Anaheim City School District
1411 S. Anaheim Blvd.
Anaheim, California 92805
(714) 517-7550

March 16, 2012

ADDENDUM 1 TO BID #AZA 101103

PARTIAL MODERNIZATION

AT

JAMES MADISON ELEMENTARY SCHOOL
1510 S. Nutwood Street, Anaheim, CA 92804

Application No. 04-111967

This addendum must be signed and returned with the bid as proof that you received it. Please make a copy for your records.

Company Name _____

By _____

Title _____

Date _____

The following changes and/or additions shall be made to the plans and specifications and all other conditions shall remain the same.

DRAWINGS

1. Sheet AS1.2 Enlarged Site Plans and Details
   a. Detail #16 – (n) Handrail at (e) Stairs - Note #4 has been revised, the clear sealer "Stonetone 44CF-1" by Epmar has been replaced with "Ameron Amershield"

2. Sheet AS1.4 Site Details
   a. Typical for all details – All new railings will have the clear sealer "Ameron Amershield", it will replace "Stonetone 44CF-1" by Epmar where indicated.

3. Sheet AS1.6 Enlarged Plans and Details
   a. Typical for all details – All new railings will have the clear sealer "Ameron Amershield", it will replace "Stonetone 44CF-1" by Epmar where indicated.

4. Sheet A0.3 Demolition Plans – Buildings 'D', 'E', 'G', & 'I'
   a. Plan #3 Demolition Floor Plan – Building "I" – Add keynote #D31 - Remove perimeter skirting around perimeter of Relocables (all 3 buildings).
   b. Plan #4 Demolition Floor Plan – Building "G" – Add keynote #D31 - Remove perimeter skirting around perimeter of Relocable.

5. Sheet A1.1 Floor Plans – Buildings 'A' & 'B'
   a. Construction Keyed Notes
      I. Keynote #18 revised to "(N) WATER HEATER – REFER TO PLUMBING DWGS. FOR ANCHORAGE SEE 13/A10.5"

6. Sheet A1.2 Floor Plans – Buildings 'C' & 'F'
   a. Plan #2 – Resource Room (F01) the item located at the NW corner of the room, south of Closet F02) is not cabinetry, omit from drawing.

7. Sheet A1.3 Floor Plans – Buildings 'D', 'E', 'G', & 'I'
   a. Plan #1 – Classroom #21 (D03) will have the same cabinets as called out in classroom #22 (D02).
   b. Plan #2
      I. Classroom #24 (E01) will have the same cabinets as called out in classroom #25 (E02).
      II. Classroom #24 (E01) the item at the NW corner of the room is a new IDF unit (keynote #24) and is not new cabinetry.
      III. The north and south elevations of classroom #26 (E03) have the same cabinets as called out in classroom #25 (E02).
   c. Plans #1 & 2 – At the new surface mounted electrical panels and conduits located on the exterior side of the wall (south side of bungalow D and north side of bungalow E install a furred wall on the exterior side of the building to enclose the exposed conduits and panels. Paint panels to match adjacent finish and caulk around sides of all panels. (See Sk-1 thru SK-3).

8. Sheet A4.1 Exterior Elevations – Building 'A' and 'B'
    a. Color Notes
        I. Note G has been revised to "Ameron Amershield"

9. Sheet A4.2 Exterior Elevations – Buildings 'C' and 'F'
    a. Construction Keyed Notes
        I. Keynote #25 revised to "(e) concrete masonry unit wall/column to be power washed and sealed with Okon S-40 sealer.
    b. Color Notes
        I. Note G has been revised to "Ameron Amershield"

10. Sheet A4.3 Exterior Elevations – Bungalows 'D' & 'E'
    a. Color Notes
        I. Note E has been revised to "Ameron Amershield"
    b. Keynotes
        I. Keynote #16 – Cement panel "Cedarmill" has been revised to James Hardie Fiber Cement Board Panels "Sierra 8"

11. Sheet A4.4 Exterior Elevations – Bungalows 'I' & 'G'
    a. Keynotes
        I. Keynote #6 – Cement panel "Cedarmill" has been revised to James Hardie Fiber Cement Board Panels "Sierra 8"

12. Sheet A6.2 Restroom Interior Elevations – Buildings "A" and "B"
    a. Accessory Keyed Notes
        I. Keynote 9D has been revised to "Recessed toilet tissue dispenser and seat cover dispenser 'Bobrick' B-3474, contractor installed and furnished.
        II. Keynote 9E has been revised to "Partition Mounted Dual sides multi-roll Toilet Tissue Dispenser 'Bobrick' B-386, contractor installed and furnished.

13. Sheet A6.3 Restroom Interior Elevations – Buildings "A", "F", and "E"
    a. Accessory Keyed Notes
        I. Keynote 9D has been revised to "Recessed toilet tissue dispenser and seat cover dispenser 'Bobrick' B-3474, contractor installed and furnished.
        II. Keynote 9E has been revised to "Partition Mounted Dual sides multi-roll Toilet Tissue Dispenser 'Bobrick' B-386, contractor installed and furnished.

14. Sheet A7.1 Interior Finish and Material Schedule
    a. Exterior Painting Color Schedule
        I. Add for exposed exterior CMU/brick walls & columns to be sealed with Okin S-40 sealer.
        II. Under section 'Wood Paneling, Trim, and Skirting – Relocables' add "Skirting @ Bungalows".

15. Sheet A10.5 'Typical Details'
    a. Detail #13 'Floor Mounted Water Heater Base' – Detail added. (See SK-4)

16. Sheet P0.0.2 Plumbing Schedule (See SK-5)
    a. Plumbing Fixture Schedule – Floor Sink SK/1 has been added.
    b. Domestic Electric Hot Water Heater Schedule – Electric water heater WH/4 has been added.

17. Sheets P1.1 Floor Plans – Buildings 'A' & 'B'
    a. Underground stormdrain line has been relocated east. (See SK-6)
    b. At Storage Rm A23 water heater WH/1 has been replaced with water heater WH/4. (See SK-7)
    c. At Storage Rm A23 new floor sink FS/1 added (See SK-7).

18. Sheets P1.3 Floor Plans – Buildings 'D' & 'E'
    a. Plan #1 – Gasline at classroom #21 (D03) revised (See SK-8)

19. Sheets P3.3 Roof Plans – Buildings 'D' & 'E'
    a. Plan #1 – Gasline at classroom #21 (D03) at roof revised (See SK-9)

20. Sheets P6.1 Enlarged Restroom Floor Plans
    a. Plan #1 – New hot water line added (See SK-10)

21. Sheets P7.2 Plumbing Details
    a. Detail #3 – Detail added (See SK-11)

22. Sheets M1.3 Floor Plans – Buildings 'D', 'E', & 'I'
    a. At bungalows D & E seal J-box for the thermostat and its conduit penetrating into the attic space with insulation caulking at ceilings.

23. Sheets E1.04 Panel Schedule
    a. Panel (E) D is not an existing panel and needs to be replaced, refer to item 27a below.
    b. Panel (E) E is not an existing panel and needs to be replaced, refer to item 27a below.

24. Sheets E3.01, E3.02, & E3.03 'Lighting Plans'
    a. NOTE – At each classroom install (3) 3-way switches (for "a", "b" and "c") to be mounted adjacent to the exterior door that currently does not have switches, similar to exterior door with switching.
    b. NOTE – Lighting under soffits at the back of classrooms in buildings A, B & C are to be tied into the exterior switching at each door.
    c. NOTE – In each classroom, alternate similar lighting control system (daylight harvesting with occupancy sensor) in function and performance as specified per-Basis of Design (BOD) and detailed on Sheet 5/E1.08 by "Leviton" OSC10-MOW is acceptable (See attachment 'A'). Lighting Control BOD per-plan is "Greengate"- by Cooper Controls

25. Sheets E4.01, E4.02, & E4.03 'Power Plans'
    a. NOTE – At front of each classroom sawcut (e) concrete for the installation of a floor outlet for power and data port located 6'-0" from the existing wall and centered at the marker board cabinet. Install 2 floor boxes (1 power, 1 low voltage) with 1" and ¾" conduits. Fill saw cut areas with concrete per detail 9/AS1.2.
        I. Floor outlet boxes (3-gang box) are to be approved by the District prior to ordering.
        II. Installation at Bungalow floors is to cut (e) wood sheathing.
        III. Floor outlets and data ports/VGA and Audio inputs called out horizontally in the toe kicks in each classroom at buildings A, B, C, D, & E are to be removed.
        IV. Floor outlets are not to be installed in the Relocables G & I, the power outlets and data ports indicated on the drawings are to remain.

