\Users\Owner\Dropbox (mADi Group, Inc.)\mADi Group, Inc\PROJECTS\Solano Community College\SCCD-04 Horticulture\Dwg\Modular DSA sheets\+G0.1 COVER SHEET.dwg 5-10-16 09:40:48 AM Owner

SOLANO COMMUNITY COLLEGE DISTRICT

4000 Suisun Valley Road, Fairfield, California 94534 (T) 707.864.7000, www.solano.edu

HORTICULTURE & PLANT SCIENCE INSTITUTE

PHASE II: MODULAR RESTROOM BLDG

AT

SCCD FAIRFIELD CAMPUS

4000 Suisun Valley Road, Fairfield, California 94534 (T) 707.864.7000, www.solano.edu

CODE SUMMARY & REGULATIONS

AS A FACILITY WHICH COMES UNDER THE APPROVAL AND AUTHORITY OF THE DIVISION OF THE STATE ARCHITECT OFFICE OF REGULATION SERVICES (DSA), THIS PROJECT IS SUBJECT TO DRAWING AND JOB SITE REVIEW BY A REPRESENTATIVE OF DSA.

ADMINISTRATIVE REQUIREMENTS (PARTIAL LISTING ONLY FROM CHAPTER 4, PART 1, TITLE 24, C.C.R)

1. A COPY OF PARTS 1 AND 2, TITLE 24, C.C.R. AND ALL SECTIONS OF THE CALIFORNIA BUILDING CODE (9 VOLUMES) SHALL BE KEPT ON SITES AT ALL TIMES.
2. ALL CHANGE ORDERS AND ADDENDA TO BE SIGNED BY THE ARCHITECT OF RECORD AND THE OWNER AND APPROVED BY DSA. ALL SUBSTITUTIONS TREATED AS CHANGE ORDERS ARE NOT VALID UNTIL APPROVED BY DSA PER SECTION 4-338, PART 1, TITLE 24
3. DSA SHALL BE NOTIFIED AT THE START OF CONSTRUCTION AND PRIOR TO THE PLACEMENT OF CONCRETE PER SECTION 4-331, PART 1, TITLE 24
4. INSPECTOR SHALL BE APPROVED BY DSA AND EMPLOYED DIRECTLY BY OWNER. INSPECTION SHALL BE IN ACCORDANCE WITH SECTION 4-331(B), PART 1, TITLE 24
5. SUPERVISION OF CONSTRUCTION BY DSA SHALL BE IN ACCORDANCE WITH SECTION 4-334, PART 1, TITLE 24
6. CONTRACTOR, INSPECTOR, ARCHITECT OF RECORD AND ENGINEERS SHALL SUBMIT VERIFIED REPORTS (DSA 6AE) IN ACCORDANCE WITH SECTION 4-336 AND 4-343, PART 1, TITLE 24
7. THE ARCHITECT OF RECORD AND STRUCTURAL ENGINEER SHALL PERFORM THEIR DUTIES IN ACCORDANCE WITH SECTION 4-333(A) AND 40341, PART 1, TITLE 24
8. THE CONTRACTOR SHALL PERFORM HIS DUTIES IN ACCORDANCE WITH SECTION 4-343, PART 1, TITLE 24

NON-COMPLYING CONSTRUCTION FOR ALTERATION PROJECTS, STATEMENTS SIMILAR TO THE ONE NOTED IN SECTION 4-317 (C), PART 1, TITLE 24, C.C.R. IS TO BE INCLUDED ON THE COVER DRAWINGS.

THE INTENT OF THE DRAWINGS AND PROJECT MANUAL IS THAT THE WORK OF THE ALTERATION, REHABILITATION OR RECONSTRUCTION IS TO BE IN ACCORDANCE WITH TITLE 24, CALIFORNIA CODE OF REGULATIONS. UPON DISCOVERY OF NON-COMPLYING EXISTING CONDITIONS NOT ADDRESSED BY THE CONTRACT DOCUMENTS AND AFFECTING COMPLIANCE OF FINISHED WORK, A CHANGE ORDER OR SEPARATE SET OF CONSTRUCTION DOCUMENTS ADDRESSING THE NECESSARY REMEDIAL SLOPE OF WORK SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER, CLIENT, ARCHITECT AND DSA BEFORE PROCEEDING WITH THE WORK.

GOVERNING CODES

*2013 CALIFORNIA BUILDING STANDARD, TITLE 24, PART 1
*2013 CALIFORNIA BUILDING CODE, TITLE 24, PART 2
*2013 CALIFORNIA ELECTRICAL CODE, TITLE 24, PART 3
*2013 CALIFORNIA MECHANICAL CODE, TITLE 24, PART 4
*2013 CALIFORNIA PLUMBING CODE, TITLE 24, PART 5
*2013 CALIFORNIA ENERGY CODE, TITLE 24, PART 6
*2013 CALIFORNIA FIRE CODE, TITLE 24, PART 9
*2013 CALIFORNIA EXISTING BUILDING CODE, TITLE 24, PART 10
*2013 CALIFORNIA GREEN BUILDING STANDARD, TITLE 24, PART 11
*2013 CALIFORNIA BUILDING STANDARDS, TITLE 24, PART 12
*2013 NFPA 13-13 AUTOMATIC SPRINKLER SYSTEMS, WITH 2013 CBC AMENDMENTS
*2013 NFPA 14-13 INSTALLATION OF STANDPIPE, PRIVATE HYDRANT AND HOSE SYSTEMS, WITH 2013 CBC AMENDMENTS
*2013 NFPA 72-13 NATIONAL FIRE ALARM CODE, WITH 2013 CBC AMENDMENTS
*2013 NFPA 20-13 INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
*2013 NFPA 22-13 WATER TANKS FOR PRIVATE FIRE PROTECTION
*2013 NFPA 24-13 INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES, WITH 2013 CBC AMENDMENTS
*2008 NFPA 25 INSPECTION, TESTING, MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS
*2013 NFPA 110-13 EMERGENCY AND STANDBY POWER SYSTEMS
*2007 ICC 300-12 STANDARDS ON BLEACHERS, FOLDING TELESCOPIC SEATING & GRANDSTANDS
*2013 NFPA 17-13 DRY CHEMICAL EXTINGUISHING SYSTEMS
*2013 NFPA 17A-13 WET CHEMICAL EXTINGUISHING SYSTEMS
*2008 NFPA 2001-12 CLEAN AGENT FIRE EXTINGUISHING SYSTEMS
*ASTM STANDARDS CHANGES (EXAMPLE: ASTM E648-04 STANDARD TEST METHOD FOR CRITICAL RADIANT FLUX OF FLOOR)
*UL STANDARD CHANGES (EXAMPLE: 2005 UL 38 MANUAL OPERATING SIGNAL BOXES)
*TITLE 24-12 CCR STATE FIRE MARSHAL REGULATIONS
*2003 UL 464-03 AUDIBLE SIGNAL APPLIANCES
*1999 UL 521-99 HEAT DETECTORS FOR FIRE PROTECTIVE SIGNALING SYSTEMS
*2002 UL 1971 SIGNALING DEVICES FOR HEARING IMPAIRED
*ADA STANDARDS FOR ACCESSIBLE DESIGN: 2010 ADA ACCESSIBILITY GUIDELINES (ADAAG) 28, PART 36 APPENDIX A
*ADA STANDARDS FOR ACCESSIBLE DESIGN-CODE OF FEDERAL REGULATIONS (INCLUDING AMENDMENTS)
* AISC MANUAL OF STEEL CONSTRUCTION, 14TH EDITION
*2005 REVISED NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
*ACI 318-11 CODE AND COMMENTARY

CONSULTANTS

STRUCTURAL ENGINEER:

CIVIL ENGINEER:

ELECTRICAL & FIRE ALARM ENGINEER:

HARRY A. YEE & ASSOCIATES
4920 FREEPORT BLVD. SUITE D
SACRAMENTO, CA 95822
(T) 916.454.5319
WWW.HYAENGINEERS.COM

LOW VOLTAGE:

MECHANICAL ENGINEER:

PLUMBING ENGINEER:

FIRE SUPPRESSION ENGINEER:

LANDSCAPE ENGINEER:

WATER INTRUSION CONSULTANT:

ENERGY CONSULTANT:

ACOUSTICAL ENGINEER:

CONSTRUCTION MANAGEMENT:

KITCHELL
360 CAMPUS DRIVE
FAIRFIELD, CA 94534
(T) 707.864.7000
WWW.KITCHELL.COM

SCOPE OF WORK

SCOPE OF WORK INCLUDES AND IS NOT LIMITED TO THE FOLLOWING:

CONSTRUCTION AND INSTALLATION OF A NEW MODULAR 480 SQUARE-FOOT RESTROOM BUILDING ~~AND 900 SQUARE-FOOT SHADE STRUCTURE~~, WITH ASSOCIATED SITEWORK AND UTILITIES. 1

ALL SITEWORK HAS BEEN APPROVED SEPARATELY AS DSA APPLICATION #02-114750 AND IS NOT PART OF THE SCOPE OF THIS APPLICATION. REFER TO GENERAL NOTE #1 ON SHEET A1.2

DEFERRED SUBMITTAL

1. MOUNTING OF HVAC, SHEET A2.4A
2. MOUNTING OF IDF, SHEET A2.4A

EQUIPMENT ANCHORAGE NOTES

ALL MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER DETAILS ON 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 2013 CBC, SECTIONS 1615A.1.12 THROUGH 1615A.1.22 AND ASCE7-05 CHAPTER 6 AND 13:

1. ALL PERMANENT EQUIPMENT AND COMPONENTS
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. 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 NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENTS AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT:

1. 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.
2. 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 THE 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 SHALL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK AND ELECTRICAL SYSTEM DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE7-05, SECTION 13.3 AS DEFINED IN ASCE7-05 SECTION 13.6.8, 13.6.7 AND 2013 CBC SECTIONS 1615A.1.20, 1615A.1.21 AND 1615A.1.22. BRACING AND ATTACHMENT TO THE STRUCTURE SHALL BE DETAILED ON APPROVED DRAWINGS OR THEY SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVALS (OPA#) 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 ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

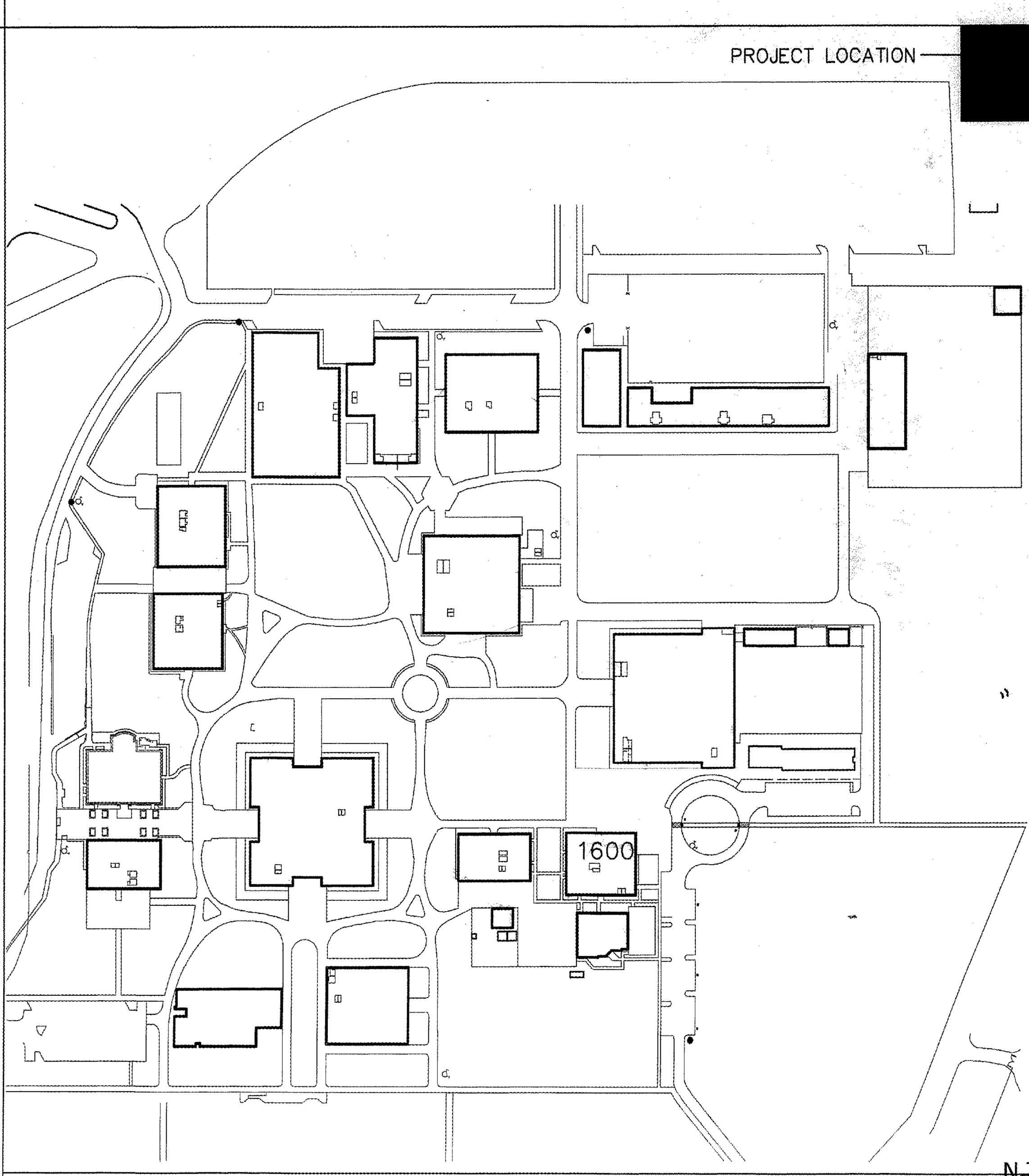
SYMBOLS

Symbol	Description
(1) (A)	COLUMN GRID LINE Numbers horizontal Letters vertical
STUDIO 117	ROOM ID Room name & number
C.13 A	DOOR SYMBOL Door number
C.13 A	WINDOW SYMBOL Window number
CT-1	FINISH SYMBOL Finish mat'l identification
10 A5.02	SECTION CUT Section identification Sheet number
10 A9.03	DETAIL REFERENCE Detail information Sheet number
A B C D 30 A6.01	INTERIOR ELEVATIONS Detail information Sheet number / elevation
A, 1	REVISION Addendum letter Supplemental instruction revision cloud
	WORK POINT Target
	MATCH LINE Target
1	ARCHITECTURAL WALL PANEL TYPE SYMBOL
1	SHEET NOTE SYMBOL
	ELEVATION TAG

ABBREVIATIONS

@	AT
A.B.	ANCHOR BOLT
A.D.	AREA DRAIN
ADD'L	ADDITIONAL
ADJ. HT.	ADJUSTED HEIGHT
A.F.F	ABOVE FINISH FLOOR
AC	ASPHALT CONCRETE
AGG.	AGGREGATE
ALT.	ALTERNATE
ALUM.	ALUMINUM
AMP	AMPERAGE
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX.	APPROXIMATE
A.S.L.	ABOVE SEA LEVEL
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS
B.F.F.	BELOW FINISH FLOOR
BLK'G/BLKNG	BLOCKING
BM	BEAM
BTM./BOTT.	BOTTOM
BTWN	BETWEEN
B.U.R	BUILT-UP ROOFING
CALCS.	CALCULATIONS
CEM. PLAST.	CEMENT PLASTER
C.I.	CAST IRON
C.J.	CONSTRUCTION JOINT
C.L.	CENTER LINE
CLG.	CEILING
C.M.U.	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONTR.	CONTRACTOR
CSMT	CASEMENT
DBL.	DOUBLE
DBL. PL.	DOUBLE PLATE
DET.	DETAIL
DEG.	DEGREE
D.F.	DOUGLAS FIR OR DRINKING FOUNTAIN
DIA.	DIAPHRAGM
DN	DOWN
DS	DOWNSPOUT
DW	DISHWASHER
(E)	EXISTING
EA.	EACH
ELECT.	ELECTRICAL
ELEV.	ELEVATION
E.J.	ELEVATION JOINT
EMBED.	EMBEDMENT
E.P.S.	EXTRUDED POLYSTYRENE FOAM
EXT.	EXTERIOR
F.D.	FLOOR DRAIN
FDN./FOUND.	FOUNDATION
F.F.	FINISHED FLOOR
F.G.	FUEL GAS
F.J./ FLR.JST.	FLOOR JOIST
FLASH'G	FLASHING
FLR.	FLOOR
FLUOR.	FLUORESCENT
F.O.S.	FACE OF STUD
FR.	FRENCH
FTG.	FOOTING
GA.	GAUGE
GALV.	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GIR	GIRDER
GLU-LAM	GLUE LAMINATED
G.S.M.	GALVANIZED SHEET METAL
GYP.BD.	GYPSUM BOARD
H.B.	HOSE BIBB
HD	HOLD DOWN
H.H.	HEAD HEIGHT
HMF	HOLLOW METAL FRAME
HORIZ.	HORIZONTAL
HR.	HOUR
INFO.	INFORMATION
INSUL	INSULATION OR INSULATED
JST.	JOIST
LB. OR #	POUND OR NUMBER
LEV./ LVL	LEVEL
LT.	LIGHT
LTWT.	LIGHTWEIGHT
MAX.	MAXIMUM
MBRS	MEMBERS
M.D.F.	MEDIUM DENSITY FIBERBOARD
MFR.	MANUFACTURER
(N)	NEW
NAT.	NATIONAL
M.SUITE/ M.S.	MASTER SUITE
MIN.	MINIMUM
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.H./ OPP.	OPPOSITE HAND
P.B.	PUSH BUTTON
PERF.	PERFORATED
PL.	PLATE
PL.HT.	PLATE HEIGHT
PLYWD.	PLYWOOD
PR.	PAIR
PSI	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
PWDR.	POWDER
R.	RISER
RECOM.	RECOMMENDATION
REINF.	REINFORCING
RFTR.	RAFTER
RM.	ROOM
R.W./RWD	REDWOOD
SAF	SELF ADHESIVE FLASHING
S.C.	SOLID CORE
S.C.D.	SEE CIVIL DRAWINGS
SCHED.	SCHEDULE
SD	SMOKE DETECTOR
S.E.D.	SEE ELECTRICAL DRAWINGS
S.F./ SQ.FT.	SQUARE FOOT
SHR.	SHEAR
SIM..	SIMILAR
S.M.D.	SEE MECHANICAL DRAWINGS
SQ.IN.	SQUARE INCH
S.S.D.	SEE STRUCTURAL DRAWINGS
ST	STRAP
STOR.	STORAGE
STR1	STRUCTURAL 1
S.W.	SHEAR WALL
SQ.	SWITCH
SYM.	SYMBOL
S3S/S4S	SMOOTH 3 OR 4 SIDES
TEMP./ T.	TEMPERED
T.H.	THRESHOLD
T./ THERM	THERMOSTAT
T.O.C.	TOP OF CURB
T.O.F.	TOP OF FLOOR
T.O.G.B.	TOP OF GRADE BEAM
T.O.P.	TOP OF PLATE
T.O.S	TOP OF SLAB
T.O.W.	TOP OF WALL
T/P /T.OF PL	TOP OF PLATE
T.P.O.	THERMOPLASTIC POLYOLEFIN
TRNSM.	TRANSOM
T&G	TONGUE & GROOVE
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
UTL./ UTIL.	UTILITY
V	VOLTAGE
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
WD.	WOOD
W.A.	WROUGHT IRON
WL	WALL
W.P.	WEATHERPROOF
WP.SCRD.	WEEP SCREED
W.W.F.	WELDED WIRE FABRIC
W.W.M.	WELDED WIRE MESH
W/D	WASHER/ DRYER

PROJECT LOCATION



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OWNER

SOLANO COMMUNITY COLLEGE

CONSULTANT

PROFESSIONAL STAMP:

LICENSED ARCHITECT FRANCIS R. CHAN No. C-7519 RENEWAL DATE STATE OF CALIFORNIA

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS

4000 Suisun Valley Rd, Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16
1	ADDENDUM 1	8/18/17

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: -
CHECKED BY: -
SHEET NAME:

COVER SHEET

DSA APPROVAL STAMP: File No 48-C1
IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC TM FLS [signature] SS Trevor/SAC
DATE 8-11-2016

SHEET NUMBER:

G0.1

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SHEET LIST

GENERAL
G0.1 COVER SHEET
G0.2 SHEET LIST

CIVIL DRAWINGS
C2 GRADING & DRAINAGE PLAN
C3 UTILITY PLAN

ARCHITECTURAL DRAWINGS
A1.1 SITE PLAN - FIRE MARSHAL REVIEW
A1.1A SITE PLAN
A1.2 SITE PLAN - ACCESSIBILITY PLAN
A1.4 ENLARGED SITE PLAN
A2.4A RESTROOM PLANS AND ELEVATIONS
A10.5A ELECTRICAL SPECIFICATIONS
A10.6A ELECTRICAL SPECIFICATIONS

ELECTRICAL DRAWINGS
E0.1A ELECTRICAL SYMBOL LIST & NOTES
E1.1A POWER SITE PLAN
E1.2A SIGNAL SITE PLAN
E1.3A FIRE ALARM SITE PLAN
E4.1A SIGNAL FLOOR PLANS
E5.1A FIRE ALARM FLOOR PLANS
E5.2A FIRE ALARM NOTES & DETAILS

STATEMENT OF GENERAL CONFORMANCE

THESE DRAWINGS AND/OR SPECIFICATIONS AND/OR CALCULATIONS FOR ITEMS LISTED IN THE "SHEET LIST" HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. THESE DOCUMENTS HAVE BEEN EXAMINED BY ME FOR DESIGN INTENT OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME.

THE ITEMS LISTED IN THE "SHEET LIST" ARE ACCEPTABLE FOR INCORPORATION INTO THE CONSTRUCTION OF THIS PROJECT FOR WHICH I AM THE INDIVIDUAL DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE (OR FOR WHICH I HAVE BEEN DELEGATED RESPONSIBILITY FOR THIS PORTION OF THE WORK).

LIST OF ITEMS REVIEWED AND ACCEPTED: ALL ITEMS IN THE SHEET INDEX, EXCEPT ARCHITECTURAL DRAWINGS.

SIGNATURE OF ARCHITECT 3/1 DATE C7519 LIC. NUMBER 11/17 EXP.

~~SHADE STRUCTURE PC 02-113840~~
~~G.1 DESIGN NOTES, EXAMPLE FORM DSA 103~~
~~NT30.0 DESIGN NOTES, EXAMPLE FORM DSA 103~~
~~NT30.1 PLANS AND ELEVATIONS~~
~~NT30.2 SECTIONS AND DETAILS~~

12X40 MODULAR RESTROOM BUILDING PC 02-113910 **BASIS OF DESIGN** ⚠

~~A0 COVER SHEET, BUILDING CODES & CBC DATA, SHEET INDEX~~
A1 BOYS, GIRLS RESTROOM FLOOR PLAN, INTERIOR & EXTERIOR ELEVATIONS,
MATERIAL SPECIFICATIONS, AND NOTES
A1A BOYS, GIRLS RESTROOM FLOOR PLAN, INTERIOR & EXTERIOR ELEVATIONS,
MATERIAL SPECIFICATIONS, AND NOTES
A2 REFLECTED CEILING PLANS & CEILING ATTACHMENT DETAILS
AGB GREEN BUILDING STANDARDS
EN1 ENERGY COMPLIANCE UNCONDITIONED RESTROOM
EN1.1 ENERGY COMPLIANCE UNCONDITIONED RESTROOM
EN1.2 ENERGY COMPLIANCE UNCONDITIONED RESTROOM
A3 ELECTRICAL POWER PLAN, SIGNAL PLAN, LIGHTING PLAN, DETAILS, ELECTRICAL NOTES
A4B.1 SHED ROOF SECTIONS AND DETAILS
A4H INTERIOR WALL CONNECTION DETAILS
A4C.1 NON-RATED WALL ATTACHMENT DETAILS (CONCRETE FLOORS)
A5 MISCELLANEOUS DETAILS
S1C.3(H) (HIGH SEISMIC) CONCRETE FOUNDATION, FOOTING DETAILS & NOTES
(CONCRETE FLOORS)
S1C.4 MISCELLANEOUS FOOTING DETAILS (CONCRETE FLOORS)
S2A(H)(HIGH SEISMIC) SHED ROOF, CEILING & FLOOR FRAMING PLANS, STRUCTURAL STEEL
PROPERTIES, NOTES
S2C.1 (HIGH & LOW SEISMIC) FRAMING PLAN, STRUCTURAL STEEL PROPERTIES, NOTES
(CONCRETE FLOORS)
S3FA FASTENING SCHEDULE & NOTES
S3A SHED ROOF LONGITUDINAL BUILDING SECTION, WALL FRAMING ELEV., END FRAME
ELEVATION, NAILING SCHEDULE
S4 STRUCTURAL CONNECTION DETAILS
S4.1 ALTERNATE STRUCTURAL DETAILS
S4.2 ALTERNATE STRUCTURAL DETAILS
S4.3 ALTERNATE DETAILS - METAL SOFFIT PANELS
S4.4 ALTERNATE DETAILS - METAL SOFFIT PANELS W/ WALL-MOUNT HVAC UNIT
S4C STRUCTURAL CONNECTION DETAILS (CONCRETE FLOORS)
WC1 CANOPY FRAMING & CONNECTION DETAILS

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CONSULTANT

PROFESSIONAL STAMP:

LICENSED ARCHITECT
FRANCIS F. CHAN
No. C-7519
11/17
RENEWAL DATE
STATE OF CALIFORNIA

PROJECT:

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4000 Suisun Valley Rd,
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REVISIONS

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-	DSA SUBMITTAL	3/7/16
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DSA APPROVAL STAMP:

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AC TM FL
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SHEET NUMBER:

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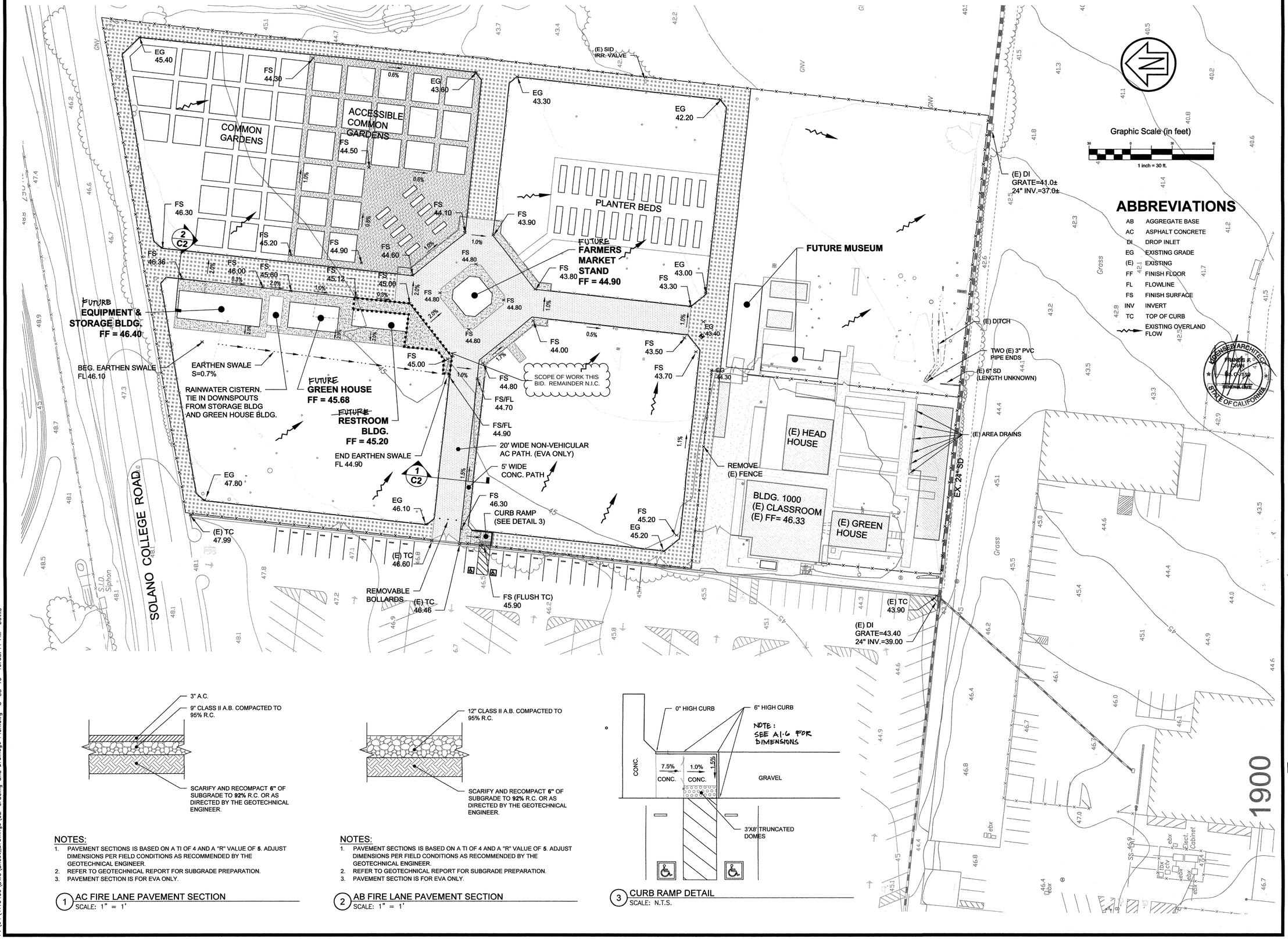

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
DI	DROP INLET
EG	EXISTING GRADE
(E)	EXISTING
FF	FINISH FLOOR
FL	FLOWLINE
FS	FINISH SURFACE
INV	INVERT
TC	TOP OF CURB
	EXISTING OVERLAND FLOW

NOTES:
1. PAVEMENT SECTIONS IS BASED ON A TI OF 4 AND A "R" VALUE OF 5. ADJUST DIMENSIONS PER FIELD CONDITIONS AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
2. REFER TO GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION.
3. PAVEMENT SECTION IS FOR EVA ONLY.

1 AC FIRE LANE PAVEMENT SECTION
SCALE: 1" = 1'

NOTES:
1. PAVEMENT SECTIONS IS BASED ON A TI OF 4 AND A "R" VALUE OF 5. ADJUST DIMENSIONS PER FIELD CONDITIONS AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
2. REFER TO GEOTECHNICAL REPORT FOR SUBGRADE PREPARATION.
3. PAVEMENT SECTION IS FOR EVA ONLY.

2 AB FIRE LANE PAVEMENT SECTION
SCALE: 1" = 1'

3 CURB RAMP DETAIL
SCALE: N.T.S.

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Land Planning
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http://www.cswst2.com
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PROFESSIONAL STAMP:
REGISTERED PROFESSIONAL ENGINEER — KIRK S. BOVITZ — No. 74631 — 3/3/16 — CIVIL — STATE OF CALIFORNIA
LICENSED ARCHITECT — FRANCIS P. GIVEN — No. C-27318 — RENEWAL DATE — STATE OF CALIFORNIA

PROJECT:
LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE
4000 Suisun Valley Rd, Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	-	-
B	DSA BACKCHECK	03/07/16
A	CLIENT SUBMITTAL	12/01/15

PROJECT CODE:	SCCD-04
START DATE:	-
DRAWN BY:	-
CHECKED BY:	-
SHEET NAME:	

GRADING & DRAINAGE PLAN

DSA APPROVAL STAMP: IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
02 114750
AC INT FLS — BS
DATE 5/18/16

SHEET NUMBER:
C 2

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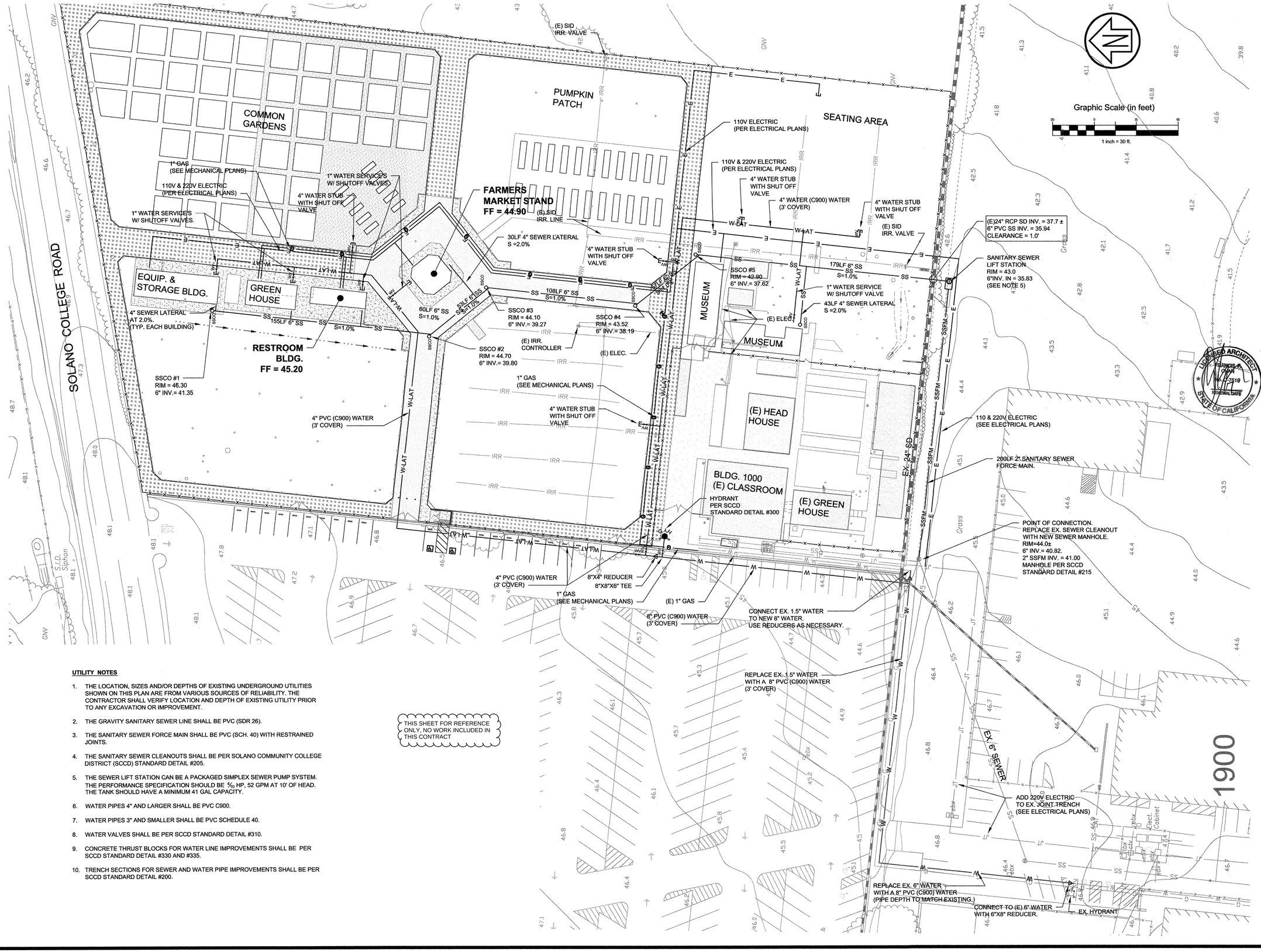
P:\04\4116406\DWG\Sheet_Drawings\C2-Grading and Drainage Plan.dwg 3-03-16 10:33:44 AM bovks



UTILITY NOTES

1. THE LOCATION, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE FROM VARIOUS SOURCES OF RELIABILITY. THE CONTRACTOR SHALL VERIFY LOCATION AND DEPTH OF EXISTING UTILITY PRIOR TO ANY EXCAVATION OR IMPROVEMENT.
2. THE GRAVITY SANITARY SEWER LINE SHALL BE PVC (SDR 26).
3. THE SANITARY SEWER FORCE MAIN SHALL BE PVC (SCH. 40) WITH RESTRAINED JOINTS.
4. THE SANITARY SEWER CLEANOUTS SHALL BE PER SOLANO COMMUNITY COLLEGE DISTRICT (SCCD) STANDARD DETAIL #205.
5. THE SEWER LIFT STATION CAN BE A PACKAGED SIMPLEX SEWER PUMP SYSTEM. THE PERFORMANCE SPECIFICATION SHOULD BE ⅝ HP, 52 GPM AT 10' OF HEAD. THE TANK SHOULD HAVE A MINIMUM 41 GAL CAPACITY.
6. WATER PIPES 4" AND LARGER SHALL BE PVC C900.
7. WATER PIPES 3" AND SMALLER SHALL BE PVC SCHEDULE 40.
8. WATER VALVES SHALL BE PER SCCD STANDARD DETAIL #310.
9. CONCRETE THRUST BLOCKS FOR WATER LINE IMPROVEMENTS SHALL BE PER SCCD STANDARD DETAIL #330 AND #335.
10. TRENCH SECTIONS FOR SEWER AND WATER PIPE IMPROVEMENTS SHALL BE PER SCCD STANDARD DETAIL #200.

THIS SHEET FOR REFERENCE ONLY, NO WORK INCLUDED IN THIS CONTRACT

ARCHITECT

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TEL: 800.725.0571

OWNER

SOLANO COMMUNITY COLLEGE

CONSULTANT

CSW | ST2
CSW/Stuber-Stroeh Engineering Group, Inc.
45 Leveroni Court tel: 415.883.9850
Novato, CA 94949 fax: 415.883.9835
Civil & Structural Engineers
Surveying & Mapping
Environmental Planning
Land Planning
Construction Management
http://www.cswst2.com

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PROFESSIONAL STAMP:

LICENSED ARCHITECT JAMES S. BOVIS C-19519 RENEWAL DATE 08/31/2017 STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER JAMES S. BOVIS No. 74631 3/31/16 CIVIL STATE OF CALIFORNIA

PROJECT:

LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE
4000 Suisun Valley Rd, Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	-	-
C	DSA BACKCHECK	03/07/16
B	DSA SUBMITTAL	03/01/16
A	CLIENT SUBMITTAL	12/01/15

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: -
CHECKED BY: -
SHEET NAME:

UTILITY PLAN

DSA APPROVAL STAMP:

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT 02 114750 AC JM FLS — 83 — DATE 3/31/16

SHEET NUMBER:

C 3

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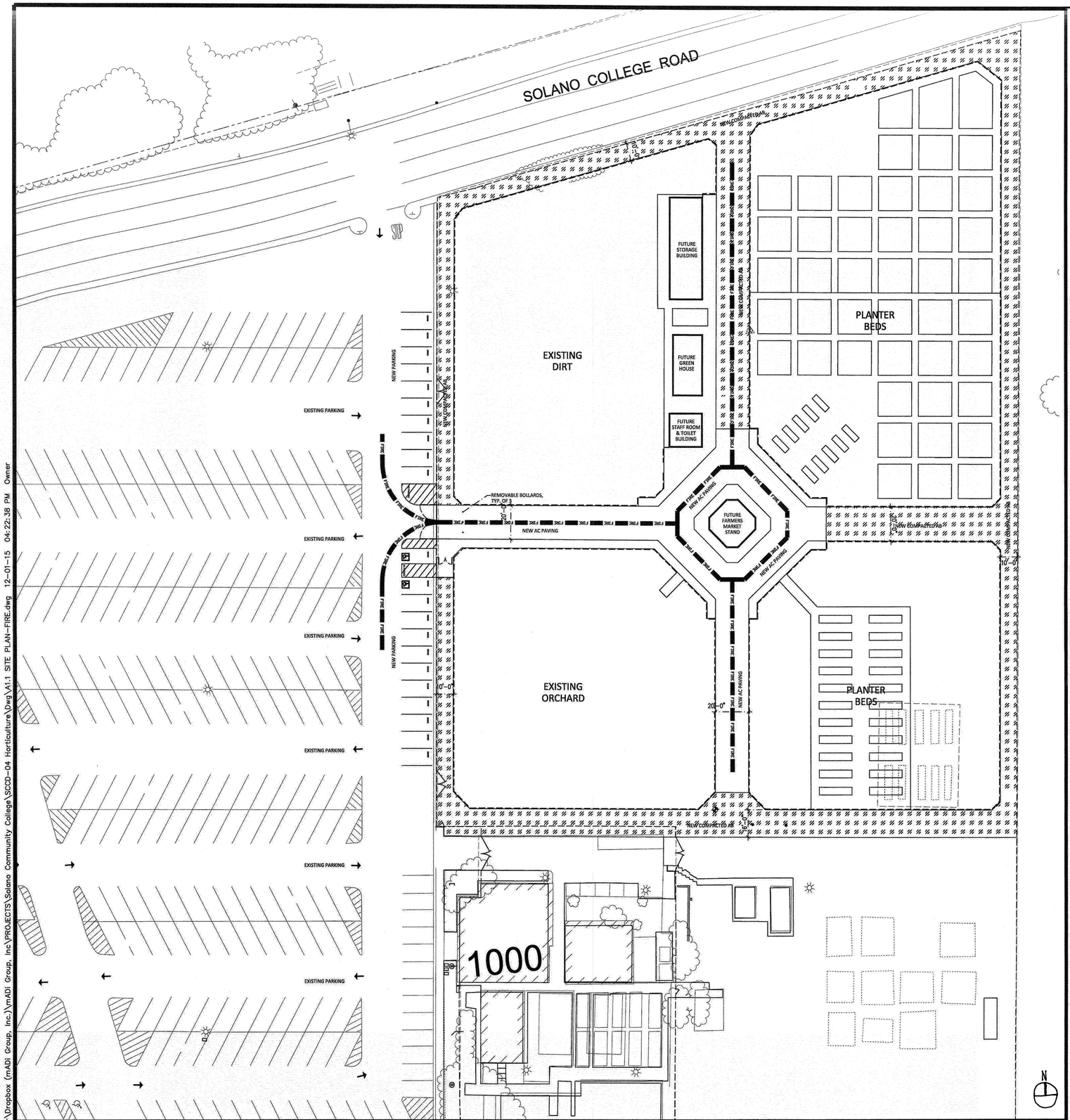

1 SITE PLAN

SCALE : 1" = 30'-0"

A-Site

C:\Users\Owner\Dropbox (mADi Group, Inc.)\mADi Group, Inc\PROJECTS\Solano Community College\SCCD-04 Horticulture\Dwg\A1.1 SITE PLAN-FIRE.dwg 12-01-15 04:22:38 PM Owner

DSA 810

LOCAL FIRE AUTHORITY REVIEW

To facilitate the Division of the State Architect's (DSA) approval of the Fire/Life Safety portion of a project, DSA requires Local Fire Authority (LFA) review of certain elements as identified in this form. Use of this form is mandatory for projects that add square footage to a campus or if any item on this form is relevant to the project. For additional information, see DSA 810 Instructions and DSA Policy 09-01.

PROJECT INFORMATION	
School District/Owner:	
Project Name/School:	
Project Address:	

LOCAL FIRE AUTHORITY (LFA)			
LFA Agency Name:	Cordelia Fire Protection District		
LFA Reviewer Name:	Kevin Martin	Title:	Fire Chief
Email:	kevinmartin@sbcglobal.net	Telephone Number:	707-864-0465

I have reviewed and responded to the applicable items for this project as listed below.

Note: Only sign this form when it is imaged onto the site plan. A loose form is not acceptable to DSA.

LFA Reviewer's Signature: _____ Date: 12/14/15

Review Key: "Y" = Complies with LFA requirements; "N" = Not approved (complete Section 8); "NA" = Not applicable to the project; "NR" = LFA elects not to review

	Description	Y	N	NA	NR
1	Where an elevator does not meet medical emergency service cab size, per the California Building Code (CBC), use of stairways for emergency rescue and patient transport is acceptable.			X	
2	Access roads, fire lane markings, pavers and gate entrances are in accordance with Title 19, California Code of Regulations and the California Fire Code, Chapter 5.	X			
3	Fire hydrant location and distribution complies with the California Fire Code (or see # 4).	X			
4	Fire hydrant location and distribution complies with NFPA 1142, "Alternate Means." If "NR" is checked, DSA can only approve on-site water storage as an alternate. The signature of the school district official is required to acknowledge the use of alternate means.	X			
	Signature of School District Official: _____ **Date:** _____ **Print the School District Official's Name:**				
5	The location(s) of the proposed post indicator valve and fire department connection meet the requirements of this jurisdiction.			X	
6	The location(s) of the detector check valve assembly meet the requirements of this jurisdiction.			X	
7	Is the project located in a hazard severity zone area? (CBC, Chapter 7A, Section 701A.) ☐ Yes ☒ No Check type if "Yes": ☐ Moderate ☐ High ☐ Very High ☐ WIFA (If one of these boxes is checked, the project design must meet the requirements of Chapter 7A.)				
8	COMMENTS (note deficiencies):				

DSA 810 (rev 05-12-14) DIVISION OF THE STATE ARCHITECT — DEPARTMENT OF GENERAL SERVICES — Page 1 of 1 STATE OF CALIFORNIA

FIRE TRUCK ACCESS

THE DESIGNATION OF THE FIRE LANE(S) SHALL BE INDICATED PER THE CALIFORNIA VEHICLE CODE SECTION 22500.1(3) BY OUTLINING OR PAINTING THE LANES IN RED, AND IN CONTRASTING COLOR, MARKING THE LANES WITH THE WORDS 'FIRE LANE', WHICH ARE CLEARLY VISIBLE FROM A VEHICLE. MARKED FIRE LANES SHALL BE A MINIMUM OF 20'-0" WIDE.

LEGEND: FIRE FIRE FIRE FIRE — FIRE TRUCK ACCESS (FIRE LANE)

(E)FHR — EXISTING FIRE HYDRANT

ARCHITECT

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OWNER

SOLANO COMMUNITY COLLEGE

CONSULTANT

LICENSED ARCHITECT FRANCIS F. LOHAN No. C-27647 RENEWAL DATE STATE OF CALIFORNIA

PROFESSIONAL STAMP:

FOR REFERENCE ONLY

PROJECT:

LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE

4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	-	-

PROJECT CODE: SCCD-04

START DATE: -

DRAWN BY: -

CHECKED BY: -

SHEET NAME:

SITE PLAN FIRE MARSHAL REVIEW

DSA APPROVAL STAMP: DEPARTMENT OF GENERAL SERVICES DIV. OF THE STATE ARCHITECT 02 114923 ACTIVE DATE 12/14/15

SHEET NUMBER:

A1.1

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PINE

12"OAK

SEE APPL. 02-114750 FOR BUILDING LOCATIONS & SITE FEATURES, TYP.

(E)~~NEW~~ FARMSTAND
~~THIS APPLICATION~~
~~FROM PC DESIGN 02-113840~~
~~SEE SHEET A2.1A & MFR'S DRAWINGS~~
N.I.C.

(E) ~~NEW~~ CONCRETE
2% MAX SLOPE
IN ANY DIRECTION

FLUSH, TYP.

30"PINE CLUSTER

FUTURE ~~NEW~~ STORAGE SHED
NON-FIELD ACT
NOT FOR DSA REVIEW
N.I.C.

FUTURE
~~NEW~~ GREENHOUSE
NON-FIELD ACT
NOT FOR DSA REVIEW
N.I.C.

GAS, P.O.C.

WATER, P.O.C.

SEWER P.O.C.

FINISHED GRADE 0'-0"

NEW RESTROOM BUILDING
THIS APPLICATION
FROM PC DESIGN 02-113910 **(BASIS OF DESIGN)***
SEE SHEET A2.~~4~~A & MFR'S DRAWINGS
FINISHED FLOOR ELEVATION = +1 1/2" MAX. (BEVELED 1:2 MAX)
BUILDING FABRICATED SPECIFICALLY FOR THIS APPLICATION.

* THIS PC IS INCLUDED AS THE BASIS OF DESIGN. IF CONTRACTOR PROVIDES ALTERNATE BUILDING PC, PC DESIGN MUST BE DSA APPROVED AND DRAWINGS SUBMITTED TO THE ARCHITECT FOR DSA APPROVAL FOR USE IN THIS PROJECT. BUILDING MUST FOLLOW ALL DESIGN REQUIREMENTS SHOWN ON SHEET A2.4A.

42"PINE

1 SITE PLAN

SCALE : 1" = 10'-0"
A-Site

N

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ARCHITECT

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OWNER

SOLANO COMMUNITY COLLEGE

CONSULTANT

PROFESSIONAL STAMP:

LICENSED ARCHITECT
FRANCIS F. CHAN
No. C-7519
11/17
RENEWAL DATE
STATE OF CALIFORNIA

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS

4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16
1	ADDENDUM 1	8/2/17

PROJECT CODE:	SCCD-04
START DATE:	-
DRAWN BY:	-
CHECKED BY:	-

SHEET NAME:

SITE PLAN

DSA APPROVAL STAMP:

SHEET NUMBER:

ADDENDUM 1

A1.1A

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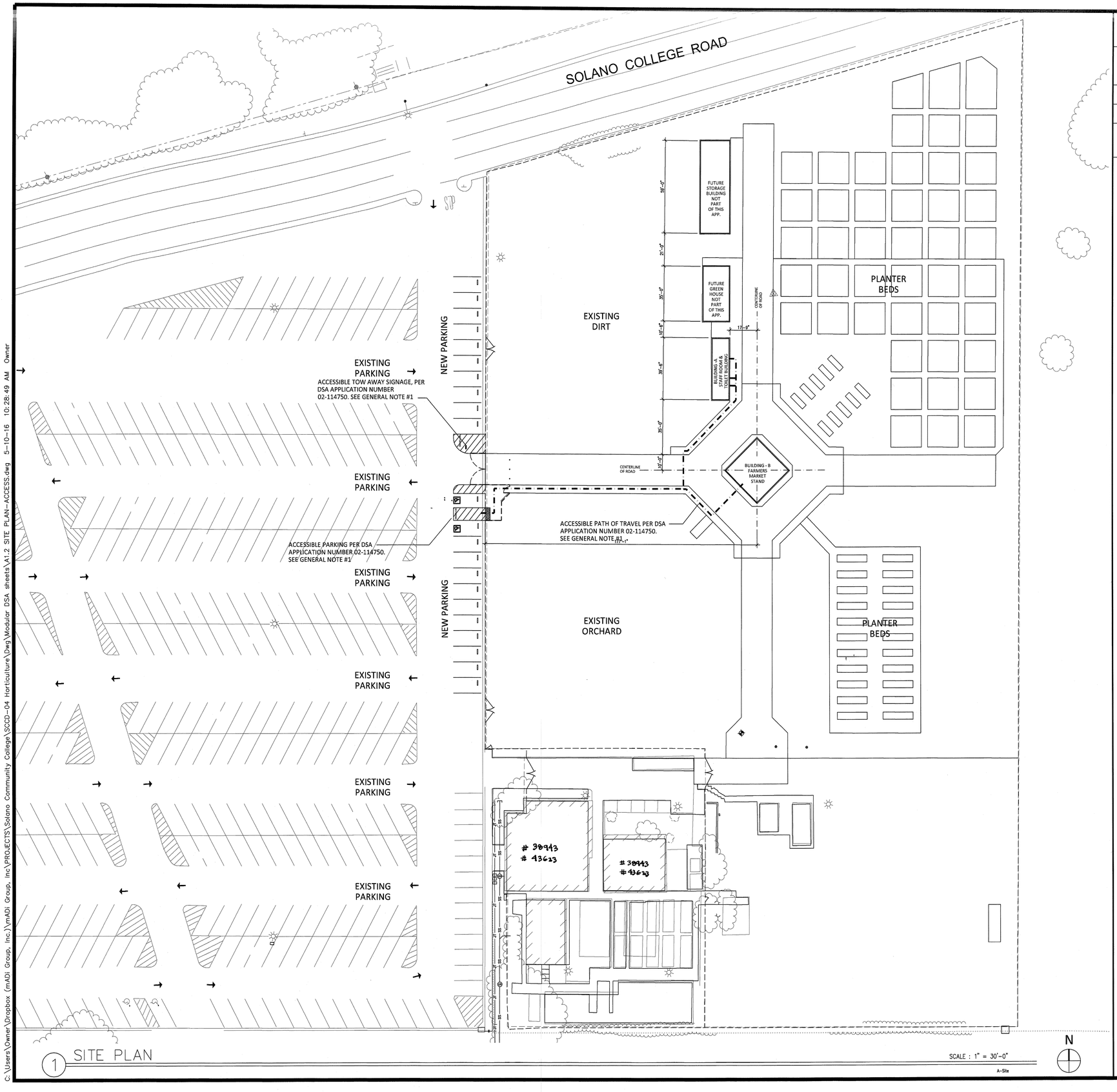
LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE



1 SITE PLAN

SCALE : 1" = 30'-0"

A-Site

PARKING LOT DATA

PARKING LOT	NON-ACCESSIBLE STALLS	ACCESSIBLE STALLS REQUIRED	ACCESSIBLE STALLS PROVIDED
1 (EXISTING)	30	1 VAN, 1 REG.	1 VAN, 1 REG.

ACCESSIBLE PATH OF TRAVEL

ACCESSIBLE PATH OF TRAVEL (P.O.T.) AS INDICATED, IS A COMMON, BARRIER-FREE, FIRM AND SMOOTH ACCESS ROUTE WITHOUT ANY ABRUPT VERTICAL CHANGES EXCEEDING 1/2" BEVELED AT 1:2 MAXIMUM SLOPE. PASSING SPACES AT LEAST 60" X 60" ARE LOCATED NOT MORE THAN 200' APART. PARTS OF P.O.T.WITH CONTINUOUS GRADIENTS HAVE 60" LEVEL AREAS NOT MORE THAN 400' APART. THE CROSS-SLOPE DOES NOT EXCEED 2% AND SLOPE INTHE DIRECTION OT TRAVEL AND IS LESS THAN 5% UNLESS OTHERWISE INDICATED. (POT) SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND PROTRUDING OBJECTS GREATER THAN 4" PROJECTION FROM WALL AND ABOVE 27" AND LESS THAN 80".

——— ACCESSIBLE PATH OF TRAVEL (P.O.T.)

NOTE:
"DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE STATEMENT: THIS POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS IS COMPLIANT WITH THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS ALTERATIONS, ADDITIONS AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT 1) HAVE INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. ANY NONCOMPLIANT ELEMENTS, COMPONENTS OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THE THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR A FINDING OF UNREASONABLE HARDSHIP ARE SO INDICATED IN THESE CONSTRUCTION DOCUMENTS.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CODE COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THEY SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF CONSTRUCTION CHANGE DOCUMENT."

GENERAL NOTE:

1. PATH OF TRAVEL WORK UNDER DSA APPLICATION 02-114750 SHALL BE COMPLETE FOR USE UNDER THIS APPLICATION. THIS APPLICATION CANNOT BE CERTIFIED WITHOUT THE COMPLETION OF DSA APPLICATION 02-114750

ARCHITECT

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OWNER

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CONSULTANT

PROFESSIONAL STAMP:

LICENSED ARCHITECT FRANCIS R. CAVIN No. C-21219 PROFESSIONAL CORP. STATE OF CALIFORNIA

PROJECT:

LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE

4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	-	-

PROJECT CODE:	SCCD-04
START DATE:	-
DRAWN BY:	-
CHECKED BY:	-

SHEET NAME:

SITE PLAN

ACCESSIBILITY PLAN

DSA APPROVAL STAMP:

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
02 114923
AC FLS SS
DATE 8/1/16

SHEET NUMBER:

A1.2

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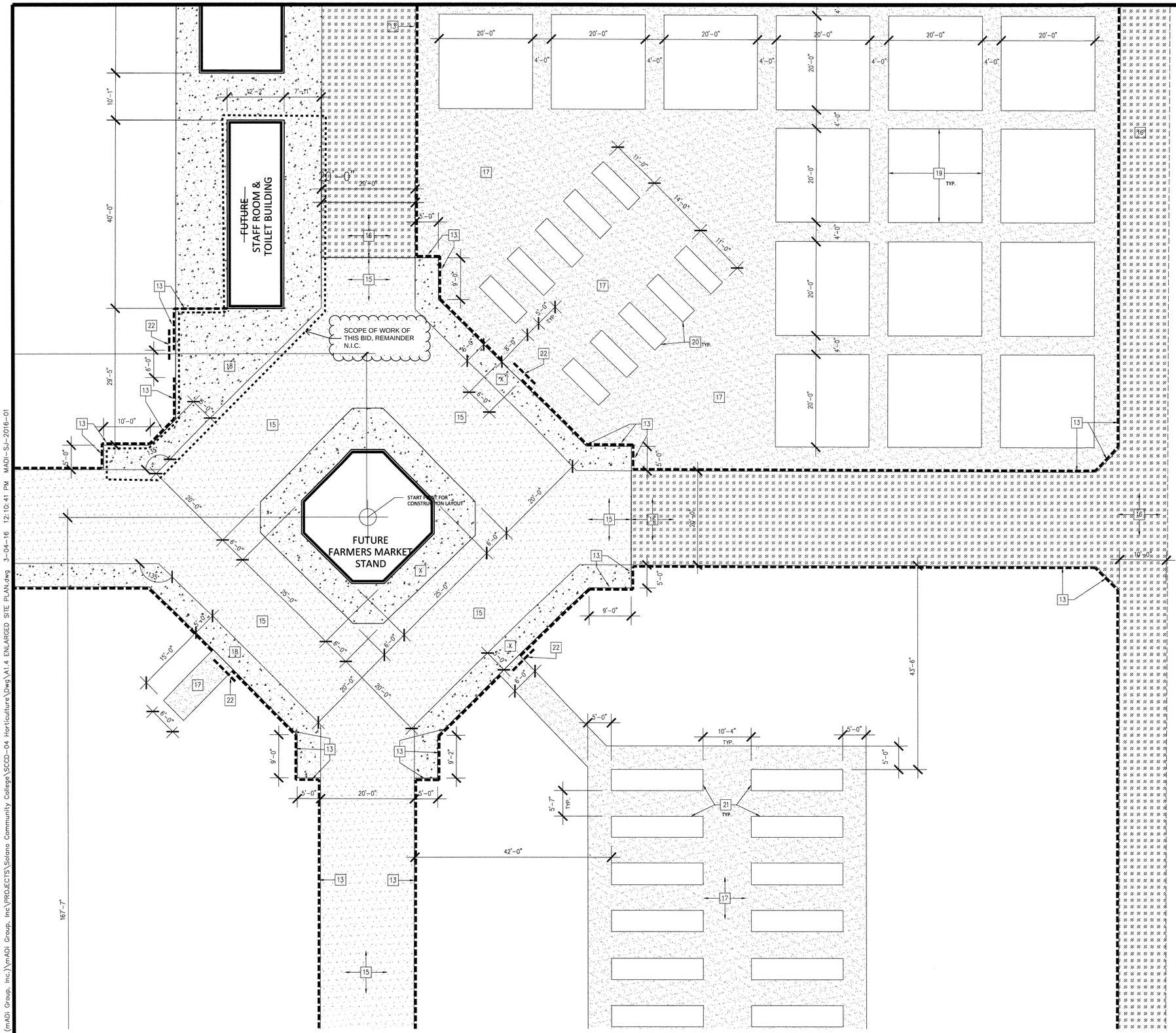

1 ENLARGED SITE PLAN

SCALE : 1" = 10'-0"

A-Site

LEGEND

1. DEMOLISH EXISTING FENCE AND/OR GATE
2. EXISTING FENCE TO REMAIN
3. (N) 20'-0" WIDE X 6'-0" HIGH SWING GATE; SEE 6B/A1.9
4. (N) DETECTABLE WARNING STRIPS; SEE 7&8/A1.8
5. (N) 3'-0" WIDE X 6'-0" HIGH SWING GATE; SEE 6A/A1.9
6. (N) ACCESSIBLE PARKING; SEE 1/A1.8
7. (N) PARKING STRIPING
8. (N) WHEELSTOP; SEE 9/A1.8
9. (N) REMOVABLE BOLLARDS; SEE 4/A1.8
10. (N) SIGNAGE; SEE 10/A1.8
11. (N) SIGNAGE; SEE 11/A1.8
12. (N) SIGNAGE; SEE 12/A1.8
13. (N) 4'-0" HIGH CHAINLINK FENCE
14. (N) 6'-0" HIGH CHAINLINK FENCE
15. (N) AC PAVING
16. (N) AB PAVING
17. (N) DG PAVING. PROVIDE REDWOOD HEADER EDGING PER DETAIL 5/A1.8
18. (N) CONCRETE PAVING
19. (N) 20'X20' PLANTERS FLUSH WITH ADJACENT GRADE WITH REDWOOD HEADER EDGING PER DETAIL 5/A1.8
20. (N) 3'-6"X11'-0" PLANTERS
21. (N) 4'-6"X20'-0" PLANTERS
22. (N) 4'-0" HIGH X 5'-0" SLIDING GATE; SEE 1/A1.9. PROVIDE SIGN STATING "ENTRY CONTROLLED AND RESTRICTED BY SECURITY PERSONNEL" PER CBC 11B-404.1 EXCEPTION 1.
23. (E) DIRT
24. (N) SIGNAGE; SEE 3/A1.8

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OWNER

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CONSULTANT

PROFESSIONAL STAMP:

LICENSED ARCHITECT
FRANCIS F. CHAN
No. C-17519
11/12
RENEWAL DATE
STATE OF CALIFORNIA

PROJECT:

LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE

4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	-	-

PROJECT CODE: SCCD-04

START DATE: -

DRAWN BY: -

CHECKED BY: -

SHEET NAME:

ENLARGED SITE PLAN

DSA APPROVAL STAMP:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114750
AC FLS SS
DATE 5/8/16

SHEET NUMBER:

A1.4

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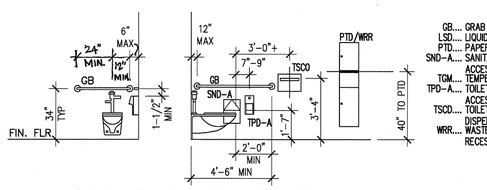
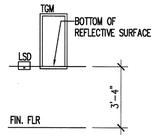


6 ACCESSORY MOUNTING HEIGHTS

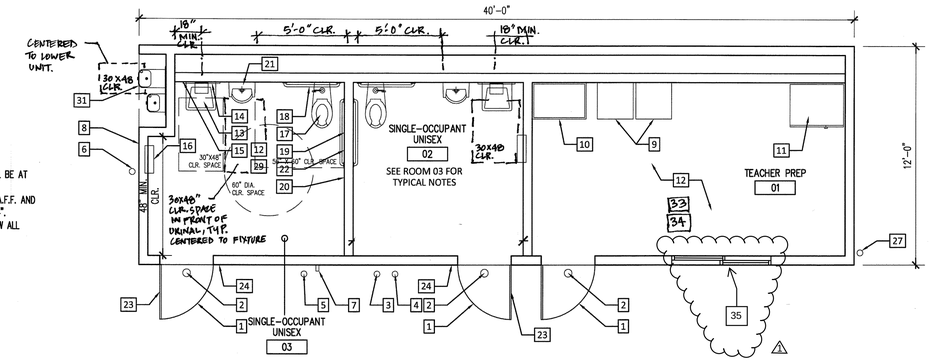
1/4" = 1'-0"

-006-08_A18.1 -RG

GB.... GRAB BAR
LSD.... LIQUID SOAP DISPENSER
PTD.... PAPER TOWEL DISPENSER
SND-A.... SANITARY NAPKIN DISPOSAL; ACCESSIBLE
TGM.... TEMPERED GLASS MIRROR
TPD-A.... TOILET PAPER DISPENSER; ACCESSIBLE
TSCD.... TOILET SEAT COVER DISPENSER
WRR.... WASTE RECEPTACLE; RECESSED

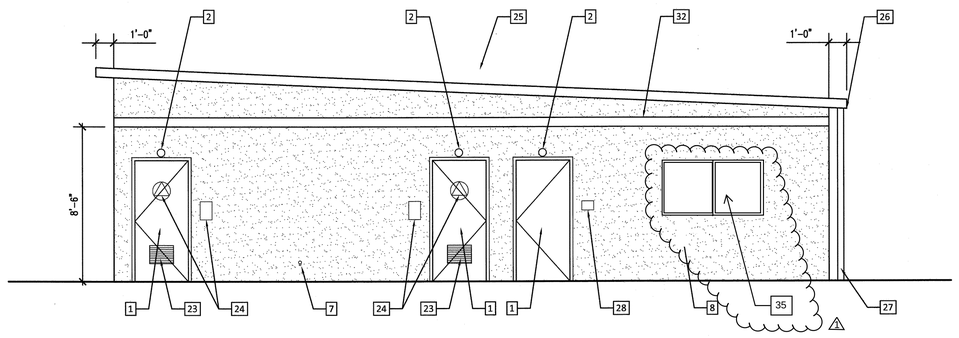


NOTES:
-OPERABLE PART (ACCESS POINT) OF ACCESSORY SHALL BE AT 40" A.F.F., TYP, U.O.N.
-ALL WALL-MOUNTED FIXTURES LOCATED BETWEEN 27" A.F.F. AND 80" A.F.F. SHALL PROJECT FROM WALL NO MORE THAN 4".
-MAINTAIN 1-1/2" MIN. CLEAR SPACE ABOVE AND BELOW ALL GRAB BARS



1 PLAN

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



2 EAST ELEVATION

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

LEGEND

1. 3'-0" X 7'-0" ACCESSIBLE DOOR, SEE PC DETAIL 6/A4B.1
2. EXTERIOR WALL-MOUNTED DOWNLIGHT ABOVE DOOR, SEE PC SHEET A3.
3. APPROX. LOCATION OF GAS CONNECTION, SEE SITEWORK DRAWINGS.
4. APPROX. LOCATION OF ELECTRICAL CONNECTION, SEE SITEWORK DRAWINGS.
5. APPROX. LOCATION OF DOMESTIC WATER CONNECTION, SEE SITEWORK DRAWINGS.
6. APPROX. LOCATION OF SEWER CONNECTION, SEE SITEWORK DRAWINGS.
7. HOSE BIBB.
8. S7/8" CEMENT PLASTER FINISH W/ METAL CONTROL JOINTS, TYP. AT EXTERIOR WALLS. APPLY ON-SITE. PAINT ALL SURFACES.
9. RESIDENTIAL WASHER AND DRYER, BY OWNER N.I.C. PROVIDE DEDICATED OUTLETS. ⚠1
10. PLASTIC UTILITY SINK.
11. RESIDENTIAL REFRIGERATOR, BY OWNER N.I.C. PROVIDE DEDICATED OUTLET.
12. TYPICAL FINISHES: EPOXY FLOORING, FRP WALL PANELING, PAINTED GYP BOARD CEILING
13. ACCESSIBLE LAVATORY, SEE PC DETAIL 7/A1
14. STAINLESS STEEL MIRROR, SEE PC DETAIL 7/A1
15. SOAP DISPENSER, MOUNT PER DETAIL 6/-
16. COMBO PAPER TOWEL DISPENSER/TRASH CAN, MOUNT PER DETAIL 6/-
17. ACCESSIBLE WC. SEE PC DETAIL 7/A1
18. ACCESSIBLE GRAB BAR, TYP. SEE PC DETAIL 7/A1
19. ACCESSIBLE TOILET PAPER DISPENSER, TYP. SEE PC DETAIL 7/A1
20. TOILET SEAT DISPENSER, MOUNT PER DETAIL 6/-
21. ACCESSIBLE URINAL, SEE PC DETAIL 7/A1
22. SANITARY NAPKIN DISPOSAL, MOUNT PER DETAIL 6/-
23. LOUVER, WITH MIN. 1.5 SF FREE AREA.
24. ACCESSIBLE RESTROOM SIGNAGE, SEE PC DETAIL 5/A5
25. STANDING SEAM METAL ROOF SYSTEM, TYP. 24 GA. MIN. "COOL ROOF" FINISH. SEE PC DWGS.
26. GALV. SHEET METAL GUTTER, TYP. FINISH TO MATCH METAL ROOF PANELS.
27. GALV. SHEET METAL DOWNSPOUT, TYP. PAINT TO MATCH ADJACENT WALL.
28. ROOM ID SIGNAGE, SEE PC DETAIL 10/A5
29. EXHAUST FAN, ABOVE, SEE PC DWGS.
30. [NOT USED]
31. ACCESSIBLE HIGH-LOW DRINKING FOUNTAIN IN ALCOVE, SEE PC DETAIL 14/A5
32. 4' DEEP AWNING, PER PC SHEET WC1
33. COORDINATE LOCATION OF IDF WITH ELECTRICAL DRAWINGS. SUBMIT TO DSA FOR APPROVAL
34. COORDINATE LOCATION OF WALL MOUNTED HVAC WITH MANUFACTURER. SUBMIT TO DSA FOR APPROVAL
35. 8'-0" W X 4'-0" H SLIDING WINDOW ⚠1

GENERAL NOTES

1. THESE DRAWINGS ARE TO SHOW DESIGN INTENT ONLY. BUILDING MFR. TO PROVIDE FINAL DRAWINGS TO ARCHITECT, FOR DSA REVIEW AND APPROVAL.
4. BUILDING TO COMPLY WITH ALL APPLICABLE PROVISIONS OF THE 2013 CALIFORNIA BUILDING CODE, 2013 CALIFORNIA ENERGY CODE, AND 2013 CALGREEN CODE.
5. BUILDING FLOOR/FOUNDATION SYSTEM TO BE LIGHTWEIGHT CONCRETE TOPPING SLAB OVER FRAMED FLOOR PLATE, OVER ACCESSIBLE CRAWLSPACE WITH CONCRETE FOOTINGS.
7. CONTRACTOR TO PROVIDE RAT SLAB AND AREA DRAINS AT CRAWLSPACE.

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SOLANO COMMUNITY COLLEGE

CONSULTANT

PROFESSIONAL STAMP:

LICENSED ARCHITECT
FRANCIS F. CHAN
No. C-7519
10/17
RENEWAL DATE
STATE OF CALIFORNIA

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS

4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16
⚠1	ADDENDUM 1	8/18/17

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: -
CHECKED BY: -

SHEET NAME:

RESTROOM PLANS AND ELEVATIONS

DSA APPROVAL STAMP:

SHEET NUMBER:

ADDENDUM 1

A2.4A ⚠1

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LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE @ SOLANO COMMUNITY COLLEGE DISTRICT

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SECTION 26 00 00
ELECTRICAL GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 WORK INCLUDED

A. Furnish and install all necessary labor, materials, tools and equipment to perform and completely finish the work according to the intent of this specification, and the accompanying drawings.

B. Furnish and install any incidental work which can reasonably be inferred as required and necessary to provide complete and workable systems.

C. The requirements of the General and Supplemental Conditions, and Division 01 apply to Divisions 26, 27 and 28, and these specifications. All sections in Divisions 26, 27, and 28 are interrelated. Work specified in other sections, as applicable, shall apply to all work hereunder.

1.2 LOCAL CONDITIONS

A. Examine site; verify dimensions and locations against drawings and become informed of all conditions under which work is to be done before submitting proposal. No allowance will be made for extra expenses because of omission on Contractor's part to include cost of work under prevailing conditions.

B. Information shown relative to services is based upon available records and data shall be regarded as approximate only. Minor deviations found necessary to conform with actual locations and conditions shall be made without extra cost.

C. Extreme care shall be exercised in excavating near existing utilities to avoid any damage thereto. It shall be the contractor's responsibility to verify existing underground utilities prior to digging anywhere. Information provided on these plans indicating existing conditions shall only be used as reference, and shall not be deemed considered accurate. Any damage to existing utilities done by the contractor shall be repaired and/or replaced by the contractor at their expense to its pre-damage condition.

