

Appendix 4.07

Blumel Hall

Re-pipe & Remodel

PORTLAND STATE UNIVERSITY

PSU Facilities and Planning
Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

(Block 268)

1705 SW 11th Ave.

Portland, Oregon 97201

Code Notes

CODE NOTES / STATISTICS

TYPE 1 B Construction (2010 OSSC Code)
Group R-2 Occupancy
Dormitory with Fire Sprinklers
Not High Rise <75' ht. grade to top floor ht. (Sect 202)
No elevator lobbies (Sect. 708.14.1--except #4)
No seismic evaluation req'd after 1971, sect 24.85,
No change of use.

Maintain 1- hr fire corridor per Fire Marshall.
1-hr fire separation between R-2 and S-2
Fire resistance: Roof-1hr /Bearing walls 2-hr./
Primary Structure --2hr. / floors 2hr. / Non-bearing
Walls -0 hr.

Existing:
1st - Level of Parking -- 64 + (4) ADA stalls
2nd - Level of Parking - 83 + (2) ADA stalls
Total = 153 stalls

3rd - Level Dormitory -- 17 + (10) ADA Units =
27 units
4th - 9th - Levels Dormitory -- 27 Units x 6 =
162 units
Total = 189 units @ (7) Levels.

Roof Level -- Elevator rm, Mechanical, Cell Site.

1st Level Parking = 34,000 sf +/-
2nd Level Parking = 34,000
3-9th Levels Dormitory = 7 x 18,800 = 131,600
Total Bldg Area w/ Parking = 199,600 sf +/-

4/17/12
issued for bid/permit

ARCHITECTURAL (30 -sheets) 1

Dated: 4 / 17 / 2012

- A1 Cover Sheet
- A2 Room List
- A3.1-2 Specifications
- A4.1-3 1st Floor / Clg./ Det. Plans
- A5.1-3 2nd Floor / Clg Plans / P. Repair
- A6.1-2 3rd - 9th Floor/ Clg Plans
- A7.1-2, 2.1-7 Lobby / Lounge / RR / Unit Plans
- A8.1-2 Interior Elevations
- A9.1-2 Sections / Details 1 remove A9.3
- A10.1 Exterior Elevations
- A11.1-5 Schedules & Finishes

- MP12 - MP14 New Work Plans
- MP15 Details
- MP16 Schedules

ELECTRICAL (23 - sheets)

Dated: 4 / 17 / 2012

- E3.1 - E3.8 General Items, Schedules and Specs.
- E4.0 - E4.1 1st Floor - Demolition
- E5.0 2nd Floor - Demolition
- E5.1 2nd Floor - New
- E6.0 3rd - 9th Floor - Demolition
- E6.2 1st Floor - New
- E7.0 - E7.1, E7.1a Enlarged Plans - 1st Floor - New
- E7.2 Enlarged Plans - 2nd Floor - New
- E7.6 Enlarged - Standard
- E7.7 Expanded Plan
- E7.8 Expanded ADA Plan - Existing
- E7.9 Expanded ADA Plan - New
- E12.1 Roof Plan - Demo and New

FOR REFERENCE ONLY

ROOF ARCHITECTURAL (4 - sheets)

Dated: 3/09 / 2012

- A12.1-4 Roof Plan / Details (ADDENDUM #1, 3/26/12)

ROOF STRUCTURAL (3 - sheets)

Dated: 3/09 / 2012

- S0.1 General Items (3-9-12)
- S1.1 Roof Plan (3-9-12)
- S2.1 Roof Details (3-9-12)

STRUCTURAL (2 - sheets)

Dated: 5 / 4 / 12

- S1 Pipe Penetration Details 1 add (2) sheets
- S2 Ceiling Details

MECHANICAL / PLUMBING (18 - sheets)

Dated: 4 / 17 / 2012

- MP0.1-MP0.2 Symbols / Abbreviations / Specs
- MP1 - MP5 Demo Plans
- MP6 - MP11 Diagrams and New Piping

Sheet Index (Total = 73) + 7 = 80 sheets at 34' x 22' size



East View

VERIFY ALL SYMBOLS WITH ENGINEERS DRAWINGS.
N = NEW, E = EXISTING, R = RELOCATED.

Symbols

PSU Facilities and Planning
Project Management Group
Architectural Services &
Mech./Plumbing
Engineering
University Svcs. Bldg. - 617
SW Montgomery St. #202
Portland, OR 97201
(503) 725-3738

Ron Blaj - Asst. Director
Mark Fujii - Project Manager
Tom Arnich - Architect
Tracy Prose - Project
Coordinator
Tina Yackley - Interior
Designer
Quinn Soifer -
Mech./Plumbing Engineer

Contacts

PSU Network -Teleco OIT
Dan Walsh-Assoc. Dir Univ.
Tech. Services Bldg.-2121
Portland, OR 97201
SW 4th Ave. #400
Portland, OR 97201
(503) 725-3310

Electrical Engineer
InSite Group, Inc.
Consulting Engineers
Chris Wierman - Principal
310 SW 4th Ave. #1120
Portland, OR 97204
(503) 222-2044

Roofing Consultant
Professional Roof
Consultants, Inc.
Steve McBride - President

1108 SE Grand Ave. #300
Portland, OR 97214
(503) 280-8759

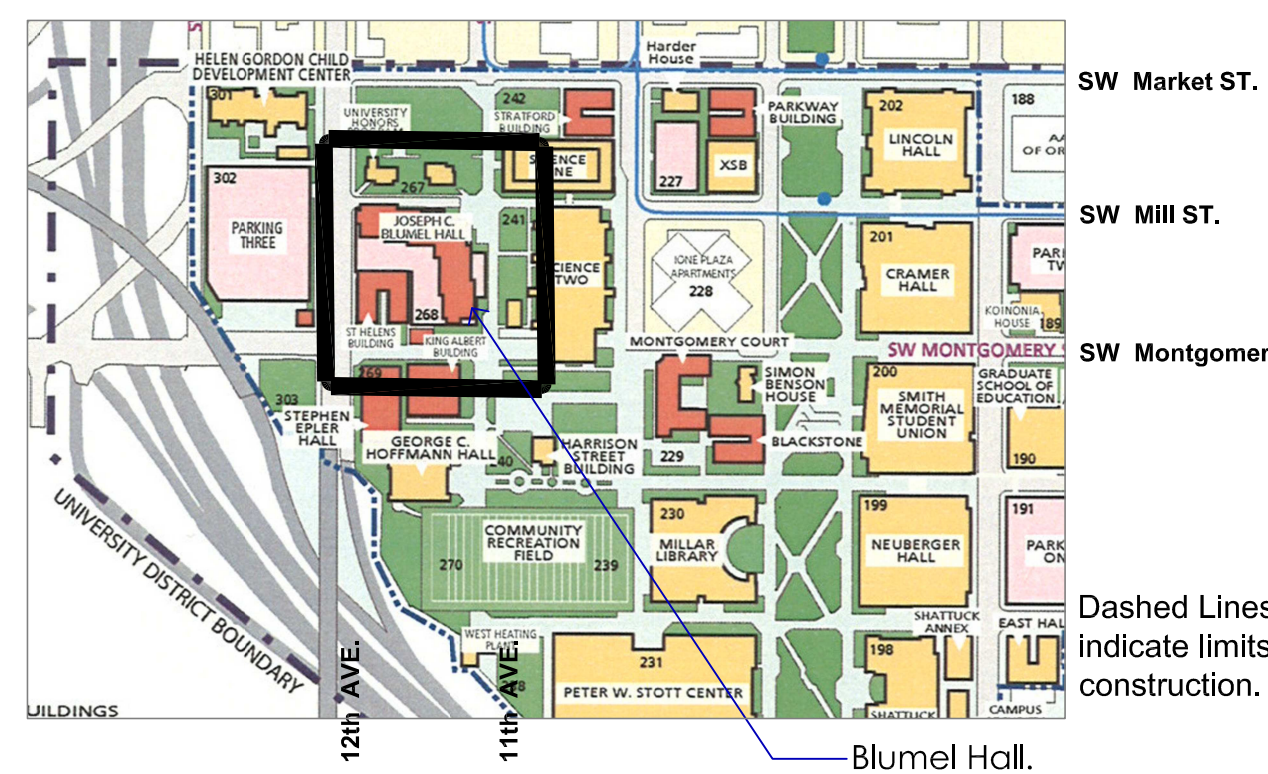
Structural Engineer
ABHT Structural Engineers
Clinton Ambrose
224 NW 13th Ave. #325
Portland, OR 97209
(503) 243-6682

City of Portland-BDS
Facility Permit Program
1900 SW 4th Ave. #5000
Portland, OR 97201
Scott Burris - Inspector
(503) 823-0668
Gary Boyles - Fire Marshal

(503) 823-3778
Client Contacts

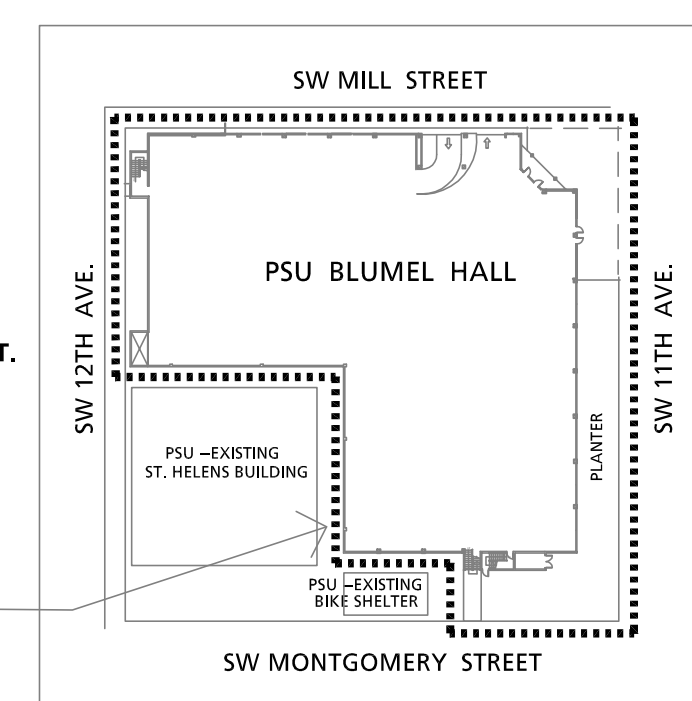
PSU Auxiliary Services
Wayne Wilcox - Aux.
Maintenance Manager
Ondine - 1912 SW 6th Ave.
#201
Portland, OR 97201
(503) 725-5440

Sarah Renkens - Mgr.
Transportation & Park'g.
Svcs.
ASRC - 1800 SW 6th Ave.
#145
Portland, OR 97201
(503) 725-3442



Vicinity Map

No Scale



"LIMITS OF CONSTRUCTION"
Site Plan

No Scale - Diagramatic Only



Revisions :
1 5 / 4 / 12 ADDENDUM #1

Date :
4/17/12

Drawn :

Checked :

Cover Sheet w/ notes, symbols, and index.