26. Sheet E4.01 'Power Plans Buildings A & B'
    a. In Storage A23, install 3.6kW Electric Water Heater at 480V-3Ph on circuit HA-26&28&30, and Circulating Pump 1/6HP at 120V-1Ph on circuit LAA-34.

27. Sheet E4.03 'Power Plans Buildings D, E, G, & I'
    a. Plans #3 & #4 – Install individual electrical Panel in each classroom (location per-Architectural Plan). Panel shall be with 100 Amp Main CB, 100A-bus, 3Phase, 4Wire with minimum of 18 circuits (for CLA, CLB, CLC, DLB and DLC), except for panel "DLA" with 30 circuits.

SPECIFICATIONS

28. Specification Section 06101 'Rough Carpentry'
    a. Section 06101.1.02.C.1 has been omitted.

29. Specification Section 08800 'Glazing'
    a. Section 08800.1.06.A concerning extra stock has been omitted.

30. Specification Section 09900 'Painting'
    a. Tables (Sheets 09900-9 thru 12)
        I. GE123 Galva-Etch has been replaced with Krud Kutter Metal Etch.
        II. W901V Permasheen has been replaced with Evershield ESH50.

31. Specification Section 11132 'Projection Screens
    a. Projection screen size is 6' x 6'.

32. Specification Section 12496 'Window Shades'
    a. Shade Valances section 12496.2.03.H (pg. 3) are to be headboxes w/o tile receiver, but with closer plate and end caps (See attachment 'B')

33. Specification Section 15400 'Plumbing'
    a. Piping system section 15400.2.02.A.1(pg. 3) has been revised (See attached spec section).

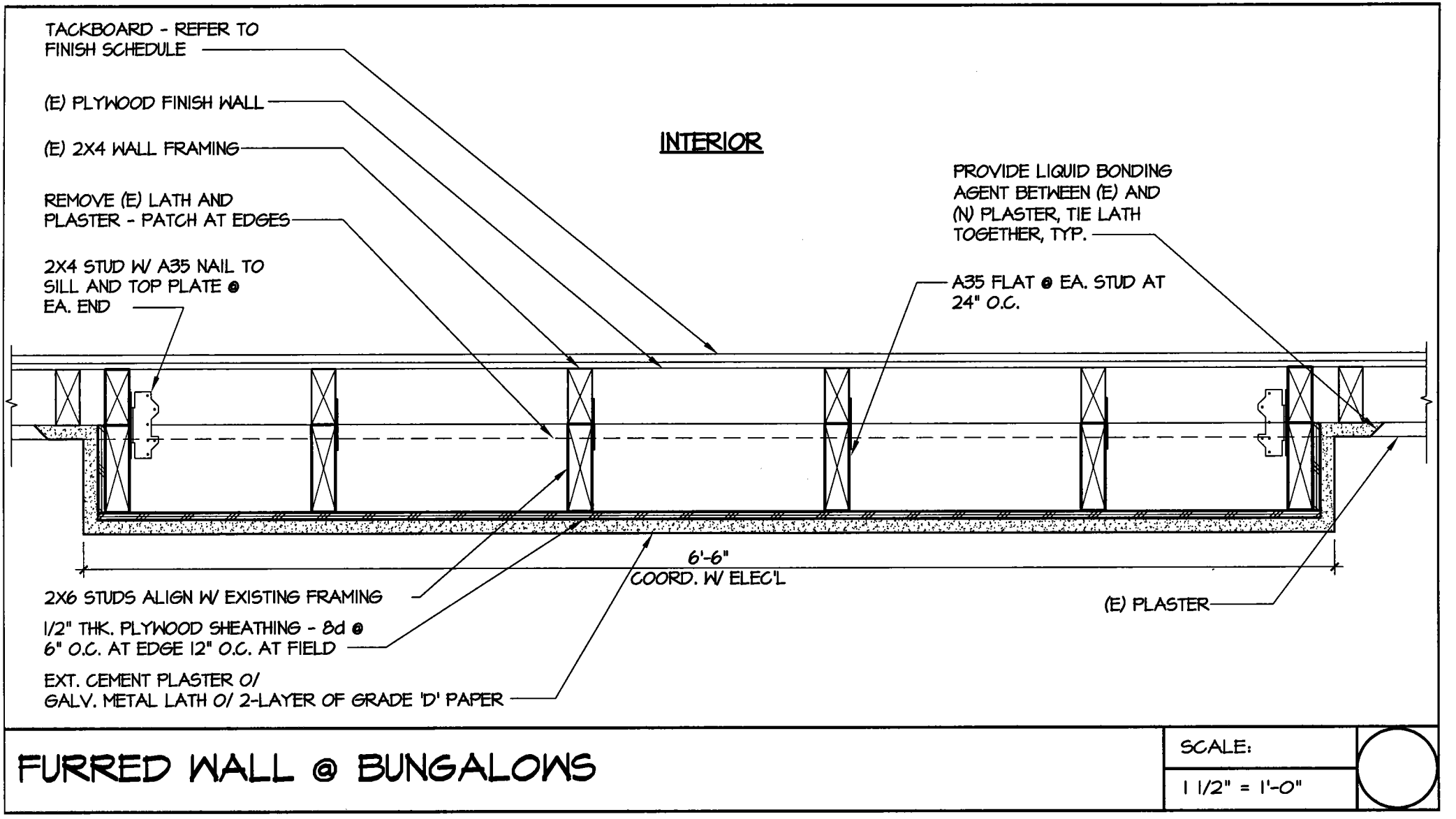
34. Specification Section 16510 'Lighting Fixtures'
    a. NOTE – Alternate lighting fixtures which are equal in performance and efficiency as specified as per BOD are acceptable. Lighting Fixtures BOD per plan is by Cooper lighting.

35. Specification Section 16600 'Integrated Communication System'
    a. Section 16600.2.01.B.1 has been revised (See attached spec section).

36. Specification Section 16720 'Fire Alarm System'
    a. Section 16720.2.02.A.1 has been revised (See attached spec section).
    b. Section 16720.2.02.A.2 has been revised (See attached spec section).

Kevin Colby
Project Architect
ADOLPH ZIEMBA, AIA & ASSOCIATES, INC.

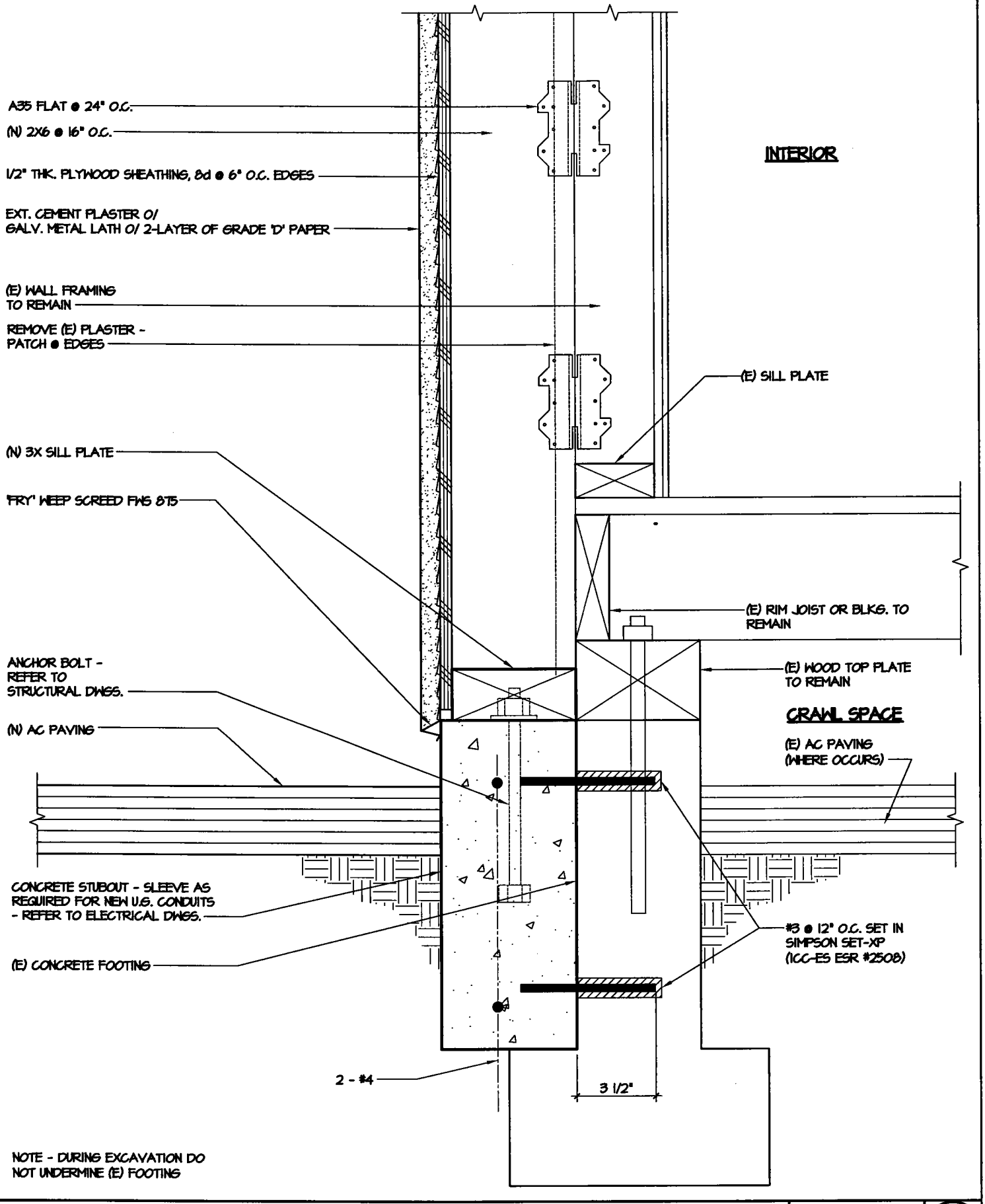
SK-1 Item 7c Exterior furred wall for conduits (Plan)



