GENERAL NOTES:

1R-27-8
WELDING REQUIREMENTS:

1. THE WELDING REQUIREMENTS IN AWS D1.1 (1994 EDITION) AS MODIFIED IN CBC, CHAPTER 22A, DIVISION VIII OR DIVISION IX, CURRENT EDITION SHALL BE STRICTLY ENFORCED. WELD ACCESS HOLES MAY BE LARGER THAN THE MINIMUM REQUIRED IN AWS D1.1, SECTION 3.2.5.

2. THE SPECIAL INSPECTION REQUIREMENTS IN AWS D1.1, SECTIONS 6.1 THROUGH 6.6 SHALL BE IMPLEMENTED. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH A FABRICATION/ERECTION INSPECTOR AND THE OWNER TO EMPLOY A VERIFICATION INSPECTOR. VISUAL INSPECTION MEANS THAT THE INSPECTOR VISUALLY INSPECTS THE WELDING FOR ADHERENCE TO THE APPROVED WELD PROCEDURE SPECIFICATION STARTING WITH FIT-UP AND PROCEEDING THROUGH THE WELDING PROCESS (SEE AWS D1.1, SECTION 6.2 THROUGH 6.5 AND 8.15). RELIANCE ONLY UPON USE OF NON-DESTRUCTIVE EXAMINATION (NDE) AT THE END OF THE WELDING SHOULD BE AVOIDED. USE VISUAL INSPECTION IN CONJUNCTION WITH NDE FOR A SOUND WELD.

3. A WELDING PROCEDURE SPECIFICATION (WPS), WITH THE INFORMATION REQUIRED BY AWS D1.1, SECTION 5, SHALL BE SUBMITTED TO THE OWNER'S ENGINEER AND THE ENFORCEMENT AGENCY FOR ACCEPTANCE PRIOR TO THE START OF WORK. THE WPS SHALL BE USED IN PROVIDING THE REQUIRED SPECIAL INSPECTION. THE WPS SHALL CONTAIN THE ACTUAL VALUES TO BE USED FOR THE WELDING PARAMETERS AND VARIABLES SO THAT INSTRUCTION IS PROVIDED TO WELDERS; AS A MINIMUM THE WPS SHALL LIST THE POSITION, ELECTRODE TYPE AND SIZE, TRAVEL SPEED, ELECTRODE STICK-OUT, VOLTAGE AND AMPERAGE WITH ACCEPTABLE LIMITS, BEAD SIZE, WELD SEQUENCE, STRESS RELIEVING, AND OTHER PERTINENT DATA. A COPY OF THE FILLER METAL MANUFACTURER'S TECHNICAL DATA SHEET SHALL BE SUBMITTED WITH EACH WPS. WELDING CONSUMABLES MUST BE USED WITHIN THE POSITIONS, THICKNESSES, TEMPERATURES, AND OTHER PARAMETERS PROVIDED BY THE MANUFACTURER. FOR WPS's WHICH REQUIRE QUALIFICATION, PROCEDURE QUALIFICATION RECORDS (PQRs) SHALL ALSO BE SUBMITTED FOR ACCEPTANCE. PRODUCTION WELDING HEAT INPUT SHALL BE LIMITED BASED ON THE PQR.

4. WPS's FOR GROOVE WELDS JOINING THE BEAM FLANGES TO THE COLUMN SHALL MEET OR EXCEED THE WORKMANSHIP AND TECHNIQUE REQUIREMENTS OF AWS D1.1. WPS's FOR FCAW SHALL BE QUALIFIED BY TESTING IN ACCORDANCE WITH AWS D1.1, SECTION 5. THE TESTS SHALL INCLUDE CHARPY V-NOTCH (CVN) TESTS OF THE WELD METAL (SEE ITEM 8 BELOW).

5. SHIELDED METAL ARC WELDING (SMAW) AND FLUX CORE ARC WELDING (FCAW), BOTH SELF SHIELDED (FCAW-SS) AND GAS SHIELDED (FCAW-G), ARE SUITABLE PROCESSES.

