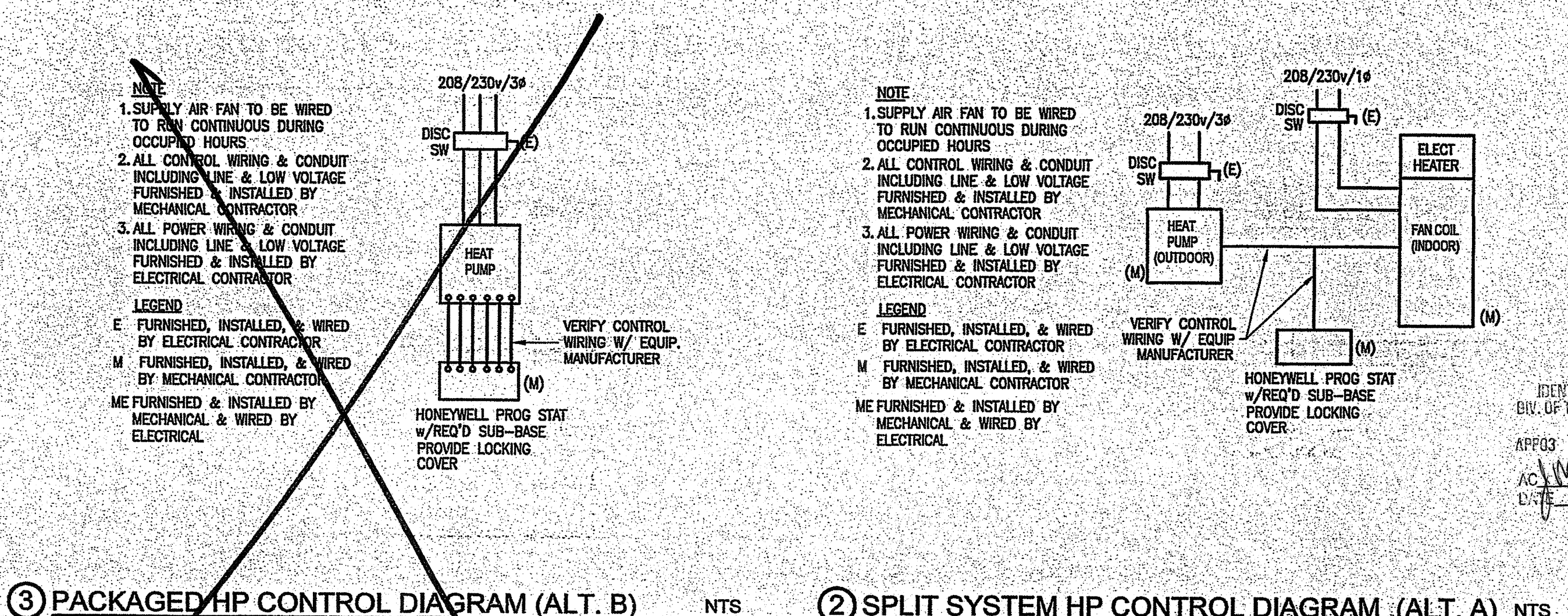
**M5.01**



| EQUIPMENT SCHEDULE                           |  |  |
|--|--|--|
| <b>FAN-COIL UNITS (ALT. A)</b>               |  |  |
|  | DAY & NIGHT #FSM4X800A MULTI-POSITION AIR HANDLER - 1580 CFM @ .5"ESP - 3/4 HP BLOWER MOTOR - EXPANSION VALVE FOR HEAT PUMP - NOMINAL 3.8 KW ELECTRIC HEAT - SINGLE POINT WIRING KIT - 33.5 MCA @ 208/230V/1# 35 AMP MOCP - LARGE FILTER KIT - OPER. WT. 210 LBS - OR EQUAL                              |  |
|  | DAY & NIGHT #FSM4X600A MULTI-POSITION AIR HANDLER - 1770 CFM @ .5"ESP - 3/4 HP BLOWER MOTOR - EXPANSION VALVE FOR HEAT PUMP - NOMINAL 3.8 KW ELECTRIC HEAT - SINGLE POINT WIRING KIT - 33.5 MCA @ 208/230V/1# 35 AMP MOCP - LARGE FILTER KIT - OPER. WT. 240 LBS - OR EQUAL                              |  |
| <b>SPLIT SYSTEM HEAT PUMP UNITS (ALT. A)</b> |  |  |
|  | DAY & NIGHT #N4H3480CHE NOMINAL 4 TON HEAT PUMP - R-410A 13 SEER - HIGH & LOW PRESSURE SWITCHES - ANTI SHORT CYCLE KIT - EMERGENCY HEAT RELAY KIT - LOW AMBIENT KIT - 18.5 MCA @ 208/230V/3# 30 AMP MOCP - 300 lbs - OR EQUAL  |  |
|  | DAY & NIGHT #N4H360GHB NOMINAL 5 TON HEAT PUMP - R-410A 13 SEER - HIGH & LOW PRESSURE SWITCHES - ANTI SHORT CYCLE KIT - EMERGENCY HEAT RELAY KIT - LOW AMBIENT KIT - 21.1 MCA @ 208/230V/3# 30 AMP MOCP - 300 lbs - OR EQUAL   |  |
| <b>PACKAGED HEAT PUMP UNITS (ALT. B)</b>     |  |  |
|  | <b>WALL-MOUNT HEAT PUMP</b><br>BARO #W482AD06000E HEAT PUMP NOM. 4 TON - WALL MOUNTED 9.0 EER - 1380 CFM @ .2"ESP - R-410A - 6 KW ELECTRIC HEAT KIT - 47 MCA @ 208/230V/3ph - 50 MOCP - SINGLE POINT ELECTRICAL CONNECTION - DEMAND CONTROL VENTILATION w/FAULT DETECTION DIAGNOSTIC CONTROLS - 600 LBS  |  |
|  | <b>WALL-MOUNT HEAT PUMP</b><br>BARO #W6362AD06000E HEAT PUMP NOM. 3 TON - WALL MOUNTED 9.0 EER - 1050 CFM @ .2"ESP - R-410A - 6 KW ELECTRIC HEAT KIT - 41 MCA @ 208/230V/3ph - 45 MOCP - SINGLE POINT ELECTRICAL CONNECTION - DEMAND CONTROL VENTILATION w/FAULT DETECTION DIAGNOSTIC CONTROLS - 440 LBS |  |
|  | <b>WALL-MOUNT HEAT PUMP</b><br>BARO #W60H2AD06000E HEAT PUMP NOM. 5 TON - WALL MOUNTED 9.0 EER - 1800 CFM @ .2"ESP - R-410A - 9 KW ELECTRIC HEAT KIT - 55 MCA @ 208/230V/3ph - 80 MOCP - SINGLE POINT ELECTRICAL CONNECTION - DEMAND CONTROL VENTILATION w/FAULT DETECTION DIAGNOSTIC CONTROLS - 640 LBS |  |
| <b>EXHAUST FANS</b>                          |  |  |
|  | GREENHECK #SP-A700 CEILING EXHAUST FAN - 500 CFM @.38" SP BACKDRAFT DAMPER - 3.2 AMPS @ 120v - SPEED CONTROLLER MTD. IN FAN - 34 lbs - INTERLOCK w/ LIGHTING - OR EQUAL  |  |
|  | GREENHECK #SP-A200 CEILING EXHAUST FAN - 130 CFM @.38" SP BACKDRAFT DAMPER - .43 AMPS @ 120v - SPEED CONTROLLER MTD. IN FAN - 24 lbs - INTERLOCK w/ LIGHTING - OR EQUAL  |  |
|  | GREENHECK #SP-A110 CEILING EXHAUST FAN - 80 CFM @.25" SP BACKDRAFT DAMPER - .58 AMPS @ 120v - SPEED CONTROLLER MTD. IN FAN - 17 lbs - INTERLOCK w/ LIGHTING - OR EQUAL   |  |
| <b>RELIEF VENTILATOR</b>                     |  |  |
|  | BROAN #612 PRESSURE RELIEF VENTILATOR CAP 12" - FLASH & SEAL WATER TIGHT WITH FLAT OR CURB MOUNT INSTALLATION PER METAL ROOFING MFG'S RECOMMENDATION - OR EQUAL  |  |
|  | BROAN #611 PRESSURE RELIEF VENTILATOR CAP 8" - FLASH & SEAL WATER TIGHT WITH FLAT OR CURB MOUNT INSTALLATION PER METAL ROOFING MFG'S RECOMMENDATION - OR EQUAL   |  |
| <b>INTAKE VENTILATOR</b>                     |  |  |
|  | BROAN #612 ROOF CAP 12" - FLASH & SEAL WATER TIGHT WITH FLAT OR CURB MOUNT INSTALLATION PER METAL ROOFING MFG'S RECOMMENDATION - OR EQUAL  |  |
| <b>REGISTER SCHEDULE</b>                     |  |  |
| SIZE<br>CFM                                  | <input checked="" type="checkbox"/> SAD - SUPPLY AIR CEILING DIFFUSER  | REGISTERS TO BE TITUS OR EQUAL<br>SUPPLY T BAR CEILING - #MCD-3 w/OBD<br>SUPPLY HARD SURFACE - #MCD-1 w/OBD    |
| SIZE<br>CFM                                  | <input type="checkbox"/> FRAG - FILTERED RETURN AIR GRILLE   | RETURN/EXHAUST T BAR CEILING - #50FF w/OBD<br>RETURN/EXHAUST HARD SURFACE - #50R w/OBD                         |
| SIZE<br>CFM                                  | <input checked="" type="checkbox"/> EAG - EXHAUST AIR GRILLE   | TRANSFER GRILLE T BAR CEILING - #50FF w/OBD<br>TRANSFER GRILLE HARD SURFACE - #50R w/OBD                       |
| SIZE<br>CFM                                  | <input checked="" type="checkbox"/> TC - TRANSFER AIR GRILLE   | SEE PLAN FOR ALL SIZES.<br>SEE PLAN FOR SUPPLY AIR THROWS.<br>COORDINATE REGISTERS w/ CEILING GRID & LIGHTING. |



① PACKAGED HEAT PUMP UNIT WALL MTG - TYP. (ALT. B) NTS



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**SOG-32 RE-LOCATABLE BUILDING PC**

APPROVALS

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT

PRE-CHECK (PC) DOCUMENT  
CODE 2013 CE  
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

FILE # 116810  
APPROVED 11/20/15  
AC: FLS/SS/SP  
DATE: 11/19/15

DATE \_\_\_\_\_  
PROJECT **XX-XXX**

02-18-15

**PC**

SHEET NAME  
**MECHANICAL SCHEDULE & DETAILS**

SHEET NUMBER  
**M5.02**



|   |   |
|---|---|
| ○ | CEILING SURFACEMOUNT                              |
| ○ | WALL SURFACEMOUNT                                 |
| ○ | PENDANT MOUNT                                     |
| □ | RECESSED DOWNLIGHT                                |
| □ | RECESSED WALLWASH                                 |
| □ | RECESSED FLOOR                                    |
| □ | SURFACE FLOOR                                     |
| — | FLOOR STRIP UON                                   |
| — | TRACK LIGHT                                       |
| — | DIRECTIONAL FLOOD                                 |
| — | EMERGENCY FIXTURE                                 |
| — | POLE LIGHT  |
| — | POLE LIGHT-DECORATIVE                             |
| — | UPLIGHT-FLUSH IN GRADE                            |
| — | BOLLARD   |
| — | TANDEM-WIRED LAMPS                                |
| — | UNDERCABINET LIGHT                                |
| — | WALL SURFACEMOUNT LINEAR TYPE                     |
| — | PENDANT LINEAR FLOOR                              |
| — | RECESSED WALLMOUNT                                |
| — | WALLPACK  |
| — | EXIT LIGHT-WALL                                   |
| — | EXIT LIGHT-CEILING<br>(ARROW INDICATES DIRECTION) |
| — | LETTER ADJACENT INDICATES<br>FIXTURE TYPE         |

|   |  |
|---|--|
| ⊕ | SINGLE RECEIPT   |
| ⊕ | DUPLEX RECEIPT   |
| ⊕ | DUPLEX - CONTROLLED  |
| ⊕ | DOUBLE DUPLEX  |
| ⊕ | SPECIAL CONFIGURATION  |
| ⊕ | FLOORMOUNT 208V, 1φRECEIPT                                   |
| ⊕ | DUPLEX-FLOOR OUTLET  |
| ⊕ | GROUND FAULT CIRCUIT INTERRUPT                               |
| ⊕ | JUNCTION BOX   |
| ⊕ | SPECIAL SYSTEM JUNCTION BOX                                  |
| ▽ | TELEPHONE OUTLET   |
| ▽ | DATA OUTLET  |
| ▽ | PHONE/DATA COMBO OUTLET                                      |
| ▽ | TELEVISION OUTLET  |
| ▽ | SAFETY DISCONNECT  |
| ▽ | DROP CORD RECEIPT  |
| ▽ | ABOVE-CLGMOUNT J-BOX   |
| ▽ | TV OUTLET-FLOORMOUNT   |
| ▽ | TELEPHONE FLOOR OUTLET                                       |
| ▽ | DATA FLOOR OUTLET  |
| ▽ | WIRELESS ACCESS POINT IN CEILING                             |
| ▽ | MOUNT DEVICE ABOVE COUNTER<br>PER ARCHITECTURAL REQUIREMENTS |

|   |  |
|---|--|
| — | NEW  |
| — | UNDERGROUND                                |
| — | NEW POWER HOMERUN<br>(3 HOTS & NEUT SHOWN) |
| — | ISOLATED GROUND                            |
| — | ISOLATED GROUND<br>(E) POWER HOMERUN       |
| — | WIRE LINE-CONTINUES                        |
| — | CONDUIT STUB (W/MARKER)                    |
| — | VERTICAL CONDUIT RUN                       |
| — | CONDUIT SEAL                               |
| — | FLEXIBLE CONNECTION                        |
| — | LOW VOLTAGE                                |
| — | SURFACEMOUNT RACEWAY                       |
| — | INDICATES LINE CONTINUES                   |
| — | CORD W/PLUG                                |

|   |                      |
|---|----------------------|
| ⊕ | NORN-AUDIBLE DEVICE  |
| ⊕ | VISUAL-VISUAL DEVICE |
| ⊕ | AUDIBLE/VISUAL       |
| ⊕ | FLOW SWITCH          |
| ⊕ | TAMPER SWITCH        |
| ⊕ | MANUAL PULL STATION  |
| ⊕ | SMOKE DETECTOR       |
| ⊕ | DUCT SMOKE DETECTOR  |
| ⊕ | HEAT DETECTOR        |
| ⊕ | BELL                 |
| ⊕ | END OF LINE RESISTOR |
| ⊕ | CHIME                |

|   |                           |
|---|---------------------------|
| ⊕ | MOTOR                     |
| ⊕ | THERMOSTAT                |
| ⊕ | CIRCUIT BREAKER           |
| ⊕ | FUSIBLE SWITCH            |
| ⊕ | GROUND                    |
| ⊕ | PHASE                     |
| ⊕ | CLOCK                     |
| ⊕ | CLOCK/SPEAKER COMBINATION |
| ⊕ | WALL MOUNTED CLOCK        |
| ⊕ | PUSHBUTTON                |
| ⊕ | FLUSHMOUNT PANEL          |
| ⊕ | FLUSHMOUNT PANEL          |
| ⊕ | SURFACEMOUNT PANEL        |
| ⊕ | SURFACEMOUNT PANEL        |
| ⊕ | DAMPER MOTOR              |
| ⊕ | HUMIDISTAT                |
| ⊕ | MAGNETIC CONTACTOR        |
| ⊕ | COMBINATION STARTER       |

|   |                       |
|---|-----------------------|
| ⊕ | SPST                  |
| ⊕ | DPST                  |
| ⊕ | 3-WAY                 |
| ⊕ | 4-WAY                 |
| ⊕ | DIMMER                |
| ⊕ | TIMER SWITCH          |
| ⊕ | W/THERMAL OVERLOAD    |
| ⊕ | W/PILOT LIGHT         |
| ⊕ | KEY OPERATED          |
| ⊕ | DUAL LEVEL SWITCHING  |
| ⊕ | SWITCHLEG DESIGNATION |
| ⊕ | OCCUPANCY SENSOR      |
| ⊕ | BYPASS TIMER          |

**ABBREVIATIONS**

|       |                               |                     |                                  |       |  |         |                               |
|-------|-------------------------------|---------------------|----------------------------------|-------|--|---------|-------------------------------|
| A     | AMPERE                        | EC                  | ELECTRICAL CONTRACTOR            | LPS   | LOW PRESSURE SODIUM                                  | (R)     | RELOCATED(D)                  |
| AB    | AMP BREAKER                   | EC-#                | EVAPORATIVE COOLER               | LRA   | LOCKED ROTOR AMPS                                    | RECEPT  | RECEPTACLE                    |
| ABAND | ABANDONED                     | EF-#                | EXHAUST FAN                      | LS    | LIFE SAFETY BRANCH                                   | REF     | REFRIGERATOR                  |
| ABV   | ABOVE                         | EL                  | EVENING LIGHT                    | LT    | LIGHT  | REQ'D   | REQUIRED                      |
| AC    | ALTERNATING CURRENT           | ELEC                | ELECTRICAL                       | LTO   | LIGHTING   | RLA     | RATED LOAD AMPS               |
| AC-#  | AIR CONDITIONER               | EM                  | EMERG BATTERY BACKUP             | LV    | LOW VOLTAGE  | RM      | ROOM                          |
| ADJ   | ADJACENT                      | EMB                 | EMERGENCY BALLAST                | MC    | MECHANICAL CONTRACTOR                                | RMC     | RIGID METAL CONDUIT           |
| AF    | AMP FUSE, AMP FRAME           | EMERG               | EMERGENCY                        | MCA   | MINIMUM CKT AMPS                                     | RMV     | REMOVAL                       |
| AFF   | ABOVE FINISH FLOOR            | EOL                 | END OF LINE                      | MCB   | MAIN CIRCUIT BREAKER                                 | RPLC    | RAPID                         |
| AFG   | ABOVE FINISH GRADE            | EQUIP               | EQUIPMENT                        | MCTB  | MAIN CATV TERMINAL BOARD                             | RS      | RESET START                   |
| AI    | AMPERES INTERRUPTING CAPACITY | ES                  | ENERGY SAVING                    | MCTC  | MAIN CATV TERMINAL CABINET                           | SC      | SIGNAL CABINET                |
| AL    | ALUMINUM                      | (E) IN (N) LOCATION | (E) IN (N) LOCATION              | MECH  | MECHANICAL   | SCC     | SHORT CKT CURRENT             |
| AS    | AMP SWITCH RATING             | (EXR)               | (E) TO BE (R)                    | MFR   | MANUFACTURER   | SGM     | STATE FIRE MARSHAL            |
| ATS   | AUTOMATIC TIME SWITCH         | EXT                 | EXTERIOR                         | MFS   | MAIN FUSIBLE SWITCH                                  | SH      | SHEET                         |
| ATS   | AUTOMATIC TRANSFER SWITCH     | FL                  | FLOURESCENT                      | MH    | METAL HALIDE   | SL      | SLIMLINE, SWITCH LEG          |
| AV    | AUDIBLE/AUDIO VISUAL          | F                   | FUTURE                           | MLO   | MAIN LUGS ONLY                                       | SPEC    | SPECIFICATION                 |
| AWG   | AMERICAN WIRE GAGE            | F-#                 | FURNACE                          | MOCF  | MAXIMUM OCP  | SPST    | SINGLE POLE SINGLE THROW      |
| BFG   | BELOW FINISH GRADE            | FA                  | FIRE ALARM                       | MSB   | MAIN SWITCHBOARD                                     | SQ      | SQUARE                        |
| BIL   | BASIC IMPULSE LEVEL           | FACP                | FIRE ALARM CONTROL PANEL         | MT    | MOUNT  | STR'G   | STORAGE                       |
| BLDG  | BUILDING                      | FAT                 | FIRE ALARM TERMINAL              | MT HT | MOUNTING HEIGHT                                      | SURF    | SURFACE                       |
| C     | CONDUIT                       | FAU                 | FORCED AIR UNIT                  | MTS   | MANUAL TRANSFER SWITCH                               | SW      | SERVICE                       |
| C-#   | CATV CONDUIT                  | FBO                 | FURNISHED BY OTHERS              | MTTB  | MAIN TELEPHONE TERMINAL BOARD                        | SWC     | SWITCH                        |
| CABT  | CABINET                       | FC-#                | FAN COIL                         | MTTC  | MAIN TELEPHONE TERMINAL CABINET                      | T       | TRANSFORMER, TERMINAL         |
| CATV  | CABLE TELEVISION              | FLA                 | FULL LOAD AMPS                   | MW    | MICROWAVE  | TEL     | TELEPHONE CONDUIT             |
| CB    | CIRCUIT BREAKER, CODE BLUE    | FLR                 | FLOOR                            | N     | NEUTRAL (GROUNDED CONDUCTOR)                         | TBR     | TO BE REMOVED                 |
| CBC   | CA. BUILDING CODE             | FLUR                | FLOURESCENT                      | (N)   | NEW  | TC      | TIME CLOCK                    |
| CEC   | CA. ELECTRICAL CODE           | FS                  | FUSIBLE SWITCH                   | N3R   | NEMA 3R  | TEL     | TELEPHONE                     |
| CF    | CA. ENERGY COMMISSION         | FNVR                | FULL VOLTAGE NON-REVERSING       | NC    | NORMALLY CLOSED                                      | TELECO  | TELEPHONE COMPANY             |
| CFE   | COMPACT FLOURESCENT           | G                   | GROUNDING CONDUCTOR              | NEC   | NATIONAL ELECTRICAL CODE                             | TS      | TIME SWITCH                   |
| CFC   | CALIFORNIA FIRE CODE          | GC                  | GENERAL CONTRACTOR               | NEMA  | NAT'L ELEC MANUFACTURER'S ASSOC                      | TSD     | TIME SWITCH OVERRIDE          |
| CLG   | CEILING                       | GD                  | GENERAL DISPOSAL                 | NIC   | NOT IN CONTRACT                                      | TSP     | TWISTED SHIELDED PAIR         |
| CL    | CENTER LINE                   | GFCI                | GROUND FAULT CIRCUIT INTERRUPTER | NL    | NIGHT LIGHT  | TTB     | TELEPHONE TERMINAL BOARD      |
| CKT   | CIRCUIT                       | GFI                 | GROUND FAULT CIRCUIT INTERRUPTER | NO    | NORMALLY OPEN  | TTC     | TELEPHONE TERMINAL CABINET    |
| CNTR  | CONTRACTOR                    | GND                 | GROUND                           | NPF   | NORMAL POWER FACTOR                                  | TX      | TRANSFORMER                   |
| C.O.  | CONDUIT ONLY (W/PULLROPE)     | GND                 | GROUND                           | NTS   | NOT TO SCALE   | TYP     | TYPICAL                       |
| COND  | CONDUIT, CONDUCTOR            | GNS                 | GALVANIZED RIGID STEEL           | OC    | ON CENTER  | TYP SIM | TYPICAL SIMILAR               |
| CR    | CRITICAL BRANCH               | GWS                 | GANG WITH SWITCH                 | OCP   | OVERCURRENT PROTECTION                               | UC      | UNDERCABINET, UNDERCOUNTER    |
| CSFM  | CALIFORNIA SFM                | H                   | HEIGHT, HIGH                     | OD    | OUTSIDE DIAMETER                                     | UG      | UNDERGROUND                   |
| CT    | CURRENT TRANSFORMER           | HACR                | HEATING, AC & REFRIG             | OH    | OVERHEAD   | UGPS    | UNDERGROUND PULL SECTION      |
| CU    | COPPER                        | HID                 | HIGH INTENSITY DISCHARGE         | OSA   | OFFICE OF THE STATE ARCHITECT                        | UL      | UNDERWRITERS LABORATORIES     |
| CU-#  | CONDENSING UNIT               | HO                  | HIGH OUTPUT                      | OSHPD | OFFICE OF STATEWIDE HEALTH<br>PLANNING & DEVELOPMENT | UNO     | UNLESS OTHERWISE NOTED        |
| D     | DEPTH                         | HOA                 | HAND-OFF-AUTO                    | OVD   | OVERLOAD   | USA     | UG SVC ALERT 800-842-2444     |
| DC    | DIRECT CURRENT                | HP                  | HORSEPOWER                       | P     | POLE   | V       | VOLT                          |
| DF    | DRINKING FOUNTAIN             | HFP                 | HIGH POWER FACTOR                | PA    | PUBLIC ADDRESS                                       | VA      | VOLT AMPERES                  |
| DIA   | DIAMETER                      | HPS                 | HIGH PRESSURE SODIUM             | PB    | PULLBOX  | VAC     | VOLT ALTERNATING CURRENT      |
| DISC  | DISCONNECT                    | IC                  | INTERCOM                         | PC    | PULL CHAIN   | VHO     | VERY HIGH OUTPUT              |
| DIST  | DISTRIBUTION                  | ID                  | IDENTIFICATION                   | PC    | PULL CHAIN   | VOLT    | VOLTAGE                       |
| DPST  | DOUBLE POLE SINGLE THROW      | IF                  | INSIDE FROST                     | PC    | PHOTOCCELL   | VR      | VANDAL-RESISTANT              |
| DM    | DISHWASHER                    | IG                  | ISOLATED GROUND                  | ph    | PHASE  | W       | WIDTH, WATT, WIRE             |
| DW    | EMERGENCY                     | J-BOX               | JUNCTION BOX                     | PNL   | PANEL  | WH-#    | WATER HEATER                  |
| E     | EXISTING                      | K                   | QUANTITY 1000                    | POC   | POINT OF CONNECTION                                  | WP      | WEATHERPROOF (NEMA 3R)        |
| EA    | EACH                          | KVA                 | KILOVOLTAMPS                     | -PP-  | POWER PRIMARY  | XFR     | TRANSFORMER                   |
| EB    | ELECTRONIC BALLAST            | KW                  | KILOWATT                         | -PS-  | POWER SECONDARY                                      | +48     | INDICATES MOUNTING HEIGHT AFF |