FURRED WALL @ BUNGALOWS

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

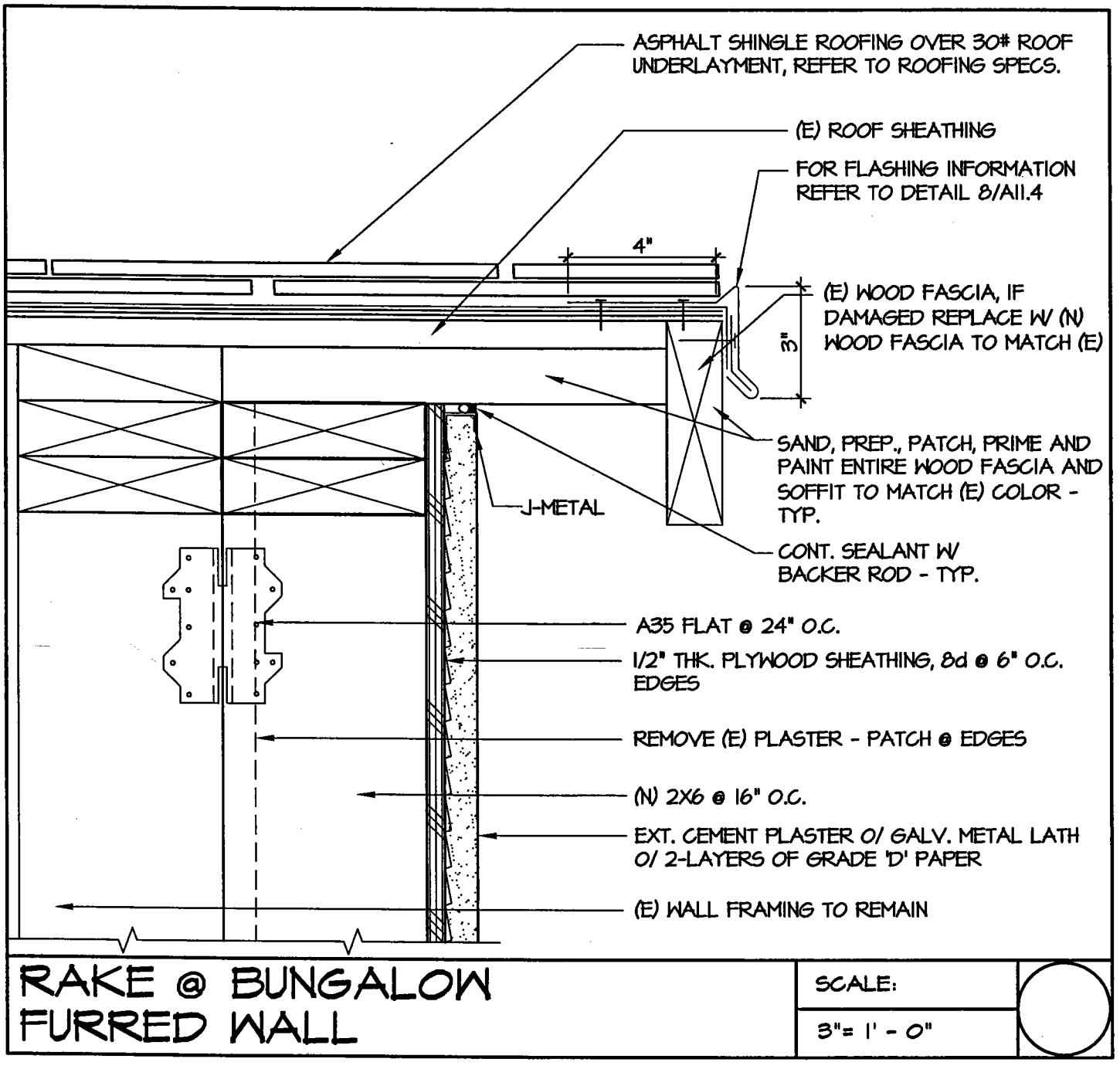
SK-2 Item 7c Exterior furred wall for conduits (Section)



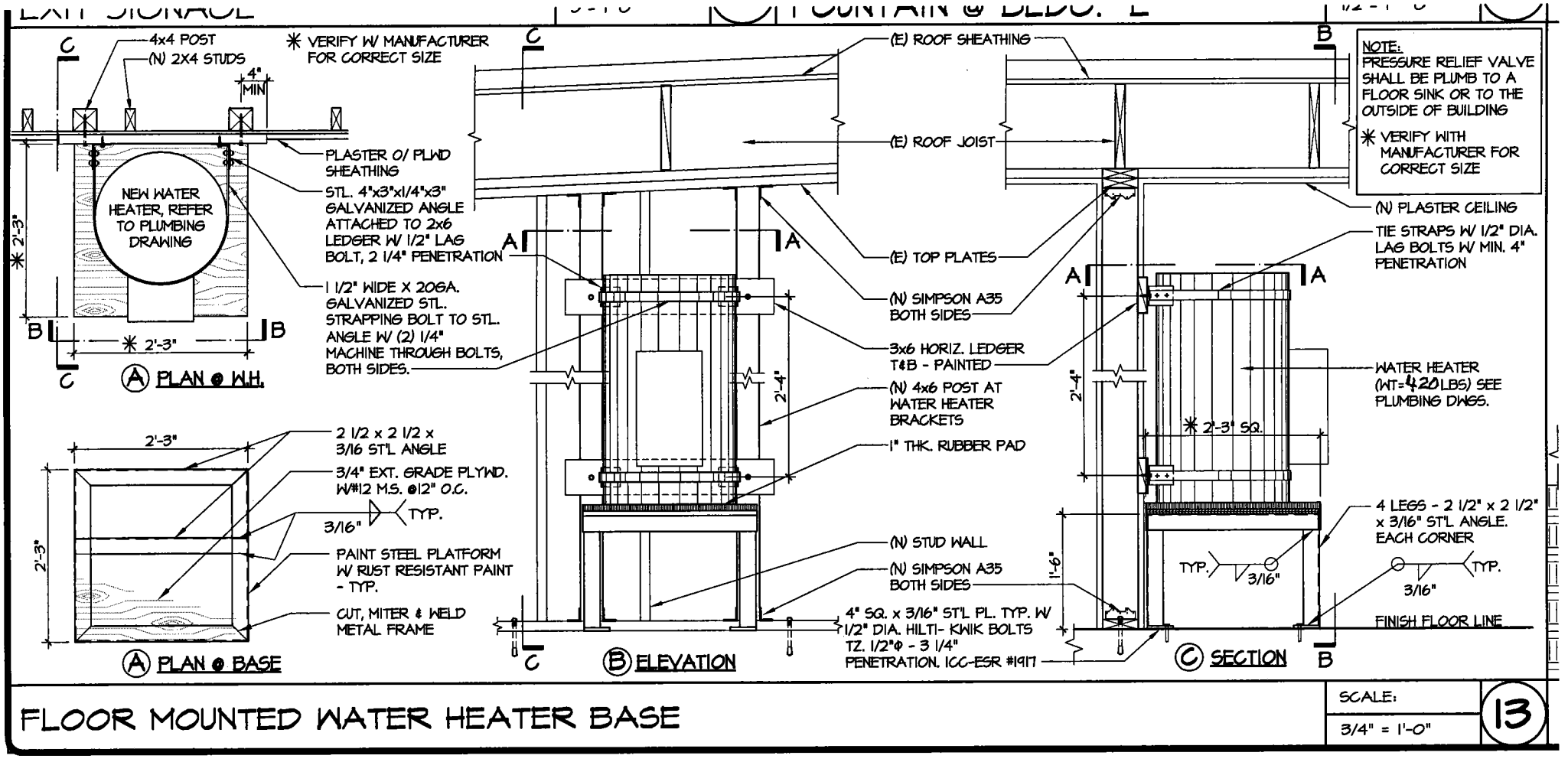
FURRED WALL @ FOOTING

SCALE:
3" = 1'-0"