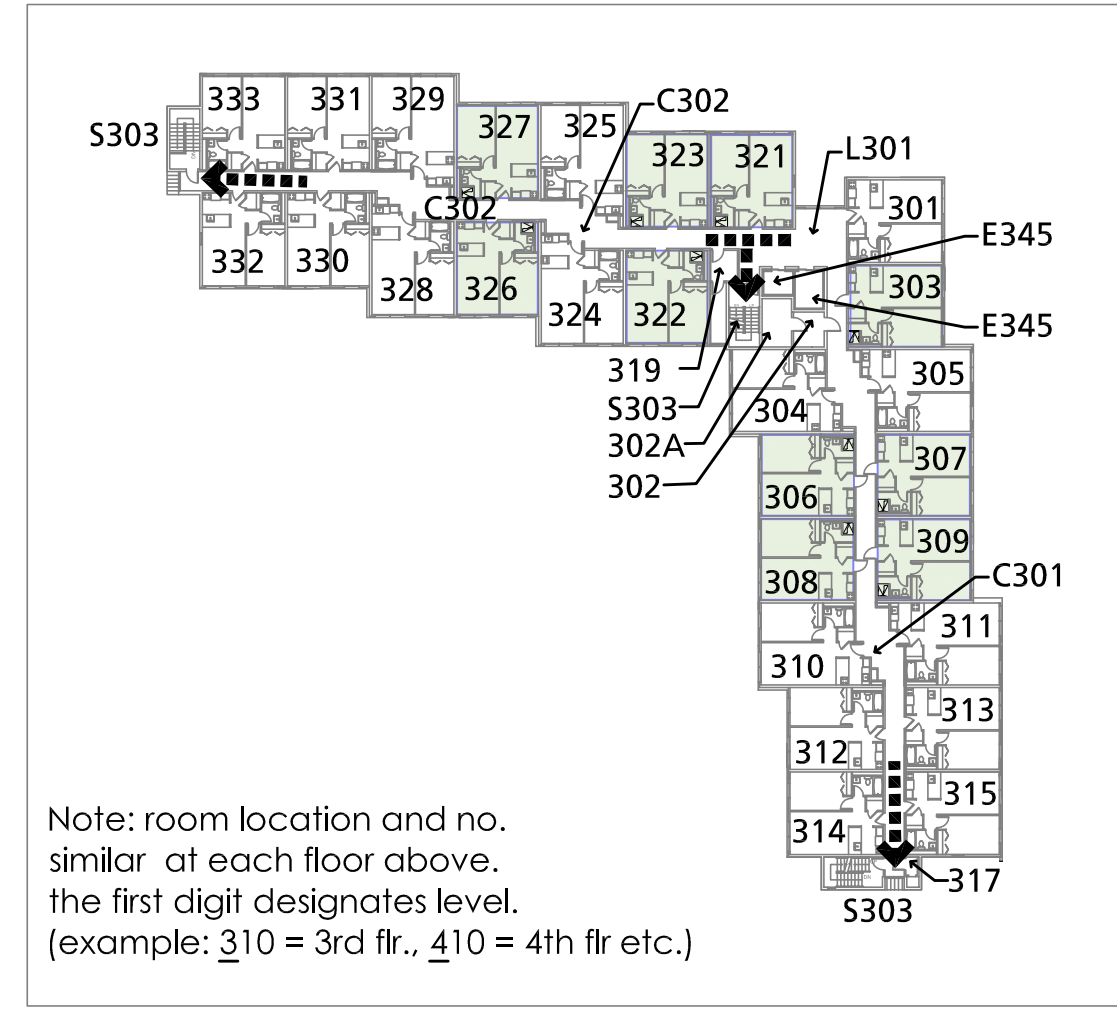
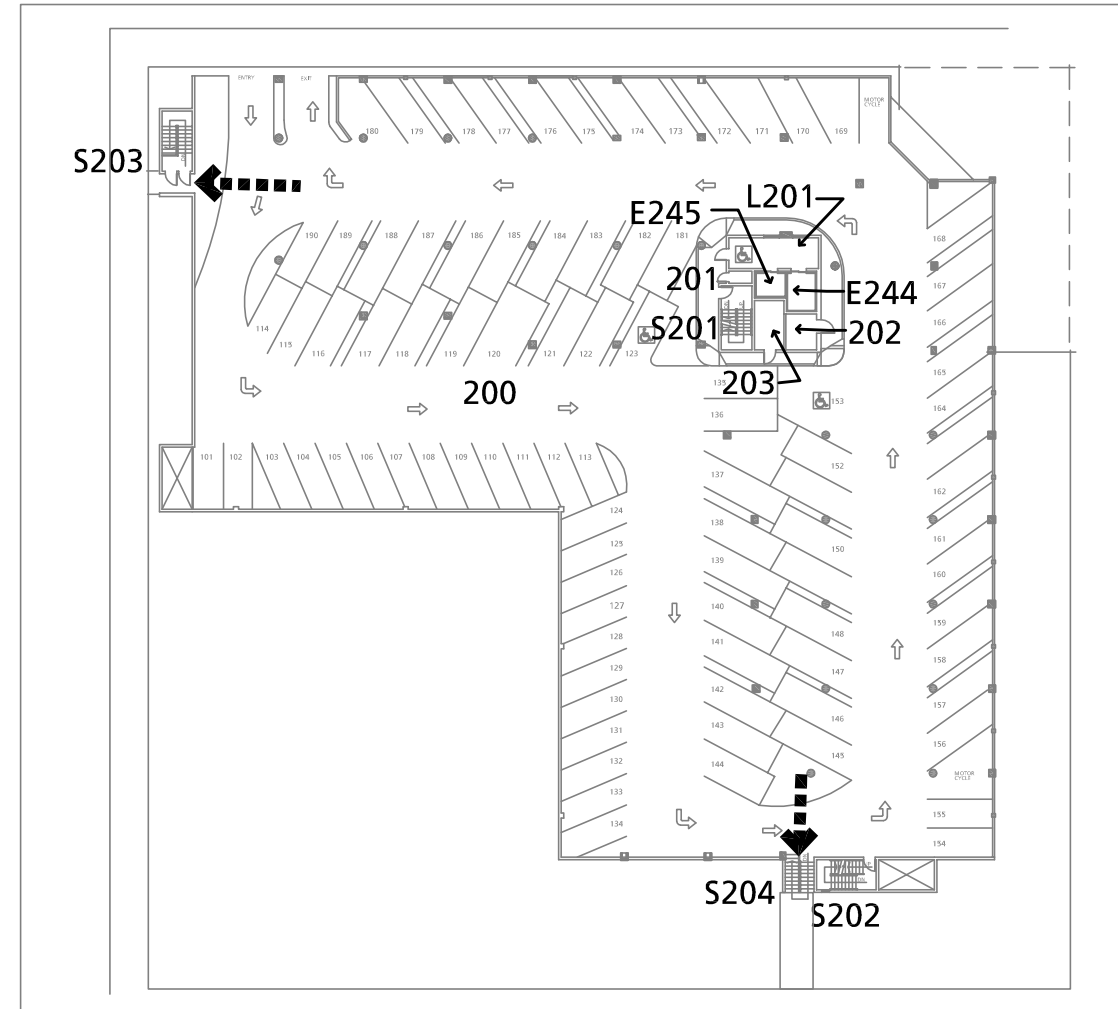
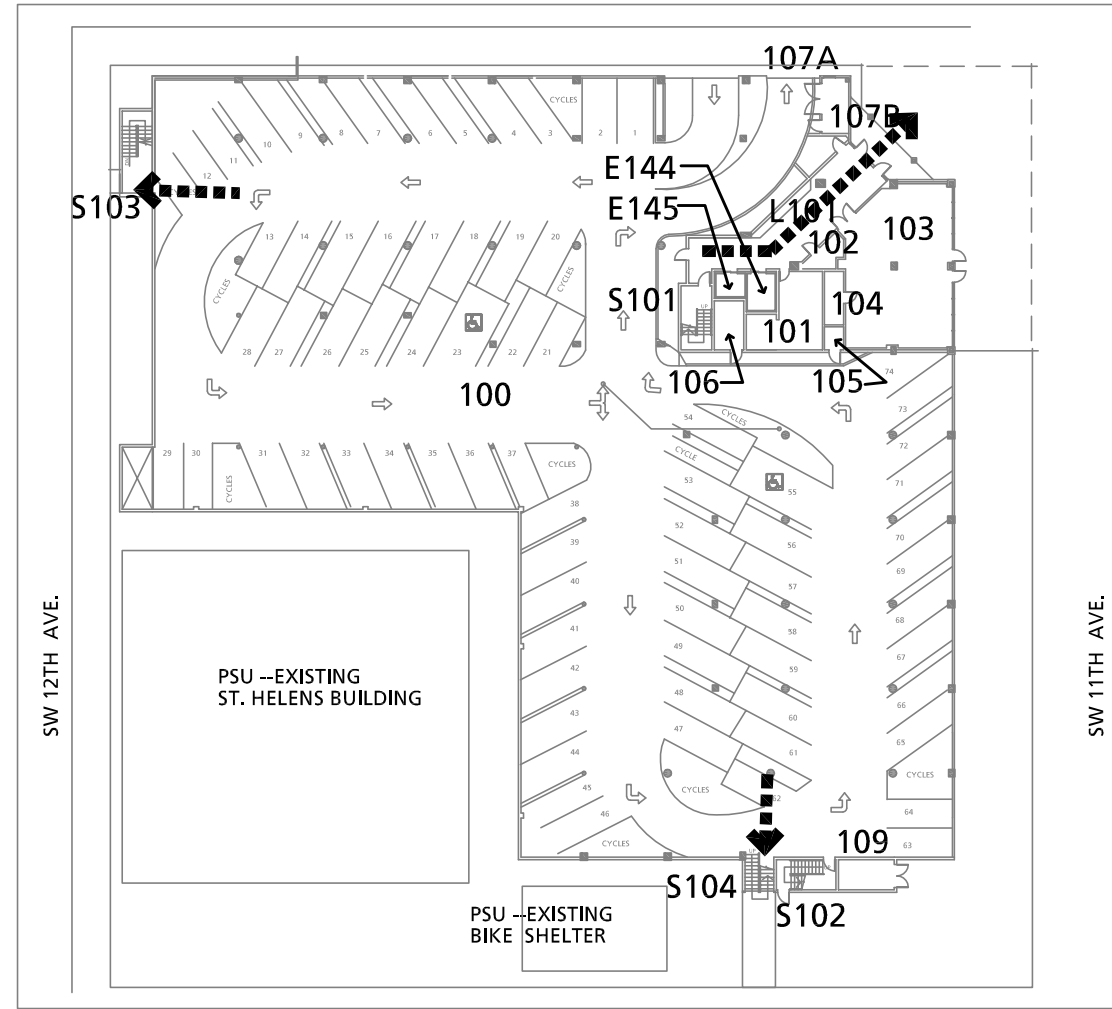
no scale