1.3 PERMITS AND INSPECTIONS

A. Obtain and pay for all permits and service charges required in installation of the work. Arrange for required inspections and secure approvals from authorities having jurisdiction.

B. During its progress, work shall be subject to inspection by Project Inspector.

1.4 CODES AND STANDARDS

A. Work and materials shall be in full accordance with California Occupational Safety Health Act (CAL-OSHA), California Electrical Code (CEC), State Fire Marshal, Electrical Safety Orders (Title 8, Subchapter 5), the National Fire Protection Association, California Building Code (CBC); California Code of Regulations - Title 24 and other applicable State or local laws or regulations. Nothing in the Drawings or Specifications shall be construed to permit work not conforming to these codes.

B. Electrical materials shall bear the label of, or be listed by, the Underwriter's Laboratories (UL) unless of a type for which label or listing service is not provided.

C. Materials and components shall conform to industry Standards, including:

NEMA -	National Electrical Manufacturer's Association
ANSI -	American National Standards Institute
ASTM -	American Society For Testing Material Association
IPCEA -	Insulated Power Cable Engineer's Association

D. When Contract Documents differ from governing codes, furnish and install larger size or higher standards called for without extra charge.

1.5 REVIEW OF MATERIALS

A. Prior to commencement of Work and within 35 days after award of contract, submit for approval in accordance with General Conditions all equipment and materials to be furnished.

1. Equipment/Product submittals shall be bound and indexed and shall include a table of contents listing all equipment submitted. The table of contents shall include: Project designation, submittal number, submittal name including specification section, date, and include manufacturer, model number, reference specification paragraph or sheet detail number, description, and page location. Where a group or series of products are submitted, each item do not have to be listed, only the series need to be identified. Example:

Project:
Submittal No.
Submittal Name:
Date:

Spec para.,

Page(s)	Manufacturer	Model No.	Detail No.	Description
1-12	XYZ Corp	123ABC	2.5	Control panel
13,14	XYZ Corp	456DEF	2.6-A	Power supply
15	ABC Corp	789GHK	A/E9.5	Rack
16,17	Cantex	PVC-40	2.1	PVC conduit
18	Steel City	XYZ series	2.2	Steel fittings

2. Shop drawings submittals shall be neat and professionally done using CAD (computer aided drafting), hand-drawn submittals will not be accepted. Shop drawings shall have sufficient information to clearly indicate work to be performed and be complete including device/equipment locations, wire sizes, wire types and number of wires, symbol list or legend, point-to-point connections, wiring diagrams, and equipment anchorage detail where needed. Shop drawings shall utilize the same size paper as the Bid set of plans.

B. Substitutions:

1. Only one request for substitution will be considered on each item of material or equipment. No substitutions will be considered thereafter. Substitutions will be interpreted to be all manufacturers other than those specifically listed by model or catalog number. Should the original submittal of a proposed substitution be rejected, the specified item shall be furnished.
2. Submit complete information or catalog data to show equality of equipment or material offered to that specified. Identify which product is being substituted in the specifications and/or the plans and provide analysis as indicating either it "Complies" or that it "Does Not Comply" and providing a reason. Each Specification paragraph shall be provided with this analysis. No substitutions will be allowed unless requested and approved in writing. Materials of equal merit and appearance, in the opinion of the Engineer, will be approved for use. Engineer reserves the right to require originally specified item.
3. Acceptance of a substitute is not to be considered a release from the Specifications. Any deficiencies in an item, even though approved, shall be corrected by the Contractor at his expense.
4. Responsibility for installation of approved substitution is included herein. Any changes required for installation of approved substituted equipment shall be made without additional cost to Owner.

C. Where it is in the best interest of the Owner, Engineer may give written consent to a submittal received after expiration of designated time limits, or for an additional resubmittal.

D. Submit for approval in ample time to avoid delay of construction, shop drawings or submittals on all items of equipment and materials covered in list mentioned above. Submit in accordance with General Conditions in a complete package; partial submittals will not be considered.

E. Failure to comply with any of the preceding requirements will necessitate that the specified materials be submitted and supplied.

1.6 RECORD DRAWINGS

A. Upon completion of Work, furnish Engineer with AutoCAD file, PDF file, and one printed full size hardcopy upon which shall be shown all Work installed under contract including any Work which are not in accordance with Original Contract Drawings. AutoCAD files shall be 2004 or later version, with external references bound to its parent drawing. Provide a separate PDF file for each sheet, do not combine all sheets into a single file. Furnish digital files on a USB flash drive or CD.

1. The above shall also include shop drawings.

B. All symbols and designations used in preparing Record Drawing shall match those used in Contract Drawings.

C. Show all buried and concealed conduit, stub-outs, etc. Locate all buried conduit and stub-outs by dimensions from permanent, easily located and identifiable portion of structure; also, dimension ends of stub-outs, etc. Note depth of buried items below grade.

1.7 ADDENDA AND CHANGE ORDERS

A. Changes in the plans and specifications shall be made by Addenda or Change Orders signed by the Engineer.

PART 2 PRODUCTS

2.1 MATERIALS

A. Materials mentioned herein or on drawings require that each item listed be provided and of quality noted, or an approved equal. All material shall be new, full weight and standard in all respects and in first-class conditions. Where possible, all materials used shall be of the same brand or manufacturer throughout for each class of material or equipment.

B. Grade or quality of materials desired is indicated by trade names or catalog numbers stated herein. Dimensions, sizes and capacities shown are a minimum and shall not be changed without permission of Engineer.

PART 3 EXECUTION

3.1 DRAWINGS AND COORDINATION

A. Examine Drawings and Site; be familiar with types of construction where electrical installation is involved. Work shall be neatly installed in a workmanlike manner in accordance with NECA Standard of Installation. Work shall be coordinated with other trades to avoid conflicts. Clarifications will be made by Engineer and minor adjustments shall be made without additional cost to Owner. Obtain ruling from Engineer concerning any obvious discrepancies or omissions in work before bidding. All work involved in correcting obvious errors or omissions after award of Contract shall be performed as directed by Engineer without additional cost to Owner.

B. Layouts of equipment, accessories and wiring systems are diagrammatic (not pictorial), but shall be followed as closely as possible. Drawings and Specifications are for assistance and guidance, and exact locations, distances, levels, etc., will be governed by Site.

C. All equipment (devices, conduits, boxes, etc.) shall be flush or semi-flush mounted unless otherwise noted. Where conditions do not allow flush mounting and where acceptable to the Architect, equipment may be surface mounted.

3.2 WORKING SPACE

A. Provide adequate working space around electrical equipment in compliance with Article 4 of Electrical Safety Orders. In general, provide 36 inches minimum clear work space in front of panelboards and controls of 120/208 volt systems.

3.3 CARE AND CLEANING

A. All broken, damaged or otherwise defective parts shall be repaired or replaced without additional cost to Owner. Work shall be left in a condition satisfactory to Engineer. At completion, carefully clean and adjust all equipment, fixtures and trim installed as part of this work. Systems and equipment shall be left in a satisfactory operating condition.

B. All surplus materials and debris resulting from this work shall be cleaned out and removed from site; this includes surplus excavated material.

3.4 EXCAVATING AND BACKFILLING

A. Excavate and backfill as required for installation of electrical work. Restore all surfaces, roadways, sod, walks, curbs, walls, existing underground installation, etc., cut by installations to original condition in an acceptable manner. Maintain all warning signs, barricades, flares and lanterns as required by the Safety Orders and local ordinances.

B. Excavation: Dig trenches straight and true to line and grade, with bottom clear of any rock points. Minimum conduit depth of pipe crown shall be 24 inches below finished grade.

C. Backfill: Support conduits with 2" sand bedding at bottom of trench. Provide sand backfill from bottom to 12" below finished grade. The top 12" to be local fine earth material free of rubble, rubbish or vegetation. Trenches shall be backfilled and compacted to 90% (per ASTM D1557) of maximum dry density at optimum moisture content in layers not to exceed 6" when compacted.

3.5 PROTECTION

A. In performance of work, protect work from damage. Protect electrical equipment, stored and installed, from dust, water or other damage.

3.6 EQUIPMENT IDENTIFICATION

A. Panelboards, remote control switches, terminal boxes, etc., shall be properly identified with a descriptive nameplate. Nameplate shall be made of 3/32 inch laminated plastic with black background and white letters. Size of letters shall be 1/4 inch high for equipment in device box or boxes 12" or smaller, and 1/2 inch high for panelboard, terminal can, or larger items. Letters shall be machine engraved. Punched strip type nameplates and cardholders in any form are not acceptable. Nameplates shall be attached with oval head machine screws tapped into front panel.

B. Indicate type of equipment and equipment designation, ex. "PANEL-XXX", "MAIN SWITCHBOARD-XXX", "TRANSFORMER-XXX", "SIGNAL-XXX", "TV-XXX", "EF-1", "AC-1", etc.

3.7 RUST INHIBITOR

A. Channels, joiners, hangers, straps, clamps, brackets, caps, nuts and bolts and associated parts shall be plated electrolytically with zinc followed immediately thereafter by treating freshly deposited zinc surfaces with chromic acid to obtain a surface which will not form a white deposit on surface for an average of one hundred twenty (120) hours when subjected to a standard salt spray cabinet test, or shall be hot dipped galvanized.

3.8 EQUIPMENT PADS

A. Concrete reinforced pads for mounting of equipment (i.e. switchboard, transformers, freestanding panels, etc.) shall be minimum 3000psi, 6" thick with #4 rebars at 12" on center each way. Rebars shall be centered in pad. Pad shall extend 2" beyond equipment and 1.5" above surrounding area. Backfill and compact to 95% maximum dry density at optimum moisture content in layers not to exceed 6" when compacted.

3.9 EQUIPMENT ANCHORAGE

A. Seismic Anchorage of Electrical equipment shall conform to the regulations of 2010 CBC (California Building Code) and ASCE 7-05, sections 13.3, 13.4, and 13.6. All equipment shall be braced or anchored to resist a horizontal force acting in any direction using the following criteria:

1. The total design lateral seismic force shall be determined from section 1614A of 2010 CBC and 13.3 ASCE 7-05. Forces shall be applied in the horizontal directions which results in the most critical loading for design.
2. The value if Ap (component Amplification factor) and Rp (component response modification factor) of section 13.3.1 ASCE 7-05 shall be selected from section 13.6-1 ASCE 7-05. The value of Ip (seismic importance factor) shall be selected from 13.1.3 ASCE 7-05.
   Where anchorage details are not shown on the drawings, the field installation shall be subject to the approval of the structural engineer and the field representative of the Office Of The State Architect.

3.10 ARC FLASH

A. Electrical equipment such as switchboards, panelboards, load centers, motor control centers, industrial control panels, meter centers shall be field marked to warn persons of potential electric arc flash hazards per CEC 110.16 and NFPA 70E Standard for Electrical Safety in the Workplace. Minimum label wording shall be as follows:

DANGER
Arc Flash and Shock Hazard.
Appropriate PPE Required.
Do not operate controls or open doors without appropriate personal protection equipment.
Failure to comply may result in injury or death.

3.11 TEST

A. Test all wiring and connections for continuity and grounds; where such test indicate faulty insulation or other defects, locate, repair and retest. Balance loads at panelboards. Furnish all testing equipment.

3.12 CLOSING OF AN UNINSPECTED WORK

A. Do not allow or cause any of work installed hereunder to be covered up or enclosed before it has been inspected and approved.

B. Should any work be enclosed or covered up before it has been approved, uncover such work and after it has been inspected and approved, make all repairs necessary to restore work of others to conditions in which it was found at time of cutting, all without additional cost to Owner.

3.13 WARRANTY

A. All materials and installation shall be provided with a one (1) year warranty which shall include replacement parts, labor, retesting, and travel to and from the job site. The warranty period shall begin after final acceptance of the project. The warranty shall cover but is not limited to the following:

1. Defective workmanship and Installation.
2. All System components, devices, conduit, wires, etc.
3. Manufactured items such as receptacles, panelboard, etc.
4. Basic materials such as conduit, wires, boxes, cabinets, etc.

B. Certain manufactured items will have longer warranty periods. Refer to specific item and specification section for warranty information and terms.

END OF SECTION

SECTION 26 05 00
BASIC MATERIALS AND METHODS

PART 1 GENERAL

1.1 SCOPE

A. The work of this Section consists of basic materials and methods for all work included under Divisions 26, 27, and 28. Additional specifications requirements for electrical work are specified under other sections of Divisions 26, 27 and 28 and where those requirements differ from the requirements of this Section, they shall govern.

1.2 SUBMITTALS

A. Submit product data per Section 26 00 00.

PART 2 PRODUCTS

2.1 CONDUIT

A. Rigid Steel Conduit: Standard weight, mild steel pipe, zinc coated on both inside and outside by a hot dipping or sherardizing process. Inside and outside of conduit shall be finished with a protective coating. All threads galvanized after cutting. Meets UL 6, UL Card #DYIX, and ANSI C80.1.

B. Intermediate Metallic Conduit (IMC): Intermediate weight, mild steel pipe, meeting same requirements for finish and material as rigid steel conduit. Meets UL 1242, UL Card #DYIX, and ANSI C80.6.

C. Electrical Metallic Tubing (EMT): Cold rolled steel tubing, hot-dipped galvanized, with zinc coating on outside and protective lubricating coating on inside. Fittings shall meet same requirements for finish and material as EMT. Meets UL 797 and ANSI C80.3.

D. Flexible Conduit: UL Listed. Flexible steel, zinc coated on both inside and outside by hot dipping or sherardizing process. Liquid-tight conduit shall be galvanized with extruded polyvinyl covering and with watertight connectors, sunlight resistant, direct burial rated. Flexible steel conduit less than 1/2" shall not be used except that 3/8" shall be permitted in lengths not in excess of 6 feet as part of a listed assembly or for tap connections to lighting fixtures as required in CEC Section 410-67(c). Flexible conduit to be one continuous length, no couplings. AFC Liquid-Tuff Type-LFMC and AFC Reduced Wall Flexible Steel Conduit, or equal.

A. PVC Conduit:

1. Type 40, 90C, UL listed, composed of polyvinyl chloride, conforming to NEMA TC-2, Fed Spec WC1094A, UL651 Standards. Material shall have minimum tensile strength of 6,500 psi at 73.4F, flexural strength of 12,500 psi and compressive strength of 9,000 psi per ASTM testing. PVC conduit shall be suitable for direct burial without concrete encasement. Fittings shall be of same manufacture. All joints shall be solvent welded.
2. Type 80, similar to type 40 except with extra heavy wall.
3. Only manufactured elbows/bends shall be used. Where field bends have to be made, obtain prior approval by the engineer.

F. Raceway Fittings:

1. Rigid Steel Conduit: Fittings, such as couplings, connectors, conduletts, elbows, bends, etc., shall be subject to same requirements as for rigid steel conduit. Couplings and unions shall be threaded type, assembled with anti-corrosion, conductive anti-seize compound at joints made absolutely tight to exclude water. Connectors shall be threaded hubs with bonding insulated metallic bushings. Unions shall be equal to Crouse Hinds UNY or UNF.
2. IMC: Fittings shall be as specified for rigid steel conduit.
3. EMT: Fittings shall be steel, box connectors shall have insulated throat. Connectors and couplings to be compression type.
4. Flexible Metallic Conduit: Connectors to be insulated. Metallic connectors (except for liquid-tight) shall be steel "squeeze" type via a screw, Steel City XC-90X and XC-49X series. Liquid-tight metallic connectors shall be watertight approved for such use.
5. Bushings: Metallic insulated type. Weatherproof or dust-tight installations; liquid-tight with sealing ring and insulated throat, OZ/Gedney type "KR".
6. Expansion and Deflection Fittings: OZ/Gedney, Type "DX" or accepted equal.
7. All box connectors to be Insulated throat type.
8. Conduit Straps: Galvanized steel, 2-hole straps. 1-hole straps may be used for conduit sizes 1" and smaller concealed in wall or above ceiling.
9. PVC Conduit: Fittings shall be same grade of material as conduit, solvent welded to conduit.

G. Metallic conduits, raceways, and fittings shall be listed and approved as a grounding means.

2.2 BOXES

A. Galvanized one-piece or welded pressed steel type. Boxes shall be at least 1-1/2" deep, 4" square for 1 or 2 gang devices, with plaster rings and gang box with gang cover. Boxes mounted in wall or ceiling finished with gypsum board shall be furnished with 3/4" deep plaster rings. Use screws and not nails to support/secure outlet boxes. Provide blank cover plates for all boxes without devices.

1. 1-gang and 2-gang outlet and junction boxes installed exposed outdoors shall be weatherproof type FS, FD, WS, WO die cast metal or aluminum boxes, Appleton or equal. Plug all unused hubs.
2. Provide #12 equipment grounding pigtail at all outlet boxes.
3. Outlet boxes for data, telecommunications, video, and TV outlets shall be 4 11/16" square x 2.125" deep.
4. Outlet boxes containing #8, #6, or #4 AWG wires shall be a minimum 2.125" deep per CEC.

B. Junction boxes located outdoors, or in wet or damp locations shall be rated NEMA-3R, with hinged door and pad-locking tabs.

C. Equipment furnished by other trade but require electrical connection shall be provided with appropriate backbox.

2.3 WIRES

A. Wire shall be copper only, manufactured by General Cable Co., Rome, General Electric Co., or Anaconda. Wire shall be rated 90 degrees C for both dry and wet locations, THWN-2, XHHW-2, or RHW-2 insulation. 90 degrees C THHN may be used in dry and damp locations. Wire installed in high temperature areas, including in branch circuits in or above roof insulation or in fluorescent ballast channel, shall have type RHW_2 or XHHW-2 90 insulation.

1. Feeders sized #2 and larger routed below grade, extending beyond or outside the building foundation line shall use types XHHW-2, THW-2, or RHW-2 insulation, 90 degrees C dry and wet rated.

B. Wire shall be Code type copper wire of not less than 98% conductivity. Wires #8 gauge and larger, shall be stranded. Wires shall bear the Underwriters' label, be color coded and be marked with gauge, type and manufacturer's name on 24" centers. Wires smaller than #8 may be solid or stranded. Where stranded wire is used, provide solid pigtail for connection to screw terminals of receptacles, switches, etc.

C. Color coding to be as follows:

	208/120 Volts
Phase A	Black
Phase B	Red
Phase C	Blue
Neutral	White
Ground	Green

D. Bring wire to job in original unbroken packages. Obtain approval of inspector or Engineer before installation of wires.

2.4 CONVENIENCE OUTLETS

A. Shall be "Specification" grade rated 20 amperes at 125 volts, duplex, composition base with slots to accommodate parallel plug caps with grounding peg. Contact shall grip both sides of plug prongs. Outlet shall be UL listed. Receptacles to be Hubbell or equal.

B. Provide devices with matching plates.

2.5 PANELBOARDS

A. Panelboards shall meet NEMA AB-1, PB-1, PB1.1, PB1.2. Panelboards shall be type NQOD, NEHB, I-Line, Power-R-Line, A-Series, and CCB as specified for secondary utilization voltage and phase. As manufactured by Square-D, Cutler-Hammer/Eaton, General Electric, or approved equal. Square-D has been used for design purposes. Busses shall be copper. Provide with neutral bus and copper ground buss. Series rated equipment are not acceptable. Panels shall have full height fully rated bussing.

B. Circuit breakers shall be bolt-on type thermal magnetic, single-pole and multi-pole for branch circuit control with trip-rating permanently marked on the handle. Where trip-rating is not marked on the handle, provide engraved label adjacent to the breaker indicating amperage rating. Multi-pole breakers shall be common trip type with single handle. Factory assembled and listed multi-pole breakers with handle ties shall be acceptable. Bails will not be accepted except where used with multi-wire branch circuits through fluorescent lighting fixtures. All circuit breaker handles shall be equipped with padlocking tabs, "lock-off" device. All circuit breakers shall be fully rated to withstand the available short circuit current as designated on the drawings. Series rated equipment will not be acceptable.

C. Enclosures shall be code gauge, galvanized metal with front trim and hinged door with lock masterkeyed. Front trim shall be equipped with concealed trim clamps and concealed door hinges. Enclosures shall be rated NEMA-1 at dry indoor locations, and NEMA-3R where located outdoors in damp or wet locations. Lighting and appliance branch circuit Panelboards shall be minimum 20" wide and 6" deep. Panel trim and cabinet shall be finished ANSI-49 or ANSI-61 gray, except panel cabinets to be recessed are not required to be painted. Surface cabinets shall be without knockouts. Inside door shall have frame for circuit identification card. Fill out card, typewritten, with list of circuits corresponding with the circuit number. Identification shall be specific with room designation, type of load, etc, (i.e., "Classroom 214 receptacles"). For distribution panels, provide engraved laminated labels for load served where identification card is not provided.

D. Panelboard submissions shall include a ladder diagram, physical and electrical data, numbering and trip rating of each circuit breaker. Panelboard shall bear the UL label of approval.

E. Panelboard types as indicated on the drawings shall be the minimum size and type. Provide a larger size and type of panelboard as necessary for the breakers and features/accessories as indicated.

F. Circuit breaker arrangement shall be per the panel schedule.

G. Panel nameplate label shall identify panel, minimum AIC rating, and equipment it is fed from, example as follows, "PANEL-XXX, MAX. 22,000 AIC, FED FROM YYY". Where fed via a transformer, it shall read, "PANEL-XXX, MAX. 14,000 AIC, FED FROM YYY THRU TRANSF-ZZZ". Label shall be engraved plastic per section 26 00 00. 1/2 inch letters for panel identification.

2.6 INDIVIDUAL CIRCUIT BREAKERS

A. Circuit breakers shall be molded case thermal magnetic type with trip rating as scheduled on drawings.

B. Circuit breakers shall be quick-make, quick-break, trip free operation. The trip-free mechanism shall be independent of manual handle control. All circuit breakers shall be fully rated to withstand the available short circuit current as designated on the drawings. Series rated equipment will not be acceptable.

C. Breakers to be in NEMA-1 (indoor) or NEMA-3R (damp, wet, and outdoor) enclosures. NEMA-3R enclosures shall have the handle concealed behind the cover, and the hinged cover shall be provided with padlocking tabs. Each circuit breaker shall be identified with an engraved, laminated phenolic plate showing the load served or the function of the circuit breaker and trip rating. The nameplate shall be attached with oval head machine screws tapped into the front of the board. Equip breaker handles with padlocking "lock-off" devices.

2.7 PULL LINE

A. Furnish and install pull line in all unused (empty) raceways. Pull lines shall not rot or mildew.

1. Conduits up to 1.5": 1/8" diameter braided line of polypropylene with 200 lbs. tensile strength, IDEAL, Jet-Line #232, or equal.
2. Conduits 2" or larger: 3/16" polypropolene pull rope with 800 lbs. tensile strength, IDEAL Pro-Pull or equal.

2.8 PRECAST CONCRETE PULLBOXES/HANDHOLES

A. Boxes shall be size as indicated on the drawings. Design loads shall consist of live, dead, impact, hydrostatic, and other loads. Live loads shall be for H-20 and/or H-20-S16-44, or as required, per A.A.S.H.O. standard specifications for highway bridges with revisions. Design loads shall be sixteen KIPS. Concrete shall be per ASTM-C-33-64. Lightweight concrete shall conform to ASTM-C-33-64T. Cement shall be Portland Cement meeting ASTM-C-150 Type II standards. Compressive strength shall be minimum 4,000 psi at 28 days.

B. Boxes: Precast high-density reinforced concrete with end and side knockouts, and extension as required. Minimum 1.5" wall thickness. Acceptable manufacturers shall be Forni, Christy or equal.

A. Covers: Covers shall be reinforce concrete with hold down bolts. Where susceptible to vehicular traffic, use H_20 rated traffic cover. All covers shall be factory marked, see drawings for marking/label required. If not noted, use the following markings:

SYSTEM	MARKING
Power	Electrical
Telephone	Telephone
Clock, Unified Signal, etc.	Signal
Fire Alarm	Fire Alarm
Television	T.V.
Lighting	Lighting
Grounding	Ground

B. Installation:

1. Excavate around area to accept box, a minimum of 4" around all sides for ease of installation. Provide 12" of compacted pea gravel for bedding and/or to facilitate drainage.
2. Backfill shall consist sand or fine earth, compacted. Saturated soil or large rocks shall not be used. No voids shall remain between walls and native soil.
3. Grout and seal conduits at box entry with cement. Provide with conduit end bells.
4. The metal covers of lighting and power pull boxes shall be ground bonded to the circuit grounding conductor(s) in the pull box. The size of the bonding conductor shall be the same size as the associated circuit ground conductors.

2.9 BACKBOARDS

A. Backboards shall be 3/4" plywood, type A-C grade fire treated for interior use, and type Exterior Grade for outdoor use. Backboards located outdoors shall be provided with one coat primer and two coats of exterior paint. Backboards in terminal cabinets shall be same as for interior use.

2.10 TERMINAL CABINETS

A. Terminal, relay, and contactor cabinets shall be code gauge, size as indicated with appropriate trim for mounting as indicated, with hinged door and cylinder type locks. NEMA-1 for indoor use in dry areas and NEMA-3R for outdoor use or in wet locations. Surface mounted cabinets shall not have knockouts. Provide backing plate/board for mounting equipment. Circle A_W or equal.

B. Provide engraved plastic label per section 26 00 00. Label shall identify the type of cabinet and designation, example "FIRE ALARM - FCA" and "EXTERIOR LIGHTING - RA".

2.11 GROUND RODS

A. Ground rods shall be 3/4 in dia. x 10 ft. copper clad steel.

2.12 SURFACE METALLIC AND NONMETALLIC RACEWAYS

A. The surface raceway system for branch circuit wiring and/or data network, voice, video and other low-voltage wiring shall be manufactured by the Wiremold Company, or equal. Raceway series as indicated on the plans. The raceway and all system components must be UL listed and exhibit non-flammable self-extinguishing characteristics. The raceway shall be a two-piece design with a base and a snap-on cover.

1. The nonmetallic raceway base and cover shall be manufactured of rigid PVC compound, available in ivory color. Exposed cuts shall be painted with cover clips.
2. The metal raceway base and cover shall be manufactured of galvanized steel, ivory finish and suitable for field painting.

B. A full compliment of fittings must be available including, but not limited to flat, internal and external elbows, tees, entrance fittings, boxes, covers, adapters, cover clips, and end caps. The fittings shall match the base and cover, and be of matching colors. All fittings shall be supplied with a base where applicable to eliminate mitering. A transition fitting shall be available to adapt to other Wiremold series raceways. Field cuts shall be clean, straight, and true with no rough edges.

C. For multicompartment raceways, device brackets shall be available for mounting standard devices in-line or offset from the raceway. A device bracket shall be available for mounting up to four devices at one location. Faceplates shall match and fit flush in the device plate and shall overlay the cover and base to hide uneven cuts. They shall match the raceway base and cover. The raceway manufacturer will provide a complete line of connectivity: outlets and modular inserts for UTP (i.e. data jacks), STP (150 ohm), Fiber Optic, Coaxial and other cabling types with face plates and bezels to facilitate mounting.

D. Work shall include furnishing all raceway and appropriate fittings and device plates to install a nonmetallic surface raceway system. Installer shall comply with detailed manufacturer's instruction sheets, which accompany system components as well as system instruction sheets.

2.13 COVER PLATES

A. Switch and receptacle cover plates shall be smooth nylon type. Cover plates for other devices/outlets such as data, telephone, television, etc. shall be nylon. Cover plate color shall be ivory, matching all systems.

PART 3 EXECUTION

3.1 CONDUITS

A. All conduits shall be rigid steel or IMC except EMT may be used at following locations:

1. In dry locations in concealed furred spaces.
2. In partitions.
3. For exposed work indoors except:
   a. In special locations prohibited by Code, such as hazardous locations, rigid steel shall be used.
   b. Conduits exposed on/above the roof shall be rigid steel up to 10 ft above roof surface.
4. Concealed above suspended ceilings or ceilings directly attached to structure above.

B. Provide a separate bonding conductor in all flexible connections/conduit. Flexible conduit shall be one continuous length without couplings.

C. Run conduit concealed in areas having finished ceilings and in walls. Run all cross conduits and vertical risers or drops concealed in wall and/or partitions. Should it be necessary to notch any framing members, make such notching only at locations and in a manner as approved by the Architects. Where concealing conduit is not possible or practical, conduit may be run exposed in areas only where so permitted by the Architect. Install exposed conduit run neatly, parallel to or at right angles to structural members.

D. Support conduit with straps and secure to wood structure by means of bolts or lag screws, to concrete by means of insert or expansion bolts, to brickwork by means of expansion bolts, and to hollow masonry by means of toggle bolts. Expanders and shields shall be steel or malleable iron.

E. Conduits installed in contact with ground shall be PVC_40 conduit.

1. Provide a minimum 2" of sand bedding at the bottom of the trench before laying conduits. Maintain 2" separation between conduits, Maintain 12" separation between power conduits (120 Volts and greater) and low voltage signal conduits.
2. Backfill shall be sand, from bottom to 12" below finished grade. Fine earth native backfill to be used for the last 12".
3. Risers, including elbows, shall be double-wrapped rigid steel or PVC coated rigid steel conduit; except that risers, including elbows and bends, at in-ground pull box locations shall be PVC-40 terminated with endbells.
4. When installing underground conduits to specified depth, depth shall be taken from the top of the conduit to the finished grade level. Unless otherwise specified, underground conduits outside of foundation line shall be installed with top side not less than 24" below finished grade.
5. The minimum size of conduits outside the foundation line shall be 1".
6. Bends shall be wide sweeping type with minimum 24 inch radius bends.
7. Manufactured elbows are required to be used for all 22.5 and 45 degree bends, and 90 degree elbows, and combinations thereof. Field bends may be used for other bends with approved field benders specifically for such purpose and such bends shall not compromise the integrity and nominal thickness of the conduit wall.
8. For all trenches, provide a 6" wide non-biodegradable metal-detectable polyethylene tape at 12" below grade, 5-mil thick, labeled " CAUTION ELECTRIC LINE BURIED BELOW". Fluorescent red for electric power conduits and fluorescent orange "TELECOM/MUNICATIONS" for telephone and signal conduits. Use Fluorescent red for common trenches. Tape shall be continuous for full length of trench.

F. Support individual conduits with 2-hole steel straps. 1-hole steel straps may be used for conduits 1" and smaller concealed in wall or above ceilings.

G. Galvanized iron hanger rods sizes 1/4" diameter and larger with spring steel fasteners, clips or clamps specifically designed for purpose for conduits up to 1" size may be used.

H. Individual conduits 3/4" and smaller run above wire suspended ceilings may be supported from independent hanger wires with approved spring steel clips. Wire ties will not be acceptable. Wire shall be taut and secured to ceiling and structure above.

I. Support multi-parallel horizontal conduit runs with trapeze type hangers consisting of two or more steel hanger rods, cross channels, J-bolts, clamps, etc.

J. Sizes of rods and cross channels shall be designed to support four times actual load. Hanger rods shall have safety factor of 5 based on ultimate strength of material used.

K. Conduits for data, telecommunications, signal, video, TV, and/or containing fiber optic, coaxial, or OSP (outside plant) multi-pair cables shall have a minimum inside bend radius per CEC Table 346-10 (do not use exception); except that conduits 2" to 4" shall be minimum 24" radius bends.

L. After installation of conductors, all conduits routed below grade shall be sealed at each opening, including risers and in pull boxes, to prevent the entrance of water and debris.

M. Relocatable (Portable) Buildings:

1. Where building is not secured to a permanent foundation, conduits connecting to Portable Buildings, shall be installed so as to allow 12 inches of building movement in all directions. Conduit riser shall extend to approximately 4 inches above ground 12 inches from the building, continuing with a flexible conduit connection to the panel, cabinet, junction box, etc.
2. For ease of disconnection for interior conduits, provide flexible conduit connection through junction box between building modules.

N. Conduits not terminated into a box or cabinet, such as stubbed to a backboard, shall be terminated with an insulated bushing. Bushings for metallic conduits shall be metallic type secured by set screw, compression, or threaded type. Bushings for PVC conduits shall be glued in place.

O. Although circuiting is shown as diagrammatic, their point-to-point destinations and their indication of above/below ground route shall be followed as much as possible. Where site conditions dictate that an alternate means of routing will alleviate conflicts, the alternate means will be considered with prior approval by the Engineer.

P. Horizontal runs of conduit above suspended wire lay-in ceilings shall not be less than 12" above the ceiling.

Q. Maintain 12 inch separation between power circuits (>120V) and all signal circuits (data, telephone, speaker, clock, etc.) to prevent interference.

R. Feeder conduits connected to panels/switchboard shall have ground lug bushing connected to equipment ground buss with ground wire same size as largest ground wire in the panel/switchboard.

S. Conduits penetrating through the roof shall be secured within 12" below roof and supported within 12" of the penetration on the roof.

T. Where conduits cross building expansion/seismic joints provide a short length of flexible conduit (do not exceed 6 ft.) and fittings listed as a grounding means, or in locations where flex conduit cannot be used provide UL listed expansion/seismic fittings.

U. Where conduit passes through finished walls or ceilings, provide steel escutcheon plates, chrome or painted as directed. Conduit which penetrate floor slabs, concrete or masonry walls shall be grouted and sealed watertight at penetrations.

3.2 CAPPING

A. Cap conduits during construction with manufactured seals. Swab out conduits before wires are pulled in.

B. Cap all empty conduits below grade and in pull boxes with manufacturer's caps to prevent entrance of water and debris, attach pull string to cap.

3.3 PENETRATIONS OF FIRE RESISTIVE WALLS AND PARTITIONS

A. Penetrations of protected openings (fire rated walls, ceilings, floor-ceilings, roofs, etc.) shall be protected in accordance with the California Building Code, Part 2, Chapter 7, Title 24. Penetrations shall apply to conduits (raceways), cable trays, boxes, cabinets, panels, cables, etc.

B. Fire stopping shall be provided at penetrations of fire resistive walls, floors, ceilings, floor-ceiling assemblies, and roofs. Fire-stopping shall have a "F" and/or "T" rating as determined by tests conducted in accordance with ASTM E 814 or UL-1479. Fire stopping system/materials shall be UL Listed.

3.4 ACCESS DOORS

A. Furnish and install access doors wherever required whether shown or not for easy maintenance of electrical systems; for example, inaccessible areas and attics containing heat detectors, junction boxes, etc. Access doors shall provide for complete removal and replacement of equipment. Provide fire rated access doors where located in fire rated partitions.

3.5 BOXES

A. Nails shall not be used to support outlet boxes. Boxes must be accurately placed for finish, independently and securely supported by adequate wood backing or by manufactured adjustable channel type heavy-duty box hangers. For metal stud construction, use metal box hangers only. Box hangers shall be securely tied or welded (where permitted) or screwed to metal studs. Paint weld with rust inhibitor.

1. Outlet boxes with receptacles: Provide a solid pigtail (green) ground wire grounded to the metallic outlet box. Pigtail shall also ground device and separate ground conductor if available. Size of ground wire to match overcurrent protection.

B. Install pull boxes or junction boxes as required in accessible spaces but do not install in finished areas unless approved by Architect.

C. Where fire rated construction is required (refer to Architectural Drawings), do not locate electrical outlet boxes back-to-back. Provide a minimum of 24" horizontal separation between outlet boxes on opposite side of the same wall. Where such restrictions cannot be met, provide fire-stopping around box such as 3M Moldable Putty Pads or equal.

D. Boxes up to 100 cubic inches located in suspended wire ceilings may be supported through an independent hanger wire with approved tension clips. Wire shall be taut. Secure wire to the structure above and the ceiling below.

3.6 CONDUCTORS

A. Splices and joints for #10 AWG or smaller wiring shall be twisted together electrically and mechanically strong and insulated with approved type insulated electrical spring connectors, Scotchlok or Ideal. Joints and connections for #8 AWG or larger shall be made with Burndy, T & B, or approved equal, solderless tool applied pressure lugs and connectors. Uninsulated lugs and wire ends shall be insulated with layers of plastic tape equal to insulation of wire and with all irregular surfaces properly padded with "Scotchfil" putty prior to application of tape. Tape shall be equal to Scotch #33, General Electric #AW-1, or approved equal. Feeder splicing is not permitted.

1. In special instances where feeder splicing is allowed by the Engineer, it shall be made with high compression sleeve type connector followed by manufactured splicing kit utilizing as insulators, resins poured into a ready-to-use plastic mold to provide a uniform, moisture-proof tough, impact-resistant insulation.

2. Conductor splices below grade shall meet ANSI C119.1-1986 and UL 4850 Standards. Raychem WCSM or FCSM heavy wall heat shrink tubing; or RVS or RVC series if use of flame heat is prohibited. Conductors to be joined with compression sleeve connectors.

B. Use only UL approved wire pulling compounds as lubricant.

C. Lace conductors together with waxed linen lacing cord, T & B "Ty-Rap", Holub "Quik-Wrap" or equal, in a neat and workmanlike manner in panelboards, wireways, raceways, pull boxes and similar locations.

D. #12 AWG wire shall be minimum size wire used for power circuits

SECTION 27 05 50
INSTALLATION AND IDENTIFICATION OF SIGNAL CABLES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. The installation and identification of Signal cables. Signal cables as referenced in this section shall include but not limited to cables for the following systems; intercom, paging, clock, telephone, speaker, fire alarm, intrusion and television.

1.2 RELATED SECTIONS

A. Sections where signal cables are specified. Such systems are specified in the Divisions 27 and 28.

1.3 SUBMITTALS

A. Submit cables and method of labeling including tags, ties, labels, etc.

B. Submit per Section 26 00 00.

PART 2 PRODUCTS

2.1 PRODUCTS

A. Refer to cables and wires specified under other sections.

B. All energy limited cables that are identified as opened wired (not in conduit) within buildings shall be rated for the environment it is installed. Exposed wiring shall not be used in hazardous locations and locations not allowed by the CEC.
1. General Purpose rating allows the cable to be used in areas allowed by the CEC but shall not be used as riser cable and in air plenums.
2. A Riser rating allows the cable to be used in general purpose applications and building riser applications. Riser cables shall not be used in air plenums.
3. A Plenum rating allows the cable to be used in general purpose, riser, and air plenum applications.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install all wiring in accordance with manufacturer's recommendations. All work shall be performed in a neat and workmanlike manner. All debris, trash, leftover materials etc., shall be cleaned out of pull boxes, terminal cabinets, terminal rooms and the general work areas.

B. Cables shall be labeled at each terminal location and at pull boxes.

C. Protection of Cables: Cables within terminal cabinets, equipment racks, etc., shall be grouped and bundled (harnessed) as to type and laced with No. 12 cord waxed linen lacing twine or T & B "Ty_Rap" cable. Edge protection material ("cat_track") shall be installed on edges of holes, lips of ducts or any other point where cables or harnesses cross metallic edge.

D. Cable Identification: Individual conductors not in a multiconductor cable and multiconductor cables shall be color coded and/or individually identified. Each cable identification shall be a unique number located approximately 1_1/2" from cable connection at both ends of cable. Numbers shall be approximately 1/4" in height. A typewritten schedule shall be provided at each cabinet or terminal location indicating the destination of the cable from such location. Example, a intercom cable entering and terminating in Building-A from Building-B shall be labeled at Building-A as follows, "INTERCOM FROM BLDG-B". A schedule shall be provided for each systems cables. The schedule shall be on a 8.5" x 11" plain paper identifying all cables of the system at the terminal location, and shall be typewritten, neatly handwritten are allowed only when approved. A copy of the schedule shall located at the terminal location and a copy shall be provided to the Owner. The schedule shall match the identification on the As_Built drawings.

E. At pull boxes, use engraved plastic tags minimum of 2"H X 4"W securely tied around cable. Tags shall be listed for such use and shall not corrode or be susceptible to such environments. All cables shall be labeled by system type and destination, to and from.

F. Shielding: Cable shielding shall be connected to common ground at point of lowest audio level and shall be free from ground at any other point. Shields shall be connected a one end only to prevent ground loops. Cable shields shall be terminated in same manner as conductors.

G. Nameplates: Terminal cabinets and junction boxes shall have plastic engraved nameplates to identify each with Drawings and Specifications. Refer to Section 26 00 00. Provide nameplates at backboard terminals for each system, sample "INTERCOM". Secure all labels with screws.

H. Outlet Box Identification: All outlet boxes mounted in attic space shall be individually identified with a black permanent waterproof marker. Identification shall be by system type and/or cable type.

I. All cables shall be run in continuous lengths between terminal locations and/or equipment, no splicing permitted.

J. The Contractor shall supply and install all modular mushroom rings, D-rings, etc., needed for the terminal boards. The blocks should allow for a minimum of 25% growth.

K. Cables on backboards shall be neatly trained following the lines of the room/backboard. Typically routes shall be vertical and horizontal with smooth turns. Do not route cables in odd angles.

L. Provide grounding electrode conductor, #6 AWG bare stranded copper. Locate at each terminal location and bond to building grounding electrode system. At backboards, provide a minimum 3"H X 6"W copper ground buss with stand-offs, secure to backboard. At each terminal cabinet, terminate ground wire in ground lug. One ground conductor may serve multiple backboards and terminal cabinets in the same area.

M. Terminations shall be consistent as to the color of conductors throughout the system at like stations.

N. The system shall be checked by the Contractor for opens, grounds, and shorts.

END OF SECTION

SECTION 27 13 20
DATA COMMUNICATIONS SYSTEM

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Furnish and install a complete data communications system. The system shall consist of but not limited to cables (twisted-pair copper), patch panels, connectors (copper), wiring blocks and telecommunications outlets and any other equipment and accessories as required. The work performed under this specification shall be of good quality and performed in a workmanlike manner. In this context "good quality" means the work shall meet industry technical standards and quality of appearance. The Owner reserves the right to reject all or a portion of the work performed, either on technical or aesthetic grounds.

B. The copper cabling system shall perform to Category-6 Permanent Link performance requirements, from patch panel to outlet jack. The system shall be capable for transmission of the Gigabit Ethernet (1000Base-T) protocol and other designed for Category-6 cabling systems.

1.2 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specifications Sections, apply to work specified in this Section.

B. Sections 26 00 00, 26 05 00, 27 05 50.

C. Applicable Standards:
1. ANSI/TIA/EIA-569-A, Commercial Building Standard for Telecommunications Pathways and Spaces.
2. ANSI/TIA/EIA-568-B, Commercial Building Telecommunications Cabling Standard.
3. ANSI/TIA/EIA-568-B.2, Transmission Performance Specifications for 4-Pair 100 Ohm Category 6 Cabling.
4. TIA/EIA-606-A (2002), Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.
5. J-STND-607-A (2002), Commercial Building Grounding and Bonding Requirements for Telecommunications.
6. EIA/TIA-455-61, FOTP-61, Measurement of Fiber or Cable Attenuation Using An OTDR.
7. IEEE 802.3, Carrier Sense Multiple Access With Collision Detection.
8. CEC Articles 770 and 800.

1.3 CONTRACTOR QUALIFICATIONS

In order to qualify for installation of the data communications system, Contractor must possess the required license classification, a performance history, experience in the installation and termination of fiber optics cable systems, certification from cabling manufacturer, and proof of time in business.

A. License Classification: Contractor must posses a valid C-7 California State Contractor's License. This license must have been issued two years prior to the date of this bid. No other license classification is acceptable.

B. Performance History: Contractor must have successfully performed at least three projects of similar scope, within two years of the date of this bid. Proof of performance shall be in the form of reference sheets which shall include a brief description of the project, the beginning and ending contract price, the project foreman or superintendent's name, and the name, address, and telephone number of a project contact.

C. Certification From Cabling Manufacturer: Contractor must be able to prove to the satisfaction of the Owner via a certificate that certification in copper and fiber optic product installation has been granted and is current.

A. Time In Business: Contractor must have been in business and in the business of installing telecommunications systems, continuously, for a period of at least three years, prior to the date of this bid. Contractor must submit at least one project reference for each of the of the three years prior to the date of this bid. These project references shall contain the same information required in Paragraph B above. Contractor must also provide a list of key installation personnel, their hire dates, and a resume of their experience. Key installation personnel shall include at least one foreman and two journey level installers or technicians. By submitting the names of these personnel, Contractor is committing them to the execution of the project outlined in this specification.

1.4 DEFINITIONS

A. Main Distribution Facility (MDF): The MDF is the location, within a building or complex of buildings, where the entire telecommunications system originates. It may include: The physical location, enclosure, wire and cable management hardware, termination hardware, distribution hardware, and equipment racks. ANSI/TIA/EIA-569-A refers to the room housing the MDF as the "Equipment Room".

B. Intermediate Distribution Facility (IDF): The IDF is the location in a building where a transition between the backbone or vertical riser system and the horizontal distribution system occurs. It may include: The physical location, enclosure, wire and cable management hardware, termination hardware, distribution hardware, and equipment racks. The IDFs provide the interface location between fiber distribution cable (backbone) and station cable (horizontal distribution).

C. Backbone Pathway: The Backbone Pathway consists of a series of conduits or chases which connect the MDF to IDFs or IDFs to IDFs. It generally houses the vertical or backbone system.

D. Backboard: Backboard generally refers to the plywood sheeting lining the walls of telecommunications facilities. Backboard may also refer to the entire wall-mounted assembly, including wire management, wiring blocks, and equipment racks. In this case, the term Backboard is fully interchangeable with SBB or TTB and the equipment required to fulfill the Scope of Work below.

1.5 SYSTEM DESCRIPTION

A. The data communications system shall consist of active hub equipment, a fiber optics backbone and twisted pair copper work station cabling. The central location shall house an MDF and each of the other locations shall house an IDF. Each fiber optics cable shall originate in the MDF and shall be terminated in its respective IDF. All fiber optics cables shall be enclosed in innerduct which shall be routed through a system of conduits and raceways. From each IDF one or more twisted-pair copper cables shall be routed to each data outlet location. These cables shall originate in an IDF and terminate in its respective data outlet location. The MDF and each IDF will house active data distribution equipment including but not limited to fiber hubs, data terminal controllers, local area network hubs, fiber optic transceivers, routers, and DSU/CSU devices. Unless specifically noted, active equipment is not within the scope of the work.

1.6 MANUFACTURER

A. Throughout this specification, manufacturers are cited, along with specific part numbers. These citations are for the purpose of establishing quality and performance criteria.

1.7 SUBMITTALS AND SUBSTITUTIONS

A. The submission shall consist of five (5) major sections with each section separated with insertable index tabs.
1. The first section shall be the "Index" which shall include the project title and address, name of the firm submitting the proposal and name of the Architect. Each page in the submission shall be numbered chronologically and shall be summarized in the index.
2. The second section shall include a copy of the Contractor's valid C-7 California State Contractor's License, the information required in Section 1.2 above, and a list of instrumentation to be used for system testing.
3. The third section shall contain a table of contents with product literature including cut sheets and specification sheets.
4. The fourth section shall contain samples of proposed cable markers and labeling.
5. The fifth section shall contain a complete shop drawings, point-to-point wiring, device/outlet locations, rack elevation showing all major equipment such as patch panels and fiber interconnect equipment, detailed satellite closet count, and bill-of-materials.

B. For purposes of determining equality, technical and general information set forth on the respective data sheets by manufacturers named for each specified item shall be considered as part of these specifications and binding herein. Any proposed equal item offered shall be substantiated fully to prove equality. The Owner reserves the right to require a complete sample of any proposed equal item and may, if necessary, request a sample tested by and a copy of the test results by an independent testing laboratory to prove equality. The decision of the Owner regarding equality of proposed equal items will be final.

1.8 FUNCTION AND OPERATION

A. The intended function of the data communications cable system is to transmit data signals from a central location to several individual data outlet locations.

B. The multimode fiber optics cable system shall be capable of transmitting signals with a bandwidth per the performance parameters of the specified cable. The cumulative signal loss, through connectors, jumpers, couplers, and fiber cable, shall be no more than the manufacturer's stated dB loss based on cable length and 0.6 dB loss for each connector assembly.

C. Work station cable, commencing at the wiring blocks, shall be installed in accordance with ANSI/TIA/EIA-568-B.1 standard and shall be capable of transmitting a signal at 155 MBPS with acceptable performance in accordance with Category-6 performance requirements as specified in ANSI/TIA/EIA-568-B.2-1. The entire work station cable system, including wiring blocks, cable, and telecommunications outlets shall be tested for Category-6 compliance.

PART 2 PRODUCT AND INSTALLATION

2.1 GENERAL

A. Equipment shall be installed in accordance with the drawings and the manufacturer's requirements. General installation provisions are as follows:
1. Equipment Racks: Each rack shall be mounted such that the side rails are plumb. Each rack shall be affixed to the backboard at each of the mounting holes provided. Attachment shall be by 1/2" x 1-1/4" lag bolts. A 3/8" pilot hole shall be drilled for each lag bolt.
2. Wiring Blocks and Wire Management Components: Where required, wiring blocks and wire management components shall be mounted to the plywood backboard. Each device shall be mounted such that its horizontal dimension is level. In cases where more than one device is mounted, they shall be aligned vertically. Each device shall be affixed to the plywood backboard by means of screws suitable for fastening to plywood. A minimum of four (4) of the mounting holes provided shall be utilized for fastening.
3. Fiber and Copper Cable: Where fiber or copper cable enters an MDF or IDF it shall be affixed to the backboard via "D" Rings and cable ties in accordance with the attached drawings. All cable shall be neatly bundled, combed, and tied. All cable runs, within the MDF or IDF shall be horizontal or vertical within the constraints of minimum cable bending radii.
4. Fiber Optics Interconnect Equipment: Interconnect equipment may be mounted either on the plywood backboard or in the equipment racks, depending on the particular application and as noted on the drawings. When mounted on the backboard, the horizontal dimension shall be level. A minimum of four (4) of the mounting holes provided shall be utilized for fastening. Screws shall be tightened to the extent that they hold the device snug to the backboard, but not so tight as to distort or damage the device. Interconnect equipment mounted in racks shall be affixed to the rack by at least four (4) screws. The screws shall be of the correct size and thread configuration for the holes in the rack.
5. Labeling: With exception of work station cables, hand written labels are not acceptable. All labels shall be machine printed on clear or opaque tape, stenciled onto adhesive labels, or type written onto adhesive labels. The font shall be at least one-eighth inch (1/8") in height, block characters, and legible. The text shall be of a color contrasting with the label such that it may be easily read. If labeling tape is utilized, the font color shall contrast with the background. Patch panels shall exhibit workstation numbers, in sequential order, for all workstations served by the MDF or IDF.
Each fiber optics cable segment shall be labeled at each end with its respective IDF identifier. Each fiber interconnect device shall be labeled with its respective IDF identifier. Each telecommunications outlet shall be labeled with its respective work station number (machine labels only). Workstation numbers shall be comprised of the Building Designator-The Room Number-The Station Number (for example A-205-2). Each workstation cable shall be neatly hand labeled, using permanent ink or other permanent labeling medium, at each end with its respective workstation number. Each copper backbone cable shall be machine labeled at each end with its respective IDF number. Each binder group shall be tied off with its respective identifying ribbon at each break-out point.
For device floor boxes, the label shall be inside the box either on the back of the lid cover or adjacent to the device.
6. Warning Tags: At each location where the fiber cable is exposed to human intrusion, it shall be marked with warning tags. These tags shall be yellow or orange in color, and shall contain the warning: "CAUTION FIBER OPTIC CABLE". The text shall be, permanent, black, block characters, and at least 3/16" high. A warning tag shall be permanently affixed to each exposed cable or bundle of cables, at intervals of not less than five (5) feet. Any section of exposed cable which is less than five (5) feet in length shall have at least one warning tag affixed to it. Cables shall be tagged in pull boxes and at all locations not in conduit.

2.2 FIBER INNERDUCT

A. Description: From the MDF to each IDF segments of fiber optics innerduct shall be installed in the conduit system.
1. Product: Carlon or equal, minimum 1.25" OSP fiber optic cable innerduct, orange, corrugated, routed in conduit, with all necessary accessories.
1. Quantities Required: Innerduct runs do not have to be continuous throughout, breaks are expected at the pull boxes. Contractor is responsible for determination of actual lengths of innerduct required. Enough innerduct shall be provided and installed to extend from the fiber service loop in the MDF to the fiber service loop in each IDF. If the route passes through a pull box, the segments of innerduct shall extend twelve inches into the pull box. If the route passes through an enroute IDF, each segment of innerduct shall extend at least twelve inches beyond the end of the service conduit.

A. Installation: Fiber innerduct shall be installed in accordance with manufacturers instructions and industry standards. Within the equipment rooms, the innerduct shall extend from the end of conduit to four (4) feet above the floor and shall be affixed to the backboard by means of clamps designed for that purpose. Care shall be taken to avoid kinking the innerduct or applying excessive tension during the installation process.

2.3 FIBER DISTRIBUTION

A. Description: From the MDF to each IDF a **continuous segment** of fiber cable shall be installed. Routing shall be via conduit in accordance with electrical site drawings. Through each conduit section, the cable shall be housed in a 1-1/4" innerduct, care being taken not to exceed CEC specifications regarding conduit fill. The cable shall be suitable for subsurface installation. The cable shall not extend more than fifty (50) feet into the building interior unless enclosed in conduit.

B. Fiber Optic Cables:
1. 50 micron Multimode (MM) Fiber Parameters:
a. Fiber Size: 50.0/125/250 micron (core/clad/coating/)
b. Numerical Aperture: 0.200
c. Maximum attenuation dB/km at 850/1300 nm: 3.5/1.5.
d. Minimum LED bandwidth MHz-km at 850/1300 nm: 500/500.
e. Meets FDDI optical specifications and IBM 3044 channel extender.
f. Gigabit Ethernet distance guaranteed to 600/600 meters at 850/1300 nm respectively.
g. 10 Gigabit Ethernet distance guaranteed to 82/- meters at 850/1300 nm respectively.
2. Singlemode(SM) Fiber Parameters:
a. Single Mode/125/250 micron.
b. Maximum attenuation dB/km at 1310/1550 nm: 0.40/0.30. (1.0/0.75 for building cable)
c. Gigabit Ethernet distance guaranteed to 5,000 meters.
3. Site Cable Parameters:
a. Strength Member: Aramid.
b. Outside plant cable rated OFNR.
c. Cable shall be non-conductive per CEC 775-4.
d. Loose tube construction.
Fiber cables shall be Corning FREEDM or ALTOS All-Dielectric Loose Tube Cables, CommScope 8H and 5H cables, or equal. Strand count as indicated on plans (Provide with 12-strand MM and 6-strand SM cables where no strand count indicated). Cable construction shall consist of a central dielectric strength member, fiber in loose buffer tubes, surrounded by water blocking material, rip cord, dielectric strength member all around and a PE outer jacket.
4. Building Cable Parameters:
a. Tight buffered non-conductive.
b. OFNR or OFNP rated.
c. Utilizes 900 micron TBII buffered fibers.
Fiber cables shall be Siecor MIC Cables, CommScope 8H (SM) and 5H (MM), or equal. Strand count as indicated on plans (Provide 12-strand MM and 6-strand SM cables where no strand count indicated).
5. Singlemode cables shall not be terminated and shall be left "dark". Provide 15 ft. of excess cable at IDF/MDF bundled in tight loop.

C. Connectors: Connectors shall be 568SC type meeting ANSI/TIA/EIA-568-B and JIS specification, premium ceramic ferrule with composite housing, typical insertion loss of 0.2 dB, durability of $\leq$ 0.2 dB change at 500 matings, tensile strength of $\leq$ 0.2 dB change at 20 lbs., temperature cycling of $\leq$ 0.3 dB change from -40C to +75C for 40 cycles. Siecor, Leviton, AT&T or equal.

D. Fan-Out Kits: For termination of loose tube fiber cables. For buffer tube sizes of 2.4mmor 3.0mm, Siecor FAN-BTXX-XX series or Leviton 49887 series. Provide fan-out kits for terminating all fibers.

E. Installation: Installation shall be conducted following guidelines established by the product manufacturer and industry standards.
1. Fiber Optic Cable: During installation of the fiber optic cable segments into the conduit system, special care shall be taken to avoid damage to the cable. While under pulling tension, the cable shall not be bent into a curve with a radius of less than twenty (20) times the cable diameter. Pulling tension shall not exceed manufacturer's recommended maximum tensile load. Contractor shall utilize a winch with tension control or a "break-away" link designed to break away at or below the recommended maximum tension.
The fiber optic cable shall be routed through the conduit and onto the appropriate IDF backboard. Routing on the backboard shall be straight and plumb. A minimum ten (10) foot service loop shall be provided at each terminal location.

2.4 WORK STATION CABLE & JACKS

A. Description: From each IDF and MDF, provide data cable(s) to each work station (data outlets) served.
1. Product: 4 pair #24 or #23 UTP, Category-6, PVC jacket, third party verified to ANSI/TIA/EIA-568-B. Belden MediaTwist, CommScope Ultramedia, Mohawk/CDT AdvanceNet, SuperiorEssex DataGain 450, or equal, CM rated. Cables routed between floors or in air plenums shall be CMP plenum rated with same performance parameters. Shall be able to support 100/1000 MBPS TP-PMD/CDDI, 155 bps ATM. Guaranteed performance at 250Mhz:
a. Attenuation = 32.8 dB max.
b. NEXT = 38.3 dB min.
c. ACR = 5.5 dB min.
d. PS NEXT = 36.3 dB min.
e. PS ACR = 3.5 dB min.
f. ELFEXT = 20.8 dB min.
g. PS ELFEXT = 7.8 dB min.
h. Return Loss = 7.3 dB min.
2. Required Accessories and Quantities (Hard Wall Locations):
a. Wall Plate: Leviton Quickport Multi-media wallplates #42080-XXX (single gang and multi-gang), with designation windows, with blank fillers.
b. Category-6 Jacks: Leviton 61110-R*6, eXtreme6 series.
c. Miscellaneous: Provide appropriate modules with appropriate connectors for other system devices such as: #41084-FXF (F-connector), #41084-BXF (BNC-connector), etc.
3. At other than wall installations (i.e., raceways, floor boxes, etc.) provide Leviton Category-6 jacks to fit application.

B. Installation: Installation shall be conducted in accordance with guidelines established by the product manufacturer and industry standards. Wall plates shall be mounted such that their vertical dimension is plumb. Each wall plate shall be labeled with its respective work station number. Each modular mounting frame shall be labeled with its respective work station number.

2.5 INTERMEDIATE DISTRIBUTION FACILITIES (IDF)

A. Description: In situations where the cable route distance to the furthest workstation in the building is greater than one hundred meters, additional IDFs shall be constructed. Where closet space is available, each IDF shall utilize wall racks. Where closet space is not available, the IDF shall be in a cabinet.
1. Products and Quantities:
a. Modular Patch Panels: Rack mounted. Leviton eXtreme6 Category-6 patch panels #69586-UXX, up to 24 ports per rack space (1.75"), T568B configuration, in 12 or 24 port increments. One (1) port for each workstation served with a minimum of 12 spare ports are required. Minimum (1) 24 port patch panel. Provide as many patch panels as necessary to service all workstation cables plus the required spare count.
b. Wiring Blocks: Leviton #41AB6-1FT Category-6 110 type blocks.
2. Required Accessories and Quantities:
a. Wire Management: Leviton 49253-LPM (19"W x 1.75"H x 4"D) or #41150-019 velcro loops bar (where front space is limited) front, #49258-TWB tie bar rear. One set for each patch panel.
b. "D" Rings: Provide and install sufficient quantities of 2" and 3" "D" rings, at 12 inches on center on wall/backboard.

B. Installation: Installation shall be conducted in accordance with manufacturer's recommendations, industry standards, and this specification. Installation includes complete assembly, copper cables, and mounting of the wiring blocks.

2.6 TESTING AND DOCUMENTATION

A. Testing: Contractor shall test each multimode and single mode (where terminated) fiber strand and each pair of each twisted-pair copper cable. The Owner reserves the right to have a representative present during all or a portion of the testing process. If the Owner elects to be present during testing, test results will only be acceptable when conducted in the presence of the Owner.
1. Fiber Optics Cable: Each fiber strand shall undergo bi-directional testing for signal strength. In addition, one fiber of each cable shall be tested using an OTDR to verify length and continuity.
a. Test Equipment: Multimode: Siecor OM-100F and OS-100D or equivalent. OTDR test equipment.
b. Tests: Multimode Bi-directional signal attenuation at 850 and 1300 nm. Singlemode bi-directional signal attenuation testing at 1310 and 1550 nm, only if required to be terminated.
c. Test Criteria: Signal loss of for each fiber shall not be more than the loss summation due to cable length and 0.5 dB loss per connection assembly (Connector-to-connector) or 0.25 dB loss per connector, and 0.10 dB loss for each splice. Identify actual loss based on testing and calculated loss on test form. The tested loss (TL) shall be lower than the calculated loss (CL). The owner reserves the right to have fiber cables replaced and retested if the TL exceeds the CL.
2. Workstation Cable: Each workstation cable shall be tested from the Jack Panel to the data outlet to ANSI/TIA/EIA-568-B.2-1 Category-6 performance standards.
a. Test Equipment: HP Wirescope 350, Microtest Omniscanner-2 or equivalent. Must meet level III compliance in accordance with ANSI/TIA/EIA-568-B.
b. Tests: Signal Attenuation, Noise, Near End Cross-talk (NEXT), ELFEXT, Power sum NEXT, ACR, Return Loss, Cable Length, Propagation Delay and Delay Skew.
c. Test Criteria: The system shall be tested to Category-6 compliance. The test path shall include workstation jacks, station cables, and jack panels (Permanent Link Configuration). Where adapter (patch) cables are specified, the tests shall include the patch cables also (Channel Configuration). The owner reserves the right to have cables replaced and retested if performance parameters are not met.

B. Documentation: Contractor shall provide documentation to include test results and as-built drawings.
1. Work Station Cable: The results of the work station cable tests shall be provided in the form of print-outs from the test equipment.
2. As-Built Drawings: Provide reproducible vellum as-builts, full size indicating each outlet location and designation. Show IDF/MDF locations and cable designations terminated.

2.7 ACCEPTANCE

A. Acceptance of the Data Communications System, by Owner, shall be based on the results of testing, functionality, and the receipt of documentation. With regard to testing, all fiber segments and all workstation data cables must meet the criteria established. With regard to functionality, Contractor must demonstrate to Owner that specified data signals can be successfully transmitted, bi-directionally, from the MDF/IDF to and from some number of individual data outlets. The number of outlet locations to be tested shall be determined by Owner. With regard to documentation, all required documentation shall be submitted to Owner.

PART 3 EXECUTION

3.1 DIVISION OF WORK

A. Contractor shall install the data communications system as described in the preceding. Installation shall result in a functional system. The Scope of Work includes:
1. All necessary conduit and raceway.
2. Necessary trenching, backfill, replacement of landscape material, repair of damage to utilities or structures, replacement of asphalt and base, and replacement or repair to concrete flat work incidental to conduit or raceway installation.
3. Provide and install all equipment.
4. Supply and install all material discussed in this specification.
5. Test and document system, upon completion.
6. Supply and install all material necessary, whether or not discussed in this specification, to result in a complete and functional system.

END OF SECTION

SECTION 28 31 00
FIRE DETECTION AND ALARM SYSTEM

PART 1 GENERAL

The requirements of Section 26 00 00 and 26 05 00 apply to all work hereunder.

1.1 SCOPE

A. Furnish and install a low voltage programmable, networked fire alarm system as specified herein.

B. The fire alarm system shall conform to the California Electrical Code and NFPA 72 National Fire Code.

C. Installation of the fire alarm system shall not be started until detailed specifications and battery calculations for each component of the system have been approved by the Engineer and the Base Fire Marshal.

D. Upon completion of the installation of the fire alarm system, a satisfactory test of the entire system shall be made in the presence of the Base Fire Marshal.

1.2 RELATED SECTIONS

A. Comply with Division 1, General Requirements and documents referred to therein.

B. Provide all labor, equipment, and materials to complete the Fire Alarm System work in accordance with local and state regulations.

1.3 REFERENCES/APPROVALS

A. The entire installation, including materials and equipment shall meet or exceed the minimum standards and requirements of the following:
1. Underwriters' Laboratory Inc. listing service.
2. NFPA National fire codes.
3. State of California Title 24.

1.4 SYSTEM DESCRIPTION

A. The Fire Alarm System shall be a zoned, non-coded, electronically supervised, microprocessor based hardwired/analog system as manufactured by Edwards Systems Technology (EST).
1. It shall be complete with all necessary hardware, software and memory specifically tailored for this installation. It shall be possible to permanently modify the software on site by using an integral service console or plug in programmer. The burning of EPROM to store changes permanently is unacceptable. The main panel shall monitor and control every point and zone in the entire system. Programming of all system points shall be from the main panel.

B. Provide contacts for central station monitoring for alarm and trouble, as well as sprinkler flow and sprinkler tamper contracts. The central station monitoring agreement will be a function of the owner, and will not be included in this contract.

1.5 SUBMITTALS

A. Descriptive data for all products and materials. If any substitutions are rejected the specified product shall be provided.

B. Recommended application and installation methods, including area coverage for smoke detectors and fire alarm load for signaling appliances.

C. Information and data, such as drawings showing device locations and types, riser diagrams, wiring diagrams, approvals, test data, etc. required. Provide worst case voltage drop and battery calculations in the drawing package.

D. Complete shop drawings of all assembled products, including wiring diagrams.

E. Drawings identifying all terminals and illustrating all device wiring connections.

F. All equipment and materials used shall be standard components, regularly manufactured and of the same manufacture.

G. All systems and components shall have been thoroughly tested and proven in actual use.

1.6 PROJECT RECORD DOCUMENTS

A. Submit under provisions of General Conditions.

B. Record actual locations of initiating and signaling appliances. Include initiating device and control relay addresses on these documents.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum of ten years experience, and with service facilities within 100 miles of this project.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. The material specified is as manufactured by Edwards Systems Technology (EST) or equal. All products shall be from a single manufacturer.

2.2 FIRE ALARM CONTROL PANEL

A. The existing Control Panel is an Edwards Systems Technology EST3.

2.3 BOOSTER POWER SUPPLY

A. Booster Poser Supply: Self contained 24 VDC power supply with all necessary circuits to monitor and charge batteries, control and supervise four Class B and Class A NAC circuits and monitor two controlling inputs from external sources. Use: EST BPS6A.

2.4 INITIATION DEVICES

A. Smoke Detectors: Provide microprocessor based addressable photoelectric smoke detectors with separate base. Detectors shall store history log of alarms and troubles. Detectors shall have 32 different trouble codes and shall be able to alarm panel even when addressable data is not present. Use: EST SIGA-PS, SIGA-SB.

B. Heat Detectors: Provide microprocessor based addressable rate of rise detectors with separate base. Detectors shall store history log of alarms and troubles. Detectors shall have 32 different trouble codes and shall be able to alarm panel even when addressable data is not present. Use: EST SIGA-HRS, SIGA-SB.

C. Attic Heat Detectors: Provide 194 degrees F fixed temperature and rate of rise heat detectors with mounting plate. Use: EST 282B-PL.

2.5 ADDRESSABLE MODULES

A. Input Modules: Provide addressable input modules for all for all normally open zones such as waterflow and tamper switches. Modules shall store and report alarms and troubles and shall alarm system even upon loss of addressable data. Use: EST SIGA-CT1.

B. Control Relay Module: Provide addressable relay module where required for remote control. Use: EST SIGA-CR.

2.6 SIGNALING APPLIANCES

A. Visual Devices: Use wedge shaped strobes clearly labeled Fire in English. Polarize the strobes for supervised operation. Strobes shall provide a high intensity flashing light (candela to meet ADA) and shall be synchronized for visual signaling.

PART 3 EXECUTION

3.1 INSTALLATION

A. Installation shall be accomplished in a professional manner by manufacturer certified personnel regularly engaged in and experienced in this type of work.

B. All underground wiring shall meet CEC wet location listing requirements.

C. Use 18 AWG minimum size conductors for fire alarm addressable, hardwire and signal circuit conductors. Use 2 pairs of 16 gauge twisted pair for all network wiring. Install wiring in conduit.

D. All terminations shall be consistent as to the color of conductors throughout the system at like stations. Cables shall not be spliced in such a manner as to change the color code from one termination point to another.

E. No splices (joints) in wiring will be permitted except in terminal cabinets, junction boxes or equipment housing.

F. The entire system shall be checked by the contractor and shall test free of opens, grounds and shorts and shall be made to operate to the satisfaction of the Architect and Owner.

G. Conduct performance tests in presence of Fire Marshal after systems have been places into operation. Contractor shall furnish competent personnel for these tests. Contractor shall submit written certification stating that system and its component parts are as listed and approved by Base Fire Marshal, that installation conforms in all respects to requirements of National Electrical Code, NFPA 72 National Fire Code, that components used (and approved circuits) have not been modified or changed in any way to cause aforementioned approvals or guarantees to be void.

3.2 DEVICE MOUNTING

A. Locate outlets as noted on Drawings.

B. Install pull boxes and terminal cabinets as required in accessible spaces but do not install in finished areas unless approved by Architect.

3.3 MANUAL AND SUPPORTING DOCUMENTS

A. Furnish two copies of the following manuals:
1. Installation Service Manual.
2. Circuit Description.
3. Schematic Drawings.