SK-3 Item 7c Exterior furred wall for conduits (@ Roof)



SK-4 Item 15a Water Heater anchorage detail 13/A10.5



FLOOR MOUNTED WATER HEATER BASE

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

13

SK-5 Item 16 Revised plumbing schedule P0.0.2

GAS LOADS CUBIC FEET PER HOUR

BUILDING	A	B	C	D	E	F	TOTAL
SPACE HEATING	640	480	240	190	180	180	1910
WATER HEATING	-	180	--	180	--	--	360
OTHER	-	-	-	-	-	-	-
TOTAL	820	660	240	370	180	180	2270

REF. SHEET P0.0.2

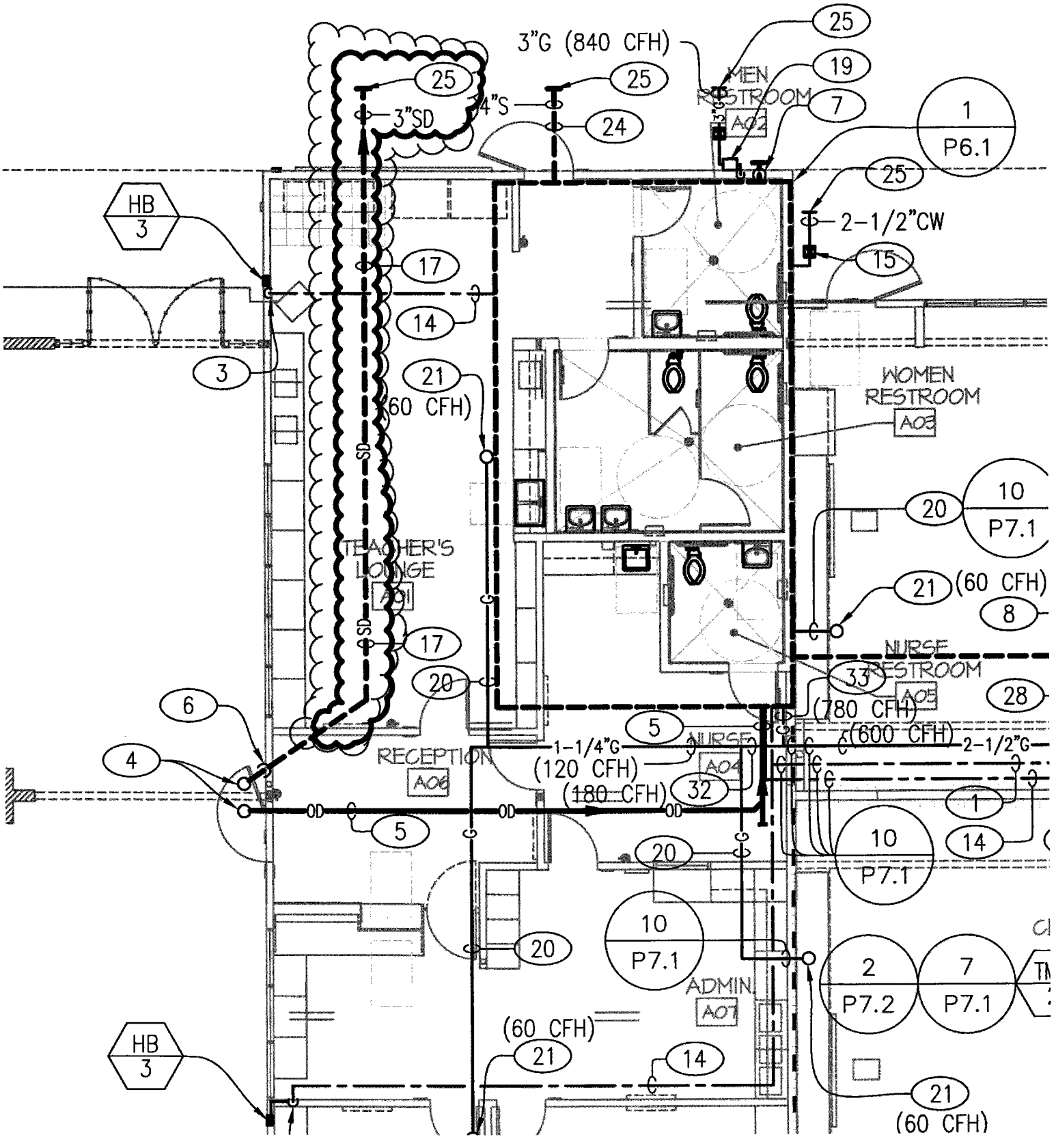
PARTIAL PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	BRANCH CONNECTION					REMARKS
		TRAP	WASTE	VENT	HW	CW	
SK 1	FLOOR SINK	2"	2"	1-1/2"	-	1/2"TP	"J.R. SMITH" FIG. 3100-Y-12-C-U-P050 CAST IRON BODY COMPLETE WITH FLASHING COLLAR, SEDIMENT BUCKET, NO HUB CONNECTION, VANDAL PROOF GRATE, TRAP PRIMER CONNECTION, OR APPROVED EQUAL.