A1.1

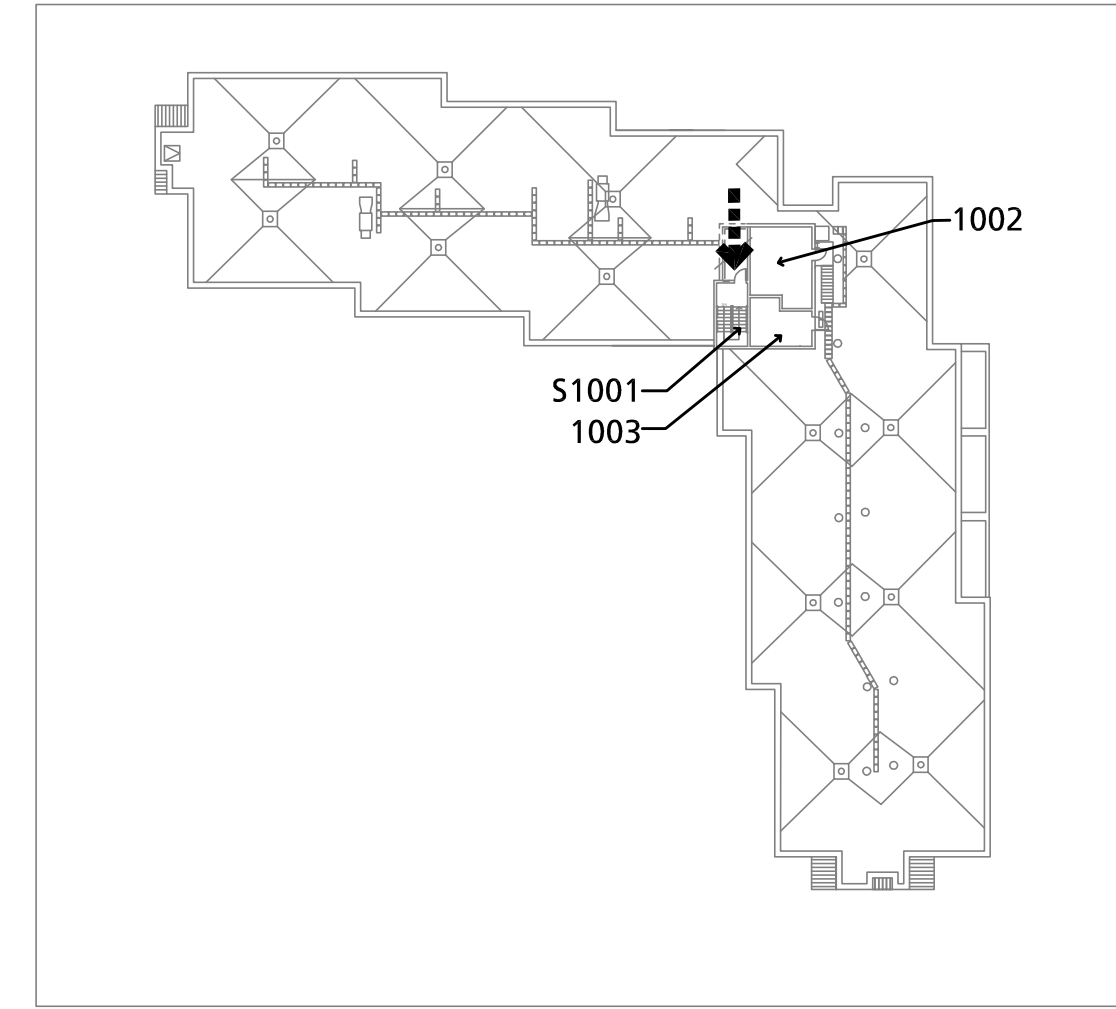
PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes 1

1. See specification sheet for notes. A



Note: room location and no. similar at each floor above. the first digit designates level. (example: 310 = 3rd flr., 410 = 4th flr. etc.)