6. MAXIMUM DIAMETER OF ELECTRODES ALLOWED FOR SMAW IS PER AWS D1.1, SECTION 4.6. MAXIMUM DIAMETER OF ELECTRODES ALLOWED FOR FCAW IS PER AWS D1.1, SECTION 4.14 EXCEPT THAT THE MAXIMUM DIAMETER FOR THE FLAT AND HORIZONTAL POSITION SHALL BE LIMITED TO 7/64 INCH.

7. MAXIMUM WIDTH AND THICKNESS OF WELD LAYERS SHALL BE PER AWS D1.1, SECTION 4.6 FOR SMAW AND SECTION 4.14 FOR FCAW EXCEPT THAT: A) THE THICKNESS OF A ROOT LAYER SHALL NOT EXCEED 1/4" INCH; B) THE MAXIMUM WIDTH OF A LAYER IN ANY POSITION SHALL NOT EXCEED 5/8" INCH; AND C) THE WIDTH OF A WEAVE BEAD SHALL NOT EXCEED 3 TIMES THE ELECTRODE (WIRE) DIAMETER, D, WHEN D > 3/32 INCH, OR 5 TIMES THE ELECTRODE DIAMETER WHEN D ≤ 5/64 INCH.

8. THE FILLER METAL USED SHALL HAVE A NOTCH TOUGHNESS NOT LESS THAN OF 20 FT-LBS AS MEASURED BY A STANDARD CHARPY V-NOTCH (CVN) TEST, ASTM E-23. THE CVN TEST TEMPERATURE SHALL BE AT LEAST 0 DEGREES F. THE MINIMUM REQUIRED ENERGY ABSORPTION IS 20 FT-LBS. AVERAGE. ONE SPECIMEN MAY BE LESS THAN THE MINIMUM AVERAGE, BUT NOT LESS THAN 15 FT-LBS. THE TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE APPLICABLE FILLER METAL SPECIFICATION REFERENCED IN AWS D1.1 AND MAY BE PERFORMED BY THE MANUFACTURER.

10. ALL WELDS SHALL BE STARTED AND ENDED WITH A FULL CROSS SECTION WELD FOR A MINIMUM LENGTH OF ONE INCH ON WELD TABS ("RUN OFF" TABS) EXCEPT AT ACCESS HOLES IN BEAM/GIRDER WEBS (SEE AWS D1.1, SECTION 3.12). ALL WELD TABS SHALL BE REMOVED, THE AFFECTED AREA GROUND SMOOTH AND MAGNETIC PARTICLE TESTED FOR DEFECTS. MINIMUM WELD TAB LENGTH SHALL BE THE GREATER OF ONE INCH OR 1.5 TIMES THE BEAM FLANGE THICKNESS, BUT NEED NOT EXCEED FOUR INCHES.

11. IF BACKING BARS ARE USED UNDER THE BOTTOM BEAM FLANGE TO COLUMN FLANGE CJP GROOVE WELD, THE BACKING BAR SHALL BE REMOVED, THE REMOVAL AREA GROUND TO SOUND, BRIGHT METAL AND THE AREA MAGNETIC PARTICLE TESTED FOR DEFECTS. A REINFORCING FILLET WELD, AT LEAST 1/4" OF THE BOTTOM FLANGE THICKNESS BUT NOT GREATER THAN 3/8" INCH, SHALL BE PLACED IN THIS LOCATION (SIMILAR TO AWS D1.1, FIGURE 2.4, NOTE J).

12. IF A BACKING BAR IS USED UNDER THE TOP BEAM FLANGE TO COLUMN CJP GROOVE WELD, AND IS NOT REMOVED, THE BACKING BAR SHALL BE ATTACHED TO THE COLUMN AND BEAM FLANGES BY EITHER A FILLET WELD ALONG THE COMPLETE BAR LENGTH ON THE UNDER SIDE OF THE BAR; OR BY A PARTIAL PENETRATION WELD FROM THE UNDERSIDE OF THE BAR. FOR THE FULL LENGTH OF THE BAR. OTHER METHODS OF WELDING THE BAR TO THE COLUMN AND BEAM MAY BE USED SUBJECT TO THE ENGINEERS APPROVAL.