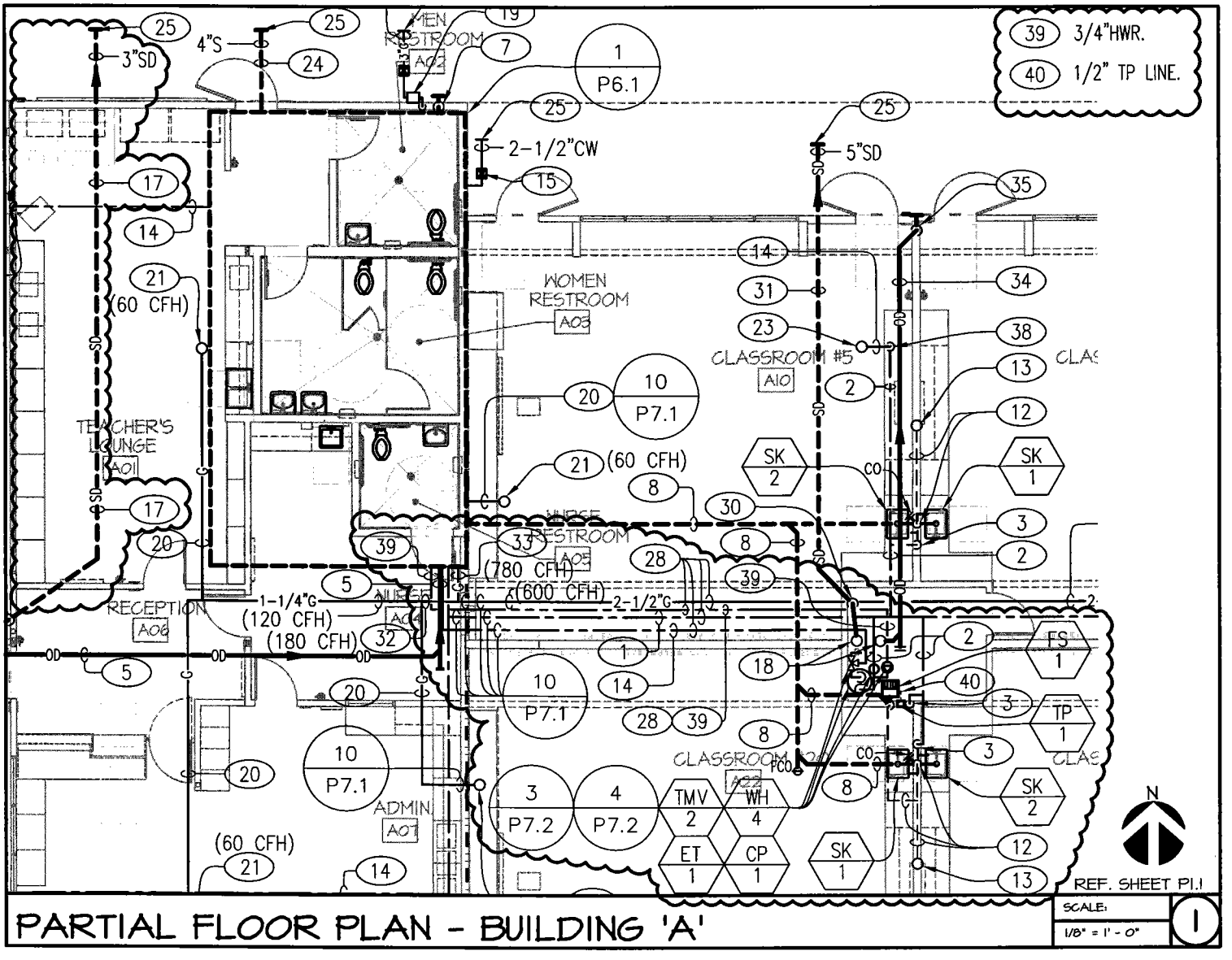
PARTIAL DOMESTIC ELECTRIC HOT WATER HEATER SCHEDULE

SYMBOL	DESCRIPTION	USE	RECOVERY	MANUFACTURER & MODEL NUMBER	ELECTRICAL REQUIREMENTS				OPERATING WEIGHT (LBS.)	REMARKS
					KW	VOLTS	PHASE	HERTZ		
WH 4	30 GAL ELECTRICAL WATER	BLDG A ADMIN OFFICE	2.0 GPM @ 60°F RISE	A.O. SMITH MODEL DSE30	3	480	3	60	420	AMPS = 3.60
ET 1	EXPANSION TANK	WH/4	-	AMTROL ST-5-C	-	-	-	-	20	THERM-X-TROL IN LINE MODEL
CP 1	CIRCULATING PUMP	WH/4	-	TACO 009-BFS	-	115	1	60	-	1/8 HP ALL BRONZE COMPLETE WITH 7-DAY CLOCK & ADJUST FULL LOAD AMPS =1.4

SK-6 Item 17a Revised u.g. storm drain 1/P1.1



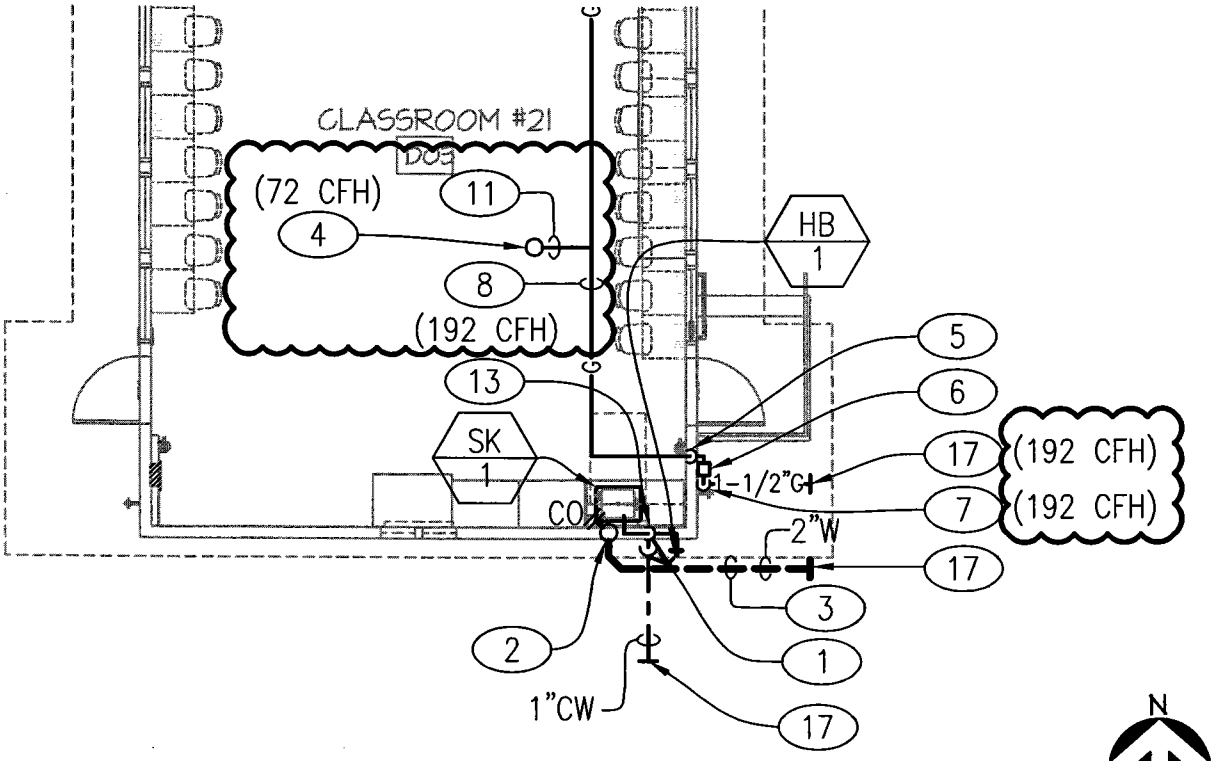
SK-7 Item 17b&c New water heater WH/4 1/P1.1



SK-8 Item 18a Revised gasline at classroom #21 P1.3

(4) 1-1/4"G UP THRU ROOF .

(11) 1-1/4"G IN ATTIC SPACE.



REF. SHEET P1.3

PARTIAL FLOOR PLAN - BUILDING 'D'

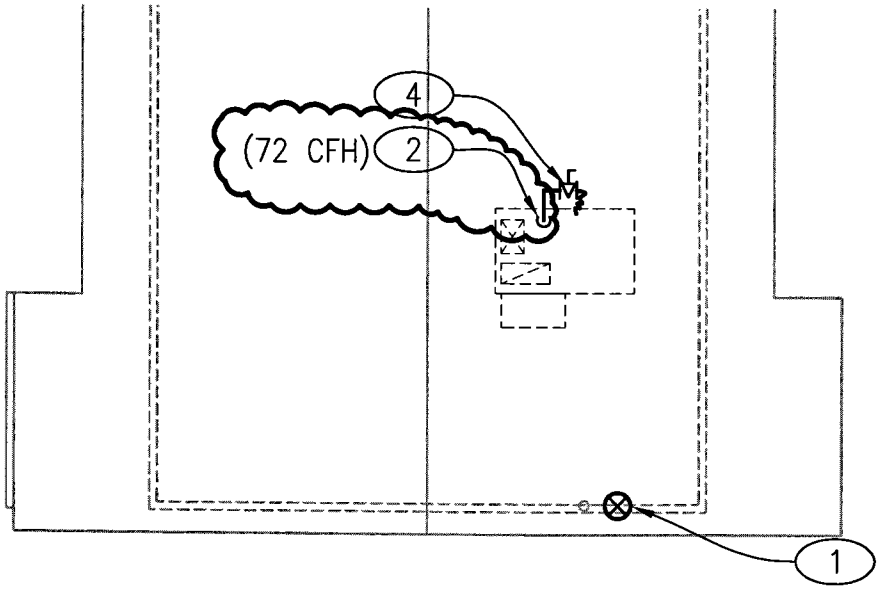
SCALE: 1/8" = 1' - 0"

1

SK-9 Item 19a Revised gasline at classroom #21 roof P3.3

CONSTRUCTION KEYED NOTES

1. 1-1/2" VTR.
2. 1-1/4"G FR BEL. WITHIN UNITE CURB . PENETRATE THRU CURB & CONN. TO UNIT W/GC.
3. 1"G FR BEL. WITHIN UNITE CURB . PENETRATE THRU CURB & CONN. TO UNIT W/GC.
4. G.C. AND FLEX TO MECH. EQUIP. SEE 1/P7.2 .
5. 2"VTR.