END OF SECTION

ARCHITECT

MADI
ARCHITECTURE + PLANNING
333 1ST STREET, SUITE C
SAN FRANCISCO, CA 94105
303 POTRERO STREET, SUITE 7B
SANTA CRUZ, CA 95060
TEL: 800.725.0571

OWNER

SOLANO COMMUNITY COLLEGE

CONSULTANT

PROFESSIONAL STAMP:

LICENSED ARCHITECT FRANCIS F. CHAN No. C-7510 RENEWAL DATE STATE OF CALIFORNIA

PROJECT:

LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE
4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	-	-

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: -
CHECKED BY: -

SHEET NAME:

SPECIFICATIONS

DSA APPROVAL STAMP:
IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
02 114923
AC TM FLS SS
DATE 5.11.16

SHEET NUMBER:

A10.6A

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LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE + SOLANO COMMUNITY COLLEGE DISTRICT

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GENERAL NOTES:

1. MOUNTING HEIGHT IS TO THE CENTER OF EQUIPMENT, U.O.N. MOUNTING HEIGHTS OF SUSPENDED LIGHT FIXTURES ARE TO THE BOTTOM OF THE FIXTURE. U.O.N.
2. RECEPTACLES AND DEVICES INSTALLED ABOVE COUNTER SHALL HAVE THE BOTTOM OF COVER PLATE AT APPROX 2-INCHES ABOVE COUNTER OR BACKSPLASH.
3. CAP ALL EMPTY CONDUITS FOR FUTURE USE WATERTIGHT WITH MANUFACTURERS END CAP, WITH PULL STRING ATTACHED.
4. SEAL ALL EXTERIOR WALL PENETRATIONS WATERTIGHT WITH SILICONE GROUT.
5. SEAL ALL WALL AND CEILING PENETRATIONS WITH GROUT. WHERE CONDUITS PENETRATE FIRE RATED BARRIERS, SEAL PENETRATIONS WITH FIRE RATED COMPOUND TO MATCH OR EXCEED BARRIER RATING.
6. PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE SEALED AS REQUIRED BY CBC.
7. ALL CONDUITS AND BOXES ON THE EXTERIOR SHALL BE PAINTED TO MATCH THE ADJACENT FINISH.
8. WHERE FIRE RATED CONSTRUCTION IS REQUIRED (REFER TO ARCHITECTURAL DRAWINGS), DO NOT LOCATE ELECTRICAL OUTLET BOXES BACK-TO-BACK. PROVIDE MINIMUM 24" HORIZONTAL SEPARATION BETWEEN OUTLET BOXES PER CBC.
9. FIRE STOPPING SHALL BE PROVIDED WHERE PENETRATING ITEMS PASS ENTIRELY THROUGH BOTH PENETRATIVE MEMBRANES OF BEARING WALLS REQUIRED TO HAVE A FIRE-RESISTIVE RATING AND WALLS REQUIRING PROTECTED OPENINGS. FIRE STOPPING SHALL ALSO BE PROVIDED AT PENETRATIONS OF FIRE RESISTIVE FLOORS AND FLOORS WHICH ARE PART OF A CEILING-FLOOR ASSEMBLY. FIRE-STOPPING SHALL HAVE AN "F" AND/OR "T" RATING AS DETERMINED BY TESTS CONDUCTED IN ACCORDANCE WITH CBC STD. 43-6.
10. JUNCTION BOXES, CABINETS, EQUIPMENT ENCLOSURES, SWITCHES, PANELS, ETC. INSTALLED OUTDOORS, OR IN WET OR DAMP LOCATIONS, SHALL BE RATED NEMA-3R FOR OUTDOOR ENVIRONMENTS. PROVIDE MINIMUM 1/4" AIR GAP BETWEEN ENCLOSURE AND WALL SURFACE. PROVIDE GALVANIZED METAL CHANNELS FOR MOUNTING ENCLOSURE ONTO WALL AS REQUIRED.
11. ALL BOXES FOR LIGHT SWITCHES SHALL HAVE CIRCUIT ID HANDWRITTEN (WITH PERMANENT FELT PEN) ON THE BACK INSIDE OF THE BOX.
12. ALL RECEPTACLES SHALL HAVE CIRCUIT ID ON THE COVERPLATE. USE TYPEWRITTEN "CLEAR TAPE". CLEAN SURFACE BEFORE ADHESIVE TAPE IS APPLIED. SAMPLE, "HA-11".
13. ALL WIRING SHALL BE IN CONDUIT, ALL CIRCUITS SHALL BE CONCEALED EXCEPT THAT ON EXISTING SURFACE AND IN DRY LOCATIONS WHERE NECESSARY AND ACCEPTABLE TO THE ARCHITECT, SURFACE METAL RACEWAY (SMR) CAN BE USED, WIREMOLD OR EQUAL. 1/2" CONDUIT WITH LESS THAN 5#12 WIRES SHALL CORRESPOND TO A V200 RACEWAY, OTHERWISE USE V500; 3/4" CONDUIT SHALL CORRESPOND TO A V700; 1" CONDUIT SHALL CORRESPOND TO A V2000; 1-1/4" CONDUIT SHALL CORRESPOND TO A V2400BC. SMR SHALL BE IVORY COLOR AND SHALL BE SECURED TO SURFACES WITH 2 HOLE STRAPS. PROVIDE ALL FITTINGS, ADAPTERS, COUPLINGS, BOXES, ETC. AS REQUIRED FOR A COMPLETE SYSTEM. PROVIDE MATCHING SURFACE OUTLET BOX. PAINT TO MATCH ADJACENT FINISH.
14. DEVICE AND EQUIPMENT HEIGHTS SHALL BE COORDINATED WITH ARCHITECTURAL PLANS AND ELEVATIONS. CONFLICTS SHALL BE ADDRESSED TO THE ARCHITECT PRIOR TO ROUGH-IN.
15. COORDINATE EXACT LOCATION OF EXTERIOR WALL LIGHT FIXTURES, SPEAKERS, ETC. WITH ARCHITECTURAL ELEVATIONS.
16. ELECTRICAL CIRCUITS TO AC UNITS SHALL COME UP INSIDE OF AC CURBS, UNLESS THE AC UNIT DOES NOT ALLOW THIS.
17. IN CERTAIN ROOMS, CIRCUITING AND DEVICES/EQUIPMENT IN ONE ROOM ARE INDICATED TO BE SIMILAR TO ANOTHER ROOM'S. PROVIDE ALL SUCH CONDUIT, WIRING DEVICES, AND EQUIPMENT TO BE THE SAME AS THE OTHER ROOM INDICATED. MAKE NECESSARY MINOR ADJUSTMENTS FOR SIMILAR ROOMS THAT ARE OPPOSITE HAND, FLIP-FLOPPED, MIRRORED, OR MINOR WALL DIFFERENCES. THE FOLLOWING ITEMS ARE NOT INCLUDED IN THIS SIMILAR LAYOUT AND ARE SPECIFIC TO EACH ROOM, UNLESS SPECIFICALLY NOTED OTHERWISE.
   A. AIR CONDITIONING AND MECHANICAL EQUIPMENT CONNECTIONS.
   B. EQUIPMENT THAT IS N.I.E.S. BUT REQUIRE ELECTRICAL CONNECTIONS.
   C. LAYOUT OF THE CABLE SUPPORT SYSTEM (CABLE HOOKS OR CABLE TRAY).
18. NOT USED
19. FOR CONDUITS ROUTED BELOW FOOTING AT ELECTRICAL ROOMS, COORDINATE WITH STRUCTURAL DRAWINGS.

EXISTING CONDITIONS:

1. DEVICES / EQUIPMENT AND CIRCUITING SHOWN AS EXISTING AND/OR EXISTING TO BE REMOVED ARE BASED ON REVIEW OF EXISTING AVAILABLE DOCUMENTS AND VISUAL FIELD VERIFICATION. SUCH INFORMATION MAY NOT BE ACCURATE. PRIOR TO DEMOLITION AND CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS TO DETERMINE ACCURACY. WHERE EXISTING CONDITIONS DO NOT REFLECT THE INFORMATION SHOWN ON THE PLANS, AND WHERE CONTRACTOR'S INVESTIGATION CANNOT DETERMINE THE PROPER ADJUSTMENTS NEEDED TO MEET THE INTENT OF THE DESIGN, CONTRACTOR SHALL INFORM ARCHITECT.
2. EXISTING CIRCUITS AND HOMERUNS WERE BASED ON EXISTING DOCUMENTS.
3. REMOVED EQUIPMENT SHALL MAINTAIN CIRCUIT CONTINUITY FOR DEVICES / EQUIPMENT CONNECTED TO THE SAME CIRCUIT. EXTEND AND/OR REROUTE THE EXISTING CIRCUITS AS NEEDED.
4. REVISE EXISTING PANEL SCHEDULES TO REFLECT THE NEWLY CONNECTED LOADS AND SPARE CIRCUITS.
5. DO NOT REUSE ANY REMOVED MATERIALS SUCH AS CONDUIT, WIRING, AND BOXES.
6. PRIOR TO COMMENCEMENT OF WORK THE CONTRACTOR SHALL VERIFY AND DOCUMENT WITH THE OWNER THE PROPER FUNCTION AND PHYSICAL APPEARANCE OF EXISTING ELECTRICAL EQUIPMENT (DEVICES, LIGHTING, RECEPTACLES, ETC.) IN THE ROOM AND THE AREA OF WORK UNDER THIS CONTRACTOR. IF AFTER CONSTRUCTION ANY EXISTING EQUIPMENT IS DAMAGED OR DOES NOT FUNCTION PROPERLY, THE CONTRACTOR SHALL REPAIR OR REPLACE THE EQUIPMENT IN-KIND FOR PROPER FUNCTION AND APPEARANCE.

ELECTRICAL COMPONENT ANCHORAGE NOTE:

ALL ELECTRICAL COMPONENTS SHALL BE ANCHORED & INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAILS 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 6 AND 13.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. 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 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 CONDUIT.

A. 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.
B. 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 REQUIRED DETAILS ON THE 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 & EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE:

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 (OPM #) 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 ELECTRICAL DISTRIBUTION SYSTEMS.

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

TERMINAL CABINET SCHEDULE

DESIGNATION	SIZE			MOUNTING		NEMA-1	NEMA-3R
	W	H	D	SURFACE	FLUSH		
FATC-H	14"	24"	6"	■			■
STC-H	14"	24"	6"	■			■

NOTES:

1. ALL TERMINAL CABINETS SHALL BE NEMA-1 WITH HINGED DOORS, CYLINDER TYPE LOCKS, & 3/4" PLYWOOD BACKBOARD, U.O.N.
2. PROVIDE TERMINAL BLOCKS, TYPE AS REQUIRED.
   A. SIEMENS #66M1-50 WITH 89B STAND-OFF. MAKE FULL USE OF BRIDGE CLIPS.
   B. BUCHANAN #0525 SERIES. PROVIDE CHANNEL CLAMPS, CHANNEL AND END SECTIONS.

ABBREVIATIONS & DESIGNATIONS

(E)	EXISTING
FA	FIRE ALARM
FABP	FIRE ALARM SIGNAL BOOSTER PANEL
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
GND	GROUND
MT	EMPTY CONDIT WITH PULL CORD
MTC	CONDUIT WITH WIRING AS INDICATED OR AS REQUIRED
(N)	NEW
NIES	NOT IN ELECTRICAL SECTION OF THESE PLANS AND SPECIFICATIONS
STC	SIGNAL TERMINAL CABINET
UON	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF
15,30,75,110	FIRE ALARM VISUAL DEVICE SUBSCRIPTS- NUMBER INDICATES LIGHT INTENSITY

POWER AND SIGNAL SYSTEMS DURING CONSTRUCTION

1. POWER AND SIGNAL SYSTEMS: SYSTEMS SHUT-DOWNS SHALL BE COORDINATED WITH THE OWNER. SYSTEMS DOWN TIME SHALL OCCUR ONLY ON THE WEEKENDS AND DURING "OFF" HOURS. THE WEEKEND SHALL BE DEFINED AS FROM 5:00 PM FRIDAY TO THE NEXT 6:00 AM MONDAY. "OFF" HOURS SHALL BE DEFINED AS FROM 5:00 PM EVENING TO 6:00 AM THE NEXT MORNING. NORMAL BUSINESS HOURS SHALL BE DEFINED AS 6:00 AM MONDAY TO 5:00 PM FRIDAY WITHIN THE SAME WEEK. DURING BUSINESS HOURS, POWER SHALL BE PROVIDED AND SIGNAL SYSTEMS SHALL BE OPERATIONAL TO THE CAMPUS.
2. SIGNAL SYSTEMS SHALL INCLUDE TELECOR INTERCOM, PAGING, CLOCK SYSTEM, ADEMCO INTRUSION, DATA, VOIP TELEPHONE, TELEVISION, AND HARRINGTO FIRE ALARM.
3. THROUGHOUT CONSTRUCTION, THE ELECTRICAL AND SIGNAL SYSTEMS SHALL REMAIN IN OPERATION.
4. SIGNAL SYSTEMS: PROVIDE DEVICES AS SHOWN ON THE DRAWINGS AND ALL NECESSARY EQUIPMENT INCLUDING HARDWARE, WIRING AND PROGRAMMING FOR A COMPLETE AND OPERATIONAL SYSTEM PER SCHOOL DISTRICT REQUIREMENTS. COORDINATE WITH SCHOOL DISTRICT FOR SYSTEM OPERATIONS PRIOR TO BID. TEST SYSTEM TO COMPLY WITH MANUFACTURER'S OPERATION REQUIREMENTS. DEVICES AND EQUIPMENT ADDITIONS SHALL NOT VOID THE EXISTING EQUIPMENT WARRANTY.
5. LOCAL FIRE AUTHORITY SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF FIRE ALARM SHUT DOWN.

ELECTRICAL SYMBOLS LIST

SYMBOL	DESCRIPTION
	CONDUIT CONCEALED BELOW FLOOR OR GRADE.
	CONDUIT CONCEALED IN CEILING OR WALL.
	HOMERUN TO RESPECTIVE PANEL OR TERMINAL.
	INDICATES 1#12 (GREEN) GROUND WIRE; OTHER SIZES AS INDICATED.
NOTE:	BRANCH CIRCUIT WITHOUT FURTHER DESIGNATION IS A 2#12 WIRE CIRCUIT. FOR MORE THAN 2#12 WIRES AS FOLLOWS: 3#12, 4#12, ETC. FOR OTHER SIZES AS FOLLOWS: 3#10, 4#6, ETC.
	PULL-BOX WITH GROUND ROD, SEE DETAIL-B/E4.1A.
	PANELBOARD, SEE SCHEDULE.
	TERMINAL CABINET BACKBOARD.
	15 AMP DOUBLE DUPLEX RECEPTACLE MOUNT IN IDF.
	FIRE ALARM END OF LINE DEVICE.
	FIRE ALARM EXTERIOR HORN.
	FIRE ALARM HORN/STROBE, +80", 15cd, 75cd U.O.N.
	ADDRESSABLE 135° F CEILING HEAT DETECTOR, FIXED TEMPERATURE WITH R-O-R.
A	FIRE ALARM ADDRESSABLE 190° F ATTIC HEAT DETECTOR.
	ADDRESSABLE PHOTO-ELECTRIC CEILING SMOKE DETECTOR.
FACP	FIRE ALARM CONTROL PANEL.
FABP	FIRE ALARM BOOSTER PANEL.
FATC	FIRE ALARM TERMINAL CABINET.
MM	MONITOR MODULE.
CM	CONTROL MODULE.
T	TRANSFORMER
1 WAP	SINGLE DATA OUTLET WITH WIRELESS ACCESS PANEL, WALL MOUNTED, +9'-0".
2	DATA OUTLET WITH 2 PORTS, +18". To CENTER LINE To TOP OF BOX
	TELEPHONE HANDSET, WALL MOUNTED, +48". MATCH EXISTING SYSTEM.
IDF	INTERMEDIATE DISTRIBUTION FRAME.

OPEN WIRED LOW VOLTAGE CABLE WIRING NOTES:

(APPLICABLE TO LV SIGNAL SYSTEM WITHIN BUILDINGS.)

1. CABLE HOOKS SHALL ONLY BE USED WHERE SHOWN ON THE PLANS FOR OPEN WIRED LOW VOLTAGE CABLING IN DRY LOCATIONS INSTALLED ABOVE ACCESSIBLE T-BAR CEILINGS. ONLY LOW VOLTAGE LIMITED ENERGY CLASS-2 AND CLASS-3 SYSTEMS SHALL BE OPEN WIRED. ALL OTHER SYSTEM CLASSES SHALL BE ROUTED IN CONDUIT. OPEN WIRED CABLING SHALL BE RATED FOR THE ENVIROMENT THEY ARE INSTALLED. A GENERAL PURPOSE RATING, SUCH AS "CM" CAN BE USED ABOVE CEILINGS. IN PLENUM SPACES USED PLENUM RATED CABLES, & FOR RISER LOCATIONS USE RISER RATED CABLES.
2. SYSTEM SEPARATION:
   A. DATA AND TELEPHONE CABLES SHALL SHARE ONE SET OF CABLE HOOKS.
   B. ALL OTHER SIGNAL CABLING SHALL SHARE THE OTHER SET OF CABLE HOOKS.
3. CABLE HOOKS USED TO SUPPORT OPEN WIRED CABLES SHALL BE AS FOLLOWS:
   A. B-LINE #BCH32 (2", MAX 70 4-PR UTP CABLES)
   B. B-LINE #BCH64 (4", MAX 280 4-PR UTP CABLES).
   C. B-LINE #BCH21 (1 5/16", MAX. 30 4-PR UTP CABLES).

   DO NOT FILL TO MORE THAN 75% CAPACITY, CABLE HOOKS TO BE PRE-GALVANIZED STEEL, 1.5" WIDE WITH ROUNDED EDGES, STATIC CAPACITY OF 30 lbs. CABLE HOOKS SHALL BE EASILY ACCESSIBLE AND BE APPROXIMATELY 12 TO 24 INCHES ABOVE CEILING.
4. STUB 3/4" CONDUIT FROM DEVICE BOX TO WITHIN 24" OF CABLE HOOKS. FOR DATA AND TELEPHONE OUTLETS STUB 1" CONDUIT. CABLE HOOKS MAY BE USED INSTEAD OF CONDUIT ABOVE ACCESSIBLE CEILINGS.
5. SUPPORT CABLE HOOKS AT 48" ON CENTER. SECURE TO WALL STUDS ABOVE CEILING OR SUSPEND WITH MINIMUM 1/2" STEEL RODS. PROVIDE ALL NECESSARY FASTENERS, RODS, HANGERS, BLACKETS, ETC., AS NEEDED.
6. WHERE CABLES MUST PASS ABOVE CEILINGS THAT ARE NOT ACCESSIBLE OR ARE NOT T-BAR CEILINGS, THE CABLING SHALL BE ROUTED IN CONDUIT(S). PROVIDE CONDUIT TO SPAN THE SPACE THAT IS NOT ACCESSIBLE AND BETWEEN CABLE HOOK SYSTEMS.
7. CABLES THAT PASS THROUGH FIRE RATED WALLS, SEISMIC JOINTS, SOUND WALLS, COVERED (SHEETROCK, PLYWOOD) WALLS, ETC. SHALL PASS THRU IN CONDUIT SLEEVES. PROVIDE FIRE SEALANT FOR FIRE RATED WALLS TO MAINTAIN RATING.
8. CONDUIT EQUIVALENTS:
   (1) 2" J-HOOK = (1) 4" CONDUIT.
   (1) 4" J-HOOK = (2) 4" CONDUITS.
   (1) 1 5/16" J-HOOK = (1) 2" CONDUIT.
9. LENGTH OF EACH J-HOOK SHALL NOT EXCEED 12" IN LENGTH.

PLOT DATE: 03-28-16

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PROFESSIONAL STAMP:

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS

4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16

PROJECT CODE: SCCD-04

START DATE: -

DRAWN BY: HW-DB

CHECKED BY: DY

SHEET NAME:

ELECTRICAL SYMBOLS LIST, SCHEDULE, & NOTES

DSA APPROVAL STAMP:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC TM FLS SS
DATE 8/11/16

SHEET NUMBER:

E0.1A

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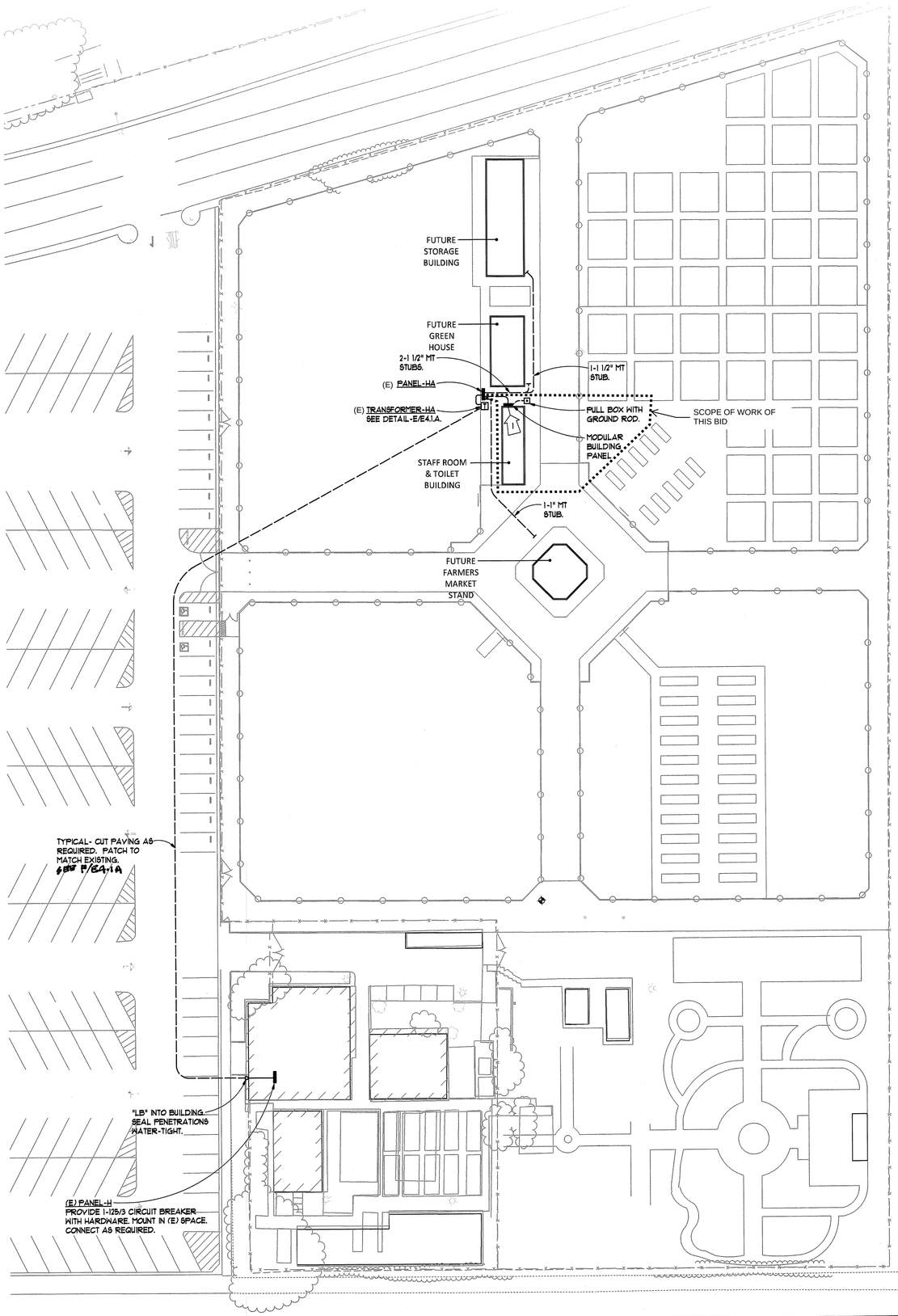
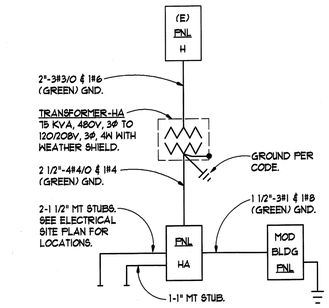


CONSTRUCTION NOTE:

1 PANELBOARD N.I.E.S. FURNISHED WITH TOILET BUILDING, CONNECT AS REQUIRED.



B / E1.1A PARTIAL ONE LINE DIAGRAM

NO SCALE

GND NEUT

PANEL-HA

MINIMUM AIC: 10,000
TYPE: NQOD-24-4AB-225
MOUNTING: ☐ FLUSH ☐ SURFACE ☒ FREESTANDING
MISC: NEMA-3R

VOLTAGE: ☒ 120/208 ☐ 480/277 ☐ 120/240
PHASE: ☐ 1-PHASE ☒ 3-PHASE
BUSS AMPS: 225 ☒ CU ☐ AL
MAIN AMPS: 225 ☐ MLO ☒ BKR
FED FROM: PANEL-H

KVA	USE	BKR	No.	Phase	No.	BKR	USE	KVA
.	TOILET	125/2	1	A	2	20/1	FARM STAND	.
			3	B	4	50/2	GREEN HOUSE	.
			5	C	6			
.	STORAGE BLDG.	100/3	7	A	8	1P	SPACE	.
			9	B	10			
.	FARMERS MARKET	20/1	11	C	12			
	SPARE		13	A	14			
			15	B	16			
			17	C	18			
			19	A	20			
			21	B	22			
			23	C	24			

LOAD KVA: .

A / E1.1A POWER SITE PLAN

SCALE: 1" = 30'-0"

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PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS
4000 Suisun Valley Rd, Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: HW-DB
CHECKED BY: DY

SHEET NAME:

POWER SITE PLAN

DSA APPROVAL STAMP:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC TM FL SS AV
DATE 5 11 16

SHEET NUMBER:

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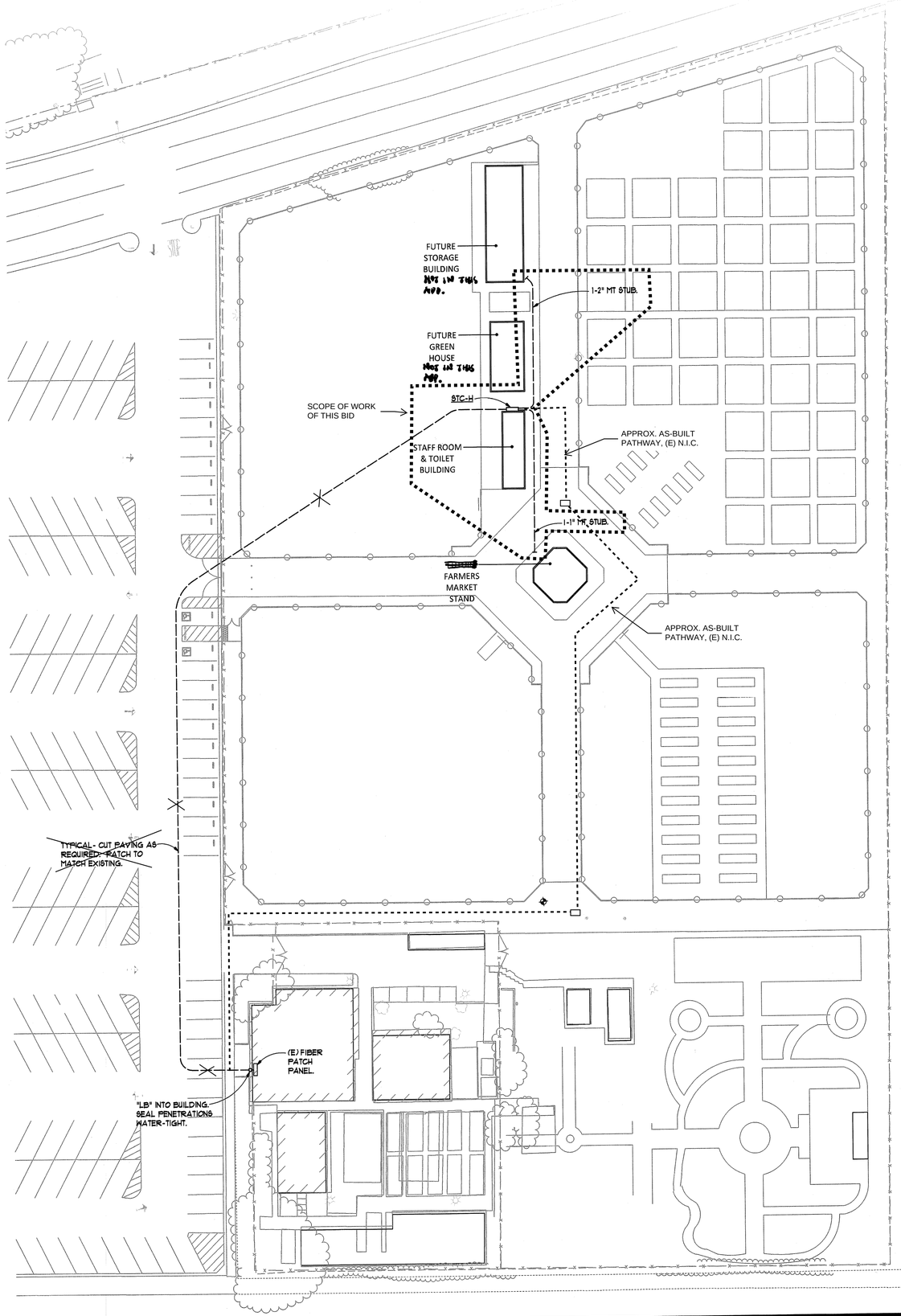
PLOT DATE: 03-28-16



A E1.2A SIGNAL SITE PLAN
SCALE: 1" = 30'-0"

PLOT DATE: 03-28-16

ARCHITECT

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PROFESSIONAL STAMP:

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS

4000 Suisun Valley Rd,
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REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: HW-DB
CHECKED BY: DY

SHEET NAME:
SIGNAL SITE PLAN

DSA APPROVAL STAMP:

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02 114923
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DATE 3/11/16

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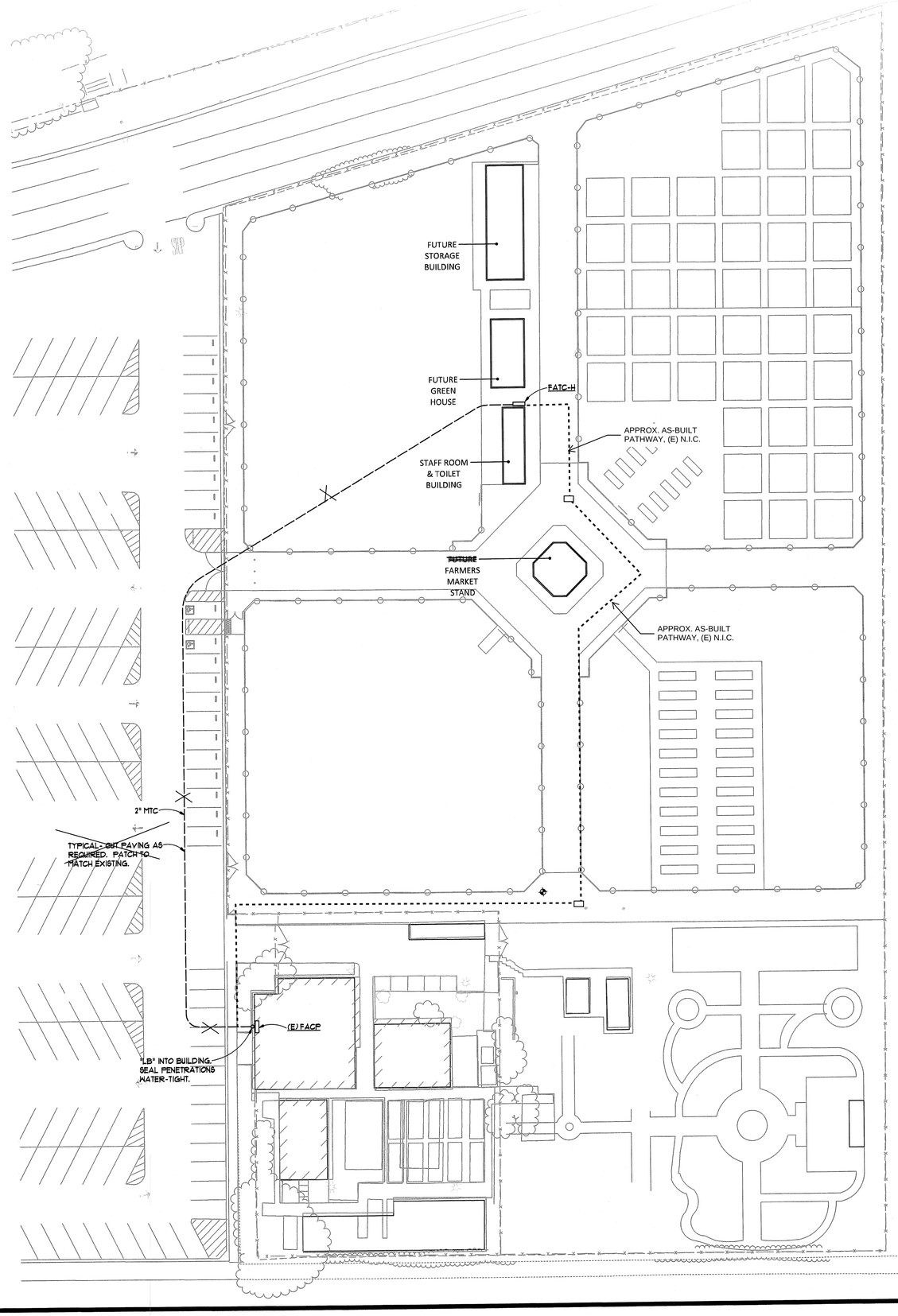

A E1.3A FIRE ALARM SITE PLAN

SCALE: 1" = 30'-0"

PLOT DATE: 03-28-16

ARCHITECT

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PROFESSIONAL STAMP:

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS

4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

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-	DSA SUBMITTAL	3/7/16

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: HW-DB
CHECKED BY: DY

SHEET NAME:

FIRE ALARM SITE PLAN

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POST-INSTALLED ANCHORS:

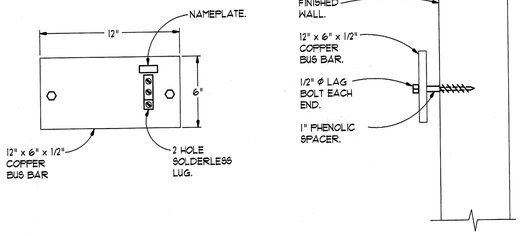
1. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS GIVEN IN THE ICC REPORTS:
   HILTI KWIK BOLT TZ - ESR-1917
2. SPECIAL INSPECTION IS REQUIRED FOR ALL POST INSTALLED ANCHORS.
3. TEST EACH ANCHOR OF DIFFERENT DIAMETER AND EMBEDMENT DEPTH FOR EACH TYPE AND STRENGTH OF CONCRETE PER 2013 CBC 1913A.1.3:
   A. ANCHORS USED FOR SILL PLATE BOLTING SHALL HAVE 10 PERCENT OF THE ANCHORS TESTED.
   B. ANCHORS USED FOR OTHER STRUCTURAL APLLICATIONS SHALL HAVE 100% OF THE ANCHORS TESTED.
   C. ANCHORS USED FOR NONSTRUCTURAL APPLICATIONS SUCH AS EQUIPMENT ANCHORAGE SHALL HAVE 50 PERCENT OR ALTERNATE BOLTS IN A GROUP, INCLUDING AT LEAST ONE-HALF THE ANCHORS IN EACH GROUP, TESTED.
4. THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
   A. HYDRAULIC RAM METHOD: THE ANCHOR MUST NOT EXHIBIT OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD MAINTAINED FOR A MINIMUM OF 15 SECONDS. FOR WEDGE AND SLEEVE TYPE ANCHORS, A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE. DROP-IN ANCHORS ARE ONLY TO BE TESTED WITH THIS METHOD. SCREW ANCHORS MAY BE LOOSENED A MAXIMUM OF ONE FULL TURN TO FACILITATE THE POSITIONING OF A TENSION TEST COLLAR. FOLLOWING THE TENSION TEST, THE ANCHOR SHALL BE RE-TORQUED, IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
   B. TORQUE WRENCH METHOD: ANCHORS TESTED WITH A CALIBRATED TORQUE WRENCH MUST ATTAIN THE SPECIFIED TORQUE WITHIN ½ TURN OF THE NUT. (EXCEPTION: ¼ TURN OF THE NUT FOR ⅜"Ø ANCHORS). THE TORQUE VALUES SHALL BE PER THE SCHEDULE BELOW OR THE SPECIFIC ANCHORAGE DETAILS.
   C. IF ANCHOR FAILS TESTING, ALL ANCHORS OF THE SAME CATEGORY, NOT PREVIOUSLY TESTED, SHALL BE TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS THE TEST REQUIREMENTS. THE INITIAL TESTING FREQUENCY SHALL THEN BE RESUMED.
5. WHEN INSTALLING DRILLED IN ANCHORS AND/OR POWDER DRIVEN PINS IN EXISTING CONCRETE OR MASONRY, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING EXISTING REINFORCING BARS.
6. THE TESTING OF THE ANCHORS SHALL BE DONE BY THE TESTING LABORATORY IN THE PRESENCE OF THE PROJECT INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE GOVERNING AGENCY AND ARCHITECT/ STRUCTURAL ENGINEER. TESTING SHALL OCCUR AT MINIMUM OF 24 HOURS AFTER THE INSTALLATION OF THE ANCHORS.
7. TEST EQUIPMENT IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.
8. NEW BARS DOWELLED AND EPOXIED INTO AN EXISTING SLAB-ON-GRADE DO NOT NEED TO BE TENSION TESTED.
9. TEST VALUES SHALL BE PER THE SCHEDULE BELOW OR THE SPECIFIC ANCHORAGE DETAILS.
10. ALL TESTS SHALL BE PERFORMED IN THE PRESSENCE OF THE INSPECTOR OF RECORD.

POST-INSTALLED ANCHOR TEST SCHEDULE

ANCHOR TYPE	ANCHOR DIAMETER	EFFECTIVE EMBEDMENT DEPTH	TENSION TEST	TORQUE TEST	BASE MATERIAL
HILTI KWIK BOLT TZ	3/8"	2"	-	25 FT-LBS	CONCRETE
		-	-	-	-
HILTI KWIK BOLT TZ	1/2"	2"	-	40 FT-LBS	CONCRETE
		3 1/4"	-	40 FT-LBS	CONCRETE
HILTI KWIK BOLT TZ	5/8"	3 1/8"	-	60 FT-LBS	CONCRETE
		4"	-	60 FT-LBS	CONCRETE

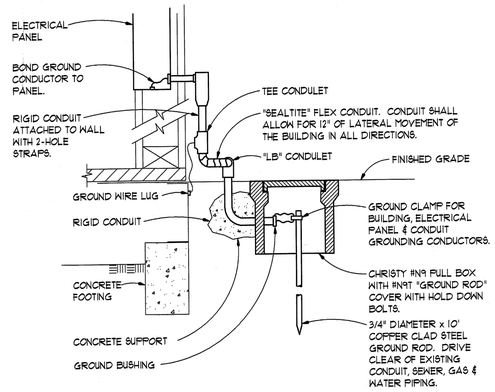
NOTE:

CONNECT TO BUILDING GROUNDING SYSTEM WITH #6 (GREEN) GND.



C E4.1A GROUND BUS DETAIL

NO SCALE

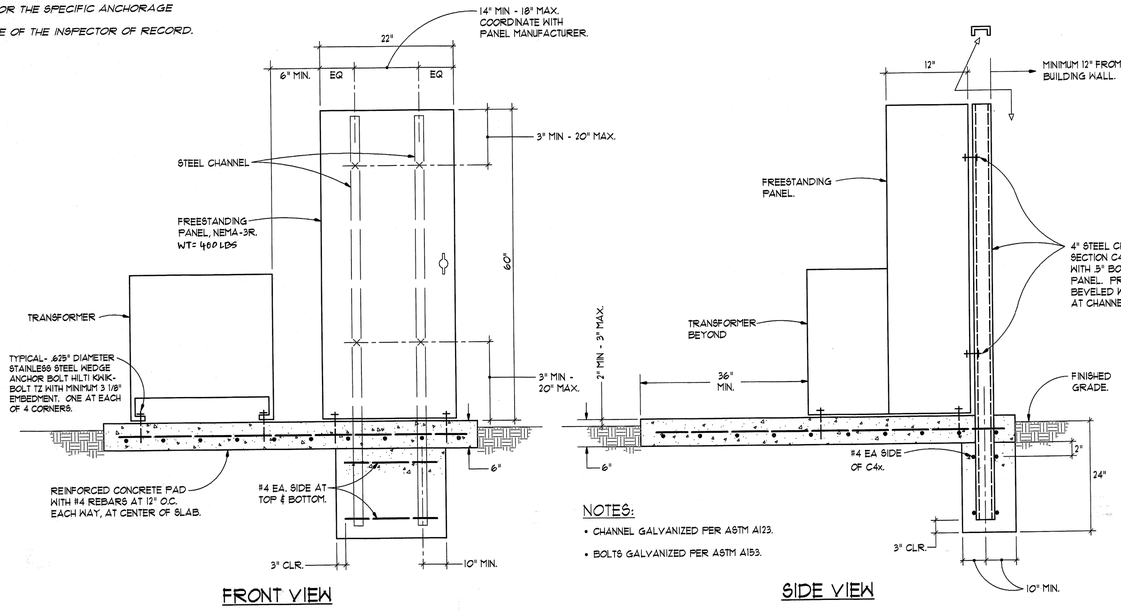


NOTES:

1. SIZE OF CONDUCTORS SHALL COMPLY WITH CEC TABLE 250-94.
2. BOND THE GROUND ROD TO METAL WATER PIPE, IF AVAILABLE.
3. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL AND TO METAL BUILDING FRAME (CEC 250-81) IN ADDITION TO THE DETAIL SHOWN ABOVE. BOND THE ELECTRICAL GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10 FEET INTO THE SOIL IF AVAILABLE (CEC 250-81 AND 250-83).
4. CHECK RESISTANCE TO GROUND. IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS WITH CONDUCTORS AS SHOWN, SEPARATED AT LEAST 6'-0", UNTIL RESISTANCE IS REDUCED TO 25 OHMS OR LESS. FORWARD TEST RESULTS TO ENGINEER.

B E4.1A GROUNDING DETAIL

NO SCALE

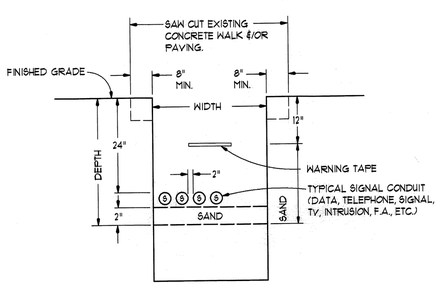


NOTES:

- CHANNEL GALVANIZED PER ASTM A123.
- BOLTS GALVANIZED PER ASTM A153.

E E4.1A PANEL AND TRANSFORMER MOUNTING DETAILS

NO SCALE

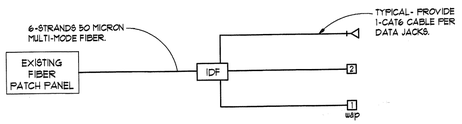


NOTES:

1. MAINTAIN MINIMUM SEPARATION OF CONDUITS OF DIFFERENT SYSTEMS AS SHOWN.
2. MAINTAIN A MINIMUM OF 2" SEPARATION BETWEEN ALL CONDUITS AND BETWEEN CONDUITS AND SIDE WALL TO ALLOW SAND TO FILL ALL GAPS.
3. BACKFILL SHALL BE AS FOLLOWS:
   A. SAND FROM BOTTOM TO LAST 12".
   B. REMAINDER OF BACKFILL TO BE FINE NATIVE EARTH.
4. TOTAL WIDTH AND DEPTH OF TRENCH SHALL BE VERIFIED AND COORDINATED ON JOB SITE.

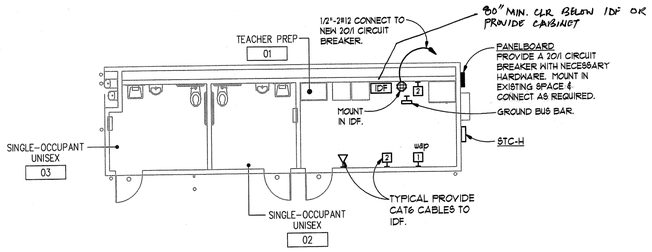
F E4.1A TYPICAL- TRENCH DETAIL

NO SCALE



D E4.1A DATA/TELEPHONE RISER DIAGRAM

NO SCALE



A E4.1A RESTROOM SIGNAL FLOOR PLAN

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

PLOT DATE: 05-10-16

ARCHITECT

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PROFESSIONAL STAMP:

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS

4000 Suisun Valley Rd, Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: HW-DB
CHECKED BY: DY

SHEET NAME:
SIGNAL FLOOR PLANS

DSA APPROVAL STAMP:

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT 02 114923 APPROVED DATE 5/11/16

SHEET NUMBER:

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FIRE ALARM EQUIPMENT SCHEDULE

SYMBOL	EQUIPMENT / DEVICE	MANUFACTURER AND MODEL NUMBER	CSFM LISTING NO.	STANDBY AMPS	ALARM AMPS
(E) FACP	(E) FIRE ALARM CONTROL PANEL	EDWARDS #EST-3	7165-1651:186	(E)	(E)
FABP	FIRE ALARM BOOSTER PANEL	EST-BPS6A	7300-1651-229	.070	.190
CM	CONTROL RELAY MODULE	EST# SIGA-CR	7300-1651-121	.0001	.0001
MM	MONITOR MODULE	EST# SIGA-CT1	7300-1651-121	.00025	.0004
S	ADDRESSABLE SMOKE DETECTOR	EST# SIGA-PS	7272-1651:126	.000045	.000045
H	ADDRESSABLE HEAT DETECTOR (135°F)	EST# SIGA-HRS	7270-1651:125	.000045	.000045
H A	CONVENTIONAL ATTIC HEAT DETECTOR (190°F)	EST# 284B-PL	7270-1651:109	0	0
EXT WP	EXTERIOR HORN	WHEELOCK #AH-24	7125-0785:131	0	.062
HORN 15	HORN/STROBE (15cd)	WHEELOCK #AS-24MCW-FR	7125-0785:131	0	.08

NOTES:

1. WALL MOUNTED DEVICES SHALL BE "RED".
2. CEILING MOUNTED DEVICES SHALL BE "WHITE".

FIRE ALARM WIRE SCHEDULE

DESIG.	DESCRIPTION	USE	SYSTEM	O.D. (inches)	AREA (sq. inches)
F1	1 PR.#16, STP, ADDRESSABLE LOOP, FPL LON CAP, NFW #D991	BLDG., INITIATING	FIRE ALARM	0.226	0.0401
F2	1 PR.#14, STP, ADDRESSABLE LOOP, FPL, WET LOC., LON CAP, NFW #AQ295	SITE, INITIATING		0.35	0.0962
F3	2#12, THHN	BLDG. SIGNAL		0.13 EA.	0.0265
F4	2#10, THHN	SITE, SIGNAL		0.164 EA.	0.0422
F5	2#14 FPL	HARDWIRED INT.			

VOLTAGE DROP CALCULATIONS

FABP

SIG CKT#	N1			
DEVICE	1st	2nd	3rd	4th
GAUGE	12.00	12.00	12.00	12.00
DISTANCE (FT)	33	21	16	18
AMPS @ DEVICE	.08	.08	.062	.08
AMPS DEVELOPED	.302	.222	.142	.08
VOLT DROP	.04	.0188	.09	.006

SIGNAL CIRCUIT#	N1
AMPS DEVELOPED	.302
TOTAL CKT. V.D.	.155
CKT. VOLTAGE	24.0
ESTIMATED VOLTAGE AT LAST DEVICE ON CIRCUIT	23.845
% VOLTAGE DROP	0.65

VOLTAGE DROP FORMULAS

VD= VOLTAGE DROP

L = ONE WAY LENGTH OF CIRCUIT (IN FEET)

R = CONDUCTOR RESISTANCE (IN OHMS/FEET)

I = LOAD CURRENT (IN AMPS)

$VD = \frac{2 \times L \times R \times I}{1000}$

$\%VD = \frac{VD}{24} \times 100$ (DEVICE VOLTAGE)

FIRE ALARM MONITORING NOTE

AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AS AMENDED BY ARTICLE 9I. THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUJS BY UNDERWRITER'S LABORATORY OR SHALL MEET THE REQUIREMENTS OF FACTORY MUTUAL RESEARCH APPROVAL STANDARD 3011.

BATTERY CALCULATION WORKSHEET

EQUIPMENT / DEVICE	QUANTITY	DEVICE STANDBY CURRENT (AMPS)	TOTAL STANDBY CURRENT (AMPS)	DEVICE ALARM CURRENT (AMPS)	TOTAL ALARM CURRENT (AMP)
(E) FIRE ALARM CONTROL PANEL- (E) FACP	1	(E)	(E)	(E)	(E)
ADDRESSABLE SMOKE DETECTOR	1	.000045	.000045	.000045	.000045
ADDRESSABLE HEAT DETECTOR (135°F)	3	.000045	.000135	.000045	.000135
CONVENTIONAL ATTIC HEAT DETECTOR (190°F)	1	0	0	0	0
MONITOR MODULE	2	.00025	.00050	.0004	.0008
CONTROL MODULE	1	.0001	.0001	.0001	.0001
		TOTALS:	.00078		.00108 AMPS

NOTES:

BATTERY CALCULATIONS FOR 24 HOURS (STANDBY) PLUS 15 MINUTES (ALARM).

(TOTAL STANDBY CURRENT) (24 HRS) + (TOTAL ALARM CURRENT) ($\frac{15}{60}$ h) x (25%) = MIN. BATTERY AMP HRS. REQ'D.

(.00078) (24 HRS) + (.00108) ($\frac{15}{60}$ h) x (25%) = .0241 AMP HOUR (MINIMUM BATTERY)

ADDED LOAD = .024I

(E) BATTERY PROVIDED = 7.0 Ahr.

(N) BATTERY PROVIDED = 12.0 Ahr.

BATTERY CALCULATION WORKSHEET

EQUIPMENT / DEVICE	QUANTITY	DEVICE STANDBY CURRENT (AMPS)	TOTAL STANDBY CURRENT (AMPS)	DEVICE ALARM CURRENT (AMPS)	TOTAL ALARM CURRENT (AMP)
FIRE ALARM BOOSTER PANEL- FABP	1	.07	.07	.190	.190
FIRE ALARM EXTERIOR HORN	1	0	0	.062	.062
FIRE ALARM WALL HORN/STROBE (15cd)	3	0	0	.080	.240
		TOTALS:	.07 AMPS		.492 AMPS

NOTES:

BATTERY CALCULATIONS FOR 24 HOURS (STANDBY) PLUS 15 MINUTES (ALARM).

(TOTAL STANDBY CURRENT) (24 HRS) + (TOTAL ALARM CURRENT) ($\frac{15}{60}$ h) x (25%) = MIN. BATTERY AMP HRS. REQ'D.

(.07) (24 HRS) + (.492) ($\frac{15}{60}$ h) x (25%) = 2.254 AMP HOUR (MINIMUM BATTERY)

BATTERY PROVIDED = 7.0 Ahr.

FIRE ALARM DEVICE SEQUENCE OF OPERATION MATRIX

INITIATION / RESPONSE	MANUAL PULL STATION	AREA SMOKE DETECTORS	HEAT DETECTOR	DUCT DETECTOR	ELEVATOR RECALL	TROUBLE CONDITION (SHORT, OPEN, POWER FAILURE)
ANNUNCIATE AT FACP	YES	YES	YES	YES	YES	YES
ACTIVATE AUDIBLE & VISIBLE ALARMS THROUGH OUT CAMPUS	YES	YES	YES	YES	YES	NO
ACTIVATE EVAC SYSTEM THROUGH OUT CAMPUS	YES	YES	YES	YES	YES	NO

FIRE ALARM PROJECT NOTES:

A. BEFORE REQUESTING FINAL APPROVAL OF THE INSTALLATION THE INSTALLING CONTRACTOR SHALL FURNISH A WRITTEN STATEMENT TO THE PROJECT INSPECTOR TO THE EFFECT THAT THE SYSTEM HAS BEEN INSTALLED AND TESTED IN ACCORDANCE WITH THE (2013) NFPA 72 SECTION 14.4.1.

B. AUTOMATIC FIRE ALARM SYSTEMS SHALL TRANSMIT THE ALARM, SUPERVISORY AND TROUBLE SIGNALS TO AN APPROVED SUPERVISING STATION AS REQUIRED BY NFPA 72 AND CBC 907.6.5.2 THE SUPERVISING STATION SHALL BE LISTED AS EITHER UUFX OR UUJS BY UL OR SHALL MEET THE REQUIREMENTS OF FM STANDARD 3013.

C. THE FIRE ALARM CONTRACTOR SHALL PROVIDE A SUFFICIENT NUMBER OF HORNS AND QUANTITY OF STROBES AND LOCATIONS TO MEET THE AUDIBILITY AND VISUAL REQUIREMENTS OF 2013 NFPA 72. HORNS AND STROBES SHOWN ON THE DRAWINGS ARE A MINIMUM AND SHALL NOT BE REDUCED FROM THE FINAL INSTALLATION.

D. AFTER INSTALLATION AND TESTING OF THE FIRE ALARM SYSTEM, AN INDEPENDENT AUDIBILITY TEST SHALL BE PERFORMED BY A QUALIFIED THIRD PARTY TESTING AGENCY, PROVIDED BY THE CONTRACTOR PRIOR TO ACCEPTANCE OF THE SYSTEM. ANY CHANGES REQUIRED DUE TO THE RESULTS OF THE AUDIBILITY TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT AS NECESSARY TO BRING THE SYSTEM INTO 2013 NFPA 72, ANNEX D COMPLIANCE.

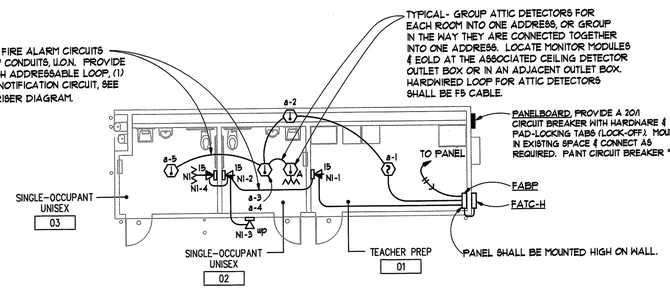
E. ALL FIRE ALARM CABLE SHALL BE INSTALLED IN CONDUIT. ALL CONDUIT SHALL BE INSTALLED WITH COMPRESSION FITTINGS FOR COUPLERS AND BOX CONNECTORS.

F. THE FIRE ALARM SYSTEM IS AN ADDRESSIBLE SYSTEM.

FIRE ALARM SYSTEM NOTES:

1. THE FIRE ALARM SYSTEM IS A COMPLETE PLAN SUBMITTAL.
2. THE FIRE ALARM SYSTEM SHALL CONFORM TO THE CALIFORNIA BUILDING CODE (CBC) SECTION 907; THE CALIFORNIA ELECTRICAL CODE (CEC) ARTICLE 760 AND THE CALIFORNIA FIRE CODE (CFC) SECTION 907.

   UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE DIVISION OF THE STATE ARCHITECT (DSA) INSPECTOR OF RECORD.
3. INSTALLATION OF THE FIRE ALARM SYSTEM SHALL NOT BE STARTED UNTIL DETAILED PLANS AND SPECIFICATIONS, INCLUDING CALIFORNIA STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM, VOLTAGE DROP CALCULATIONS, AND BATTERY CALCULATIONS HAVE BEEN SUBMITTED AND APPROVED. IF THE INFORMATION ON THE BID DRAWINGS ARE REUSED AS THE SUBMITTAL DRAWINGS, CLOUD ALL CHANGES.
4. ALL CEILING HEAT AND SMOKE DETECTORS SHALL BE LOCATED AWAY FROM THE SUPPLY AIR REGISTER, DISTANCE AS RECOMMENDED BY EQUIPMENT MANUFACTURER.
5. BASIC SOUND AND PATTERN OF THE NEW FIRE ALARM AUDIBLE DEVICES SHALL SOUND THE CALIFORNIA FIRE ALARM SIGNAL IN TEMPORAL MODE.
6. PROVIDE COMPLETE SYSTEM WIRING. ALL WIRING SHALL BE IN MINIMUM 3/4" CONDUIT. NO OTHER SYSTEMS WIRING SHALL BE ROUTED IN THE FIRE ALARM CIRCUITS. HARDWIRED INITIATING CIRCUITS SHALL BE MINIMUM #14 THHN/THWN. SYSTEMS WIRING SHALL BE PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND THEIR REQUIREMENTS.
7. THE FIRE ALARM SYSTEM SHALL COMPLY WITH A TOTAL COVERAGE FULLY AUTOMATIC SYSTEM. DETECTORS SHALL BE INSTALLED IN ALL AREAS WHERE REQUIRED BY THE APPROPRIATE NFPA STANDARD OR THE AUTHORITY HAVING JURISDICTION. EACH INSTALLED DETECTOR SHALL BE ACCESSIBLE FOR PERIODIC MAINTENANCE AND TESTING. PROVIDE ACCESS DOORS AS REQUIRED. TOTAL COVERAGE SHALL INCLUDE ALL ROOMS, STORAGE AREAS, ATTICS, SPACES ABOVE SUSPENDED CEILINGS, AND OTHER SUBDIVISIONS AND ACCESSIBLE SPACES. INACCESSIBLE AREAS SHALL NOT BE REQUIRED TO BE PROTECTED BY DETECTORS UNLESS THEY CONTAIN COMBUSTIBLE MATERIAL, IN WHICH CASE THEY SHALL BE MADE ACCESSIBLE AND BE PROTECTED BY DETECTOR(S).
8. ALARM-INDICATING DEVICES OF A FIRE ALARM SYSTEM INTENDED TO ALERT ALL OCCUPANTS SHALL CAUSE A LEVEL OF AUDIBILITY OF NOT LESS THAN 15 dBA ABOVE THE AVERAGE AMBIENT NOISE LEVELS OR 5 dBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF 60 SECONDS WHICH-EVER IS GREATER, MEASURED 5'-0" ABOVE THE FLOOR. AMBIENT NOISE LEVELS MEANS THE LEVEL WHICH CAN NORMALLY BE EXPECTED WHEN THE FACILITY, BUILDING, ROOM OR AREA IS FUNCTIONING UNDER NORMAL OPERATING OR WORKING CONDITIONS (NFPA 72, SEC. 18.4.3.1.).
9. THE AUTOMATIC FIRE ALARM SYSTEM SHALL COMPLY WITH SENATE BILL NO. 575 (SB575) & CBC 907.2.3.7. FOR NEW CONSTRUCTION PROJECTS.
10. THE LOCATION OF AUTOMATIC DETECTORS, MANUAL STATIONS AND OTHER FIRE ALARM EQUIPMENT AND DEVICES, AS SHOWN ON PLAN, ARE FOR REFERENCE ONLY AND DO NOT CONSTITUTE SHOP DRAWINGS WHICH ARE REQUIRED FOR REVIEW AND APPROVAL.
11. THE ALARM SYSTEM SHALL ACTIVATE A MEANS OF WARNING THE HEARING IMPAIRED. FLASHING VISUAL WARNINGS SHALL HAVE A FLASH RATE NOT EXCEEDING TWO FLASHES PER SECOND (2 HZ) NOR BE LESS THAN ONE FLASH EVERY SECOND (1 HZ.). STROBE SIGNALING DEVICES FOR THE HEARING IMPAIRED SHALL BE STATE FIRE MARSHAL APPROVED AND LISTED (NFPA 72, SEC. 18.5.2.1.).
12. POWER SERVICE SHALL BE ON A DEDICATED BRANCH CIRCUIT WITH A RED MARKING AND IDENTIFIED AS "FIRE ALARM CIRCUIT CONTROL".
13. AUDIBLE FIRE ALARM SOUND LEVEL SHALL BE AT LEAST 15 dBA ABOVE AVERAGE AMBIENT SOUND LEVEL IN ALL OCCUPIABLE AREAS. (ie. CLASSROOM AVERAGE AMBIENT ROOM NOISE IS 45 dBA PLUS 15 dBA EQUALS = 60 dBA MINIMUM ALARM TONE REQUIRED). SYNCHRONIZE AUDIBLE SIGNAL PER NFPA 72: 18.4.2.5.
14. STROBES SHALL FLASH AT A RATE NOT EXCEEDING TWO FLASHES PER SECOND NOR BE LESS THAN ONE FLASH EVERY SECOND. SYCNCHRONIZE STROBE FLASH PER NFPA 72: 18.5.4.3.2.
15. CBC Sec. 907.5.2: AUDIBLE SIGNALS INTENDED FOR OPERATION IN THE PUBLIC MODE SHOULD HAVE A SOUND LEVEL OF NOT LESS THAN 75 dBA AT 10 FEET OR MORE THAN 110 dBA AT THE MINIMUM HEARING DISTANCE FROM THE AUDIBLE APPLIANCE.
16. FINAL FIRE ALARM TEST SHALL BE MADE WITH THE DSA INSPECTOR OF RECORD (IOR). LOCAL FIRE AUTHORITY SHALL BE NOTIFIED OF DATE AND TIME OF FINAL FIRE ALARM TESTING AND SHALL ASSIST/WITNESS SUCH TESTING WHEN ABLE.
17. THE INSTALLING CONTRACTOR SHALL PROVIDE A RECORD OF COMPLETION PER NFPA 72. SECTION 14.6, FIGURE 14.6.2.4 & CBC 907.12 TO THE INSPECTOR OF RECORD (IOR) / DSA AFTER COMPLETION OF OPERATIONAL ACCEPTANCE TESTS.
18. WHEN THE SPECIFIED EQUIPMENT IS SUBSTITUTED OR ANY CHANGES ARE MADE THE CONTRACTOR SHALL OBTAIN DSA APPROVAL VIA THE DSA CHANGE ORDER PROCESS PER DSA IR A-21.



A E5.1A RESTROOM FIRE ALARM FLOOR PLAN

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

PLOT DATE: 03-28-16

ARCHITECT

MADI ARCHITECTURE + PLANNING

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PROFESSIONAL STAMP:

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS

4000 Suisun Valley Rd,
Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16

PROJECT CODE: SCCD-04

START DATE: -

DRAWN BY: HW-DB

CHECKED BY: DY

SHEET NAME:

FIRE ALARM FLOOR PLANS

DSA APPROVAL STAMP:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
ACCESS TM
DATE 8/11/16

SHEET NUMBER:

E5.1A

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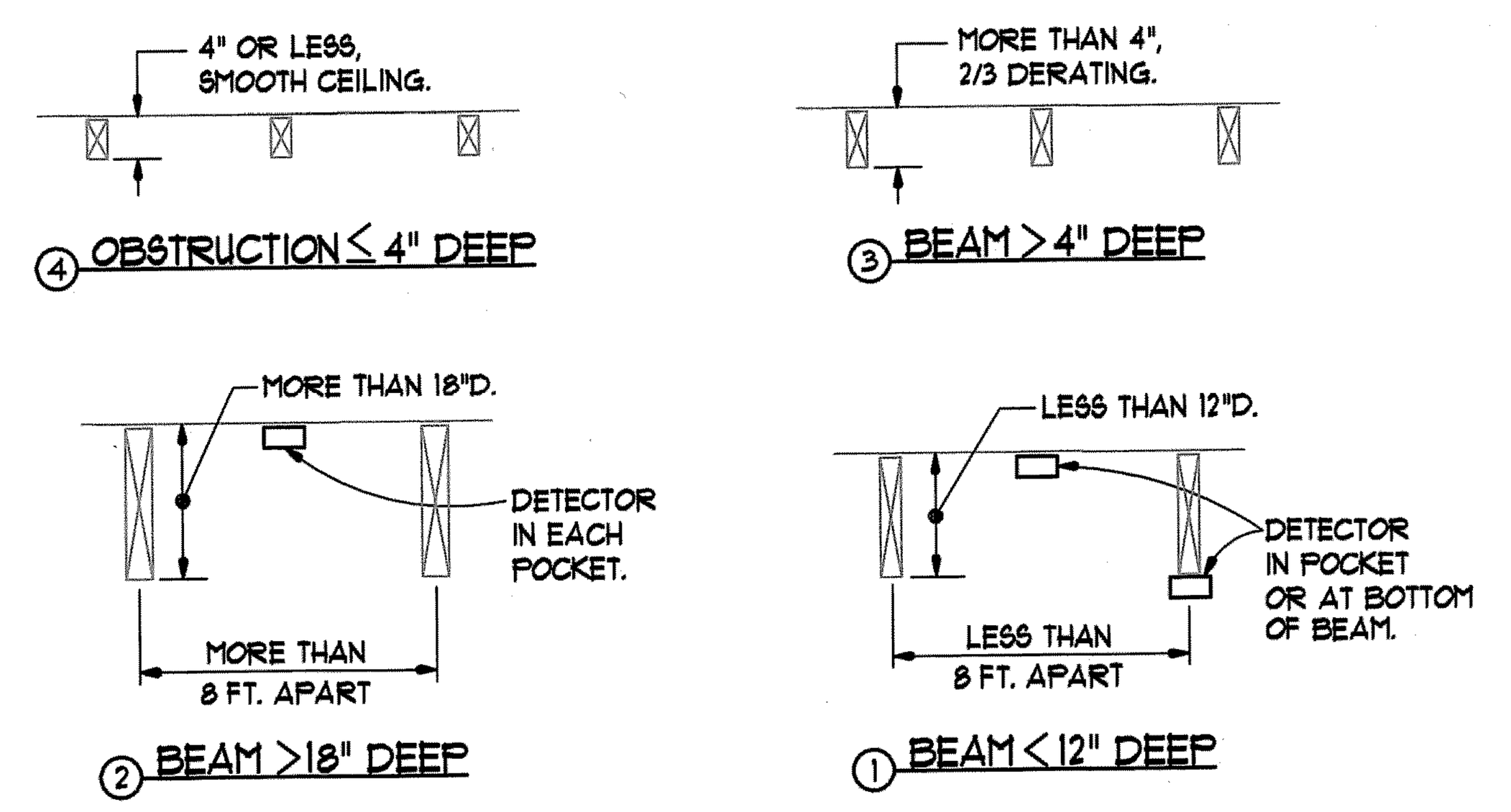
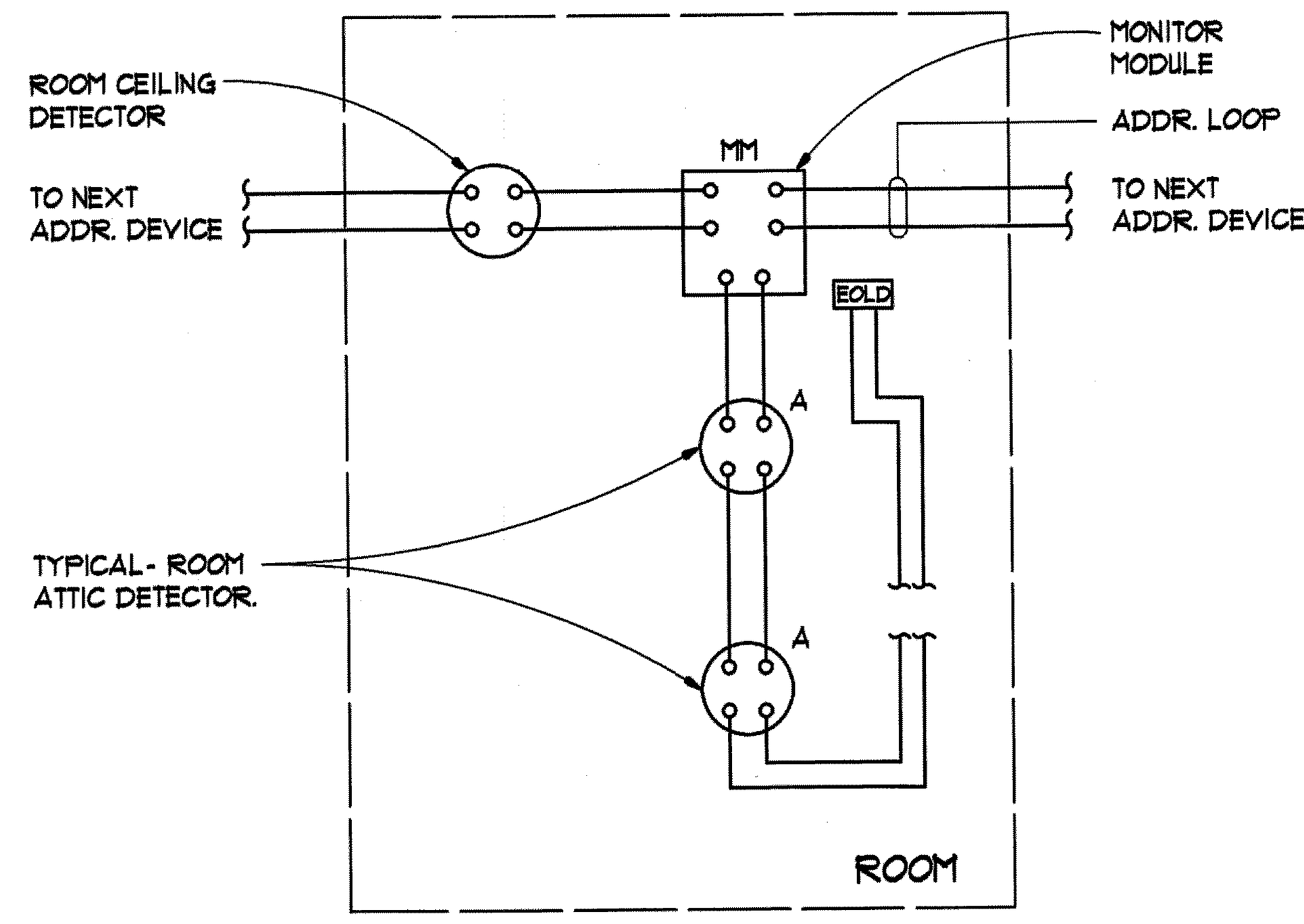
NOTES:

1. SOLID JOIST CONSTRUCTION.
   A. SPACING: THE DESIGN SPACING OF HEAT DETECTORS, WHERE MEASURED AT RIGHT ANGLES TO THE SOLID JOISTS, SHALL NOT EXCEED 50 PERCENT OF THE LISTED SPACING.
   B. LOCATION: DETECTORS SHALL BE MOUNTED AT THE BOTTOM OF THE JOISTS.
2. BEAM CONSTRUCTION.
   A. SPACING:
      1. A CEILING SHALL BE TREATED AS A SMOOTH CEILING IF THE BEAMS PROJECT NO MORE THAN 4 IN. BELOW THE CEILING.
      2. WHERE THE BEAMS PROJECT MORE THAN 4 IN. BELOW THE CEILING, THE SPACING OF SPOT-TYPE HEAT DETECTORS AT RIGHT ANGLES TO THE DIRECTION OF BEAM TRAVEL SHALL BE NOT MORE THAN TWO-THIRDS OF THE LISTED SPACING.
      3. WHERE THE BEAMS PROJECT MORE THAN 18 IN. BELOW THE CEILING AND ARE MORE THAN 8 FT. ON CENTER, EACH BAY FORMED BY THE BEAMS SHALL BE TREATED AS A SEPARATE AREA.
   B. LOCATION: WHERE BEAMS ARE LESS THAN 12 IN. IN DEPTH AND LESS THAN 8 FT. ON CENTER, DETECTORS SHALL BE PERMITTED TO BE INSTALLED ON THE BOTTOM OF BEAMS.
3. BEAM CONSTRUCTION CONSISTS OF SOLID MEMBERS PROJECTING DOWN FROM THE CEILING SURFACE MORE THAN 4" AND SPACED MORE THAN 36" O.C.
4. JOIST CONSTRUCTION CONSISTS OF SOLID MEMBERS PROJECTING DOWN FROM THE CEILING SURFACE MORE THAN 4" AND SPACED AT 36" OR LESS O.C.