13. WELD "DAMS" ARE NOT ALLOWED. WELD "DAMS" ARE WELD TABS NOT ALIGNED IN SUCH A MANNER TO PROVIDE AN EXTENSION OF THE JOINT PREPARATION PER AWS D1.1, SECTION 3.12. WELD "DAMS" ARE TYPICALLY PERPENDICULAR TO PROPER WELD TABS.

14. ALL TACK WELDS SHALL BE OF THE SAME QUALITY AS THE FINAL WELDS. THIS INCLUDES REQUIREMENTS FOR PREHEAT. ALL TACK WELDS NOT INCORPORATED INTO THE FINAL WELDS SHALL BE REMOVED.

18. MILL SCALE SHALL BE REMOVED FROM THE COLUMN IN THE AREA WHERE THE BEAM FLANGES WILL BE WELDED TO THE COLUMN.

19. CONTRACTOR SHALL SUBMIT TO THE ENGINEER AND THE ENFORCING AGENCY, FOR ACCEPTANCE, A QUALITY CONTROL OR INSPECTION PLAN THAT ADDRESSES ALL INSPECTION ISSUES, INCLUDING IN PROCESS AND FINAL INSPECTION THAT ARE ADDRESSED IN AWS D1.1.

20. THE QUALIFICATION OF THE CONTRACTOR'S INSPECTORS AND NDE PERSONNEL SHALL BE SUBMITTED TO THE ENGINEER AND ENFORCEMENT AGENCY FOR ACCEPTANCE.

21. IN CASES OF DIFFERENCES OF OPINION BETWEEN THE OWNER'S INSPECTOR AND THE CONTRACTOR'S INSPECTOR REGARDING CONFORMANCE OF A WELD WITH THE SPECIFICATIONS, THE ISSUE SHALL BE BROUGHT TO THE OWNER'S ENGINEER AND THE ENFORCEMENT AGENCY AS PART OF THE RESOLUTION PROCESS.

22. ALL GROOVE WELDS IN THE GIRDER-TO-COLUMN CONNECTION SHALL BE ULTRASONICALLY (UT) EXAMINED FOR THE FULL LENGTH. BACKING BAR REMOVAL AREAS AND FILLET WELDS ON CONTINUITY PLATES SHALL BE EXAMINED FOR THE FULL LENGTH BY THE MAGNETIC PARTICLE TESTING (MPT) METHOD.

23. SHEAR CONNECTION PLATES SHALL BE SIZED SO THAT THEY DO NOT INTERFERE WITH WELDERS ACCESS TO MAKE FLANGE WELDS OR TO PERFORM WORK WHICH IS REQUIRED TO INSTALL OR REMOVE BACKING OR TO PLACE REINFORCING FILLET WELDS.

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PC-

ARCHITECT APPROVAL

REGISTERED PROFESSIONAL ENGINEER JAMES T. SIMONS N° 3602 STRUCTURAL STATE OF CALIFORNIA
LICENSE EXPIRES 6-30-2000

STRUCTURAL ENGINEERS STAMP

STATE AGENCY APPROVAL

AGENCY TRACKING NO. 63321-154
FILE NO. 15-6
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
OFFICE OF REGULATION SERVICES
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AC / FLS SS
DATE 12-8-/2016

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STATE AGENCY APPROVAL

PROJECT
24'X40', 36'X40', & 48'X40'
MODULAR CLASSROOM BUILDING

TITLE
STRUCTURAL GENERAL NOTES

JOB #

DATE 12-8-97

DRAWN BY R.D.L.

SCALE NONE

APPROVED

REVISIONS

SHEET NO.
S-1A