N

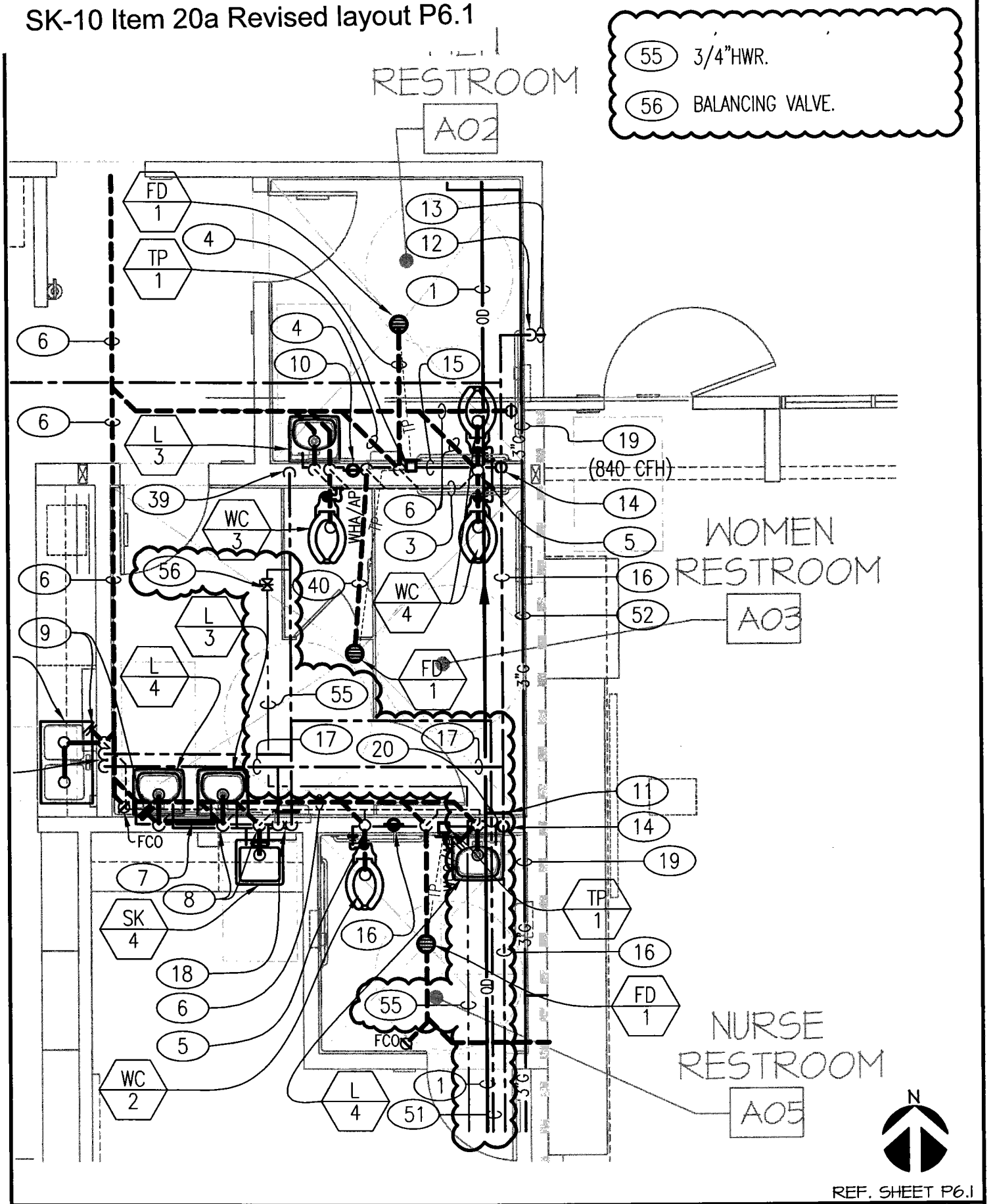
REF. SHEET P3.3

PARTIAL ROOF PLAN - BUILDING 'D'

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

1

SK-10 Item 20a Revised layout P6.1

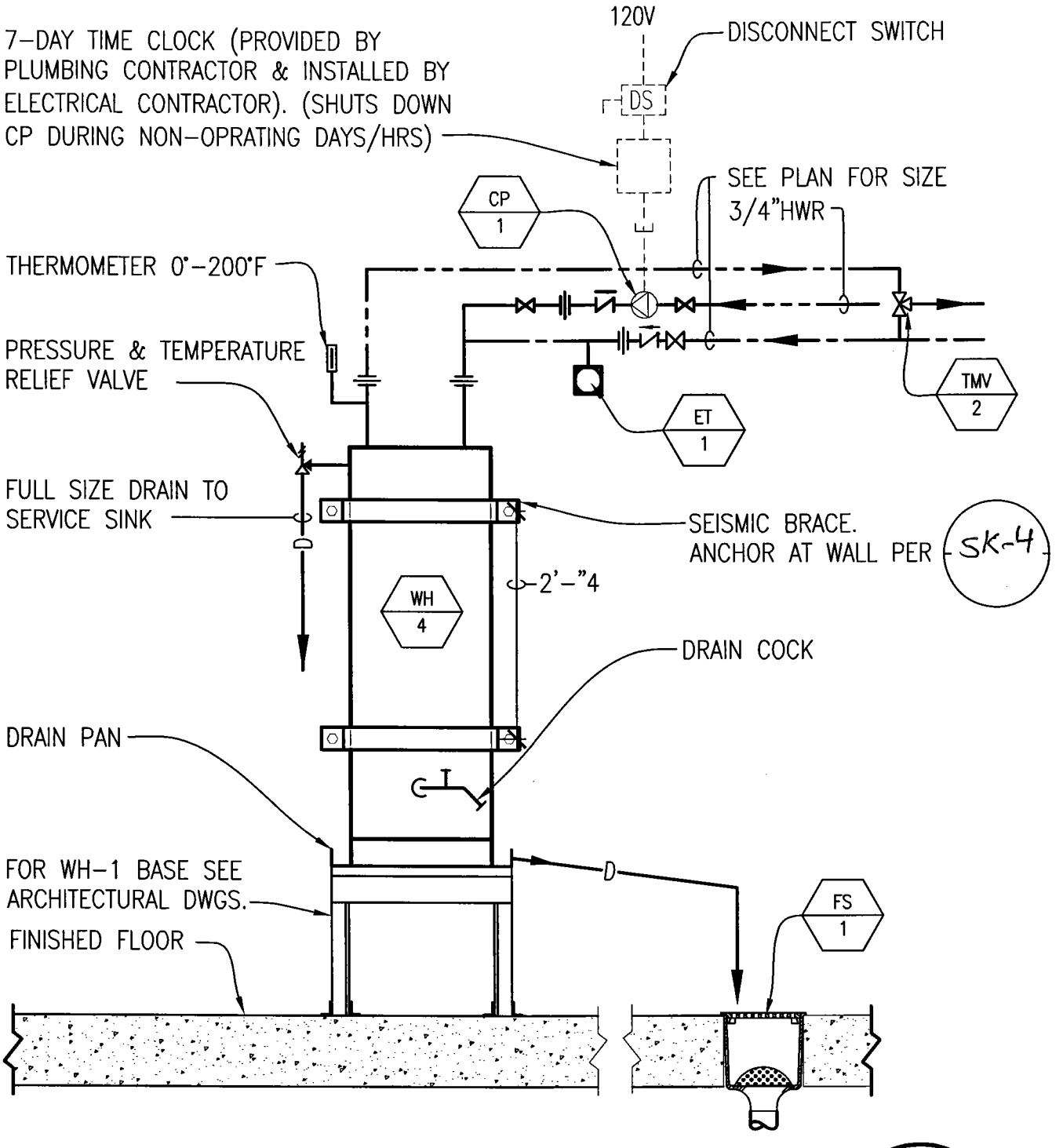


PARTIAL FLOOR PLAN - MEN'S, WOMEN'S & NURSE'S RESTROOMS @ BLDG 'A'

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

1

SK-11 Item 21a Det. #3 Electrical Water Heater added P7.3



ELECTRIC WATER HEATER

3
P7.2

NOT TO SCALE

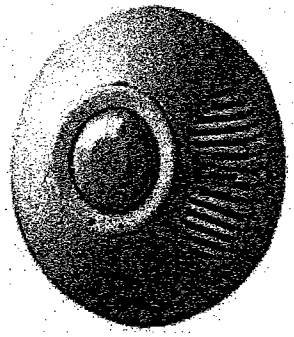
PLUMBING DETAIL

REF. SHEET P7.2

Attachment 'A' Leviton Sensor

PRODUCT SPECIFICATIONS / INFO

LEVITON



ODC10-M0W

UPC Code: 07847703685

Country of Origin: Please Contact Customer Service

Description
Multi-Technology, 180 Degree, 1000 Sq. Ft.Coverage, Self-Adjusting, Ceiling Mount Occupancy Sensor, Commercial Grade - White.