**GENERAL LIGHTING PLAN NOTES**

- DUAL LEVEL SWITCHING: IN ROOMS 100 SQ. FT. OR LARGER, OR WHERE INDICATED ON PLANS, CONTROL INBOARD LAMPS BY ONE SWITCH AND OUTBOARD LAMPS BY OTHER SWITCH
- NIGHT LIGHT (NL) DESIGNATED LUMINAIRES IN INTERIOR LOCATIONS SHALL HAVE ONE BALLAST CONTINUOUSLY ENERGIZED. LUMINAIRES IN EXTERIOR LOCATIONS SHALL BE ON FROM DUSK TO DAWN
- LIGHTING FIXTURE LOCATIONS SHOWN ARE SCHEMATIC. REFER TO ARCHITECTURAL PLANS (REFLECTED CEILING, ELEVATIONS, ETC.) FOR EXACT LOCATIONS AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN
- REFER TO ARCHITECT'S REFLECTED CEILING PLAN(S) FOR CEILING HEIGHTS, TYPES, FINISHES, ETC. IN EACH AREA. VERIFY FLANGE TYPES, TRIM KITS, STEM LENGTHS, ETC. FOR ALL FIXTURES PRIOR TO SUBMITTALS.
- CONFIRM LOCATION OF ALL DOORS SWINGS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN OF SWITCHES.
- PROVIDE UNSWITCHED HOT LEG OF ROOM LIGHTING BRANCH CIRCUIT TO EACH BATTERY POWERED EMERGENCY LIGHT AND EXIT SIGN FOR CONTINUOUS CHARGING

**GENERAL POWER PLAN NOTES**

- FUSING: ALL FUSIBLE SAFETY DISCONNECT SWITCHES SHALL BE PROVIDED WITH DUAL-ELEMENT TIME DELAY TYPE FUSES SIZED AND RATED PER EQUIPMENT MANUFACTURERS' RECOMMENDATIONS. VERIFY WITH EQUIPMENT NAMEPLATE BEFORE INSTALLATION.
- INSTALL SEPARATE NEUTRALS FOR EACH BRANCH CIRCUIT SERVING ISOLATED GROUND RECEPTACLES.
- MOTOR OVERLOAD PROTECTION: WHERE REQUIRED BY NEC ARTICLE 430 PART C AND NOT SHOWN ON PLAN OR PROVIDED INTEGRAL WITH EQUIPMENT, PROVIDE AND INSTALL THERMAL OVERLOAD PROTECTION FOR ALL MOTORS.
- SPARE CONDUIT FOR RECESSED PANELS: PROVIDE (1) 3/4" SPARE CONDUIT STUB UP TO ACCESSIBLE ABOVE CEILING SPACE AND/OR ACCESSIBLE SPACE BELOW FOR EVERY (2) SPARE BREAKER SPACES AS INDICATED ON PANEL SCHEDULES.
- DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE. EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.
- ELECTRICAL AND COMMUNICATIONS OUTLETS SHOWN IN THE SAME LOCATION, SHALL BE MOUNTED ON OPPOSITE SIDES OF THE SAME STUD. COORDINATE BETWEEN ELECTRICAL AND COMMUNICATIONS PLANS.

**GENERAL COMMUNICATION PLAN NOTES**

- SIGNAL AND COMMUNICATIONS SYSTEMS RACEWAYS AND BOXES: PROVIDE AND INSTALL 4" SQUARE RECESSED JUNCTION BOX WITH 1-GANG RING AND (1) 3/4" CONDUIT STUB TO ACCESSIBLE CEILING SPACE AT EACH WALL TELEPHONE (VOICE), TELEVISION AND DATA OUTLET LOCATION SHOWN ON THE PLANS UNLESS OTHERWISE NOTED. FOR EACH COMBINATION VOICE/DATA OUTLET, PROVIDE AND INSTALL (2) 3/4" CONDUIT STUBS TO ACCESSIBLE CEILING SPACE.
- BEFORE CONSTRUCTION, COORDINATE AND VERIFY ALL DATA AND TELEPHONE LOCATIONS WITH OWNER OR ARCHITECT
- TELEPHONE WIRING: EACH TELEPHONE OUTLET LOCATION SHOWN ON THE PLANS SHALL HAVE A 4 PAIR, 24 GAUGE CONTINUOUS CABLE, CATEGORY 6 (BERK-TEK LANMARK SERIES OR APPROVED EQUAL), HOMERUN TO THE TELEPHONE TERMINAL BOARD "TIB" TERMINATE AT OUTLET LOCATION WITH OWNER APPROVED JACK, VERIFY LOCATIONS WITH OWNER OR ARCHITECT PRIOR TO CONSTRUCTION.
- TELEVISION PREWIRE: EACH TELEVISION OUTLET SHOWN ON THE PLANS SHALL HAVE AN RG6 (WITH QUAD SHIELD) COAXIAL CABLE HOMERUN PREWIRED TO THE CATV TERMINAL BOARD LABEL AND LEAVE ADEQUATE SLACK FOR UTILITY CONNECTION.
- VOICE/DATA WIRING: EACH VOICE/DATA OUTLET LOCATION SHOWN ON THE PLANS SHALL HAVE (4) 4 PAIR, 24 GAUGE, CATEGORY 6, UTP CABLES (BERK-TEK LANMARK SERIES OR APPROVED EQUAL) HOMERUN TO THE TELEPHONE TERMINAL BOARD. TERMINATE AT OUTLET LOCATION WITH OWNER APPROVED JACK. VERIFY SYSTEM REQUIREMENTS WITH OWNER OR ARCHITECT PRIOR TO CONSTRUCTION.
- DEVICE LOCATIONS SHOWN ARE SCHEMATIC AND APPROXIMATE. EXACT LOCATIONS SHALL BE FIELD VERIFIED DURING ROUGH-IN WITH ARCHITECTURAL ELEVATIONS, CASEWORK SHOP DRAWINGS, FURNITURE, ETC. AND SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT WITH OTHER EQUIPMENT.
- ELECTRICAL AND COMMUNICATIONS OUTLETS SHOWN IN THE SAME LOCATION, SHALL BE MOUNTED ON OPPOSITE SIDES OF THE SAME STUD. COORDINATE BETWEEN ELECTRICAL AND COMMUNICATIONS PLANS.

**TITLE 24 CODES:**

- 2013 CALIFORNIA ADMINISTRATIVE CODE (CAC) . . . . . (PART 1, TITLE 24, CCR)
- 2013 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1 & 2 . . . . . (PART 2, TITLE 24, CCR)  
(2012 EDITION INTERNATIONAL BUILDING CODE WITH 2013 CALIFORNIA AMENDMENTS)
- 2013 CALIFORNIA ELECTRICAL CODE . . . . . (PART 3, TITLE 24, CCR)  
(2011 EDITION NATIONAL ELECTRICAL CODE WITH 2013 CALIFORNIA AMENDMENTS)
- 2013 CALIFORNIA MECHANICAL CODE (CMC) . . . . . (PART 4, TITLE 24, CCR)  
(2012 EDITION IPMIO UNIFORM MECHANICAL CODE WITH 2013 CALIFORNIA AMENDMENTS)
- 2013 CALIFORNIA PLUMBING CODE (CPC) . . . . . (PART 5, TITLE 24, CCR)  
(2012 EDITION IPMIO UNIFORM PLUMBING CODE WITH 2013 CALIFORNIA AMENDMENTS)
- 2013 CALIFORNIA ENERGY CODE . . . . . (PART 6, TITLE 24, CCR)  
(2012 EDITION CALIFORNIA ENERGY COMMISSION BUILDING ENERGY EFFICIENCY STANDARDS)
- 2013 CALIFORNIA FIRE CODE (CFC) . . . . . (PART 9, TITLE 24, CCR)  
(2012 EDITION OF INTERNATIONAL FIRE CODE WITH 2013 CALIFORNIA AMENDMENTS)
- 2013 CALIFORNIA GREEN CODE . . . . . (PART 11, TITLE 24, CCR)
- 2013 CALIFORNIA REFERENCED STANDARDS CODE . . . . . (PART 12, TITLE 24, CCR)  
NFPA 13 - 2013  
NFPA 72 - 2013

REFERENCED CODE SECTIONS FOR APPLICABLE STANDARDS  
2013 CBC, CHAPTER 35  
2013 CFC, CHAPTER 45

**GENERAL NOTES**

- CODE COMPLIANCE ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES, STANDARDS AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS (IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION) OF THE FOLLOWING PUBLICATIONS:
  - CALIFORNIA CODE OF REGULATIONS TITLE 24; INCLUDES 2004 NATIONAL ELECTRICAL CODE, UNIFORM FIRE CODE, UNIFORM BUILDING CODE, ETC. WITH CALIFORNIA AND OTHER LOCAL AMENDMENTS AS APPLICABLE.
  - AMERICANS WITH DISABILITIES ACT (ADA)
- SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT ALL CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORKERS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, FLAGS, TAPE, ETC. AS REQUIRED FOR SAFETY. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES, WHICH MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.
- FIRE RATED ASSEMBLIES SHALL MAINTAIN RATINGS AS SPECIFIED IN THE CALIFORNIA BUILDING CODE CHAPTER 7. CONTRACTOR SHALL PROVIDE AND INSTALL PHYSICAL ENCLOSURE AROUND FIXTURES, PANELS, ETC. AS REQUIRED. ALL ASSEMBLIES TO BE PENETRATED SHALL BE INSTALLED WITH APPLICABLE THROUGH-PENETRATION FIRESTOP SYSTEM AS DETERMINED BY UL CLASSIFICATION. BEFORE CONSTRUCTION, VERIFY AND COMPLY WITH REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION.
- MOUNTING HEIGHTS IN INCHES TO CENTERLINE ABOVE FINISH FLOOR SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
  - +18" AFF: RECEPTACLES, TELEPHONE, TV & DATA OUTLETS
  - +48" AFF: LIGHT SWITCHES TOP OF BOX
  - +48" AFF: FIRE-ARM-RESISTANT-PULL-STATIONS, T-SWITCH (TOP OF BOX)
  - +80" AFF OR 6" BELOW CEILING (WHICHEVER IS LOWER); FIRE ALARM VISUALS
  - +42"-48" FIRE ALARM PULL STATIONS, OPERATING HANDLE

BEFORE ROUGH-IN, VERIFY ALL MOUNTING HEIGHTS AND EXACT LOCATIONS FOR ALL EQUIPMENT ELECTRICAL CONNECTIONS, STUB-UPS, RECEPTACLES, OUTLETS, ETC. WITH ARCHITECT OR OWNER. PLACE DEVICES LOCATED ABOVE COUNTERS, SHELVING, ETC. AND BATHROOMS SO AS NOT TO CONFLICT WITH EDGES OF WANSICOTING, COUNTER SPLASH, SHELVING, ETC. ARCHITECTURAL SHEETS SHALL GOVERN.

- LABEL PANELS, CABINETS, BACKBOARDS, MAIN DEVICES, SAFETY SWITCHES, CONTACTORS AND OTHER SPECIFICALLY DESIGNATED EQUIPMENT SHOWN ON PLANS. USE ENGRAVED LAMINATED PLASTIC NAMEPLATES ATTACHED BY SCREWS OR NUTS. FOR FEEDERS, NEATLY AND INDELBLY LABEL CONDUIT DESTINATIONS ON BOTH VISIBLE ENDS OF CONDUIT RUNS WHERE CONDUITS TERMINATE AT DESIGNATED ENCLOSURES, STRUCTURES OR EQUIPMENT (INCLUDING PULL AND SPLICE BOXES)
- EQUIPMENT ANCHORAGE: BRACE OR ANCHOR ALL ELECTRICAL EQUIPMENT TO RESIST A HORIZONTAL FORCE ACTING IN ANY DIRECTION. USE THE FOLLOWING CRITERIA FOR DETERMINING:
  - FIXED EQUIPMENT ON GRADE 30% OF OPERATING WEIGHT.
  - FIXED EQUIPMENT ON STRUCTURE 45% OF OPERATING WEIGHT.
  - EMERGENCY POWER EQUIPMENT ON GRADE 50% OF OPERATING WEIGHT.
  - EMERGENCY POWER EQUIPMENT ON STRUCTURE 60% OF OPERATING WEIGHT.

EXCEPTIONS: FOR FLEXIBLY MOUNTED EQUIPMENT USE 4X THE ABOVE VALUES; FOR SIMULTANEOUS VERTICAL FORCE, USE 5X HORIZONTAL FORCE. SEE STRUCTURAL PLANS FOR ANCHORAGE DETAILS AND WHERE ANCHORAGE DETAILS ARE NOT SHOWN ON THE DRAWINGS, THE FIELD INSTA INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND THE FIELD REPRESENTATIVE OF THE AUTHORITY HAVING JURISDICTION. SHOULD SAID APPROVAL BE WITHHELD, ELECTRICAL CONTRACTOR SHALL, AT NO EXTRA COST TO THE OWNER, MODIFY AND JUSTIFY INSTALLATION AS REQUIRED TO GAIN APPROVAL.

- MECHANICAL SYSTEMS**
- MECHANICAL UNIT CONDUITS: TO PREVENT DAMAGE DUE TO VIBRATION, BOTH POWER AND CONTROL WIRING CONDUITS FEEDING EXTERIOR MECHANICAL UNITS SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR WITH LIQUID TIGHT FLEXIBLE TYPE AT FINAL CONNECTION TO UNIT AND BETWEEN ROOF JACK AND DISCONNECT SWITCH WHERE DISCONNECT IS MOUNTED ON UNIT.
  - NOT USED
  - T-SWIT J-BOXES: PROVIDE AND INSTALL 4" SQUARE JUNCTION BOX WITH 1-GANG RING AND 1/2" CONDUIT TO ACCESSIBLE CEILING SPACE ABOVE AT EACH THERMOSTAT LOCATION
  - EXHAUST FANS SHALL BE PROVIDED & INSTALLED BY MECHANICAL CONTRACTOR WITH WIRING CONNECTIONS MADE BY ELECTRICAL CONTRACTOR

- MEP COMPONENT ANCHORAGE NOTE**
- ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2013 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 13, 28 AND 30.
- ALL PERMANENT EQUIPMENT AND COMPONENTS.
  - TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY GAS OR WATER.
  - MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE ATTACHMENT OF THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

- COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
- COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

**PLUMBING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE**

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, 13.6.5.6, AND 2013 CBC, SECTIONS 1616A.1.23, 1616A.1.24, 1616A.1.25 AND 1616A.1.26

THE BRACING AND ATTACHMENTS TO THE STRUCTURE SHALL BE DETAILED ON THE APPROVED DRAWINGS OR THEY SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVALS (OP#) AS MODIFIED TO SATISFY ANCHORAGE REQUIREMENTS OF ACI 318, APPENDIX D.

COPIES OF THE MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF HANGING AND BRACING OF THE PIPE, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS.

THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS

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LICENSE #E18218

**CANTELM ENGINEERING**

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Cantelmi@Cantelmi.NET

**SOG-32 RE-LOCATABLE BUILDING PC**

APPROVALS

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT

PRE CHECK (PC) DOCUMENT  
CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION  
FOR CONSTRUCTION IS REQUIRED

FILE # PC-113-2013  
APPROVED BY: [Signature]  
DATE: 3/19/15

DATE: \_\_\_\_\_

PROJECT: **XX-XXX**

PROFESSIONAL SEAL  
ELECTRICAL ENGINEER  
STATE OF CALIFORNIA  
16168  
REN 12-31-2015

02-18-15

**PC**

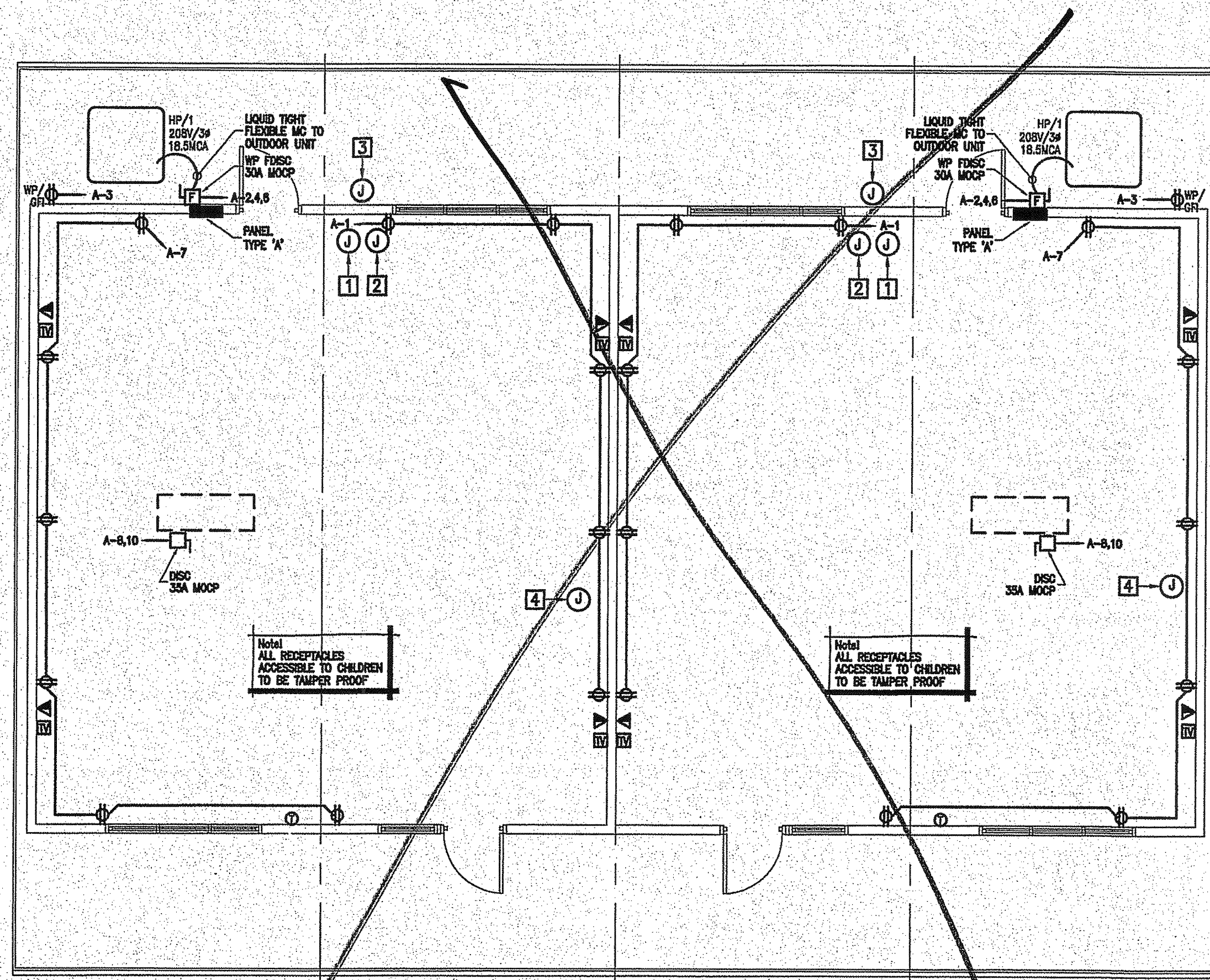
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**ELECTRICAL NOTES**

SHEET NUMBER  
**E0.01**

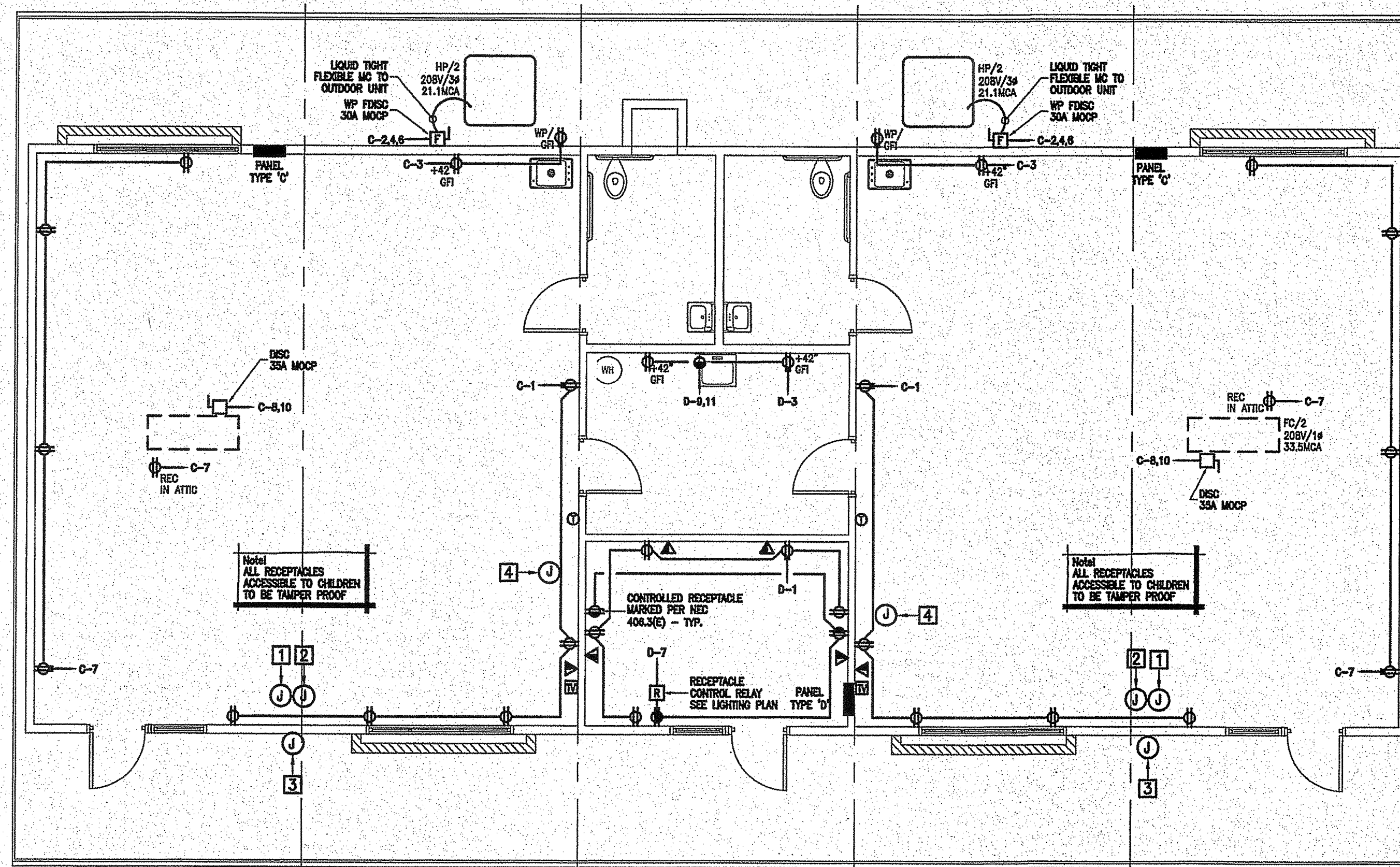
IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT

APPROX 116810  
NO. [Signature]  
DATE 02/16/16

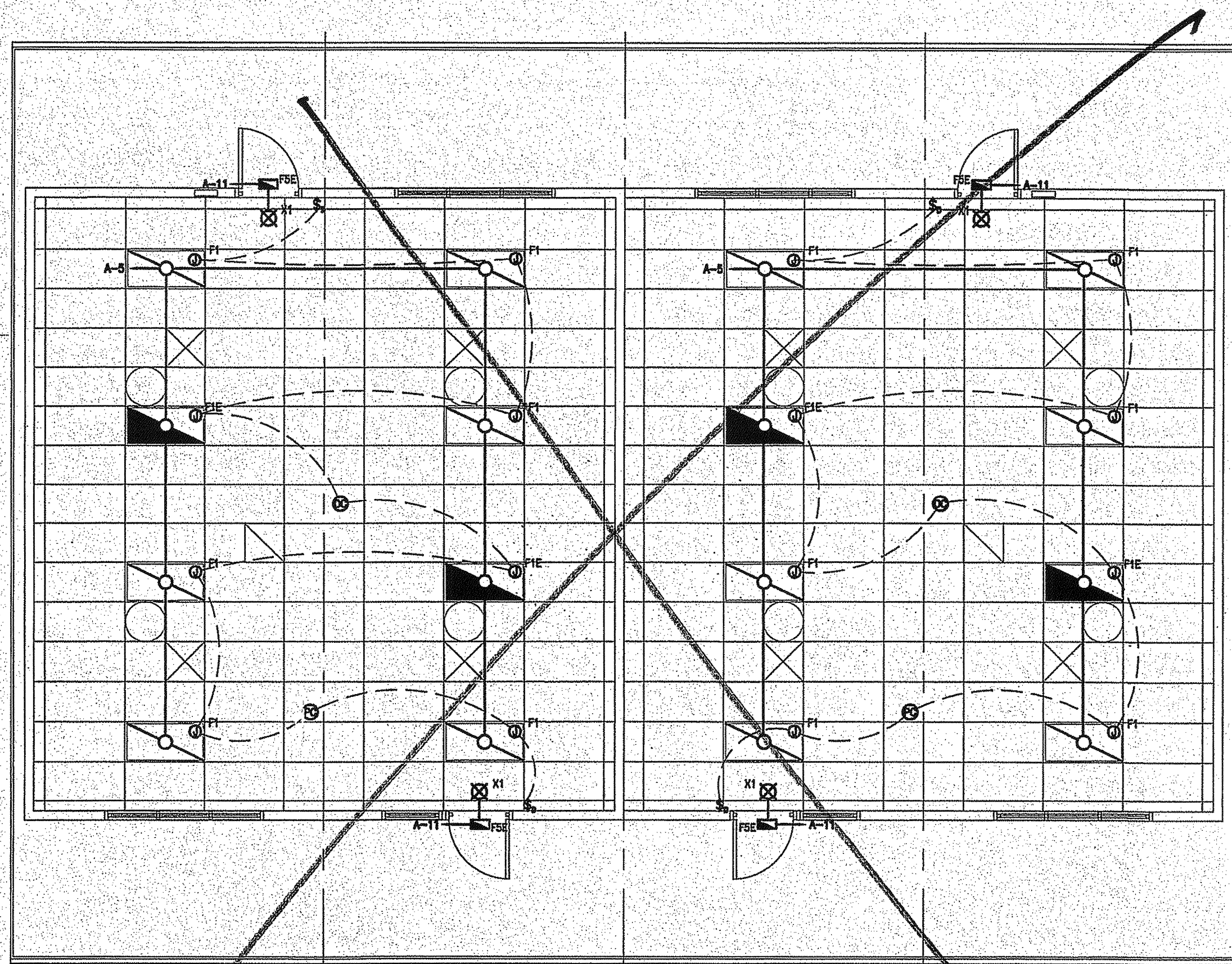




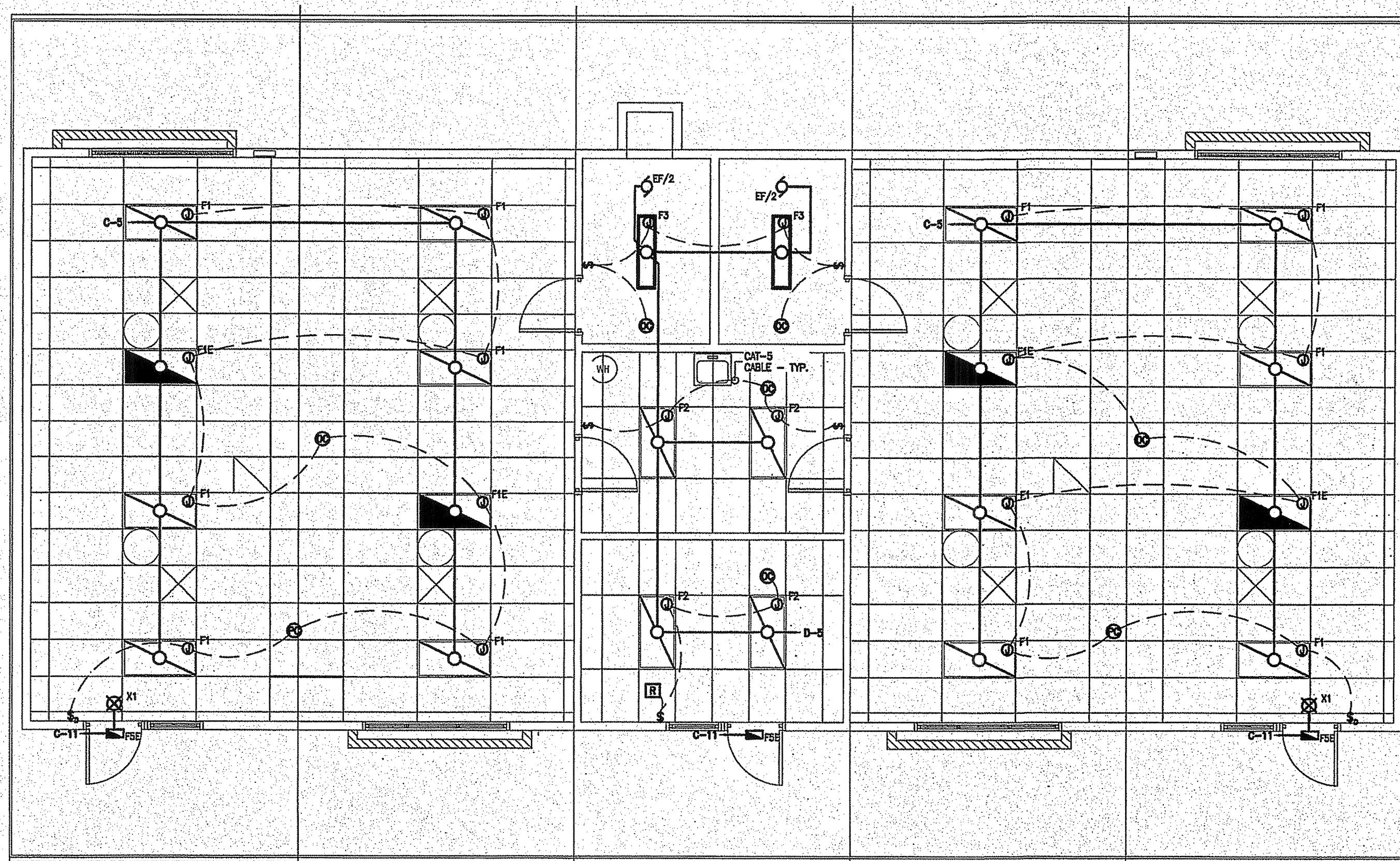
1 SOG 32 - POWER PLAN - 4M (ALTERNATE 'A')  
SCALE 3/16" = 1'-0"



2 SOG 32 - POWER PLAN - 5M (ALTERNATE 'A')  
SCALE 3/16" = 1'-0"



3 SOG 32 - LIGHTING PLAN - 4M  
SCALE 3/16" = 1'-0"



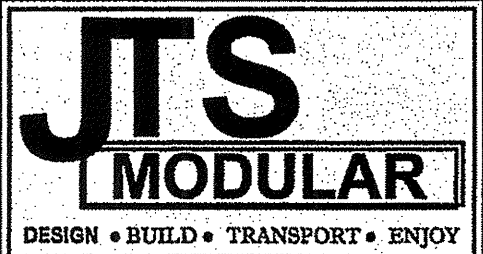
4 SOG 32 - LIGHTING PLAN - 5M  
SCALE 3/16" = 1'-0"

KEYNOTES

- JUNCTION BOX FOR FIRE ALARM PULL STATION WITH CONDUIT STUBBED TO ATTIC
- JUNCTION BOX FOR FIRE ALARM VISUAL DEVICE WITH CONDUIT STUBBED TO ATTIC
- JUNCTION BOX FOR FIRE ALARM EXTERIOR HORN
- ADD JUNCTION BOX FOR FIRE ALARM PULL STATION

REFER TO EC.01 FOR MOUNTING HEIGHTS.

Note: LOCATION OF TELECOMMUNICATIONS CABINET DETERMINED IN FIELD. PROVIDE (1) 6"x5/8" DIA COPPER CLAD STEEL GROUND ROD w/ (1) #6G TO PANEL GROUND - PROVIDE (1) QUAD-PLEX RECEPTACLE IN CABINET TO CKT 3



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SOG-32 RE-LOCATABLE BUILDING PC

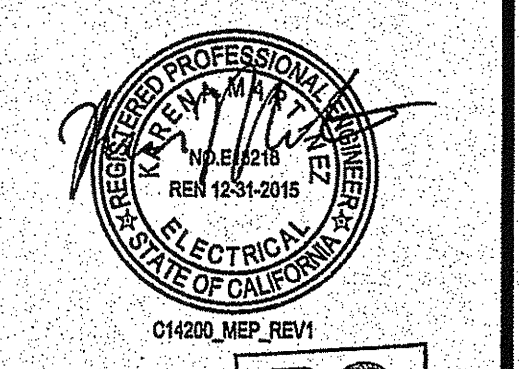
APPROVALS

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT

PRE CHECK (PC) DOCUMENT  
CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

FILE # PC-575  
APPLICATOR: JTS, SCA  
AC: F/LS, JLS, SS, SPP  
DATE: 02/19/15

DATE: \_\_\_\_\_  
PROJECT: XX-XXX



02-18-15 PC

SHEET NAME  
ELECTRICAL PLANS:  
4M & 5M  
(ALTERNATE 'A')

SHEET NUMBER  
**E1.02**

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPROX 116810  
AC: F/LS, M, SS, SPP  
DATE: 02/16/16



**PANEL TYPE E**

BUS AMPS 125 MFR. C-HAMMER OR EQUAL LOC. 5M CLASSROOM w/RR MTG. RECESSED MAIN AMPS 100  
 PHASE 3 WIRES 4 VOLTS 120/208V FEEDER SEE SITE 1-LINE AT TOP AIC RATING 10,000 A.SYM.

| DESCRIPTION       | VOLT-AMPS |      |   | OUTLETS |     |      | BKR. WIRE |   |     | BUS CONNECTION |   |      | WIRE BKR. OUTLETS |    |     | VOLT-AMPS |      |      | DESCRIPTION |  |  |                |
|-------------------|-----------|------|---|---------|-----|------|-----------|---|-----|----------------|---|------|-------------------|----|-----|-----------|------|------|-------------|--|--|----------------|
|                   | A         | B    | C | LTG     | REC | MISC | AMP       | P | AWG | AWG            | P | MISC | AMP               | P  | AWG | A         | B    | C    |             |  |  |                |
| OFFICE CONTRL REC | 540       |      |   |         |     |      | 20        | 1 | 12  | 1              |   |      | 2                 | 10 | 30  |           |      |      | 2220        |  |  | HP/1           |
| OFFICE CONTRL REC | 540       |      |   |         |     |      | 20        | 1 | 12  | 3              |   |      | 4                 | 10 | 30  |           |      |      | 2220        |  |  | "              |
| OFFICE CONTRL REC | 540       |      |   |         |     |      | 20        | 1 | 12  | 5              |   |      | 6                 | 10 | 30  |           |      |      | 2220        |  |  | "              |
| OFFICE CONTRL REC | 540       |      |   |         |     |      | 20        | 1 | 12  | 7              |   |      | 8                 | 10 | 30  |           |      |      | 3484        |  |  | FC/1           |
| OFFICE REC        | 1080      |      |   |         |     |      | 20        | 1 | 12  | 9              |   |      | 10                | 10 | 30  |           |      |      | 3484        |  |  | "              |
| OFFICE REC        | 1260      |      |   |         |     |      | 20        | 1 | 12  | 11             |   |      | 12                | 10 | 30  |           |      |      |             |  |  | "              |
| OFFICE CONTRL REC | 540       |      |   |         |     |      | 20        | 1 | 12  | 13             |   |      | 14                | 10 | 30  |           |      |      |             |  |  | "              |
| WP GFI REC        | 360       |      |   |         |     |      | 20        | 1 | 10  | 15             |   |      | 16                | 10 | 30  |           |      |      |             |  |  | "              |
|                   |           |      |   |         |     |      | 20        | 1 | 10  | 17             |   |      | 18                | 10 | 30  |           |      |      |             |  |  | "              |
| CONNECTED LOAD    | 1620      | 1800 |   |         |     |      |           |   |     |                |   |      |                   |    |     | 5704      | 5704 | 2220 |             |  |  | CONNECTED LOAD |

LOAD DATA BY PHASE  
 PHASE A VOLT-AMPS : 7324 VA  
 PHASE B VOLT-AMPS : 7684 VA  
 PHASE C VOLT-AMPS : 4000 VA

DEMAND CALCULATIONS  
 TOTAL DEMAND AMPS = 6900 VOLTS-AMPS ÷ (√3 \* PHASE VOLTAGE 208 VOLTS) = 53 AMPS

**PANEL TYPE F**

BUS AMPS 125 MFR. C-HAMMER OR EQUAL LOC. 2M CLASSROOM MTG. RECESSED MAIN AMPS 100  
 PHASE 3 WIRES 4 VOLTS 120/208V FEEDER SEE SITE 1-LINE AT TOP AIC RATING 10,000 A.SYM.

| DESCRIPTION    | VOLT-AMPS |      |      | OUTLETS |     |      | BKR. WIRE |   |     | BUS CONNECTION |   |      | WIRE BKR. OUTLETS |    |     | VOLT-AMPS |      |      | DESCRIPTION |  |  |                |
|----------------|-----------|------|------|---------|-----|------|-----------|---|-----|----------------|---|------|-------------------|----|-----|-----------|------|------|-------------|--|--|----------------|
|                | A         | B    | C    | LTG     | REC | MISC | AMP       | P | AWG | AWG            | P | MISC | AMP               | P  | AWG | A         | B    | C    |             |  |  |                |
| GFI REC        | 180       |      |      |         |     |      | 20        | 1 | 12  | 1              |   |      | 2                 | 10 | 30  |           |      |      | 3000        |  |  | WATER HEATER   |
| LIGHTS         | 1348      |      |      |         |     |      | 20        | 1 | 12  | 3              |   |      | 4                 | 10 | 30  |           |      |      | 3000        |  |  | "              |
| HAND DRYER     | 1800      |      |      |         |     |      | 20        | 1 | 12  | 5              |   |      | 6                 | 10 | 30  |           |      |      | 1800        |  |  | HAND DRYER     |
| HAND DRYER     | 1800      |      |      |         |     |      | 20        | 1 | 12  | 7              |   |      | 8                 | 10 | 30  |           |      |      | 20          |  |  | EXIT/EMERG     |
| HAND DRYER     | 1800      |      |      |         |     |      | 20        | 1 | 12  | 9              |   |      | 10                | 10 | 30  |           |      |      |             |  |  | "              |
| HAND DRYER     | 1800      |      |      |         |     |      | 20        | 1 | 12  | 11             |   |      | 12                | 10 | 30  |           |      |      |             |  |  | "              |
| CONNECTED LOAD | 1800      | 3148 | 3600 |         |     |      |           |   |     |                |   |      |                   |    |     | 3020      | 3000 | 1800 |             |  |  | CONNECTED LOAD |

LOAD DATA BY PHASE  
 PHASE A VOLT-AMPS : 5000 VA  
 PHASE B VOLT-AMPS : 6148 VA  
 PHASE C VOLT-AMPS : 5400 VA

DEMAND CALCULATIONS  
 TOTAL DEMAND AMPS = 16565 VOLTS-AMPS ÷ (√3 \* PHASE VOLTAGE 208 VOLTS) = 46 AMPS

**PANEL TYPE G**

BUS AMPS 125 MFR. C-HAMMER OR EQUAL LOC. 2M CLASSROOM MTG. RECESSED MAIN AMPS 100  
 PHASE 3 WIRES 4 VOLTS 120/208V FEEDER SEE SITE 1-LINE AT TOP AIC RATING 10,000 A.SYM.