1st Floor

2nd Floor

3rd thru 9th Floor

Roof

SCALE : NONE

DIAGRAMATIC EXIT / EGRESS PLANS

ROOM LIST

ROOM	NAME	ROOM	NAME	ROOM	NAME	ROOM	NAME	ROOM	NAME	ROOM	NAME	ROOM	NAME	ROOM	NAME	ROOM	NAME	ROOM	NAME
100	PARKING GARAGE	301	APARTMENT-STANDARD	401	APARTMENT-STANDARD	501	APARTMENT-STANDARD	601	APARTMENT-STANDARD	701	APARTMENT-STANDARD	801	APARTMENT-STANDARD	901	APARTMENT-STANDARD	1001	ROOF MECHANICAL		
101	LAUNDRY	302	STORAGE	402	STORAGE	502	STORAGE	602	STORAGE	702	STORAGE	802	STORAGE	902	STORAGE	1002	ROOF MECHANICAL		
102	STORAGE	302A	STORAGE	402A	STORAGE	502A	STORAGE	602A	STORAGE	702A	STORAGE	802A	STORAGE	902A	STORAGE				
103	LOUNGE	303	NEW-ADA ROLL-IN	403	APARTMENT-STANDARD	503	APARTMENT-STANDARD	603	APARTMENT-STANDARD	703	APARTMENT-STANDARD	803	APARTMENT-STANDARD	903	APARTMENT-STANDARD	1101	ROOF PENTHOUSE		
104	STORAGE	304	APARTMENT-EXPANDED	404	APARTMENT-EXPANDED	504	APARTMENT-EXPANDED	604	APARTMENT-EXPANDED	704	APARTMENT-EXPANDED	804	APARTMENT-EXPANDED	904	APARTMENT-EXPANDED				
105	STORAGE	305	APARTMENT-EXPANDED	405	APARTMENT-EXPANDED	505	APARTMENT-EXPANDED	605	APARTMENT-EXPANDED	705	APARTMENT-EXPANDED	805	APARTMENT-EXPANDED	905	APARTMENT-EXPANDED	S1001	STAIR		
106	ELECTRICAL	306	EXISTING ADA -TRANSFER	406	APARTMENT-STANDARD	506	NEW-ADA ROLL-IN	606	APARTMENT-STANDARD	706	APARTMENT-STANDARD	806	APARTMENT-STANDARD	906	APARTMENT-STANDARD				
107A	GENERATOR	307	EXISTING ADA -TRANSFER	407	APARTMENT-STANDARD	507	APARTMENT-STANDARD	607	APARTMENT-STANDARD	707	APARTMENT-STANDARD	807	APARTMENT-STANDARD	907	APARTMENT-STANDARD				
107B	GENERATOR	308	EXISTING ADA -TRANSFER	408	APARTMENT-STANDARD	508	APARTMENT-STANDARD	608	APARTMENT-STANDARD	708	APARTMENT-STANDARD	808	APARTMENT-STANDARD	908	APARTMENT-STANDARD				
109	GARBAGE	309	EXISTING ADA -TRANSFER	409	APARTMENT-STANDARD	509	APARTMENT-STANDARD	609	APARTMENT-STANDARD	709	APARTMENT-STANDARD	809	APARTMENT-STANDARD	909	APARTMENT-STANDARD				
XXX	OFFICE	310	APARTMENT-EXPANDED	410	APARTMENT-EXPANDED	510	APARTMENT-EXPANDED	610	APARTMENT-EXPANDED	710	APARTMENT-EXPANDED	810	APARTMENT-EXPANDED	910	APARTMENT-EXPANDED				
XXX	ADA RESTROOM	311	APARTMENT-EXPANDED	411	APARTMENT-EXPANDED	511	APARTMENT-EXPANDED	611	APARTMENT-EXPANDED	711	APARTMENT-EXPANDED	811	APARTMENT-EXPANDED	911	APARTMENT-EXPANDED				
C103	CORRIDOR	312	APARTMENT-STANDARD	412	APARTMENT-STANDARD	512	APARTMENT-STANDARD	612	APARTMENT-STANDARD	712	APARTMENT-STANDARD	812	APARTMENT-STANDARD	912	APARTMENT-STANDARD				
E144	ELEVATOR	313	APARTMENT-STANDARD	413	APARTMENT-STANDARD	513	APARTMENT-STANDARD	613	APARTMENT-STANDARD	713	APARTMENT-STANDARD	813	APARTMENT-STANDARD	913	APARTMENT-STANDARD				
E145	ELEVATOR	314	APARTMENT-STANDARD	414	APARTMENT-STANDARD	514	APARTMENT-STANDARD	614	APARTMENT-STANDARD	714	APARTMENT-STANDARD	814	APARTMENT-STANDARD	914	APARTMENT-STANDARD				
L101	LOBBY	315	APARTMENT-STANDARD	415	APARTMENT-STANDARD	515	APARTMENT-STANDARD	615	APARTMENT-STANDARD	715	APARTMENT-STANDARD	815	APARTMENT-STANDARD	915	APARTMENT-STANDARD				
S101	STAIR	316		416		516		616		716		816		916					
S102	STAIR	317	TRASH CHUTE	417	TRASH CHUTE	517	TRASH CHUTE	617	TRASH CHUTE	717	TRASH CHUTE	817	TRASH CHUTE	917	TRASH CHUTE				
S104	STAIR	318		418		518		618		718		818		918					
Z100	PIPE CHASES	319	LAUNDRY ROOM	419		519	LAUNDRY ROOM	619		719	LAUNDRY ROOM	819		919	LAUNDRY ROOM				
		320	RECYCLING	420	RECYCLING	520	RECYCLING	620	RECYCLING	720	RECYCLING	820	RECYCLING	920	RECYCLING				
		321	EXISTING ADA -TRANSFER	421	APARTMENT-STANDARD	521	APARTMENT-STANDARD	621	APARTMENT-STANDARD	721	APARTMENT-STANDARD	821	APARTMENT-STANDARD	921	APARTMENT-STANDARD				
		322	EXISTING ADA TRANSFER	422	APARTMENT-STANDARD	522	APARTMENT-STANDARD	622	APARTMENT-STANDARD	722	NEW-ADA ROLL-IN	822	APARTMENT-STANDARD	922	APARTMENT-STANDARD				
		323	EXISTING ADA -TRANSFER	423	APARTMENT-STANDARD	523	APARTMENT-STANDARD	623	APARTMENT-STANDARD	723	APARTMENT-STANDARD	823	APARTMENT-STANDARD	923	APARTMENT-STANDARD				
		324	APARTMENT-EXPANDED	424	APARTMENT-EXPANDED	524	APARTMENT-EXPANDED	624	APARTMENT-EXPANDED	724	APARTMENT-EXPANDED	824	APARTMENT-EXPANDED	924	APARTMENT-EXPANDED				
		325	APARTMENT-EXPANDED	425	APARTMENT-EXPANDED	525	APARTMENT-EXPANDED	625	APARTMENT-EXPANDED	725	APARTMENT-EXPANDED	825	APARTMENT-EXPANDED	925	APARTMENT-EXPANDED				
		326	EXISTING ADA -TRANSFER	426	APARTMENT-STANDARD	526	APARTMENT-STANDARD	626	APARTMENT-STANDARD	726	APARTMENT-STANDARD	826	APARTMENT-STANDARD	926	APARTMENT-STANDARD				
		327	EXISTING ADA -TRANSFER	427	APARTMENT-STANDARD	527	APARTMENT-STANDARD	627	APARTMENT-STANDARD	727	APARTMENT-STANDARD	827	APARTMENT-STANDARD	927	NEW-ADA ROLL-IN				
		328	APARTMENT-EXPANDED	428	APARTMENT-EXPANDED	528	APARTMENT-EXPANDED	628	APARTMENT-EXPANDED	728	APARTMENT-EXPANDED	828	APARTMENT-EXPANDED	928	APARTMENT-EXPANDED				
		329	APARTMENT-EXPANDED	429	APARTMENT-EXPANDED	529	APARTMENT-EXPANDED	629	APARTMENT-EXPANDED	729	APARTMENT-EXPANDED	829	APARTMENT-EXPANDED	929	APARTMENT-EXPANDED				
ROOM	NAME	330	APARTMENT-STANDARD	430	APARTMENT-STANDARD	530	APARTMENT-STANDARD	630	APARTMENT-STANDARD	730	APARTMENT-STANDARD	830	APARTMENT-STANDARD	930	APARTMENT-STANDARD				
200	PARKING GARAGE	331	APARTMENT-STANDARD	431	APARTMENT-STANDARD	531	APARTMENT-STANDARD	631	APARTMENT-STANDARD	731	APARTMENT-STANDARD	831	APARTMENT-STANDARD	931	APARTMENT-STANDARD				
201	STORAGE	332	APARTMENT-STANDARD	432	APARTMENT-STANDARD	532	APARTMENT-STANDARD	632	APARTMENT-STANDARD	732	APARTMENT-STANDARD	832	APARTMENT-STANDARD	932	APARTMENT-STANDARD				
202	STORAGE	333	APARTMENT-STANDARD	433	APARTMENT-STANDARD	533	APARTMENT-STANDARD	633	APARTMENT-STANDARD	733	APARTMENT-STANDARD	833	APARTMENT-STANDARD	933	APARTMENT-STANDARD				
203	ELECTRICAL	C301	CORRIDOR	C401	CORRIDOR	C501	CORRIDOR	C601	CORRIDOR	C701	CORRIDOR	C801	CORRIDOR	C901	CORRIDOR				
E244	ELEVATOR	C302	CORRIDOR	C402	CORRIDOR	C502	CORRIDOR	C602	CORRIDOR	C702	CORRIDOR	C802	CORRIDOR	C902	CORRIDOR				
E245	ELEVATOR	E344	ELEVATOR	E444	ELEVATOR	E544	ELEVATOR	E644	ELEVATOR	E744	ELEVATOR	E844	ELEVATOR	E944	ELEVATOR				
L201	LOBBY	E345	ELEVATOR	E445	ELEVATOR	E545	ELEVATOR	E645	ELEVATOR	E745	ELEVATOR	E845	ELEVATOR	E945	ELEVATOR				
S201	STAIR	L301	LOBBY	L401	LOBBY	L501	LOBBY	L601	LOBBY	L701	LOBBY	L801	LOBBY	L901	LOBBY				
S202	STAIR	S301	STAIR	S401	STAIR	S501	STAIR	S601	STAIR	S701	STAIR	S801	STAIR	S901	STAIR				
S203	STAIR	S302	SOUTH STAIR	S402	SOUTH STAIR	S502	SOUTH STAIR	S602	SOUTH STAIR	S702	SOUTH STAIR	S802	SOUTH STAIR	S902	SOUTH STAIR				
S204	STAIR	S303	WEST STAIR	S403	WEST STAIR	S503	WEST STAIR	S603	WEST STAIR	S703	WEST STAIR	S803	WEST STAIR	S903	WEST STAIR				
Z200	PIPE CHASES	Z300	PIPE CHASES	Z400	PIPE CHASES	Z500	PIPE CHASES	Z600	PIPE CHASES	Z700	PIPE CHASES	Z800	PIPE CHASES	Z900	PIPE CHASES				

4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

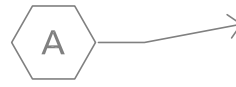
Room List

Revisions :	Date :
1. 5 / 4 / 12 ADDENDUM #1	4/17/12
Drawn :	
Checked :	

Room List

Diagramatic / not to scale

A2.1



A. General Items

- A.1. Codes -- All work to conform to latest applicable codes for City of Portland, including ADA, Environmental, and Waste management regulations and shall include the following:
- A.2. Re-cycling Plan -- Complete and submit the Pre-construction re-cycling plan / applications as required by the City of Portland
- A.3. Completion Quality -- All work shall be completed to provide a new, clean, patched, repaired, painted or finished, working and watertight installation per minimum industry standard for Institutional facilities. Include finishing /cleaning of carpet, waxing of floors, and cleaning of walls, ceilings, equipment, exposed surfaces of mechanical/electrical items, fixtures and furnishings.
- A.4. General Conditions of Contract -- Contractor shall conform to the applicable PSU General Conditions of the Contract.
- A.5. Coordination -- Contractor to review all documents and coordinate all work with subcontractors including PSU subcontractors and crews.
- A.6. Installations -- All equipment, appliances, furnishings, cabinets, and product items to be installed according to manufacturer's specifications and recommendations for installation, and to meet all codes for a finished workable product assembly which includes ADA, structural, fire, and safety regulations. Verify all dimensions for appliances and provide manufacturers required openings.
- A.7. Submittals -- Prior to ordering, Contractor to submit to PSU Facilities for review and approval all products/equip/furnishings, samples, colors, paint colors and shop drawings.
- A.8. Dimensions -- All drawing dimensions shall have preference over scale. Verify all existing dimensions.
- A.9. Verify / Protect Existing -- Verify all existing conditions. Protect existing building, property, structure and utilities from damage, and replace to existing condition if damaged during construction.
- A.10. Final Working Installation -- Reconfigure and reconnect existing and new items including utilities, controls, detectors, alarms, exit lighting, strobes, elect. lights, power, switches, mech. diffusers, ducting, sprinklers, data, plumbing, water, sewer, and venting for a complete working installation.
- A.11. Structural Engineer Approvals - Penetrations of Structure by Contractor -- Any Penetration of Structure, including anchoring, coring, scraping, cutting or removal is not permitted unless approved and inspected by PSU Structural Engineer. Upon his determination, work shall be subject to special inspection and or certified location services and reports to determine location of steel reinforcing. Any existing irregularities, flaws, or wear of structure that is uncovered or discovered by Contractor during the process of the work shall be immediately reported to PSU Structural Engineer and subject to his review, recommendations, and inspections. See Structural Engineer's Drawings for more detail.

B. Demolition

- B.1. General Demo --- Remove existing walls, doors, frames, finishes, electrical, mechanical, and other building items as required to accommodate new construction. Remove all abandoned mech., elect., and plumbing lines. Verify all existing structure and protect. Protect existing lobby areas, restrooms, and elevators.
- B.2. Sandblast Painted Deck Signage -- To include parking stripes and other markings.
- B.3. Remove Abandoned Parking Controls / Equipment -- To include entry control mechanisms. Cap all Utilities.
- B.4. Demolition at Dorm Units -- Remove appliances, countertops, sawcut wall at existing raised counter, removal of cabinets noted on interior elevations, mirrors and towel bars, and plumbing fixtures noted on engineer's drawings. Protect existing showers at existing accessible units to remain.

C. Walls

- C.1. New Walls --- See Structural drawings for minimums. Walls to be minimum unless noted other wise 3 -1 /2" wide metal studs @ 16" o.c. x 20 gauge min. by Steeler Inc. or approved equal, typical both sides min. 5/8" type 'X' gyp. bd. Extend full sheathed wall up to structural deck above and secure. Do not secure walls to ceiling grid. Insulate all new walls.