Color: White

Product Features

Sensor Type: Multi-Technology
Adjustment: Self-Adjusting
Sensor Technology: PIR/Ultrasonic 32kHz
Pattern Degrees: 180
Coverage Range Sq. Ft.: 1000
Manual Time Adjustment: 8m-100m
Load Rating: Uses Power Pack
Input Voltage: 24VDC
Color: White
Standards and Certifications: CUL/US Cert
Warranty: 5-Year Limited

Control Specifications	
Adjustment	Self-Adjusting
Manual Time Adjustment	8m-100m

Material Specifications	
Color	White

Electrical Specifications	
Input Voltage	24VDC
Load Rating	Uses Power Pack

Mechanical Specifications	
Sensor Technology	PIR/Ultrasonic 32kHz
Pattern Degrees	180
Coverage Range Sq. Ft.	1000

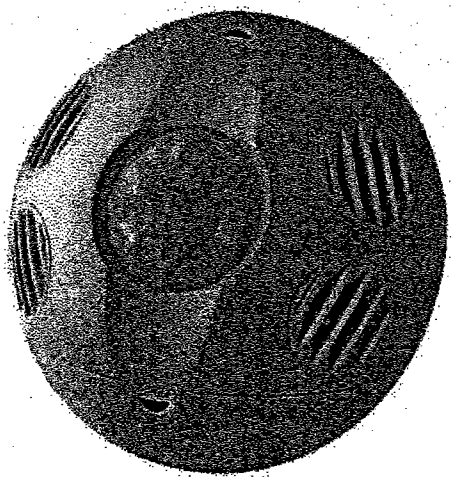
SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:	
JOB NUMBER:		

Occupancy Sensor
Multi-Technology Ceiling Sensor

OSC20-MOW
OSC10-MOW
OSC05-MOW

The most advanced sensor available. Combines multi-technology with all-digital architecture. Eliminates false triggering. The result is a trouble-free, "install and forget" solution for lighting control.



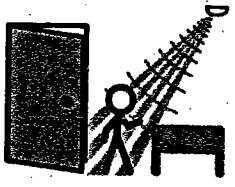
THE OSCxx-MOW SERIES OCCUPANCY SENSOR

- MULTI-TECHNOLOGY FOR HIGHEST RELIABLITY INFRARED & ULTRASONIC
- SIMPLE, FAST INSTALLATION
- SELF-ADJUSTING
- ALL-DIGITAL, COMPLETE RELIABILITY
- PHOTOCELL BUILT-IN
- CEILING MOUNT

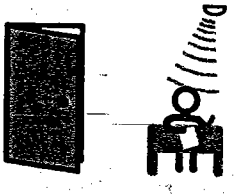
OSCxx-MOW

GENERAL OPERATION

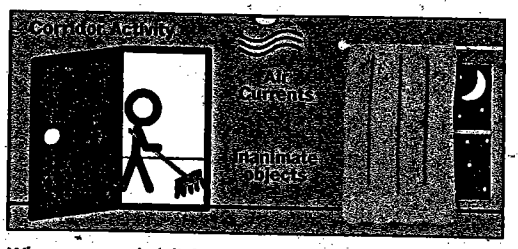
Occupancy sensors have two tasks: keeping the lights on while the room is occupied and, conversely keeping the lights off when unoccupied. Ultrasonic (doppler shift) motion detection gives maximum sensitivity yet can be vulnerable to false triggering from air conditioning currents, corridor activity and movement of inanimate objects. Infrared motion sensing gives immunity to false triggering, but lacks sensitivity at greater distances. Leviton multi-technology sensors combine the benefits of both infrared and ultrasonic technologies for unrivaled performance and reliability.



Upon room entry, the infrared detects motion and turns lights on.



Ultrasonic keeps lights on even with very minor motion.



When unoccupied, lights stay off while air conditioning system cycles on and off, and cleaning crews occupy corridors.

ADAPTIVE FUNCTIONS

The OSCxx-MOW constantly analyzes and adapts to changing conditions:

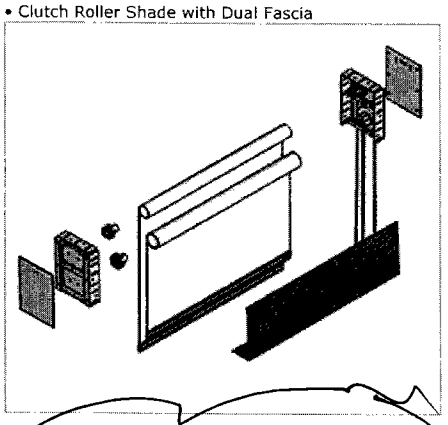
HOW THE ODCXX-M AUTOMATICALLY ADAPTS

Condition	Example	Adaptive Reaction
Timer Left In Test Mode - The sensor remains in an 6 sec. test mode.	An installer accidentally leaves the sensor in the 6 sec. timer test mode and the lights may go off or on every 6 sec.	The sensor automatically resets the timer to 10 min after 15 min of test mode.
False-On -The sensor incorrectly turns the lights on.	The sensor detects movement in the corridor or hallway and the room lights turn on.	After an initial movement is sensed, if another movement is not sensed within the timer setting then the delayed off time setting is automatically reduced.
False-Off -The sensor incorrectly turns the lights off.	The sensor does not detect movement because an occupant sits virtually motionless at a desk and the lights turn off.	If motion is sensed within a short period after the lights go off, then the current delayed off-time setting is increased.

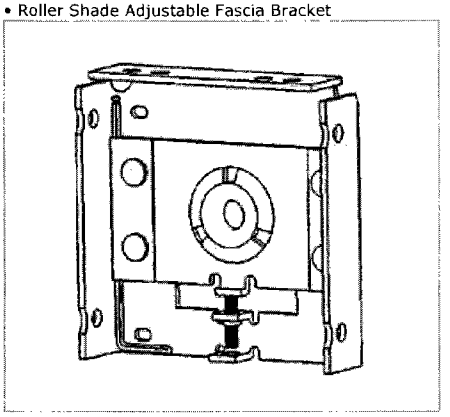
LEVITON SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:
JOB NUMBER:	

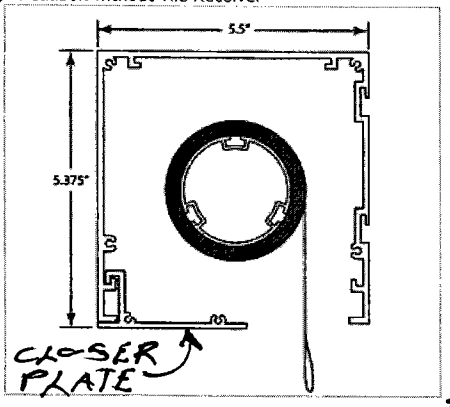
• Clutch Roller Shade with Dual Fascia



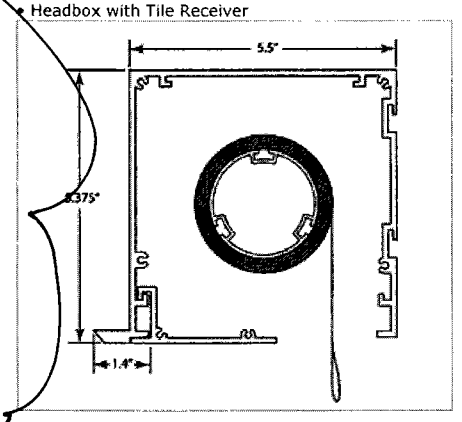
• Roller Shade Adjustable Fascia Bracket