| DESCRIPTION    | VOLT-AMPS |     |     | OUTLETS |     |      | BKR. WIRE |   |     | BUS CONNECTION |   |      | WIRE BKR. OUTLETS |    |     | VOLT-AMPS |      |      | DESCRIPTION |  |  |                |
|----------------|-----------|-----|-----|---------|-----|------|-----------|---|-----|----------------|---|------|-------------------|----|-----|-----------|------|------|-------------|--|--|----------------|
|                | A         | B   | C   | LTG     | REC | MISC | AMP       | P | AWG | AWG            | P | MISC | AMP               | P  | AWG | A         | B    | C    |             |  |  |                |
| CLASS ROOM REC | 1080      |     |     |         |     |      | 20        | 1 | 12  | 1              |   |      | 2                 | 10 | 30  |           |      |      | 2220        |  |  | HP/1           |
| GFI REC        | 540       |     |     |         |     |      | 20        | 1 | 12  | 3              |   |      | 4                 | 10 | 30  |           |      |      | 2220        |  |  | "              |
| LIGHTS         |           |     | 621 |         |     |      | 20        | 1 | 12  | 5              |   |      | 6                 | 10 | 30  |           |      |      | 2220        |  |  | "              |
|                |           |     |     |         |     |      | 20        | 1 | 12  | 7              |   |      | 8                 | 10 | 30  |           |      |      | 3484        |  |  | FC/1           |
|                |           |     |     |         |     |      | 20        | 1 | 12  | 9              |   |      | 10                | 10 | 30  |           |      |      | 3484        |  |  | "              |
| EXIT/EMERG     |           |     | 20  |         |     |      | 20        | 1 | 12  | 11             |   |      | 12                | 10 | 30  |           |      |      |             |  |  | "              |
| CONNECTED LOAD | 1080      | 540 | 641 |         |     |      |           |   |     |                |   |      |                   |    |     | 5704      | 5704 | 2220 |             |  |  | CONNECTED LOAD |

LOAD DATA BY PHASE  
 PHASE A VOLT-AMPS : 6784 VA  
 PHASE B VOLT-AMPS : 6244 VA  
 PHASE C VOLT-AMPS : 2861 VA

DEMAND CALCULATIONS  
 TOTAL DEMAND AMPS = 15889 VOLTS-AMPS ÷ (√3 \* PHASE VOLTAGE 208 VOLTS) = 45 AMPS

**PANEL TYPE A**

BUS AMPS 125 MFR. C-HAMMER OR EQUAL LOC. 2M CLASSROOM MTG. RECESSED MAIN AMPS 100  
 PHASE 3 WIRES 4 VOLTS 120/208V FEEDER SEE SITE 1-LINE AT TOP AIC RATING 10,000 A.SYM.

| DESCRIPTION    | VOLT-AMPS |     |     | OUTLETS |     |      | BKR. WIRE |   |     | BUS CONNECTION |   |      | WIRE BKR. OUTLETS |    |     | VOLT-AMPS |      |      | DESCRIPTION |  |  |                |
|----------------|-----------|-----|-----|---------|-----|------|-----------|---|-----|----------------|---|------|-------------------|----|-----|-----------|------|------|-------------|--|--|----------------|
|                | A         | B   | C   | LTG     | REC | MISC | AMP       | P | AWG | AWG            | P | MISC | AMP               | P  | AWG | A         | B    | C    |             |  |  |                |
| CLASS ROOM REC | 900       |     |     |         |     |      | 20        | 1 | 12  | 1              |   |      | 2                 | 10 | 30  |           |      |      | 2220        |  |  | HP/1           |
| WP GFI REC     | 180       |     |     |         |     |      | 20        | 1 | 12  | 3              |   |      | 4                 | 10 | 30  |           |      |      | 2220        |  |  | "              |
| LIGHTS         |           |     | 682 |         |     |      | 20        | 1 | 12  | 5              |   |      | 6                 | 10 | 30  |           |      |      | 2220        |  |  | "              |
| CLASS ROOM REC | 1080      |     |     |         |     |      | 20        | 1 | 12  | 7              |   |      | 8                 | 10 | 30  |           |      |      | 3484        |  |  | FC/1           |
|                |           |     |     |         |     |      | 20        | 1 | 12  | 9              |   |      | 10                | 10 | 30  |           |      |      | 3484        |  |  | "              |
| EXIT/EMERG     |           |     | 20  |         |     |      | 20        | 1 | 12  | 11             |   |      | 12                | 10 | 30  |           |      |      |             |  |  | "              |
| CONNECTED LOAD | 1800      | 180 | 702 |         |     |      |           |   |     |                |   |      |                   |    |     | 5704      | 5704 | 2220 |             |  |  | CONNECTED LOAD |

LOAD DATA BY PHASE  
 PHASE A VOLT-AMPS : 7884 VA  
 PHASE B VOLT-AMPS : 5884 VA  
 PHASE C VOLT-AMPS : 2924 VA

DEMAND CALCULATIONS  
 TOTAL DEMAND AMPS = 16492 VOLTS-AMPS ÷ (√3 \* PHASE VOLTAGE 208 VOLTS) = 46 AMPS

**PANEL TYPE B**

BUS AMPS 125 MFR. C-HAMMER OR EQUAL LOC. 3M CLASSROOM MTG. RECESSED MAIN AMPS 100  
 PHASE 3 WIRES 4 VOLTS 120/208V FEEDER SEE SITE 1-LINE AT TOP AIC RATING 10,000 A.SYM.

| DESCRIPTION    | VOLT-AMPS |     |      | OUTLETS |     |      | BKR. WIRE |   |     | BUS CONNECTION |   |      | WIRE BKR. OUTLETS |    |     | VOLT-AMPS |      |      | DESCRIPTION |  |  |                |
|----------------|-----------|-----|------|---------|-----|------|-----------|---|-----|----------------|---|------|-------------------|----|-----|-----------|------|------|-------------|--|--|----------------|
|                | A         | B   | C    | LTG     | REC | MISC | AMP       | P | AWG | AWG            | P | MISC | AMP               | P  | AWG | A         | B    | C    |             |  |  |                |
| CLASS ROOM REC | 1080      |     |      |         |     |      | 20        | 1 | 12  | 1              |   |      | 2                 | 10 | 30  |           |      |      | 2532        |  |  | HP/2           |
| WP GFI REC     | 180       |     |      |         |     |      | 20        | 1 | 12  | 3              |   |      | 4                 | 10 | 30  |           |      |      | 2532        |  |  | "              |
| LIGHTS         |           |     | 990  |         |     |      | 20        | 1 | 12  | 5              |   |      | 6                 | 10 | 30  |           |      |      | 2532        |  |  | "              |
| CLASS ROOM REC | 1260      |     |      |         |     |      | 20        | 1 | 12  | 7              |   |      | 8                 | 10 | 30  |           |      |      | 3484        |  |  | FC/2           |
|                |           |     |      |         |     |      | 20        | 1 | 12  | 9              |   |      | 10                | 10 | 30  |           |      |      | 3484        |  |  | "              |
| EXIT/EMERG     |           |     | 20   |         |     |      | 20        | 1 | 12  | 11             |   |      | 12                | 10 | 30  |           |      |      |             |  |  | "              |
| CONNECTED LOAD | 2340      | 180 | 1010 |         |     |      |           |   |     |                |   |      |                   |    |     | 6016      | 6016 | 2532 |             |  |  | CONNECTED LOAD |

LOAD DATA BY PHASE  
 PHASE A VOLT-AMPS : 8356 VA  
 PHASE B VOLT-AMPS : 6196 VA  
 PHASE C VOLT-AMPS : 3522 VA

DEMAND CALCULATIONS  
 TOTAL DEMAND AMPS = 18094 VOLTS-AMPS ÷ (√3 \* PHASE VOLTAGE 208 VOLTS) = 51 AMPS

**PANEL TYPE C**

BUS AMPS 125 MFR. C-HAMMER OR EQUAL LOC. 2M CLASSROOM MTG. RECESSED MAIN AMPS 100  
 PHASE 3 WIRES 4 VOLTS 120/208V FEEDER SEE SITE 1-LINE AT TOP AIC RATING 10,000 A.SYM.

| DESCRIPTION    | VOLT-AMPS |     |     | OUTLETS |     |      | BKR. WIRE |   |     | BUS CONNECTION |   |      | WIRE BKR. OUTLETS |    |     | VOLT-AMPS |      |      | DESCRIPTION |  |  |                |
|----------------|-----------|-----|-----|---------|-----|------|-----------|---|-----|----------------|---|------|-------------------|----|-----|-----------|------|------|-------------|--|--|----------------|
|                | A         | B   | C   | LTG     | REC | MISC | AMP       | P | AWG | AWG            | P | MISC | AMP               | P  | AWG | A         | B    | C    |             |  |  |                |
| CLASS ROOM REC | 900       |     |     |         |     |      | 20        | 1 | 12  | 1              |   |      | 2                 | 10 | 30  |           |      |      | 2532        |  |  | HP/2           |
| WP GFI REC     | 360       |     |     |         |     |      | 20        | 1 | 12  | 3              |   |      | 4                 | 10 | 30  |           |      |      | 2532        |  |  | "              |
| LIGHTS         |           |     | 683 |         |     |      | 20        | 1 | 12  | 5              |   |      | 6                 | 10 | 30  |           |      |      | 2532        |  |  | "              |
| CLASS ROOM REC | 720       |     |     |         |     |      | 20        | 1 | 12  | 7              |   |      | 8                 | 10 | 30  |           |      |      | 3484        |  |  | FC/2           |
|                |           |     |     |         |     |      | 20        | 1 | 12  | 9              |   |      | 10                | 10 | 30  |           |      |      | 3484        |  |  | "              |
| EXIT/EMERG     |           |     | 20  |         |     |      | 20        | 1 | 12  | 11             |   |      | 12                | 10 | 30  |           |      |      |             |  |  | "              |
| CONNECTED LOAD | 1620      | 360 | 703 |         |     |      |           |   |     |                |   |      |                   |    |     | 6016      | 6016 | 2532 |             |  |  | CONNECTED LOAD |

LOAD DATA BY PHASE  
 PHASE A VOLT-AMPS : 7638 VA  
 PHASE B VOLT-AMPS : 6376 VA  
 PHASE C VOLT-AMPS : 3235 VA

DEMAND CALCULATIONS  
 TOTAL DEMAND AMPS = 17247 VOLTS-AMPS ÷ (√3 \* PHASE VOLTAGE 208 VOLTS) = 48 AMPS

**PANEL TYPE D**

BUS AMPS 125 MFR. C-HAMMER OR EQUAL LOC. 5M CLASSROOM w/RR MTG. RECESSED MAIN AMPS 100  
 PHASE 3 WIRES 4 VOLTS 120/208V FEEDER SEE SITE 1-LINE AT TOP AIC RATING 10,000 A.SYM.

| DESCRIPTION       | VOLT-AMPS |      |      | OUTLETS |     |      | BKR. WIRE |   |     | BUS CONNECTION |   |      | WIRE BKR. OUTLETS |    |     | VOLT-AMPS |   |   | DESCRIPTION |  |  |                |
|-------------------|-----------|------|------|---------|-----|------|-----------|---|-----|----------------|---|------|-------------------|----|-----|-----------|---|---|-------------|--|--|----------------|
|                   | A         | B    | C    | LTG     | REC | MISC | AMP       | P | AWG | AWG            | P | MISC | AMP               | P  | AWG | A         | B | C |             |  |  |                |
| OFFICE REC        | 900       |      |      |         |     |      | 20        | 1 | 12  | 1              |   |      | 2                 | 12 | 20  |           |   |   |             |  |  | "              |
| GFI REC           | 360       |      |      |         |     |      | 20        | 1 | 12  | 3              |   |      | 4                 | 12 | 20  |           |   |   |             |  |  | "              |
| LIGHTS            |           |      | 280  |         |     |      | 20        | 1 | 12  | 5              |   |      | 6                 | 12 | 20  |           |   |   |             |  |  | "              |
| OFFICE CONTRL REC | 540       |      |      |         |     |      | 20        | 1 | 12  | 7              |   |      | 8                 | 12 | 20  |           |   |   |             |  |  | "              |
| WATER HEATER      | 3000      |      |      |         |     |      | 20        | 1 | 12  | 9              |   |      | 10                | 12 | 20  |           |   |   |             |  |  | "              |
|                   |           |      |      |         |     |      | 20        | 1 | 12  | 11             |   |      | 12                | 12 | 20  |           |   |   |             |  |  | "              |
| CONNECTED LOAD    | 1440      | 3360 | 3280 |         |     |      |           |   |     |                |   |      |                   |    |     |           |   |   |             |  |  | CONNECTED LOAD |

LOAD DATA BY PHASE  
 PHASE A VOLT-AMPS : 1440 VA  
 PHASE B VOLT-AMPS : 3360 VA  
 PHASE C VOLT-AMPS : 3280 VA

DEMAND CALCULATIONS  
 TOTAL DEMAND AMPS = 8080 VOLTS-AMPS ÷ (√3 \* PHASE VOLTAGE 208 VOLTS) = 23 AMPS

IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT  
 APP03 116810  
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**SOG-32 RE-LOCATABLE BUILDING PC**

APPROVALS

IDENTIFICATION STAMP  
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PRE CHECK (PC) DOCUMENT  
 CODE 2013 CCB  
 A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

FILE # PC-JTS  
 APPL 02/11/16  
 AC: FLS: [Signature] SS: [Signature]  
 DATE: 2/19/16

DATE: \_\_\_\_\_  
 PROJECT: **XX-XXX**

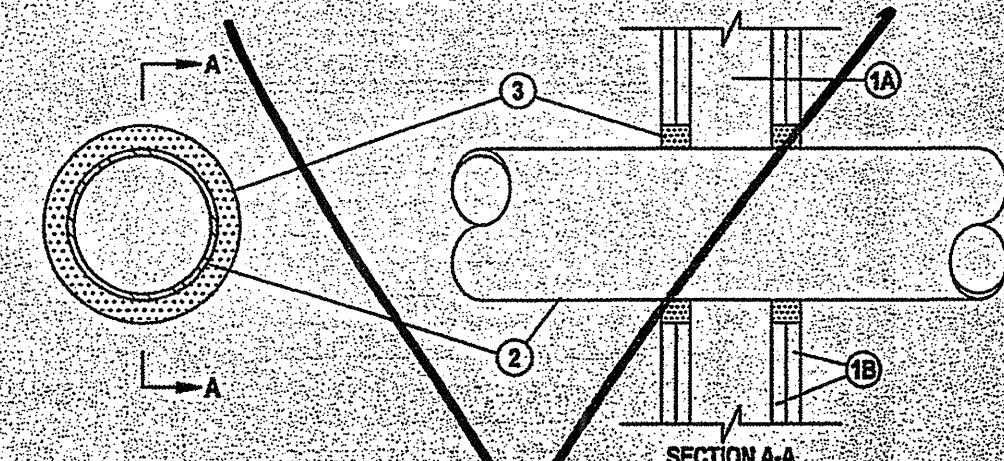
02-18-15 **PC**

SHEET NAME  
**ELECTRICAL PANEL SCHEDULES (ALTERNATE 'A')**

SHEET NUMBER  
**E5.01**



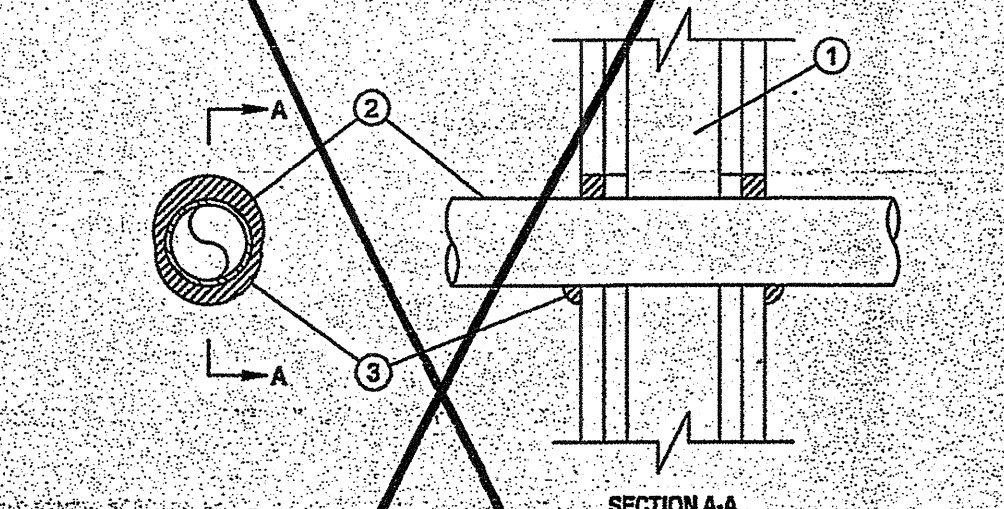
**System No. W-1-1054**  
 F Rating - 1 and 2 Hr (See Item 1 & 3)  
 T Rating - 0 Hr  
 L Rating At Ambient - Less Than 1 CFMSq Ft  
 L Rating At 400 F - 4 CFMSq Ft



1. Wall Assembly - The 1 or 2 hr fire-rated gypsum board/wall assembly shall be constructed of the materials and in the manner specified in the Individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:  
 A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nominal 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. x 3-1/2 in. x 1/8 in. thick. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw attached to the steel studs at each end. The framing opening in the wall shall be 1/8 in. wider on each side than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.  
 B. Gypsum Board - 5/8 in. thick, 4 ft wide, with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the Individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. for steel studs. Max diam of opening is 14-1/2 in. for wood stud walls. The F Rating of the firestop system is equal to the F rating of the wall assembly.  
 2. Through-Penetrants - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe to be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:  
 A. Steel Pipe - Nom 2 in. (or smaller) Schedule 40 (or heavier) steel pipe.  
 B. Iron Pipe - Nom 3/4 in. (or smaller) cast or ductile iron pipe.  
 C. Conduit - Nom 4 in. (or smaller) steel electrical metallic tubing (EMT) or 0 in. diam steel conduit.  
 D. Copper Tubing - Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.  
 E. Copper Pipe - Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.  
 3. Fill Void or Cavity Material - Sealant - Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point of continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied to the pipe wall interface on both surfaces of wall.  
 HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-One Sealant  
 Bearing the UL Classification Mark

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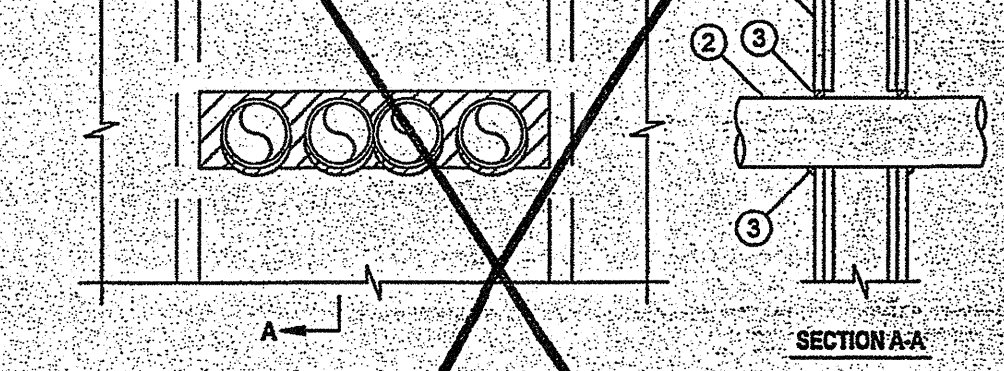
**System No. W-1-2244**  
 F Rating - 1 and 2 Hr (See Item 1)  
 T Rating - 0 Hr (See Item 1)  
 L Rating At Ambient - Less Than 1 CFMSq Ft  
 L Rating At 400 F - 2 CFMSq Ft



1. Wall Assembly - The 1 and 2 hr fire-rated gypsum board/wall assembly shall be constructed of the materials and in the manner specified in the Individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:  
 A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nominal 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (408 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide by 3-3/8 in. (86 mm) deep channel spaced max 24 in. (610 mm) OC.  
 B. Gypsum Board - 5/8 in. thick, 4 ft wide, with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the Individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 3 in. (76 mm).  
 The hourly F Rating of the firestop system is equal to the hourly rating of the wall assembly in which it is installed.  
 2. Through Penetrant - One nonmetallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe and sheath of opening shall be min 0 in. (0 mm, point contact) to a max 5/8 in. (16 mm). Pipe to be rigidly supported on both sides of wall assembly. The following types and sizes of nonmetallic pipes may be used:  
 A. Polyvinyl Chloride (PVC) Pipe - Nom 2 in. (51 mm) diam (or smaller) cellular or solid core Schedule 40 (or heavier) pipe to be used in closed (process or supply) piping systems.  
 B. Chlorinated Polyvinyl Chloride (CPVC) - Nom 2 in. (51 mm) diam (or smaller) DR 150 CPVC pipe to be used in closed (process or supply) piping systems.  
 3. Fill Void or Cavity Material - Sealant - Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At point contact locations, a min 1/2 in. (13 mm) diam bead of fill material shall be applied to the wall/penetrant interface on both surfaces of the wall.  
 HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - FS-ONE Sealant  
 Bearing the UL Classification Mark

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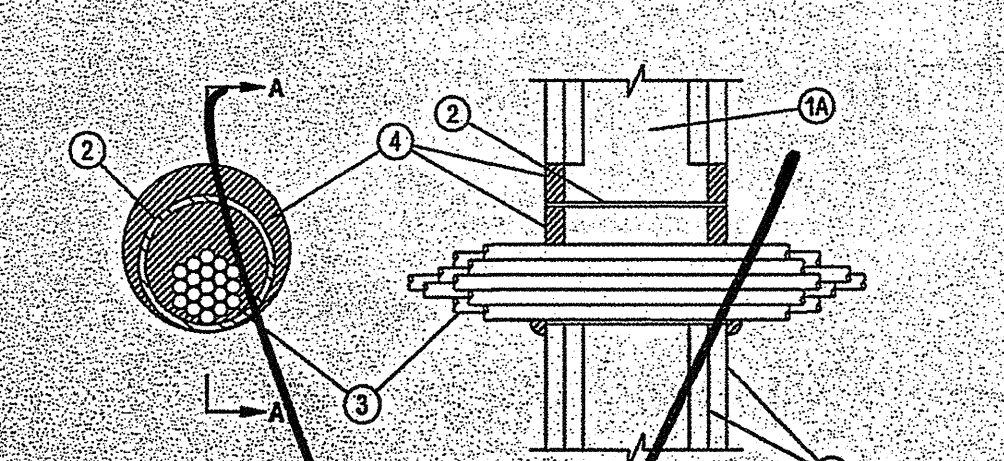
**System No. W-1-1408**  
 F Rating - 1 or 2 Hr (See Item 1)  
 T Rating - 0 or 1/4 Hr (See Item 1)