F E5.2A HEAT DETECTORS IN SOLID JOIST & BEAM CONSTRUCTION
NO SCALE



E E5.2A ATTIC DETECTOR MONITORING WIRING DIAGRAM
NO SCALE

FIRE ALARM RECORD DOCUMENTS CABINET
NFPA 72, 7.7.2

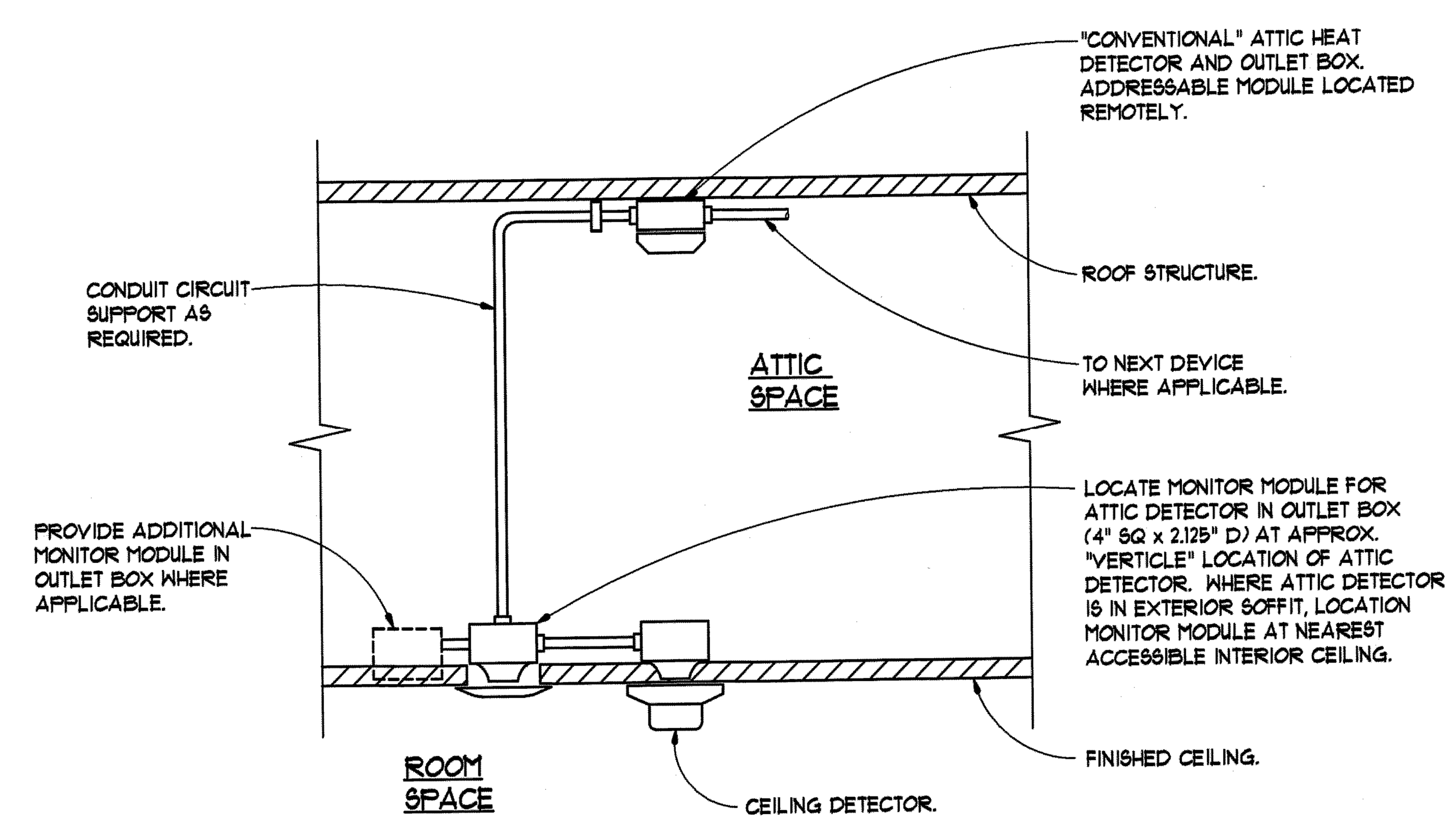
- Every new Fire Alarm System shall provide a documentation cabinet, installed at the system control panel or other approved location.
- The documentation cabinet shall be prominently labeled, "SYSTEM RECORD DOCUMENTS".
- All record and testing documentation shall be stored in the cabinet.
- Contents shall be accessible by authorized personnel only.
- Where cabinet is installed in a location other than the system control unit, its location shall be identified at the system control unit.

SYSTEM DOCUMENTS AS APPLICABLE:
- Record Drawings/As-Builts
- Equipment Cut Sheets & CA SFM Listings
- Alternative Means and Methods
- Performance Based Design Documentation (NFPA 72, 7.3.7)
- System Record of Completion & any Supplemental Inspection and Testing Documentation (NFPA 72, 7.8.2)
- Emergency Response Plan (NFPA 72, 7.3.8)
- Evaluation Documentation (NFPA 72, 7.3.9)
- Risk Analysis Documentation (NFPA 72, 7.3.6)
- Software & Firmware Control Documentation (NFPA 72, 23.2.2)

SPECIFY ON FIRE ALARM DRAWINGS

A FIRE ALARM ACCEPTANCE TEST of all devices and appliances, including the backup battery(ies), shall be performed. All Manufacturer operating ranges shall be met. Testing of the Supervising Station signals, as well as relay to the appropriate responding agency, shall be included in the Acceptance Testing. The Project Inspector shall witness the Acceptance Inspection and shall sign as the AHJ Representative on the "SYSTEM RECORD OF COMPLETION" at Section 12.3 [NFPA 72, Figure 7.8.2(a)], and the "SYSTEM RECORD OF INSPECTION AND TESTING" at Section 10.1 [NFPA 72, Figure 7.8.2 (g)]. ALL Supplementary Records shall be attached as applicable. The Project Inspector shall verify that the FIRE ALARM SYSTEM is in service PRIOR to completion of the "SYSTEM RECORD OF COMPLETION" form. All original documentation shall be retained in the required DOCUMENTATION CABNIET (NFPA 72, 7.7.2).

2013 NFPA 72, Section 10.6.7
The secondary power supply shall have sufficient capacity to operate the system under quiescent load (system operating in a non-alarm condition) for a minimum of 24 hours and, at the end of that period, shall be capable of operating all alarm notification appliances used for evacuation or to direct aid to the location of an emergency for 5 minutes, unless otherwise permitted or required by the following:
(1) Battery calculations shall include a 20 percent safety margin to the calculated amp-hour rating.
(2) The secondary power supply for In-Building Emergency Voice/Alarm Communications service shall be capable of operating the system under quiescent load for a minimum of 24 hours and then shall be capable of operating the system during a fire or other emergency condition for a period of 15 minutes at maximum connected load.



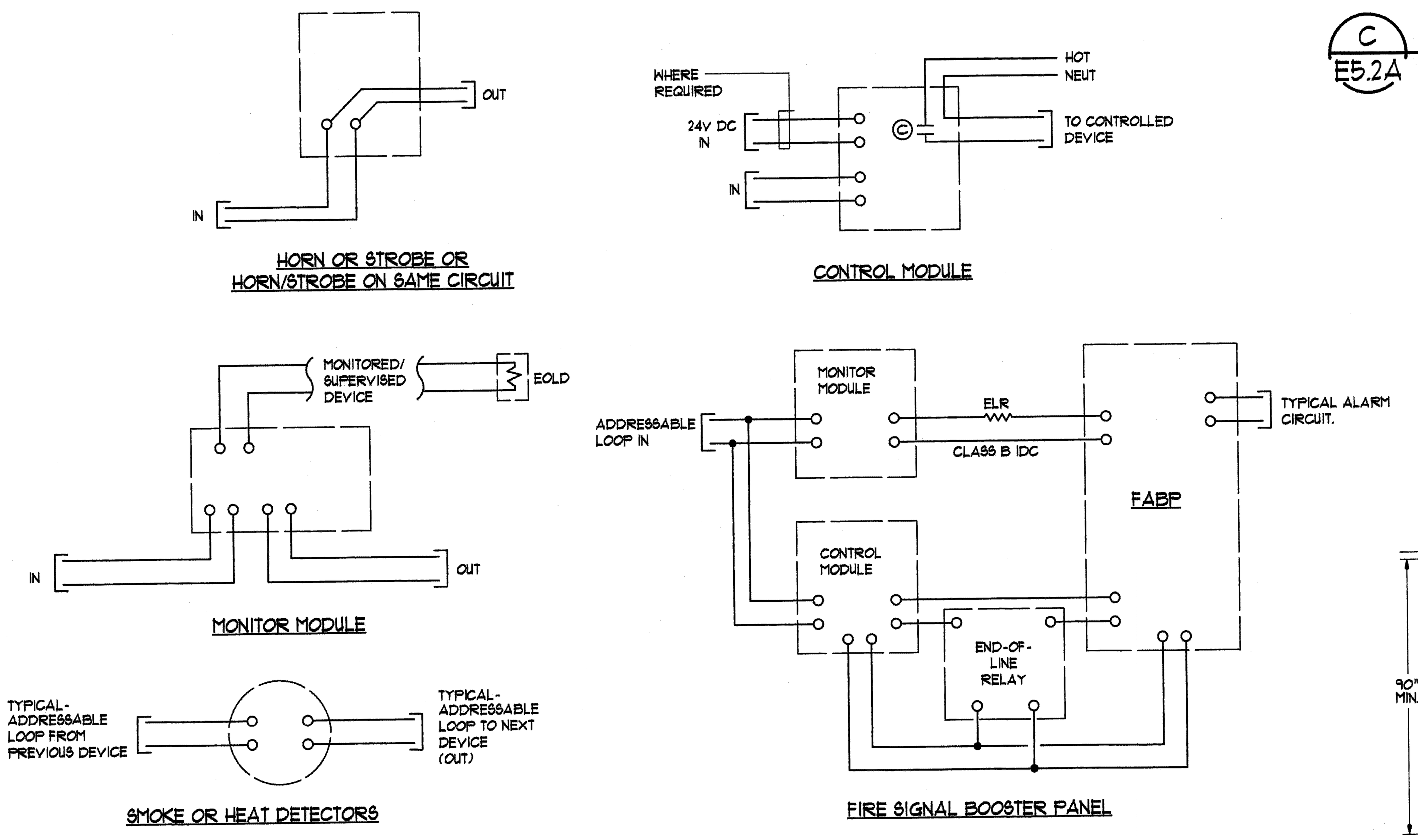
C E5.2A ATTIC HEAT DETECTOR ADDRESSABLE MODULE LOCATION DETAIL
NO SCALE

NOTES:

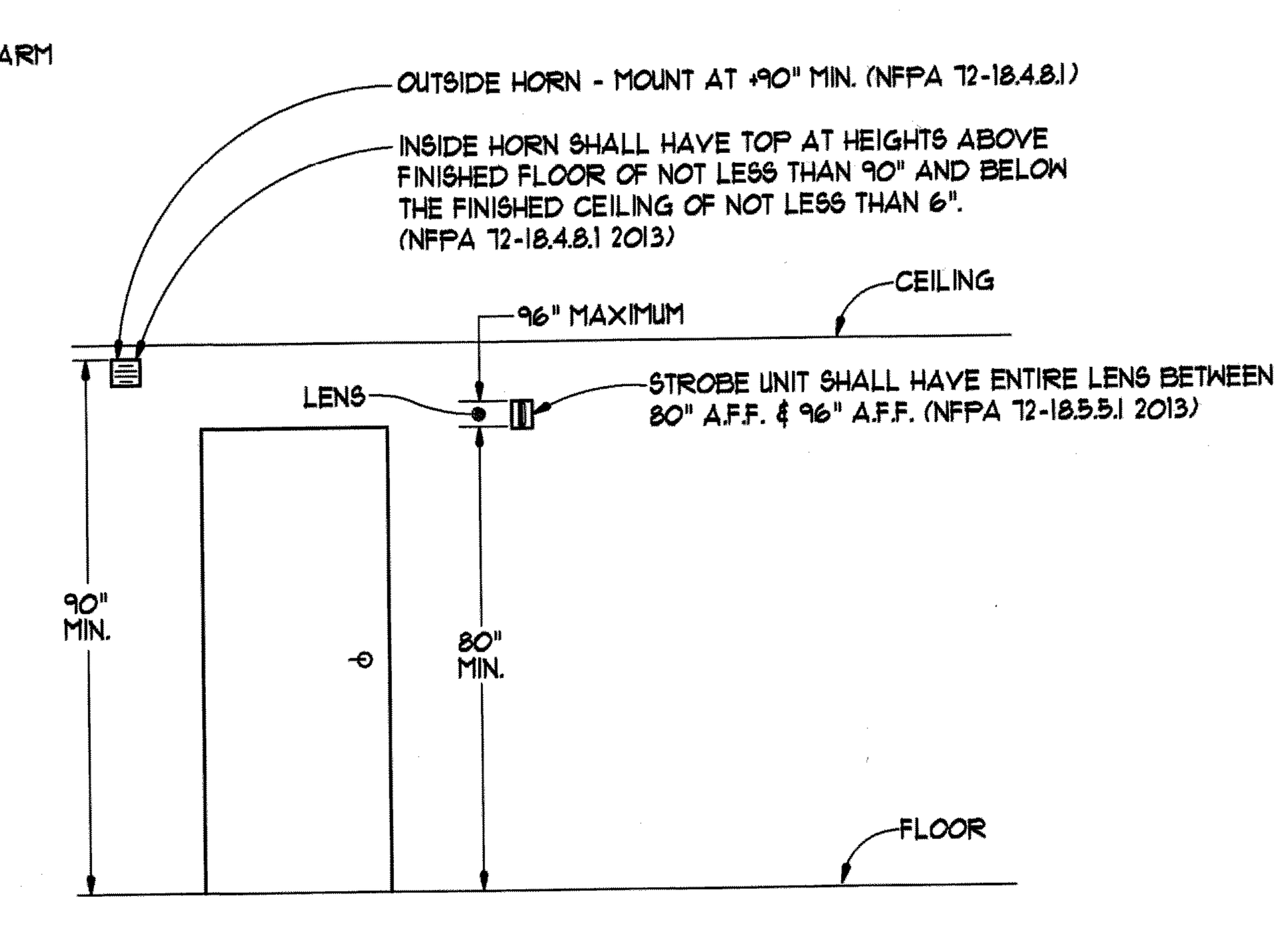
1. APPLICABLE STANDARD 2013 NFPA 72.
2. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
3. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF DSA AND THE ARCHITECT/ENGINEER OF THE PROJECT.
4. DSA ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
5. ALL PENETRATIONS THROUGHT RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN CBC CHAPTER 7, UL OR OTHER LAB TESTING CRITIERIA, APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.
6. WALL MOUNTED VISUAL NOTIFICATION DEVICES SHALL HAVE THEIR ENTIRE LENS MOUNTED WITHIN 80" MINIMUM AND 96" MAXIMUM FROM FINISHED FLOOR.
7. WALL MOUNTED AUDIBLE NOTIFICATION DEVICES SHALL HAVE THEIR TOPS MOUNTED AT 90" MINIMUM AND 100" MAXIMUM FROM FINISHED FLOOR AND NO CLOSER THEN 6" TO A HORIZONTAL STRUCTURE.
8. AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIMUM HEARING DISTANCE SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECONDS 5 DBA MUST BE MAINTAINED.
9. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
10. UNDERGROUND AND EXTERIOR CONDUITS TO HAVE WATERTIGHT FITTINGS AND WIRE TO BE APPROVAL FOR WET LOCATIONS.
11. ALL FIRE ALARM WIRING SHALL BE FLP OR FPLP (FIRE POWER LIMITED OR FIRE POWER LIMITED PLENUM) AS REQUIRED FOR APPLICATION. WIRING IN CONDUIT ABOVE GROUND MAY BE THHN OR THWN.
12. PER CEC STANDARDS. ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER CEC.
13. ALL FIRE ALARM CIRCUITS SHALL BE IN CONDUIT, SURFACE RACEWAY OR OPEN RUN ABOVE CEILINGS, UNDER FLOORS AND IN WALLS IN A NEAT AND PROTECTED MANOR AS INDICATED ON DESIGN DOCUMENTS. EXPOSED CIRCUITS ARE ONLY PERMITTED WHEN NOTED AS EXPOSED ON DESIGN DOCUMENTS.
14. FIRE ALARM PANEL. REMOVES AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURERS SPECIFICATION. NO SINGLE DEVICE SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
15. A DEDICATED BRANCH CIRCUIT SHALL BE PROVIDED FOR FIRE ALARM EQUIPMENT. THIS CIRCUIT SHALL BE ENERGIZED FROM THE COMMON USE AREA PANEL AND SHALL HAVE NO OTHER OUTLETS. THE BREAKER SHALL BE RED WITH LOCKING DEVICE TO BLOCK THE HANDLE IN THE "ON" POSITION. THE CIRCUIT BREAKER SHALL BE LABELED "FIRE ALARM CIRCUIT CONTROL". CIRCUIT ID TO BE LABELED AT FIRE PANEL/EXTENDER.
16. CONTROL PANELS, REMOTE ANNUNCIATORS SHALL BE INSTALLED WITH THEIR BOTTOMS MOUNTED AT 48".
17. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING PER CBC SECTION 901.6.2.
18. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
19. OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING A FIRE SYSTEM MONITORING CONTRACTOR PROVISIONS.
20. WIRING AND MATERIALS PER CEC 760.

FIRE ALARM SYSTEM DESCRIPTION

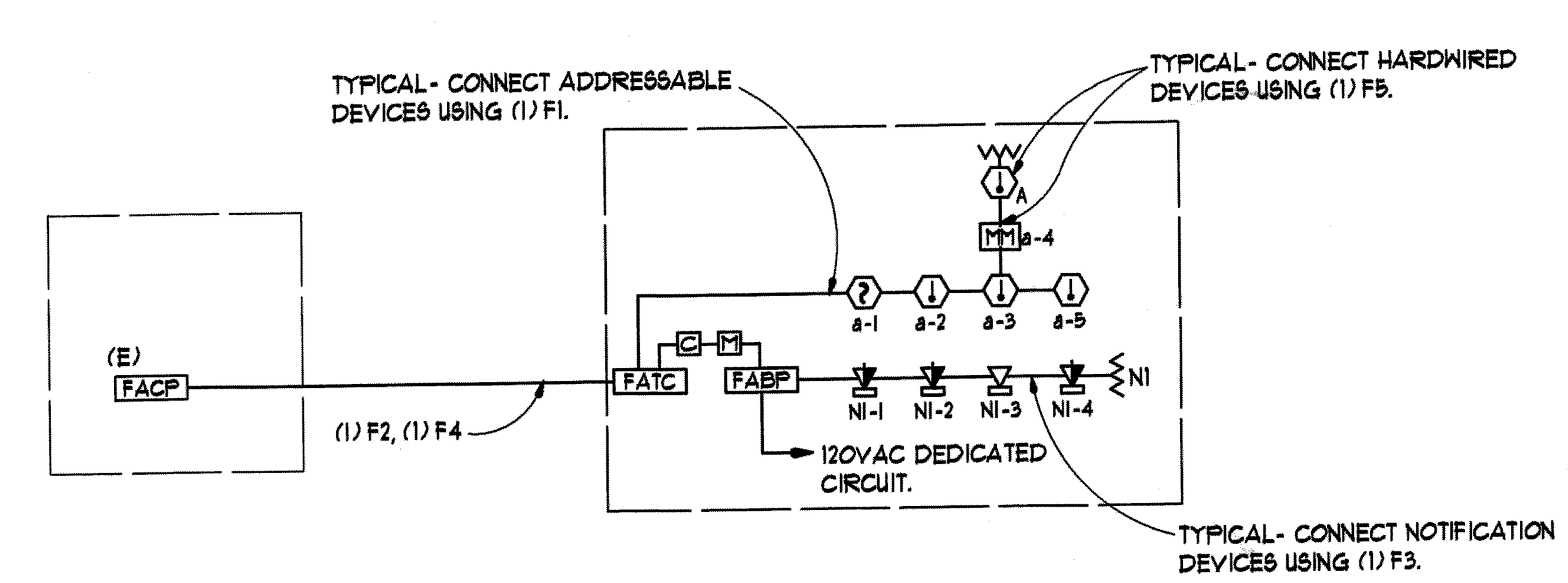
THE SYSTEM IS POWER LIMITED, AUTOMATIC, MANUAL, LOCAL, AUXILIARY, REMOTE STATION (PROTECTED PREMISES), PROPRIETARY (PROTECTED PREMISES), WATERFLOW, AND SPRINKLER SUPERVISORY SERVICE. SUITABLE FOR RELEASING DEVICE SERVICE, REFER TO LISTEE'S DATA SHEET FOR DETAILED PRODUCT DESCRIPTION AND OPERATIONAL CONSIDERATIONS.



D E5.2A TYPICAL- FIRE ALARM DEVICES WIRING DIAGRAMS
NO SCALE



B E5.2A HORN & STROBE UNIT ELEVATION DETAIL
NO SCALE



A E5.2A FIRE ALARM RISER DIAGRAM
NO SCALE

PLOT DATE: 03-28-16

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REGISTERED PROFESSIONAL ENGINEER DAVID K. YU No. E14987 Exp. 6/30/17 ELECTRICAL STATE OF CALIFORNIA

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HYA Job #1612A

PROFESSIONAL STAMP:

PROJECT:

HORTICULTURE & PLANT SCIENCE INSTITUTE PHASE II: MODULAR BUILDINGS
4000 Suisun Valley Rd, Fairfield, CA 94534

REVISIONS

REF	DESCRIPTION	DATE
-	DSA SUBMITTAL	3/7/16

PROJECT CODE: SCCD-04
START DATE: -
DRAWN BY: HW-DB
CHECKED BY: DY

SHEET NAME:

FIRE ALARM DIAGRAMS, NOTES, & DETAILS

DSA APPROVAL STAMP:

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC TM FLS D SS
DATE 5/11/16

SHEET NUMBER:

E5.2A

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LOUISE WILBOURN YARBROUGH HORTICULTURE & PLANT SCIENCE INSTITUTE + SOLANO COMMUNITY COLLEGE DISTRICT

ENVIROPLEX, INC.

STEEL ORDINARY MOMENT RESISTING FRAME MODULAR BUILDING

12'x40' RESTROOM & STAFF BUILDING (480 S.F.)

(Serial Number: 11398)

TEST & INSPECTION GUIDELINE

TYPE OF MODULAR STEEL MOMENT FRAME BUILDING PROJECT (X–INDICATES TEST OR INSPECTION TO BE DONE)

TEST and INSPECTIONS (as listed on Form DSA–103)				STOCKPILE		CONSTRUCTION OF (diaphragm material–foundation material)			RELOCATION OF CERTIFIED BUILDING	
MATERIAL TYPE		DSA 103 ITEM #	DESCRIPTION	WOOD FLOOR ONLY	CONCRETE FLOORS	PLYWOOD FLOOR ONLY -WOOD FOUNDATION	PLYWOOD FLOOR CONCRETE FOUNDATION	CONCRETE FLOOR - CONCRETE FOUNDATION	WOOD FOUNDATION	CONCRETE FOUNDATION
SOILS Verify the necessity of the Tests and/or Inspections with the requirements of the application that this PC is part of.	GENERAL	1	-Site has been prepared properly prior to fill placement/excavations -Fdn excavations extended to proper depth and material -Materials below footing are adequate				X	X		X
	COMPACTED FILL	2a	Perform qualification testing of materials				X	X		X
		2b	Proper fill materials, lift thickness placement and compaction during placement.				X	X		X
		2c	Compaction test				X	X		X
CONCRETE	LT WT FILL OVER METAL DECK	7a	Verify required design mix		X			X		
		7c	Perform slump and (where required) air content test; determine temperature of concrete		X			X		
		7d	Test concrete - compression tests		X			X		
		7e	Inspect batching of concrete -		X			X		
		12	Waiver of Batch Plant Inspection See Note 1 for conditions and requirements.		X			X		
		7f	Inspect placement of concrete, reinforcing and embedded items over steel deck - by RBIP		X			X		
	FOUNDATION	7a	Verify required Design Mix				X	X		X
		7b	Test reinforcing Steel - See Note 1 for Waiver for one Story Bldgs.				X	X		X
		7c	Perform slump and (where required) air content test; determine temperature of concrete				X	X		X
		7d	Test concrete - compression tests				X	X		X
		7e	Inspect batching of concrete -				X	X		X
		7e	Inspect placement of formwork, concrete, reinforcing steel and embedded items - by Project Inspector				X	X		X
	POST INSTALLED ANCHORS NOTE 2		Inspect installation of post installed anchors				X	X		X
			Test post-installed anchors				X	X		X
STRUCTURAL STEEL	MATERIAL VERIFICATION	17a	-Materials are appropriately marked -Mfr. certified mill test reports -Material sizes, types and grades comply with requirements	X	X	X	X	X		
		17b	Sample and test all unidentified structural steel and steel deck	X	X	X	X	X		
		17c	Examine seam welds of structural tubes and pipes	X	X	X	X	X		
		17d	Verify member locations, bracing and all details constructed in the field	X	X	X	X	X		
		17e	Verify stiffener locations, connection tab locations and all construction details fabricated in the shop.	X	X	X	X	X		
	VERIFICATION OF MATERIALS, EQUIPMENT, WELDERS, ETC	18a	Verify weld filler material identification marking per AWS designation listed on the DSA approved documents and the WPS	X	X	X	X	X		
		19b	Verify weld filler material manufactures's certificate of compliance	X	X	X	X	X		
		19c	Verify WPS, welder qualifications and equipment	X	X	X	X	X		
	SHOP WELDING	19.1a	Inspect groove, multi-pass, and fillet welds > 5/16"	X	X	X	X	X		
		19.1b	Inspect single-pass fillet welds ≤ 5/16"	X	X	X	X	X		
		19.1c	Inspect welding of stairs and railing systems. Note 3.	X	X	X	X	X		
	FIELD WELDING See Note 3	19.2a	Inspect groove, multi-pass, and fillet welds > 5/16"			X	X	X		X
		19.2b	Inspect single-pass fillet welds ≤ 5/16"			X	X	X		X
		19.2f	Inspect welding of stairs and railing systems.			X	X	X		X
	OTHER	24a	Shop Welding - Inspection welding of cold-formed steel Periodic/Special Inspector	X	X	X	X	X		
		24b	Shop Welding - Inspect welding of steel floor deck welds Periodic/Special Inspector		X			X		
OTHER - SHOT PINS (Two Story Modular)		27a	Ceiling wire hangers (pins in metal deck with concrete fill) Test/Lab		X			X		
INSPECTOR CLASS (minimum requirements)				RBIP or Class 1		In Plant RBIP or Class 1 Site: Class 4 for Single Story Site: Class 2 for Two-story			Class 4 for Single Story Class 2 for Two-story	
SELECTION OF THE PROJECT INSPECTOR AND TESTING 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 (Title 24, Part1,Section 4–333(b) AND TESTING AGENCY (Title 24, Part 1, Section 4–335))				By the Owner		By the School District				

NOTE 1: Reinforcing steel tests may be waived for one-story buildings.

NOTE 2: Required only where the details of the PC specify the use of this type of anchor

NOTE 3: Required only where the details of the PC specify this Welding

The Example form DSA-103's shown on this sheet are for illustration purposes only to assist in the completion of future project-specific form DSA-103's. A form DSA-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.

PC GENERAL NOTES

1. THIS PC IS NOT APPROVED FOR "A" OCCUPANCY USES AND CANNOT BE REVIEWED OVER THE COUNTER (OTC).
2. PC BUILDING APPROVED ONLY FOR OCCUPANCY B, or E WITH OCCUPANT LOAD LESS THAN 250. (2013 CBC TABLE 1604A.5 RISK CATEGORY I & II).
3. PC BUILDING EXITING IS BASED ON THE USE OR OCCUPANCY AND WILL BE REVIEWED AS SITE SPECIFIC.
4. PC BUILDING LOCATED IN FIRE HAZARD SEVERITY ZONES PER WILDLAND URBAN INTERFACE FIRE AREAS (WUI) SHALL CONFORM TO CBC CHAPTER 7A.
5. THIS PC IS NOT APPROVED FOR FIRE HAZARD SEVERITY ZONES PER C.B.C. CHAPTER 7A.
6. SITE AND USE SPECIFIC REQUIREMENT FOR FIRE ALARM SYSTEM MIGHT BE REQUIRED BUT NOT INCLUDED IN THIS PC APPROVAL.
7. THIS BUILDING IS STRUCTURALLY DESIGNED TO SUPPORT THE WEIGHT OF A FUTURE FIRE SPRINKLER SYSTEM (EQUIVALENT TO 1.5 psf MAXIMUM), IF REQUIRED.
8. THIS PC IS APPROVED FOR CLIMATE ZONES 1 THROUGH 16.
9. THIS PC IS NOT APPROVED FOR OCCUPANCY E USED AS SPECIAL HAZARD USE OR STORE SUCH AS LIBRARIES, VOCATIONAL SHOPS & DAYCARE CANNOT BE REVIEWED OVER THE COUNTER (OTC).
10. NOT USED.
11. SOLAR READY SITE ADOPTED PC BUILDINGS:
    PROVISIONS FOR SOLAR READY REQUIREMENTS OF THIS PC WILL BE PART OF ANOTHER BUILDING WITHIN 250 FT.
    SOLAR READY ZONE SHALL BE A MIN. OF 5 FT WIDE AND 80 SQ. FT. (TITLE 24, PART 6, 110.10(b).
    SOLAR READY ZONE MUST BE IN THE BUILDING OR WITHIN 250 FT. OF THE BUILDING AND HAVE A SOLAR ZONE AREA NO LESS THAN 15% OF THE TOTAL ROOF AREA OF THE BUILDING EXCLUDING ANY SKYLIGHT AREA.
    (TITLE 24, PART 6, 110.10(b) 1B.
12. NOT USED.
13. ENERGY CODE COMPLIANCE FORMS FOR SITE ADOPTED PC BUILDINGS:
    WHEN A PC BUILDING IS SITE ADAPTED, THE FOLLOWING FORMS SHALL BE SUBMITTED BY THE ARCHITECT OF RECORD WITH THE SITE SPECIFIC APPLICATION:
    DESIGN REVIEW KICKOFF - NRCC-CXR-01-E
    CONSTRUCTION DOCUMENTS, GENERAL - NRCC-CXR-02-E
    CONSTRUCTION DOCUMENTS, SIMPLE HVAC - NRCC-CXR-03-E
    DESIGN REVIEW SIGNATURE PAGE - NRCC-CXR-05-E
    SOLAR READY AREAS - NRCC-SRA-01-E
    WATER HEATING SYSTEMS (IF APPLICABLE) - CRCC-PLB-01-E

DSA GENERAL NOTES

1. ALL MATERIALS & WORKMANSHIP SHALL CONFORM TO THE 2013 CALIFORNIA BUILDING CODE (C.B.C.). A COPY OF THE CALIFORNIA BUILDING CODE SHALL BE KEPT ON THE SITE AT ALL TIMES.
2. CHANGES TO THE APPROVED DRAWINGS & SPECIFICATIONS SHALL BE MADE BY AN ADDENDA OR A CONST. CHANGE DOCUMENT APPROVED BY THE ARCHITECT OF RECORD, OWNER, & THE DIVISION OF THE STATE ARCHITECT, AS REQUIRED (REFERENCE DSA IR-A6).
3. A PROJECT INSPECTOR EMPLOYED BY THE DISTRICT (OWNER) & APPROVED BY THE ARCHITECT OF RECORD & THE DIVISION OF THE STATE ARCHITECT SHALL PROVIDE CONTINUOUS INSPECTION OF THE WORK. THE DUTIES OF THE INSPECTOR ARE DEFINED IN SECTION 4-333(b) OF 2013 TITLE 24, PART 1.
4. MATERIAL TESTING AS NOTED IN THE STRUCTURAL TESTS & INSPECTIONS AT THE LEFT SHALL BE PERFORMED AS REQ. PER SECTION 1704A & 2212A, & 1913A FOR CONCRETE OF 2013 C.B.C.
   MATERIAL TESTING REQUIRED BY FIRE REGULATIONS SHALL BE PERFORMED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
5. VERIFIED REPORTS (DSA/SSS FORM 6) SHALL BE SUBMITTED PER SECTION 4-336, 4-341(f), 342(b)(8), AND 4-343 (c) BY THE MANUFACTURER, INSPECTOR, STRUCTURAL ENGINEER.
6. A SEPARATE DSA APPLICATION NUMBER MUST BE OBTAINED BEFORE MANUFACTURING ANY ENVIROPLEX UNIT IN ACCORDANCE WITH THESE DRAWINGS.
7. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD & ACCESS REQUIREMENTS & ENVIROMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
8. SPECIAL INSPECTIONS PER CHAPTER 17A, 2013 C.B.C.

OPT. COMBINATIONS ALLOWED

Option combination table 12'x40' PC

■ not applicable / not allowed

		Roof: Bi-Pitch	Roof: Shed	Foundation: Concrete	Foundation: 50# wood	Foundation: 65# wood	Foundation: 125# wood
Exterior finish	Standard MDO, lap siding, wood clad siding	X	X	X	X	X	X
	Stucco-flex	X	X	X	■	■	■
	3-coat stucco	X	X	X	■	■	■
Roof slope	Bi-pitch	■	■	X	X	X	X
	Shed	■	■	X	X	X	X
Roof load/column	20 psf. TS 5 x 5 x 3/16"	X	X	X	X	X	X
Floor load	50 psf (joist spacing at 16" or 24"o.c.)	X	X	X	X	X	X
	65 psf (joist spacing at 16" or 24"o.c.)	X	X	X	■	X	X
	125 psf (joist spacing at 16"o.c.)	X	X	X	■	■	X
Floor construction	Plywood	X	X	X	X	X	X
	Concrete	X	X	X	■	■	■
Fire rated const.	NR / Sprinklered	X	X	X	X	X	X
	Fire barriers (Int & ext., multiple walls)	X	X	X	X	X	X

GOVERNING CODES

2013 CALIFORNIA ADMINISTRATIVE CODE (CAC) (PART 1, TITLE 24, CCR)

2013 CALIFORNIA BUILDING CODE (CBC), VOLUMES 1 AND 2 (PART 2, TITLE 24, CCR) (2012 INTERNATIONAL BUILDING CODE WITH 2013 CALIFORNIA AMENDMENTS)

2013 CALIFORNIA ELECTRICAL CODE (PART 3, TITLE 24, CCR) (2011 NATIONAL ELECTRICAL CODE WITH 2013 CALIFORNIA AMENDMENTS)

2013 CALIFORNIA MECHANICAL CODE (CMC) (PART 4, TITLE 24, CCR) (2012 UNIFORM MECHANICAL CODE WITH 2013 CALIFORNIA AMENDMENTS)

2013 CALIFORNIA PLUMBING CODE (CPC) (PART 5, TITLE 24, CCR) (2012 UNIFORM PLUMBING CODE WITH 2013 CALIFORNIA AMENDMENTS)

2013 CALIFORNIA ENERGY CODE (PART 6, TITLE 24, CCR).

2013 CALIFORNIA FIRE CODE (CFC) (PART 9, TITLE 24, CCR). (2012 INTERNATIONAL FIRE CODE WITH 2013 CALIFORNIA AMENDMENTS)

2013 CALIFORNIA GREEN BUILDING STANDARDS CODE (PART 11, TITLE 24, CCR)

2013 CALIFORNIA REFERENCED STANDARDS CODE (PART 12, TITLE 24, CCR)

NFPA 13 - 2013

NFPA 72 - 2013

DESIGN CRITERIA

DEAD AND LIVE LOADS

FLOOR: LIVE LOAD - ☐ 50.0 PSF ☒ 65.0 PSF ☐ 125.0 PSF

FLOOR: DEAD LOAD - 8.0 PSF (wood floor) 42.0 PSF (concrete floor)

ROOF: LIVE (SNOW) LOAD - 20.0 PSF

ROOF: DEAD LOAD - 9.5 PSF

ALLOWABLE SOIL PRESSURE

WOOD FOOTING (DL + LL + LATERAL) 1000 PSF

CONCRETE FOOTING (DL +LL) 1500 PSF (DL + LL + LATERAL) 2000 PSF

FLOOD DESIGN

BUILDINGS IN THIS PC ARE NOT DESIGNED TO BE LOCATED IN A FLOOD HAZARD AREA

WIND DESIGN

BASIC WIND SPEED (3 SECOND GUST), V 110 MPH

WIND EXPOSURE CATEGORY C

CHAPTER 28, PART 2, ASCE 7-10, SEC 28.6 - SIMPLIFIED DESIGN WIND PRESSURES

$\lambda = 1.21$

RISK CATEGORY = II

$K_{zt} = 1.0$

LOW SEISMIC DESIGN CRITERIA (Site specific $S_s \le 1.875$)

LATERAL FORCE RESISTING SYSTEM: ORDINARY STEEL MOMENT FRAMES

ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

SEISMIC DESIGN CATEGORY (SDC): D (S_1 <= 0.75) E (0.75 < S_1 < 1.5)

SEISMIC IMPORTANCE FACTOR, I_e: 1.0

V=EQUIV. LATERAL FORCE PROCEDURE BASE SHEAR (STRENGTH DESIGN)

$V = C_s W = 0.286W$

$C_s = \frac{S_{DS}}{(R/I_e)} = 0.286$

BASIC SEISMIC FORCE RESISTING SYSTEM: ORDINARY STEEL MOMENT FRAMES

$R = 3.5$ $P = 1.0$ SITE CLASS: D

$I_e = 1.0$ $C_d = 3.0$ $*S_s = 1.5$ $F_A = 1.0$ $S_{DS} = 1.0$

$\Omega_o = 3.0$ $S_1 <= 1.5$ $F_V = 1.5$ $S_{D1} <= 1.5$

* PER CBC 1616A.1.12 (MODIFICATION TO ASCE 7-10, 12.8.1.3): "FOR REGULAR STRUCTURES FIVE STORIES OR LESS ABOVE THE BASE AS DEFINED IN SECTION 11.2 AND WITH A PERIOD, T, OF 0.5 SECONDS OR LESS, C_s IS PERMITTED TO BE CALCULATED USING THE LARGER OF EITHER S_s = 1.5 OR 80 PERCENT OF THE VALUE OF S_s DETERMINED PER SECTIONS 11.4.1 OR 11.4.7." THEREFORE, THIS PC IS PERMITTED FOR USE IN LOCATIONS WHERE S_s IS EQUAL TO 1.875 MAX (1.5/0.8 = 1.875).

HIGH SEISMIC DESIGN CRITERIA (Site specific $S_s \le 2.625$)

LATERAL FORCE RESISTING SYSTEM: ORDINARY STEEL MOMENT FRAMES

ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE

SEISMIC DESIGN CATEGORY (SDC): D (S_1 <= 0.75) E (0.75 < S_1 < 1.5)

SEISMIC IMPORTANCE FACTOR, I_e: 1.0

V=EQUIV. LATERAL FORCE PROCEDURE BASE SHEAR (STRENGTH DESIGN)

$V = C_s W = 0.400W$

$C_s = \frac{S_{DS}}{(R/I_e)} = 0.400$

BASIC SEISMIC FORCE RESISTING SYSTEM: ORDINARY STEEL MOMENT FRAMES

$R = 3.5$ $P = 1.0$ SITE CLASS: D

$I_e = 1.0$ $C_d = 3.0$ $*S_s = 2.1$ $F_A = 1.0$ $S_{DS} = 1.4$

$\Omega_o = 3.0$ $S_1 <= 1.5$ $F_V = 1.5$ $S_{D1} <= 1.5$

* PER CBC 1616A.1.12 (MODIFICATION TO ASCE 7-10, 12.8.1.3): "FOR REGULAR STRUCTURES FIVE STORIES OR LESS ABOVE THE BASE AS DEFINED IN SECTION 11.2 AND WITH A PERIOD, T, OF 0.5 SECONDS OR LESS, C_s IS PERMITTED TO BE CALCULATED USING THE LARGER OF EITHER S_s = 1.5 OR 80 PERCENT OF THE VALUE OF S_s DETERMINED PER SECTIONS 11.4.1 OR 11.4.7." THEREFORE, THIS PC IS PERMITTED FOR USE IN LOCATIONS WHERE S_s IS EQUAL TO 2.625 MAX (2.1/0.8 = 2.625).

BUILDING DATA

CONSTRUCTION TYPE:	V-B
OCCUPANCY:	B or E
BUILDING AREA:	480 S.F. NOMINAL
NUMBER OF STORIES:	1

SHEET INDEX

■ MARKED BOX REPRESENTS DRAWING/OPTION TO BE USED FOR APPLICATION

☐ A0 – COVER SHEET, BUILDING CODES & CBC DATA, SHEET INDEX

☐ A1 – BOYS, GIRLS RESTROOM FLOOR PLAN, INTERIOR & EXTERIOR ELEVATIONS, MATERIAL SPECIFICATIONS, & NOTES

☐ A1A – STAFF, BOYS, GIRLS RESTROOM FLOOR PLAN, INT. & EXT. ELEVATIONS, MATERIAL SPECIFICATIONS, & NOTES

☐ A2 – REFLECTED CEILING PLANS & CEILING ATTACHMENT DETAILS

☐ AGB – GREEN BUILDING STANDARDS

☐ EN1 – ENERGY COMPLIANCE UNCONDITIONED RESTROOM

☐ EN1.1 – ENERGY COMPLIANCE UNCONDITIONED RESTROOM

☐ EN1.2 – ENERGY COMPLIANCE UNCONDITIONED RESTROOM

☐ A3 – ELECTRICAL POWER PLAN, SIGNAL PLAN, LIGHTING PLAN, DETAILS, ELECTRICAL NOTES

[redacted]

☐ A4B.1 – SHED ROOF SECTIONS AND DETAILS (2x6 EXTERIOR WALLS)

[redacted]

☐ A4H – INTERIOR WALL CONNECTION DETAILS

[redacted]

☐ A4C.1 – NON RATED WALL ATTACHMENT DETAILS – (CONCRETE FLOORS)

[redacted]

☐ A5 – MISCELLANEOUS DETAILS

[redacted]

☐ S1C.3(H) (HIGH SEISMIC) – CONCRETE FOUNDATION, FOOTING DETAILS & NOTES – (CONCRETE FLOORS)

☐ S1C.4 – MISCELLANEOUS FOOTING DETAILS – (CONCRETE FLOORS)

[redacted]

☐ S2A(H) – (HIGH SEISMIC) – SHED ROOF, CEILING, & FLOOR FRAMING PLANS, STRUCTURAL STEEL PROPERTIES, NOTES

☐ S2C.1 – (HIGH & LOW SEISMIC) – FRAMING PLAN, STRUCTURAL STEEL PROPERTIES, NOTES – (CONCRETE FLOORS)

[redacted]

☐ S3FA – FASTENING SCHEDULE & NOTES

[redacted]

☐ S3A – SHED ROOF LONGITUDINAL BUILDING SECTION, WALL FRAMING ELEV., END FRAME ELEVATION, NAILING SCHEDULE

☐ S4 – STRUCTURAL CONNECTION DETAILS

☐ S4.1 – ALTERNATE STRUCTURAL DETAILS

☐ S4.2 – ALTERNATE STRUCTURAL DETAILS

☐ S4.3 – ALTERNATE DETAILS – METAL SOFFIT PANELS

☐ S4.4 – ALTERNATE DETAILS – METAL SOFFIT PANELS W/ WALL MOUNT HVAC UNIT

☐ S4C – STRUCTURAL CONNECTION DETAILS – (CONCRETE FLOORS)

[redacted]

☐ WC1 – CANOPY FRAMING & CONNECTION DETAILS

[redacted]

CYS STRUCTURAL ENGINEERS INC.
2495 Natomas Park Drive, Suite 650
Sacramento, CA 95833
(916) 920-2020 (916) 920-1550 Fax
www.cyseng.com

REGISTERED PROFESSIONAL ENGINEER ARTHUR ERNEST ROSS No. S2030 EXP. 9/30/15 STRUCTURAL STATE OF CALIFORNIA

THESE DRAWINGS ARE PRELIMINARY AND NOT FOR CONSTRUCTION UNLESS STAMPED & SIGNED BY THE ENGINEER OF RECORD.

JUN 0 3 2015

ENVIROPLEX, INC.
4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

COVER SHEET, BUILDING CODES & C.B.C. DATA, SHEET INDEX

REV / DATE:	BY:

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT 02 114923 AC TM FLS [signature] SS [signature] DATE 5 11 16

JOB No.:	
DRAWN BY:	
DATE:	

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
A separate project application for construction is required.

SS-Jaspal Sangha
FLS-Greg Cabebe
ACS - Tom Markes

IDENTIFICATION STAMP DIVISION OF THE STATE ARCHITECT 02–113910 AC TM FLS [signature] SS [signature] DATE 6-9-15

2013 – 12x40

AO

12x40' P.C.

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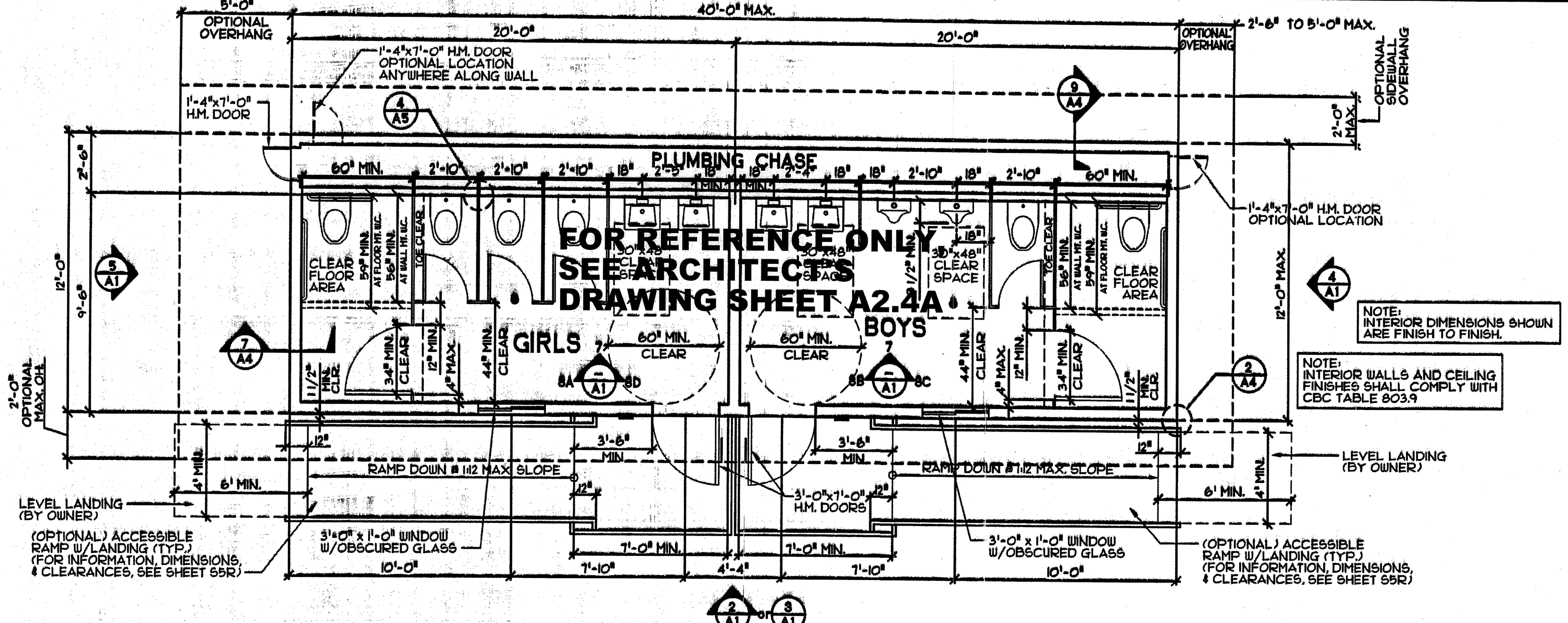
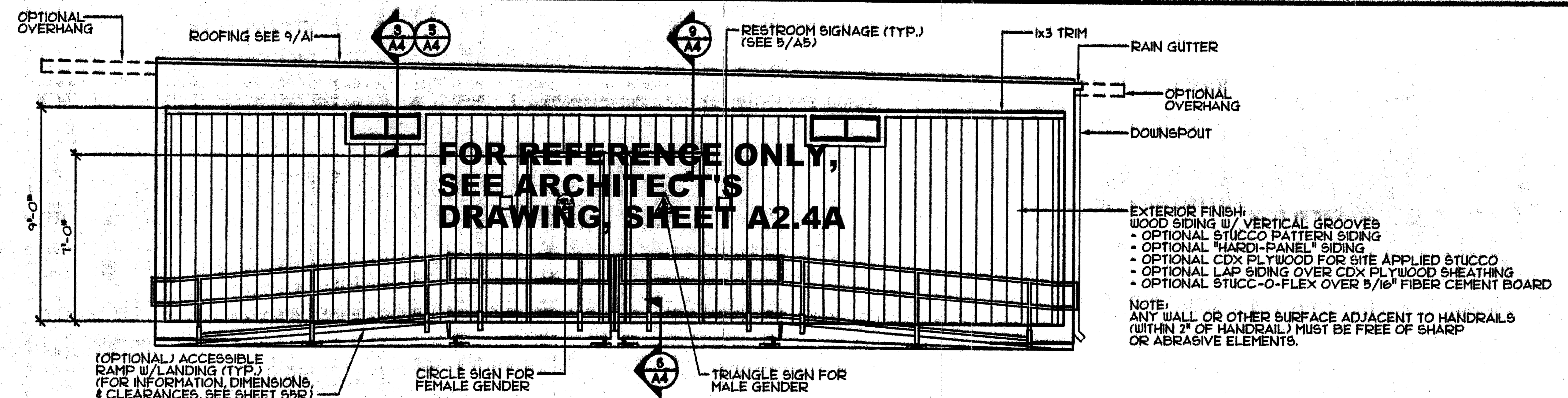
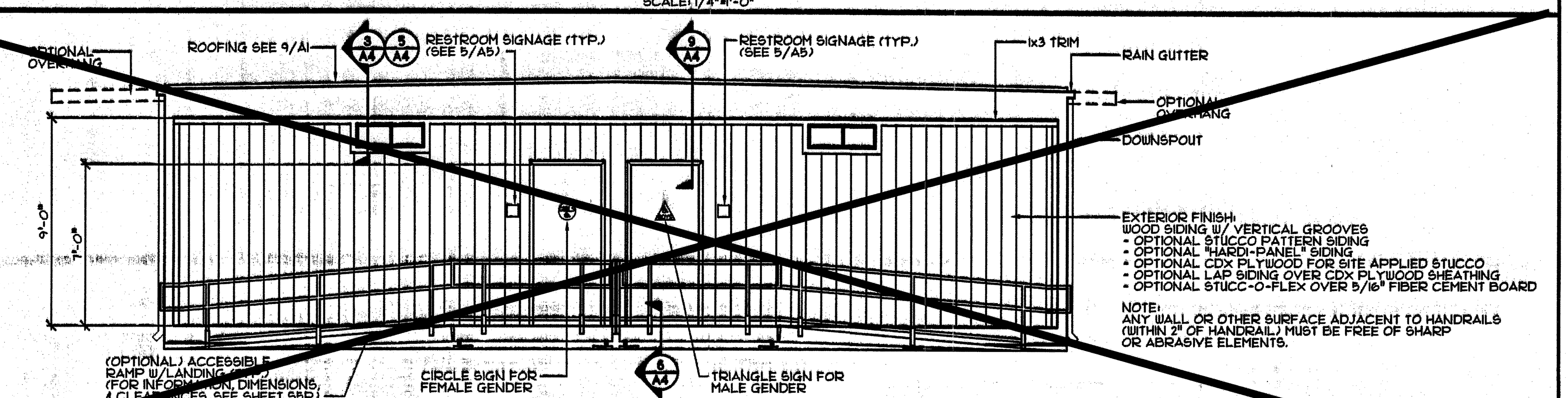


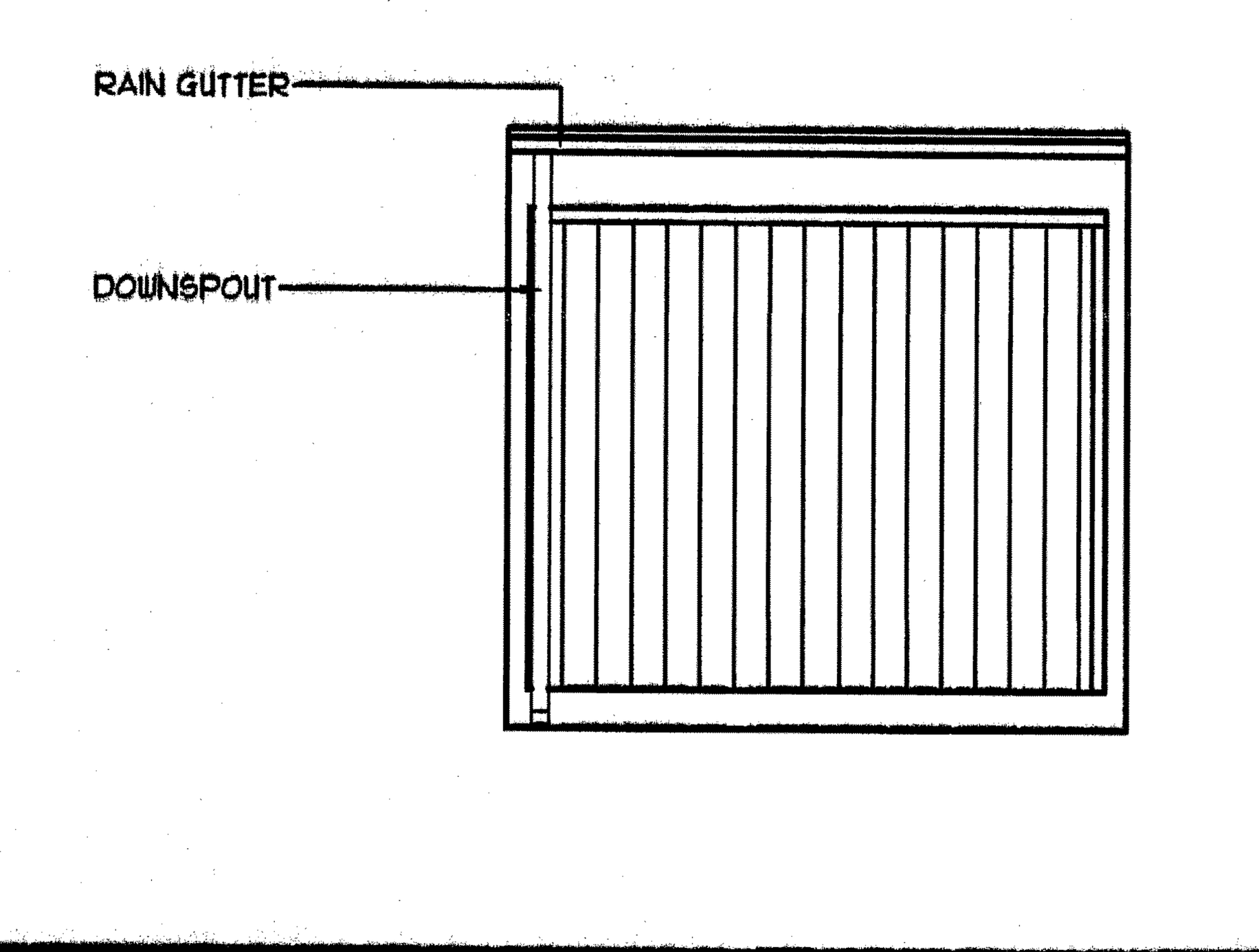
1 RESTROOM FLOOR PLAN
SCALE: 1/4"=1'-0"



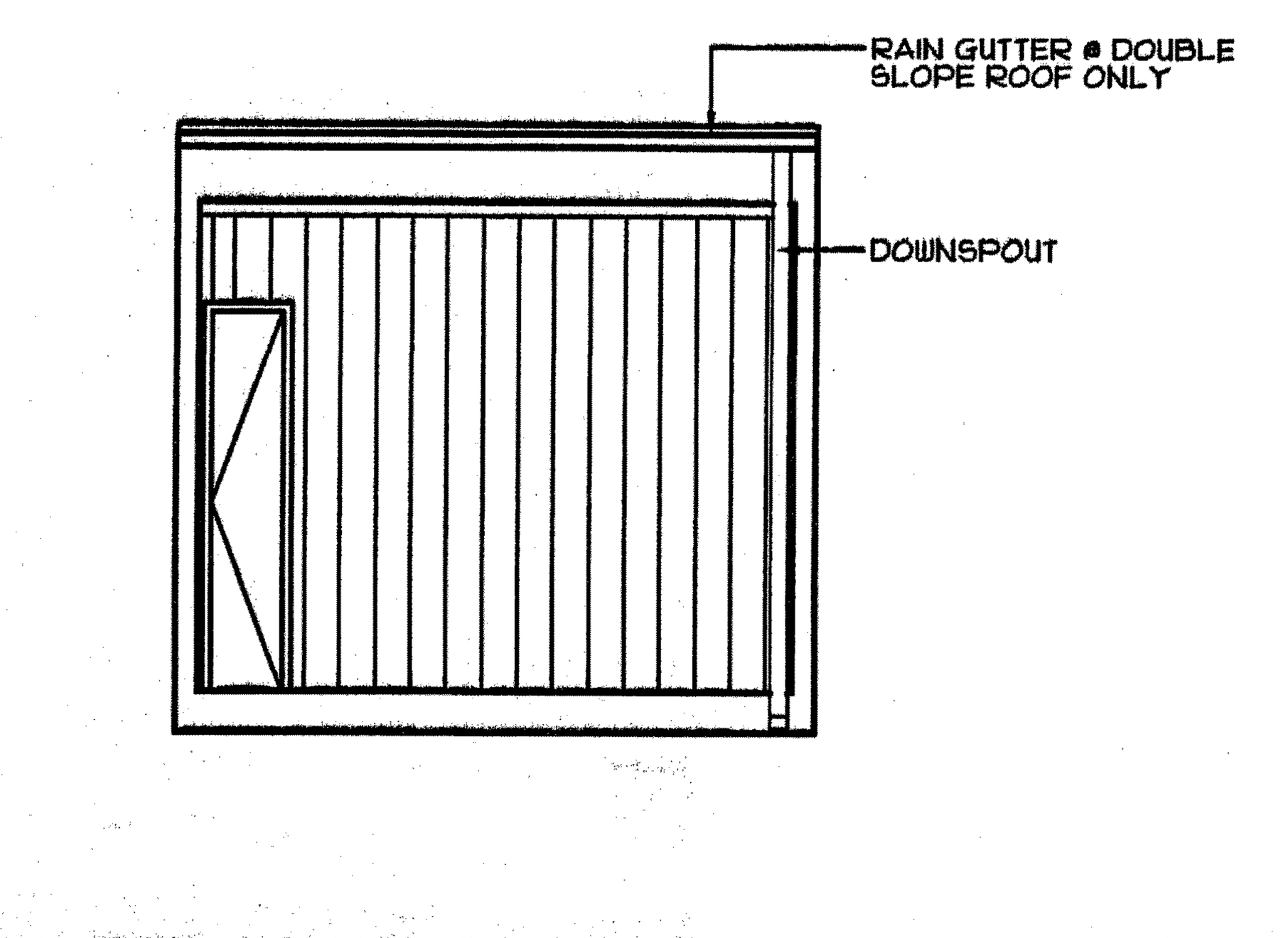
2 SIDE WALL EXTERIOR ELEVATION (SHED ROOF)
SCALE: 1/4"=1'-0"



3 SIDE WALL EXTERIOR ELEVATION (BI-PITCHED ROOF)
SCALE: 1/4"=1'-0"



4 EXTERIOR ENDWALL ELEVATION
SCALE: 1/4"=1'-0"



5 EXTERIOR ENDWALL ELEVATION
SCALE: 1/4"=1'-0"

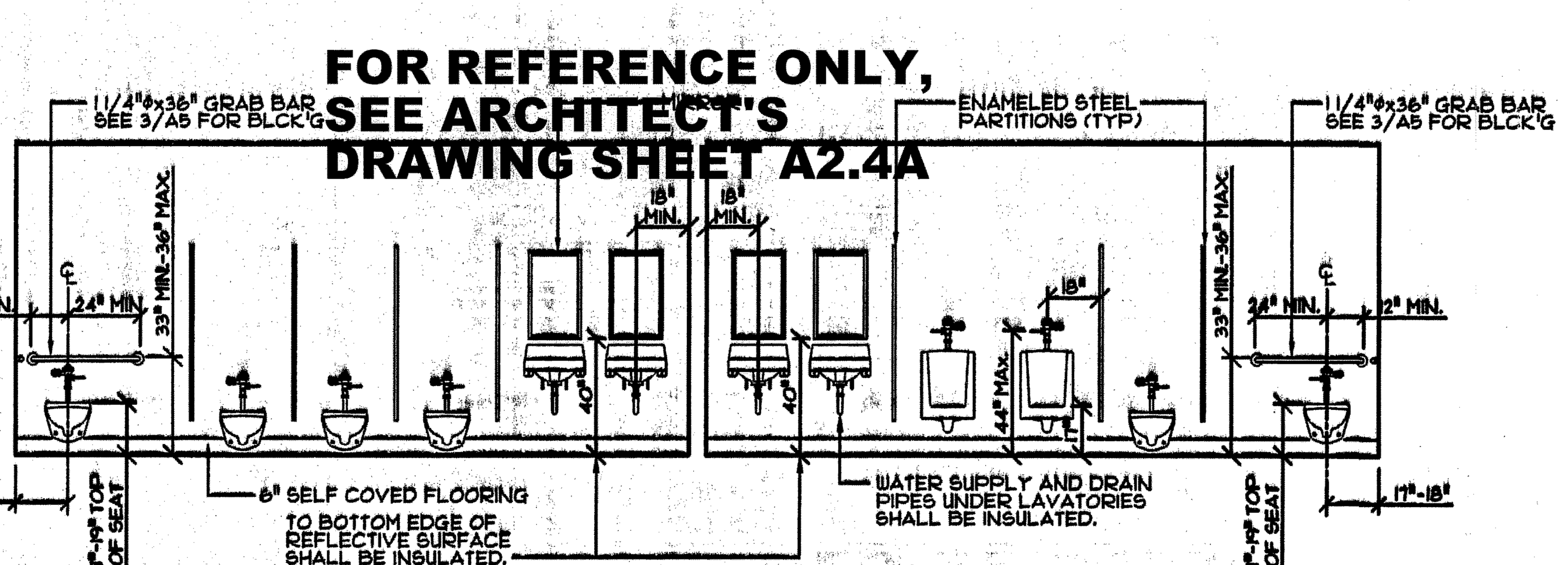
CBC TABLE 11B-604.9
SUGGESTED DIMENSIONS FOR CHILDREN'S USE

	AGES 3 AND 4	AGES 5 THRU 8	AGES 9 THRU 12
WATER CLOSET CENTERLINE	12"	12" TO 15"	15" TO 18"
TOILET SEAT HEIGHT	11" TO 12"	12" TO 15"	15" TO 17"
GRAB BAR HEIGHT	18" TO 20"	20" TO 25"	25" TO 27"
DISPENSER HEIGHT	14"	14" TO 17"	17" TO 19"

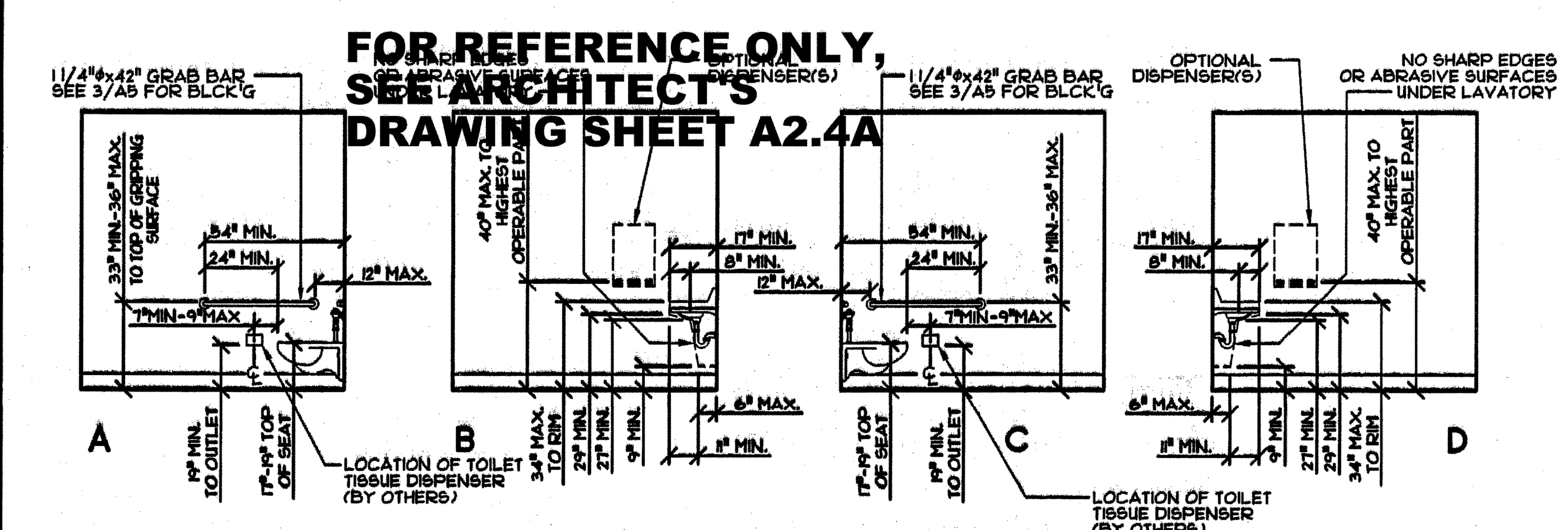
DIMENSIONS FOR ADULT USE

WATER CLOSET CENTERLINE	17" TO 18"
TOILET SEAT HEIGHT	17" TO 19"
GRAB BAR HEIGHT	33" TO 36" (TO TOP OF GRIP SURFACE)
DISPENSER HEIGHT CENTERLINE	19" TO OUTLET (7" TO 9" FROM FRONT OF TOILET TO CENTERLINE)

6 TYPICAL FIXTURE MOUNTING HEIGHTS



7 TYPICAL INTERIOR ELEVATION
SCALE: 1/4"=1'-0"



8 TYPICAL INTERIOR ELEVATION
SCALE: 1/4"=1'-0"

1. FLOORING- COMMERCIAL SHEET VINYL, ARMSTRONG CORLON OR EQUAL
NOTE: APPLICATION AND MAINTENANCE OF POLISHED-COATED FLOOR SURFACES (BY OWNER) SHALL BE SLIP RESISTANT. (0.5 MIN. COEFFICIENT OF FRICTION PER ASTM D-2047)
2. BASE TRIM- 6" COVED SHEET VINYL (SAME AS FLOORING)
3. WALL PANELS- FIBERGLASS REINFORCED POLYETHELYENE PANELS OVER 1/2" WATER RESISTENT GYPSUM WALL BOARD @ PLUMBING WALLS ONLY
4. ADHESIVES- ALL ADHESIVES SHALL BE WATER BASE, SOLVENT BASE NOT ACCEPTABLE. FURNISH AND APPLY PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
ALL ADHESIVES, SEALANTS, CAULKS, PAINTS, COATINGS, CARPET SYSTEMS, CARPET CUSHIONS, COMPOSITE WOOD PRODUCTS, AND RESILIENT FLOORING SYSTEMS SHALL COMPLY WITH GREEN BUILDING REQUIREMENTS, REFERENCE SHEET "AGB".
5. SEALANT- "VULKEM" SEALANT, POLYURETHANE, MANUFACTURED BY MAMECO INTERNATIONAL OR APPROVED EQUAL.
6. PAINT:

(EXTERIOR WOODS)	(METALS)
PRIMER: ACRYLIC UNDERCOAT	PRIMER: RED OXIDE ALKYD
FINISH: ACRYLIC ENAMEL	FINISH: ACRYLIC ENAMEL

7. M.D.O. BUILDING, DOOR, & WINDOW TRIM. JOINTS, PENETRATIONS, AND OTHER OPENINGS IN THE BUILDING ENVELOPE SHALL BE SEALED TO LIMIT INFILTRATION AND EXFILTRATION. SEALANT PAINTED TO MATCH FINISHES.
EXTERIOR SIDING - 8" O.C. GROOVED M.D.O. PLYWOOD OR STUCCO PATTERN FACED EXTERIOR SIDING. (MINUMUM NET THICKNESS 3/8")
8. HOLLOW METAL DOORS AND FRAMES- SIZES NOTED ON PLAN, 1 3/4" THICK 18 GA. FULL FLUSH DOOR IN 16 GA. METAL FRAME
EXIT DOOR SHALL BE OPENABLE FROM THE INTERIOR WITHOUT A KEY OR SPECIAL KNOWLEDGE OR EFFORT.
PUSH/PULL FORCE FOR DOORS SHALL BE SET FOR A MAXIMUM OPENING PRESSURE OF 5 LBS. MAX. CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION 12 DEGREES FROM THE LATCH IS 5 SECONDS MINIMUM.
DEADBOLTS NOT PERMITTED UNLESS OPERABLE WITH A SINGLE EFFORT USING LEVER HANDLE.
DOOR HANDLES & PULLS SHALL BE PLACED ON BOTH SIDES; LATCHES, LOCKS AND OTHER OPERATING DEVICES ON DOORS REQUIRED TO BE ACCESSIBLE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE AND SHALL BE 34" MINIMUM AND 44 INCHES MAXIMUM ABOVE FINISHED FLOOR.
DOOR SWINGS CAN BE RIGHT OR LEFT HAND HINGE.
HARDWARE SHALL BE CENTERED BETWEEN 34" AND 44" ABOVE FINISHED FLOOR.

LOCKSET:	SCHLAGE D70PDRHO OR EQUAL
HINGES:	HAGER BB1279 N.R.P 4-1/2"x4-1/2" OR EQUAL
CLOSER:	NORTON 8501BF OR EQUAL
THRESHOLD:	PEMKO 271A OR EQUAL
DOOR BOTTOM:	PEMKO 216AV OR EQUAL
WEATHERSTRIP:	PEMKO 306A OR EQUAL

9. METAL ROOF:
PREFINISHED, UNPENETRATED INTERLOCKING, 26 GAGE MIN. GALV. STEEL ROOF PANELS, MECH. CRIMPED STANDING SEAMS OVER SEAL-TITE #15 UNDERLAYMENT OVER 15/32" APA RATED, EXTERIOR GRADE PLYWOOD. (CLASS "B" FIRE RATING)
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WATER CLOSET (FLOOR MOUNT) : KOHLER "HIGHCLIFF" (1.6 G.P.F.) K-4368 OR EQUAL W/ SLOAN ROYAL 111-1.6/1.1 FLUSH VALVE (1.6/1.1 G.P.F.) OR EQ.
SEAT: BEMIS 1955-SSC (O.F.L.C.) OR EQUAL
URINALS: KOHLER "DARFIELD" K-5024-T (0.5 G.P.F.) OR EQUAL W/ SLOAN MODEL 186-0.5 FLUSH VALVE (0.5 G.P.F.) OR EQ.
LAVATORIES: KOHLER "KINGSTON" K-2005 20" x 18" OR EQUAL
FAUCET: T & S BRASS, B-2711-F05 (0.5 GPM) OR EQUAL
OPTIONAL WATER HEATER: "AO SMITH", PEC-30, 30 GAL, ELECTRIC, 15,359 INPUT RATE, (OR EQUAL) EXPOSED HOT WATER PIPES SHALL BE INSULATED. 1" THICK INSULATION FOR PIPE 1" DIA. OR LESS. 1 1/2" THICK INSULATION FOR PIPE GREATER THAN 1" DIA.
COLD WATER PIPING: TYPE L COPPER
DRAIN, WASTE & VENT: ABS AND PVC PIPES, STRAPPED TO RESIST HORIZONTAL DISPLACEMENT DUE TO EARTHQUAKE MOTION PER TITLE 24, PART 5, CALIFORNIA CODE OF REGULATIONS, CHAPER 4, SEC. 401 (A)
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12. ALL TOILETS SHOWN ARE TO BE WALL MOUNTED W/ HAND OPERATED FLUSH VALVE LOCATED 44 INCHES MAX. ABOVE FLOOR. WHEELCHAIR ACCESSIBLE TOILETS SHALL HAVE THE FLUSH VALVE ACTIVATOR ON THE OPEN SIDE.
13. DOORS HANDLES FOR ENAMELED STEEL PARTITIONS SHALL BE PLACED ON BOTH SIDES NEAR THE LATCH; SHALL PROVIDE A CLEAR WIDTH OF 34" FOR WHEELCHAIR ACCESSIBLE STALLS AND 24" WIDE FOR STANDARD STALLS. DOORS FOR ACCESSIBLE TOILETS SHALL BE SELF CLOSING, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON DOORS REQUIRED TO BE ACCESSIBLE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING, OR TWISTING OF THE WRIST TO OPERATE AND SHALL BE 34" MINIMUM AND 44 INCHES MAXIMUM ABOVE FINISHED FLOOR.
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15. ALL INSULATION SHALL COMPLY W/CALIFORNIA QUALITY STANDARDS & CALIFORNIA BUILDING CODE SECTION 719 CHAPTER 26 FOR FOAM INSULATION INCLUDING PIPE INSULATION. FLAME SPREAD MAX=25, SMOKE DENSITY MAX=450.
1. CEILING INSULATION TO BE R-19 FIBERGLASS
2. WALL INSULATION TO BE R-13 FIBERGLASS
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16. THE MANUFACTURER SHALL PLACE TWO PERMANENT METAL IDENTIFICATION TAG ON EACH MODULAR BUILDING MECHANICALLY FASTENED TO THE END WALL. THE TAG SHALL SHOW DSA APPLICATION NUMBER, MANUFACTURER'S SERIAL NUMBER, PLANT INSPECTOR'S IDENTIFICATION MARK AND DESIGN FLOOR AND ROOF LIVE LOAD. PLACE ONE TAG ON EXTERIOR AND, ONE ON THE INTERIOR ABOVE CEILING LINE.