- C.2. Wall Bracing --- See Structural drawings for minimums. Brace above all walls, windows, relites, to be minimum unless noted otherwise---3-1/2" x 20 ga. metal studs @ 4' o.c. alternating direction at 45 deg. angle max. Above windows also use typical wall studs to structural deck above and wall bracing. Secure wall bracing to structural deck with metal angle L2"x2" x 12" x 16 ga.
- C.3. Fasteners --- See Structural drawings for minimums. Locate and do not penetrate structural concrete deck pre-stressed tendons.
 - C.3.1. At Metal Framing --- Steeler Tek Screws or approved equal. At metal brace to angle plate or metal brace to track typ. min (3) #8 x 3 /4".
 - C.3.2. At Angle Plates ---Powers Fasteners Hit anchors or approved equal at concrete, typ. min (4) 1/ 4" dia. x 3/ 4" min. embed. at 3"oc
 - C.3.3. At Metal Track --- Ramset low veloc. shot pin anchors or approved equal at concrete--typ min 0.145" dia. x embed. min. 3 / 4" at 16"oc.
- C.4. Wall Board -- Typ. Gypsum Board -- Georgia Pacific, Greenguard certified, or approved equal, smooth finish.
 - C.4.1. Tile walls - to include water-resistant backer board underlayment, US Gypsum or approved equal.
 - C.4.2. Bathub and Shower walls / ceilings -- to have US Gypsum Greenboard water resistant 5/ 8" type X gyp. bd. or approved equal.
- C.5. Existing + New Wall Blocking, Patching / Painting -- Block, Patch and Prep for Paint as required at new and existing gypsum brd walls at all new or re-installed installations of electrical, mechanical, plumbing, or other new product or reinstalled items, including grab bars, recessed medicine cabinets, bathroom specialty items, trash chute doors, elect. wall heaters, outlets, lights, switches, and mechanical grilles in wall surfaces. Use water resistant gypsum brd. at all walls / ceilings surrounding tubs and showers.
- C.6. Wall Insulation -- See Insulation Items.

D. Doors / Windows

- D.1. Wood Doors --- Exposed wood doors to be 1-3/4" solid core by Vancouver Door Company or approved equal. Include Doors with lites, Flush doors, and multi-folding flush door types. All glass lites in wood doors to be 1/ 4" thick tempered with wood stops in wood doors to match finish. All doors to be internally blocked for closer and panic bar installation support.
- D.2. Wood Door Species --- All new wood doors to MATCH EXISTING wood doors, except at Lounge to be Maple.
- D.3. Hollow Metal Frame at Doors / Relites --- Ceco or approved equal 16 gauge hollow metal welded frames. See details for dimensions. 14 ga. galv primed framed at exterior trash doors. Prep. for (4) EO bolt anchors each jamb. and head.
- D.4. Exterior Aluminum Storefront -- Not Used.
- D.5. Replacement Glass Window Panels -PPG or approved equal, 0.35 U-Value, 1" thick insulating glass, clear. Replace moisture filled broken seal window panes to match existing glass type and thickness. See schedule for locations.
- D.6. Glass -- All glass to conform to City of Portland code safety impact requirements.
- D.7. Trash Chute Doors / Frame -- On (7) residential floors -- Replace existing with Midland or approved equal, model B-H, 15" wide x 18" h. x 1-1/4" thk +/- stainless steel rubbish intake door, s.s. top handle with key lock, 2" stainless steel trim with 3-1 /2" thick frame in chute. 1- 1/ 2 hr. fire label assembly. with door closer. Patch and repair 2-hr shaft wall integrity as required to accommodate new installation.
- D.8. Fasteners -- See Structural drawings for minimums. Locate and do not penetrate structural concrete deck pre-stressed tendons.
 - D.8.1. Alum. window sill -- Simpson Titen HD mini screws or approved equal at concrete --- typ. min. 1/ 4" dia. embed min. 1-3/4" at 16" o.c.
 - D.8.2. Hollow metal frame sill -- Powers Fasteners or approved equal at concrete --- Typ. min. 1 /2" dia. flat head sleeve anchor -- embed min. 2- 1/ 2" at 32" o.c. through metal support sleeve.
 - D.8.3. Hollow metal frame jamb --- Manuf. U-straps-- (4) min per jamb. Secure to framing with typ. min. (3) #8 Tek screws each side of strap. Secure jamb to floor at butt joint glass with angle clip and hit anchors to conc.
 - D.8.4. All window heads -- Steeler Tek screws or approved equal. Typ. min. #8 x 3/ 4" at 12" o.c.--secure to metal

- track.
- D.9. Hollow Metal Doors -- Ceco or approved equal, At exterior trash doors, to be exterior grade, Trio mode, 1 steel stiffened Laminated Core Door, 14 gauge, injected poly urethane foam, galvanneal steel, factory primed.

E. Door Hardware

- E.1. Door hardware list----- See Door Schedule and details.
- E.2. General items --- All doors to be a complete and functioning installation approved per code, City of Portland bldg. dept., including ADA approved hardware. All hardware finishes and lever style to match exist. bldg. standard unless noted otherwise. Supply and install all door hardware including temporary lock cylinders, with Schlage large size interchangeable core housing. Deliver key to PSU locksmith, and building and project managers. Coordinate with PSU all required card access control system installations.
- E.3. Demolished doors --- All existing hardware, on demo'd doors shown on demo plan, is to be removed, boxed, labeled, coordinated, and delivered to PSU locksmith. If existing office, restroom, or exit doors that remain in area of work don't have approved ADA hardware installation, then replace with new ADA lever/closer hardware described in these notes. Remove all existing wedge or other manual hold open devices from existing doors.
- E.4. Smoke Gaskets ----- See door hardware schedule.
- E.5. Standards --- Provide complete installation per ADA handicap accessibility standards. All hardware to be manufactured, specified, and installed per specifications and standards per the American Society of Architectural Hardware Consultants. Review all hardware operation settings with PSU locksmith prior to final city permit inspector review.
- E.6. Submittal List --- Provide to PSU a complete hardware submittal list for review and approval prior to ordering and construction.
- E.7. Closeout --- Provide to PSU, at closeout, complete hardware instructions, manufacturer's recommendations and specifications.

F. Signage

- F.1. Signage -- BY PSU -- New room and building interior signage per code, ADA, and PSU standard requirements .
- F.2. Accessible Parking Signs -- Include poles, signs and mountings. See 2/A4.3.
- F.3. Dorm Unit Number on Wall -- Protect existing to remain -- ADA mount with braille at dorm room entry.
- F.4. Dorm Unit Entry Door -- Remove existing numbers on door patch and paint existing sign anchorage holes.

G. Access Control

- G.1. PSU to provide, install, and activate access control low voltage cabling and devises.
- G.2. Contractor to provide complete installation in walls include conduit and boxes for card readers. Do not penetrate structure or existing fire walls.

H. Cabinetry / Woodwork

- H.1. New Cabinetry --- All woodwork and cabinetry to conform to "Custom Grade" - Architectural Woodwork Institute standards and specifications. Secure to wall and floor. Provide backing. Wood species to be Maple, stain-grade, plain sliced, book matched. Hardwood lumber for exposed and semi-exposed surfaces to be Maple. Hardwood Plywood species for exposed surfaces, including both faces of doors and drawer fronts to be grade "A" maple veneer with machine applied maple veneer self edge. Semi-exposed and concealed hardwood plywood surfaces to be Low pressure decorative overlay, color: White with machineapplied maple veneer self edge at semi-exposed surfaces and white at concealed surfaces. All hardwood surfaces to receive transparent finish with satin sheen in accordance to AWI and as recommended for Institutional use. Fasteners shall be size and type to suit application. Cabinet Hardware---- Concealed 110 degree min. European hinge, Blum or equal. Full extension drawer slides rated at 75 lbs. per pair at ADA units and 3/4 extension rated at 75 lbs. per pair at all other locations, KV or equal. 6" brushed nickel pulls with 3-3/4" drill spacing by Berenson or

approved equal. All shelves to be adjustable with a max. width of 3', 4" high recessed base, frameless Style-A, single length section Type II, flush overlay design-type 1-edges trimmed. Provide removable base cabinets below sinks for wheel chair ADA clearance access. 1/2" high lip on all upper shelves for seismic roll off prevention. See finish coating specification.

- H.2. Retrofit Existing Cabinetry -- Same specifications as new cabinetry except existing cabinet box to remain. Carefully remove existing doors, drawers, hardware, and face frames. Provide new Maple hardwood face frames, maple veneer plywood doors, drawer fronts, and panels on exposed sides of existing cabinet boxes. Provide new drawer bodies and interior shelves. Provide new hardware to include concealed European hinges, drawer slides, pulls, and door silencers.
- H.3. Countertop -- Wilsonart, Post-formed high pressure decorative laminate counter top, 2" nominal thickness-full bullnose front edge with 4" high squared off high pressure decorative laminate backsplash.

I. Interior Floor / Base / Surfaces (See Drawing Finish Schedule)

- I.1. Existing Floor / Base Finishes -- Remove existing carpet, sheet vinyl, cove base and resilient accessories in areas indicated to receive new finishes.
- I.2. New Carpet -- Shaw Contract, 24"x24" glue-down carpet tile-quarter turned, or 18"x36" accent carpet tile as indicated. See color and style listed on drawing finish schedule. Manufacturer listed or approved equal.
- I.3. Resilient Flooring -- See color and product description listed on drawing finish schedule. Manufacturer listed or approved equal.
- I.4. Rubber Base / Accessories -- Johnsonite, TightLock wall base for carpet and resilient flooring. Provide appropriate Johnsonite or Roppe resilient accessories at transitions between flooring types at all door openings and/or as indicated on drawings. See colors listed on drawing finish schedule. Manufacturer listed or approved equal.
- I.5. Ceramic Tile --- American Olean, 2x1 unglazed porcelain mosaic tile. See color and product description listed on drawing finish schedule. Manufacturer listed or approved equal.
- I.6. Tile Thinset --- Bostik or approved equal. Secure tile with adhesive per manufacturer approved assembly of coated glass mat backer board and water proofing membrane. Floor Water-proofing membrane to lap walls 4". Slope floors to drain. Installation method per Tile Council of America Handbook and American National Standard Specification for Installation of Tile.
- I.7. Tile Grout --- Mapei grout or approved equal. Color samples to be selected and approved.
- I.8. Walk-off Carpet -- Connexus Super NOP 52 Tile, glued down, quarter turn installation as indicated on plans. See color and style listed on drawing finish schedule. Manufacturer listed or approved equal.
- I.9. Floor Hole Patching --- Verify with Structural Engineer. Min fire rating at floors to be 2-hr.
- I.10. Roll-in Shower Walls and Base -- Swanstone or approved equal. ADA model SBF3464 base and 5-piece shower: 1/4 " thk. walls x 72" ht. solid surface type. See color listed on drawing finish schedule. Model will allow for thinset tile floor installation abutting shower base for ADA height.
- I.11. Wainscot -- Marlite or approved equal , Standard FRP 3/ 32" thk. pebbled surface black #P-807 with top alum. trim. Secure to wall with manufacturer's adhesive.



PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

- 1. See specification sheet for notes.
- 2. See Schedules for other specification notes.

4/17/12
 issued for bid/permit

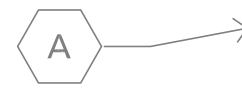


FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

Specifications 1 of 2

Revisions :	Date :
	4/17/12
Drawn :	
Checked :	

A3.1



J. Paint / Coatings / Colors/ Sealants

(See Material / Room / Finish Schedule drawings)

- J.1. **Products** --- Include (3) 8-1 /2 x 11" draw-down samples of each color on material for review.
 - J.1.1. **Paint**--Acro Pure, Miller or approved equal, water based, eggshell sheen unless noted otherwise. Primer and (3) finish coats.
 - J.1.2. **Clear Finish -- Wood** -- PolyWhey by Vermont Natural Coatings or approved equal, water based, satin sheen , clear natural coating for wood. (4) coats.
 - J.1.3. **Painted Metal Doors with Window and Door Frames** -- 100% Acrylic for use on metal, PPG Pitt. Tech. or approved equal, water base, semi-gloss sheen. Primer and (3) finish coats.
 - J.1.4. **Interior Wood Stain** --- Woodtone Series Tint by Vermont Natural Coatings or approved equal.
 - J.1.5. **Linseed Oil** -- Valspar or approved equal min (2) coats rubbed after clean existing surface.
 - J.1.6. **Interior Joint Sealers** -- Silicone GE, Dow, or approved equal. Sanitary type at bathrooms.
- J.2. **Interior Walls, ceilings** --- Paint all new gyp brd. walls and ceilings. Paint all existing interior painted areas including gyp.brd walls and ceilings, and concrete ceilings, and masonry walls. See color and product description listed on drawing finish schedule. Manufacturer listed or approved equal. Paint WIFI exposed wire mold to match existing surfaces. Protect all Electrical or WIFI exposed wiring or boxes. Refer to ceiling specifications for types of ceilings.
- J.3. **Interior Hardwood Doors** -- Existing Doors ---Oil rubbed. Clear Finish : Color -- Natural wood -- Clean existing wood prior to application. Putty sign holes compatible color and material to door finish. **New Doors** stain to match existing.
- J.4. **Metal Doors and Frames / Metal Window Frames in Doors** -- Paint : See color and product description listed. Manufacturer listed or approved equal.
- J.5. **Hardwood Cabinets** --- Clear Finish : For New Maple finish.
- J.6. **Parking Stripes and painted signage** -- Parking deck -- Sherwin Williams, Seffast Waterborne pavement marking paint, or approved equal. Comply with Manufacturer's product data, technical bulletins, and catalog and container application instructions. See 4 & 5/A4.3.
- J.7. **Parking Deck Concrete Sealer** -- Parking deck -- Ardex CG, Concrete Guard, or approved equal. Comply with manufacturer's technical specifications, including but not limited to surface preparation, recommended tools, mixing and application. Apply after low areas (where ponding occurs) have been filled and properly cured.
- J.8. **Seal Exterior Brick Masonry** -- Provide and install penetrating water repellent by Evonik Industries, Chem-trete BSM-40VO; PROSOCO Inc, H40C ; Chemical Products Industries Inc, Siloxane concentrate WB; or approved equal.Provide compatibility with other products on or adjacent to Brick including sealants, fillers, and caulking.. Pressure wash and clean existing Brick Masonry and allow to thoroughly dry prior to product installation. Re-Caulk and fill all joints and around doors and windows, vent / pipe and other penetrations. Provide a sample application at 8' sq. area at unseen area of bldg. for approval prior to complete application. Apply a heavy, full saturation coating to building per manufacturer's recommendations and specifications. Provide a manufacturer's technical representative to inspect and approve cleaned existing surfaces prior to application. Approve and provide acceptance testing in a written report delivered to the owner's representative with a Certified written Warranty period of 10 years.
- J.9. **Exterior Joint Sealant at Exterior Masonry and Windows.** -- Dow Corning 790 series or approved equal. For metal to metal, masonry, or vinyl. Verify color to match surrounding surface. Furnish and install in coordination with the exterior brick masonry sealing process. Provide compatibility with surrounding sealants and surfaces with no staining. Provide a Certified written Warranty period of 10 years.
- J.10. **Parking Deck Repair/Fill Mortar** -- Parking deck -- Ardex ERM, Exterior Ramp Mortar or approved equal. Comply with manufacturer's technical specifications, including but not limited to substrate preparation, recommended tools, mixing and application, thickness of installation,and curing. Prepare low areas as noted in "Substrate Preparation", removing not more than 1/4" depth of the existing slab.
- J.11. **Parking Deck Caulking** -- Waterproof caulking at new or existing cracks.
- J.12. **Material Finish Color Schedules** -- Provide items as noted on schedule sheets on drawings.

- J.13. **Interior Stairwell Wall Joint Sealant** -- At 2nd and 3rd floor south stairwell --- seal vertical wall joint between masonry and concrete. Dow Corning 790 series or approved equal. Match surrounding surface color. Provide backer rod at joint opening greater than 1 /4" wide.
- J.14. **Paint all areas / surfaces** that are part of demolition or new work. At Existing + New Wall Blocking, Patching / Painting -- Paint as required at new and existing gypsum brd walls at all new or re-installed installations of electrical, mechanical, plumbing, or other new product or reinstalled items, including grab bars, recessed medicine cabinets , bathroom specialty items, trash chute doors, elect. wall heaters, outlets, lights,switches, and mechanical grilles in wall surfaces.

K. Furnishings (See drawing finish schedule)

- K.1. **Window Blinds** -- Replace existing draperies with new vertical blinds to match existing at all residential unit bedroom and living room windows. Lotus, Economy vertical blind or approved equal. At residential units, verify larger window configuration at 9th floor corners. On 3rd thru 8th floors, verify additional windows at living room perimeter end walls.
- K.2. **Closet Shelf and Rod.** --- Closet Maid or approved equal. At new ADA residential closets, 12" deep white vinyl coated ventilated steel wire construction with end wall supports and center support angle support.

L. Appliances (See drawing - Interior material color finish schedule)

- L.1. **Kitchen Appliances:** At all dorm units complete furnish and install all new appliances to include range / ovens and refrigerators. For specification and model no., see Interior material color and finish schedule drawing. Verify all locations and clearances. Remove existing appliances.

M. Insulation, Fire Caulk and Safing

- M.1. **Ceiling Insulation Batts** -- Salvage, protect, and re-use existing insulation.
- M.2. **Wall Insulation Batts** -- Approved smoke / flame spread ratings per code. Certainteed, Greenguard certified or approved equal R-11 unfaced acousta-batts .
- M.3. **Fire Caulking / Fire Safing** --Manuf. 3M, STI, or approved equal -- 2hr. rated include at penetrations at floors, roof, fire rated walls, concrete block walls, stairway or shaft walls, fire corridors, mechanical /electrical rooms, and vertical pipe and duct chases thru floors.

N. Ceilings

- N.1. **Existing Interior Suspended Acoustical Ceilings** -- At existing ceilings to remain--Patch and repair damaged grid or wiring supports as required. Replace with typical new interior ceiling tiles specified below.
- N.2. **Existing Interior Painted Ceilings** --- Clean and paint.
- N.3. **Existing Interior Gypsum Board Suspended Ceilings** -- ---on suspended metal framing ceiling -- patch/paint and repair as required.
- N.4. **Existing Interior Exposed Painted Structural Concrete Ceilings** -- Clean and Paint
- N.5. **Typical New Interior Ceiling Tiles at Existing Installations** -- in Existing ceiling grid locations replace existing ceiling tile with new Armstrong or approved equal "Dune" tegular 2 x 4' with 2 x2' scored "second look" ceiling tiles. Verify existing grid style to fit tile.
- N.6. **New Interior Suspended Acoustical Ceiling** -- New Suspended Acoust. Lay-in Ceiling--Armstrong " Dune" or approved Tegular 2' x 4' tile with 2x2' score lines to match grid width. Color white. New Heavy-duty exposed white "T" grid--Prelude XL 15/16" exposed T system. Secure to floor structure above. Seismic braced as required by latest code. Contractor to provide and submit ceiling engineering to City Bldg. Dept. as required.
- N.7. **New Exterior Suspended Acoustical Ceiling** -- At Parking -- New Armstrong or approved equal, Ceramguard #605 fine fissured, white textured, 2 x4 ceiling non-perforated tile, fire resistive, for exterior locations. Ceiling grid for exterior location type square lay in type, 15 /16" wide, white, heavy duty 2' x 4' grid corrosive resistant model Prelude 24TLX (56 guage) with universal retaining clip, .

- N.8. **Exterior Gypsum Soffit Board Ceiling** -- At Parking -- Patch and match existing as required.
- N.9. **False Beams** -- At Lounge -- Painted Gyp.Brd on Metal Stud Framing Ceiling - 5 /8" type X gyp. brd on metal framing at 16" oc. See details.
- N.10. **Typical New Acoustical Suspended Ceiling Details** -- Ceiling installation to be per latest city of Portland approved IBC / 25 / # 2 standards.
 - N.10.1. **Hangers** -- Provide additional hangers at all members within 8" of the ceiling perimeter.
 - N.10.2. **Hanger connection devices** --Secure all hangers to bldg. structure with approved connector of min 100 lb. capability.
 - N.10.3. **Stabilizer bar** to be between all members at ceiling perimeter.
 - N.10.4. **Vertical Struts** -- to be at 12" o.c. each way.
 - N.10.5. **Sloped Hangers** -- Provide (2) counter slope hangers if more than 1 to 6 out of plumb.
 - N.10.6. **Trapeze Hangers** around ductwork and other large obstructions.
 - N.10.7. **Ceiling Grid** -- Suspended ceiling grid to be Heavy Duty type.
 - N.10.8. **Runners** -- Secure cross runners between main runners.
- N.11. **New Interior Ceiling -- Suspended Metal Framing w/ Gypsum Board** -- 5/8" typ. X gypsum bd. on new suspended metal framing to match existing. Use water resistant 5 / 8" type X gyp. brd. at ceilings over showers and bathtubs.
- N.12. **New Interior Ceiling -- Metal Stud Framing w/ Gypsum Board** --At Dorm Units---new closet ceiling--- 5/8" type X gypsum bd. on new metal stud framing horizontally at 16" o.c.
- N.13. **New Interior Ceiling Gyp.Board** -- Typ. 5 /8" type X Gypsum Board -- Georgia Pacific, Greenguard certified, or approved equal, smooth finish. At Bathtub and Shower walls / ceilings -- to have US Gypsum Greenboard water resistant 5 /8 " type X gyp. bd. or approved equal.