1. Wall Assembly - The 1 and 2 hr fire-rated gypsum board/wall assembly shall be constructed of the materials and in the manner specified in the Individual U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:  
 A. Studs - Wall framing shall consist of min 3-5/8 in. (92 mm) x 3-5/8 in. (92 mm) steel studs spaced max 24 in. (610 mm) OC.  
 B. Gypsum Board - 5/8 in. thick, 4 ft wide, with square or tapered edges. The gypsum board type, thickness, number of layers and orientation shall be as specified in the Individual U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory. Max diam of opening is 14-1/2 in. (368 mm) when sleeve (diam 2) is employed. Max diam of opening is 4 in. (102 mm) when sleeve (diam 2) is not employed.  
 The hourly F Rating of the firestop system is equal to the hourly rating of the wall assembly in which it is installed.  
 2. Through Penetrants - Multiple pipes or conduits installed in single layer array within the firestop system. The annular space between the pipes and the edges of the opening shall be min 0 in. (0 mm, point contact) to max 1 in. (25 mm). The separation between pipes and conduits to be a min 0 in. (0 mm, point contact) to a max 1-1/2 in. (38 mm). Pipes and conduits to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or conduits may be used:  
 A. Steel Pipe - Nom 2 in. (51 mm) diam (or smaller) Schedule 40 (or heavier) steel pipe.  
 B. Conduit - Nom 4 in. (102 mm) diam (or smaller) rigid steel conduit or steel electrical metallic tubing (EMT).  
 3. Fill Void or Cavity Material - Sealant - Min 5/8 in. (16 mm) thickness of fill material applied to completely fill annular space between pipes, conduits and gypsum flush with each surface of wall. Min 1/2 in. (13 mm) diam bead of fill material applied to the through penetrant/wall interface at the point contact locations on both sides of the wall.  
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**System No. W-1-3065**  
 F Rating - 1 and 2 Hr (See Item 1)  
 T Rating - 0 and 1/4 Hr (See Item 3)



1. Wall Assembly - The 1 or 2 hr fire-rated gypsum board/wall assembly shall be constructed of the materials and in the manner specified in the Individual U300, U400 or V400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:  
 A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nominal 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (408 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.  
 B. Gypsum Board - 5/8 in. thick, 4 ft wide, with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the Individual U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 5-1/2 in. (139 mm) when sleeve (diam 2) is employed. Max diam of opening is 4 in. (102 mm) when sleeve (diam 2) is not employed.  
 The F Rating of the firestop system is equal to the F rating of the wall assembly.  
 2. Metallic Sleeve - (Optional) - Nom 4 in. (102 mm) (or smaller) steel electrical metallic tubing (EMT) or Schedule 5 (or heavier) steel pipe or min 0.016 in. (0.41 mm, No. 28 g) galv steel sleeve installed flush with wall surfaces. The annular space between sleeve and periphery of opening shall be min 0 in. (0 mm, point contact) to max 1 in. (25 mm). When Schedule 5 steel pipe or EMT is used, sleeve may extend up to 18 in. (457 mm) beyond the wall surfaces. As an option when Schedule 5 steel pipe or EMT is used, sleeve may extend continuously beyond one wall surface. When cable bundle penetrates wall assembly at an angle of 45 degrees, no metallic sleeve is used.  
 3. Cables - Aggregate cross-sectional area of cable in opening to be max 45 percent of the cross-sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 0 in. (0 mm, point contact) to max 1 in. (25 mm). Cables to be rigidly supported on both sides of wall assembly. Cable bundles using cables described below, may penetrate the wall at an angle not greater than 45 degrees. Any combination of the following types and sizes of copper conductors, metal-clad cables or other cables may be used:  
 A. Max 7/8 in. (22 mm) diameter copper conductor.  
 B. Max 25 pair No. 24 AWG telephone cable with PVC insulation and jacket.  
 C. Type RGU coaxial cable with polyethylene (PE) insulation and PVC jacket having a max outside diameter of 3/4 in. (19 mm).  
 C1. Max RG 6U coaxial cable with extruded ethylene insulation and jacketing.  
 D. Multiple fiber optical communication cable jacketed with PVC and having a max OD of 5/8 in. (16 mm).  
 E. Through Penetrating Product - Max three copper conductor No. 8 AWG Metal-Clad Cable.  
 AFC CABLE SYSTEMS INC.  
 F. Max 3/4 in. (19 mm) diam copper conductor cable with PVC insulation and jacketing.  
 G. Max 3/4 in. (19 mm) diam copper ground cable with or without a PVC jacket.  
 H. Fire Resistant Cable - Max 1/4 in. (6.3 mm) diam aluminum conductor or built conductor Type MI cable, a min 1/8 in. (3 mm) separation shall be maintained between MI cables and any other types of cable.  
 I. Max 4 in. (102 mm) diam aluminum SER cable with PVC insulation and jacket.  
 J. Through Penetrating Product - Any cables, Metal-Clad Cable or Armored Cable currently Classified under the Through Penetrating products category.  
 K. Maximum 3/8 in. (9.5 mm) metal-clad cable.  
 L. Maximum 5/8 in. (15.9 mm) steel cable with PVC jacket.  
 For cable bundle penetrating the wall assembly at an angle of 45 degrees, the T rating is 1/4 hr for a 2 hr wall assembly.  
 See Through Penetrating Product (OCHL) category in the Fire Resistance Directory for names of manufacturers.  
 4. Fill Void or Cavity Material - Sealant or Putty - Fill material applied within the annulus, flush with each of the steel sleeve or wall surface. Fill material installed symmetrically on both sides of the wall. Min 5/8 in. (16 mm) thickness of sealant required for the 1 or 2 hr F Rating. An additional 1/2 in. (13 mm) diam bead of fill material shall be applied around the perimeter of sleeve on both sides of the wall when sleeve extends beyond surface of wall.  
 HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC - CP601S, CP606, FS-One Sealants or CP616 Putty  
 Bearing the UL Classification Mark

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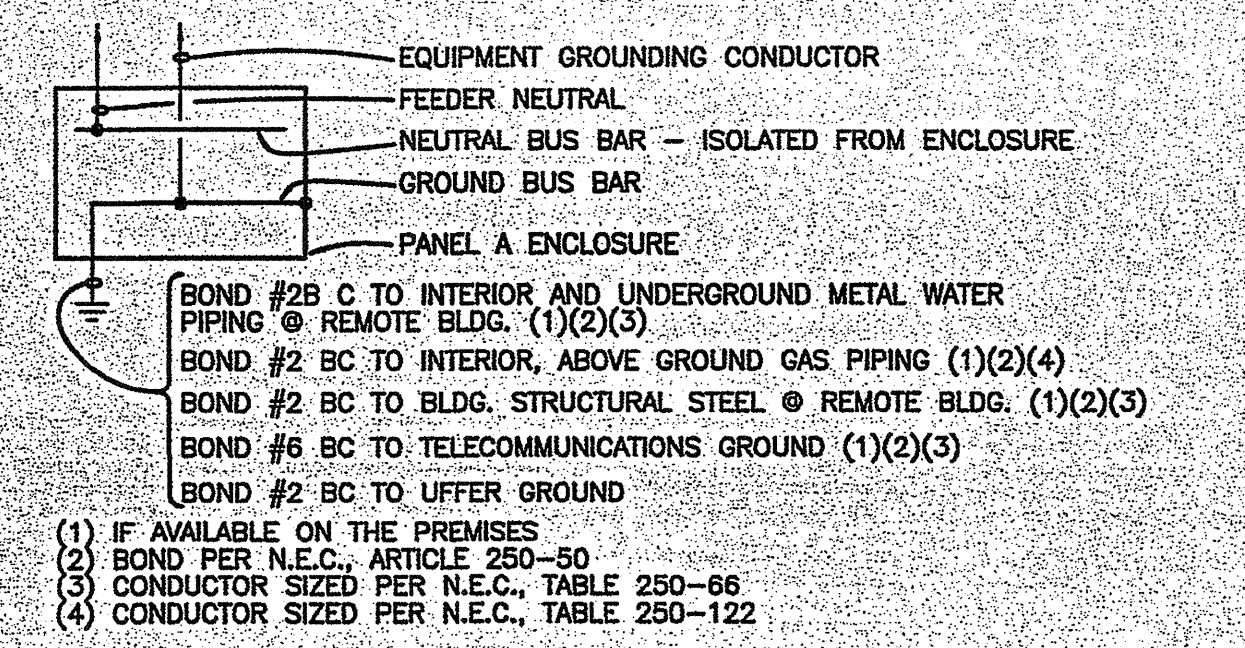
**LIGHT FIXTURE SCHEDULE** VOLTAGE: 120V (U.O.A.)

| TYPE | INPUT WATTS | DESCRIPTION AND MANUFACTURER   | REMARKS  |
|------|-------------|--|--|
| F1   | 77          | 2x4 LED TROFFER<br>#12 ACrylic 125" THICK LENS (OR EQUAL)<br>VOLTAGE: 277V<br>LAMP: LED - 7200 LUMENS<br>MANUFACTURER: LITHONIA 26TL-4-72L-LP840-N80                         | *F1E DESIGNATES EMERGENCY BALLAST FIXTURE EL34L W/ 90 MIN. BATTERY BACK-UP |
| F2   | 39          | 2x4 LED TROFFER<br>#12 ACrylic 125" THICK LENS (OR EQUAL)<br>VOLTAGE: 277V<br>LAMP: LED - 4000 LUMENS<br>MANUFACTURER: LITHONIA 26TL-4-40L-LP840-N80                         | *F2E DESIGNATES EMERGENCY BALLAST FIXTURE EL34L W/ 90 MIN. BATTERY BACK-UP |
| F3   | 50          | 1x6 WRAPAROUND (OR EQUAL)<br>PATTERNED #12 ACrylic<br>VOLTAGE: 120-277<br>LAMP: LED - 4000 LUMENS<br>MANUFACTURER: LITHONIA #LB-4-LP840                                      | *F3E DESIGNATES EMERGENCY BALLAST FIXTURE EL34L W/ 90 MIN. BATTERY BACK-UP |
| F4   | 26          | 1x2 WRAPAROUND (OR EQUAL)<br>PATTERNED #12 ACrylic<br>VOLTAGE: 120-277<br>LAMP: LED 2000 LUMENS<br>MANUFACTURER: LITHONIA #LB-2-LP840  | *F4E DESIGNATES EMERGENCY BALLAST FIXTURE EL34L W/ 90 MIN. BATTERY BACK-UP |
| F5   | 16.6        | OUTDOOR LED CEILING FLUSH MOUNT (OR EQUAL)<br>UL LISTED FOR WET LOCATION<br>VOLTAGE: 120V<br>LAMP: 18.6W LED<br>MANUFACTURER: LITHONIA RLCEFM<br>LED EXIT/BUG EYE UNIT COMBO | *F5E DESIGNATES EMERGENCY BALLAST FIXTURE EL34L W/ 90 MIN. BATTERY BACK-UP |
| X1   | 3.8         | MULTI-VOLT<br>(2) 1.8W LED<br>MANUFACTURER: LITHONIA - ECR LED M6  |  |

\* ALL EXTERIOR LIGHT FIXTURES SHALL BE DARK SKY COMPLIANT AND SHALL NOT EXCEED BUG RATING REQUIREMENTS AS SHOWN IN TABLE 5.106.8 OF THE CALIFORNIA ENERGY CODE.

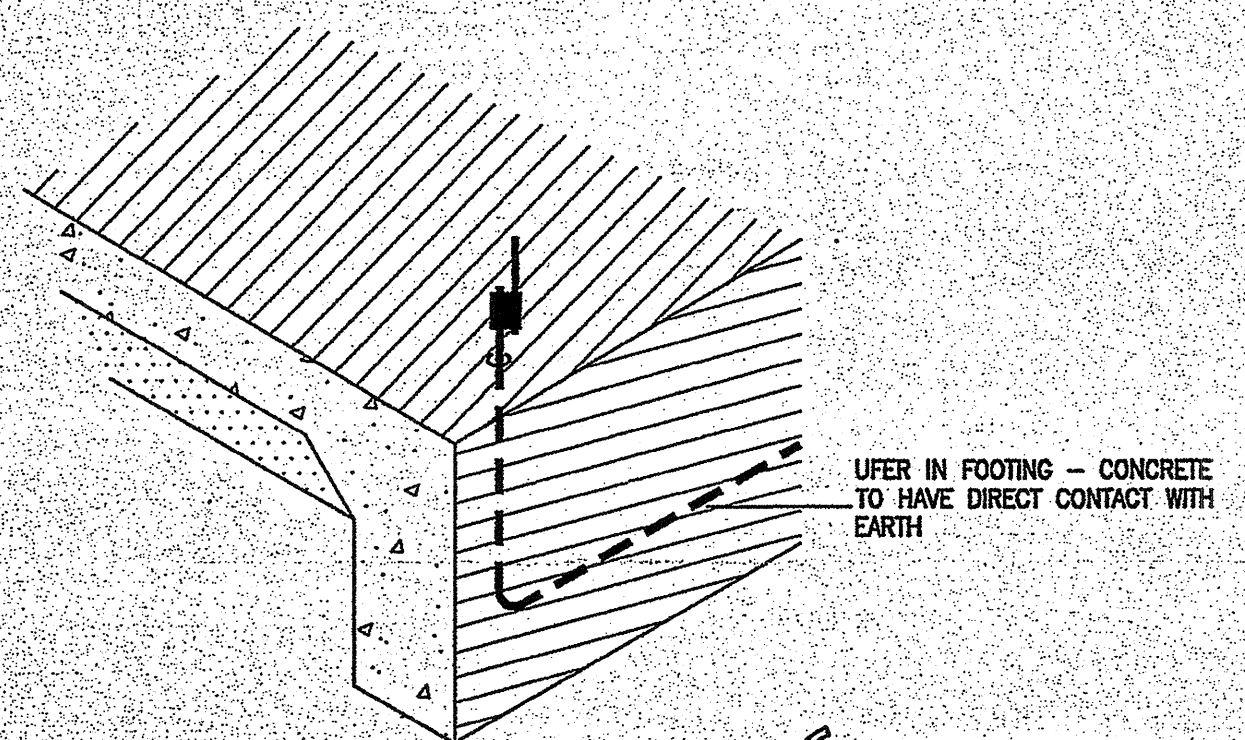
**LIGHTING CONTROLS SCHEDULE**

| SYMBOL | DESCRIPTION AND MANUFACTURER   | SYMBOL | DESCRIPTION AND MANUFACTURER  |
|--------|--|--------|---|
| OC     | OCCUPANCY SENSOR<br>CEILING MOUNT - 360° SENSING RANGE<br>COMMUNICATION: JR-45 "CAT-5 DAISY-CHAIN BUS"<br>MANUFACTURER: nLIGHT #PDT-10   | BR     | nLIGHT DAISY-CHAIN BRIDGE<br>WHERE REQUIRED, COORDINATE w/MANUFACTURER MOUNT CONCEALED ABOVE CEILING<br>COMMUNICATION: JR-45 "CAT-5 BUS"<br>MANUFACTURER: nLIGHT #PDT-10                          |
| DC     | DAYLIGHT SENSOR<br>CEILING MOUNT IN DAYLIGHT AREA<br>COMMUNICATION: JR-45 "CAT-5 DAISY-CHAIN BUS"<br>MANUFACTURER: nLIGHT #DCM-ADC   | G      | CONTROL INTERFACE AND GATEWAY w/TIME SCHEDULING ONE PER BUILDING - WALL MOUNT<br>COMMUNICATION: JR-45 "CAT-5 DAISY-CHAIN BUS"<br>MANUFACTURER: nLIGHT #GW12 KIT                                   |
| \$     | DIGITAL FOUR SCENE LIGHT SWITCH<br>COLOR TO MATCH WALL FINISH - WH=WHITE, IV=IVORY, AL=LIGHT ALMOND, GR=GREY, BK=BLACK<br>COMMUNICATION: JR-45 "CAT-5 DAISY-CHAIN BUS"<br>MANUFACTURER: nLIGHT #nPODM-4P-DX-WH | R      | CONTROLLED RELAY FOR CONTROLLED RECEPTACLES FOR CONTROLLED RECEPTACLES IN OFFICE AREAS MOUNT CONCEALED ABOVE CEILING - 16A MAX<br>COMMUNICATION: JR-45 "CAT-5 BUS"<br>MANUFACTURER: nLIGHT #nSP16 |
| \$     | DIGITAL LIGHT SWITCH ON/OFF ONLY<br>COLOR TO MATCH WALL FINISH - WH=WHITE, IV=IVORY, AL=LIGHT ALMOND, GR=GREY, BK=BLACK<br>COMMUNICATION: JR-45 "CAT-5 DAISY-CHAIN BUS"<br>MANUFACTURER: nLIGHT #nPODM         |        |   |

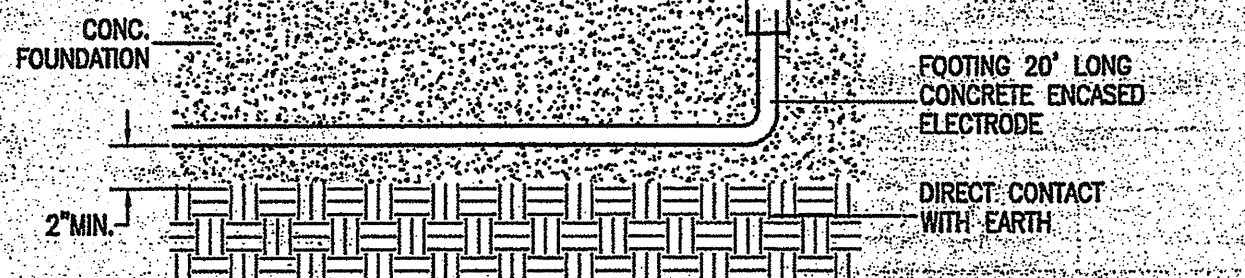


- (1) IF AVAILABLE ON THE PREMISES
- (2) BOND PER N.E.C., ARTICLE 250-50
- (3) CONDUCTOR SIZED PER N.E.C., TABLE 250-66
- (4) CONDUCTOR SIZED PER N.E.C., TABLE 250-122

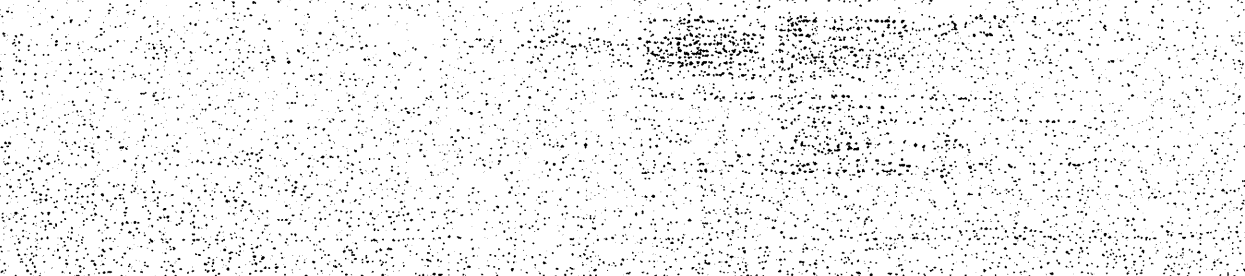
**6 NEUTRAL GROUND BOND**



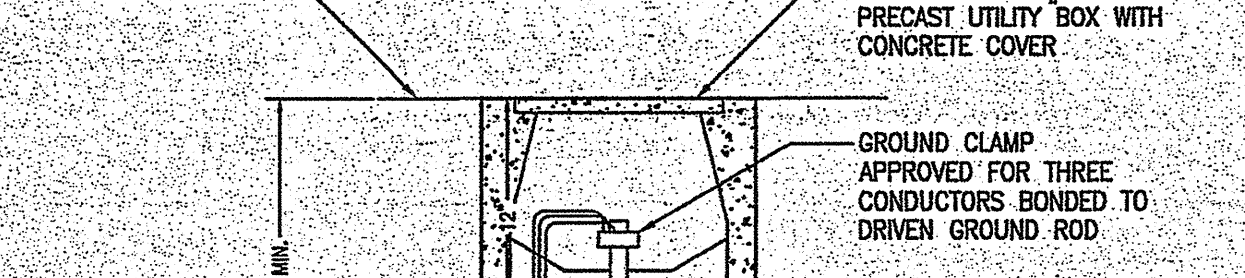
**7 UFER GROUND**



**4 PANEL MTG - FLUSH**

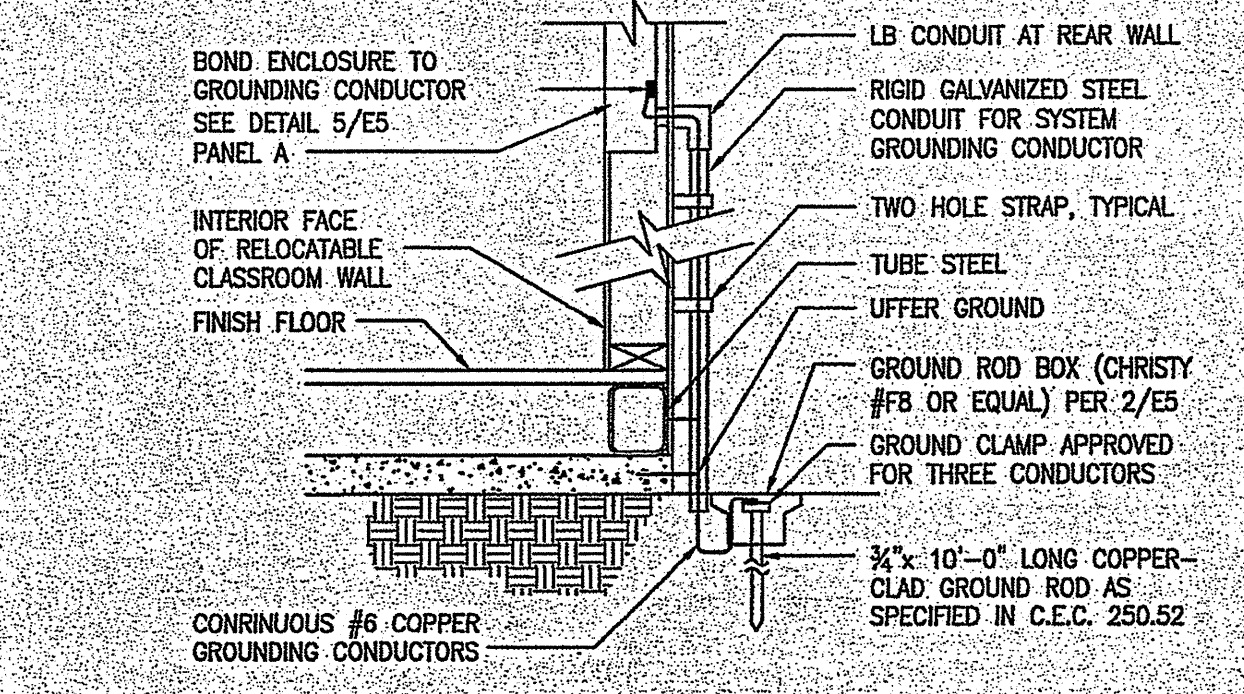


**1 GROUND WELL**



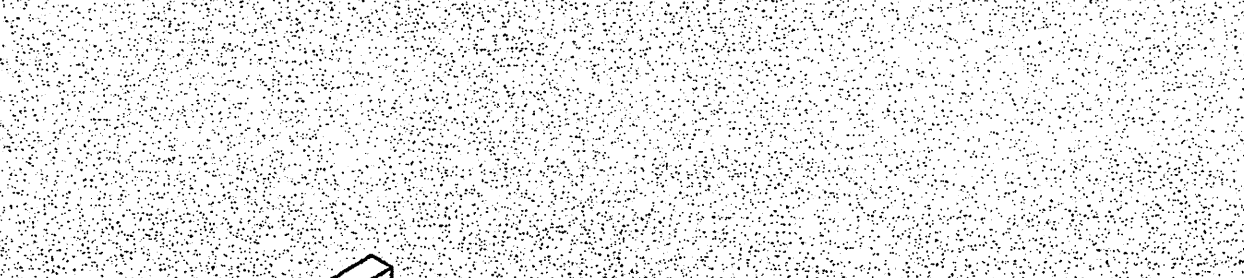
(3) #2 & (1) #6 GROUND WIRES - SEE SYSTEM GROUNDING DETAIL 3/ - FOR CONTINUATION