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
02 114923
AC TM FLS [signature] SS [signature]
DATE 5 11 16

9 MATERIAL SPECIFICATIONS & NOTES

DIVISION OF THE STATE ARCHITECT

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
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REGISTERED PROFESSIONAL ENGINEER
ARTHUR ERNEST ROSS
No. S2030
EXP. 9/30/15
STRUCTURAL
STATE OF CALIFORNIA

JUN 03 2015

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4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

BOYS, GIRLS
RESTROOM FLOOR PLAN,
INTERIOR & EXTERIOR ELEVATIONS,
MATERIAL SPECIFICATIONS,
& NOTES

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

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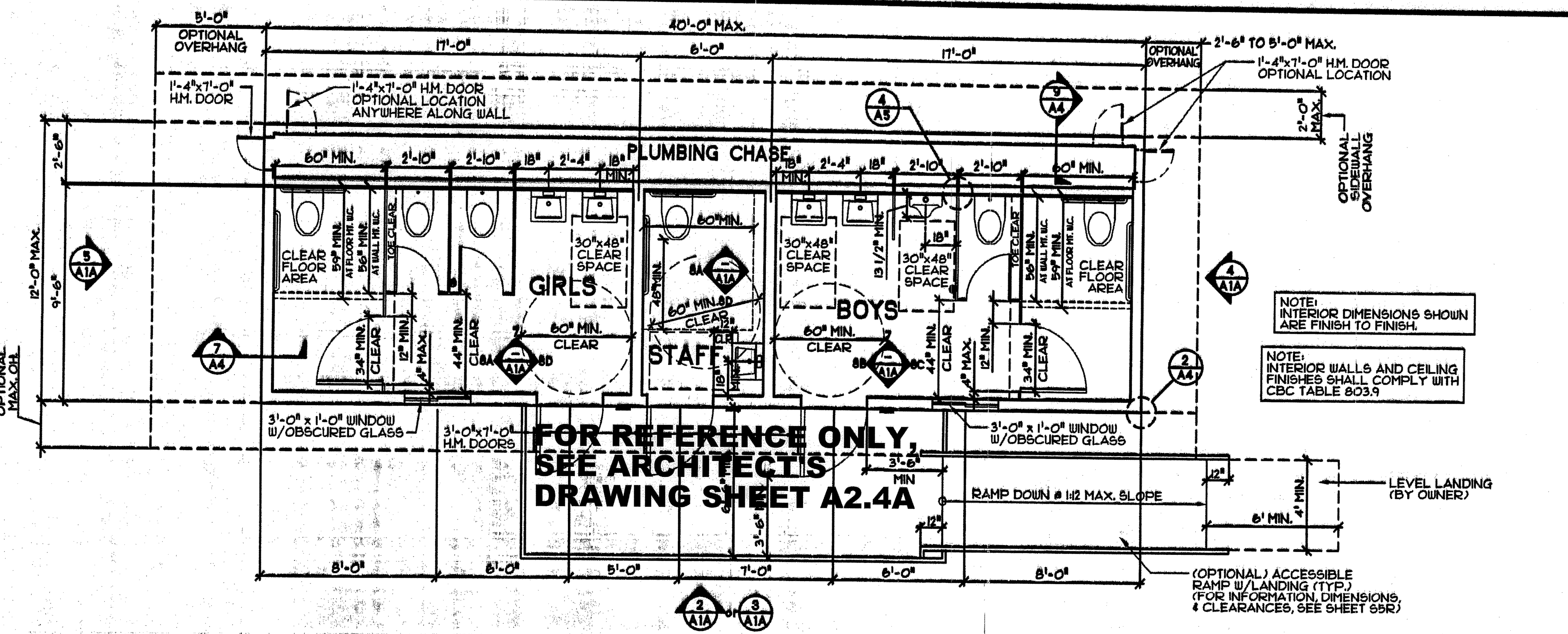
DIVISION OF THE STATE ARCHITECT
02-113910
AC TM FLS [signature] SS [signature]
DATE 6-9-15
2013 - 12x40

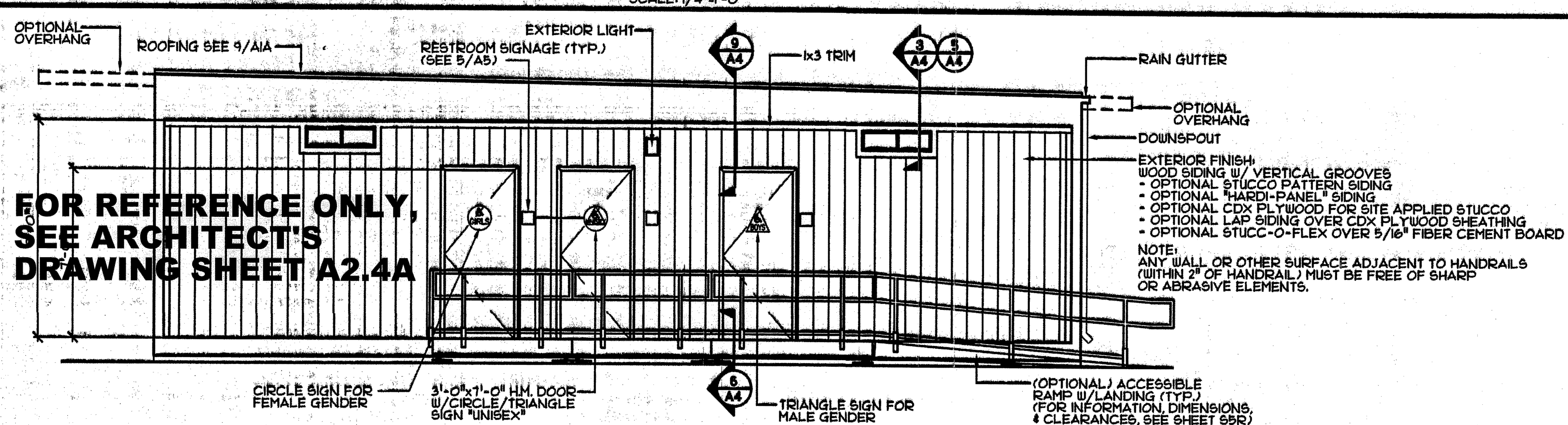
A1

12'x40' P.C.



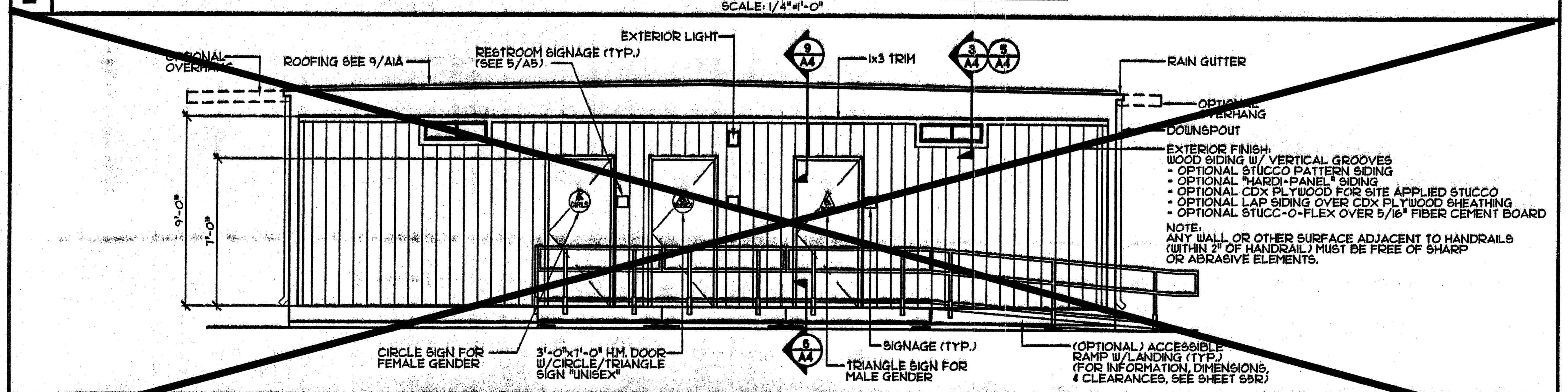
1 RESTROOM FLOOR PLAN

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



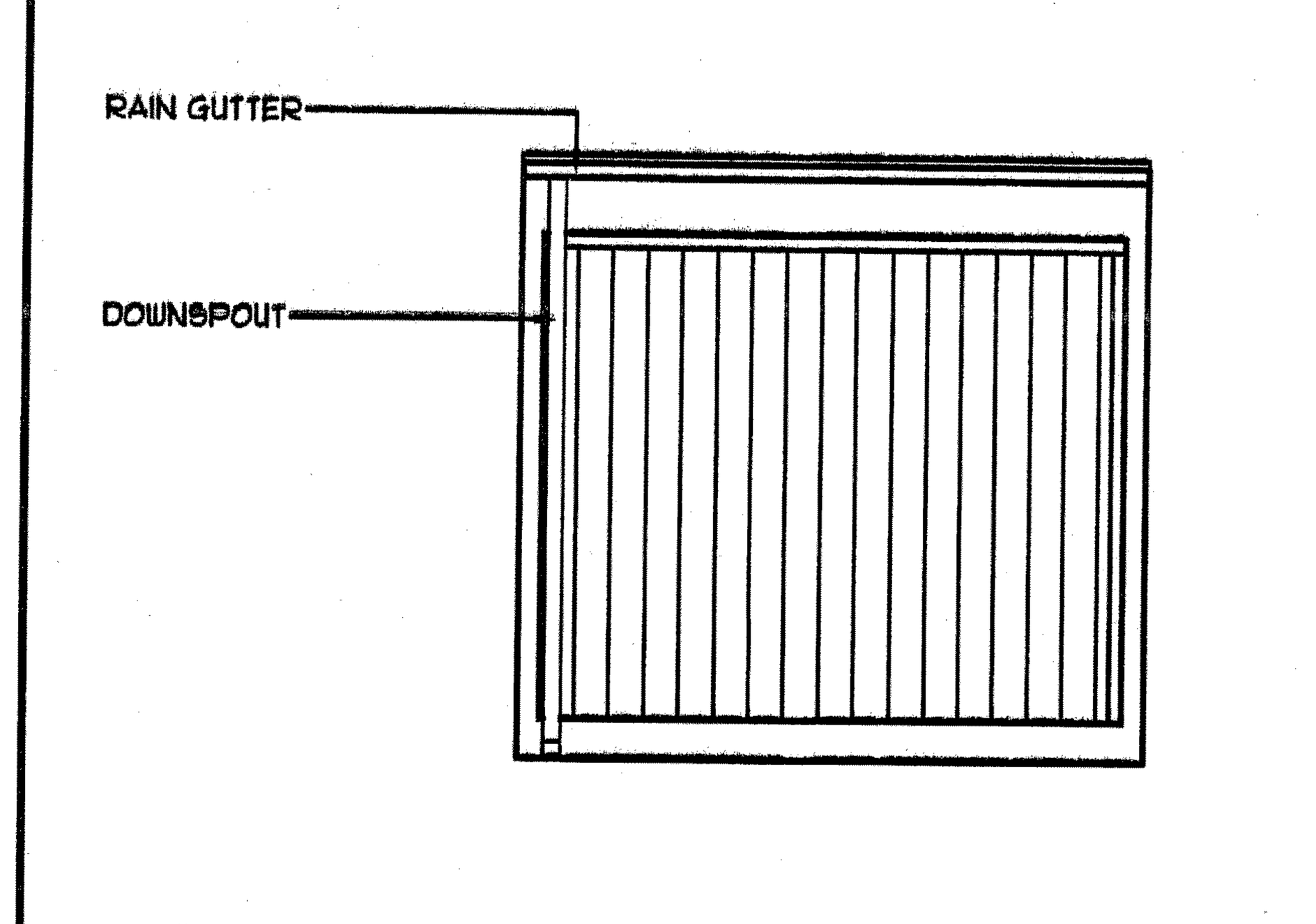
2 SIDE WALL EXTERIOR ELEVATION (SHED ROOF)

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



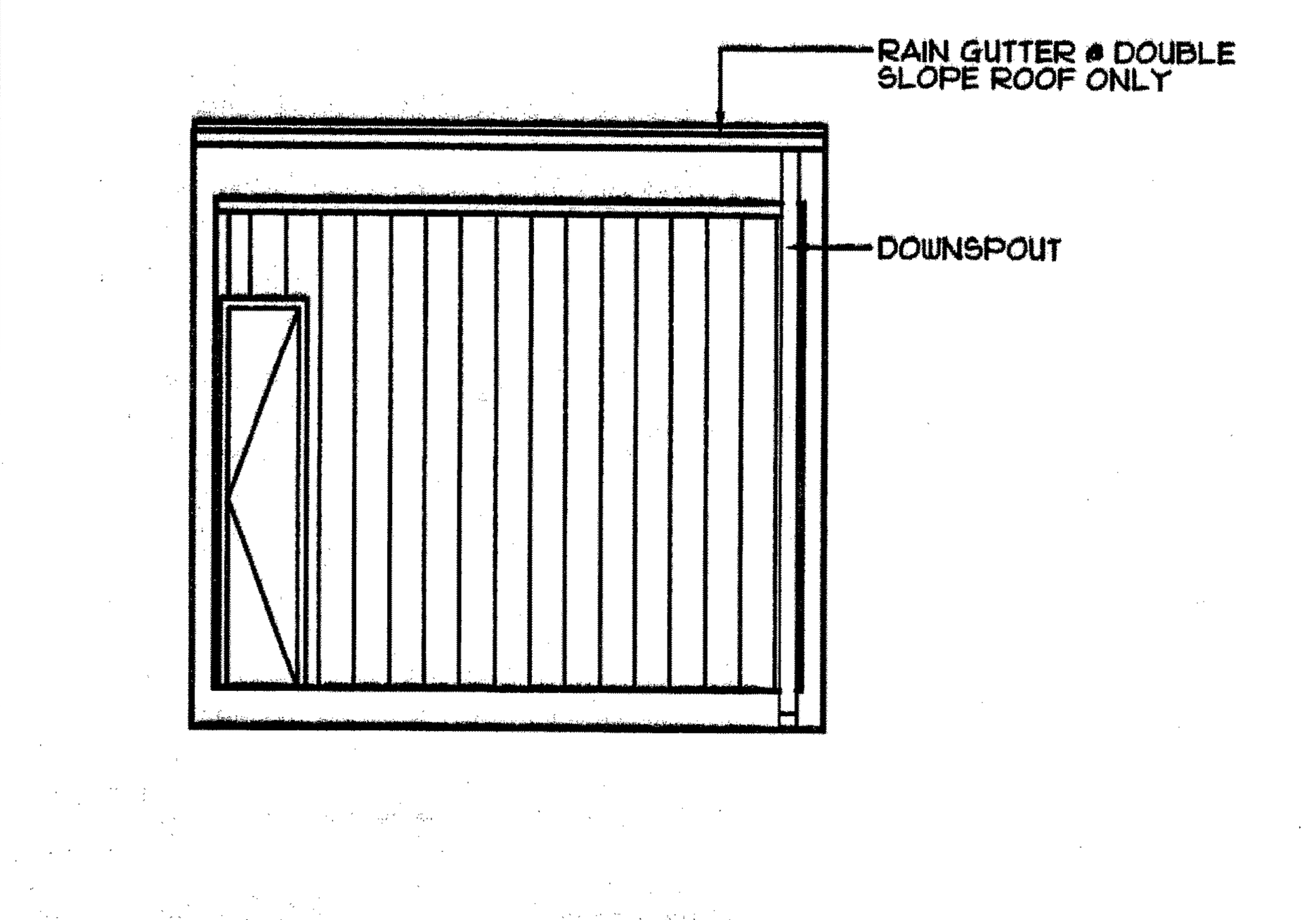
3 SIDE WALL EXTERIOR ELEVATION (BI-PITCHED ROOF)

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



4 EXTERIOR ENDWALL ELEVATION

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



5 EXTERIOR ENDWALL ELEVATION

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

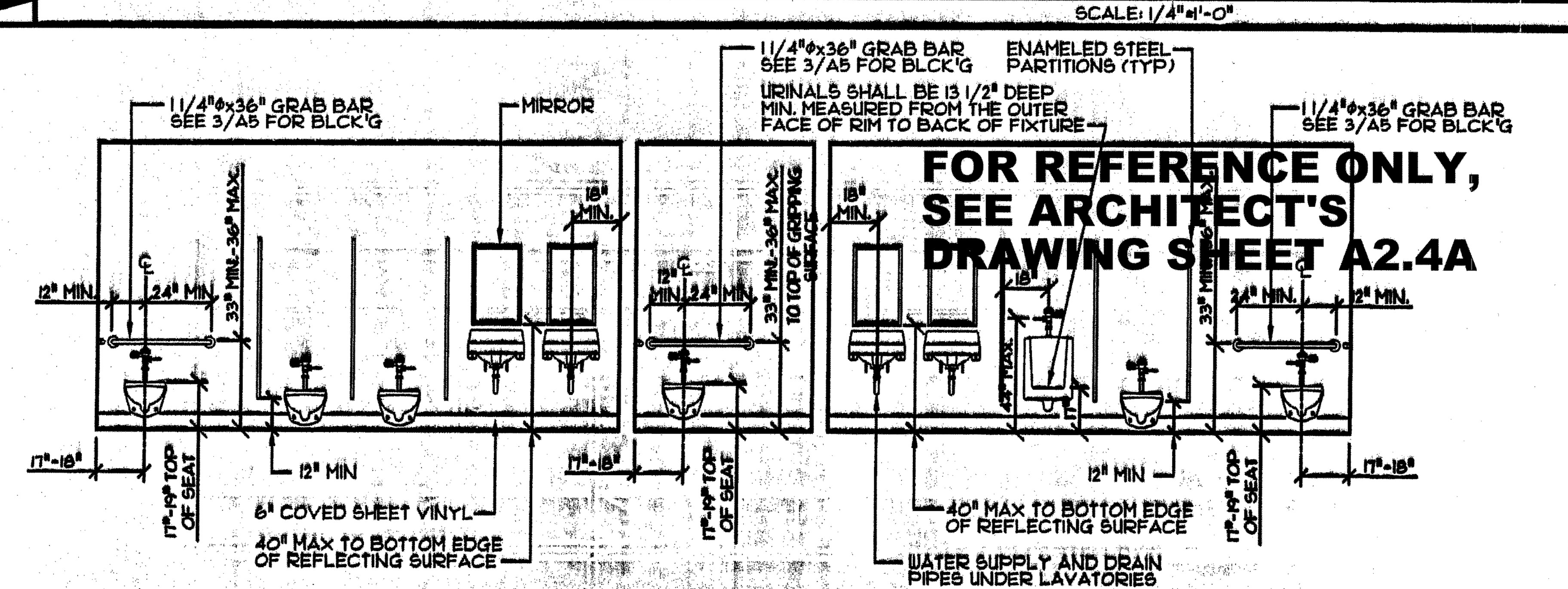
CBC TABLE 11B-604.9
SUGGESTED DIMENSIONS FOR CHILDREN'S USE

	AGES 3 AND 4	AGES 5 THRU 8	AGES 9 THRU 12
WATER CLOSET CENTERLINE	12"	12" TO 15"	15" TO 18"
TOILET SEAT HEIGHT	11" TO 12"	12" TO 15"	15" TO 17"
GRAB BAR HEIGHT	18" TO 20"	20" TO 25"	25" TO 27"
DISPENSER HEIGHT	14"	14" TO 17"	17" TO 19"

DIMENSIONS FOR ADULT USE

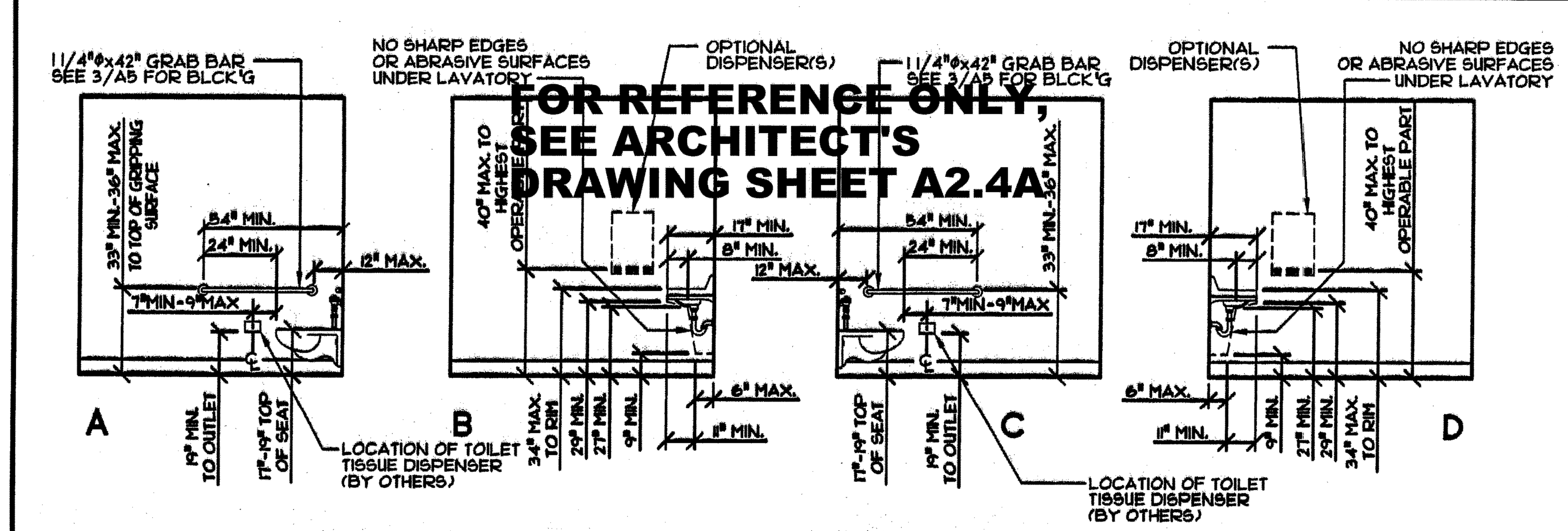
WATER CLOSET CENTERLINE	17" TO 18"
TOILET SEAT HEIGHT	17" TO 19"
GRAB BAR HEIGHT	33" TO 36" (TO TOP OF GRIP SURFACE)
DISPENSER HEIGHT CENTERLINE	19" TO OUTLET (7" TO 9" FROM FRONT OF TOILET TO CENTERLINE)

6 TYPICAL FIXTURE MOUNTING HEIGHTS



7 TYPICAL INTERIOR ELEVATION

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



8 TYPICAL INTERIOR ELEVATION

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

1. FLOORING- COMMERCIAL SHEET VINYL, ARMSTRONG CORLON OR EQUAL
   NOTE: APPLICATION AND MAINTENANCE OF POLISHED-COATED FLOOR SURFACES (BY OWNER) SHALL BE SLIP RESISTANT. (0.5 MIN. COEFFICIENT OF FRICTION PER ASTM D-2047)
2. BASE TRIM- 6" COVED SHEET VINYL (SAME AS FLOORING)
3. WALL PANELS- FIBERGLASS REINFORCED POLYETHELYENE PANELS OVER 1/2" WATER RESISTENT GYPSUM WALL BOARD @ PLUMBING WALLS ONLY
4. ADHESIVES- ALL ADHESIVES SHALL BE WATER BASE, SOLVENT BASE NOT ACCEPTABLE. FURNISH AND APPLY PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
   ALL ADHESIVES, SEALANTS, CAULKS, PAINTS, COATINGS, CARPET SYSTEMS, CARPET CUSHIONS, COMPOSITE WOOD PRODUCTS, AND RESILIENT FLOORING SYSTEMS SHALL COMPLY WITH GREEN BUILDING REQUIREMENTS, REFERENCE SHEET "AGB".
5. SEALANT- "VULKEM" SEALANT, POLYURETHANE, MANUFACTURED BY MAMECO INTERNATIONAL OR APPROVED EQUAL.
6. PAINT: (EXTERIOR WOODS) PRIMER: ACRYLIC UNDERCOAT, FINISH: ACRYLIC ENAMEL; (METALS) PRIMER: RED OXIDE ALKYD, FINISH: ACRYLIC ENAMEL

   JUN 03 2015
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IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
02 114923
AC TM FLS SS
DATE 5/11/16

9 MATERIAL SPECIFICATIONS & NOTES

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REGISTERED PROFESSIONAL ENGINEER
ARTHUR ERNEST ROSS
No. S2030
EXP. 9/30/15
STRUCTURAL
STATE OF CALIFORNIA

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STAFF, BOYS, GIRLS
RESTROOM FLOOR PLAN,
INTERIOR & EXTERIOR ELEVATIONS,
MATERIAL SPECIFICATIONS,
& NOTES

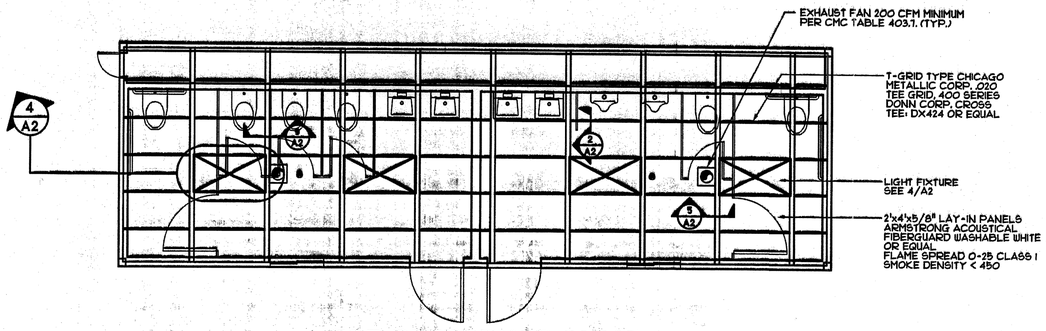
REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC TM FLS SS
DATE 6-9-15
2013 - 12x40

A1A

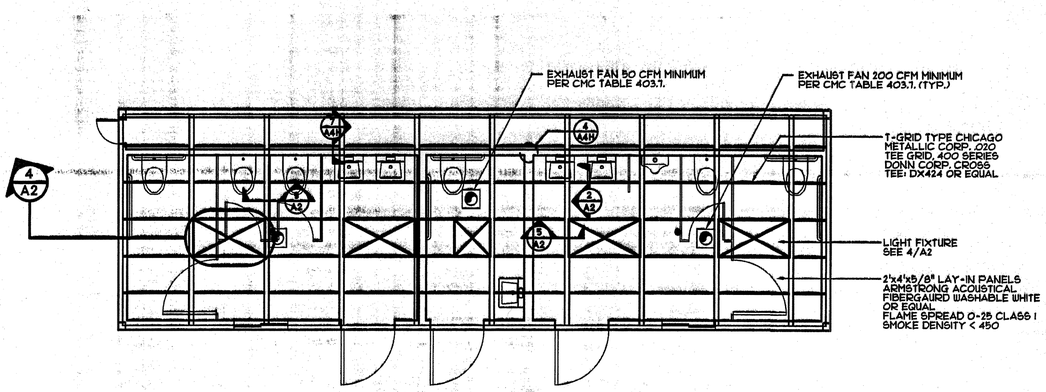
12'x40' P.C.



FOR REFERENCE ONLY, SEE ARCHITECT'S DRAWING SHEET A2.4A

NOTE: CEILING TILE & LIGHTING SYSTEM IN THIS MODULE ARE NOT SUSPENDED. THE BUILDING HAS A FIXED CEILING AND LIGHTING FIXTURE SUPPORT SYSTEM WHICH IS MECHANICALLY FASTENED TO STEEL CEILING BEAMS.

1 "BOYS / GIRLS" REFLECTED CEILING PLAN
SCALE: 1/4"=1'-0"



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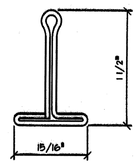
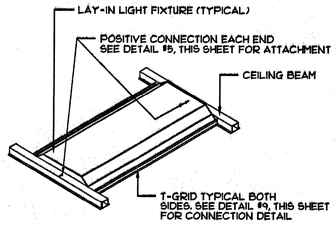
6 "BOYS / GIRLS / STAFF" REFLECTED CEILING PLAN
SCALE: 1/4"=1'-0"



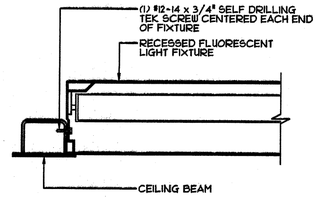
NOTE: T-GRID TO BE DONN CORP. CROSS TEE : DX424 OR CHICAGO METALLIC CORP. .020 TEE GRID, 400 SERIES OR EQUAL.

2 TYP. T-GRID SECTION
SCALE: FULL

3

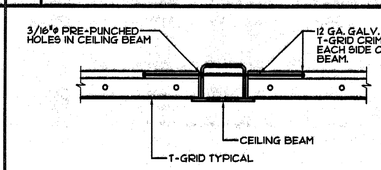


4 LAY-IN LIGHT FIXTURE
SCALE: 1/2"=1'-0"

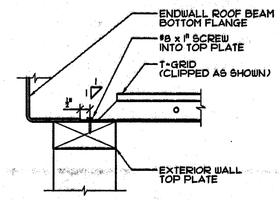


5 LIGHT FIXTURE SUPPORT
SCALE: 3"=1'-0"

8



9 T-GRID CONNECTION DETAIL
SCALE: 3"=1'-0"



10 T-GRID CONNECTION DETAIL
SCALE: 3"=1'-0"

DIVISION OF THE STATE ARCHITECT

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DIV. OF THE STATE ARCHITECT
02 114923
AC TM FLS
DATE 5-10-15

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
A separate project application for construction is required.

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JUN 03 2015

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(916) 239-4060 Fax (916) 568-0566
www.cysmg.com

REGISTERED PROFESSIONAL ENGINEER ARTHUR ERNEST ROSS No. S2030 EXP. 9/30/15 STRUCTURAL STATE OF CALIFORNIA

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ENVIROPLEX, INC.
4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

REFLECTED CEILING PLANS & CEILING ATTACHMENT DETAILS

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

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02-113910
AC. TM FLS. SS
DATE 6-9-15

2013 - 12x40

A2

12x40 P.C.

CAL-GREEN MANDATORY MEASURES

NOTE:
ONLY APPLICABLE CAL-GREEN MANDATORY MEASURES TO THE ENVIROPLEX MODULAR BUILDING ARE LISTED BELOW. FOR A COMPLETE LIST OF MEASURES REQUIRED FOR THE ENTIRE CONSTRUCTION PROJECT, REFER TO DSA DOCUMENT GL-4.

1. WATER CLOSETS.
   THE EFFECTIVE FLUSH VOLUME OF ALL WATER CLOSETS SHALL NOT EXCEED 1.28 GALLONS PER FLUSH. TANK-TYPE WATER CLOSETS SHALL BE CERTIFIED TO THE PERFORMANCE CRITERIA OF THE U.S. EPA WATERSENSE SPECIFICATION FOR TANK-TYPE TOILETS.

2. URINALS.
   THE EFFECTIVE FLUSH VOLUME OF URINALS SHALL NOT EXCEED 0.5 GALLONS PER FLUSH.

3. INDOOR WATER USE:
   LAVATORY FAUCETS - 0.5 GPM
   KITCHEN FAUCETS - 2.2 GPM
   GRAVITY TANK WATER CLOSET - 1.28 GAL/FLUSH
   FLUSHOMETER TANK WATER CLOSET - 1.28 GAL/FLUSH
   FLUSHOMETER VALVE WATER CLOSET - 1.28 GAL/FLUSH
   URINALS - 0.5 GAL/FLUSH

4. EXTERIOR DOOR PROTECTION.
   PRIMARY EXTERIOR ENTRIES SHALL BE COVERED TO PREVENT WATER INTRUSION BY USING NONABSORBENT FLOOR AND WALL FINISHES WITHIN AT LEAST 2 FEET AROUND AND PERPENDICULAR TO SUCH OPENINGS
   PLUS AT LEAST ONE OF THE FOLLOWING:
   1. AN INSTALLED AWNING AT LEAST 4 FEET IN DEPTH.
   2. THE DOOR IS PROTECTED BY A ROOF OVERHANG AT LEAST 4 FEET IN DEPTH.
   3. THE DOOR IS RECESSED AT LEAST 4 FEET.
   4. OTHER METHODS WHICH PROVIDE EQUIVALENT PROTECTION.

5. WASTE MANAGEMENT COMPANY.
   UTILIZE A WASTE MANAGEMENT COMPANY THAT CAN PROVIDE VERIFIABLE DOCUMENTATION THAT THE PERCENTAGE OF CONSTRUCTION AND DEMOLITION WASTE MATERIAL DIVERTED FROM THE LANDFILL.

6. COVERING OF DUCT OPENINGS AND PROTECTION OF MECHANICAL EQUIPMENT DURING CONSTRUCTION.
   AT THE TIME OF ROUGH INSTALLATION, OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST, WATER AND DEBRIS WHICH MAY COLLECT IN THE SYSTEM.

7. CARPET SYSTEMS.
   ALL CARPET INSTALLED IN THE BUILDING INTERIOR SHALL MEET AT LEAST ONE OF THE TESTING AND PRODUCT REQUIREMENTS:
   1. CARPET AND RUG INSTITUTE'S GREEN LABEL PLUS PROGRAM.
   2. COMPLIANT WITH THE VOC-EMISSION LIMITS AND TESTING REQUIREMENTS SPECIFIED IN THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH STANDARD METHOD FOR THE TESTING AND EVALUATION OF VOLATILE ORGANIC CHEMICAL EMISSIONS FROM INDOOR SOURCES USING ENVIRONMENTAL CHAMBERS, VERSION 1.1, FEBRUARY 2010 (ALSO KNOWN AS CDPH STANDARD METHOD V1.1 OR SPECIFICATION 01350).
   3. NSF/ANSI 140 AT THE GOLD LEVEL OR HIGHER;
   4. SCIENTIFIC CERTIFICATIONS SYSTEMS SUSTAINABLE CHOICE; OR
   5. COMPLIANT WITH THE CALIFORNIA COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS (CA-CHPS) CRITERIA INTERPRETATION FOR EQ 2.2 DATED JULY 2012 AND LISTED IN THE CHPS HIGH PERFORMANCE PRODUCT DATABASE.

8. CARPET CUSHION.
   ALL CARPET CUSHION INSTALLED IN THE BUILDING INTERIOR SHALL MEET THE REQUIREMENTS OF THE CARPET AND RUG INSTITUTE GREEN LABEL PROGRAM.

9. CARPET ADHESIVE.
   ALL CARPET ADHESIVE SHALL MEET THE REQUIREMENTS OF TABLE 5.504.4.1.

10. COMPOSITE WOOD PRODUCTS.
    HARDWOOD PLYWOOD, PARTICLEBOARD AND MEDIUM DENSITY FIBERBOARD COMPOSITE WOOD PRODUCTS USED ON THE INTERIOR OR EXTERIOR OF THE BUILDINGS SHALL MEET THE REQUIREMENTS FOR FORMALDEHYDE AS SPECIFIED IN ARB'S AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD (17 CCR 93120 ET SEQ.).
    THOSE MATERIALS NOT EXEMPTED UNDER THE ATCM MUST MEET THE SPECIFIED EMISSION LIMITS, AS SHOWN IN TABLE 5.504.4.5.

11. RESILIENT FLOORING SYSTEMS.
    80% OF FLOOR AREA RECEIVING RESILIENT FLOORING, INSTALLED RESILIENT FLOORING SHALL MEET AT LEAST ONE OF THE FOLLOWING:

    1. CERTIFIED UNDER THE RESILIENT FLOOR COVERING INSTITUTE (RFCI) FLOOR SCORE PROGRAM;

    2. COMPLIANT WITH THE VOC-EMISSION LIMITS AND TESTING REQUIREMENTS SPECIFIED IN THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH'S 2010 STANDARD METHOD FOR THE TESTING AND EVALUATION CHAMBERS, VER 1.1, FEB 2010.;

    3. COMPLIANT WITH THE CALIFORNIA COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS (CA-CHPS) CRITERIA INTERPRETATION FOR EQ 2.2 DATED JULY 2012 AND LISTED IN THE CHPS HIGH PERFORMANCE PRODUCT DATABASE;

    4. COMPLIANT WITH CDPH CRITERIA AS CERTIFIED UNDER THE GREENGUARD CHILDREN'S & SCHOOLS PROGRAM.

    VERIFICATION OF COMPLIANCE.
    DOCUMENTATION SHALL BE PROVIDED VERIFYING THAT RESILIENT FLOORING MATERIALS MEET THE POLLUTANT EMISSION LIMIT.

TABLE 5.504.4.1 - ADHESIVE VOC LIMIT[1,2]
Less Water and Less Exempt Compounds in Grams per Liter

ARCHITECTURAL APPLICATIONS	CURRENT VOC LIMIT
INDOOR CARPET ADHESIVES	50
CARPET PAD ADHESIVES	50
OUTDOOR CARPET ADHESIVES	150
WOOD FLOORING ADHESIVES	100
RUBBER FLOOR ADHESIVES	60
SUBFLOOR ADHESIVES	50
CERAMIC TILE ADHESIVES	65
VCT & ASPHALT TILE ADHESIVES	50
DRYWALL & PANEL ADHESIVES	50
COVE BASE ADHESIVES	50
MULTIPURPOSE CONSTRUCTION ADHESIVES	70
STRUCTURAL GLAZING ADHESIVES	100
SINGLE-PLY ROOF MEMBRANE ADHESIVES	250
OTHER ADHESIVES NOT SPECIFICALLY LISTED	50
SPECIALTY APPLICATIONS	
PVC WELDING	510
CPVC WELDING	490
ABS WELDING	325
PLASTIC CEMENT WELDING	250
ADHESIVE PRIMER FOR PLASTIC	550
CONTACT ADHESIVE	80
SPECIAL PURPOSE CONTACT ADHESIVE	250
STRUCTURAL WOOD MEMBER ADHESIVE	140
TOP & TRIM ADHESIVE	250
SUBSTRATE SPECIFIC APPLICATIONS	
METAL TO METAL	30
PLASTIC FOAMS	50
POROUS MATERIAL (EXCEPT WOOD)	50
WOOD	30
FIBERGLASS	80

1. IF AN ADHESIVE IS USED TO BOND DISSIMILAR SUBSTRATES TOGETHER, THE ADHESIVE WITH THE HIGHEST VOC CONTENT SHALL BE ALLOWED.

2. FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THIS TABLE, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168, www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF

TABLE 5.504.4.2 - SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter

SEALANTS	CURRENT VOC LIMIT
ARCHITECTURAL	250
MARINE DECK	760
NONMEMBRANE ROOF	300
ROADWAY	250
SINGLE-PLY ROOF MEMBRANE	450
OTHER	420
SEALANT PRIMERS	
ARCHITECTURAL	
NONPOROUS	250
POROUS	775
MODIFIED BITUMINOUS	500
MARINE DECK	760
OTHER	750

NOTE: FOR ADDITIONAL INFORMATION REGARDING METHODS TO MEASURE THE VOC CONTENT SPECIFIED IN THESE TABLES, SEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 1168.

TABLE 5.504.4.5 - FORMALDEHYDE LIMITS[1]
MAXIMUM FORMALDEHYDE EMISSIONS IN PARTS PER MILLION

PRODUCT	CURRENT LIMIT
HARDWOOD PLYWOOD VENEER CORE	0.05
HARDWOOD PLYWOOD COMPOSITE CORE	0.05
PARTICLE BOARD	0.09
MEDIUM DENSITY FIBERBOARD	0.11
THIN MEDIUM DENSITY FIBERBOARD[2]	0.13

1. VALUES IN THIS TABLE ARE DERIVED FROM THOSE SPECIFIED BY THE CALIFORNIA AIR RESOURCES BOARD, AIR TOXICS CONTROL MEASURE FOR COMPOSITE WOOD AS TESTED IN ACCORDANCE WITH ASTM E 1333. FOR ADDITIONAL INFORMATION, SEE CALIFORNIA CODE OF REGULATIONS, TITLE 17, SECTIONS 93120 THROUGH 93120.12.

2. THIN MEDIUM DENSITY FIBERBOARD HAS A MAXIMUM THICKNESS OF 5/16 INCHES (8 MM).

JUN 03 2015

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02 114923
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DATE 5/11/15

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
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REGISTERED PROFESSIONAL ENGINEER
ARTHUR ERNEST GROSS
No. S2030
EXP. 9/30/15
STRUCTURAL
STATE OF CALIFORNIA

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GREEN BUILDING STANDARDS

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC FLS SS
DATE 6-1-15

2013 - T5HB

AGB

12"x40" P.C.

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/14) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS — NRCC-LTI-01-E
Indoor Lighting — (Page 1 of 5)
Project Name: 12x40 Modular PC — Date Prepared: 10/17/2014

Climate Zone:	Conditioned Floor Area : 0
3	Unconditioned Floor Area : 480

General Information

Building Type:	☐ Nonresidential	☐ High-Rise Residential	☐ Hotel/Motel		
☐ Schools	☐ Relocatable Public Schools	☐ Conditioned Spaces	☑ Unconditioned Spaces		
Phase of Construction:	☒ New Construction	☐ Addition	☐ Alteration		
Method of Compliance:	☐ Complete Building	☐ Area Category	☐ Tailored		

LIGHTING COMPLIANCE DOCUMENTS (select yes for each document included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.

YES	NO	FORM	TITLE
YES		NRCC-LTI-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
YES		NRCC-LTI-02-E	Lighting Controls, Certificate of Compliance, and PAF Calculation. All Pages required on plans for all submittals.
YES		NRCC-LTI-03-E	Indoor Lighting Power Allowance
	NO	NRCC-LTI-04-E	Tailored Method Worksheets
	NO	NRCC-LTI-05-E	Line Voltage Track Lighting Worksheets

Summary of Allowed Lighting Power

Conditioned and Unconditioned space Lighting must not be combined for compliance

	Indoor Lighting Power for Conditioned Spaces		Watts		Indoor Lighting Power for Unconditioned Spaces		Watts
1.	Installed Lighting NRCC-LTI-01-E, page 4	+	0		Installed Lighting NRCC-LTI-01-E, page 4	+	238
2.	PORTABLE ONLY FOR OFFICES NRCC-LTI-01-E, page 3	+					
3.	Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0		Minus Lighting Control Credits NRCC-LTI-02-E, page 2	-	0
4.	Adjusted Installed Lighting Power (row 1 plus row 2 minus row 3)	=	0		Adjusted Installed Lighting Power (row 1 minus row 3)	=	238

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/14) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS — NRCC-LTI-01-E
Indoor Lighting — (Page 2 of 5)
Project Name: 12x40 Modular PC — Date Prepared: 10/17/2014

		Complies ONLY if Installed ≤ Allowed		Complies ONLY if Installed ≤ Allowed	
5.	Allowed Lighting Power Conditioned NRCC-LTI-03-E, page 1	0	Allowed Lighting Power Unconditioned NRCC-LTI-03-E, page 1		628

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	
X		NRCI-LTI-01-E - Must be submitted for all buildings	☐ Field Inspector
X		NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐ Field Inspector
	X	NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	☐ Field Inspector
	X	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐ Field Inspector
	X	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐ Field Inspector
	X	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐ 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	
X		NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐ Field Inspector
	X	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐ Field Inspector
	X	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐ Field Inspector

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/14) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS — NRCC-LTI-01-E
Indoor Lighting — (Page 3 of 5)
Project Name: 12x40 Modular PC — Date Prepared: 10/17/2014

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
☐ The actual indoor lighting power listed on this page and on the next page includes all installed permanent and planned portable lighting systems.
☐ When Complete Building Method is used for compliance, list each different type of luminaire by each different function area on separate lines
☐ When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines
☐ Also include track lighting in schedule, and submit the track lighting compliance form (NRCC-LTI-05-E) when line-voltage track lighting is installed.

B. Installed Portable Luminaires in Offices – Exception to Section 140.6(a)
☐ This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.1). 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.

Office Portable Luminaire Schedule	Office Installed Portable Luminaire Watts Per Square Foot							Office Location	Field Inspector
A	B	C	D	E	F	G	H	I	J
Complete Luminaire Description (i.e., LED, under cabinet, furniture mounted direct/indirect)	Watts per Luminaire	Number of Luminaires	Installed portable luminaire watts in this office (B x C)	Room type allowance	Watts per square foot (D / E)	If F ≤ 0.3, enter zero; If F > 0.3, (F-0.3)	If G ≤ 0	Identify Office area in which these portable luminaires are installed	Pass / Fail
									☐ ☐
									☐ ☐
									☐ ☐
									☐ ☐
									☐ ☐
Total installed portable luminaire watts that are greater than 0.3 watts per square foot per office:								Enter sum total of all pages into NRCC-LTI-01-E; Page 1	

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/14) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS — NRCC-LTI-01-E
Indoor Lighting — (Page 4 of 5)
Project Name: 12x40 Modular PC — Date Prepared: 10/17/2014

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

Luminaire Schedule			Installed Watts					Location	Field Inspector
A	B		C	D	E	F		G	H
Luminaire Schedule Number	Complete Luminaire Description (i.e., lamp fluorescent troffer, F32T8, one dimmable electronic ballast)		Luminaire Wattage	Number of Luminaires (Now wattage was determined Complete Building Method)	Number of Luminaires (Area Category Method or Tailored Method)	Luminaire Wattage (Area Category Method or Tailored Method)	Total Installed Watts (C x D or C x E)	Primary Function area in which these luminaires are located	Pass / Fail
A	4 ft LED 3GTL 4 80L		56.0	☐	4	238		Relocatable Public School	☐ ☐
				☐					☐ ☐
				☐					☐ ☐
				☐					☐ ☐
				☐					☐ ☐
				☐					☐ ☐
				☐					☐ ☐
				☐					☐ ☐
INSTALLED WATTS PAGE TOTAL:							238	Enter sum total of all pages into NRCC-LTI-01-E; Page 2	

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

STATE OF CALIFORNIA
INDOOR LIGHTING
CEC-NRCC-LTI-01-E (Revised 05/14) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS — NRCC-LTI-01-E
Indoor Lighting — (Page 5 of 5)
Project Name: 12x40 Modular PC — Date Prepared: 10/17/2014

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I, I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Hayley Dodd	Documentation Author Signature:	
Company:	EnergySoft, LLC	Signature Date:	10/17/2014
Address:	1035 5th Street, Suite A	CEA / HERS Certification Identification (If applicable):	ENERGY·SOFT
City/State/Zip:	Novato, CA 94949	Phone:	(415) 897-8400

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Lula Esquivel	Responsible Designer Signature:	
Company:	Enviroplex Inc.	Date Signed:	6-9-15
Address:	4777 E. Carpenter Rd	License:	640557
City/State/Zip:	Stockton, CA 95215	Phone:	209-466-8000

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/14) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 1 of 3)
Project Name: 12x40 Modular PC — Date Prepared: 10/17/2014

The NRCC-LTI-02-E shall be used to document all mandatory and prescriptive lighting controls that are applicable to the project.

Mandatory Lighting Control Declaration Statements (Indicate if the measure applies by checking yes or no below.)

YES	NO	Control Requirements
X		Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
X		Lighting shall be controlled by a lighting control system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
	X	One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. Additionally, an Installation Certificate shall be submitted in accordance with Section 130.4(b).
	X	A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.0. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
X		All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
X		All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
X		General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 30 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled in accordance with Section 130.1(a)4.
X		The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
X		All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
	X	Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
	X	Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
X		Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/14) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 2 of 3)
Project Name: 12x40 Modular PC — Date Prepared: 10/17/2014

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☑ CONDITIONED SPACES ☐ UNCONDITIONED SPACES

MANDATORY AND PRESCRIPTIVE INDOOR LIGHTING CONTROL SCHEDULE, PAF CALCULATION, and FIELD INSPECTION CHECKLIST

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter "E" if Exempted)								PAF Credit Calculation [2]				✓ If Acceptance Test Required	Field Inspector	
											Watt-less Controlled Lighting	PAF	Credit (K x L)				
A	B	C	D	E	F	G	H	I	J		K	L	M	N	O		
Location in Building	Type/ Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(b)	§130.1(c)1	§130.1(c)2	§130.1(c)3	§130.1(c)4	§130.1(c)5	§130.1(c)6	§130.1(d)						Pass	Fail
																☐	☐
																☐	☐
																☐	☐
																☐	☐
																☐	☐
																☐	☐
																☐	☐
																☐	☐
Control Credit PAGE TOTAL (Sum of Column M):													0				
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column M):													0				
															Enter Control Credit total into NRCC-LTI-01-E; Page 1.		

1. §130.1(a) = Manual area controls; §130.1(b) = Multi Level; §130.1(c) = Auto Shut-Off; §130.1(d) = Mandatory Daylight; §130.1(e) = Demand Responsive; §140.6(a) = Additional lighting controls installed to earn a PAF; §140.6(b) = Prescriptive Secondary Sidelit Daylight Controls.
2. Check Table §40.6-A for correct Factor. PAFs shall not be traded between conditioned and unconditioned spaces. As a condition to earn a PAF, an Installation Certificate is also required to be filled out, signed, and submitted.

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
CEC-NRCC-LTI-02-E (Revised 05/14) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-02-E
Indoor Lighting - Lighting Controls — (Page 3 of 3)
Project Name: 12x40 Modular PC — Date Prepared: 10/17/2014

A separate document must be filled out for Conditioned and Unconditioned Spaces. This page is used only for the following:
☐ CONDITIONED SPACES ☑ UNCONDITIONED SPACES

MANDATORY AND PRESCRIPTIVE INDOOR LIGHTING CONTROL SCHEDULE, PAF CALCULATION, and FIELD INSPECTION CHECKLIST

Lighting Control Schedule			Standards Complying With [1] (✓ all that apply, or enter "E" if Exempted)								PAF Credit Calculation [2]				✓ If Acceptance Test Required	Field Inspector	
											Watt-less Controlled Lighting	PAF	Credit (K x L)				
A	B	C	D	E	F	G	H	I	J		K	L	M	N	O		
Location in Building	Type/ Description of Lighting Control (i.e.: occupancy sensor, automatic time switch, dimmer, automatic daylight, etc...)	# of Units	§130.1(b)	§130.1(c)1	§130.1(c)2	§130.1(c)3	§130.1(c)4	§130.1(c)5	§130.1(c)6	§130.1(d)						Pass	Fail
																☐	☐
																☐	☐
																☐	☐
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																☐	☐
Control Credit PAGE TOTAL (Sum of Column M):													0				
IF MULTIPLE PAGES ARE USED, ENTER SUM TOTAL OF Control Credit for all pages HERE (Sum of all Column M):													0				
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CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

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DATE 6/11/15

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DIVISION OF STATE ARCHITECT
HIGH PERFORMANCE SECTION
APP.# 02-113910 DATE: 6/5/15
Lydia Barrón, C.S.P.S.

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
A separate project application for construction is required.

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(916) 388-0115 Fax: (916) 388-0116
www.cysengr.com

REGISTERED PROFESSIONAL ENGINEER ARTHUR ERNEST ROSS No. S2030 EXP. 9/30/15 STRUCTURAL STATE OF CALIFORNIA

THESE DRAWINGS ARE PRELIMINARY AND NOT FOR CONSTRUCTION UNLESS STAMPED & SIGNED BY THE ENGINEER OF RECORD.

ENVIROPLEX, INC.
4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

ENERGY COMPLIANCE
UNCONDITIONED RESTROOM

REV / DATE:	BY:

JOB No.:
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DATE:

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02-113910
AC. — FLS. — SS.
DATE 6-9-15

2013 – 12x40

12'x40' P.C.

EN1

STATE OF CALIFORNIA
INDOOR LIGHTING – LIGHTING CONTROLS
(2013-NRCC-LTI-02-E (Revised 06/14))
CALIFORNIA ENERGY COMMISSION
NRCC-LTI-03-E
(Page 3 of 3)

CERTIFICATE OF COMPLIANCE	
Indoor Lighting - Lighting Controls	
Project Name: 12x40 Modular PC	Date Prepared: 10/17/2014

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Hayley Dodd	Documentation Author Signature:	
Company:	EnergySoft, LLC	Signature Date:	10/17/2014
Address:	1026 5th Street, Suite A	CEA / HERS Certification Identification (if applicable):	ENERGY·SOFT
City/State/Zip:	Novato, CA 94949	Phone:	(415) 897-8400

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Luis Esquivel	Responsible Designer Signature:	
Company:	Enviroplex Inc.	Date Signed:	6-9-15
Address:	4777 E. Carpenter Rd	License:	640957
City/State/Zip:	Stockton, CA 95215	Phone:	209-466-8000

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
(2013-NRCC-LTI-03-E (Revised 06/14))
CALIFORNIA ENERGY COMMISSION
NRCC-LTI-03-E
(Page 1 of 4)

CERTIFICATE OF COMPLIANCE	
Certificate of Compliance - Indoor Lighting Power Allowance	
Project Name: 12x40 Modular PC	Date Prepared: 10/17/2014

ALLOWED LIGHTING POWER

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☐ CONDITIONED spaces ☒ UNCONDITIONED spaces

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES

☐ If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts.
☐ If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts

	(a)	(b)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)		
2. Area Category Method Allowed Watts. Documented in section C-3 of NRCC-LTI-03-E (below on this page)		528
3. Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E		0
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1		528

☐ Check here if building contains both conditioned and unconditioned areas.

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE

A: TYPE OF BUILDING (From §140.6 Table 140.6-B)	B: WATTS PER (ft^2)		C: COMPLETE BLDG. AREA		D: ALLOWED WATTS
		x		=	
Total Area:					
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)					

C-1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C-2 plus C-3)

	Watts
Total from section C-2	528
Total from section C-3	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page)	528

STATE OF CALIFORNIA
INDOOR LIGHTING POWER ALLOWANCE
(2013-NRCC-LTI-03-E (Revised 06/14))
CALIFORNIA ENERGY COMMISSION
NRCC-LTI-03-E
(Page 2 of 4)

CERTIFICATE OF COMPLIANCE	
Certificate of Compliance - Indoor Lighting Power Allowance	
Project Name: 12x40 Modular PC	Date Prepared: 10/17/2014

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for:
☐ CONDITIONED spaces ☒ UNCONDITIONED spaces

C-2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in section B of NRCC-LTI-03-E.
☐ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

A: Area Category (From §140.6 Table 140.6-C)		B: WATTS PER (ft^2)		C: AREA (ft^2)		D: ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
Restroom	Relocatable Public School	1.10	x	480	=	528

STATE OF CALIFORNIA
OUTDOOR LIGHTING CONTROLS
CEC-NRCC-LTO-02-E (Revised 2013)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Controls	(Page 3 of 3)
Project Name: 12x40 Modular PC	Date Prepared: 10/17/2014

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Hayley Dodd	Documentation Author Signature:	
Company:	Energy8oft, LLC	Signature Date:	10/17/2014
Address:	1025 5th Street, Suite A	CEA/ HERS Certification Identification (If applicable):	ENERGY-SOFT
City/State/Zip:	Novato, CA 94949	Phone:	(415) 897-8400

RESPONSIBLE PERSON'S DECLARATION STATEMENT
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Responsible Designer Name:	Luis Esquivel	Responsible Designer Signature:	
Company:	Enviroplex Inc.	Date Signed:	6-5-15
Address:	4777 E. Carpenter Rd	License:	640551
City/State/Zip:	Stockton, CA 95215	Phone:	209-466-8000

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-02-E (Revised 2013)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Power Allowances	(Page 2 of 4)
Project Name: 12x40 Modular PC	Date Prepared: 10/17/2014

C. ADDITIONAL "USE IT OR LOSE IT" OUTDOOR LIGHTING POWER ALLOWANCES FOR SPECIFIC APPLICATIONS
☐ The additional specific outdoor lighting power allowance shall be the smaller of the allowed lighting power or the actual lighting power used.
☐ Use Outdoor Lighting Zone (OLZ) that is documented on page 1 of NRCC-LTO-01-E to calculate the specific wattage allowances.

C-1. WATTAGE ALLOWANCE PER APPLICATION – Table 140.7-B
☐ Available only for qualifying locations, which include Building Entrances or Exits; Primary Entrances to Senior Care Facilities, Police Stations, Hospitals, Fire Stations, and Emergency Vehicle Facilities; Drive Up Windows; Vehicle Service Station Uncovered Fuel Dispenser
☐ If more than one luminaire type is used per location, use multiple rows for that location

A	B	C	D	E	F	G	H	I	J
	ALLOWED WATTS			DESIGN WATTS					
Name of Location for which allowance is claimed	Number of qualifying locations	Wattage Allowance per qualifying location	Allowed Watts (B x C)	Luminaire's Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per luminaire	Design Watts (G x H)	Allowed Watts (smaller of D or I)
Outdoor Lighting	1	90	90	S	90w Incandescent	1	60.0	60	60
							Sum total allowances per application on this site:		

C-2. WATTAGE ALLOWANCE PER UNIT LENGTH (Sales Frontage) from Table 140.7-B
☐ If more than one luminaire type is used per location, use multiple rows for that location

A	B	C	D	E	F	G	H	I	J
	ALLOWED WATTS			DESIGN WATTS					
Name of Location for which allowance is claimed	Linear feet of Sales Frontage	Wattage Allowance per linear-foot	Allowed Watts (B x C)	Luminaire's Code or Symbol	Luminaire Description	Luminaire Quantity	Watts per luminaire	Design Watts (G x H)	Allowed Watts (smaller of D or I)
							Sum total allowances for sales frontage on this site:		0

STATE OF CALIFORNIA
OUTDOOR LIGHTING POWER ALLOWANCES
CEC-NRCC-LTO-02-E (Revised 2013)
CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE	NRCC-LTO-02-E
Outdoor Lighting Power Allowances	(Page 4 of 4)
Project Name: 12x40 Modular PC	Date Prepared: 10/17/2014

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Documentation Author Name:	Hayley Dodd	Documentation Author Signature:	
Company:	Energy8oft, LLC	Signature Date:	10/17/2014
Address:	1025 5th Street, Suite A	CEA/ HERS Certification Identification (If applicable):	ENERGY-SOFT
City/State/Zip:	Novato, CA 94949	Phone:	(415) 897-8400

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DIVISION OF STATE ARCHITECT
HIGH PERFORMANCE SECTION
APP.# 02-113910 DATE: 6/5/15
Pedro Carrion, C.E.P.S.

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REGISTERED PROFESSIONAL ENGINEER
ARTHUR ERNEST ROSS
No. S3030
EXP. 6/30/15
STRUCTURAL
STATE OF CALIFORNIA

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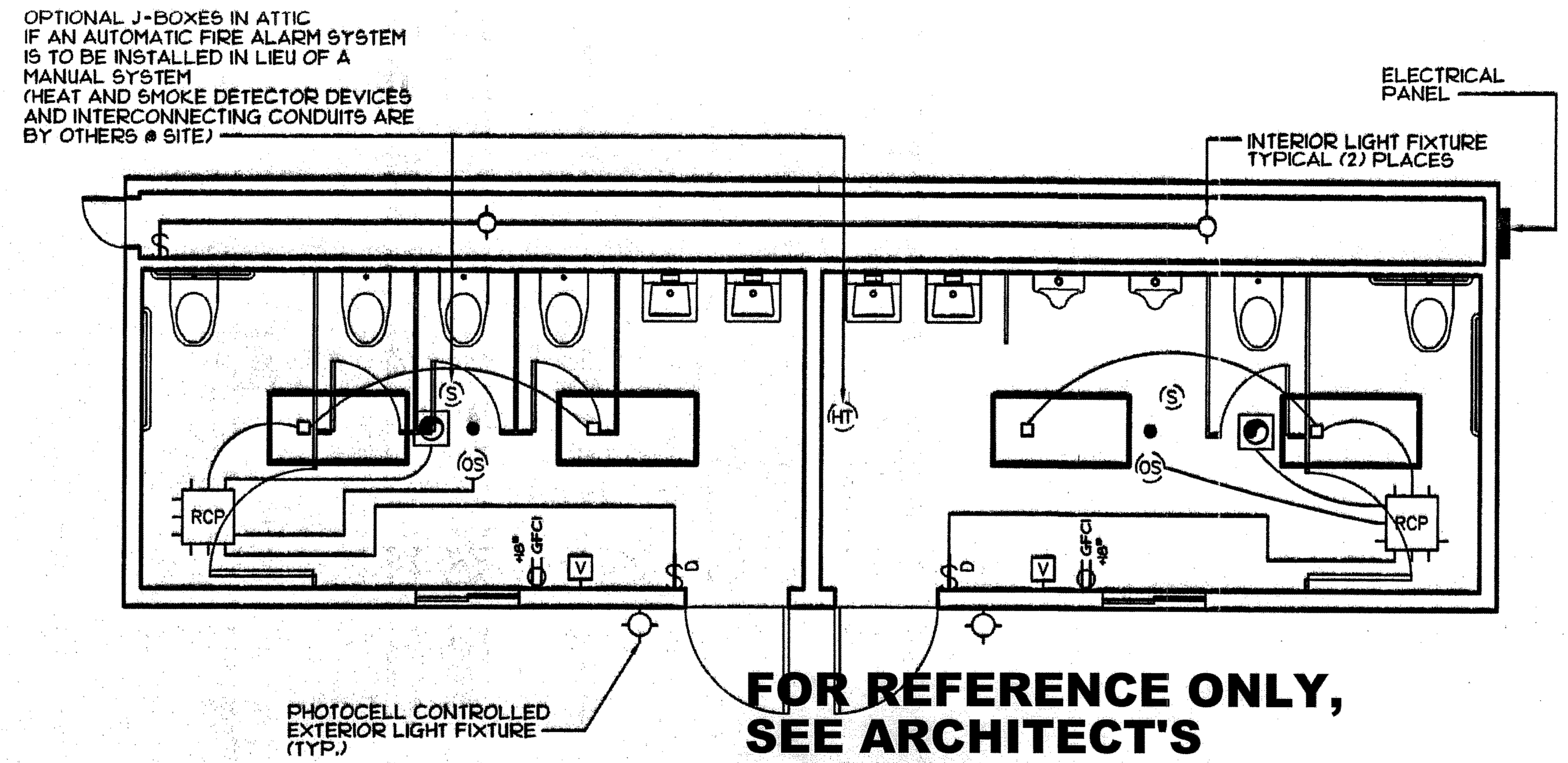
DATE 6-9-15

12x40 - 13x40

EN1.2

12x40 P.C.

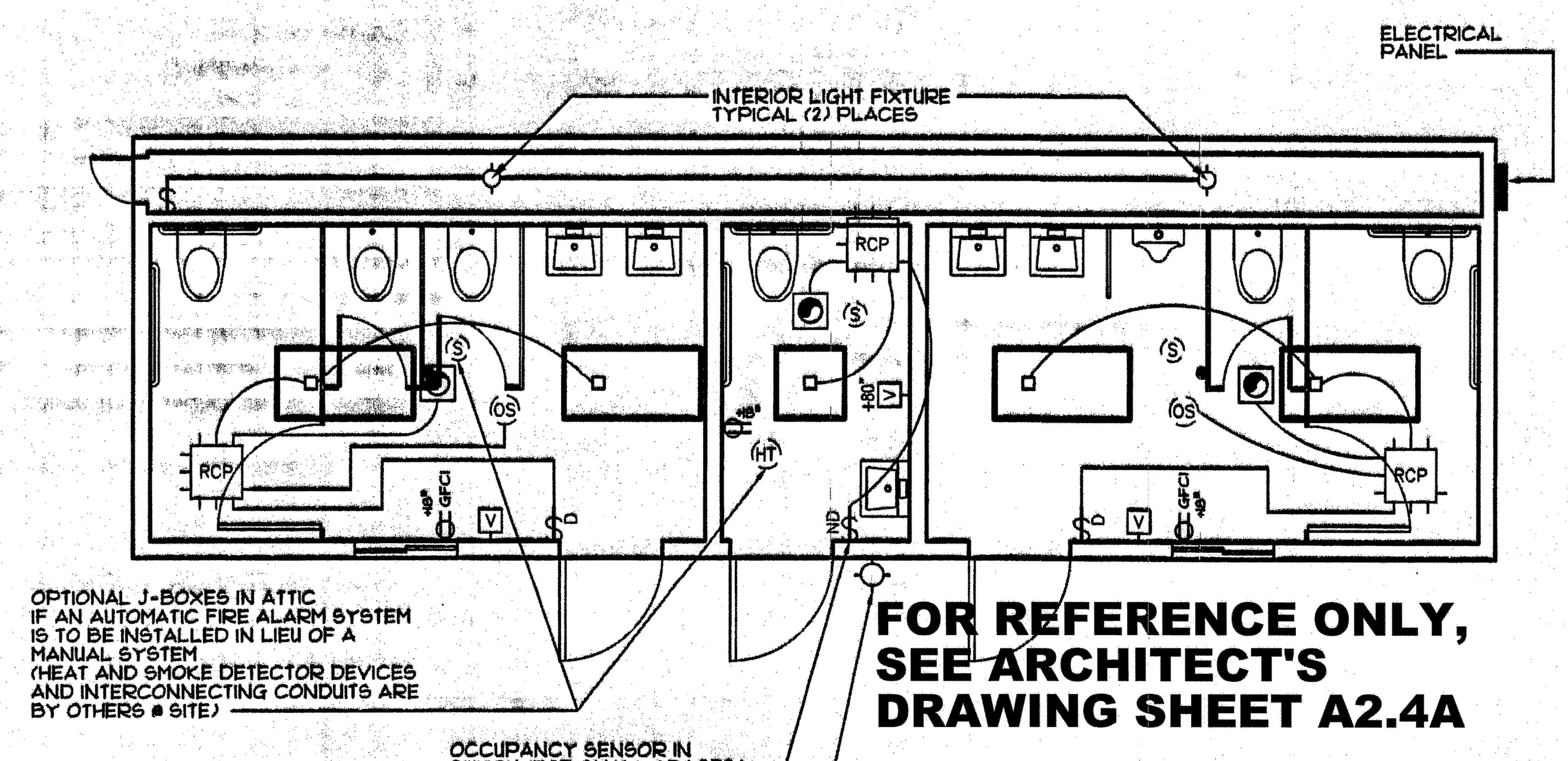


FOR REFERENCE ONLY, SEE ARCHITECT'S DRAWING SHEET A2.4A

NOTE:
DAYLIGHTING CONTROLS ARE NOT REQUIRED IN ROOMS THAT HAVE A TOTAL GLAZING AREA OF LESS THAN 24 SQ. FT.

1a ELECTRICAL POWER, LIGHTING & SIGNAL PLAN

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



FOR REFERENCE ONLY, SEE ARCHITECT'S DRAWING SHEET A2.4A

NOTE:
DAYLIGHTING CONTROLS ARE NOT REQUIRED IN ROOMS THAT HAVE A TOTAL GLAZING AREA OF LESS THAN 24 SQ. FT.

11 ELECTRICAL POWER, LIGHTING & SIGNAL PLAN

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

PANEL SCHEDULE: "A"
MOUNTING: SURFACE NEMA-1 VOLTS: 120/240
PANEL: 125A PHASE: 1φ
MAIN BREAKER: 125A WIRE: 3W

DESCRIPTION	LOAD	BRKR		MAIN 125 A B		BRKR	LOAD	DESCRIPTION
			1		2	20/1	600	LIGHTING-A
			3		4	20/1	600	LIGHTING-B
			5		6	20/1	1800	OUTLETS
			7		8	20/1	1800	OUTLETS
			9		10			
			11		12			

LEG A: 2400 W LEG B: 2400 W TOTAL: 4800 W

7 TYP. INTERIOR PANEL SCHEDULE

RCP — RELAY CONTROLLER PANEL: NEMA 1 PLENUM RATED, SURFACE MOUNTED DIMMING PANEL (RELAYS, DIMMING OUTPUTS, PHOTOCELL INPUTS, & DRY CONTACT INPUTS).

LIGHT FIXTURE: 2'x4' LED RECESSED TROFFER TYPE

LIGHT FIXTURE: 2'x2' LED RECESSED TROFFER TYPE

OS — OCCUPANCY SENSOR: LOW VOLTAGE, CEILING MOUNTED, OPTIONAL - WALL MOUNTED.

$D — DIMMING SWITCH: LOW VOLTAGE, TWO BUTTON, DIGITAL SWITCH W/ MANUAL ON/OFF & DIMMING CONTROL. (@+48" MAX A.F.F. TO TOP OF BOX).

$ND — NON-DIMMING SWITCH: LOW VOLTAGE, TWO BUTTON, DIGITAL SWITCH W/ MANUAL ON/OFF. (@+48" MAX A.F.F. TO TOP OF BOX).

EXTERIOR LIGHT: COMPACT FLUORESCENT, 13 WATT, WALL PACK. "LITHONIA" TWS (OR EQUAL) MOUNTED @ +96" A.F.F. (U.O.N.)

LIGHTING LEGEND

1. OPTIONAL WALL CLOCK (BY OWNERS) :
PROVIDE SINGLE CLOCK RECEPTACLE
115 VAC (OR EQUAL) .
2. ELECTRICAL PANEL:
FLUSH INTERIOR MOUNTED OR SURFACE MOUNT EXTERIOR W/ HINGED DOORS AND INDEXED CARD HOLDERS.
CIRCUIT BREAKER (S) WILL HAVE AN APPROPRIATE UL. LABEL LISTING.
3. RECEPTACLES:
"LEVITON", "HUBBEL" (OR EQUAL)
4. ELECTRIC METALLIC TUBING:
COUPLINGS AND FLEX CONDUIT GALVANIZED OR SHERARDIZED.