O. Audio Visual

- O.1. **AV Equipment and Cabeling** -- Protect Existing.

P. Telco

- P.1. **Telephone and Computer Network Cabling and WIFI** -- by PSU Dept. of OIT. Coordinate as required for complete installation. All cable and conduit to be concealed. PSU to remove WIFI transmitters in corridors and other locations prior to painting and to reinstall after painting is complete.

Q. Lighting / Electrical

- Q.1. **Electrical and Lighting** --- See Electrical Engineer's drawings for more information. Provide and install all code required minimum electrical and lighting items including, ADA door bells, occupancy sensors, GFI outlets, emergency lighting, illuminated exit signs, alarms, and strobes. All mounting heights to be per ADA standards.
- Q.2. **Traffic Monitor** -- NOT REQUIRED

R. Mechanical

- R.1. **Mechanical** -- See Mechanical Engineer's drawings for mechanical items.
- R.2. **Balance HVAC system**--- to code requirements and provide engineered approved report for PSU Mechanical Engineer review and approval.

S. Plumbing

- S.1. **Plumbing** -- See Mechanical Engineer's drawings for plumbing items.

T. Fire Sprinklers - Alarms

- T.1. **Fire Sprinkler System** -- Verify and protect existing Sprinkler System at existing ceilings and walls. All new work to conform to NFPA and include demolition, relocation, materials and labor for a complete code compliant installation. New work locations to include 1st floor expanded ADA restroom, 1st floor lounge new false beam area, and expanded closet and bathroom area at (4)new ADA units on 3rd floor.

- T.2. **Sprinkler and Fire Alarm Dwg. Approvals** -- Submit to city fire marshal and provide PSU with City of Portland fire marshal signed and dated approved fire sprinkler / fire alarm drawings. Refer to Electrical Engineer drawings and specifications for additional requirements.

U. Specialties

- U.1. **Towel Bars / Hooks**--Provide (2) new Bobrick B-6747 - satin finish, 24" surface mounted towel bars and (2) Bobrick B -6777 - satin finish, Towel Pin, or approved equal, in each residential bathroom. See plans and elevations for locations and lengths.
- U.2. **Grab Bars**-- 1-1/2" dia. grab bars, concealed mounting with snap flange, Bobrick B-6806 Series with satin finish, or approved equal. Install in accordance with ADA Guidelines, local codes, and per manufactures instructions and recommendations. ADA designated bathrooms only -- See plans and elevations for locations
- U.3. **Shower Curtain / Hooks** -- Provide vinyl shower curtain and hooks - Bobrick 204-2, 42" and 204-3, 70" vinyl shower curtain, or approved equal as appropriate for tub/shower type. Bobick 204-1 Type 304 Stainless Steel Shower Curtain Hook, or approved equal.
- U.4. **Toilet Tissue Dispensers** -- Toilet Tissue Dispenser type--recessed or surface mounted--to match existing. Bobrick, B-76857 Surface Mounted, satin finish, or approved equal. Bobrick, B-6677 Recessed, satin finish, or approved equal.
- U.5. **Shower / Bath Curtain Rods** -- Moen or approved equal. 1" dia brushed nickel finish low profile curved rod with mounting brackets and covers. DN2145 for 5' tub / showers and similar for 3' showers. Verify all existing finished dimensions for product fit.
- U.6. **Mirrors** -- At ADA bathrooms provide 24"W x 30"H Bobrick, B-294 Series Angle-Frame Two Position Tilt Mirror--satin finish, or approved equal, at sink location. At all other residential unit bathrooms provide 30"W x 36"H Bobrick, B-165 Series Channel-Frame Mirror--satin finish, or approved equal, at sink location.
- U.7. **Medicine Cabinets** -- Replace existing medicine cabinets with new. Bobrick or approved equal B-398, 15" w x 25"h x 3-1/2"d +/- recessed mounted , satin finish. Verify fit for new dimensions with existing opening on site. ADA approved mounting ht. 40" max to bottom of mirror.
- U.8. **Out-going Mail Box:** -- Auth-Florence or approved equal to model 130R, 14" w. x 22" L. x 6" d. comply with US postal service req'ts. and ADA mounting ht. alum. box recessed in wall flush with existing , with letter slot and lockable door. Remove / sawcut existing out going box from existing wall boxes, block, and provide new face trim frame and face to match existing finish.

V. MISCELLANEOUS

- V.1. None

W. ALTERNATE BID ITEMS

Alternate Bid Items: (ABI #s)

1. Omit exterior sealant and caulking at the entire building exterior brick masonry.
2. Reduce grade of carpet and flooring.
3. No Window coverings.
4. At Lounge Ceiling : Use the existing ceiling grid. Do not install false beam detail.
5. Parking lighting to be design-build option to performance specification.
- 5a. Parking garage lighting.
6. Omit all work inside of Boiler room.
7. Relocate Telco boxes away from both living room and bedroom heaters.
8. No Window replacement
9. No new light fixture at dorm unit living room.
10. No new Electrical heaters at dorm unit bdrooms and living rooms.
11. Includes Construction work for 1st and 2nd floor parking garage area, interior ceiling and wall finishes, deck maintenance, paint, ceiling, signage, and lighting. Does not include interiors of enclosed rooms or stair wells adjoining the parking structure area or anything above the suspended ceilings
12. Add for the demolition of the 12" x 12" access panels in the 8th floor unit bathrooms and replace with 18" x 18" access panels..

ABI # 1-12

PSU Facilities and Planning
Joseph C. Blumel
Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

1. See specification sheet for notes.
2. See Schedules for other specification notes.

4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

Specifications 2 of 2

Revisions : 5 / 4 /12 ADDENDUM #1	Date : 4/17/12
Drawn :	
Checked :	

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

1. See specification sheet for notes. A
2. See E4.0 for lighting demolition.

ABI # 11

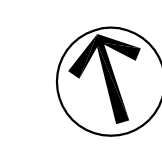
4/17/12
 issued for bid/permit



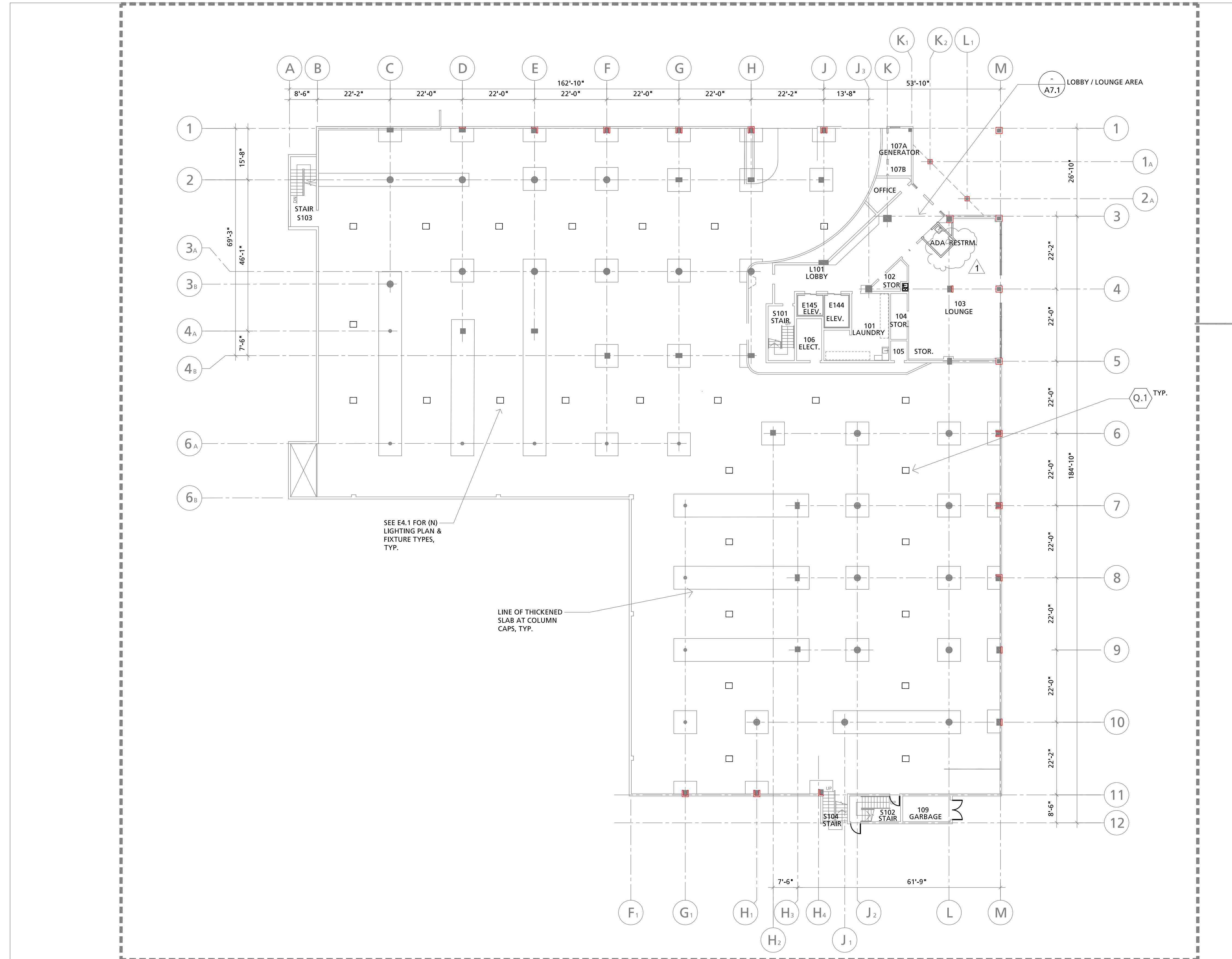
FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

1st Floor Reflected Ceiling Plan-Parking

Revisions :	Date :
1 5 / 4 /12 ADDENDUM #1	4/17/12
Drawn :	Checked :