THE GROUNDING ELECTRODE SYSTEM SHALL BE TESTED BY THE FALL OF POTENTIAL METHOD AS SPECIFIED IN IEEE STANDARD 81-1983 AND SHOWN TO BE 25 OHMS OR LESS. A COPY OF THE TEST REPORT, SIGNED BY THE PROJECT INSPECTOR WHO WITNESSED THE TEST, SHALL BE SUBMITTED TO THE ARCHITECT AND ELECTRICAL ENGINEER.

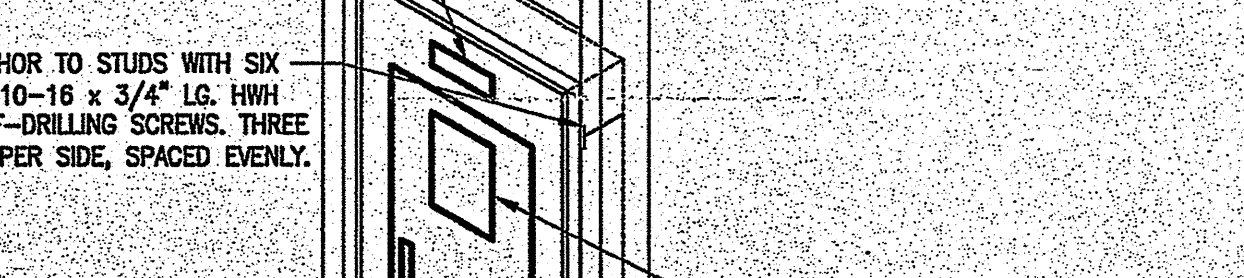


BOND CLASSROOM BUILDINGS TOGETHER WITH (1) #4 CU CONDUCTOR WHERE RELOCATABLES OCCUR SIDE-BY-SIDE  
 SITE INSPECTOR IS TO WITNESS AND VERIFY GROUNDING TESTS

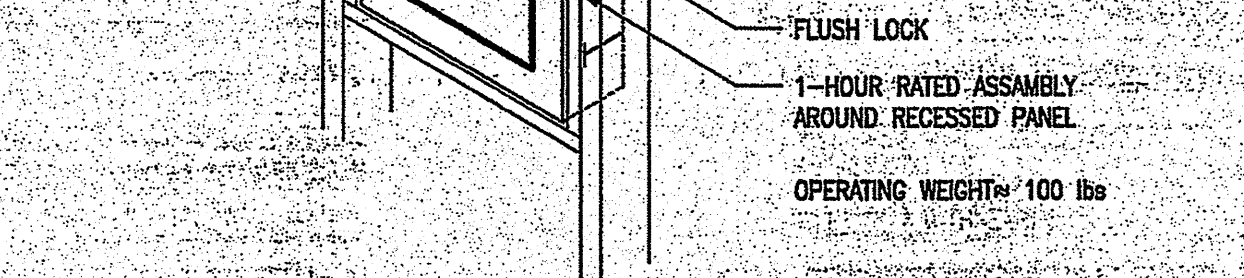
**3 SYSTEM GROUND DETAIL**



**4 PANEL MTG - FLUSH**



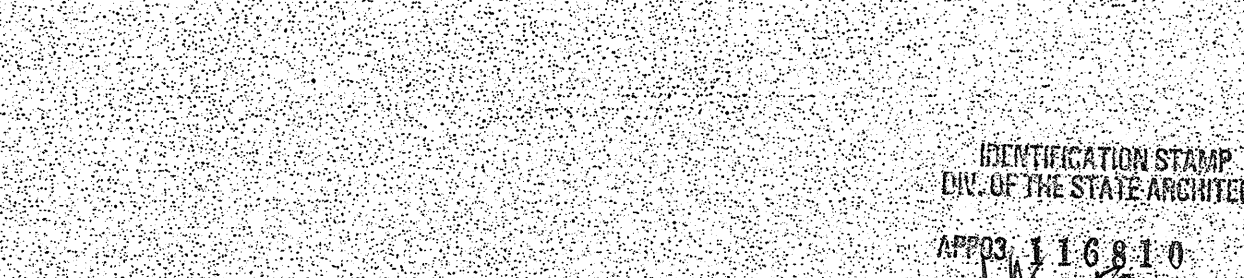
**4 PANEL MTG - FLUSH**



**4 PANEL MTG - FLUSH**



**4 PANEL MTG - FLUSH**

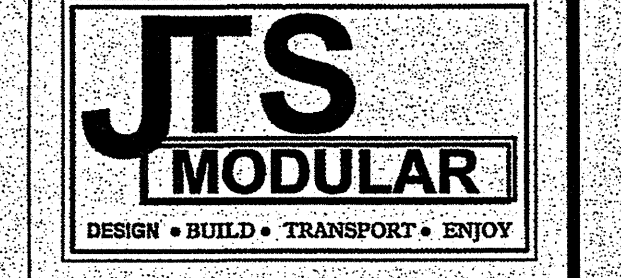


FILE PC - JTS

IDENTIFICATION STAMP  
 DIVISION OF THE STATE ARCHITECT  
 PRE CHECK (PC) DOCUMENT  
 CODE 2013 CBG  
 A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

APPROX. 11.8.2011  
 10/11/11  
 DATE 02/16/11

IDENTIFICATION STAMP  
 DIVISION OF THE STATE ARCHITECT  
 APPL. NO. XX-XXXXXX  
 AC FLS SS  
 DATE



**COMMERCIAL INSTITUTIONAL AND RESIDENTIAL MODULAR BUILDINGS DESIGN & PLANNING**

7001 Mc Divitt Dr.  
 Bakersfield, CA 93313  
 Office: (661) 835-9270  
 Plant: (661) 835-2940  
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LICENSE #E18218  
**CANTELM I ENGINEERING**

MECHANICAL & ELECTRICAL ENGINEERING  
 1800 21 STREET, SUITE C  
 BAKERSFIELD, CA 93301  
 TEL: (661) 324-5252  
 FAX: (661) 324-8439  
 Cantelmi@Cantelmi.NET

**SOG-32 RE-LOCATABLE BUILDING PC**

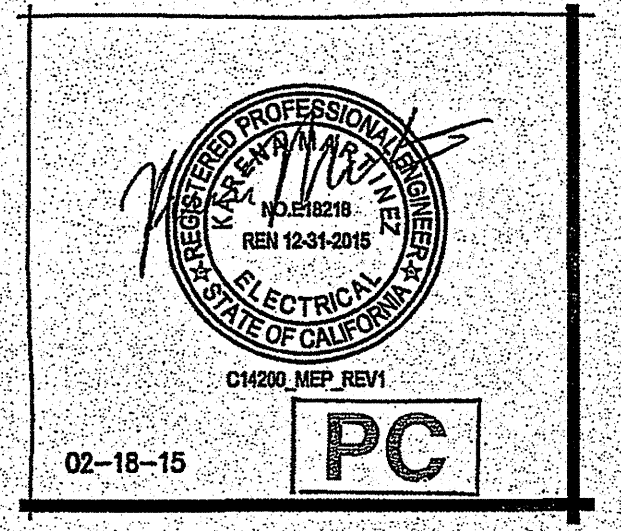
APPROVALS

IDENTIFICATION STAMP  
 DIV. OF THE STATE ARCHITECT

PRE CHECK (PC) DOCUMENT  
 CODE 2013 CBG  
 A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

FILE # 113,299  
 APPLIC. 113,299  
 AC FLS SS  
 DATE 2/16/11

DATE  
 PROJECT XX-XXX



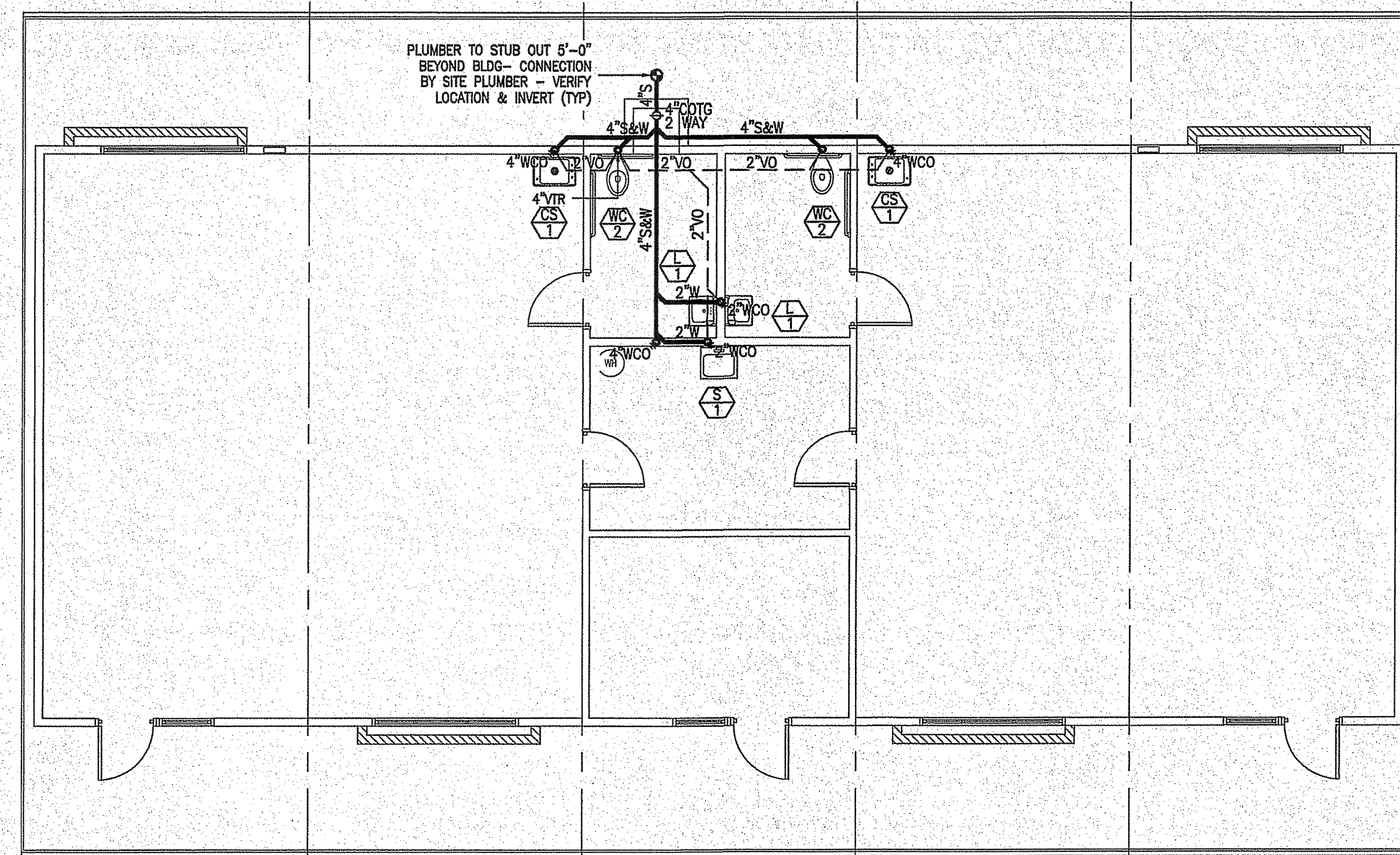
SHEET NAME  
**ELECTRICAL LIGHTING SCHEDULE & DETAILS**

SHEET NUMBER  
**E5.03**

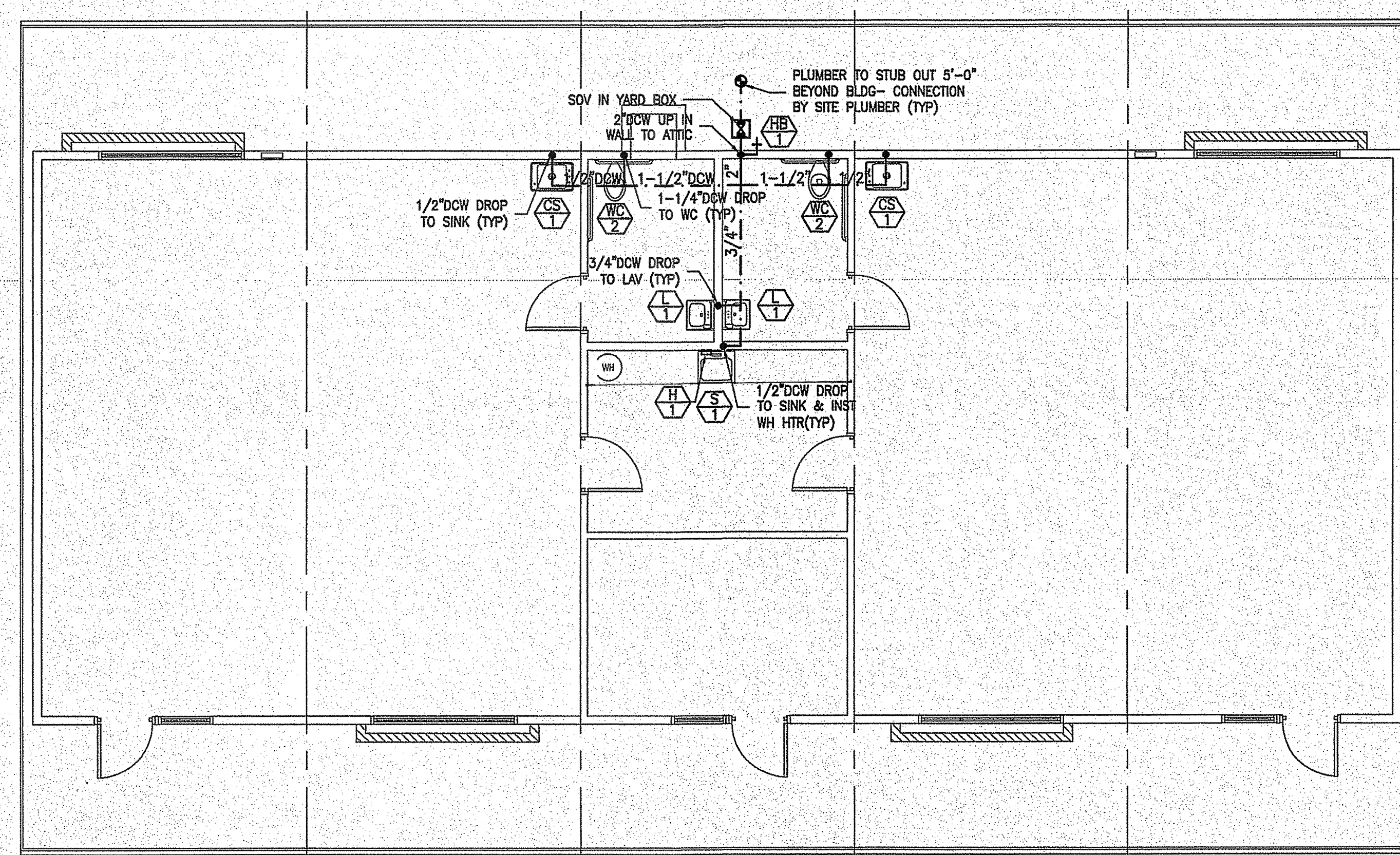






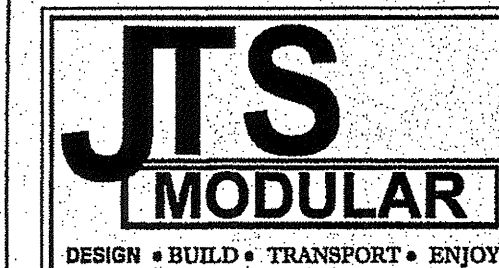


**1 SOG 32 - PLUMBING WASTE/VENT PLAN - 5M RESTROOM OPTION**  
SCALE 3/16" = 1'-0"



**2 SOG 32 - PLUMBING DCW/DHW PLAN - 5M RESTROOM OPTION**  
SCALE 3/16" = 1'-0"

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
APPROX 116810  
DATE 02/16/16



**COMMERCIAL  
INSTITUTIONAL  
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MODULAR  
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DESIGN &  
PLANNING**

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LICENSE #21190

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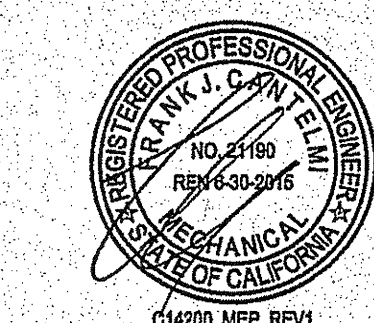
**SOG-32  
RE-LOCATABLE  
BUILDING PC**

APPROVALS

IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
PRE CHECK (PC) DOCUMENT  
CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION  
FOR CONSTRUCTION IS REQUIRED