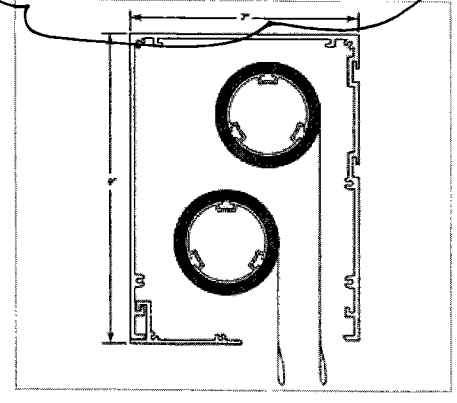
• Headbox without Tile Receiver



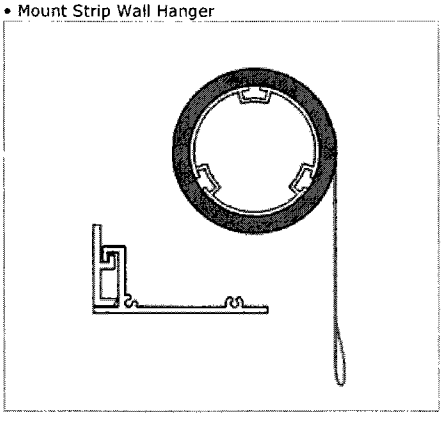
• Headbox with Tile Receiver



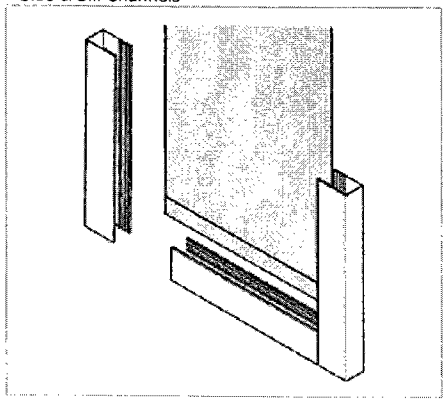
• Dual Headbox



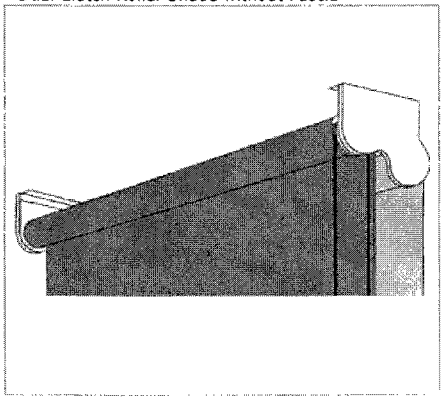
• Mount Strip Wall Hanger



• Side & Sill Channels



• Dual Clutch Roller Shade without Fascia



• Clutch Center Support for 2 on 1 Shade

• Clutch Multiple Band Coupler for 2 on 1 Shade

Floor Drains	Trap Primers
Floor Sinks	Overflow Drains
Receptor Drain	Roof Receptor
Hose Bibbs	

B. Contractor shall coordinate and provide shop drawings of the following:

1. Dimension drawings for concrete pad, curb and equipment foundations (1/4" scale minimum) including bolt sizes and locations.

2. Steel fabrication drawings for equipment and pipe supports attachments (1/8" scale).

3. Control Wiring Diagrams.

PART 2 - PRODUCTS

2.01 GENERAL

A. Plumbing fixtures, fittings or valves intended to dispense water for human consumption which contain more than 0.25% LEAD are not permitted to be sold or installed anywhere within the State of California. These devices shall be 3rd party listed to ANNEX G of NSF/ANSI 61-2008 or other approved testing standard. Evidence of compliance shall be presented to the Building Inspector prior to final inspection California Health & Safety Code 116875 (AB1963).

2.02 PIPING SYSTEMS

A. Sewer, Waste and Vent Piping, Storm Drain and Overflow Piping:

1. Hub-less cast iron pipe and fitting with stainless steel compression couplings joints by Anaco "Husky" 4 band straps (SD 4000) conforming to the requirements of CISPI Standard 301, ASTM A888 or ASTM A74 for all pipe and fittings. For all site sewer piping.

2. Pipe and fittings shall be marked with collective trademark of Cast Iron Soil Pipe Institute.

3. Joints for hub-less pipe and fitting shall conform to the manufacture's installation instructions, CISPI Standard 301 and local code requirements. Hub-less coupling gaskets shall conform to ASTM Standard C-654.

B. Potable and non-potable Cold, Tempered Water and Hot Water Piping above grade or slab indirect drain piping:

1. ASTM B88, Type "L" seamless hard drawn copper tubing with ASTM B16.22 wrot copper fittings. Joints shall be soldered with lead-free, tin-zinc alloy solder such as Harris Stay-Safe 50. Flanges, bronze solder joint, ANSI 150 lb.

C. Potable and Non-potable Cold Water Piping Below Grade:

1. ASTM B88, Type "K" seamless hard drawn copper tubing with ASTM B16.22 wrot copper fittings. Joints shall be brazed with Sil Fos 7.

1. One (1) Bogen TCPER 42" communications rack.

2. One (1) Bogen MCPC processor card.

3. One (1) Bogen MC512 power supply.

4. One (1) Bogen MC2626 power supply.

5. One (1) Bogen MCAPI audio program interface.

6. One (1) Bogen rack mounting mainframe.

7. Bogen MCAC analog cards. Quantity as needed.

8. Bogen MCSC analog cards. Quantity as needed.

9. Four (4) Bogen MCRM relay modules.

10. One (1) Bogen HTA250 amplifiers.

11. One (1) MCTC telephone access card.

12. Tripplite BC1200 UPS unit.

13. Provide AM/FM/Cassette CD player in admin area.

14. Accessory Equipment:

a. Classroom phones shall be Cisco VOiP phones supplied under separate specification section.

b. Classroom speakers shall be a Flush Mounted clock speaker enclosure Lowell PC-312 and Lowell MC301 grille. Surface clock speaker cans shown on the plans shall be Lowel PC712 cans and Lowel MC701 grilles. Provide Lathem SS-12-RFA-B 24VAC secondary clocks. Classroom Speakers shall be Bogen S8T725.

c. Outside speakers shall be Soundolier APF15T with L20-211 can and VP161APF grille.

d. The Data / Communication System, specified in another section, shall be fully interfaced with the new intercommunication system to provide all functions and features listed in this specification.

e. Contractor to provide MCDS3 Master Intercom Phone as shown on the drawings.

f. Provide Lathem PS-8-24 Power supplies and relays as needed for complete secondary clock system.

B. CABLE:

1. All speaker and station cable shall be West Penn 290 and category 6 cable.

2. Microphone cable shall be West Penn 291.

3. Whenever a trouble condition is detected and reported the FACP shall automatically initiate the following functions:

a. Trouble LED on the FACP shall flash.

b. Local audible piezo electronic signal in the FACP shall sound.

c. The trouble condition description, including the type of point and the location within the protected premises, shall be displayed on the LCD display at the FACP and, where applicable, the remote annunciator(s).

d. System shall transmit the condition to an off-site supervising station. Supervising station shall be approved per 2010 CFC 907.7.5.

e. Printing and history storage equipment shall log the information associated with the condition, including the time and date of the alarm occurrence.

f. System output programs configured via control-by-event (CBE) programming to be activated by the particular point in alarm shall be executed, and the associated system output (alarm notification appliances and relays) shall be activated on either local outputs or points located on other network nodes.

C. Remote Monitoring Connection

1. The fire alarm system shall be connected via Digital Alarm Communicator Transmitter (DACT) over telephone lines to a UL Listed Central Station Monitoring Company.

a. The fire alarm control panel shall provide an integral Digital Alarm Communicator Transmitter (DACT) for signaling to a UL Listed Central Station Monitoring Company. The DACT shall contain a "Dialer-Runaway" feature preventing unnecessary transmissions as the result of intermittent faults in the system and shall be Carrier Access Code (CAC) compliant, accepting up to 20-digit central station telephone numbers.

b. The fire alarm system shall transmit alarm, supervisory alarm and trouble signals with the alarms having priority over the trouble signal.

2.02 SYSTEM COMPONENTS

A. Fire Alarm Control Panel (FACP)

1. FCI – Model No. 7100-2D

a. California State Fire Marshal (CSFM) Listing No. 7165-1703:105

2. FACP Enclosure

a. **FCI – Model No. 7100-CAB** –The system cabinet shall be either surface or semi-flush mounted with a texture finish and shall consist of three parts: backbox, backplate, and door. The system cabinet houses the 7100 Operator's display,digital alarm communicator and related system circuitry.

b. The cabinet shall be of dead-front steel construction; the door shall be of molded plastic. The system components shall be installed on a hinged mounting plate, which may be removed to facilitate installation and testing of field wiring. A minimum of a 1-inch wiring gutter space shall be provided behind the mounting plate. Wiring shall be terminated on removable terminal blocks to allow field servicing of all modules without disrupting system wiring.

3. Display

a. The system display shall furnish audible and visual annunciation of all alarms and trouble signals. Dedicated LEDs shall be provided for:

1.	Green	AC Power On
2.	Red	Alarm
3.	Yellow	Supervisory
4.	Yellow	System Trouble
5.	Yellow	Power Fault
6.	Yellow	Ground Fault
7.	Yellow	NAC 1 Silenced
8.	Yellow	NAC 2 Silenced
9.	Yellow	System Silenced

b. The 160-character (4X40) LCD alphanumeric display shall provide status of all analog/addressable sensors, monitor and control points), and a 12-key keypad which shall permit selection of functions. The display shall be of the liquid crystal type (LCD), clearly visible in the dark and under all light conditions.

c. The panel shall contain four (4) functional keys and three (3) programming buttons:

1. Alarm Acknowledge
2. Trouble Acknowledge
3. Signal Silence
4. System Reset/Lamp Test
5. Programming Buttons:

    a. Menu/Back
    b. Back Space/Edit
    c. OK

4. Basic System Module

a. Enclosed within the system cabinet, the basic system module shall contain the power supply, microprocessor, memory, system operating software stored on a non-volatile EPROM, system configuration memory stored on a non-volatile