3 ELECTRICAL SPECIFICATIONS

1. FIRE ALARM: FURNISHED BY OWNER AND SHALL CONFORM TO THE CALIFORNIA BUILDING CODE SECTION 907.2.3 AND CALIFORNIA ELECTRICAL CODE ARTICLE 760.
2. INSTALLATION OF THE FIRE ALARM SYSTEM SHALL NOT BE STARTED UNTIL DETAILED PLANS AND SPECIFICATIONS, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAVE BEEN APPROVED BY D.S.A.
3. UPON COMPLETION OF THE INSTALLATION OF THE FIRE ALARM SYSTEM A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE PROJECT INSPECTOR.
4. ALARMS/EMERGENCY WARNING SYSTEMS/ACCESSIBILITY.
IF EMERGENCY WARNING SYSTEMS ARE PROVIDED, THEY SHALL INCLUDE BOTH AUDIBLE ALARMS AND VISUAL ALARMS COMPLYING WITH NFPA 72 AND CHAPTER 9, SECTIONS 907.5.2 AND 907.5.2.1

2 FIRE PROTECTION

DUPLEX RECEPTACLE @+15" MIN. A.F.F. (TO BOTTOM OF BOX) OR 18" A.F.F. TO CENTERLINE OF BOX. (UNLESS OTHERWISE NOTED)

J — JUNCTION BOX (SIZE AND INSTALLATION HEIGHT AS NOTED)

H — WATER PROOF BELL BOX UNDER EAVE @+9'-4" (U.O.N.) FOR FUTURE FIRE ALARM AUDIBLE WARNING DEVICE SEE NOTE NO. 1 OF FIRE PROTECTION

P — JUNCTION BOX @+48" A.F.F. (TO TOP OF BOX) FOR FUTURE FIRE ALARM PULL STATION - SEE NOTE NO. 1 OF FIRE PROTECTION ABOVE

V — JUNCTION BOX @+90" (U.O.N.) FOR FUTURE FIRE ALARM HORN/STROBE DEVICE - SEE NOTE NO. 1 OF FIRE PROTECTION ABOVE

I — JUNCTION BOX @+48" A.F.F. (TO TOP OF BOX) (U.O.N.) FOR FUTURE INTERCOM

CEILING MOUNT EXHAUST FAN (CFM PER SHEET A2)

HT — OPTIONAL JUNCTION BOX IN ATTIC FOR FUTURE HEAT DETECTOR (DEVICES AND INTERCONNECTING CONDUITS BY OTHERS @ SITE)

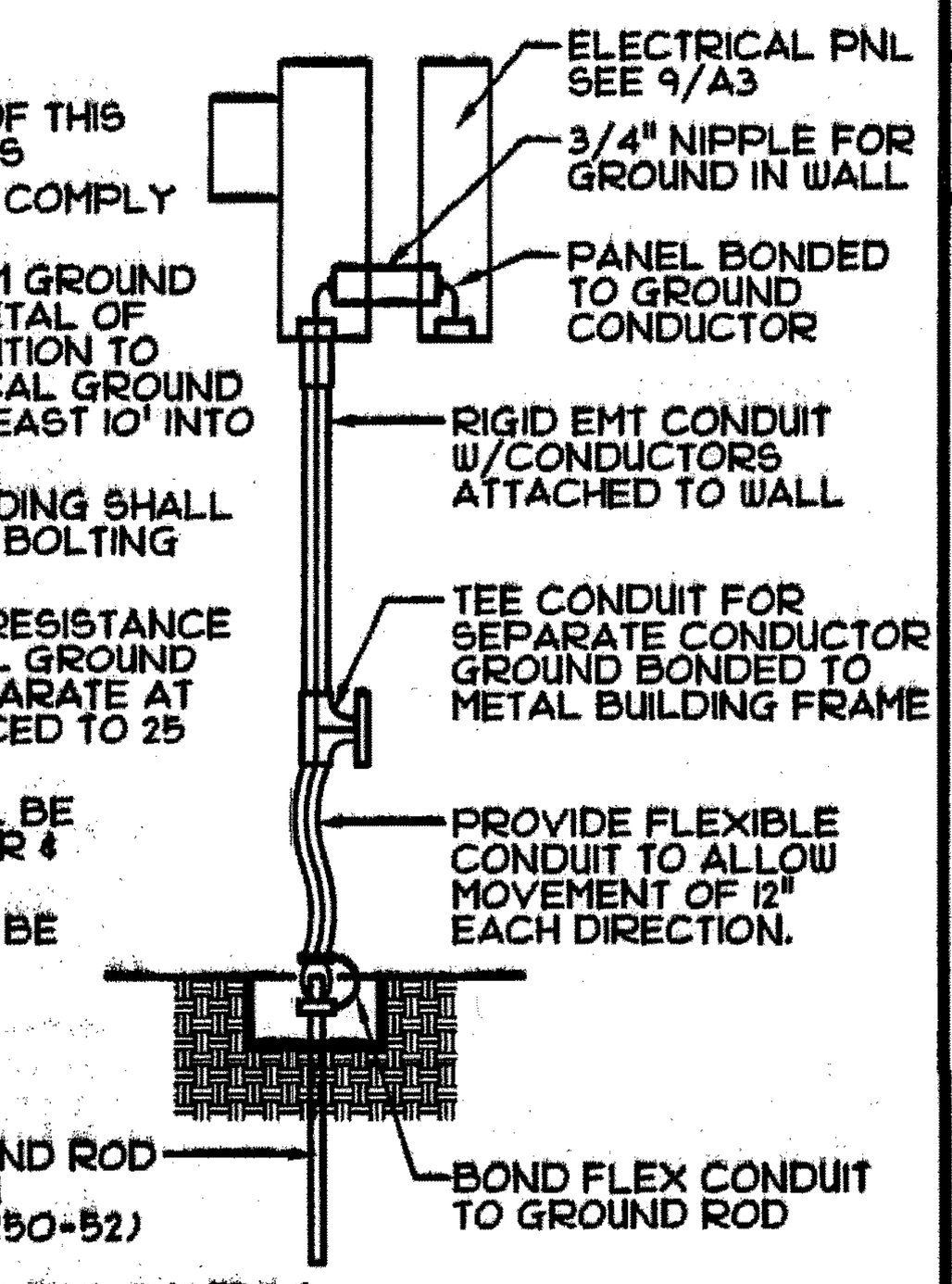
S — OPTIONAL JUNCTION BOX IN ATTIC FOR FUTURE SMOKE DETECTOR (DEVICES AND INTERCONNECTING CONDUITS BY OTHERS @ SITE)

4 ELECTRICAL LEGEND

1. CERTIFIED LUMINARIES/BALLASTS.
2. INDEPENDENT CONTROL WITHIN ENCLOSED AREAS.
3. MANUAL SWITCHING READILY ACCESSIBLE.
4. REDUCTION OF LIGHTING LOAD TO AT LEAST 50% VIA (2) SWITCHES OR (1) MULTI-LEVEL SWITCH.
5. NOT USED.
6. TANDEM WIRING OF (4) LAMP LUMINARIES.

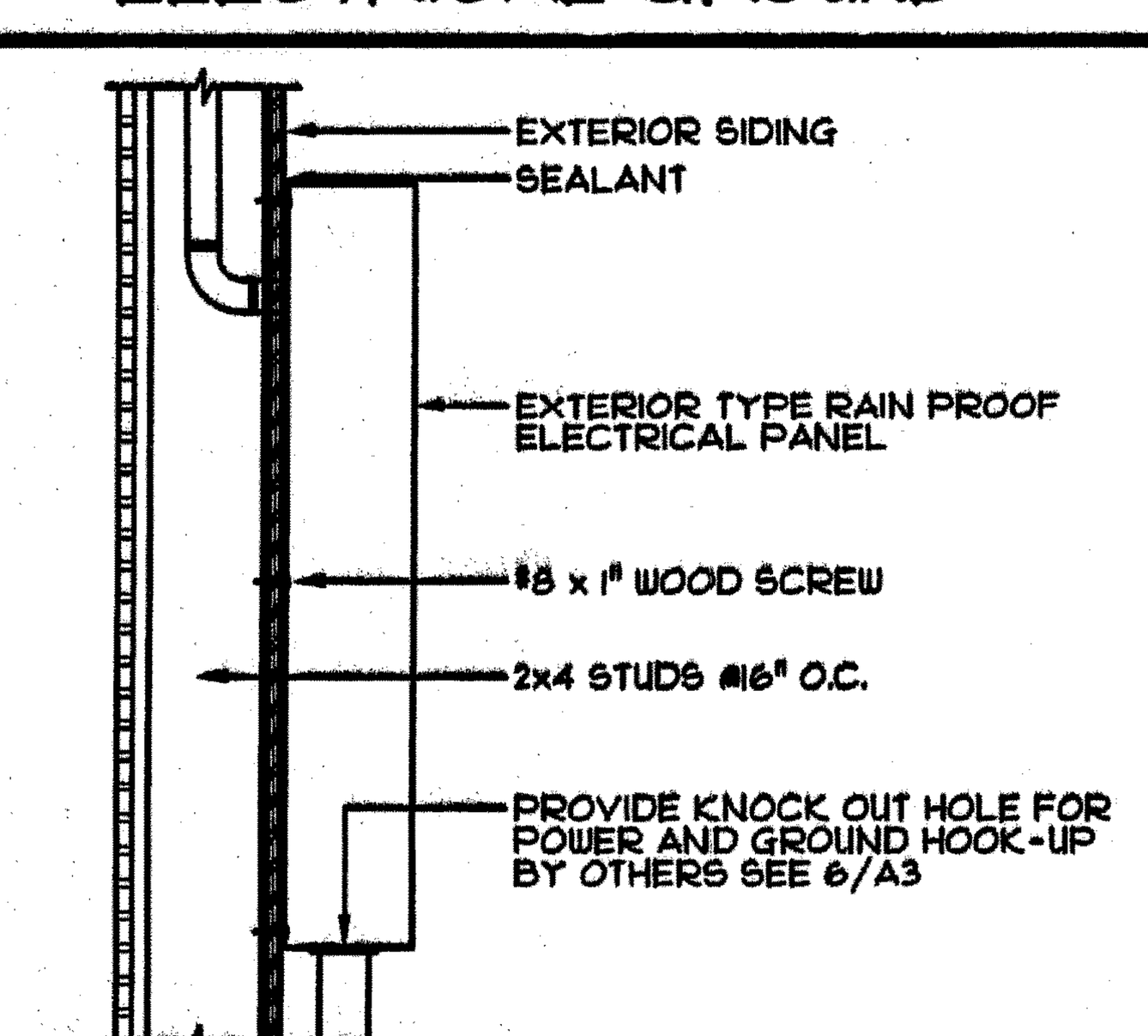
5 ELECTRICAL ENERGY COMPLIANCE

NOTES:
1. METER AND GROUND ARE NOT PART OF THIS CONTRACT TO BE PROVIDED BY OTHERS
2. SIZE OF GROUND CONDUCTOR SHALL COMPLY W/CEC TABLE 250-122
3. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELECTRICAL PANEL AND TO METAL OF BUILDING FRAME (CEC. 250-52) IN ADDITION TO THE DETAIL SHOWN BOND THE ELECTRICAL GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10' INTO THE SOIL IF AVAILABLE (C.E.C. 250-52)
4. ALL MODULES OF METAL FRAME BUILDING SHALL BE ELECTRICALLY BONDED TOGETHER, BOLTING ONLY IS NOT ACCEPTABLE BONDING.
5. CHECK RESISTANCE TO GROUND. IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDITIONAL GROUND RODS W/ CONDUCTORS AS SHOWN, SEPARATE AT LEAST 6'0" UNTIL RESISTANCE IS REDUCED TO 25 OHMS OR LESS. (C.E.C. 250-52)
6. ELECTRICAL GROUNDING TEST SHALL BE WITNESSED BY THE PROJECT INSPECTOR & RESULTS SENT TO D.S.A.
7. GROUND ROD GROUNDING CLAMP TO BE BUSHING RATED FOR 3 CONNECTIONS



NOTE: GROUND TO BE PROVIDED BY OTHERS

8 ELECTRICAL GROUND



10 ELECTRICAL PANEL INSTALLATION

SCALE: 1"=1'-0"

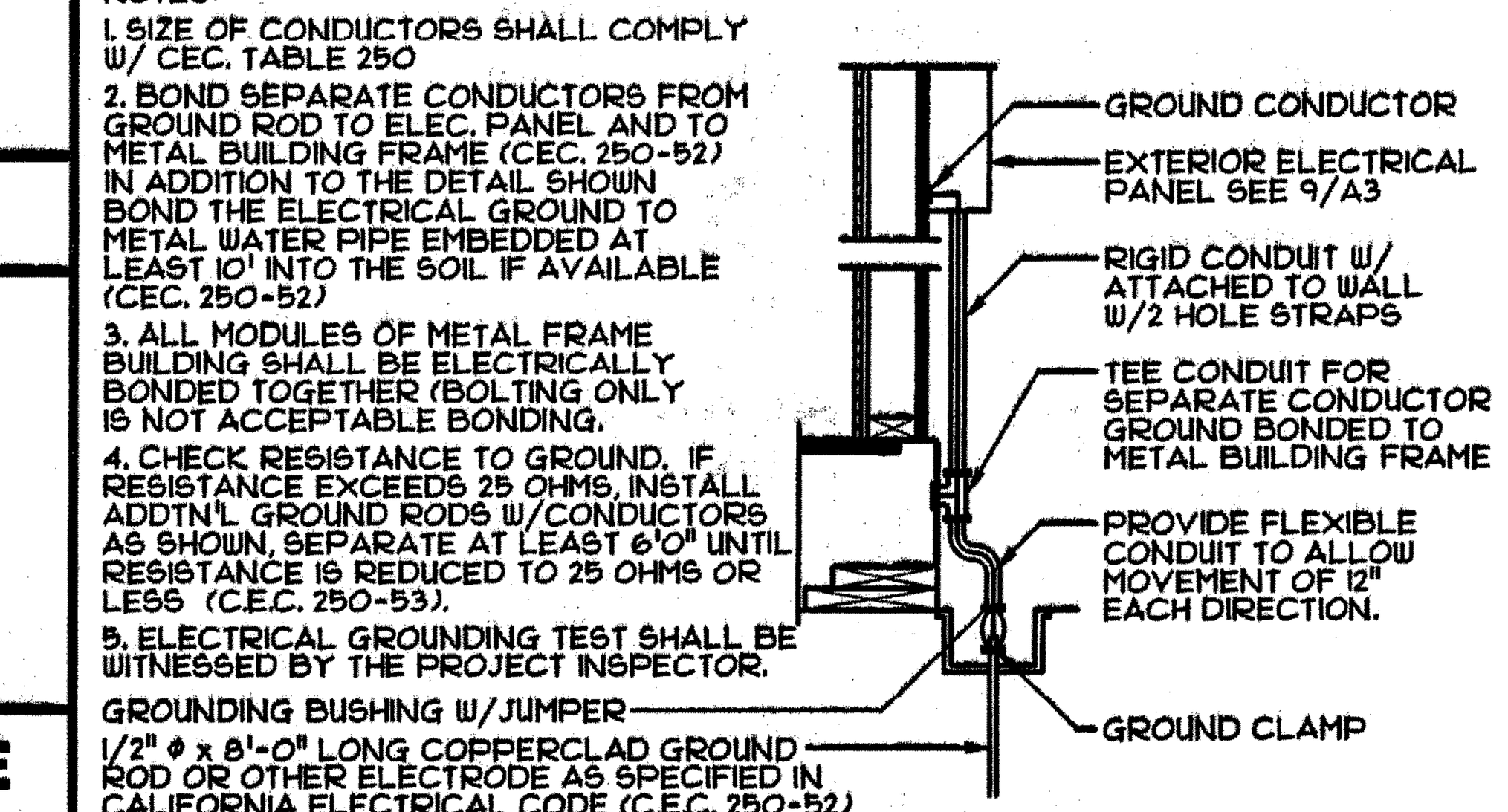
1. LIGHTING FIXTURE:
2' x 4' LED RECESSED TROFFER TYPE FIXTURES,
W/ LOW VOLTAGE DIMMING CONTROL SIGNAL, MAXIMUM 6000 LUMENS, MAX 59W.
"LITHONIA" 2GTL (OR EQUAL) .
2. DAYLIGHT CONTROL PHOTOCELL:
ON/OFF AND AUTOMATIC DIMMING CONTROL, CEILING MOUNT, LOW VOLTAGE.
"nLIGHT" nCM ADC OR nCM ADCX (OR EQUAL) .
3. LIGHT SWITCHES:
ON/OFF & ON/OFF PLUS DIMMING, PUSH BUTTON, LOW VOLTAGE.
"nLIGHT" nCM ADC OR nCM ADCX (OR EQUAL) .
4. OCCUPANCY SENSOR:
LOW VOLTAGE, WALL MOUNT OR CEILING MOUNT.
5. RELAY CONTROL PANEL:
RELAY DIMMING PANEL, NEMA 1 PLENUM RATED, SURFACE MOUNTED.
W/ 30A RELAYS, LOW VOLTAGE DIMMING OUTPUTS, PHOTOCELL OUTPUTS, DRY CONTACT INPUTS, AND OPTIONAL VOLTAGE BARRIER FOR EM CIRCUITS.
"ACUITY BRANDS" (OR EQUAL)
6. ILLUMINATED EXIT SIGNS:
IF REQUIRED BY CODE, SHALL BE PROVIDED IN COMPLIANCE W/ C.B.C. 1011 & 1006.
7. NOT USED.

JUN 0 3 2015

8. SKYLIGHTS (IF OPTION IS INCLUDED IN SITE SPECIFIC PROJECT) :
GENERAL LIGHTING FIXTURES PLACED IN THE PRIMARY DAYLIT ZONE OF SKYLIGHTS SHALL BE CONTROLLED IN RESPONSE TO AVAILABLE DAYLIGHTING.
9. ACCESSIBLE, INDEPENDENT SWITCHING OR A CONTROL DEVICE SHALL BE INCLUDED FOR ALL AREAS ENCLOSED BY CEILING HEIGHT PARTITIONS.
10. ALL OUTDOOR LIGHTING SHALL BE CONTROLLED BY A PHOTOCELL OR OUTDOOR ASTRONOMICAL TIME SWITCH CONTROL.
11. FOR NON-POLE MOUNTED LUMINAIRES OVER 30 WATTS EACH:
OUTDOOR LIGHTING WHERE BOTTOM OF LUMINAIRE IS MOUNTED 24 FEET OR LESS ABOVE THE GROUND SHALL BE CONTROLLED BY MOTION SENSORS OR OTHER CONTROLS CAPABLE OF REDUCING THE LIGHTING POWER OF EACH LUMINAIRE BY 40 TO 80% IN RESPONSE TO THE AREA BEING VACATED.

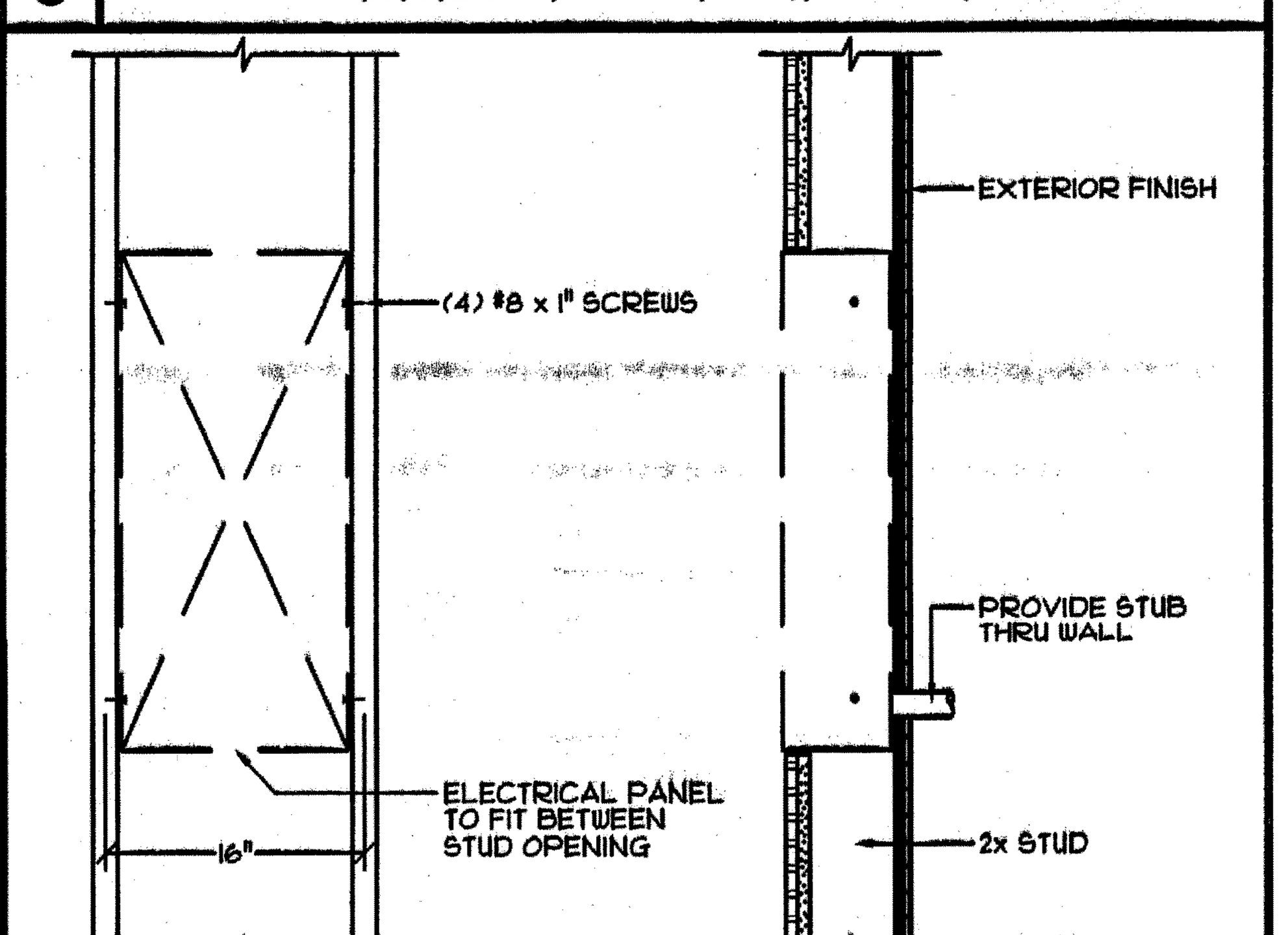
LIGHTING SPECIFICATIONS

NOTES:
1. SIZE OF CONDUCTORS SHALL COMPLY W/ CEC. TABLE 250
2. BOND SEPARATE CONDUCTORS FROM GROUND ROD TO ELEC. PANEL AND TO METAL BUILDING FRAME (CEC. 250-52) IN ADDITION TO THE DETAIL SHOWN BOND THE ELECTRICAL GROUND TO METAL WATER PIPE EMBEDDED AT LEAST 10' INTO THE SOIL IF AVAILABLE (CEC. 250-52)
3. ALL MODULES OF METAL FRAME BUILDING SHALL BE ELECTRICALLY BONDED TOGETHER (BOLTING ONLY IS NOT ACCEPTABLE BONDING.
4. CHECK RESISTANCE TO GROUND. IF RESISTANCE EXCEEDS 25 OHMS, INSTALL ADDTN'L GROUND RODS W/CONDUCTORS AS SHOWN, SEPARATE AT LEAST 6'0" UNTIL RESISTANCE IS REDUCED TO 25 OHMS OR LESS (C.E.C. 250-53).
5. ELECTRICAL GROUNDING TEST SHALL BE WITNESSED BY THE PROJECT INSPECTOR.



NOTE: GROUND TO BE PROVIDED BY OTHERS

6 ELECTRICAL GROUND



9 ELECTRICAL PANEL INSTALLATION

SCALE: 1"=1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC TM FLS SS
DATE 5 11 16

PRE-CHECK (PC) DOCUMENT
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REGISTERED PROFESSIONAL ENGINEER
ARTHUR ERNEST ROSS
No. S2030
EXP. 9/30/15
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ELECTRICAL POWER PLAN, SIGNAL PLAN, LIGHTING PLAN, DETAILS, ELECTRICAL NOTES

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

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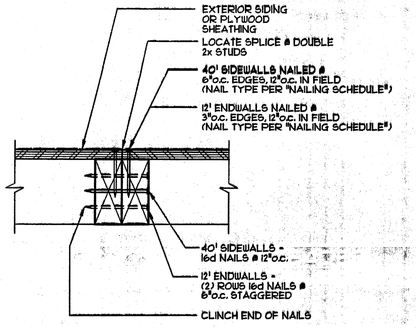
DIVISION OF THE STATE ARCHITECT
02-113910
AC TM FLS SS
DATE 6-1-15
2013 - 12x40

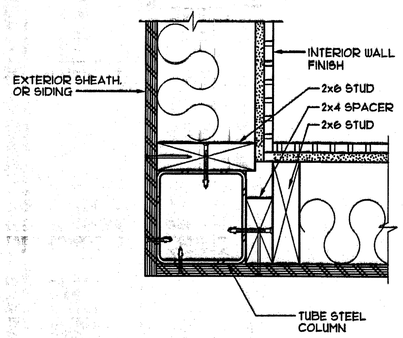
A3

12'x40' P.C.



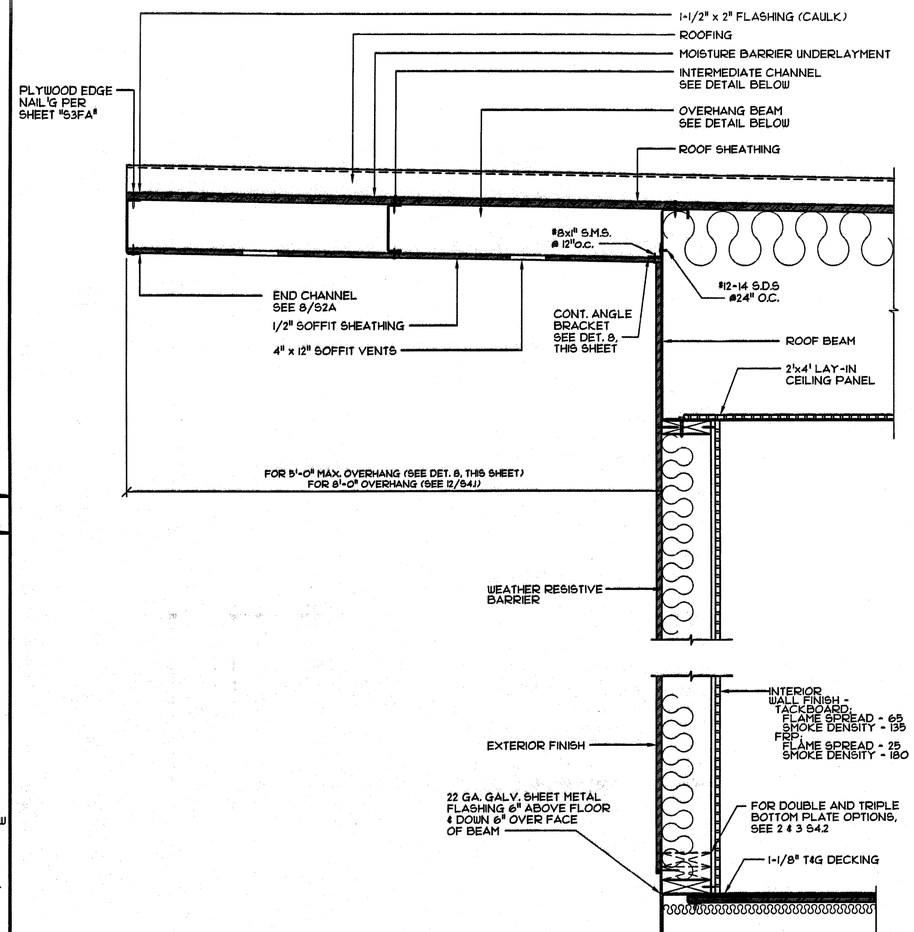
FOR FASTENER SCHEDULE, SEE "S3" SHEETS

1 SIDING SPLICE DETAIL
SCALE: 3"=1'-0"



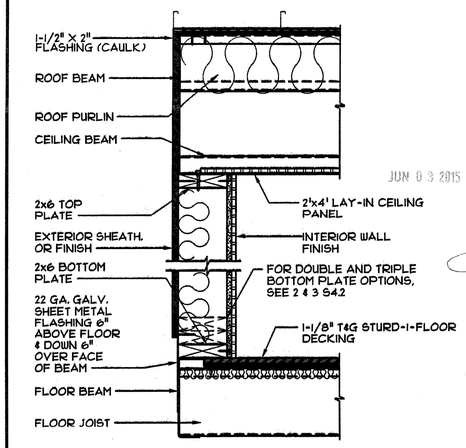
FOR FASTENER SCHEDULE, SEE "S3" SHEETS

2 SECTION - COLUMN @ CORNER
SCALE: 3"=1'-0"



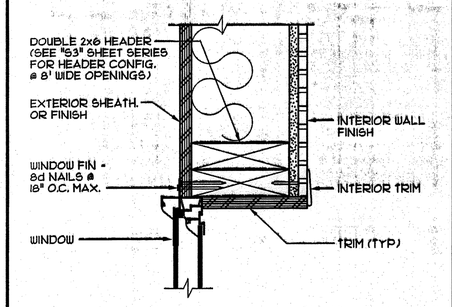
FOR FASTENER SCHEDULE, SEE "S3" SHEETS

7 SECTION - FRONT OVERHANG (REAR SIMILAR)
SCALE: 1 1/2"=1'-0"



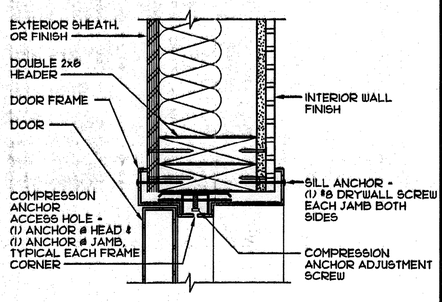
FOR FASTENER SCHEDULE, SEE "S3" SHEETS

9 SECTION - @ SIDEWALL
SCALE: 1 1/2"=1'-0"



SECTION @ WINDOW JAMB IS SIMILAR

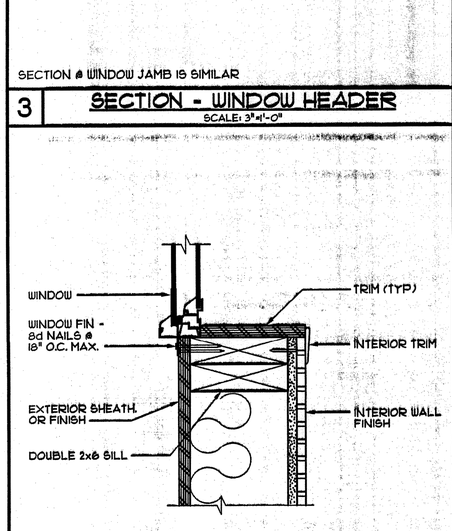
3 SECTION - WINDOW HEADER
SCALE: 3"=1'-0"



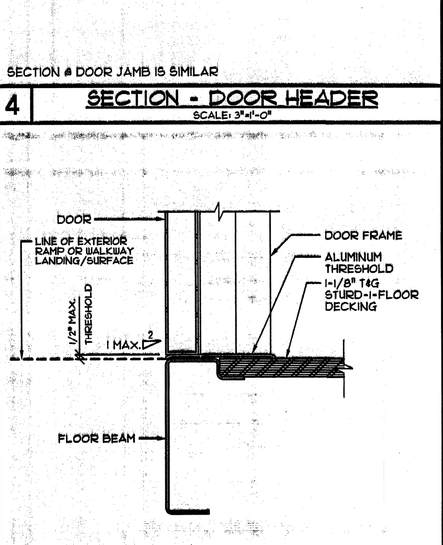
SECTION @ DOOR JAMB IS SIMILAR

4 SECTION - DOOR HEADER
SCALE: 3"=1'-0"

8 OVERHANG & GUTTER DETAILS
SCALE: AS NOTED



5 SECTION - WINDOW SILL
SCALE: 3"=1'-0"



6 SECTION - DOOR THRESHOLD
SCALE: 3"=1'-0"

10

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DATE 5/11/15

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REGISTERED PROFESSIONAL ENGINEER CHRISTIAN ERNEST ROSS No. S2030 EXP. 9/30/15 STRUCTURAL STATE OF CALIFORNIA

JUN 03 2015

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SHED ROOF
SECTIONS AND DETAILS
(2x6 EXTERIOR WALLS)

REV / DATE:	BY:

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DRAWN BY:
DATE:

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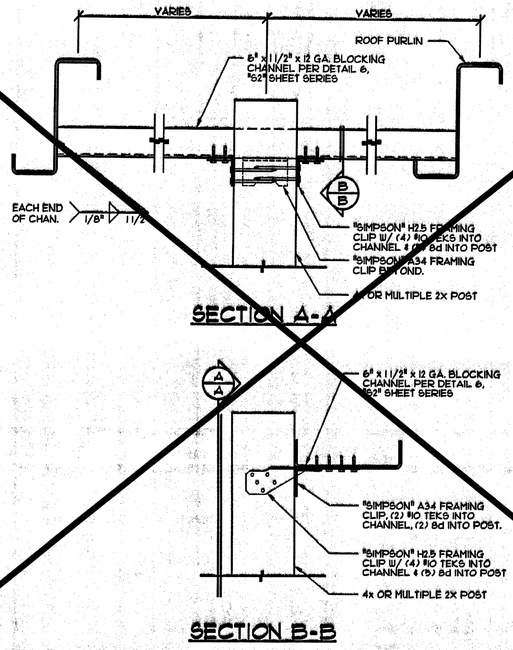
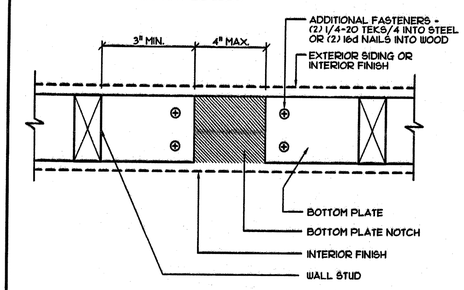
02-113910
AC. TM FLS. BZ SS.
DATE 6-9-15

12x40 P.C.

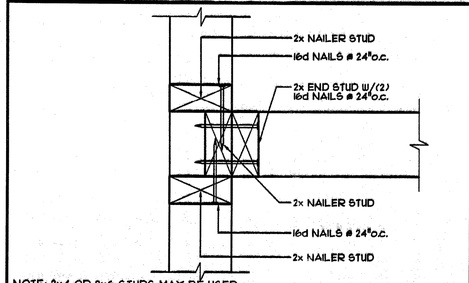
A4B.1



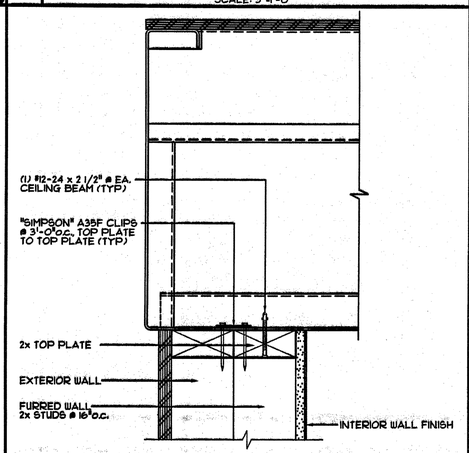
1 TOP CONNECTION - FULL HT. POST FOR HALF WALLS
SCALE: 3"=1'-0"



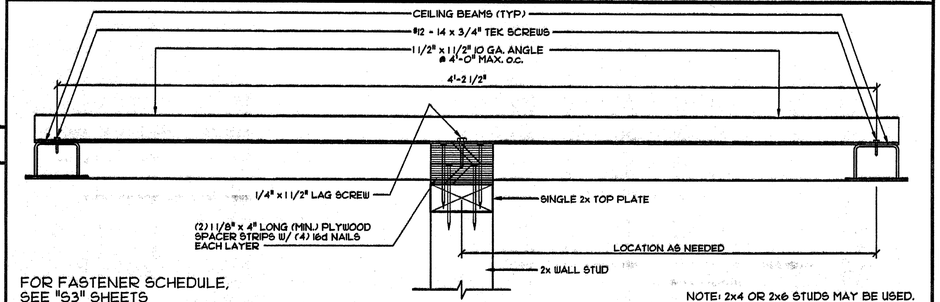
1 ALLOWABLE BOTTOM PLATE NOTCH
SCALE: 3"=1'-0"



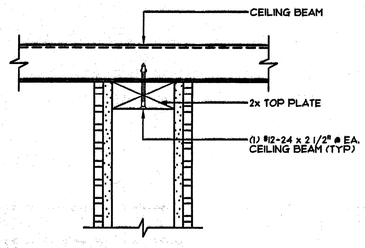
4 PERPENDICULAR WALL CONNECTION
SCALE: 3"=1'-0"



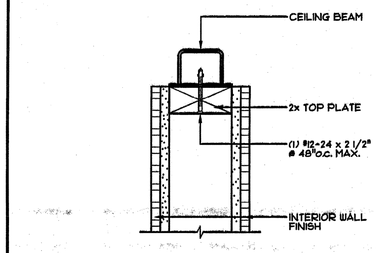
6 FURRED WALL - TOP PLATE CONN.
SCALE: 3"=1'-0"



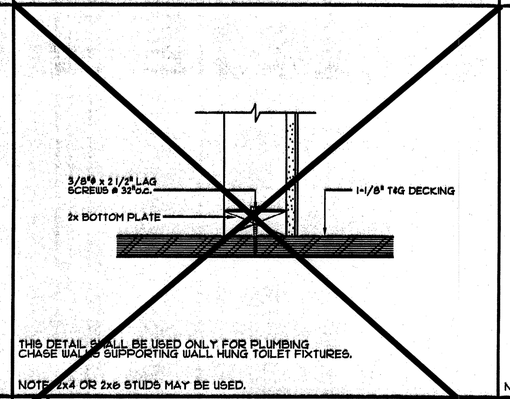
5 TOP PLATE ATTACHMENT BETWEEN CEILING BEAMS
SCALE: 3"=1'-0"



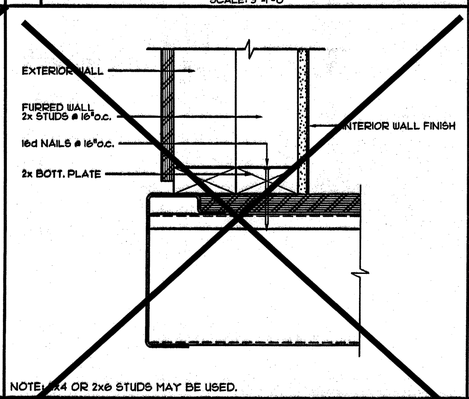
7 TOP PLATE TO CEILING BEAM
SCALE: 3"=1'-0"



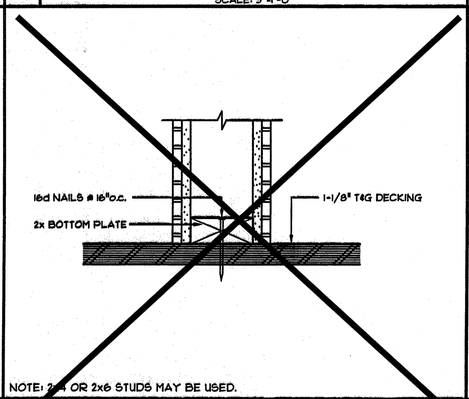
8 TOP PLATE TO CEILING BEAM
SCALE: 3"=1'-0"



11 PLUMBING CHASE WALL TO FLOOR
SCALE: 3"=1'-0"



9 FURRED WALL - BOTT. PLATE CONN.
SCALE: 3"=1'-0"



10 BOTTOM PLATE TO FLOOR
SCALE: 3"=1'-0"

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ARTHUR ERNEST CYS
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EXP. 9/30/15
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INTERIOR WALL CONNECTION DETAILS

REV / DATE:	BY:

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DATE:

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02-113910
AC. FLS SS.
DATE 6-9-15

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AC. FLS SS.
DATE 8/16

DIVISION OF THE STATE ARCHITECT

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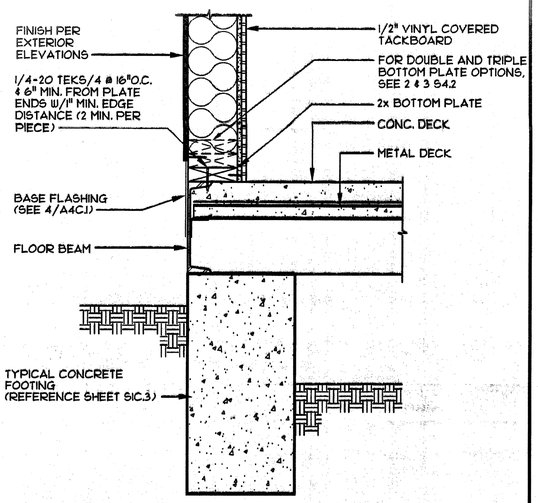
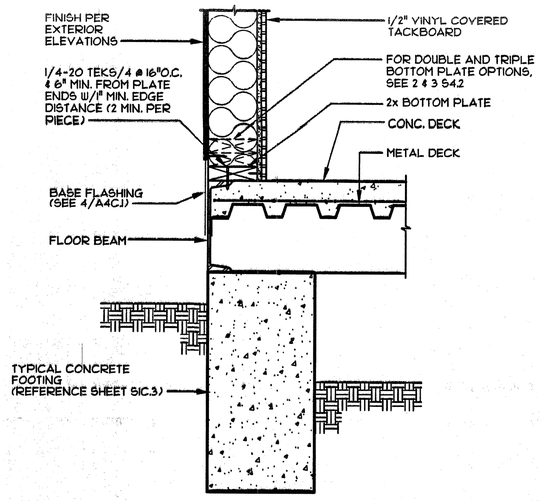
A4H

2013 - 12x40
12"x40" P.C.



NOTE:
2x6 or 2x4 FRAMING MAY BE USED
SEE STRUCTURAL DWGS. FOR FASTENER SCHEDULE

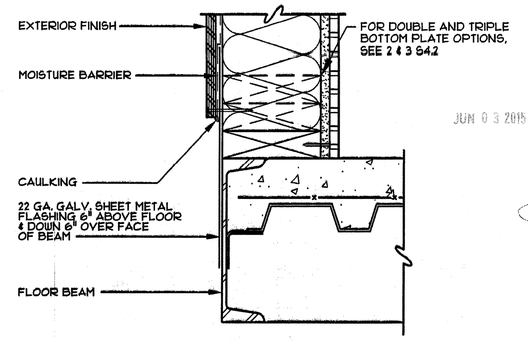
1 WALL SECTION - ENDWALL
SCALE: 1 1/2"=1'-0"



NOTE:
2x6 or 2x4 FRAMING MAY BE USED
SEE STRUCTURAL DWGS. FOR FASTENER SCHEDULE

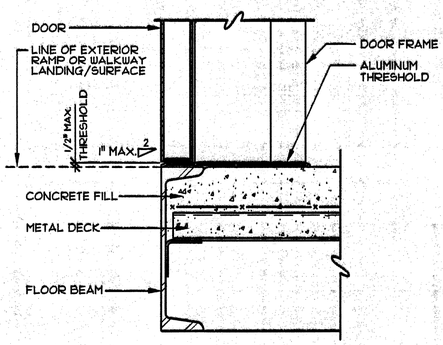
2 WALL SECTION - SIDEWALL
SCALE: 1 1/2"=1'-0"

3



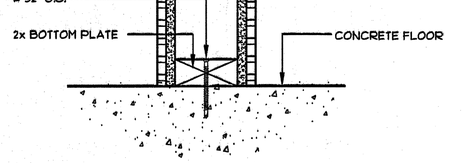
NOTE:
2x6 or 2x4 FRAMING MAY BE USED
SEE STRUCTURAL DWGS. FOR FASTENER SCHEDULE

4 BASE FLASHING DETAIL - (CONC. FLOOR)
SCALE: 3"=1'-0"



NOTE:
2x6 or 2x4 FRAMING MAY BE USED
SEE STRUCTURAL DWGS. FOR FASTENER SCHEDULE

5 DOOR THRESHOLD - (CONC. FLOOR)
SCALE: 3"=1'-0"



NOTE:
2x6 or 2x4 FRAMING MAY BE USED
SEE STRUCTURAL DWGS. FOR FASTENER SCHEDULE

7 INTERIOR WALL TO FLOOR ATTACHMENT DETAIL
SCALE: 3"=1'-0"

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ARTHUR ERNEST ROSS
No. 52030
EXP. 9/30/15
STRUCTURAL
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NON-RATED
WALL ATTACHMENT DETAILS
(CONCRETE FLOORS)

* REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

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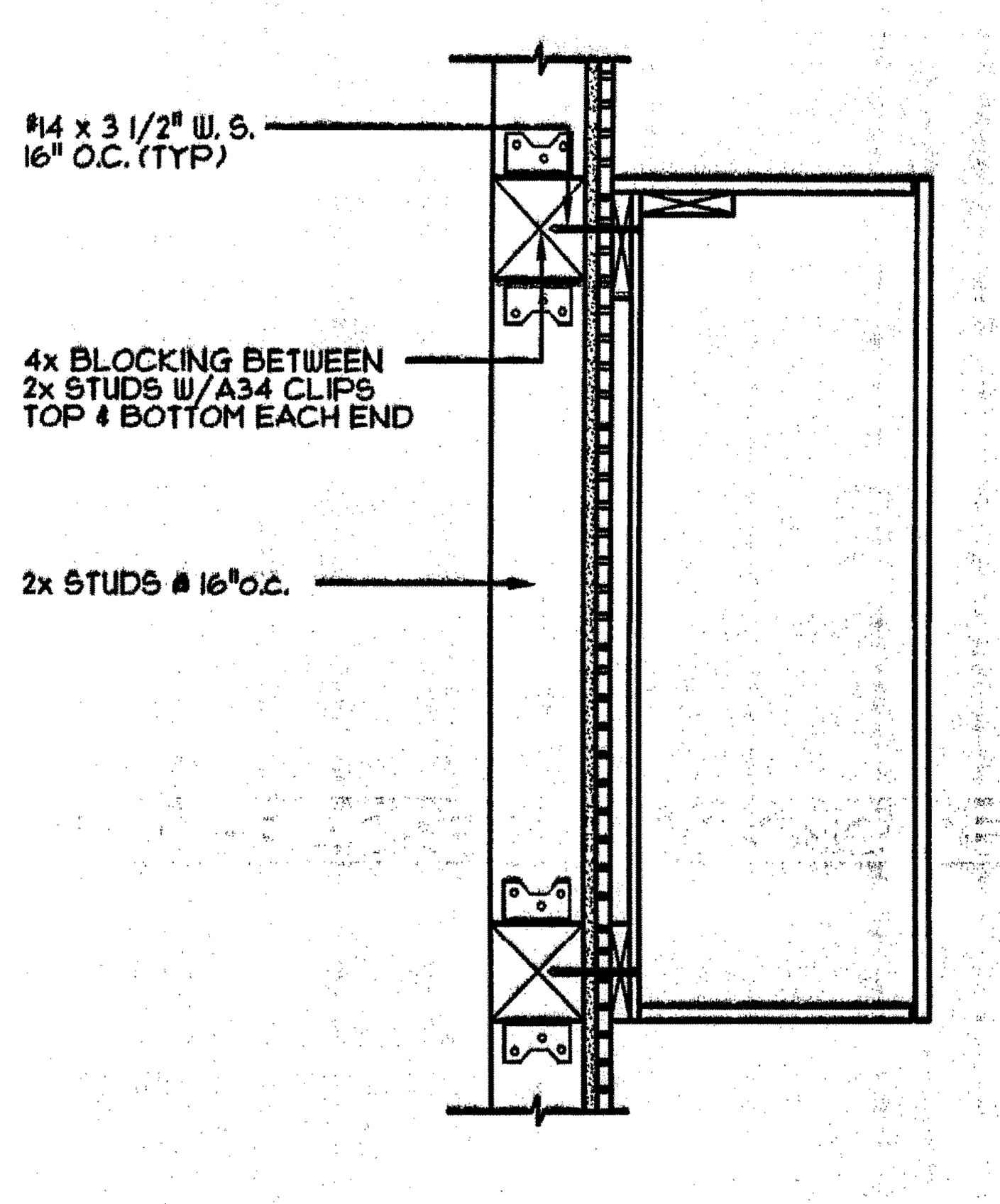
DIVISION OF THE STATE ARCHITECT
02-113910
AC. TM FLS. SS.
DATE 6-1-15

2013 - 12x40

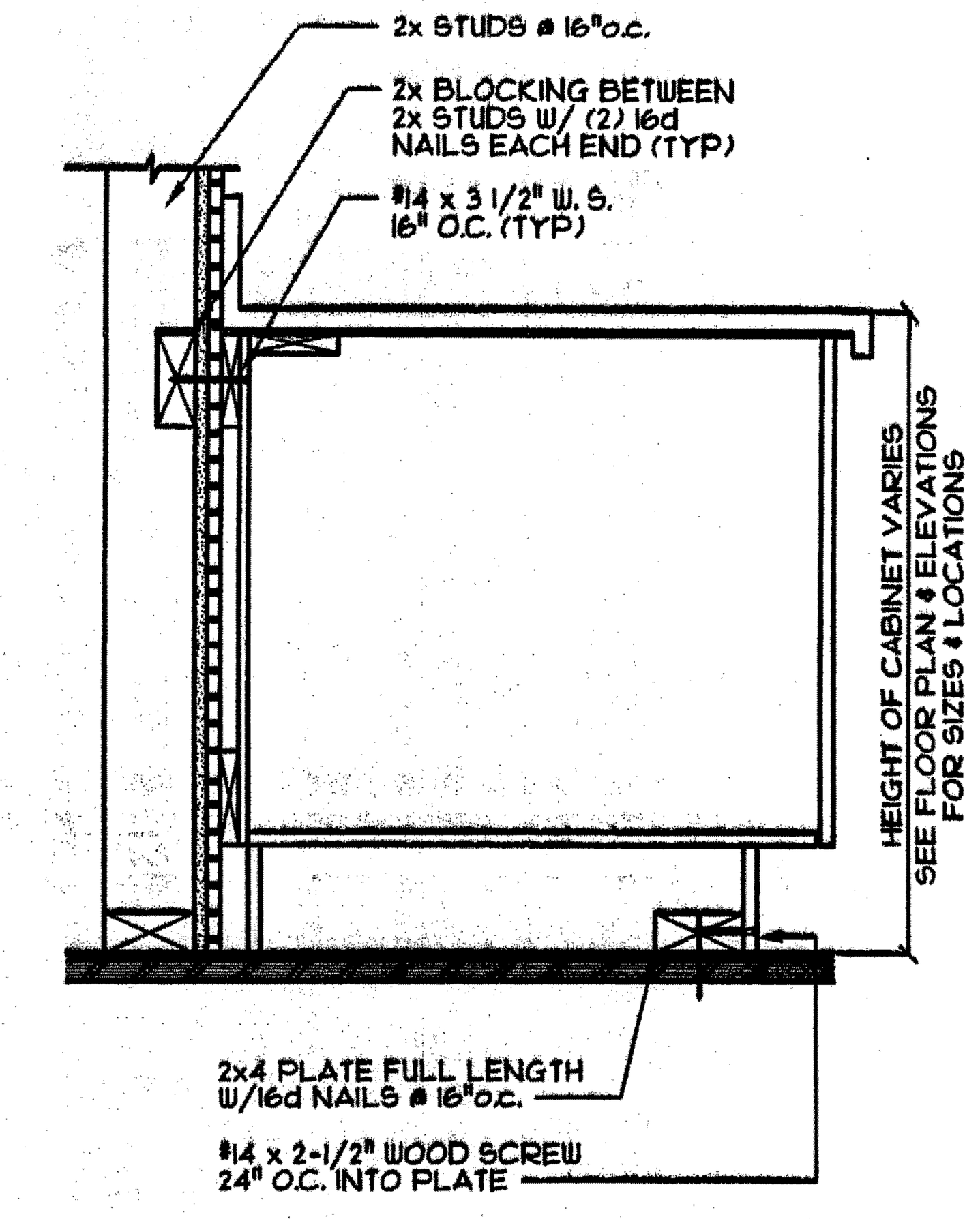
A4C.1

12"x40" P.C.



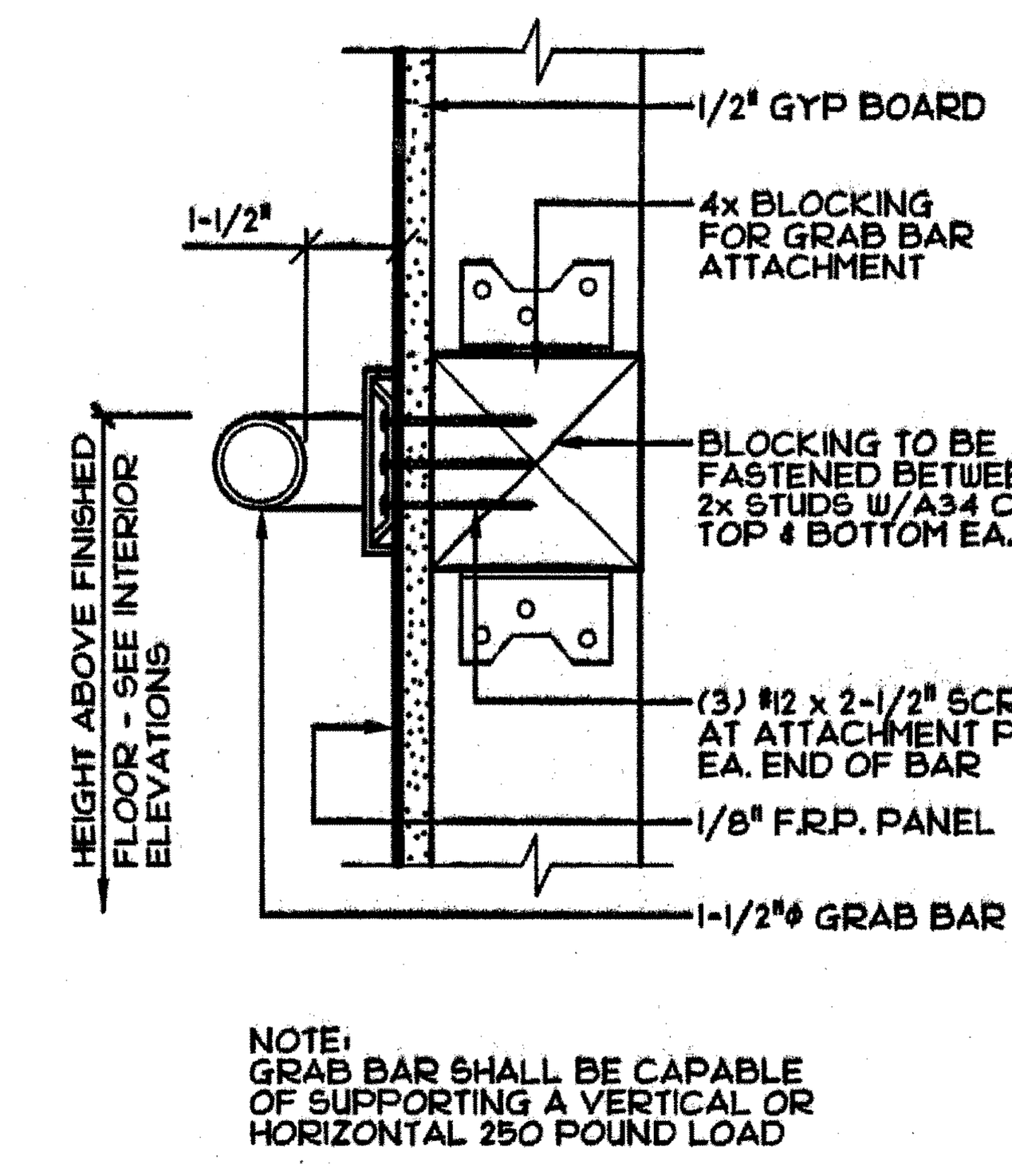
NOTE: 2x4 OR 2x6 STUDS MAY BE USED.

1 UPPER CABINET BLOCKING DETAIL
SCALE: 1 1/2"=1'-0"



NOTE: 2x4 OR 2x6 STUDS MAY BE USED.

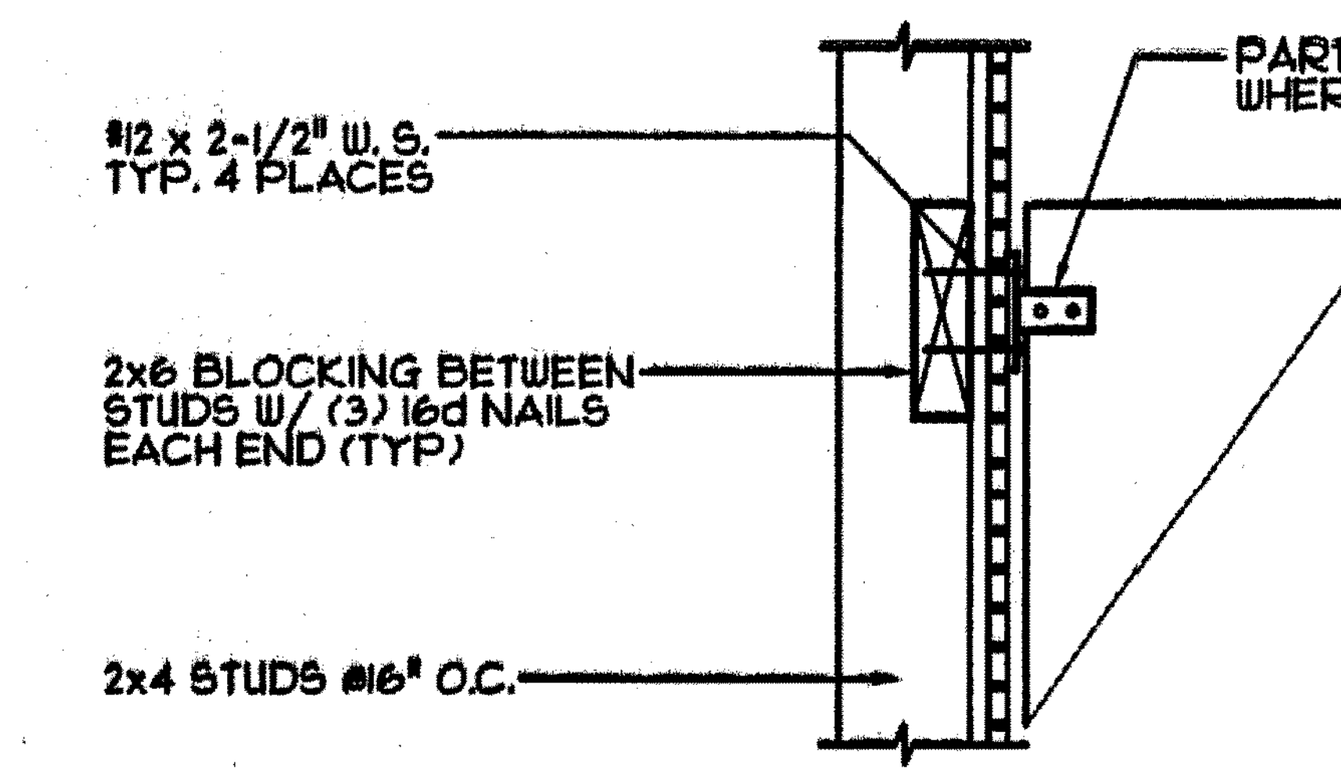
2 BASE CABINET BLOCKING DETAIL
SCALE: 1 1/2"=1'-0"



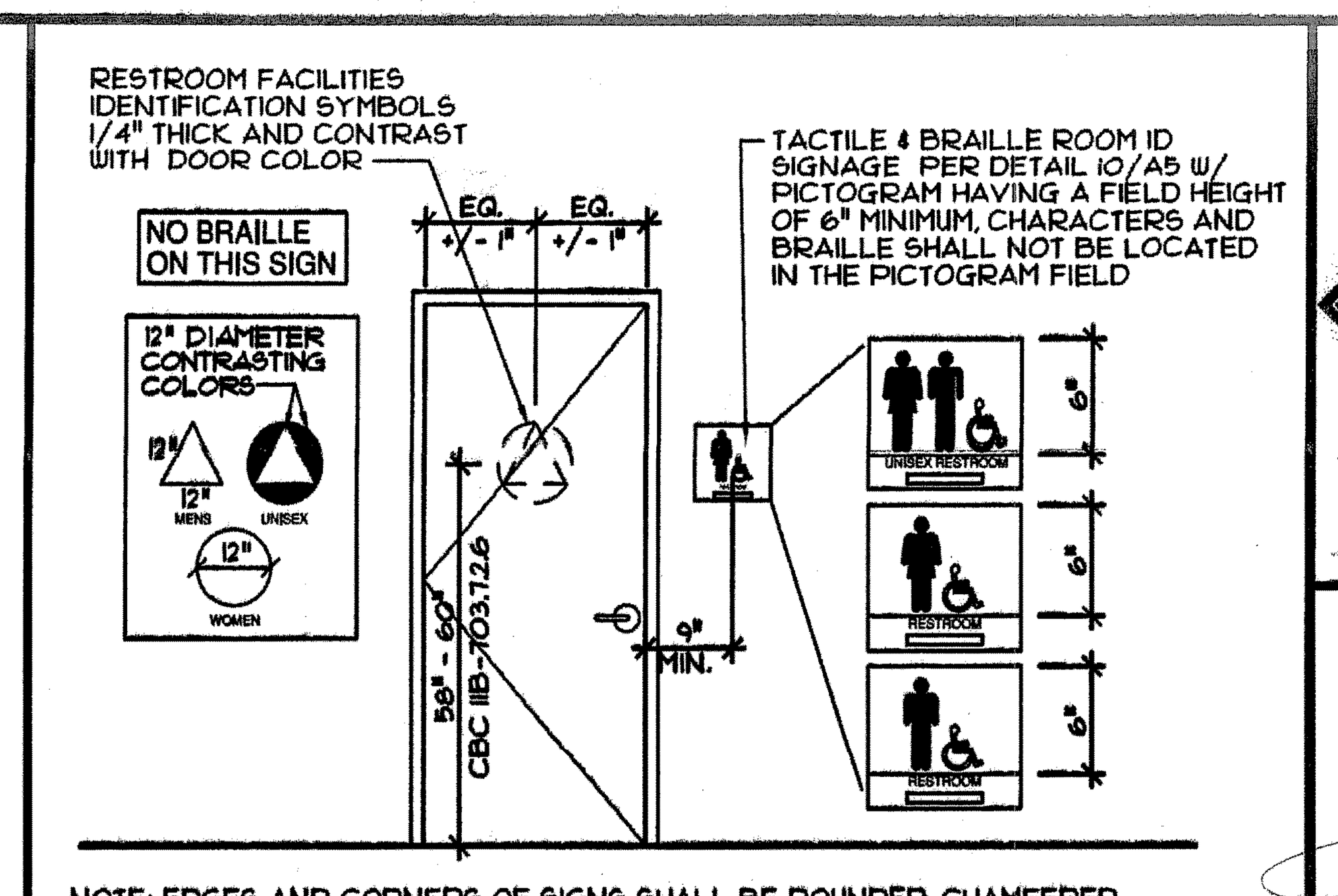
NOTE:
GRAB BAR SHALL BE CAPABLE OF SUPPORTING A VERTICAL OR HORIZONTAL 250 POUND LOAD

NOTE: 2x4 OR 2x6 STUDS MAY BE USED.

3 GRAB BAR BLOCKING DETAIL
SCALE: 3"=1'-0"



4 TOILET PARTITION BLOCKING
SCALE: 1 1/2"=1'-0"



NOTE: EDGES AND CORNERS OF SIGNS SHALL BE ROUNDED, CHAMFERED OR EASED AND SHALL HAVE A MINIMUM RADIUS OF 1/8"

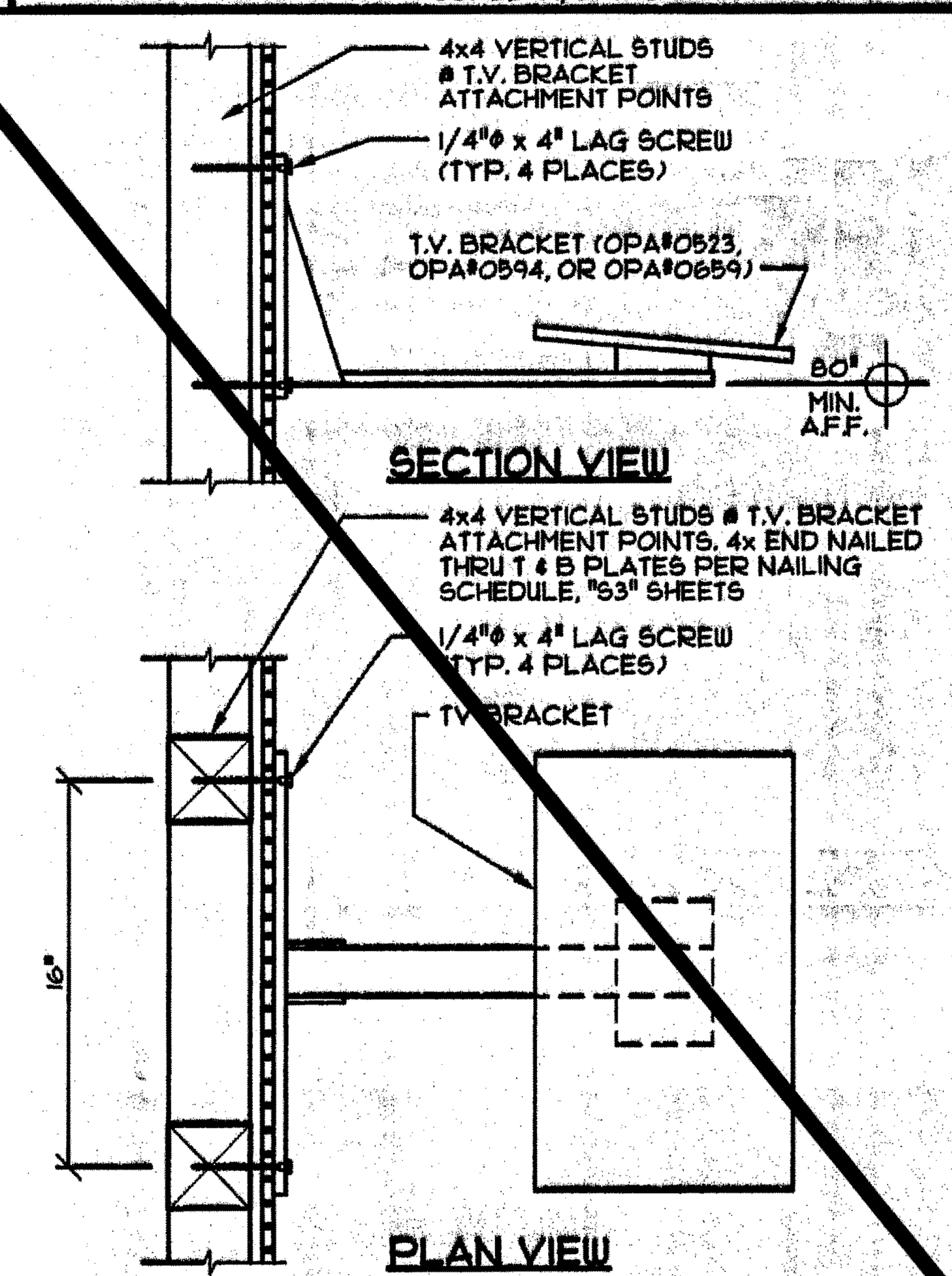
SEE 10/A5 FOR CHARACTER DEPTH, CASE, STYLE, PROPORTIONS, HEIGHT, STROKE THICKNESS, FINISH, CHARACTER SPACING, LINE SPACING, FORMAT, BRAILLE, POSITION, INSTALLATION HEIGHT ABOVE FINISHED FLOOR OR GROUND, AND LOCATION



FIGURE 11B-703.7.2.1

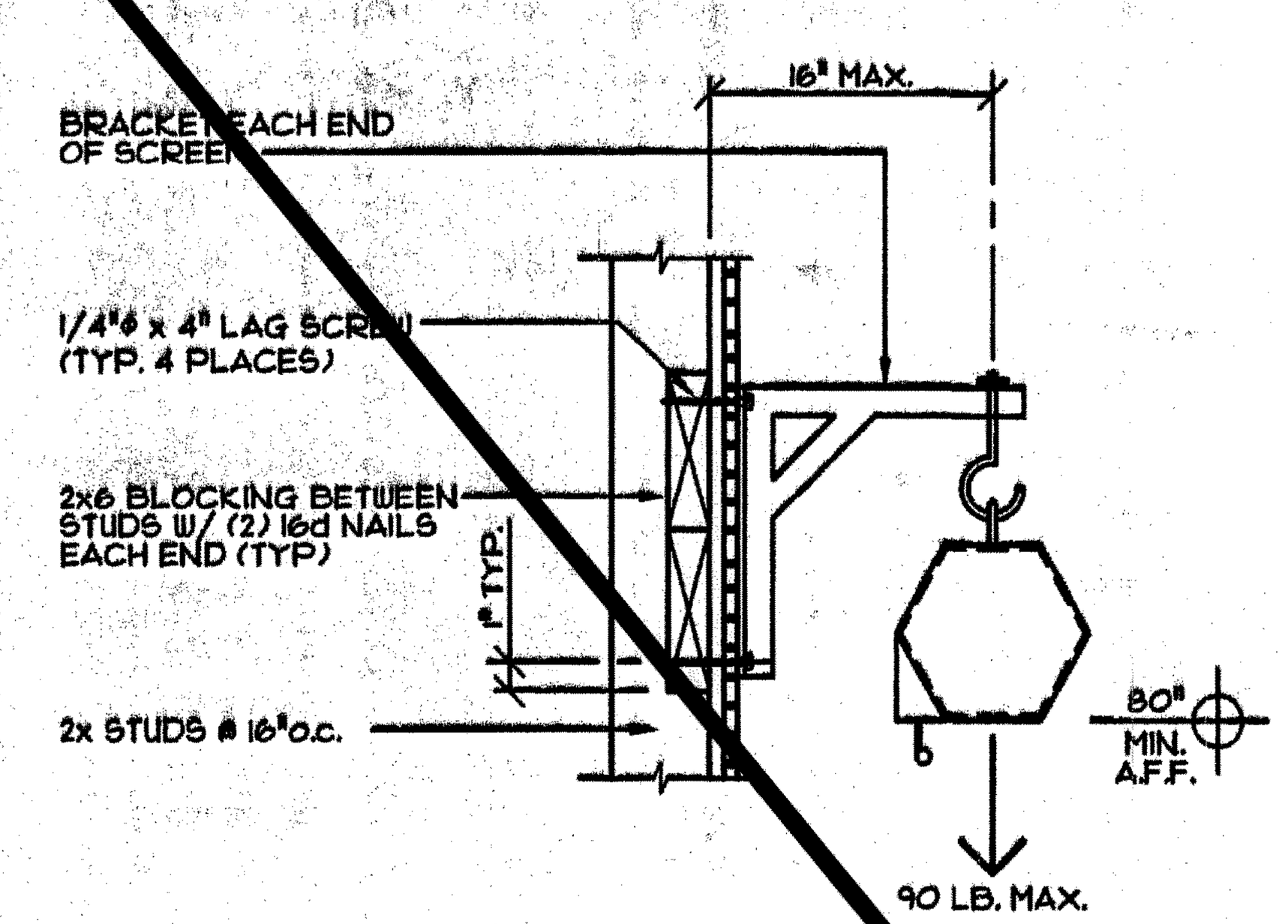
INTERNATIONAL SYMBOL OF ACCESSIBILITY:
SHALL COMPLY WITH FIGURE LLB-703.7.2.1 THE SYMBOL SHALL CONSIST OF A WHITE FIGURE ON A BLUE BACKGROUND. THE BLUE SHALL BE COLOR NO. 15090 IN FEDERAL STANDARDS 595B FIGURE ON A BLUE BACKGROUND. THE BLUE SHALL BE COLOR NO. 15090 IN FEDERAL STANDARDS 595B

5 RESTROOM DOOR & ROOM IDENTIFICATION SIGNAGE
SCALE: 3/8"=1'-0"



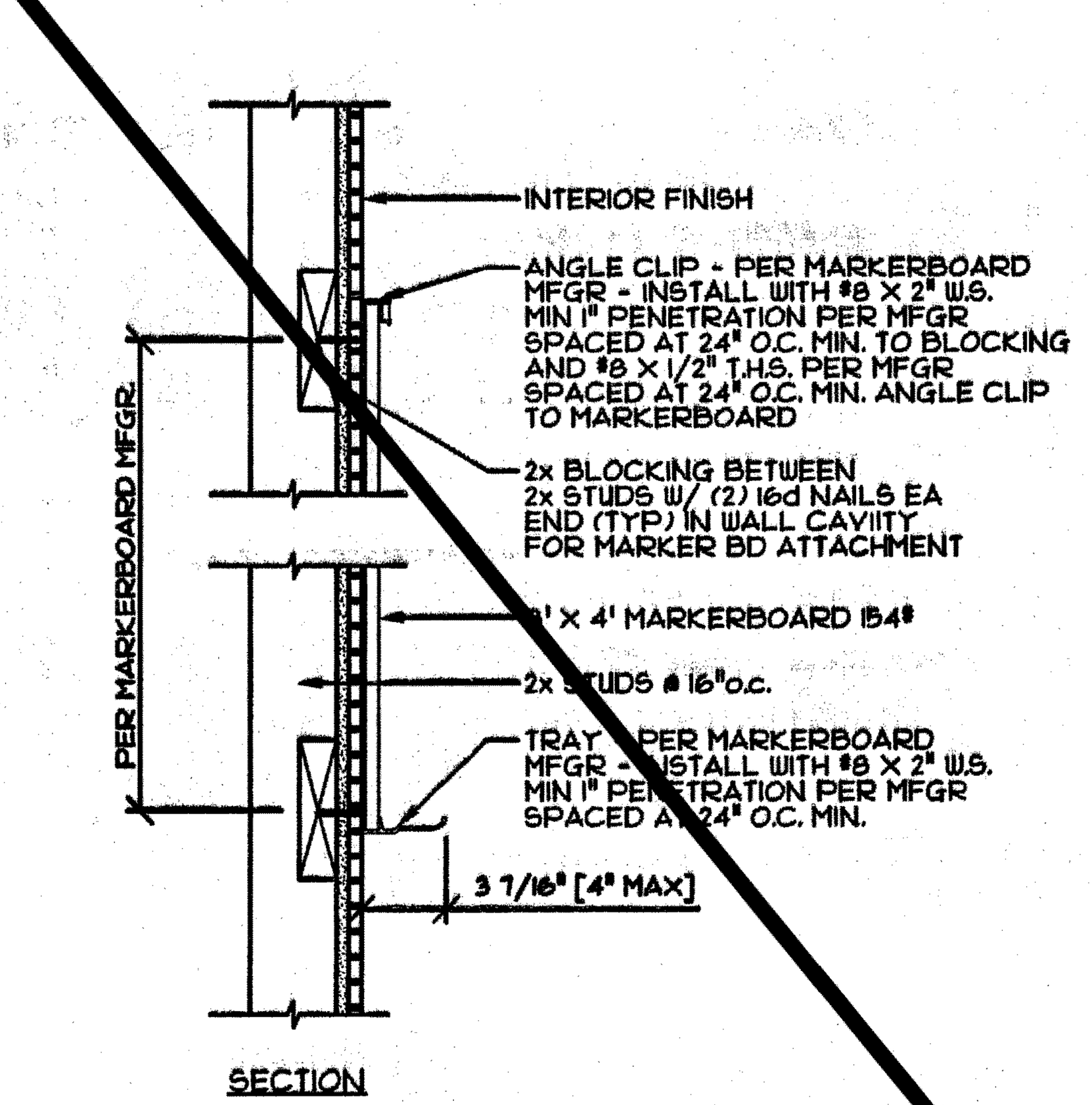
NOTE: 2x4 OR 2x6 STUDS MAY BE USED.