FILE # PC-15  
APPROX 113839  
AC FLS  
DATE 3/19/15

DATE  
PROJECT **XX-XXX**



02-18-15



SHEET NAME  
**PLUMBING PLANS:  
5M-RR**

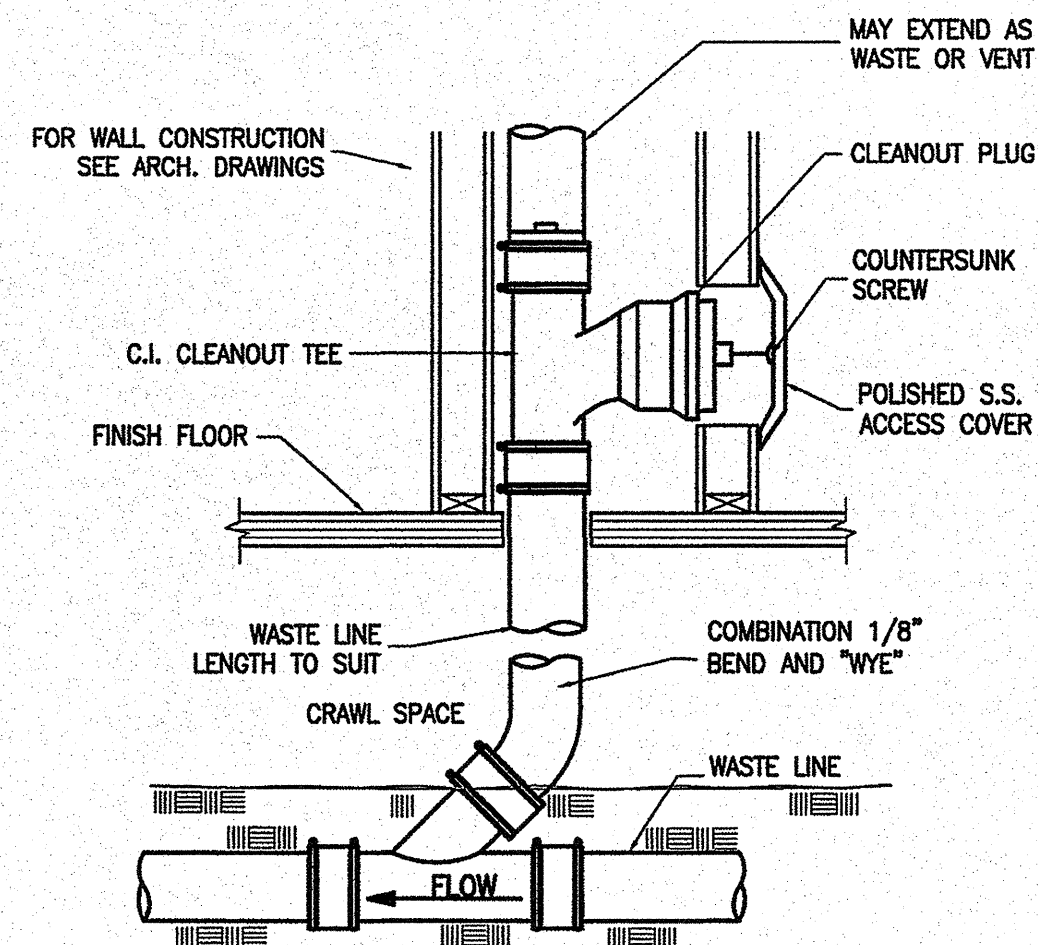
SHEET NUMBER

**P1.01**

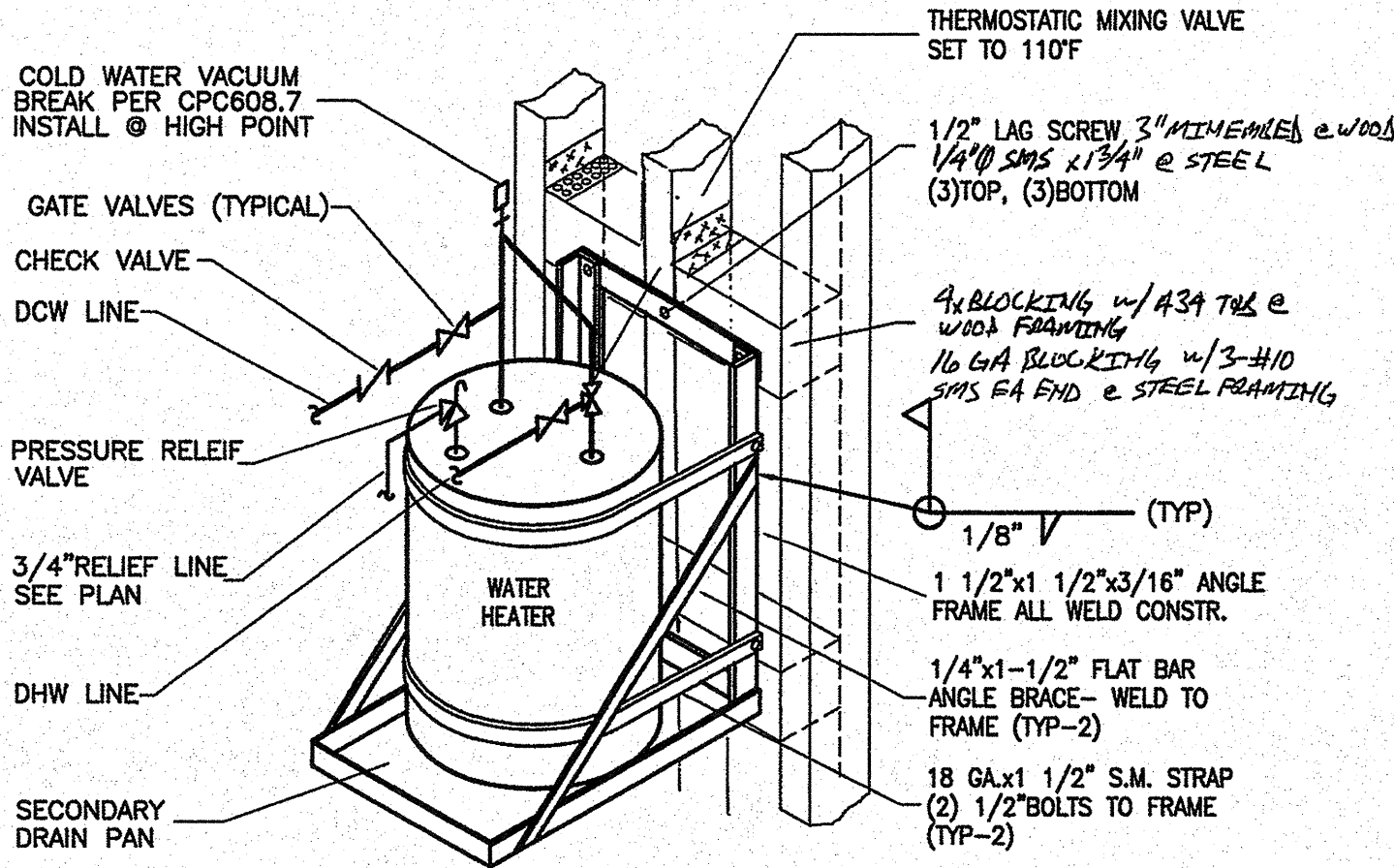


| PLUMBING FIXTURE SCHEDULE |                         |        |      |     |        |      |   |
|---------------------------|-------------------------|--------|------|-----|--------|------|---|
| MARK                      | FIXTURE                 | DCW    | DHW  | S&W | TRAP   | VENT | DESCRIPTION   |
| WC 1                      | WATER CLOSET            | 1 1/4" | -    | 4"  | INT.   | 2"   | ZURN #Z5615-BWL HET ELONGATED WALL HUNG - ECOVANTAGE FLUSH VALVE TOILET SYSTEM - VITREOUS CHINA - 1.28 GPF - ELONGATED OPEN FRONT SEAT - BOLT CAP KIT - ZURN #Z600PL-HET MANUAL FLUSH VALVE - ZURN #Z1212 WALL CLOSET SUPPORT SYSTEM - SHALL MEET CALGREEN STANDARDS  |
| WC 2                      | ACCESSIBLE TOILET       | 1 1/4" | -    | 4"  | INT.   | 2"   | ZURN #Z5615-BWL HET ELONGATED WALL HUNG - ECOVANTAGE FLUSH VALVE TOILET SYSTEM - VITREOUS CHINA - 1.28 GPF - ELONGATED OPEN FRONT SEAT - BOLT CAP KIT - ZURN #Z600PL-HET MANUAL FLUSH VALVE - ZURN #Z1212 WALL CLOSET SUPPORT SYSTEM - SHALL MEET CALGREEN STANDARDS - SEE ARCHITECTURAL DETAIL FOR ADA COMPLIANT MOUNTING HEIGHT   |
| UR 1                      | URINAL                  | 1"     | -    | 2"  | INT.   | 2"   | ZURN #Z5738.207.00 SMALL PINT ECOVANTAGE URINAL - VITREOUS CHINA - WALL MOUNTED - .125 GPF - ZURN #Z6003PL-ULF MANUAL FLUSH VALVE - SHALL MEET CALGREEN STANDARDS - SEE ARCHITECTURAL DETAIL FOR ADA COMPLIANT MOUNTING HEIGHT  |
| L 1                       | LAVATORY ADA            | 1/2"   | -    | 2"  | 1-1/4" | 2"   | KOHLER "KINGSTON" #K-2005 LAVATORY- WALL MTD - VITREOUS CHINA - COLD WATER METERING FAUCET CHICAGO #3400-ABCP - .25 GPC, MIN. 10 SEC. CYCLE TIME, MAX. 5LB ACTIVATION - MCGUIRE #155A GRID DRAIN - (1)ANGLE WALL STOP W/ FLEX RISER - 1/2" P" TRAP - WALL FIXTURE SUPPORT - VERIFY HOLE DRILLING FOR FAUCET - LAVATORY SHALL BE ADA COMPLIANT & MEET CALGREEN MAX. 4 GPM FLOW RATE (OR EQUAL)   |
| L 2                       | LAVATORY ADA            | 1/2"   | 1/2" | 2"  | 1-1/4" | 2"   | KOHLER "KINGSTON" #K-2005 LAVATORY- WALL MOUNTED - VITREOUS CHINA - HOT & COLD WATER METERING FAUCET CHICAGO #3300-ABCP - .25 GPC, MIN. 10 SEC. CYCLE TIME, MAX. 5LB ACTIVATION - GRID STRAINER - (2)ANGLE WALL STOP W/ FLEX RISERS- 1/2" P" TRAP- WALL FIXTURE SUPPORT - INSULATE HOT WATER SUPPLY & P" TRAP- VERIFY HOLE DRILLING FOR FAUCET - LAVATORY SHALL BE ADA COMPLIANT - FAUCET SHALL MEET CALGREEN MAX. 4 GPM FLOW RATE (OR EQUAL) |
| CS 1                      | CLASSROOM SINK          | 3/4"   | -    | 2"  | 1-1/2" | 2"   | JUST CRA-ADA-1931-A-GR - 19"x31"x6.5" - SINGLE COMPARTMENT TYPE 304 STAINLESS STEEL SELF-RIMMING SINK W/ 3 1/2" CRUMB CUP - STAINLESS STEEL DRAIN - CHICAGO 350 GOOSENECK SPOUT - HAWS 5054LF DRINKING FOUNTAIN - P-TRAP W/ ESCUTCHEON - SPEEDWAY COMPRESSION WALLSTOP & SUPPLY TUBING  |
| MS 1                      | MOP SINK                | 3/4"   | 3/4" | 3"  | 3"     | 2"   | ZURN Z5850 FLOOR MTD MOP SINK - 28"x28" - 8" CURB - ZURN Z843M1-XL FAUCET W/ VACUUM BREAKER - LOOSE KEY STOPS - LEVER HANDLES - INTEGRAL SHANK-STOPS & RUBBER HOSE W/ HOSE HOOK   |
| WH 1                      | WATER HEATER            | 3/4"   | 3/4" | -   | -      | -    | A.O. SMITH #DSE5-10 ELECTRIC WATER HEATER 10 GAL - WALL MOUNTED- 6 kw - 28.8 FLA @208v/1φ (VERIFY SITE VOLTAGE PRIOR TO ORDERING) - W/ AMTROL T-5 THERMAL EXPANSION TANK TO BE PRE-CHARGED @ FACTORY PRESSURE RELIEF VALVE - 188 lbs OPERATING WEIGHT (OR EQUAL)  |
| HB 1                      | HOSE BIBB               | 3/4"   | -    | -   | -      | -    | ACORN 8160 - NON-FREEZE INTEGRAL VACUUM BREAKER - DUAL CHECK HYDRANT - RECESSED HOSE BOX - 304 SS BOX W/ LOCKING DOOR - 1/4TURN CERAMIC FULL FLOW VALVE W/ WHEEL HANDLE & SCREW DRIVER OPERATED STOP  |
| FD 1                      | FLOOR DRAIN             | -      | -    | 2"  | 2"     | 2"   | OR SMITH #2005-A FLOOR DRAIN - 5" CHROME PLATED GRATE - DOUBLE DRAINAGE FLANGE - NO HUB OUTLET - TRAP PRIMER CONNECTION   |
| SA 1                      | SHOCK ABSORBER          | -      | -    | -   | -      | -    | ZURN Z1700 - SERIES SIZED PER MANUFACTURER'S REQUIREMENTS   |
| H 1                       | INSTANT ELECTRIC HEATER | 1/2"   | 1/2" | -   | -      | -    | EEMAX #SP4208 SINGLE POINT ELECTRIC TANKLESS WATER HEATER - .5 GPM - OUTLET TEMPERATURE 105-110° BRAIDED STAINLESS STEEL FLEX CONNECTORS - 4.1KW - 19.7 AMPS @ 208v/1φ (OR EQUAL)   |

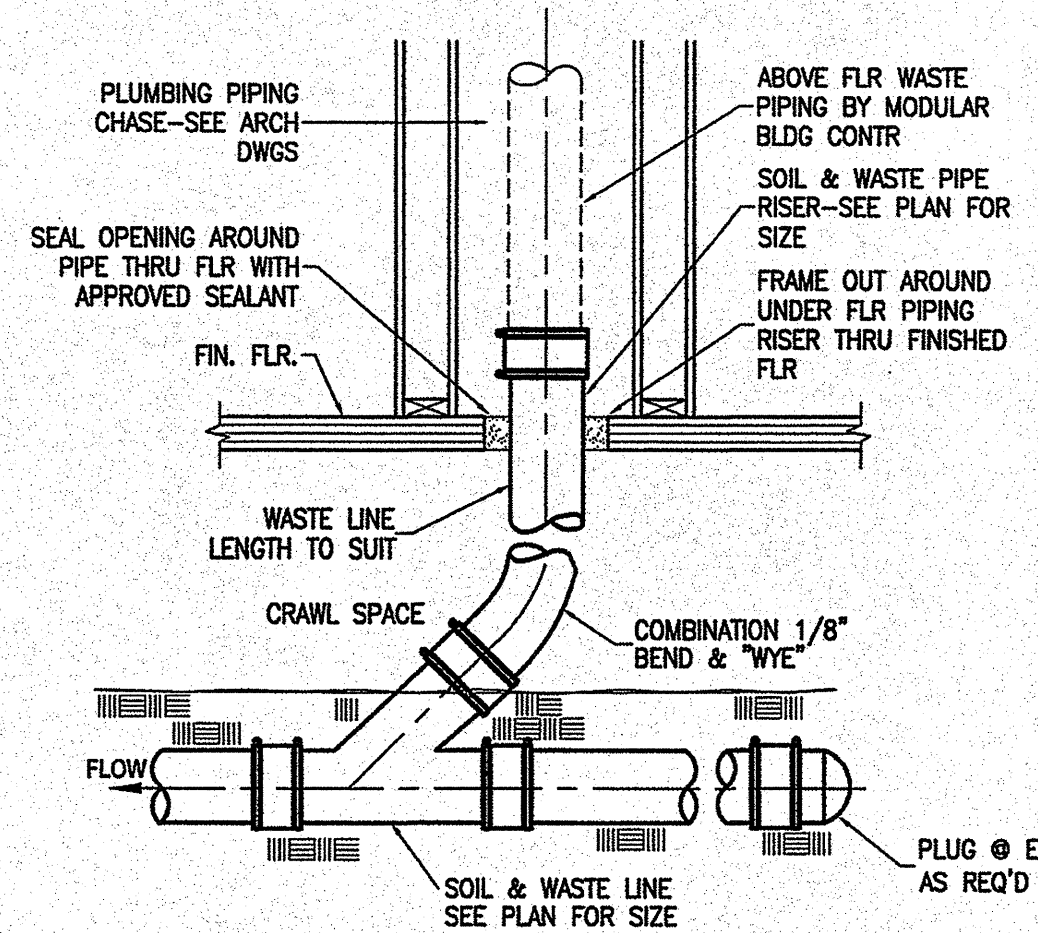
**NOTE:**  
ALL PLUMBING FIXTURES SHALL MEET 2013 CALGREEN MANDATORY MEASURES MAXIMUM FLOW RATE AT 20% REDUCTION PER TABLE 5.303.2.3



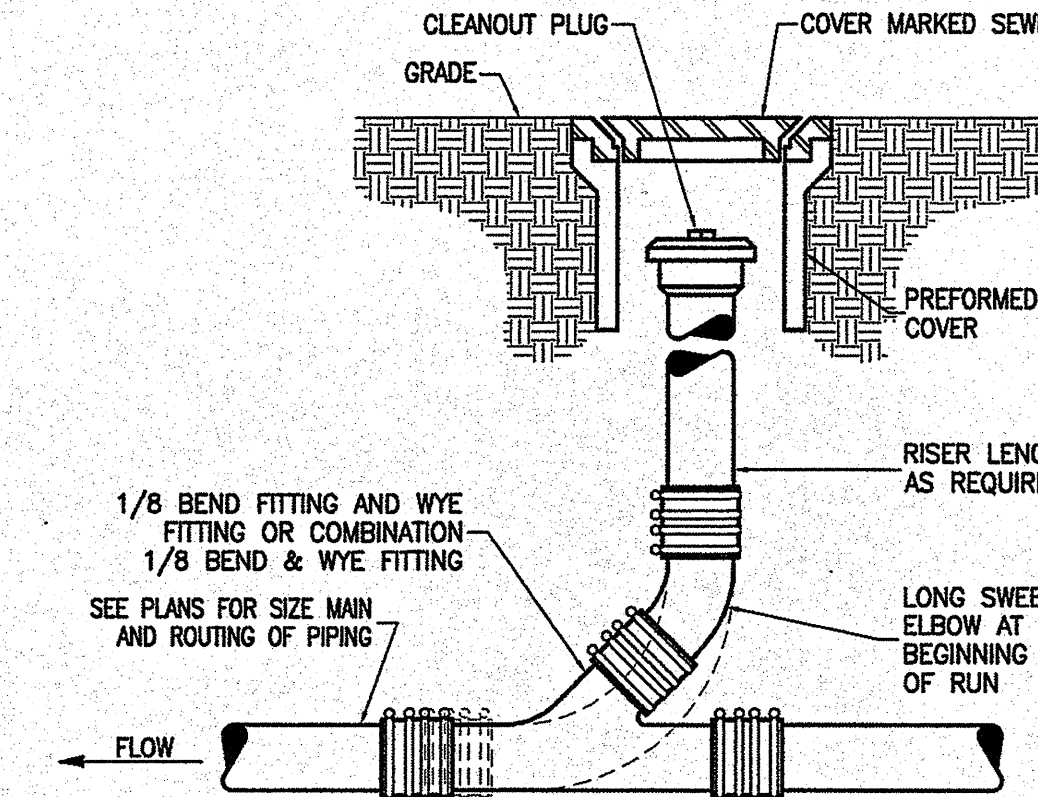
④ WALL CLEANOUT - TYP. NTS



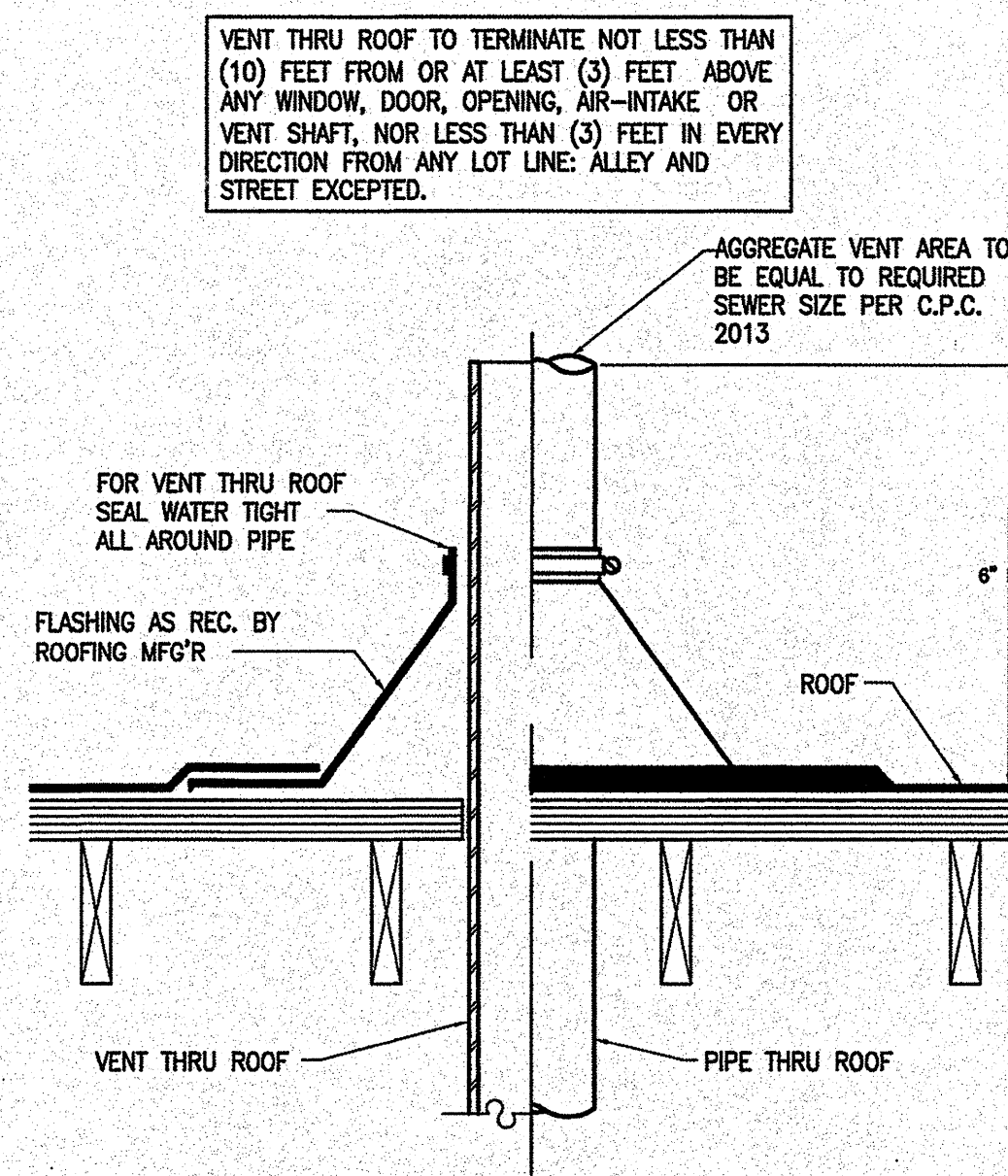
⑤ WATER HEATER MTG/PIPING NTS



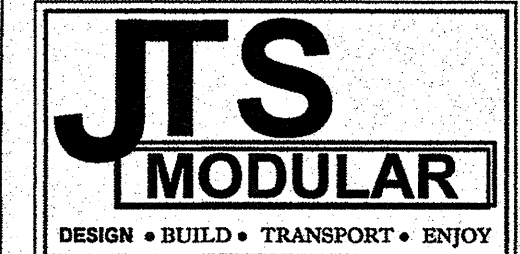
① S&W PIPE RISER THRU FLR - TYP. NTS



② CLEANOUT TO GRADE - TYP. NTS



③ VENT/PIPE THRU ROOF - TYP. NTS



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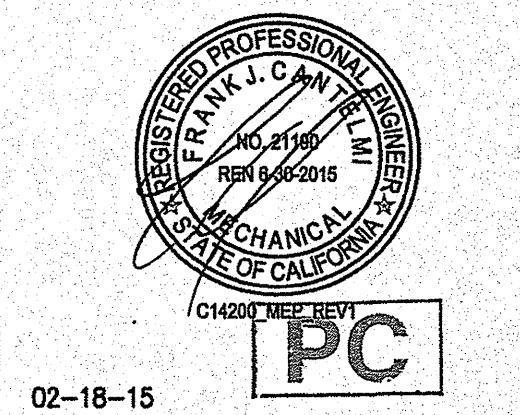
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FAX: (661) 324-8439  
Cantelmi@Cantelmi.NET