6 T.V. BRACKET BLOCKING DETAIL
SCALE: 1 1/2"=1'-0"

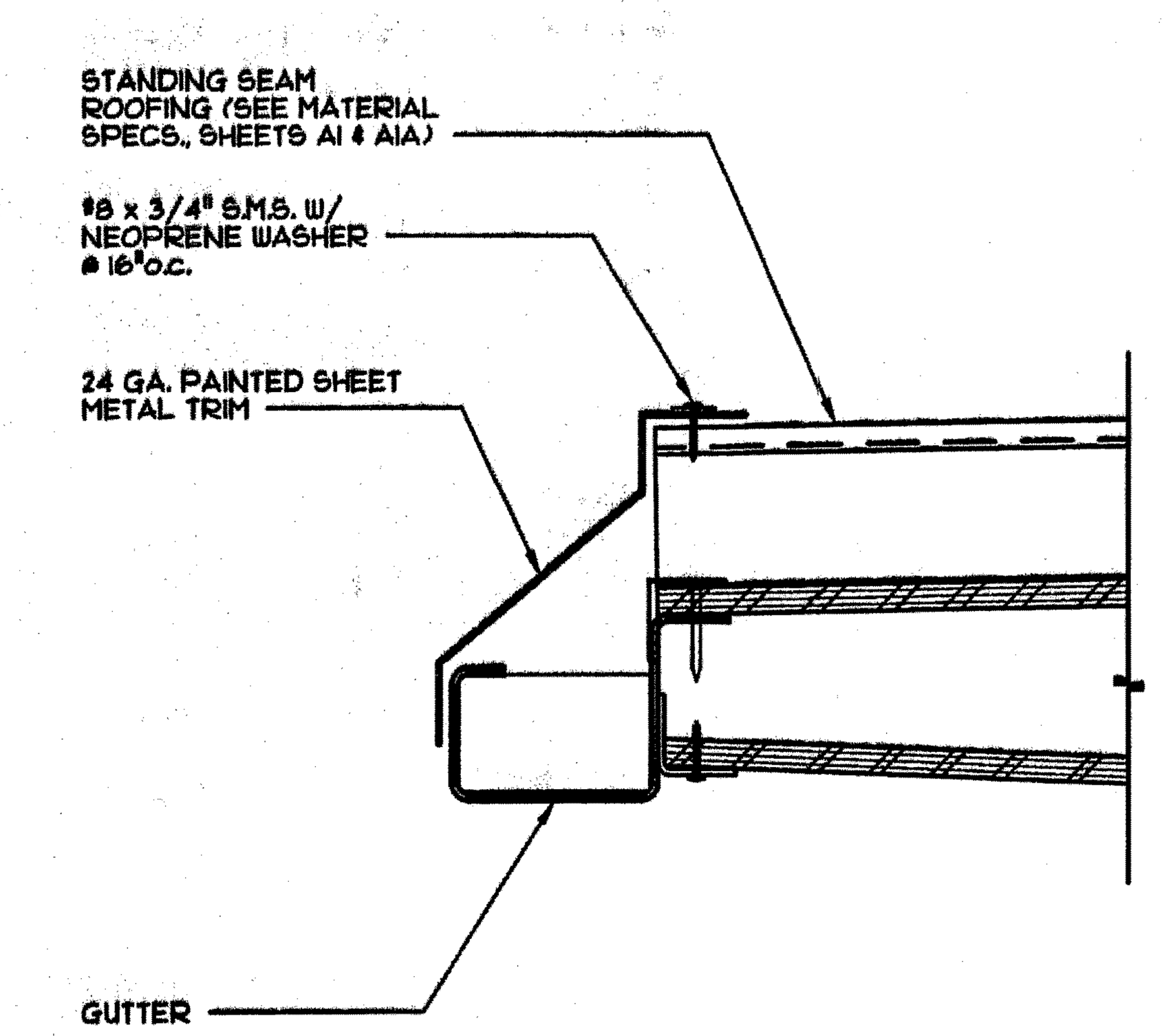


NOTE: 2x4 OR 2x6 STUDS MAY BE USED.

7 PROJECTOR SCREEN BLOCKING
SCALE: 1 1/2"=1'-0"

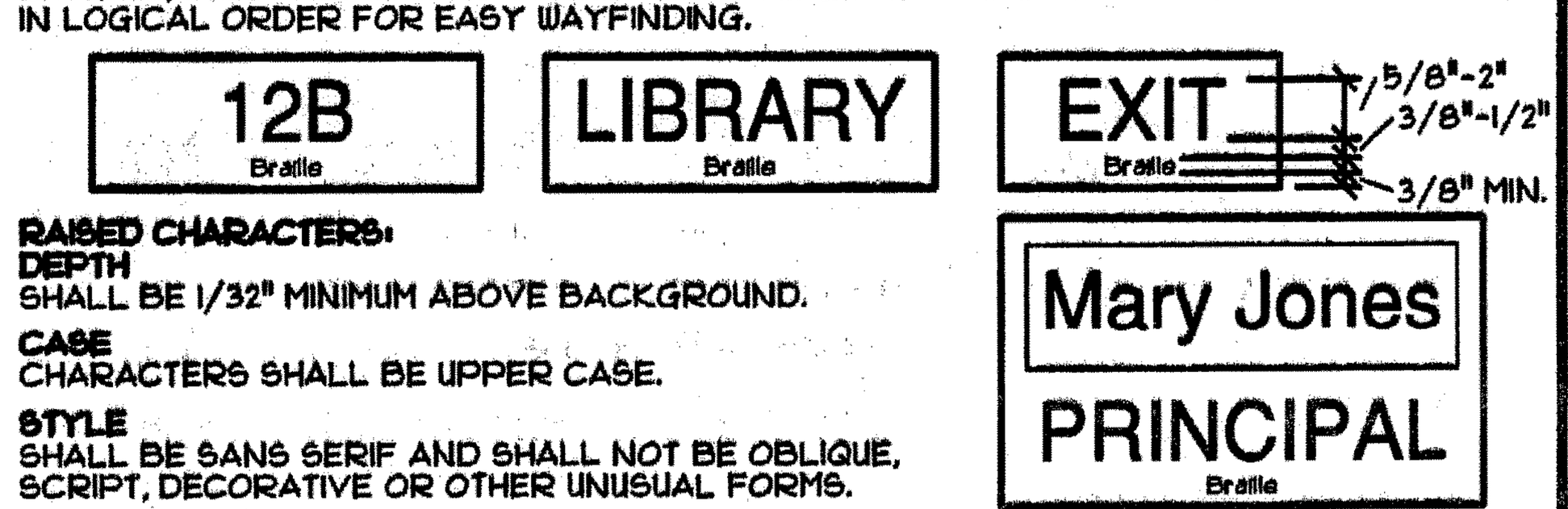


8 MARKERBOARD BLOCKING
SCALE: 1 1/2"=1'-0"



9 ROOFING CONCEALMENT TRIM
SCALE: 3"=1'-0"

NAMES, NUMBERS, OR LETTERS ONLY
THE MOST LOGICAL IDENTIFICATION SYSTEM FOR ROOMS OR OFFICES IS TO USE NUMBERS, LETTERS, OR COMBINATIONS OF NUMBERS AND LETTERS WHICH CAN THEN BE ARRANGED IN LOGICAL ORDER FOR EASY WAYFINDING.



CHANGEABLE INFORMATION MAY BE INCLUDED ON A REMOVABLE INSERT

RAISED CHARACTERS:
DEPTH
SHALL BE 1/32" MINIMUM ABOVE BACKGROUND.

CASE
CHARACTERS SHALL BE UPPER CASE.

STYLE
SHALL BE SANS SERIF AND SHALL NOT BE OBLIQUE, SCRIPT, DECORATIVE OR OTHER UNUSUAL FORMS.

PROPORTIONS
WIDTH OF UPPERCASE LETTER "O" IS 60% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF UPPERCASE "I".

HEIGHT
MEASURED VERTICALLY FROM BASELINE OF THE CHARACTER SHALL BE 5/8" MINIMUM AND 2" MAXIMUM BASED ON THE UPPERCASE LETTER "I".

STROKE THICKNESS
THICKNESS OF THE UPPERCASE LETTER "I" SHALL BE 15% MAXIMUM OF THE HEIGHT OF THE CHARACTER

FINISH
CHARACTERS AND THEIR BACKGROUND SHALL HAVE A NON-GLARE FINISH. CHARACTERS SHALL CONTRAST WITH THEIR BACKGROUND WITH EITHER LIGHT CHARACTERS ON DARK BACKGROUND OR DARK CHARACTERS ON LIGHT BACKGROUND.

CHARACTER SPACING
SPACING SHALL BE MEASURED BETWEEN THE TWO CLOSET POINTS OF ADJACENT RAISED CHARACTERS WITHIN A MESSAGE, EXCLUDING WORD SPACES. WHERE CHARACTERS HAVE RECTANGULAR CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/8" MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM. WHERE CHARACTERS HAVE OTHER CROSS SECTIONS, SPACING BETWEEN INDIVIDUAL RAISED CHARACTERS SHALL BE 1/16" MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE BASE OF THE CROSS SECTIONS AND 1/8" MINIMUM AND 4 TIMES THE RAISED CHARACTER STROKE WIDTH MAXIMUM AT THE TOP OF THE CROSS SECTIONS. CHARACTERS SHALL BE SEPARATED FROM RAISED BORDERS AND DECORATIVE ELEMENTS 3/8" MINIMUM.

LINE SPACING
SPACING BETWEEN THE BASELINES OF SEPARATE LINES OF RAISED CHARACTERS WITHIN A MESSAGE SHALL BE 135% MINIMUM AND 170% MAX. OF THE RAISED CHARACTER HEIGHT.

FORMAT
TEXT SHALL BE HORIZONTAL

BRAILLE:
SHALL BE CONTRACTED (GRADE 2) AND DOTS SHALL HAVE A DOMED OR ROUNDED SHAPE AND SHALL COMPLY WITH CBC TABLE 11B-703.3.1. THE INDICATION OF AN UPPER-CASE LETTER OR LETTERS SHALL ONLY BE USED BEFORE THE FIRST WORD OF A SENTENCE, PROPER NOUNS, AND NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS, AND ACRONYMS.

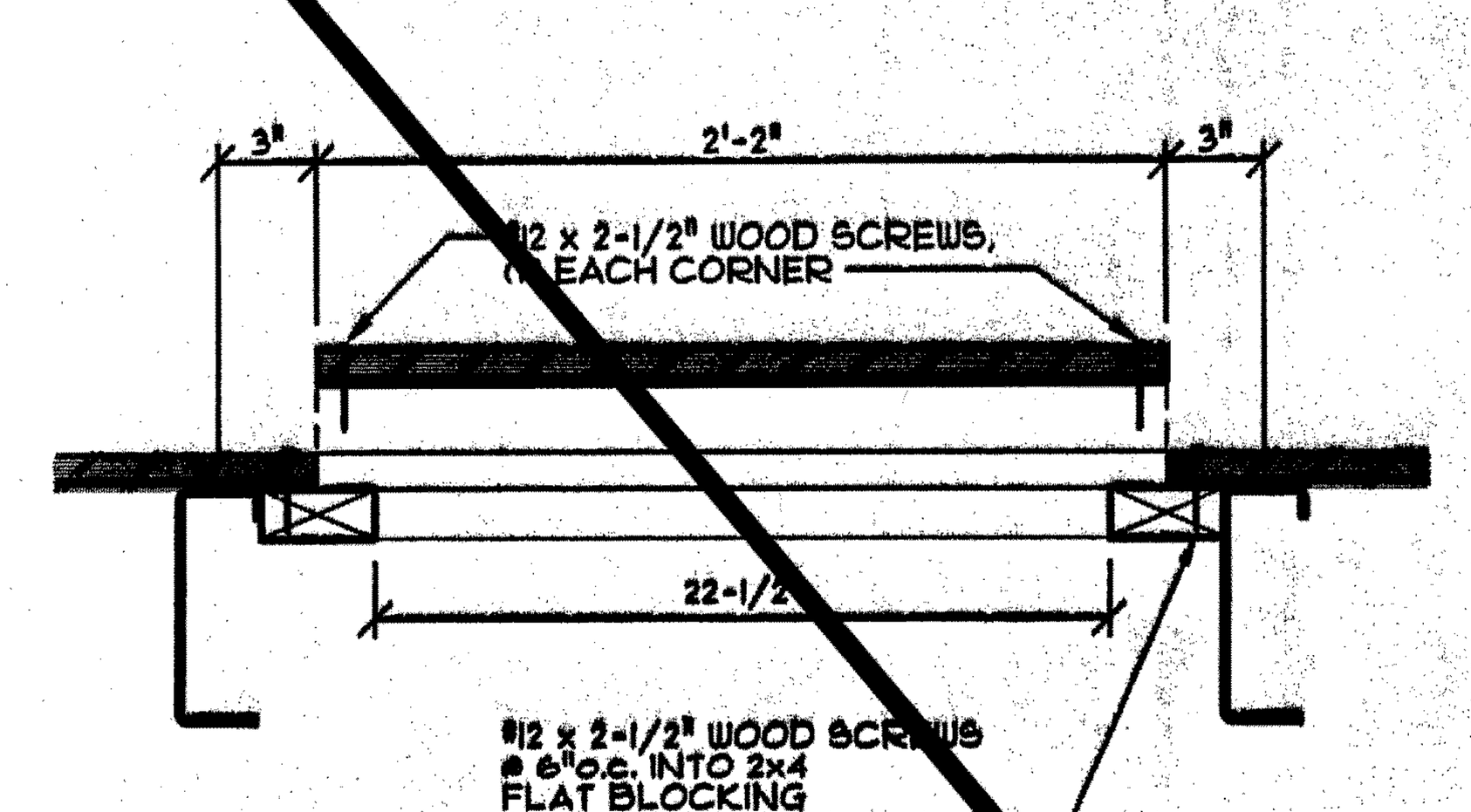
POSITION
SHALL BE POSITIONED BELOW THE CORRESPONDING TEXT IN A HORIZONTAL FORMAT, FLUSH LEFT OR CENTERED. IF TEXT IS MULTI-LINED, BRAILLE SHALL BE PLACED BELOW THE ENTIRE TEXT. BRAILLE SHALL BE SEPARATED 3/8" MIN AND 1/2" MAX FROM ANY OTHER TACTILE CHARACTERS AND 3/8" MIN FROM RAISED BORDERS AND DECORATIVE ELEMENTS.

INSTALLATION:
HEIGHT ABOVE FINISHED FLOOR OR GROUND
CHARACTERS ON SIGNS SHALL BE LOCATED 48" MIN ABOVE THE FINISHED FLOOR OR GROUND SURFACE MEASURED FROM BASELINE OF THE LOWEST BRAILLE CELLS AND 60" MAX ABOVE THE FINISHED FLOOR OR GROUND SURFACE MEASURED FROM THE BASELINE OF THE HIGHEST LINE OF RAISED CHARACTERS.

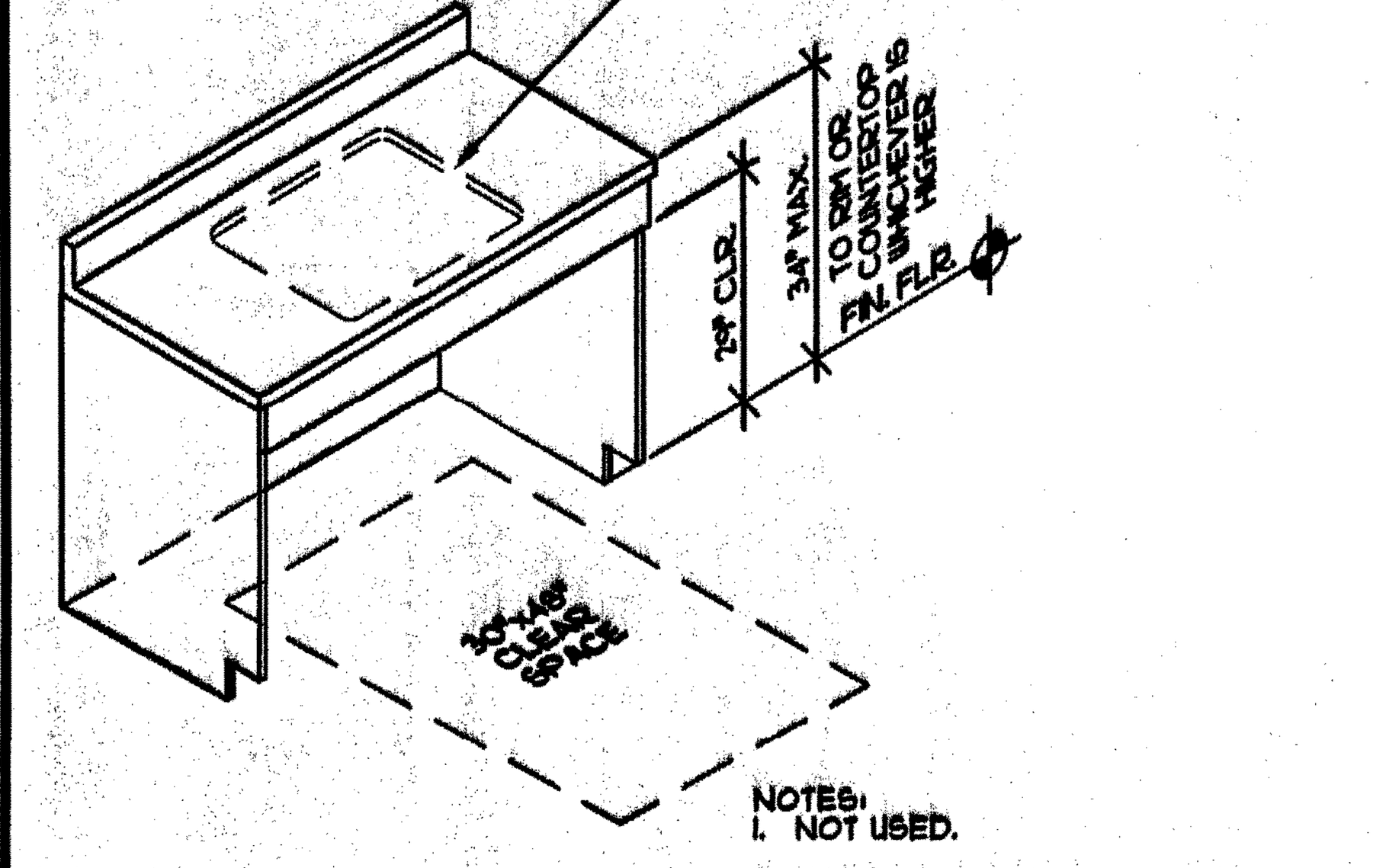
LOCATION
SIGNS SHALL BE LOCATED ALONGSIDE THE DOOR AT THE LATCH SIDE, WHERE AT DOUBLE DOORS WITH ONE ACTIVE LEAF, THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE THE PROVIDED WITH TWO ACTIVE LEAFS THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR. WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF A DOUBLE DOOR, SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT WALL. SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18" MIN BY 18" MIN CENTERED ON THE TACTILE CHARACTERS IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION.

NOTE
ROOM IDENTIFICATION SIGNAGE AND INTERNATIONAL SYMBOLS OF ACCESSIBILITY SIGNAGE SHALL BE PROVIDED BY SCHOOL DISTRICT / OWNER AT SITE. SIGNAGE SHALL BE INSTALLED AT LOCATIONS REQUIRED BY CODE USING THE ABOVE GUIDELINES.

10 TYP. ROOM IDENTIFICATION SIGNAGE

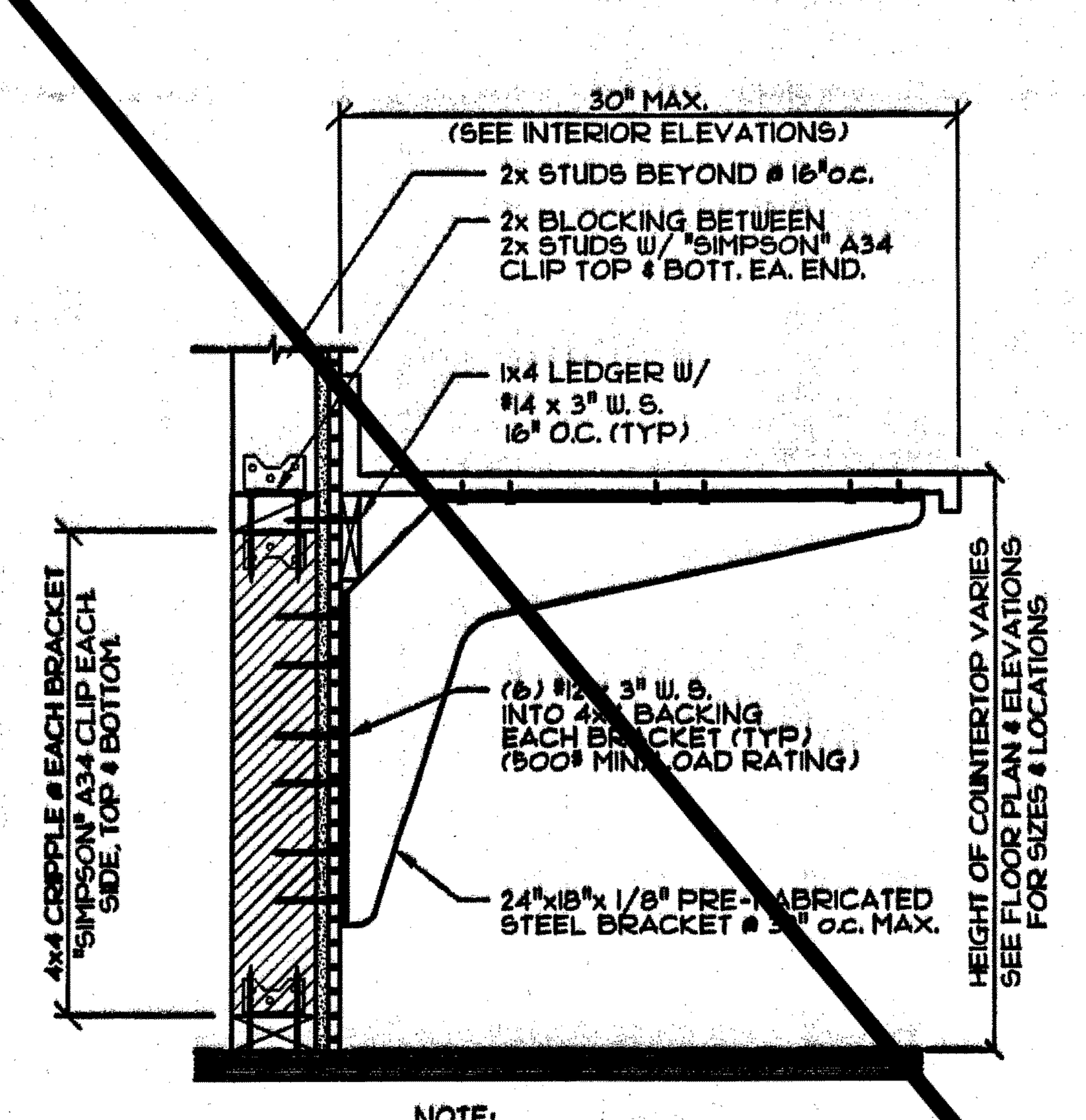


11 INTERIOR UNDERFLOOR ACCESS
SCALE: 1 1/2"=1'-0"



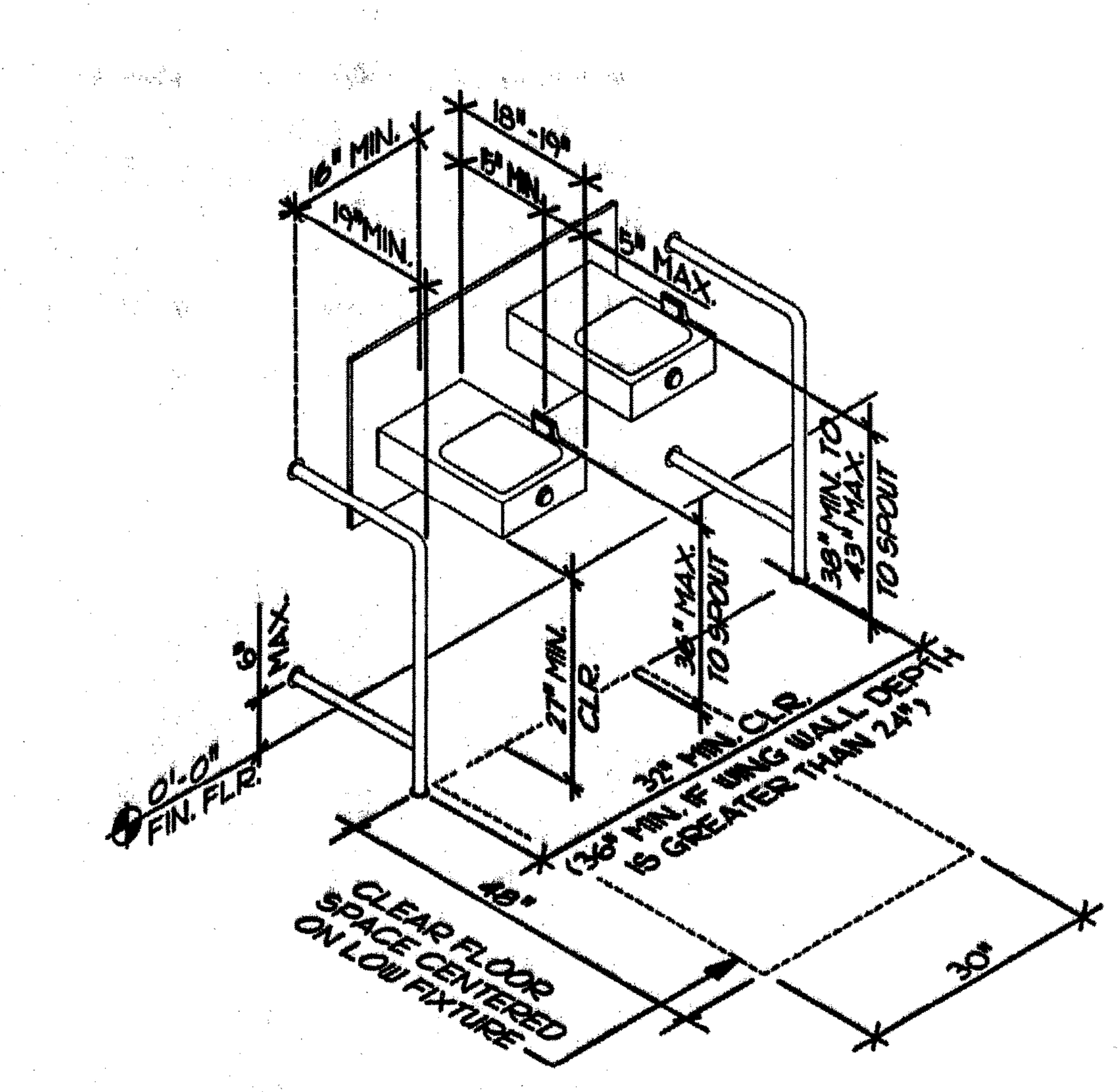
NOTES:
1. NOT USED.
2. CABINET HAS NO BASE NOR DOORS TO ALLOW FOR WHEELCHAIR ACCESS.
3. EXTEND FLOORING UNDER CABINET TO WALL
4. NO SHARP OR ABRASIVE SURFACES UNDER LAVATORY OR COUNTER.

12 ACCESSIBLE CASEWORK @ SINK
SCALE: 1/2"=1'-0"



NOTE:
NO SHARP OR ABRASIVE SURFACES UNDER SINKS/LAVATORIES OR COUNTERS.

13 COUNTERTOP SUPPORT BRACKET
SCALE: 1 1/2"=1'-0"



14 DRINKING FOUNTAIN WING WALLS
SCALE: NONE

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JUN 03 2015

REGISTERED PROFESSIONAL ENGINEER
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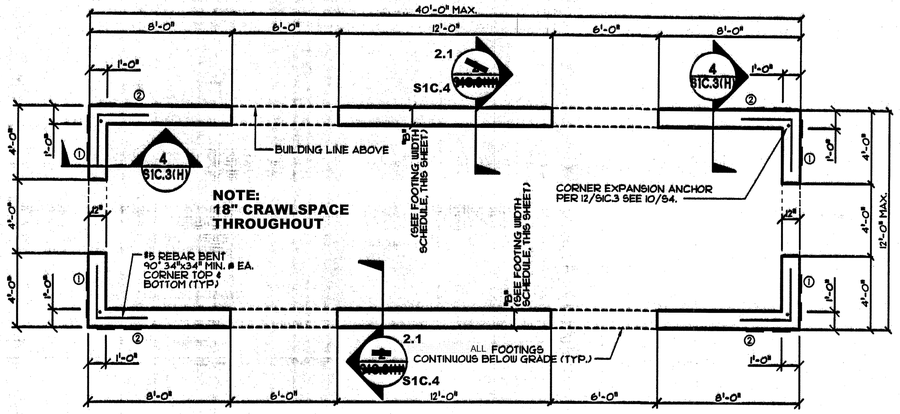


NOTE:
FOOTINGS SHALL BE EMBEDDED 24" MIN. BELOW LOWEST ADJACENT GRADE

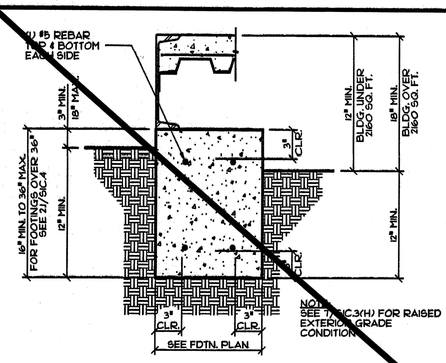
ALTERNATE SHEAR PLATES:
AT MODULE UNIT CORNERS, WHERE EXPANSION ANCHOR CANNOT BE INSTALLED, ALTERNATE SHEAR PLATES MAY BE USED IN LIEU OF THE OMITTED EXPANSION ANCHOR AS INDICATED ON PLAN.

WHEN ALTERNATE SHEAR PLATES ARE USED, THE SAME SHEAR PLATE CONNECTION MUST ALSO BE INSTALLED, AND EXPANSION ANCHOR OMITTED, AT THE OPPOSITE END OF FOUNDATION ALONG THE SAME MODULE LINE / SIDEWALL LINE.

NOTE:
① ADDITIONAL SHEAR PLATE REQUIRED FOR 88# & 125# FLOOR LIVE LOAD CONDITIONS

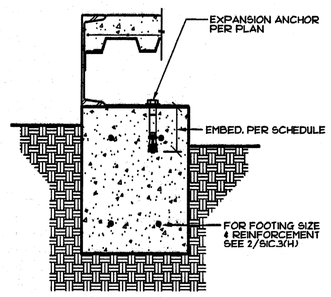
② ADDITIONAL SHEAR PLATE REQUIRED FOR 125# FLOOR LIVE LOAD CONDITIONS.

1 CONCRETE FOUNDATION PLAN
SCALE: 1/4"=1'-0"

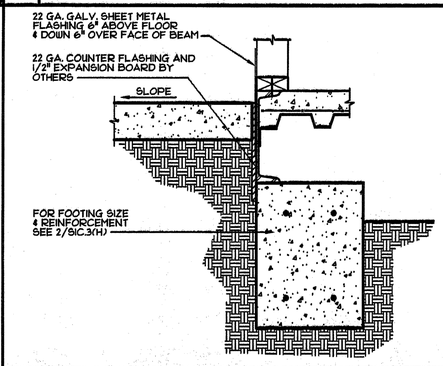


2 PERIMETER FOOTING DETAIL
SCALE: 1-1/2"=1'-0"

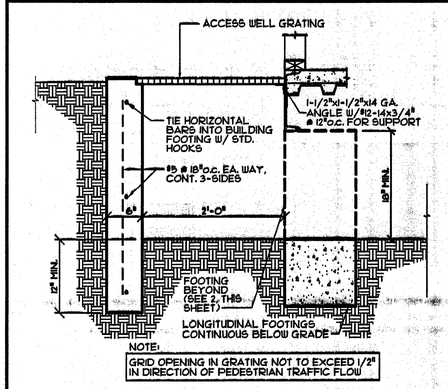
3



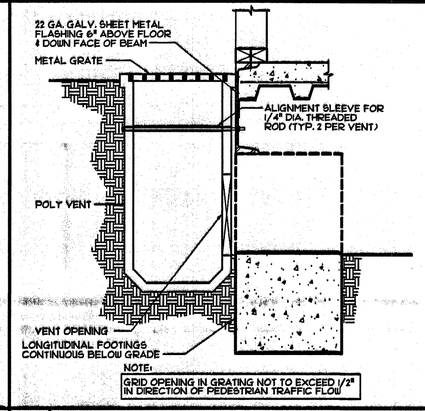
4 CORNER ANCHORING DETAIL
SCALE: 1-1/2"=1'-0"



7 PERIMETER FLASHING DETAIL
SCALE: 1-1/2"=1'-0"



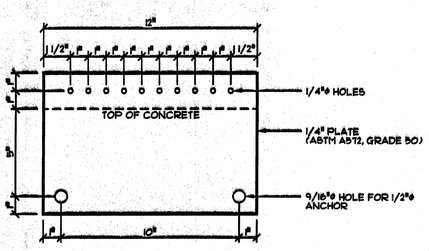
6 ACCESS / VENT WELL
SCALE: 1"=1'-0"



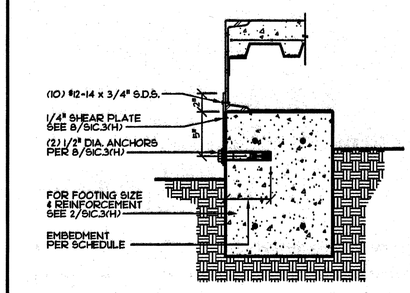
10 POLYVENT DETAIL
SCALE: 1 1/2"=1'-0"

SHEARPLATE EXPANSION ANCHOR EMBEDMENT AND PROOF LOAD SCHEDULE				
ANCHOR INFORMATION			PROOF TEST	
ANCHOR TYPE	SIZE	MIN. EMBED.	INSTALLATION TORQUE (FT#)	DIRECT TENSION see note #1
HILTI KWIK BOLT-TZ	1/2"	4"	60	5854
SIMPSON STRONG BOLT 2	1/2"	4 1/8"	60	4512

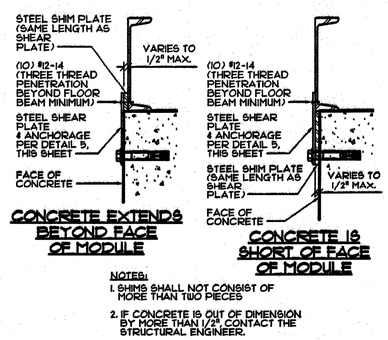
NOTES:
1. TENSION TEST = 2x ALLOWABLE TENSION LOAD PER DSA IR 19-1.
2. NORMAL WEIGHT CONCRETE WITH f'c= 3000 psi TO COMPLY WITH 1705A.3.3 FOR MATERIAL TEST WAIVER.
3. THE VALUES PRESENTED IN THIS TABLE ARE FOR STAINLESS STEEL ANCHORS.



8 ALTERNATE SHEAR PLATE
SCALE: 3"=1'-0"



5 ALTERNATE SHEAR PLATE
SCALE: 1 1/2"=1'-0"



NOTES:
1. SHIMS SHALL NOT CONSIST OF MORE THAN TWO PIECES
2. IF CONCRETE IS OUT OF DIMENSION BY MORE THAN 1/2", CONTACT THE STRUCTURAL ENGINEER.

5 ALTERNATE SHEAR PLATE SHIMS
SCALE: 1 1/2"=1'-0"

ALLOWABLE BEARING (psf)	MODULE CONFIGURATION	FOOTING WIDTH "B" (inches)	
		CLASSROOM (50 psf & 80 psf)	125psf
1500	STD BI-PITCH, STD SHED - NO STUCCO	15	
	ALL ROOF OPTIONS - NO STUCCO	15	15
	ALL ROOF OPTIONS - STUCCO	15	15

13 "B" FOOTING WIDTH SCHEDULE

NOTES:
1. ALLOWABLE SOIL BEARING PRESSURE IS 1,500 P.S.F.
2. CONCRETE FOR FOOTINGS SHALL HAVE A MINIMUM STRENGTH f'c= 3,000 P.S.I., PER 1905A.1.1 MADE WITH 1" MAX ASTM C-33 AGGREGATES PER ACI 318-11 SECTION 3.3 AND IN ACCORDANCE WITH CBC SECTION 1903A.6
3. MIX DESIGN SHALL BE PER ACI 318-11 SECTION 5.2
4. REINFORCING BARS SHALL BE A615, GRADE 60 MIN.
5. VENTILATION TO MEET REQUIREMENTS PER IR 16-1. PROVIDE MINIMUM 1 SQ. FT. OF VENT SPACE PER 150 SQ. FT. (PROVIDE 2" MINIMUM CLEARANCE)
6. ANCHORS TO BE EITHER:
   A. HILTI KWIK BOLT TZ IN ACCORDANCE WITH ICC ESR-1917.
   B. "SIMPSON" STRONG BOLT 2 ANCHOR IN ACCORDANCE WITH ICC ESR-3037
   C. ANCHORS WITH EXTERIOR EXPOSURE TO BE STAINLESS STEEL OR HOT DIPPED GALVANIZED.
7. TESTING OF REINFORCING BARS USED IN SINGLE STORY BUILDINGS MAY BE WAIVED PROVIDED CERTIFIED MILL TEST REPORTS ARE PROVIDED FOR EACH SHIPMENT OF SUCH REINFORCMENT (CBC 1913A.2).
8. CONCRETE MIX SHALL HAVE A MAXIMUM 0.50 WATER CEMENT RATIO.
9. ADD WATER REDUCING ADMIXTURE IN COMPLIANCE WITH ASTM C494 TYPE A.

11 GENERAL NOTES

HIGH SEISMIC				
EXPANSION ANCHOR EMBEDMENT AND PROOF LOAD SCHEDULE				
			PROOF TEST	
ANCHOR TYPE	SIZE	MIN. EMBED.	INSTALLATION TORQUE (FT#)	DIRECT TENSION (#) see note #1
SIMPSON STRONG BOLT 2	1"	6"	230	8340

NOTES:
1. TENSION TEST = 2x ALLOWABLE TENSION LOAD PER DSA IR 19-1.
2. NORMAL WEIGHT CONCRETE WITH f'c= 3000 psi TO COMPLY WITH 1705A.3.3 FOR MATERIAL TEST WAIVER.
3. THE VALUES PRESENTED IN THIS TABLE ARE FOR CARBON STEEL ANCHORS.

12 EXPANSION ANCHOR SCHEDULE

FOR USE:
1) 20 PSF ROOF LIVE LOAD W/ 50, 65, 125psf FLOOR LL.
2) ALL ROOF OPTIONS.
3) ALL EXTERIOR FINISH OPTIONS.

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JUN 03 2015

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CONCRETE FOUNDATION
FOOTING DETAILS & NOTES
(CONCRETE FLOORS)

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HIGH SEISMIC

S1C.3(H)

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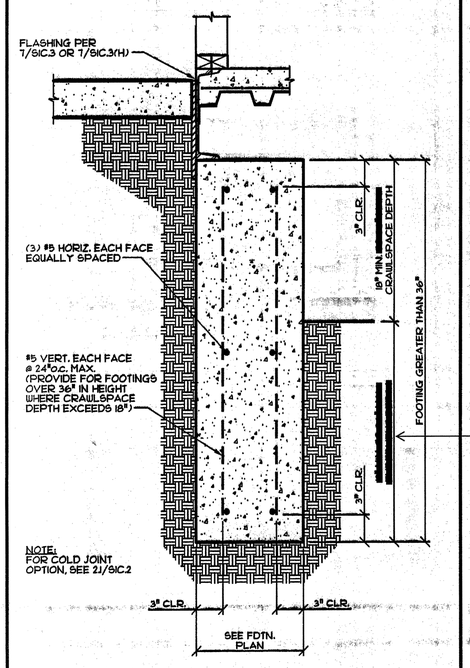


PERIMETER FOOTING

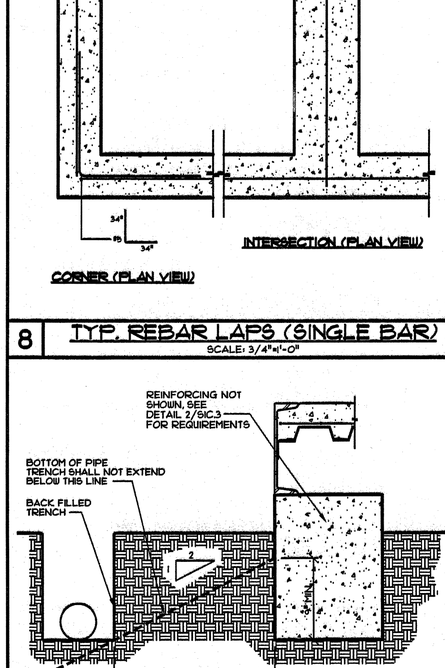
2.1 FOOTING GREATER THAN 36" HT.

SCALE: 1 1/2"=1'-0"

MULTIPLE SLEEVES

4 PIPE THROUGH FOOTING

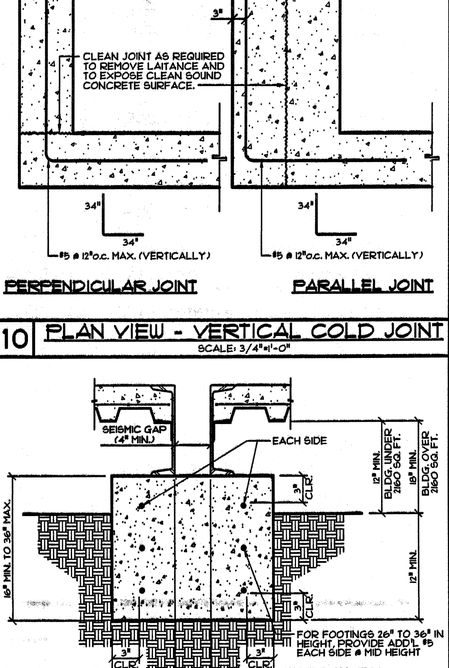
SCALE: 1"=1'-0"



MULTIPLE SLEEVES

5 PIPE NEAR BOTTOM OF FOOTING

SCALE: 1"=1'-0"

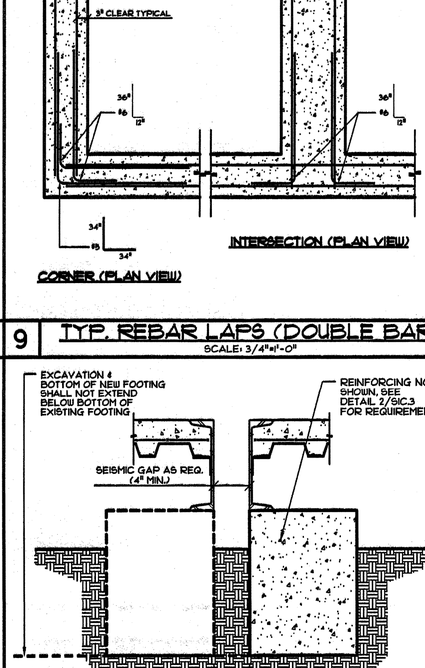


MULTIPLE SLEEVES

6 PIPE BELOW BOTTOM OF FOOTING

SCALE: 1"=1'-0"

CORNER (PLAN VIEW)



CORNER (PLAN VIEW)

PERPENDICULAR JOINT PARALLEL JOINT

8 TYP. REBAR LAPS (SINGLE BAR)

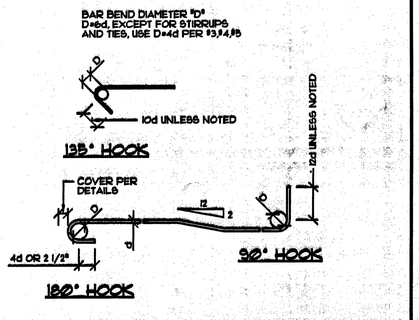
SCALE: 3/4"=1'-0"

9 TYP. REBAR LAPS (DOUBLE BAR)

SCALE: 3/4"=1'-0"

10 PLAN VIEW - VERTICAL COLD JOINT

SCALE: 3/4"=1'-0"



11 TYP. REINFORCING BAR BENDS

SCALE: NONE

13 TRENCH PROXIMITY TO FOOTINGS

SCALE: 1 1/2"=1'-0"

14 PROXIMITY OF NEW TO EXIST. FOOT.

SCALE: 1 1/2"=1'-0"

15 INTERIOR FOOTING @ SEISMIC GAP

SCALE: 1 1/2"=1'-0"

FOR USE:
1) 20psf ROOF LIVE LOAD W/ 50, 65, 125psf FLOOR LL.
2) ALL ROOF OPTIONS.
3) ALL EXTERIOR FINISH OPTIONS.

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REGISTERED PROFESSIONAL ENGINEER ARTHUR ERNEST [illegible] STRUCTURAL STATE OF CALIFORNIA No. S2030 EXP. 9/30/15

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ENVIROPLEX, INC.
4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

MISCELLANEOUS FOOTING DETAILS (CONCRETE FLOORS)

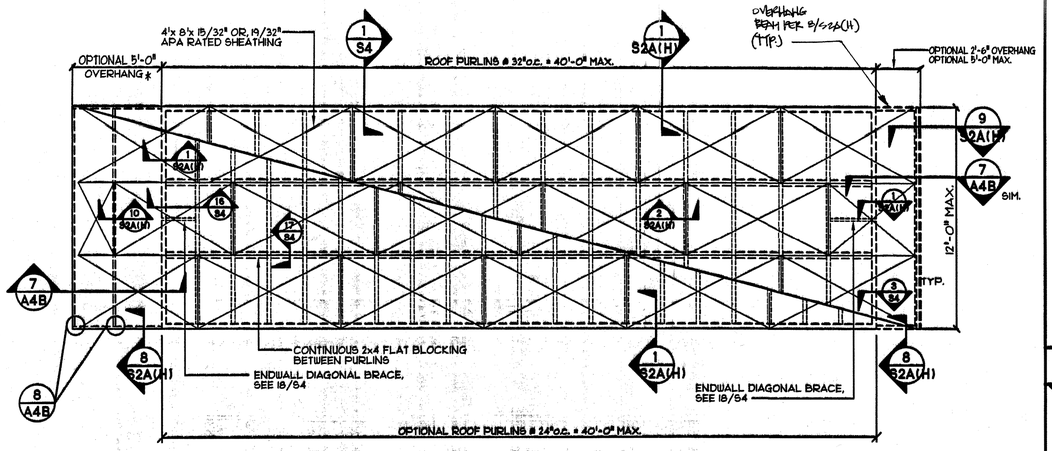
REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC. — FLS. — SS.
DATE 6-9-15

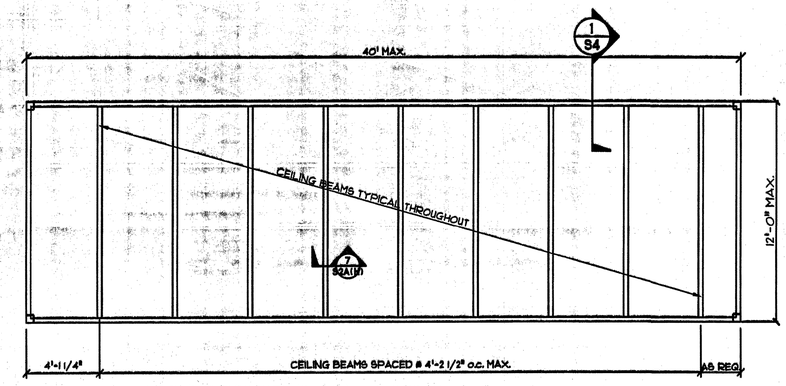
12x40' P.C.

S1C.4



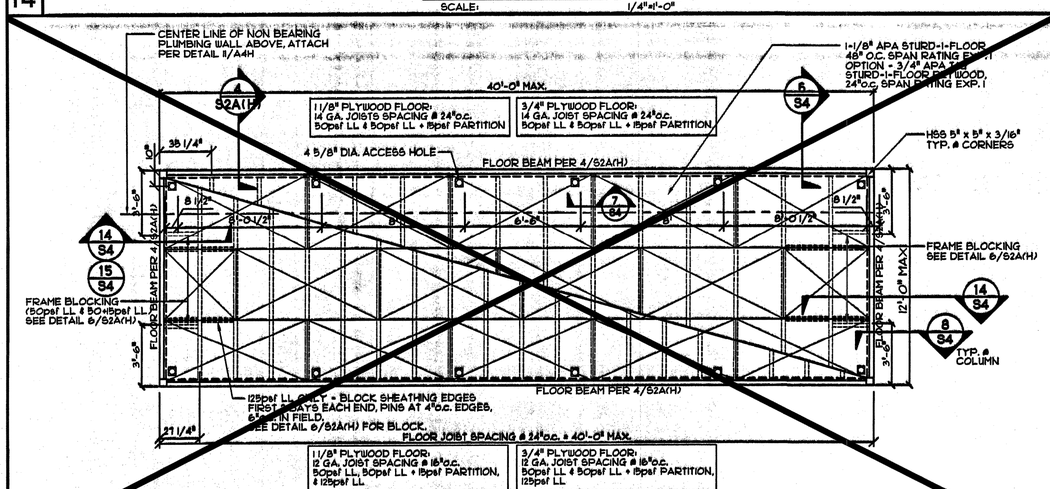
13 ROOF FRAMING PLAN

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



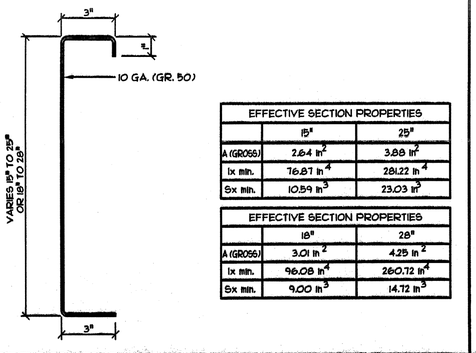
14 CEILING FRAMING PLAN

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



15 FLOOR FRAMING PLAN

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

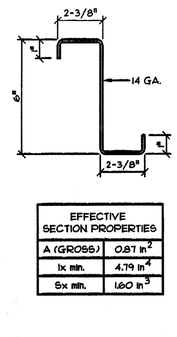


EFFECTIVE SECTION PROPERTIES		
	15"	25"
A (GROSS)	2.64 in²	3.88 in²
Ix min.	76.81 in⁴	281.22 in⁴
Sx min.	10.59 in³	23.03 in³

EFFECTIVE SECTION PROPERTIES		
	18"	28"
A (GROSS)	3.01 in²	4.25 in²
Ix min.	96.08 in⁴	260.72 in⁴
Sx min.	9.00 in³	14.72 in³

1 ROOF BEAM SECTION

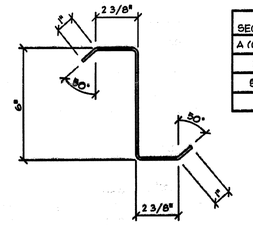
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.87 in²
Ix min.	4.79 in⁴
Sx min.	1.60 in³

2 ROOF PURLIN SECT.

SCALE: 3"=1'-0"

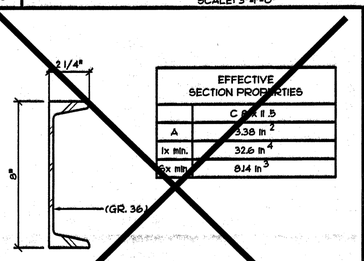


EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.878 in²
Ix min.	5.06 in⁴
Sx min.	1.687 in³
GA.	14

FOR USE WITH:
ROOFS - ALL CONDITIONS
FLOORS - 24"o.c. FOR CLASSROOM OCCUPANCIES ONLY, 19.2"o.c. FOR ALL OTHER OCCUPANCIES

3 ALT. ROOF PURLIN / FLOOR JOIST

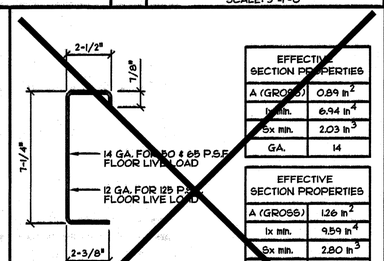
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
C 8 X 11.5	
A	3.38 in²
Ix min.	32.6 in⁴
Sx min.	8.14 in³

4 FLOOR BEAM SECTION

SCALE: 3"=1'-0"

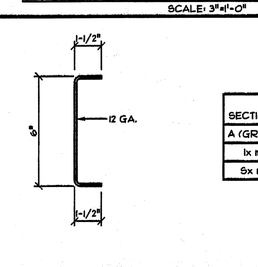


EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.89 in²
Ix min.	6.94 in⁴
Sx min.	2.03 in³
GA.	14

EFFECTIVE SECTION PROPERTIES	
A (GROSS)	1.26 in²
Ix min.	9.59 in⁴
Sx min.	2.80 in³
GA.	12

5 FLOOR JOIST SECTION

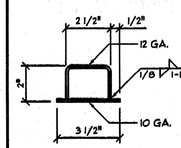
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	.891in²
Ix min.	4.12in⁴
Sx min.	1.34in³

6 FRAME BLOCKING SECTION

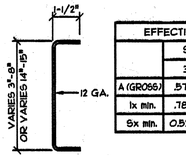
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	1.05 in²
Ix min.	0.66 in⁴
Iy min.	1.08 in⁴
Sx min.	0.829 in³
Sy min.	0.824 in³

7 CEILING BEAM SECTION

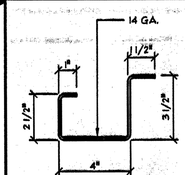
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	STANDARD		OPTIONAL	
	3"	8"	14"	18"
A (GROSS)	.571in²	1.071in²	1.68 in²	1.79 in²
Ix min.	.78in⁴	8.28in⁴	34.2 in⁴	40.47 in⁴
Sx min.	0.52in³	2.05 in³	5.11 in³	5.72 in³

8 OVERHANG BEAM

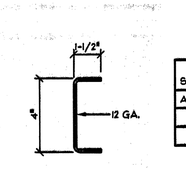
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.85 in²
Ix min.	1.26 in⁴
Sx min.	0.97 in³

9 GUTTER BEAM SECTION

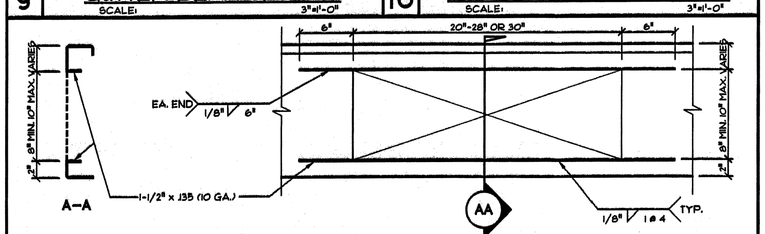
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	.691in²
Ix min.	1.58in⁴
Sx min.	.791in³

10 INTERMEDIATE CHANNELS

SCALE: 3"=1'-0"



11 HVAC PENETRATION @ ENDWALL ROOF BEAM

SCALE: 1-1/2"=1'-0"

STEEL SPECIFICATION

1. ALL LIGHT GAGE STEEL SHALL BE ASTM A1011 GRADE 36. UNLESS OTHERWISE NOTED
2. STRUCTURAL STEEL TUBING SHALL BE ASTM A500 GRADE B Fy=46
3. ALL STRUCTURAL STEEL PLATES, ANGLES, CHANNELS, BARS & MISC. SHAPES SHALL CONFORM TO ASTM A36, UNLESS OTHERWISE NOTED.
4. ALL MACHINE BOLTS SHALL BE ASTM A307.
5. WELDING SHALL BE DONE PER AWS D 1.8 - D6.3.
6. WELDING INSPECTION TO BE PER C.B.C. SECTION 1705A.2.2.5
7. SEE TESTS AND INSPECTIONS REPORT SHEET A0 FOR REQUIREMENTS.
8. LIGHT GAGE METAL & FRAMING THICKNESSES

GAGE	DESIGN THICKNESS	MIN. DELIVERED THICKNESS
7 GA. STEEL	0.1793"	0.170"
10 GA. STEEL	0.1240"	0.1178"
12 GA. STEEL	0.1017"	0.0966"
14 GA. STEEL	0.0713"	0.0677"

R = 3/16" MAX. TYPICAL CORNER RADIUS

9. MINIMUM STEEL THICKNESS SHALL NOT BE LESS THAN 95% OF THE DESIGN THICKNESS PER A151 - GENERAL AND A151 - NAS.

SHEATHING / PLYWOOD SPECIFICATION

1. ALL STRUCTURAL PLYWOOD SHALL BE MANUFACTURED TO PRODUCT STANDARD DOC PS-1 AND INSPECTED AND GRADE MARKED AT THE MILL BY AN APPROVED QUALITY CONTROL AGENCY SUCH AS APA OR TECO.
2. ROOF SHEATHING SHALL BE 4'x 8'x 15/32" GRADE MARKED 32/16 SPAN INDEX, EXP. 1 OR 19/32" GRADE MARKED 40/20 SPAN INDEX, EXP.1.
3. FLOOR SHEATHING SHALL BE 4'x 8'x 1-1/8" T & G APA OR TECO RATED UNDERLAYMENT GRADE STURD-I-FLOOR OR EQUAL, SPAN RATING = 48"
   OR
   4'x 8'x 3/4" T & G APA OR TECO RATED UNDERLAYMENT GRADE STURD-I-FLOOR OR EQUAL, SPAN RATING = 24"
4. WALL SHEATHING SHALL BE 3/8" HARD BOARD SIDING APA EXTERIOR TYPE 303 GROUP II M.D.O., EXTERIOR GROUP II, OR 1/2" APA RATED CDX PLYWOOD.
5. SEE FASTENER SCHEDULE, SHEET S3FA".

DIVISION OF THE STATE ARCHITECT

IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
02 114923
AC. — FLS — SS
DATE 5/16

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
A separate project application for construction is required.

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REGISTERED PROFESSIONAL ENGINEER ARTHUR "ERNEST" ROSES No. S2090 EXP. 9/30/15 STRUCTURAL STATE OF CALIFORNIA

JUN 03 2015

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ENVIROPLEX, INC.
4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

SHED ROOF, CEILING, & FLOOR FRAMING PLANS, STRUCTURAL STEEL PROPERTIES, NOTES

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC. — FLS — SS
DATE 6-9-15

HIGH SEISMIC

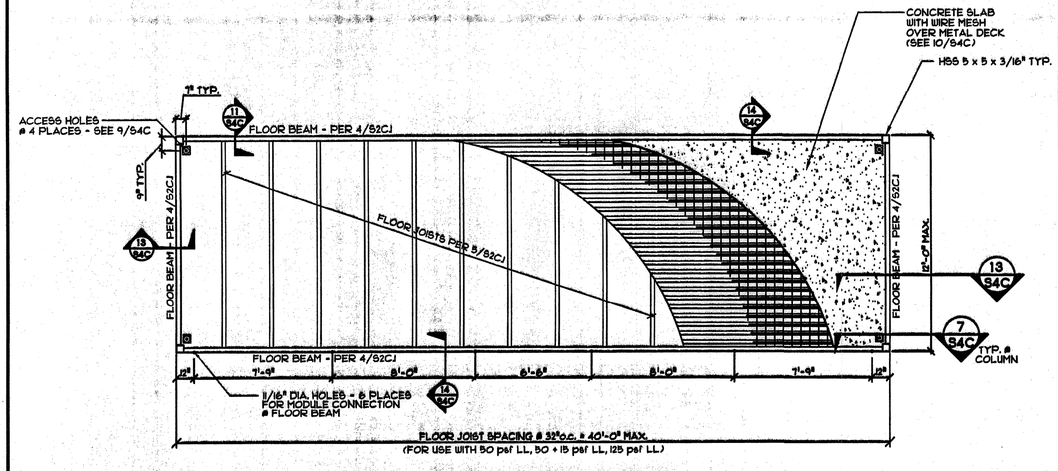
S2A(H)

12"x40" P.C.

13

14

15



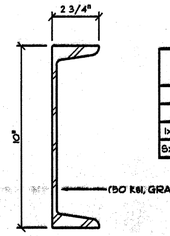
FLOOR FRAMING PLAN
SCALE: 1/4"=1'-0"

1

1.1

2

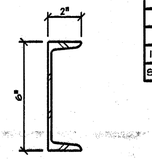
3



EFFECTIVE SECTION PROPERTIES	
	C 10 x 20
A	5.88 in^2
Ix min.	78.9 in^4
Sx min.	15.8 in^3

4

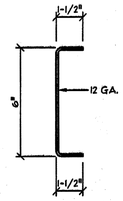
FLOOR BEAM SECTION
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
	C6 x 10.5
A	3.09 in^2
Ix min.	15.2 in^4
Sx min.	5.06 in^3

5

FLOOR JOIST SECTION
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	.89in^2
Ix min.	4.12in^4
Sx min.	1.34in^3

6

FRAME BLOCKING SECTION
SCALE: 3"=1'-0"

1. ALL LIGHT GAGE STEEL SHALL BE ASTM A101 GRADE 36. UNLESS OTHERWISE NOTED
2. STRUCTURAL STEEL TUBING SHALL BE ASTM A500 GRADE B Fy=46
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14 GA. STEEL	0.0713"	0.0677"

R = 3/16" MAX.
TYPICAL CORNER RADIUS

9. MINIMUM STEEL THICKNESS SHALL NOT BE LESS THAN 95% OF THE DESIGN THICKNESS PER AISI - GENERAL AND AISI - NAS.

STEEL SPECIFICATION

DIVISION OF THE STATE ARCHITECT

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC. FLS. SS.
DATE 6-9-15

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7

8

9

10

11

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www.cyseng.com

JUN 03 2015

REGISTERED PROFESSIONAL ENGINEER
ARTHUR ERNEST NEES
No. S2030
EXP. 9/30/15
STRUCTURAL
STATE OF CALIFORNIA

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4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

FRAMING PLAN, STRUCTURAL STEEL PROPERTIES, NOTES (CONCRETE FLOORS)

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC. FLS. SS.
DATE 6-9-15

LOW AND HIGH SEISMIC

S2C.1

12"x40" P.C.

FOR BUILDINGS ON WOOD FOUNDATIONS

JAACO - .145 x 1 3/4" PIN (ICC ESR-2961)

SUBFLOORING

I-1/8" APA RATED T&G STURD-I-FLOOR TO STEEL BEAMS & JOISTS		50 PSF	65 PSF	125 PSF
	LOW SEISMIC	PER DIAGRAM FWJ-1		PER DIAGRAM FWJ-2
	HIGH SEISMIC	PER DIAGRAM FWJ-3		PER DIAGRAM FWJ-4

DIAGRAM - FWJ-1

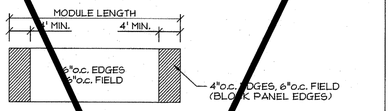


DIAGRAM - FWJ-2

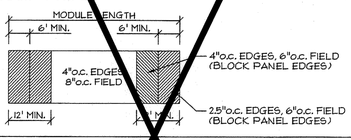


DIAGRAM - FWJ-3

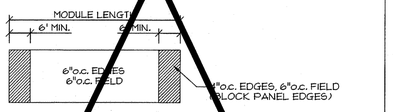
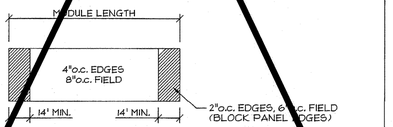


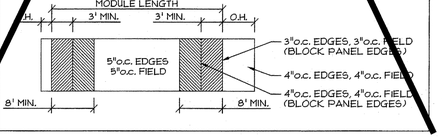
DIAGRAM - FWJ-4



ROOF

15/32" APA RATED PLYWOOD TO PURLINS & BEAMS
(OPTIONAL - 19/32" PLYWOOD ROOF)

DIAGRAM - FWJ-1



FOR BUILDINGS ON CONCRETE FOUNDATIONS

JAACO - .145 x 1 3/4" PIN (ICC ESR-2961)

SUBFLOORING

I-1/8" APA RATED T&G STURD-I-FLOOR TO STEEL BEAMS & JOISTS		50 PSF	65 PSF	125 PSF
	LOW SEISMIC	PER DIAGRAM FCJ-1		PER DIAGRAM FCJ-2
	HIGH SEISMIC	PER DIAGRAM FCJ-3		PER DIAGRAM FCJ-4

DIAGRAM - FCJ-1

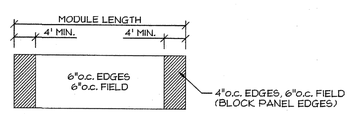


DIAGRAM - FCJ-2

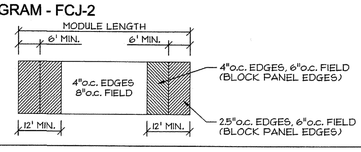


DIAGRAM - FCJ-3

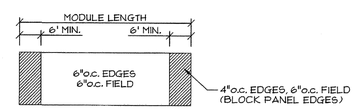
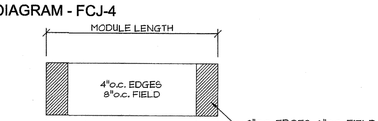


DIAGRAM - FCJ-4



SUBFLOORING WITH LEVELROCK

3/4" USG "LEVELROCK" FLOOR TOPPING OVER 3/8" SOUND REDUCTION BOARD OVER 3/4" T&G STURD-I-FLOOR PLY SHEATHING		50 PSF	65 PSF	125 PSF
	LOW SEISMIC	PER DIAGRAM FCJ-5		
	HIGH SEISMIC	PER DIAGRAM FCJ-6		

DIAGRAM - FCJ-5

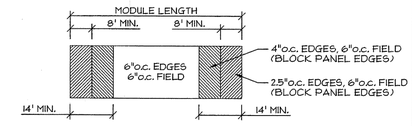
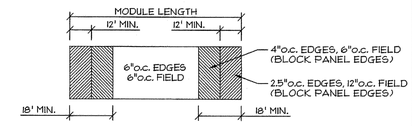
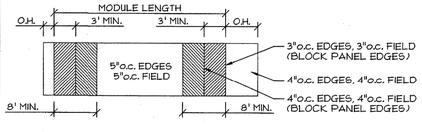


DIAGRAM - FCJ-6



ROOF

15/32" APA RATED PLYWOOD TO PURLINS & BEAMS
(OPTIONAL - 19/32" PLYWOOD ROOF)



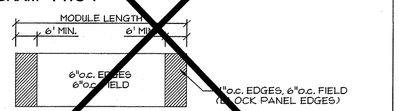
FOR BUILDINGS ON WOOD FOUNDATIONS

SCREWS - #10 S.M.S. (AISI S213-07, SECTION D)

SUBFLOORING

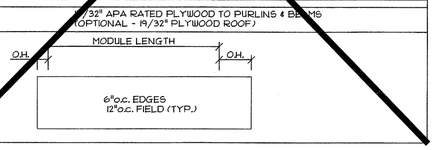
I-1/8" APA RATED T&G STURD-I-FLOOR TO STEEL BEAMS & JOISTS		50 PSF	65 PSF	125 PSF
	LOW SEISMIC	6"o.c. EDGES 12"o.c. FIELD		
	HIGH SEISMIC	6"o.c. EDGES 12"o.c. FIELD		PER DIAGRAM FWS-1

DIAGRAM - FWS-1



ROOF

15/32" APA RATED PLYWOOD TO PURLINS & BEAMS
(OPTIONAL - 19/32" PLYWOOD ROOF)



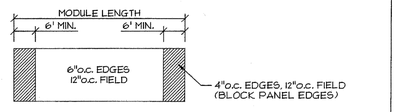
FOR BUILDINGS ON CONCRETE FOUNDATIONS

SCREWS - #10 S.M.S. (AISI S213-07, SECTION D)

SUBFLOORING

I-1/8" APA RATED T&G STURD-I-FLOOR TO STEEL BEAMS & JOISTS		50 PSF	65 PSF	125 PSF
	LOW SEISMIC	6"o.c. EDGES 12"o.c. FIELD		
	HIGH SEISMIC	6"o.c. EDGES 12"o.c. FIELD		PER DIAGRAM FCS-1

DIAGRAM - FCS-1



SUBFLOORING WITH LEVELROCK

3/4" USG "LEVELROCK" FLOOR TOPPING OVER 3/8" SOUND REDUCTION BOARD OVER 3/4" T&G STURD-I-FLOOR PLY SHEATHING		50 PSF	65 PSF	125 PSF
	LOW SEISMIC	PER DIAGRAM FCS-2		
	HIGH SEISMIC	PER DIAGRAM FCS-3		

DIAGRAM - FCS-2

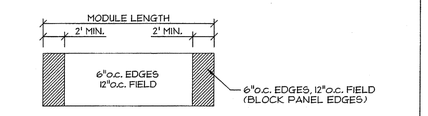
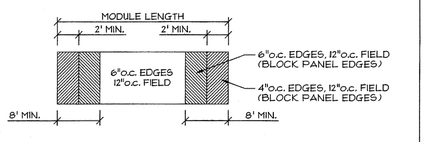
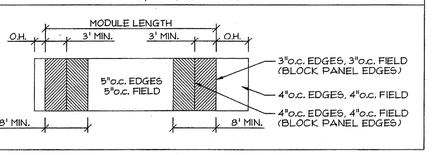


DIAGRAM - FCS-3



ROOF

15/32" APA RATED PLYWOOD TO PURLINS & BEAMS
(OPTIONAL - 19/32" PLYWOOD ROOF)



WALL TO FRAME FASTENING:

- WALL PANEL TOP PLATE TO PERIMETER ROOF BEAM. ..... (1) 1/4"ø x 2" LAG SCREWS FROM ROOF BEAM BOTT. FLANGE INTO TOP PLATE @ 15"o.c. MAX.
- WALL PANEL BOTTOM PLATE TO PERIMETER FLOOR BEAM. ..... 1/4"-20 TEKS/4 SCREWS @ 16"o.c. FROM BOTT. PLATE INTO FLOOR BEAM TOP FLANGE
- WALL PANEL SIDE STUDS TO TS CORNER COLUMNS ..... #12-24 x 2 1/2" S.D.S. @ 16"o.c. FROM SIDE STUD INTO STEEL CORNER COLUMN.
- TOP AND BOTTOM PLATE TO STUDS AND KING STUDS ..... (3) 135 x 3 1/4" LONG MACHINE NAIL
- DOUBLE STUDS, TRIMMERS, SILLS AND CRIPPLES STICH NAILED ..... 135 x 3 1/4" LONG MACHINE NAILS @ 8"o.c.
- CRIPPLES, TRIMMERS END NAILED TO PLATES AND SILLS. ..... (3) 135 x 3 1/4" LONG MACHINE NAIL EA. END
- CRIPPLES, TRIMMERS NAILED TO HEADERS. ..... (3) 135 x 3 1/4" LONG MACHINE NAIL
- ALL HANGERS, STRAPS, CLIPS, ETC. ..... NAILED AS PER MANUFACTURERS SPECS.
- FASTENING CONDITIONS NOT ADDRESSED ABOVE ..... TABLE 2304.9.1 2013 C.B.C.