SOG-32 RE-LOCATABLE BUILDING PC

APPROVALS  
IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT  
PRE CHECK (PC) DOCUMENT CODE 2013 CBC  
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED  
FILE # PC-116810  
APPLD-11.3.2016  
AC N FLS EY SS ELL  
DATE 3/19/16

DATE  
PROJECT XX-XXX



SHEET NAME  
PLUMBING SCHEDULE & DETAILS

SHEET NUMBER  
**P5.01**



STATE OF CALIFORNIA  
INDOOR LIGHTING  
CERTIFICATE OF COMPLIANCE - USER INSTRUCTIONS  
Form No. NICC-LT-01-E  
Page 1 of 5

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

A separate Lighting Schedule Must be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:  
 CONDITIONED SPACE  UNCONDITIONED SPACE

**A. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST**  
This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.3). All other planned portable luminaires shall be documented on next page of this compliance form.  
This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office.  
Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance shall not be traded between offices having different lighting systems.

| Luminaire Schedule  | Installed Watts         |                      |                             |                             |                             |   | Location        | Field Inspector  |
|---|-------------------------|----------------------|-----------------------------|-----------------------------|-----------------------------|---|-----------------|--|
|   | A                       | B                    | C                           | D                           | E                           | F   |                 |  |
| Complete Luminaire Description (i.e. Many fluorescent troffers, 1x1, one dimmable electronic ballast) | Watts per luminaire     | Number of luminaires | Watts per luminaire (B x C) | Watts per luminaire (D x E) | Watts per luminaire (F x G) | Office Location                                   | Field Inspector |  |
| 1   | 244 LED TROFFER (7200L) | 77.0                 | 77.0                        | 18                          | 1,386                       | Classrooms, Lecture, Training Office are 520 sqft |                 |  |
| 2   | 244 LED TROFFER (4000L) | 39.0                 | 39.0                        | 4                           | 156                         |   |                 |  |
| INSTALLED WATTS PAGE TOTAL  |                         |                      |                             |                             |                             |   | 1,388           | Enter sum total of all pages into NICC-LT-01-E, Page 2 |

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

STATE OF CALIFORNIA  
INDOOR LIGHTING  
CERTIFICATE OF COMPLIANCE - USER INSTRUCTIONS  
Form No. NICC-LT-01-E  
Page 2 of 5

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

Climate Zone: 14  
Conditioned Floor Area: 2,241  
Unconditioned Floor Area: 169

**A. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST**  
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| Luminaire Schedule  | Installed Watts         |                      |                             |                             |                             |                 | Location        | Field Inspector  |
|---|-------------------------|----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------|-----------------|--|
|   | A                       | B                    | C                           | D                           | E                           | F               |                 |  |
| Complete Luminaire Description (i.e. LED, under cabinet, furniture mounted, dimmable) | Watts per luminaire     | Number of luminaires | Watts per luminaire (B x C) | Watts per luminaire (D x E) | Watts per luminaire (F x G) | Office Location | Field Inspector |  |
| 1   | 1x1 LED (under cabinet) | 1                    | 1                           | 1                           | 1                           |                 |                 |  |
| INSTALLED WATTS PAGE TOTAL  |                         |                      |                             |                             |                             |                 | 1               | Enter sum total of all pages into NICC-LT-01-E, Page 2 |

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

STATE OF CALIFORNIA  
INDOOR LIGHTING  
CERTIFICATE OF COMPLIANCE - USER INSTRUCTIONS  
Form No. NICC-LT-01-E  
Page 3 of 5

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

A separate Lighting Schedule Must be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:  
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**C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST**  
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This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office.  
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| Luminaire Schedule  | Installed Watts         |                      |                             |                             |                             |   | Location        | Field Inspector  |
|---|-------------------------|----------------------|-----------------------------|-----------------------------|-----------------------------|---|-----------------|--|
|   | A                       | B                    | C                           | D                           | E                           | F   |                 |  |
| Complete Luminaire Description (i.e. Many fluorescent troffers, 1x1, one dimmable electronic ballast) | Watts per luminaire     | Number of luminaires | Watts per luminaire (B x C) | Watts per luminaire (D x E) | Watts per luminaire (F x G) | Office Location                                   | Field Inspector |  |
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| 2   | 244 LED TROFFER (4000L) | 39.0                 | 39.0                        | 4                           | 156                         |   |                 |  |
| INSTALLED WATTS PAGE TOTAL  |                         |                      |                             |                             |                             |   | 1,388           | Enter sum total of all pages into NICC-LT-01-E, Page 2 |

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

STATE OF CALIFORNIA  
INDOOR LIGHTING  
CERTIFICATE OF COMPLIANCE - USER INSTRUCTIONS  
Form No. NICC-LT-01-E  
Page 4 of 5

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

5. Allowed Lighting Power  
Conditioned NICC-LT-01-E, page 1: 1,033  
Unconditioned NICC-LT-01-E, page 1: 238

**Declaration of Required Installation Certificates** - Declare by selecting yes for all installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

| YES                                 | NO                       | Form/Title  | Field Inspector                          |
|-------------------------------------|--------------------------|---|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-01-E - Must be submitted for all buildings.   | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.   | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-03-E - Must be submitted for a line-voltage track lighting integral control limiter, or for a supplementary occupancy sensor panel used to manage line-voltage track lighting, to be recognized for compliance. | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-04-E - Must be submitted for two interrelated systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.                         | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.   | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.   | <input type="checkbox"/> Field Inspector |

**Declaration of Required Certificates of Acceptance** - Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

| YES                                 | NO                       | Form/Title   | Field Inspector                          |
|-------------------------------------|--------------------------|--|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-02-A - Must be submitted for occupancy sensors and automatic time switch controls. | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-03-A - Must be submitted for automatic daylight controls.                          | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-04-A - Must be submitted for demand responsive lighting controls.                  | <input type="checkbox"/> Field Inspector |

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

STATE OF CALIFORNIA  
INDOOR LIGHTING  
CERTIFICATE OF COMPLIANCE - USER INSTRUCTIONS  
Form No. NICC-LT-01-E  
Page 4 of 5

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

A separate Lighting Schedule Must be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:  
 CONDITIONED SPACE  UNCONDITIONED SPACE

**C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST**  
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| Luminaire Schedule  | Installed Watts         |                      |                             |                             |                             |                 | Location        | Field Inspector  |
|---|-------------------------|----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------|-----------------|--|
|   | A                       | B                    | C                           | D                           | E                           | F               |                 |  |
| Complete Luminaire Description (i.e. Many fluorescent troffers, 1x1, one dimmable electronic ballast) | Watts per luminaire     | Number of luminaires | Watts per luminaire (B x C) | Watts per luminaire (D x E) | Watts per luminaire (F x G) | Office Location | Field Inspector |  |
| 1   | 1x1 LED (under cabinet) | 1                    | 1                           | 1                           | 1                           |                 |                 |  |
| INSTALLED WATTS PAGE TOTAL  |                         |                      |                             |                             |                             |                 | 1               | Enter sum total of all pages into NICC-LT-01-E, Page 2 |

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

STATE OF CALIFORNIA  
INDOOR LIGHTING  
CERTIFICATE OF COMPLIANCE - USER INSTRUCTIONS  
Form No. NICC-LT-01-E  
Page 5 of 5

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

6. Allowed Lighting Power  
Conditioned NICC-LT-01-E, page 1: 1,033  
Unconditioned NICC-LT-01-E, page 1: 238

**Declaration of Required Installation Certificates** - Declare by selecting yes for all installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

| YES                                 | NO                       | Form/Title  | Field Inspector                          |
|-------------------------------------|--------------------------|---|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-01-E - Must be submitted for all buildings.   | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.   | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-03-E - Must be submitted for a line-voltage track lighting integral control limiter, or for a supplementary occupancy sensor panel used to manage line-voltage track lighting, to be recognized for compliance. | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-04-E - Must be submitted for two interrelated systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.                         | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.   | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.   | <input type="checkbox"/> Field Inspector |

**Declaration of Required Certificates of Acceptance** - Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

| YES                                 | NO                       | Form/Title   | Field Inspector                          |
|-------------------------------------|--------------------------|--|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-02-A - Must be submitted for occupancy sensors and automatic time switch controls. | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-03-A - Must be submitted for automatic daylight controls.                          | <input type="checkbox"/> Field Inspector |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | NICC-LT-04-A - Must be submitted for demand responsive lighting controls.                  | <input type="checkbox"/> Field Inspector |

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

STATE OF CALIFORNIA  
ENVELOPE COMPONENT APPROACH  
CERTIFICATE OF COMPLIANCE  
Form No. NICC-ENV-01-E  
Page 1 of 4

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

**A. GENERAL INFORMATION**

|                    |                     |                |                                |                                  |                     |                          |   |
|--------------------|---------------------|----------------|--------------------------------|----------------------------------|---------------------|--------------------------|---|
| 1 Project Location | 2 City and Zip Code | 3 Climate Zone | 4 Total Conditioned Floor Area | 5 Total Unconditioned Floor Area | 6 Compliance Method | 7 Component (As defined) | 8 Unconditioned Floor Area (As defined) |
| 1                  | 2,241               | 14             | 2,241                          | 169                              | 1                   | 1                        | 169                                     |

**B. ENVELOPE DETAILS - Framed**

| 1    | 2             | 3              | 4           | 5             | 6                     | 7                              | 8                                | 9                 | 10                                 | 11        |
|------|---------------|----------------|-------------|---------------|-----------------------|--------------------------------|----------------------------------|-------------------|------------------------------------|-----------|
| Type | Assembly Type | Frame Material | Frame Depth | Frame Spacing | Appendix J4 Reference | Conditioned Insulation R-Value | Unconditioned Insulation R-Value | Proposed U-Factor | Required U-Factor from Table B.5.C | Comments  |
| 1    | Wall          | Wood           | 2x6 @ 16    | 16            | 4.5, 1-A-5            | 19                             | 0.0                              | 0.025             | 0.025                              | R-19 Wall |
| 2    | Roof          | Metal          | 2x12 @ 24   | 24            | 4.2, A-3-3            | 33                             | 0.0                              | 0.025             | 0.025                              | R-38 Roof |

**C. ENVELOPE DETAILS - Non-Framed**

| 1    | 2             | 3                  | 4                  | 5                                  | 6                              | 7                                | 8                 | 9                                  | 10         | 11 |
|------|---------------|--------------------|--------------------|------------------------------------|--------------------------------|----------------------------------|-------------------|------------------------------------|------------|----|
| Type | Assembly Type | Assembly Materials | Thickness (Inches) | Insulation Core Insulation R-Value | Conditioned Insulation R-Value | Unconditioned Insulation R-Value | Proposed U-Factor | Required U-Factor from Table B.5.C | Comments   |    |
| 1    | Door          | Metal, Double-Door | 0                  | 0.0                                | 4.5, 1-A-2                     | 0.700                            | 0.700             | 0.700                              | Metal Door |    |

**D. ENVELOPE DETAILS - Mass**

| 1    | 2                     | 3                      | 4                                | 5                  | 6                              | 7                                | 8                 | 9                                  | 10       | 11 |
|------|-----------------------|------------------------|----------------------------------|--------------------|--------------------------------|----------------------------------|-------------------|------------------------------------|----------|----|
| Type | Mass Density (lb/ft³) | Max Thickness (Inches) | Furring Strip Thickness (Inches) | Insulation R-Value | Conditioned Insulation R-Value | Unconditioned Insulation R-Value | Proposed U-Factor | Required U-Factor from Table B.5.C | Comments |    |

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

STATE OF CALIFORNIA  
ENVELOPE COMPONENT APPROACH  
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Form No. NICC-ENV-01-E  
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Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

**E. ROOFING DETAILS (COOL ROOF)**

| 1                      | 2          | 3                      | 4            | 5                         | 6                                     | 7                         | 8                 | 9                   | 10             | 11       |
|------------------------|------------|------------------------|--------------|---------------------------|---------------------------------------|---------------------------|-------------------|---------------------|----------------|----------|
| Max Roof Slope (in/ft) | Roof Pitch | CRRC Product ID Number | Product Type | Applied Solar Reflectance | Proposed Thermal Emittance (Optional) | Applied Solar Reflectance | Thermal Emittance | Minimum Reflectance | SAI (Optional) | Comments |
|                        |            |                        |              |                           |                                       |                           |                   |                     |                |          |

**F. Air Barrier**

| 1    | 2                         | 3                         | 4                | 5        |
|------|---------------------------|---------------------------|------------------|----------|
| Type | Air Barrier Material Type | Air Barrier Assembly Type | Weatherstripping | Comments |
| 1    |                           |                           |                  |          |

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STATE OF CALIFORNIA  
ENVELOPE COMPONENT APPROACH  
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Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

**G. FENESTRATION PROPOSED AREAS AND EFFICIENCIES**

| 1    | 2                 | 3    | 4                                | 5          | 6            | 7        | 8        | 9      | 10    | 11             | 12       |
|------|-------------------|------|----------------------------------|------------|--------------|----------|----------|--------|-------|----------------|----------|
| Type | Fenestration Type | Area | Orientation (N, S, W, E or Roof) | # of Panes | Max U-Factor | Overhang | Max SHGC | Min VT | Label | Conditions Met | Comments |
| 1    | AlumLowE          | 32   | North                            | 1          | 0.45         | No       | 0.28     | 0.50   | New   |                |          |
| 2    | AlumLowE          | 32   | South                            | 1          | 0.45         | No       | 0.28     | 0.50   | New   |                |          |
| 3    | AlumLowE          | 8    | South                            | 1          | 0.45         | No       | 0.28     | 0.50   | New   |                |          |
| 4    | AlumLowE          | 32   | North                            | 1          | 0.45         | No       | 0.28     | 0.50   | New   |                |          |
| 5    | AlumLowE          | 32   | South                            | 1          | 0.45         | No       | 0.28     | 0.50   | New   |                |          |
| 6    | AlumLowE          | 8    | South                            | 1          | 0.45         | No       | 0.28     | 0.50   | New   |                |          |
| 7    | AlumLowE          | 8    | South                            | 1          | 0.45         | No       | 0.28     | 0.50   | New   |                |          |

**H. ENVELOPE MANDATORY MEASURES**

Indicate location on building plans of Mandatory Envelope Measures Note Block: EN-CMM

**INSTRUCTIONS TO APPLICANT ENVELOPE COMPLIANCE & WORKSHEETS (Check box if worksheets are included)**

NICC-ENV-01-E Certificate of Compliance. Required plans for all submissions.

NICC-ENV-04-E Use when minimum skylight requirements for large enclosed spaces are required in climate zones 2 through 15. Optional on plans.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 1 of 3) PER-1C  
Form No. NICC-PC-01-E  
Page 1 of 3

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

**GENERAL INFORMATION**

Building Type:  Home/Commercial  Relocatable - Indicate specific climate zone  all climates  Home/Industrial  all climates

Phase of Construction:  New Construction  Addition

**STATEMENT OF COMPLIANCE**

This certificate of compliance lists the building performance and specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations. This certificate applies only to a building using the performance compliance approach. The documentation author hereby certifies that the documentation is accurate and complete.

Documentation Author: [Signature]  
Date: 2/11/2015

Company: Fremont Contract Mechanical Engineering  
Address: 10000 Sycamore Ave, Fremont, CA 94538  
Phone: 925-239-2270

**ENV. LYG. MECH.**

I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for the preparation and that I am licensed in the State of California as a civil engineer, mechanical engineer, electrical engineer or landscape architect. I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by section 5372.2 or 5372.3 to sign this document as the person responsible for the preparation and that I am a licensed contractor performing this work.

I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document because I participate in a structure of type of work described as exempt pursuant to Business and Professions Code Sections 5337, 5339 and 6707.1.

**Principal Envelope Designer**  
Name: [Signature]  
Title: [Signature]  
Address: 10000 Sycamore Ave, Fremont, CA 94538  
Phone: 925-239-2270

**Principal Mechanical Designer**  
Name: [Signature]  
Title: [Signature]  
Address: 10000 Sycamore Ave, Fremont, CA 94538  
Phone: 925-239-2270

**Principal Lighting Designer**  
Name: [Signature]  
Title: [Signature]  
Address: 10000 Sycamore Ave, Fremont, CA 94538  
Phone: 925-239-2270

**INSTRUCTIONS TO APPLICANT COMPLIANCE & WORKSHEETS (Check box if worksheets are included)**

ENV-01 Certificate of Compliance. Required on plans.  ENV-01-E Certificate of Compliance. Required on plans.

LTR-01 Certificate of Compliance. Required on plans.  MCH-02 HVAC Advisor file requirements.  MCH-03 Mechanical Division worksheet.  LTR-02 Indoor Lighting Power Allowance.  MCH-08 Mechanical Equipment Details.  MCH-09 Mechanical Equipment Details.  MCH-10 Mechanical Equipment Details.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 2 of 3) PER-1C  
Form No. NICC-PC-01-E  
Page 2 of 3

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

**ANNUAL TON ENERGY USE SUMMARY (Minimum)**

| Energy Component   | Standard Design | Proposed Design | Compliance Margin |
|--------------------|-----------------|-----------------|-------------------|
| Space Heating      | 6.71            | 12.41           | -14.23            |
| Space Cooling      | 105.30          | 274.22          | -67.63            |
| Indoor Fans        | 112.37          | 43.34           | 70.57             |
| Heat Rejection     | 0.00            | 0.00            | 0.00              |
| Pumps & Misc.      | 0.00            | 0.00            | 0.00              |
| Domestic Hot Water | 25.34           | 32.20           | -6.86             |
| Lighting           | 22.20           | 22.89           | -3.67             |
| Receptacles        | 32.20           | 22.84           | 6.36              |
| Process            | 0.00            | 0.00            | 0.00              |
| Process Lighting   | 0.00            | 0.00            | 0.00              |
| TOTALS             | 248.82          | 435.67          | -23.85            |

Percent better than Standard: 48% (48% excluding process)

**BUILDING COMPLEX**

| Building Orientation | Conditioned Floor Area | Unconditioned Floor Area | Conditioned Pooling Area | Natural Gas Available On Site |
|----------------------|------------------------|--------------------------|--------------------------|-------------------------------|
| (N 5 deg)            | 2,241                  | 169                      | 2,410                    | Yes                           |

**Orientation**

| Orientation     | Gross Area | Glazing Area | Glazing Ratio |
|-----------------|------------|--------------|---------------|
| East Elevation  | 67         | 720          | 88.3%         |
| West Elevation  | 67         | 407          | 60.6%         |
| North Elevation | 60         | 600          | 61.1%         |
| South Elevation | 60         | 283          | 47.2%         |
| Roof            | 169        | 169          | 62.1%         |
| Total           | 2,410      | 2,410        | 62.1%         |

**Prescriptive Lighting Power Density**

| Standard | Proposed | Prescriptive Values for Compliance only. See LTR-01 for Unconditioned FLD. |
|----------|----------|--|
| 1.12     | 0.42     |  |

**REMARKS:**

APPROVED 116810  
DATE 02/11/15

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

PERFORMANCE CERTIFICATE OF COMPLIANCE (Part 3 of 3) PER-1C  
Form No. NICC-PC-01-E  
Page 3 of 3

Project Name: SOG32 - EM-RR  
Date Prepared: 2/11/2015

**SYSTEM INFORMATION**

| System Name | Zone Name          | Command Type              | Floor Area (sq ft) | Int. LPS (W/ft²) | Chg. (W/ft²) | Max. LPS (W/ft²) | Proc. (W/ft²) |
|-------------|--------------------|---------------------------|--------------------|------------------|--------------|------------------|---------------|
| AP2         | Unconditioned Zone | Controlled Load, Heating  | 169                | 0.00             | 0.00         | 0.00             |               |
| AP2         | Unconditioned Zone | Office - 239 sqft         | 169                | 0.00             | 0.00         | 0.00             |               |
| AP2         | Unconditioned Zone | Control/Reception/Support | 80                 | 0.20             | 0.00         | 0.00             |               |
| AP2         | Unconditioned Zone | Control/Reception/Support | 89                 | 0.20             | 0.00         | 0.00             |               |
| AP2         | Unconditioned Zone | Control/Reception/Support | 169                | 0.00             | 0.00         | 0.00             |               |
| AP2         | Unconditioned Zone | Control/Reception/Support | 79                 | 0.20             | 0.00         | 0.00             |               |

**EXPERIMENTAL CONDITIONS COMPLIANCE CHECKLIST**

This form requires a separate page for each experimental condition. These forms require special written documentation for their use have been prepared by the applicant.

**APPROVED**  
DIVISION OF STATE ARCHITECT  
HIGH PERFORMANCE SECTION  
APP# 12-113877 DATE: 2/20/15

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance June 2014

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MECHANICAL & ELECTRICAL ENGINEERING

1800 21 STREET, SUITE C  
BAKERSFIELD, CA 93301  
TEL: (661) 324-5252  
FAX: (661) 324-8439  
Cantelmi@Cantelmi.NET

SOG-32  
RE-LOCATABLE BUILDING PC

APPROVALS  
IDENTIFICATION STAMP  
DIV. OF THE STATE ARCHITECT  
PRE CHECK (PC) DOCUMENT  
CODE 2013 CBS  
A SEPARATE PROJECT APPLICATION FOR CONSTRUCTION IS REQUIRED

FILE # PG-115  
APPL # 113877  
AC # FLS-SS-SPR  
DATE 3/9/15

DATE  
PROJECT **XX-XXX**

PROFESSIONAL SEAL  
FRANK J. CAHILL  
MECHANICAL ENGINEER  
STATE OF CALIFORNIA  
161400-A-24-0001  
PC

02-18-15

SHEET NAME  
TITLE 24  
5M-RR CZ 14  
(ALTERNATE 'A')

SHEET NUMBER  
**EC1.01**