PLYWOOD NAILING & NOTES:

1. DO NOT CRUSH PLYWOOD FACE PLY (OUTER VENEER LAYER) BY OVER DRIVING SCREWS, MACHINE, OR HAND NAILS.
2. UNDER DRIVEN NAILS SHALL BE CORRECTED BY HAND SET.
3. REMOVE AND REPLACE NAILS DRIVEN THAT MISS FRAMING OR SUPPORT.
4. ALL CORRECTIVE NAILING SHALL BE DONE BY HAND NAILING.
5. H.D.G.= HOT DIPPED GALVANIZED WITH MINIMUM COATING OF 1 OZ PER SQ. F.T OF ZINC. OR MECHANICALLY GALVANIZED PER ASTM. F-1667.

SIDING	
EXTERIOR SIDING	INTO 2x4 OR 2x6 WOOD STUDS; .131" x 2 1/2" @ 6"o.c. PANEL EDGES, 12"o.c. IN FIELD. (H.D.G. OR MECH. GALV. NAILS, PER ASTM F-1667). INTO STEEL COLUMNS; #12-24 x 2" S.D.S. @ 24"o.c.

GYPSUM WALLBOARD	
1/2" GYP. BOARD TO 2x4 OR 2x6 STUDS	121 x 1 1/2" COATED NAILS @ 8"o.c. EDGES, 8"o.c. IN FIELD.

OVERHANG SOFFIT	
1/2" APA RATED SHEATHING	#8 x 1" S.M.S. @ 6"o.c. EDGES, 12"o.c. IN FIELD (PRE-PUNCHED HOLES IN STEEL)

CYS
STRUCTURAL ENGINEERS INC.
1109 National Park Drive, Suite 200
Sacramento, CA 95834
(916) 929-2691 Phone (916) 614-8144 Fax
www.cysinc.com

6-9-15

REGISTERED PROFESSIONAL ENGINEER
ARTHUR "ERNEST" HOSS
No. S2030
EXP. 9/30/15
STRUCTURAL
STATE OF CALIFORNIA

THESE DRAWINGS ARE PRELIMINARY AND NOT FOR CONSTRUCTION UNLESS STAMPED & SIGNED BY THE ENGINEER OF RECORD.

ENVIROPLEX, INC.
4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

FASTENING SCHEDULE & NOTES

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC. FLS. SS.
DATE 5-11-16

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC. FLS. SS.
DATE 6-9-15

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
A separate project application for construction is required.

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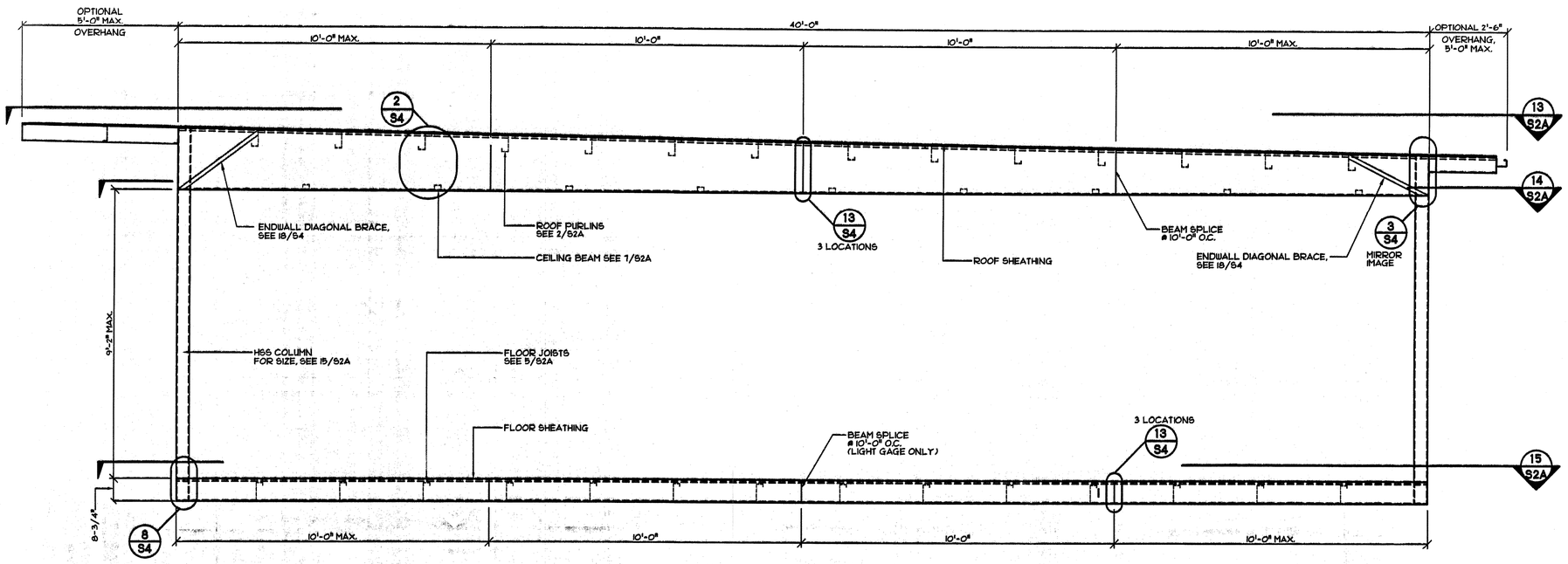
2013 - 12x40

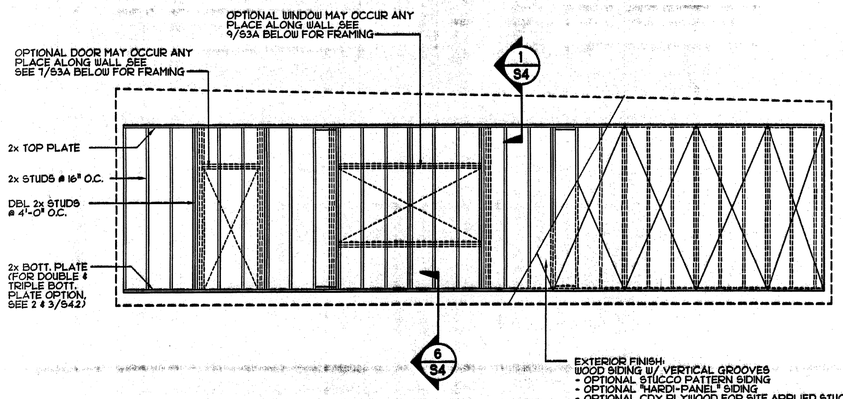
S3FA

12'x40' P.C.



1 TYPICAL LONGITUDINAL FRAME SECTION - SHED ROOF

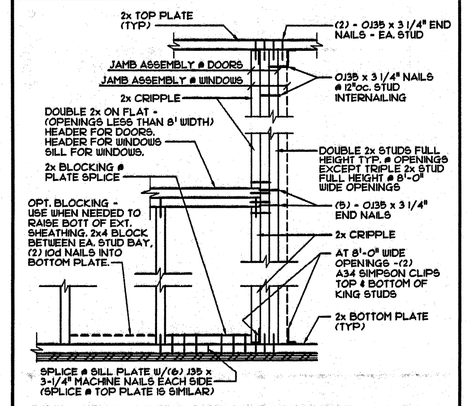
SCALE: 1/2"=1'-0"



NOTE: 2x4 OR 2x6 DF-LARCH #2 MIN STUDS MAY BE USED.

3 TYPICAL SIDEWALL FRAMING ELEVATION

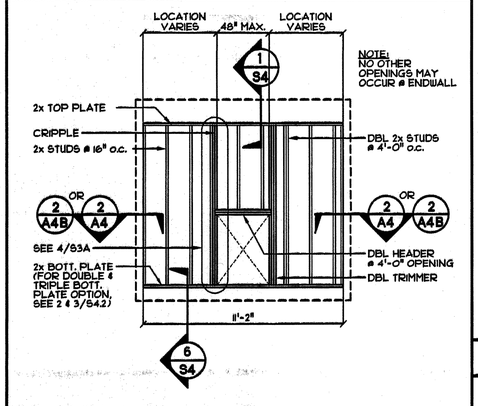
SCALE: 1/4"=1'-0"



NOTE: 2x4 OR 2x6 DF-LARCH #2 MIN STUDS MAY BE USED. FOR "NAILING SCHEDULE", SEE 2/S3

4 STUD NAILING DETAIL

SCALE: 1"=1'-0"



NOTE: 2x4 OR 2x6 DF-LARCH #2 MIN STUDS MAY BE USED.

5 ENDWALL FRAMING - INTERIOR HVAC

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

JUN 0 3 2015

REGISTERED PROFESSIONAL ENGINEER ARTHUR ERNEST ROSES No. S2030 EXP. 9/30/15 STRUCTURAL STATE OF CALIFORNIA

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STRUCTURAL ENGINEERS INC
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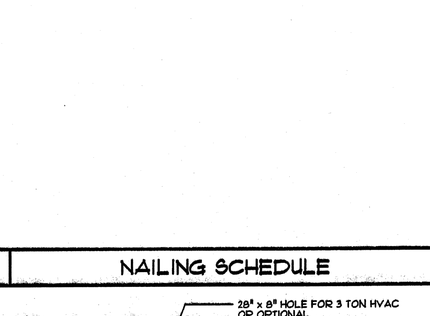
ENVIROPLEX, INC.
4777 E. CARPENTER ROAD STOCKTON, CA. 95215, (209) 466-8000

2 NAILING SCHEDULE



6 END FRAME ELEVATION

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

IDENTIFICATION STAMP DIV OF THE STATE ARCHITECT 02 114923 AC. FLS. SS. DATE 5/11/16

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
A separate project application for construction is required.

SHED ROOF
LONGITUDINAL BUILDING SECTION, WALL FRAMING ELEVATIONS, END FRAME ELEVATION, NAIL SCHEDULE

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP DIVISION OF THE STATE ARCHITECT 02-113910 AC. FLS. SS. DATE 6-9-15

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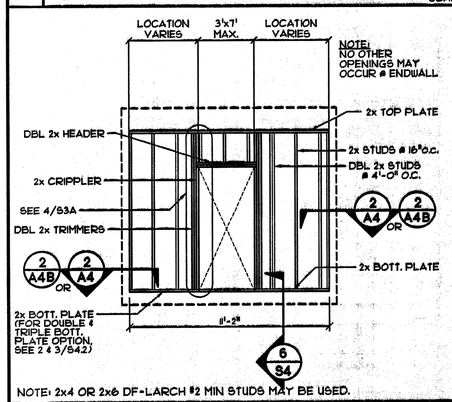
S3A

12x40 P.C.

7 ENDWALL FRAMING - EXT. DOOR

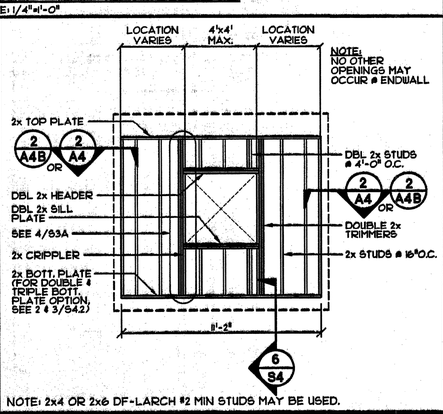
SCALE: 1/4"=1'-0"



NOTE: 2x4 OR 2x6 DF-LARCH #2 MIN STUDS MAY BE USED.

8 ENDWALL FRAMING - EXT. WINDOW

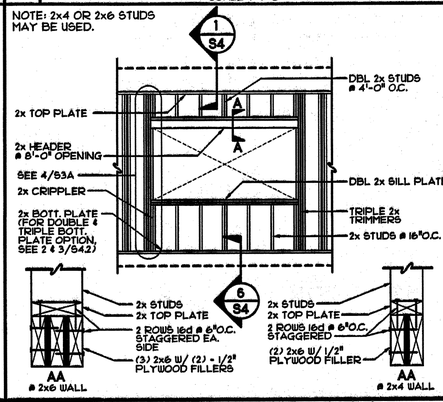
SCALE: 1/4"=1'-0"



NOTE: 2x4 OR 2x6 DF-LARCH #2 MIN STUDS MAY BE USED.

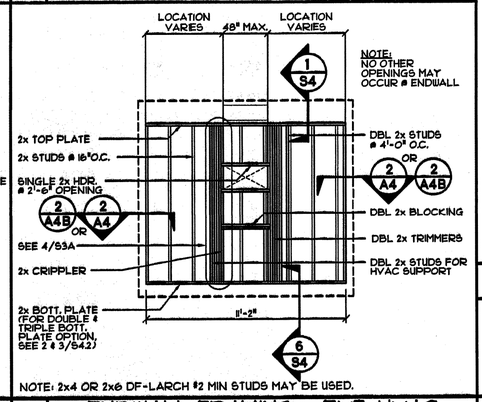
9 FRAMING @ 8'-0" OPENING

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

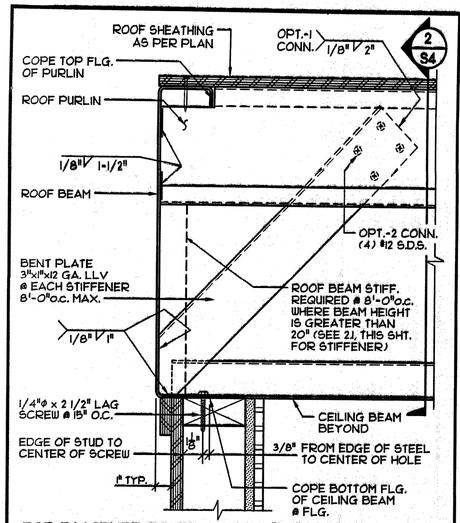


10 ENDWALL FRAMING - EXT. HVAC

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

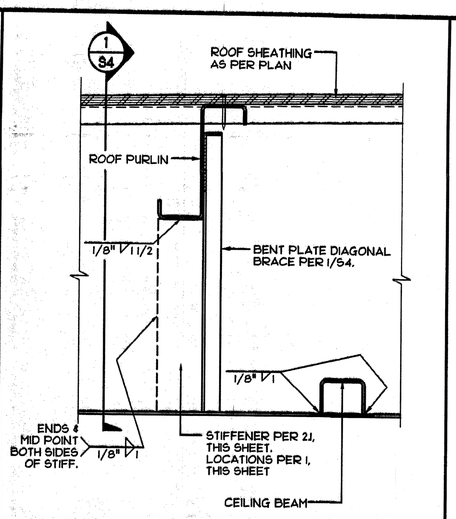


NOTE: 2x4 OR 2x6 DF-LARCH #2 MIN STUDS MAY BE USED.



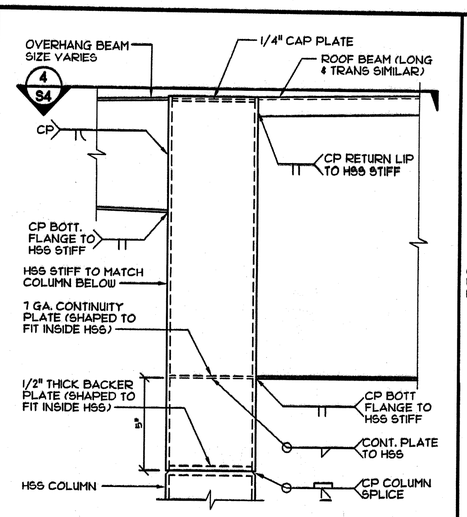
FOR FASTENER SCHEDULE, SEE "S3" SHEETS

1 ROOF BEAM SECTION @ PURLIN
SCALE: 3"=1'-0"

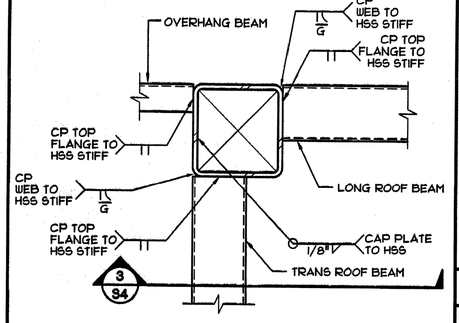


FOR FASTENER SCHEDULE, SEE "S3" SHEETS

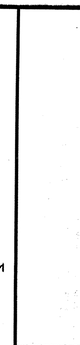
2 PURLIN TO STIFFENER AT BEAM
SCALE: 3"=1'-0"



3 ROOF BEAM SECTION @ CORNER
SCALE: 3"=1'-0"

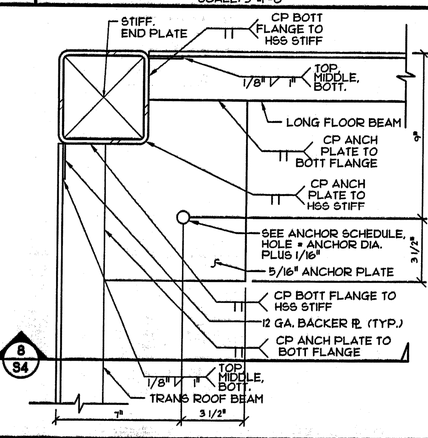


4 ROOF BEAM TOP FLANGE
SCALE: 3"=1'-0"

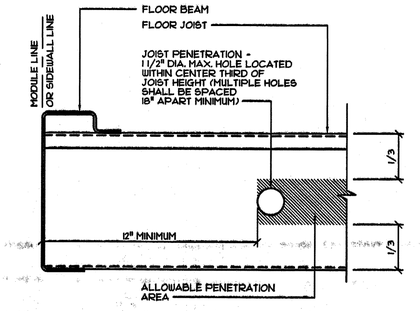


JUN 03 2015

2.1 ROOF BEAM STIFFENER
SCALE: 3"=1'-0"



10 FLOOR BEAM BOTTOM FLANGE
SCALE: 3"=1'-0"



19 FLOOR JOIST PENETRATION
SCALE: 3"=1'-0"

DIVISION OF THE STATE ARCHITECT

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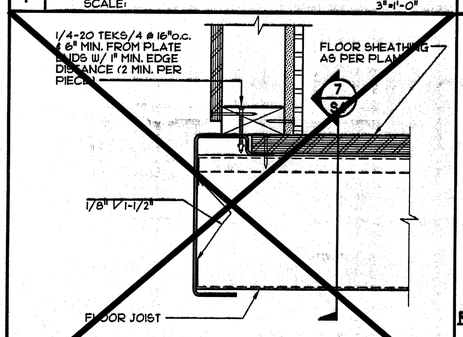
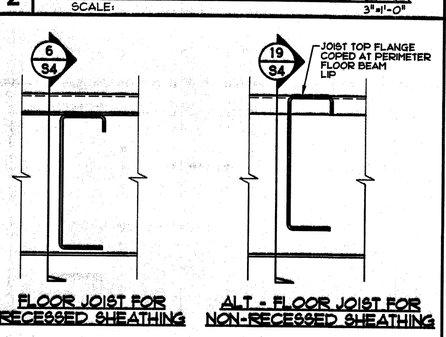
DIV. OF THE STATE ARCHITECT
02 114923
AC. — FLS. — SS. —
DATE 5-1-16



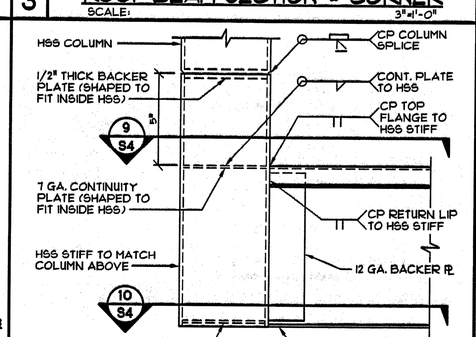
FOR FASTENER SCHEDULE, SEE "S3" SHEETS

6 FLOOR BEAM @ JOIST CONNECTION
SCALE: 3"=1'-0"

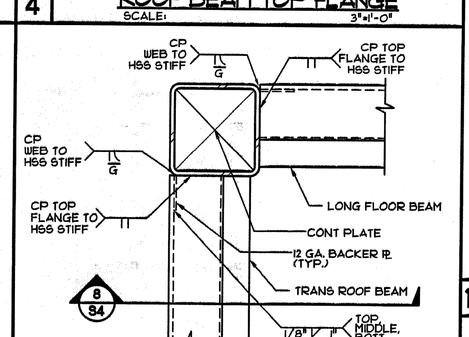


FOR CLARITY, FLOOR SHEATHING IS NOT SHOWN.

7 JOIST TO BEAM CONNECTION
SCALE: 3"=1'-0"

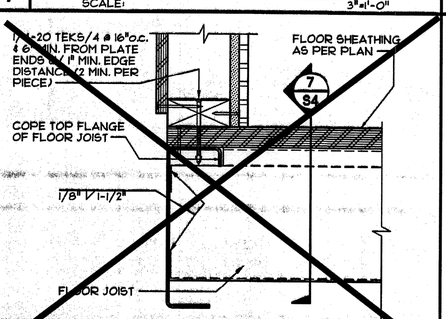


8 FLOOR BEAM SECTION @ CORNER
SCALE: 3"=1'-0"

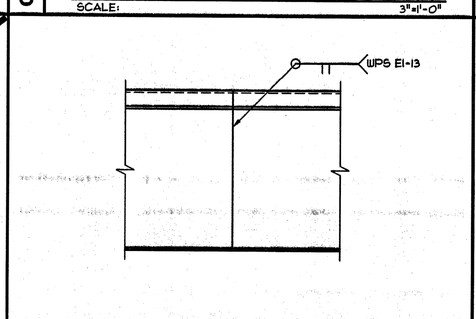


9 FLOOR BEAM TOP FLANGE
SCALE: 3"=1'-0"

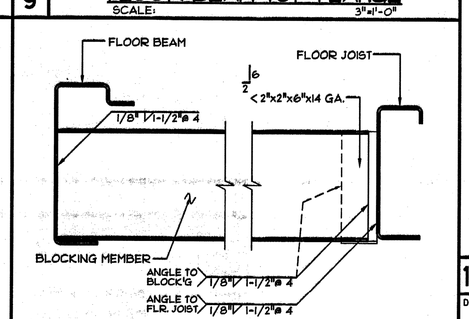
11



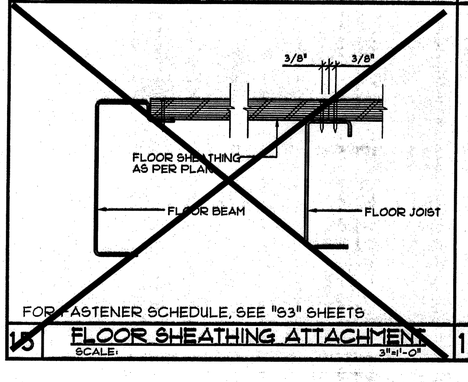
12 ALT. FLOOR BEAM @ JOIST CONN.
SCALE: 3"=1'-0"



13 BEAM SPLICE DETAIL
SCALE: 3"=1'-0"

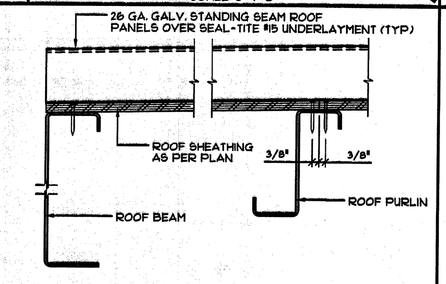


14 BLOCKING MEMBER CONNECTION
SCALE: 3"=1'-0"



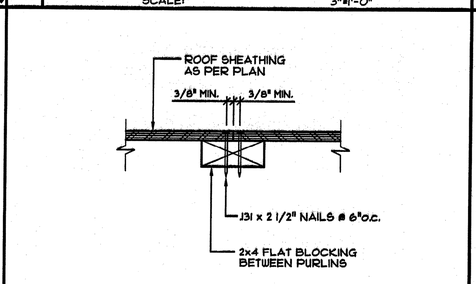
FOR FASTENER SCHEDULE, SEE "S3" SHEETS

15 FLOOR SHEATHING ATTACHMENT
SCALE: 3"=1'-0"

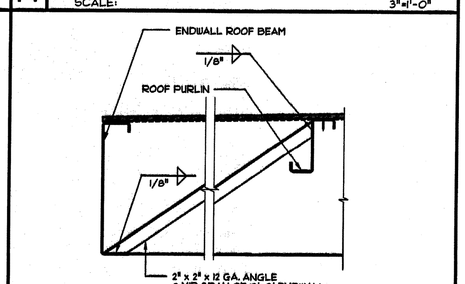


NOTE: THIS ROOF MEETS CLASS 'B' FIRE RATING FOR FASTENER SCHEDULE, SEE "S3" SHEETS

16 ROOF SHEATHING ATTACHMENT
SCALE: 3"=1'-0"



17 FLAT BLOCKING @ ROOF
SCALE: 3"=1'-0"



18 ENDWALL DIAGONAL BRACE
SCALE: 1 1/2"=1'-0"

CYS
STRUCTURAL ENGINEERS INC.
3105 Shannon Park Drive, Suite 250
Visalia, CA 93291
(559) 840-0220 (916) 920-1336 Fax
www.cysinc.com

REGISTERED PROFESSIONAL ENGINEER
ARTHUR "ERNEST" ROSS
No. S2030
EXP. 9/30/15
STRUCTURAL
STATE OF CALIFORNIA

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STRUCTURAL CONNECTION DETAILS

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JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC. — FLS. — SS.
DATE 6-1-15

PRE-CHECK (PC) DOCUMENT
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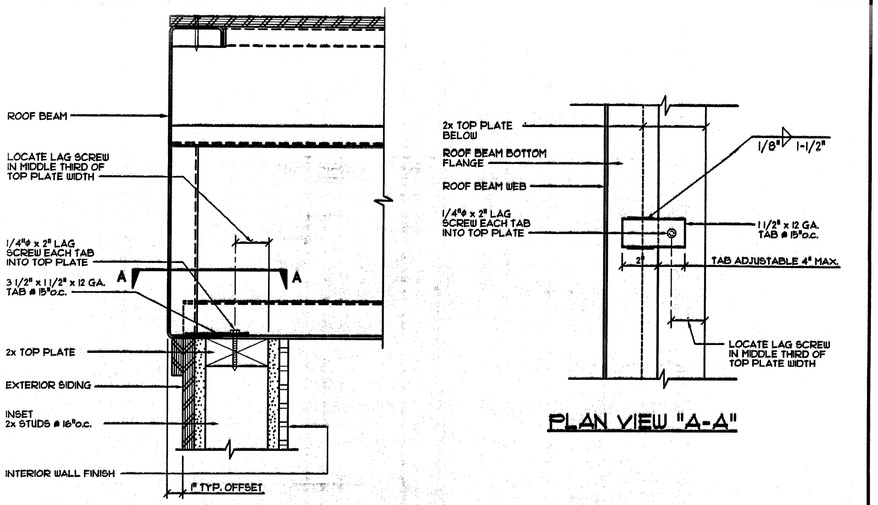
2015 - 15040

S4

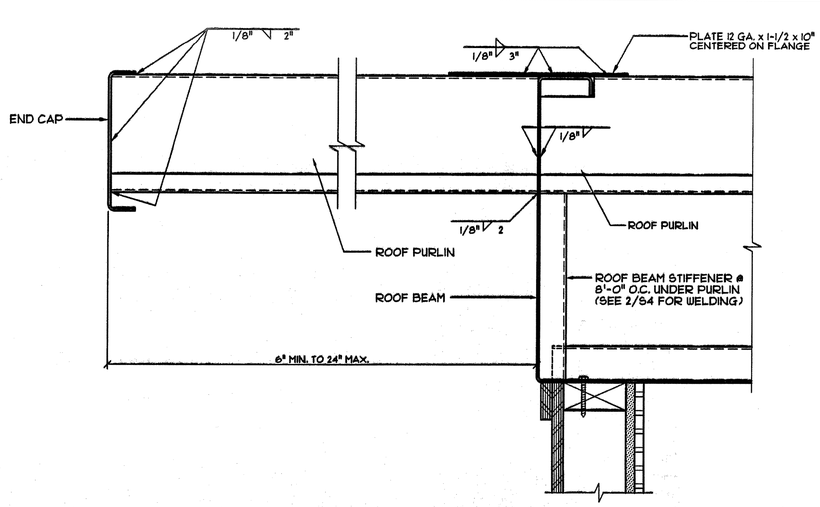
12"x40" P.C.



PLAN VIEW "A-A"

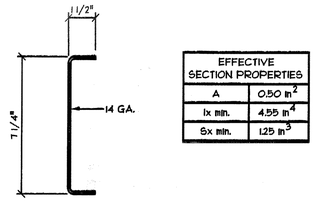
1 INSET STUDS - TOP PLATE CONNECTION

SCALE: 3"=1'-0"



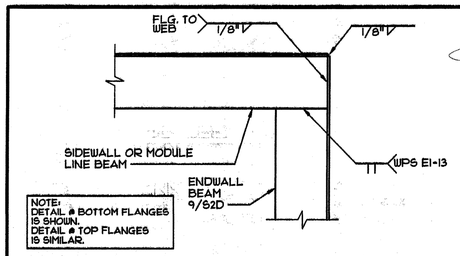
2 SIDEWALL OVERHANG DETAIL

SCALE: 3"=1'-0"



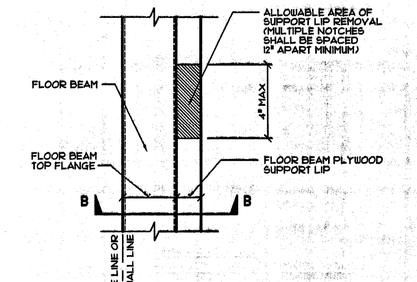
EFFECTIVE SECTION PROPERTIES	
A	0.50 in^2
Ix min.	4.55 in^4
Sx min.	1.25 in^3

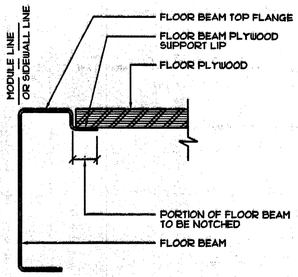
END CAP SECTION PROPERTIES



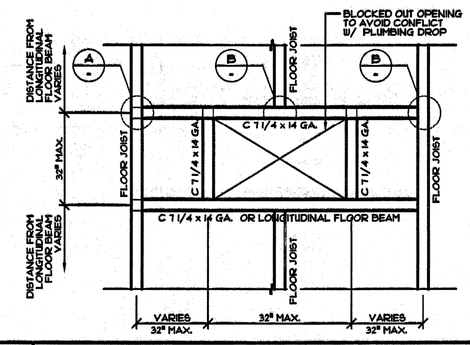
15 TYP. CHANNEL BEAM @ CORNERS

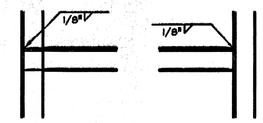
SCALE: 3"=1'-0"



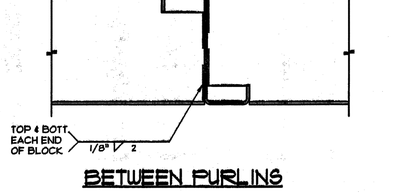


SECTION VIEW "B-B"

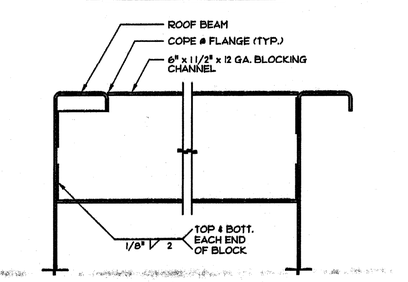




DETAIL "A" DETAIL "B"



BETWEEN PURLINS



BETWEEN BEAMS

11 TYP. CHANNEL BLOCK INSTALLATION

SCALE: 3"=1'-0"

DIVISION OF THE STATE ARCHITECT

IDENTIFICATION STAMP
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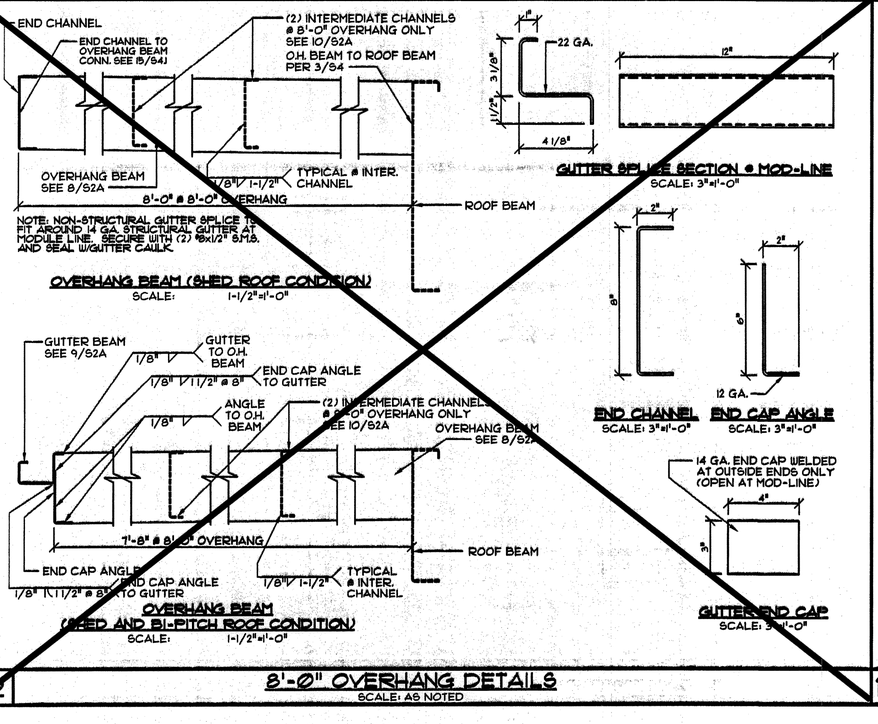
AC — FLS. / SS. —
DATE 8-11-16

3 FLOOR BEAM TOP FLANGE NOTCH

SCALE: 3"=1'-0"



GUTTER SPLICE SECTION @ MOD-LINE

SCALE: 3"=1'-0"

END CHANNEL SCALE: 3"=1'-0"

END CAP ANGLE SCALE: 3"=1'-0"

GUTTER END CAP

SCALE: 3"=1'-0"

OVERHANG BEAM (SHED ROOF CONDITION)

SCALE: 1-1/2"=1'-0"

OVERHANG BEAM (SHED AND BI-PITCH ROOF CONDITION)

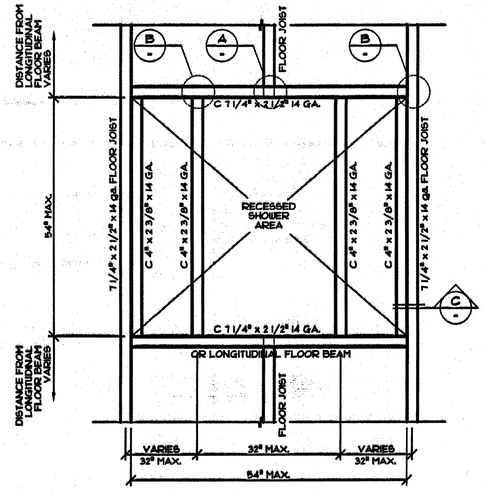
SCALE: 1-1/2"=1'-0"

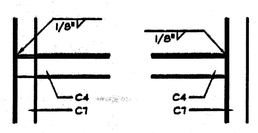
12 8'-0" OVERHANG DETAILS

SCALE: AS NOTED

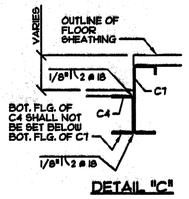
4 FLOOR JOIST PLUMBING BLOCK-OUT

SCALE: 3/4"=1'-0"





DETAIL "A" DETAIL "B"



DETAIL "C"

14 RECESSED SHOWER FLOOR FRAMING PLAN

SCALE: 3/4"=1'-0"

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
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JUN 03 2015

REGISTERED PROFESSIONAL ENGINEER ARTHUR ERNEST REES No. S2030 EXP. 9/30/15 STRUCTURAL STATE OF CALIFORNIA

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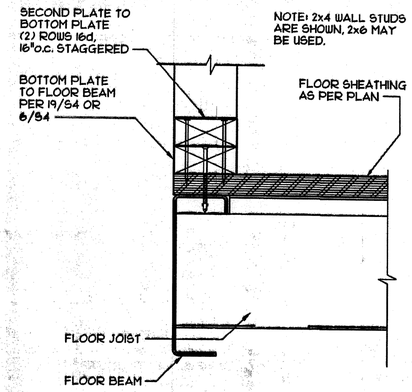
02-113910
AC — FLS. — SS.
DATE 6-9-15

2013 - 12x40

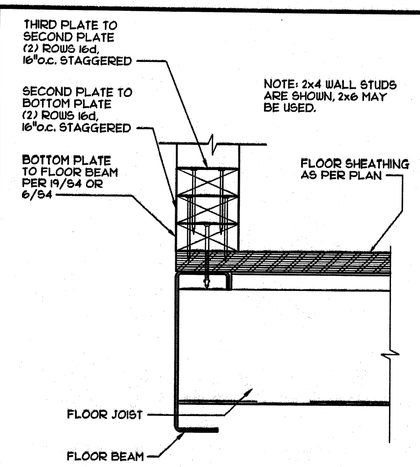
12"x40" P.C.

S4.1



1

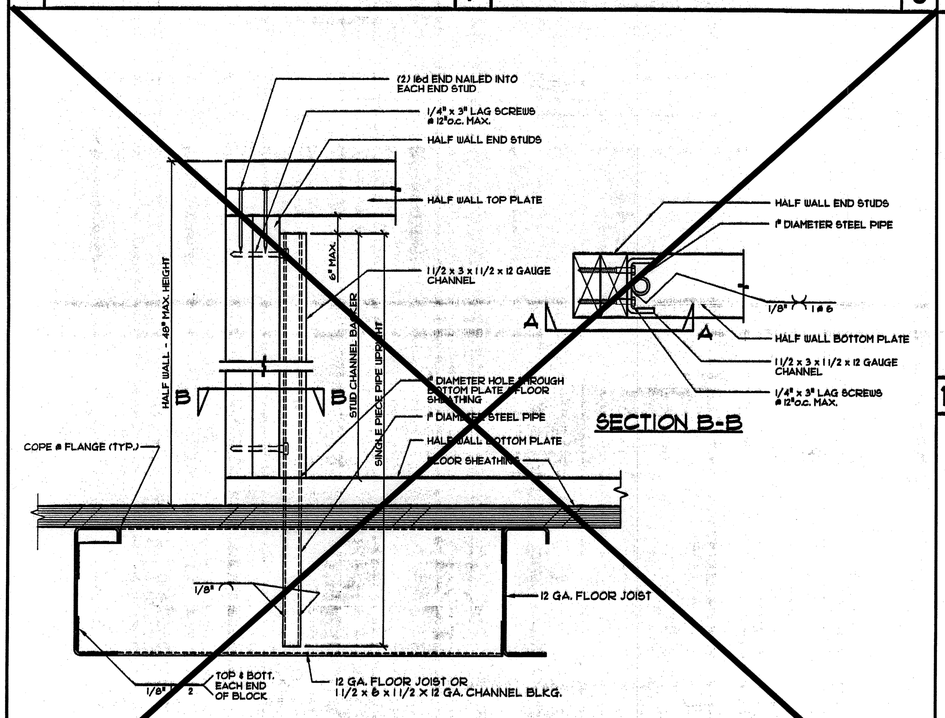
2 DOUBLE BOTTOM PLATE OPTION
SCALE: 3"=1'-0"



3 TRIPLE BOTTOM PLATE OPTION
SCALE: 3"=1'-0"

6 7 8

10.1



11 HALF WALL STABILIZER BRACKET
SCALE: 3"=1'-0"

12 15

DIVISION OF THE STATE ARCHITECT

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DIV. OF THE STATE ARCHITECT
02 114923
AC. — FLS. — SS. AC
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PRE-CHECK (PC) DOCUMENT
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(916) 920-4000 (916) 920-1580 Fax
www.cysengr.com

REGISTERED PROFESSIONAL ENGINEER
ARTHUR ERNEST ROSS
No. S2030
EXP. 9/30/15
STRUCTURAL
STATE OF CALIFORNIA

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DATE:

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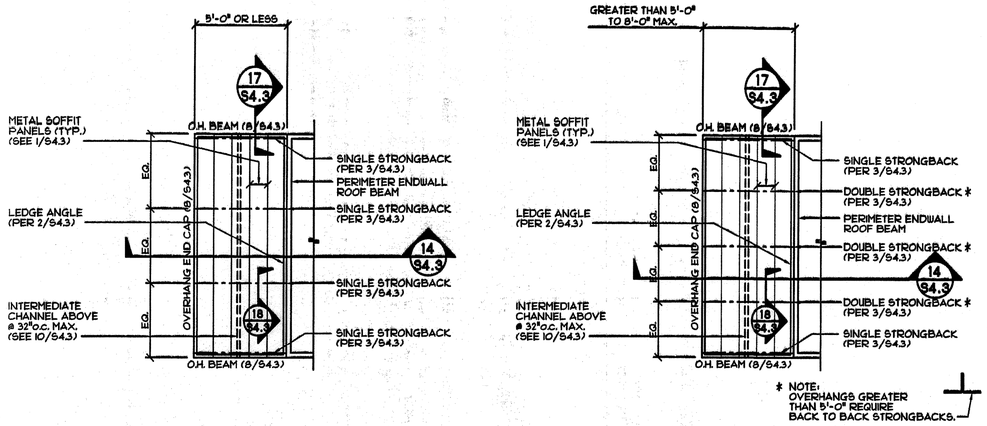
DIVISION OF THE STATE ARCHITECT
02-113910
AC. — FLS. — SS. AC
DATE 6-9-15

S4.2

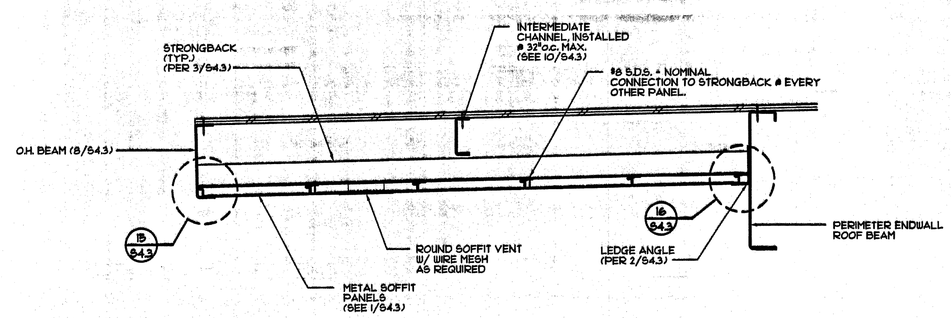
12"x40" P.C.



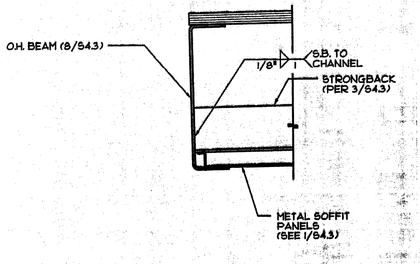
O.H. 5'-0" OR LESS

O.H. GREATER THAN 5'-0"

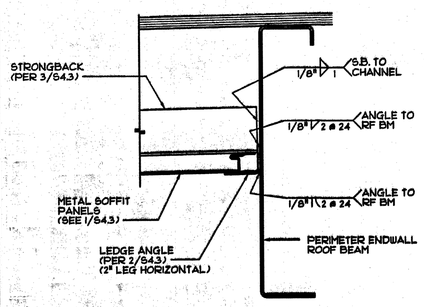
13 SOFFIT FRAMING PLAN (FRONT OVERHANG)
SCALE: 1/4"=1'-0"



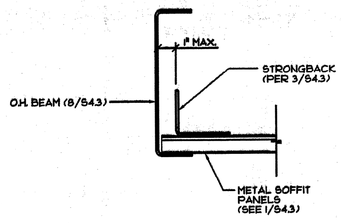
14 SOFFIT SECTION
SCALE: 1 1/2"=1'-0"



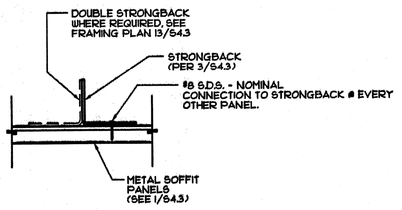
15 SOFFIT OUTBOARD END
SCALE: 3"=1'-0"



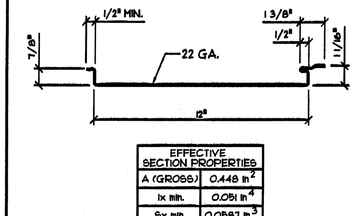
16 SOFFIT INBOARD END
SCALE: 3"=1'-0"



17 SOFFIT @ MODLINE OR SIDEWALL
SCALE: 3"=1'-0"

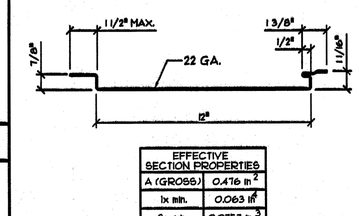


18 SOFFIT IN FIELD
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.448 in^2
Ix min.	0.051 in^4
Sx min.	0.0587 in^3
GA.	22

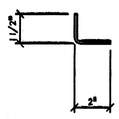
STANDARD



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.416 in^2
Ix min.	0.063 in^4
Sx min.	0.0757 in^3
GA.	22

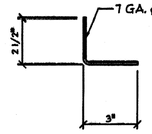
OPTIONAL (LONG RETURN LEG)

1 EXTERIOR SOFFIT PANELS
SCALE: 3"=1'-0"



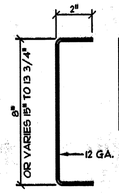
EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.387 in^2
Ix min.	0.054 in^4
Sx min.	0.106 in^3
GA.	12

2 LEDGE ANGLE
SCALE: 3"=1'-0"



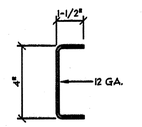
EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.931 in^2
Ix min.	0.546 in^4
Sx min.	0.295 in^3
GA.	7

3 STRONGBACK
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
	8"
A (GROSS)	1.07in^2
Ix min.	8.28in^4
Sx min.	2.05 in^3

8 OVERHANG BEAM
SCALE: 3"=1'-0"



EFFECTIVE SECTION PROPERTIES	
A (GROSS)	.69in^2
Ix min.	1.58in^4
Sx min.	.79in^3

10 INTERMEDIATE CHANNELS
SCALE: 3"=1'-0"

JUN 03 2015

REGISTERED PROFESSIONAL ENGINEER ERNEST ROSS No. 52030 EXP. 9/30/15 STRUCTURAL STATE OF CALIFORNIA

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02 114923
AC FLS SS
DATE 5/11/16

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ALTERNATE DETAILS METAL SOFFIT PANELS

REV / DATE:	BY:

JOB No.:
DRAWN BY:
DATE:

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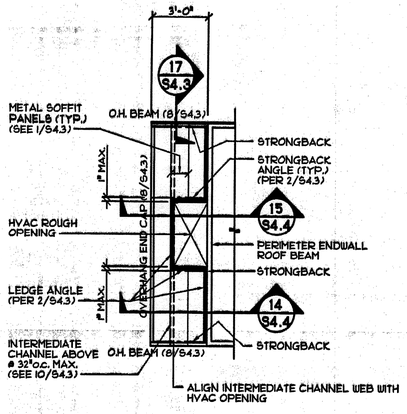
02-113910
AC FLS SS
DATE 6-9-15

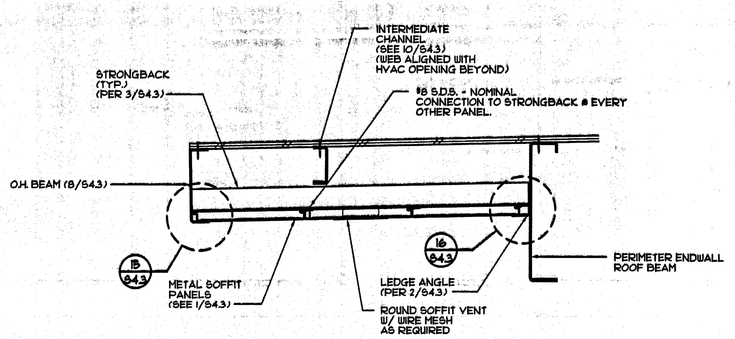
2013 - 12x40

S4.3

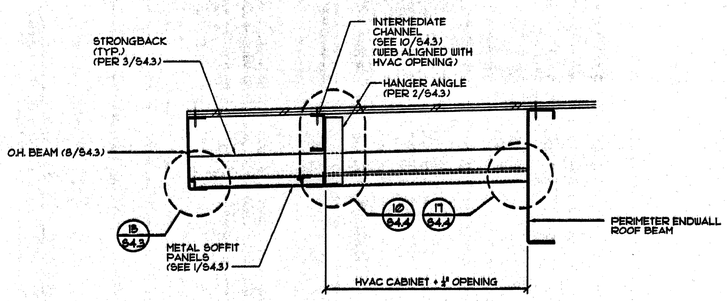
12x40 P.C.



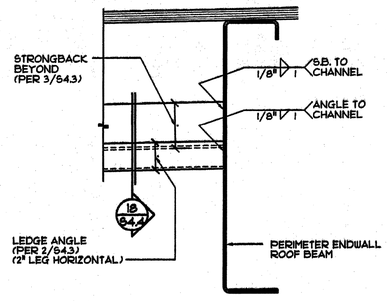
13 **SOFFIT FRAMING PLAN (WITH WALL MOUNT HVAC UNIT)**
SCALE: 1/4"=1'-0"



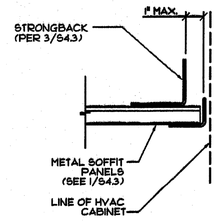
14 **SOFFIT SECTION**
SCALE: 1 1/2"=1'-0"



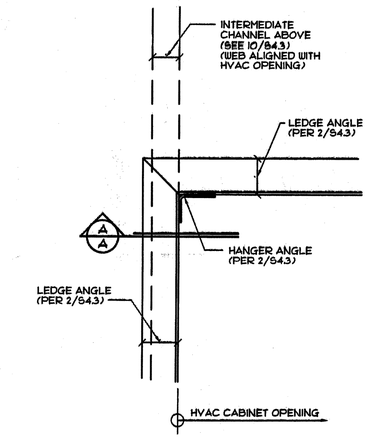
15 **SOFFIT SECTION @ HVAC OPENING**
SCALE: 1 1/2"=1'-0"



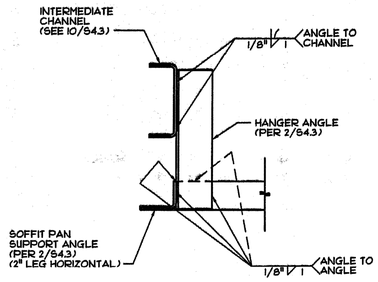
17 **ANGLE CONNECTION @ INBOARD END**
SCALE: 3"=1'-0"



18 **ANGLES ADJACENT TO HVAC**
SCALE: 3"=1'-0"



PLAN VIEW



SECTION A-A

10 **HANGER ANGLES ADJACENT TO HVAC**
SCALE: 3"=1'-0"

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC. FLS. SS.
DATE 6-11-15

PRE-CHECK (PC) DOCUMENT
Code: 2013 CBC
A separate project application for construction is required.

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(916) 568-1122 Office (916) 568-1199 Fax
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JUN 03 2015

REGISTERED PROFESSIONAL ENGINEER
ARTHUR ERNEST YEE
No. S2030
EXP. 9/30/15
STRUCTURAL
STATE OF CALIFORNIA

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ALTERNATE DETAILS METAL SOFFIT PANELS (WITH WALL MOUNT HVAC UNIT)

REV / DATE:	BY:

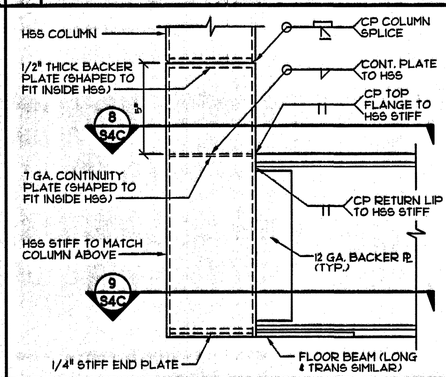
JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC. FLS. SS.
DATE 6-11-15

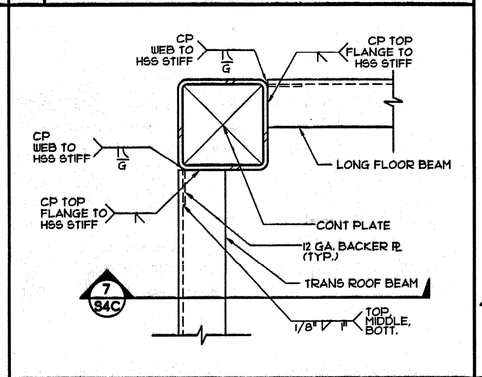
2013 - 1B+R

S4.4

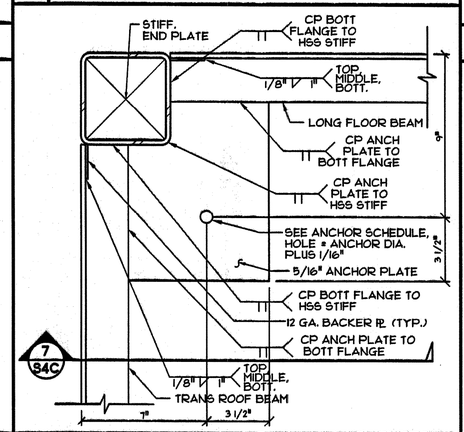
12"x40" P.C.



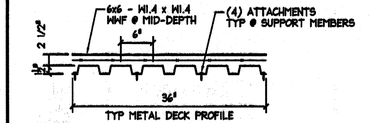
7 FLOOR BEAM SECTION @ CORNER
SCALE: 3"=1'-0"



8 FLOOR BEAM TOP FLANGE
SCALE: 3"=1'-0"



9 FLOOR BEAM BOTTOM FLANGE
SCALE: 3"=1'-0"



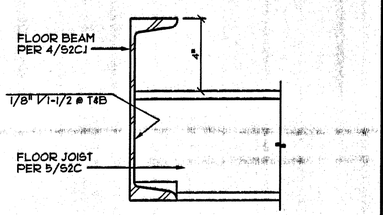
NOTES:

1. ASC B-36 20 GA COMPOSITE FLOOR DECK OR APPROVED EQUIVALENT CONFORMING TO ICC REPORT ESR-2408.

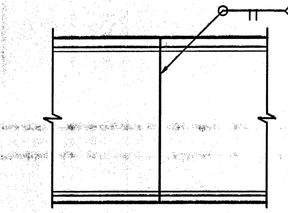
   MIN SECTION PROPERTIES
   I = 0.220 IN^4 /FT
   S = 0.235 IN^3 /FT
   GA = 20

2. TYPICAL ATTACHMENT TO BE #10-16 TEKS/3 OR 1/2" DIAMETER SPOT (PUDDLE) WELDS.
3. PROVIDE #12-16 TEKS/3 @ 10" OC OR 1/2" DIAMETER SPOT (PUDDLE) WELDS @ 24"o.c. AT SUPPORTS PARALLEL WITH FLUTES & AT SEAMS.
4. CONCRETE FILL ON METAL DECK: 3500psi 28 DAY COMPRESSIVE STRENGTH MADE WITH 3/4" ASTM C330 AGGREGATES (115pcf MAXIMUM 28 DAY DRY DENSITY) AND CONTAIN MINIMUM OF 6.0 SACKS OF CEMENT PER CUBIC YARD WITH A MAXIMUM OF 0.45 WATER CEMENT RATIO. ADD WATER REDUCING ADMIXTURE IN COMPLIANCE WITH ASTM C494 TYPE A.

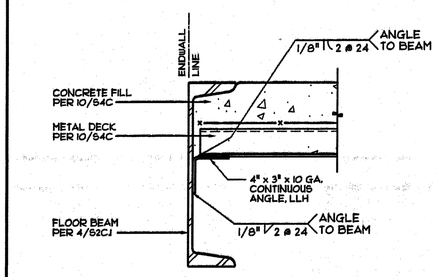
10 METAL DECK & CONCRETE FILL
SCALE: NONE



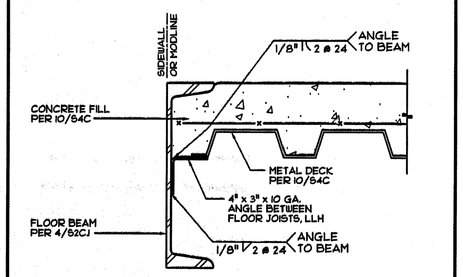
11 FLOOR JOIST TO BEAM CONN.
SCALE: 3"=1'-0"



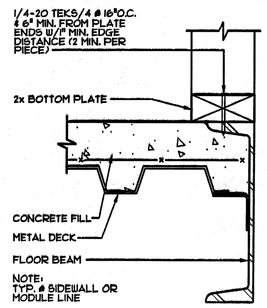
12 TYPICAL FLOOR BEAM SPLICE
SCALE: 3"=1'-0"



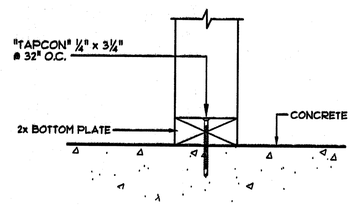
13 METAL DECK - EDGE SUPPORT
SCALE: 3"=1'-0"



14 METAL DECK - EDGE SUPPORT
SCALE: 3"=1'-0"



17 PERIMETER BOTT. PLATE TO FLOOR
SCALE: 3"=1'-0"



18 INTERIOR BOTT. PLATE TO FLOOR
SCALE: 3"=1'-0"

JUN 0 3 2015

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
02 114923
AC. — FLS. — SS.
DATE 5 11 16

PRE-CHECK (PC) DOCUMENT
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STRUCTURAL CONNECTION DETAILS (CONCRETE FLOORS)

REV / DATE:	BY:

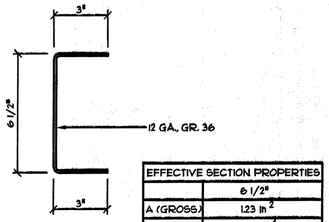
JOB No.:
DRAWN BY:
DATE:

IDENTIFICATION STAMP
DIVISION OF THE STATE ARCHITECT
02-113910
AC. — FLS. — SS.
DATE 6-9-16

2013 - CBC

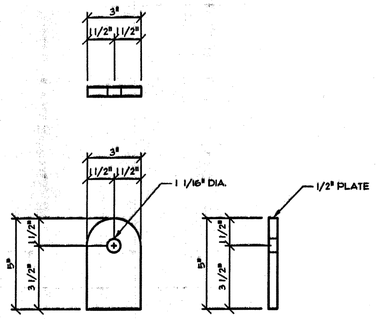
S4C

12.440 P.C.

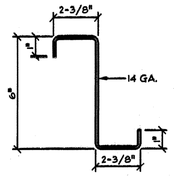


EFFECTIVE SECTION PROPERTIES	
	6 1/2"
A (GROSS)	1.23 in^2
Ix min.	6.88 in^4
Sx min.	1.34 in^3

4 DETAIL - CANOPY PERIM. CHAN.
SCALE: 3"=1'-0"

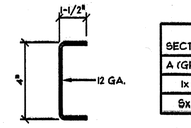


3 DETAIL - UPPER CLEVIS PLATE
SCALE: 3"=1'-0"



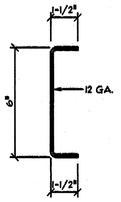
EFFECTIVE SECTION PROPERTIES	
A (GROSS)	0.87 in^2
Ix min.	4.79 in^4
Sx min.	1.60 in^3

10 DETAIL - "Z" PURLIN
SCALE: 3"=1'-0"



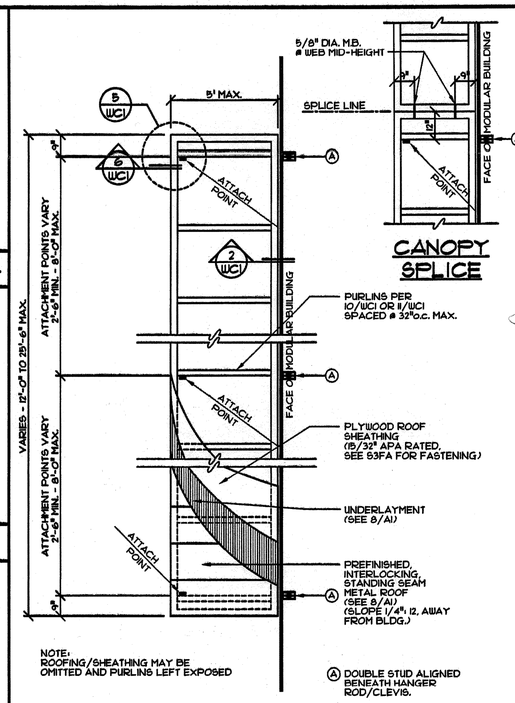
EFFECTIVE SECTION PROPERTIES	
A (GROSS)	.69 in^2
Ix min.	1.58 in^4
Sx min.	.79 in^3

9 DETAIL - STRONGBACK CHANNEL
SCALE: 3"=1'-0"



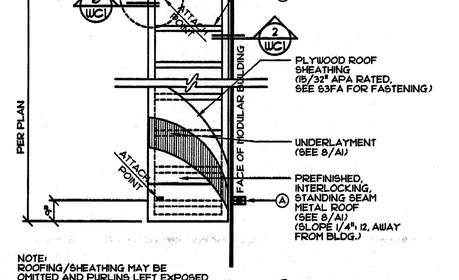
EFFECTIVE SECTION PROPERTIES	
A (GROSS)	.89 in^2
Ix min.	4.12 in^4
Sx min.	1.34 in^3

11 DETAIL - CHANNEL PURLIN OPT.
SCALE: 3"=1'-0"

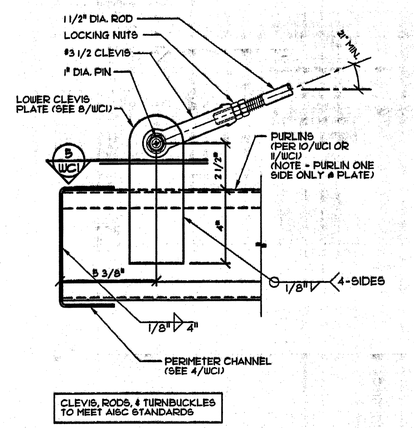


CANOPY SPLICE

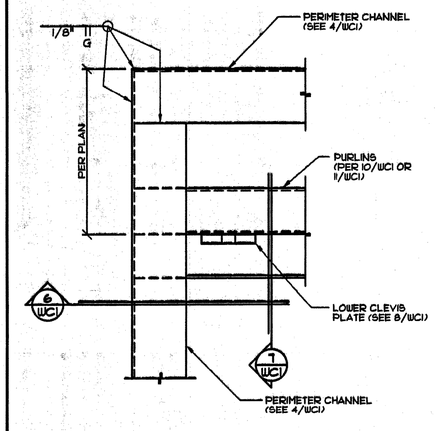
1 PLAN VIEW - MULTIPLE HANGER CANOPY
SCALE: 3/8"=1'-0"



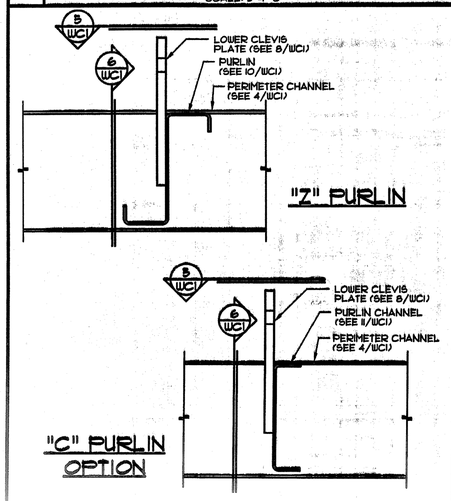
1.1 PLAN VIEW - DOUBLE HANGER CANOPY
SCALE: 3/8"=1'-0"



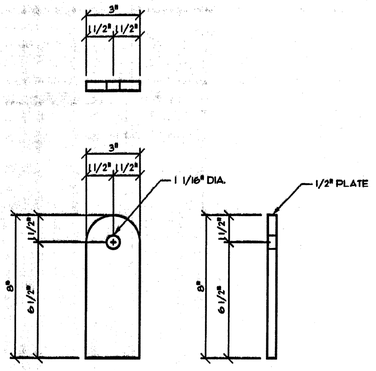
6 SECTION - LOWER CLEVIS PLATE
SCALE: 3"=1'-0"



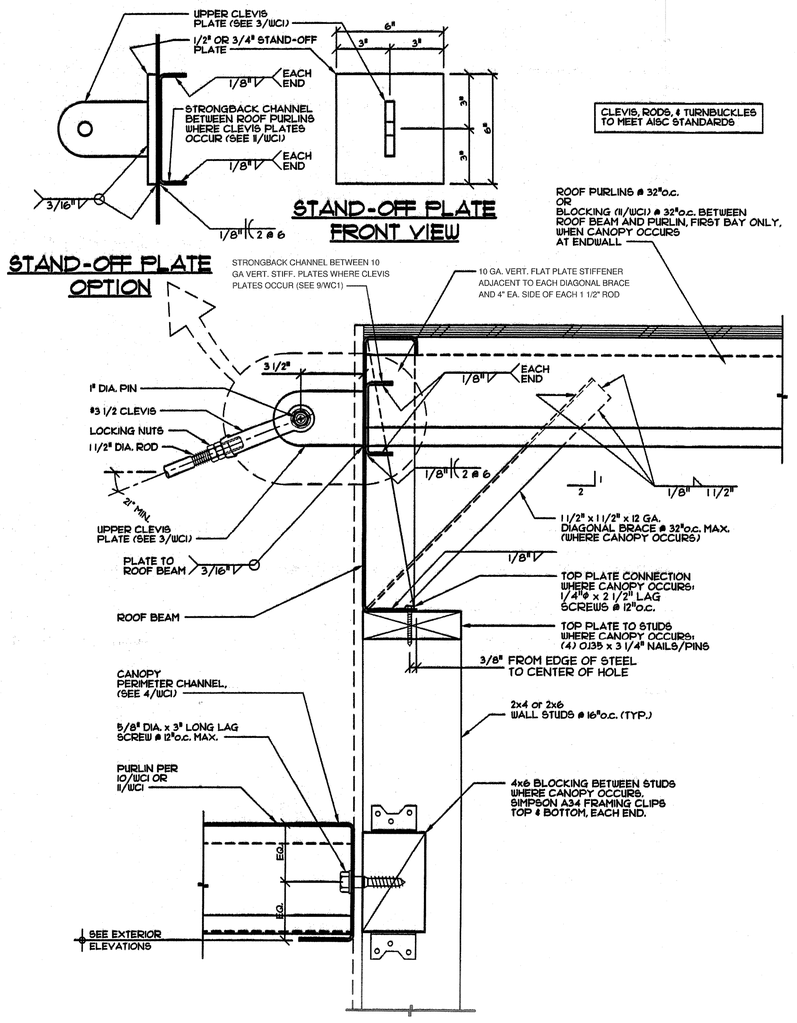
5 PLAN VIEW - LOWER CLEVIS PLATE
SCALE: 3"=1'-0"



7 SECTION - LOWER CLEVIS PLATE
SCALE: 3"=1'-0"



8 DETAIL - LOWER CLEVIS PLATE
SCALE: 3"=1'-0"



2 SECTION - CANOPY TO BUILDING
SCALE: 3"=1'-0"

PRE-CHECK (PC) DOCUMENT
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CANOPY FRAMING & CONNECTION DETAILS

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AC. — FLS. SS.
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2013 - 12x60

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12 of 40 P.