A4.2



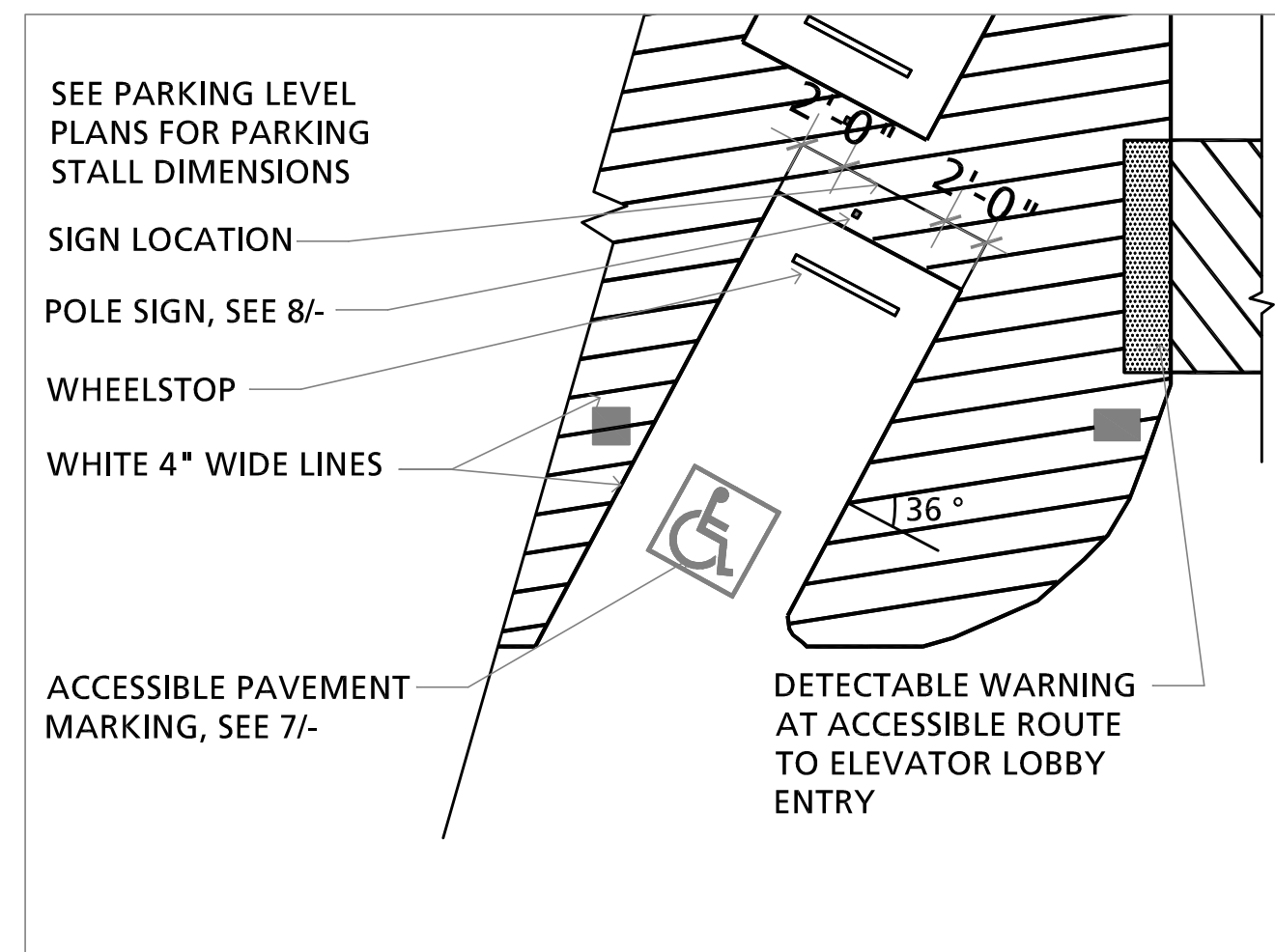
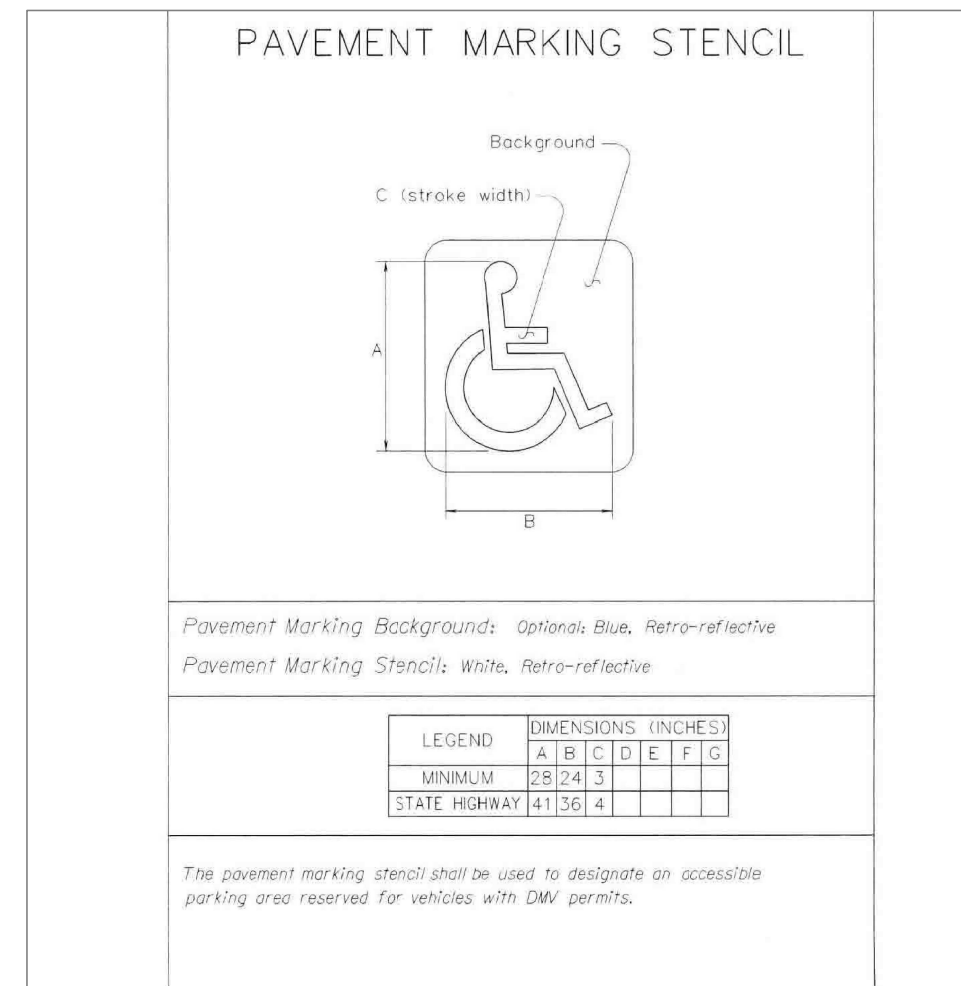
1st floor reflected ceiling plan

1/16" = 1' - 0"

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

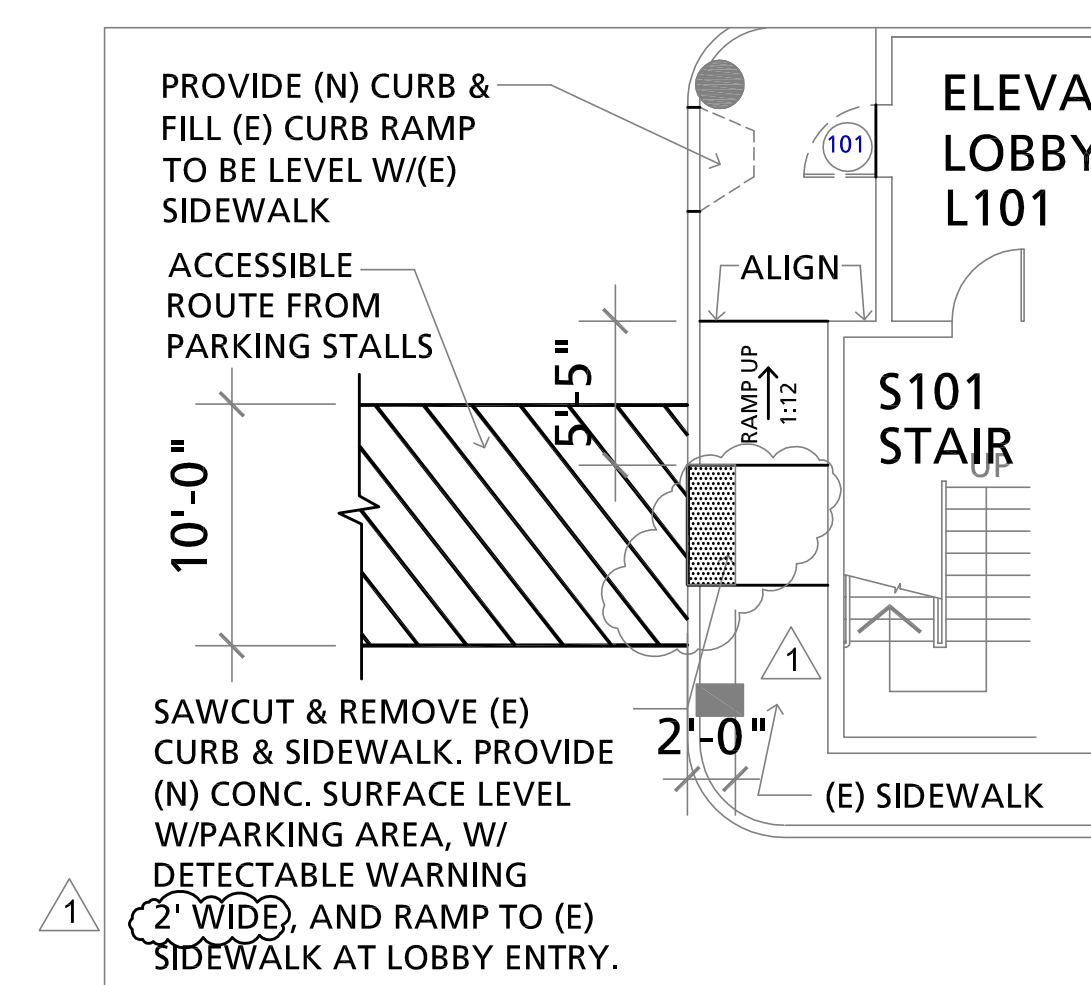
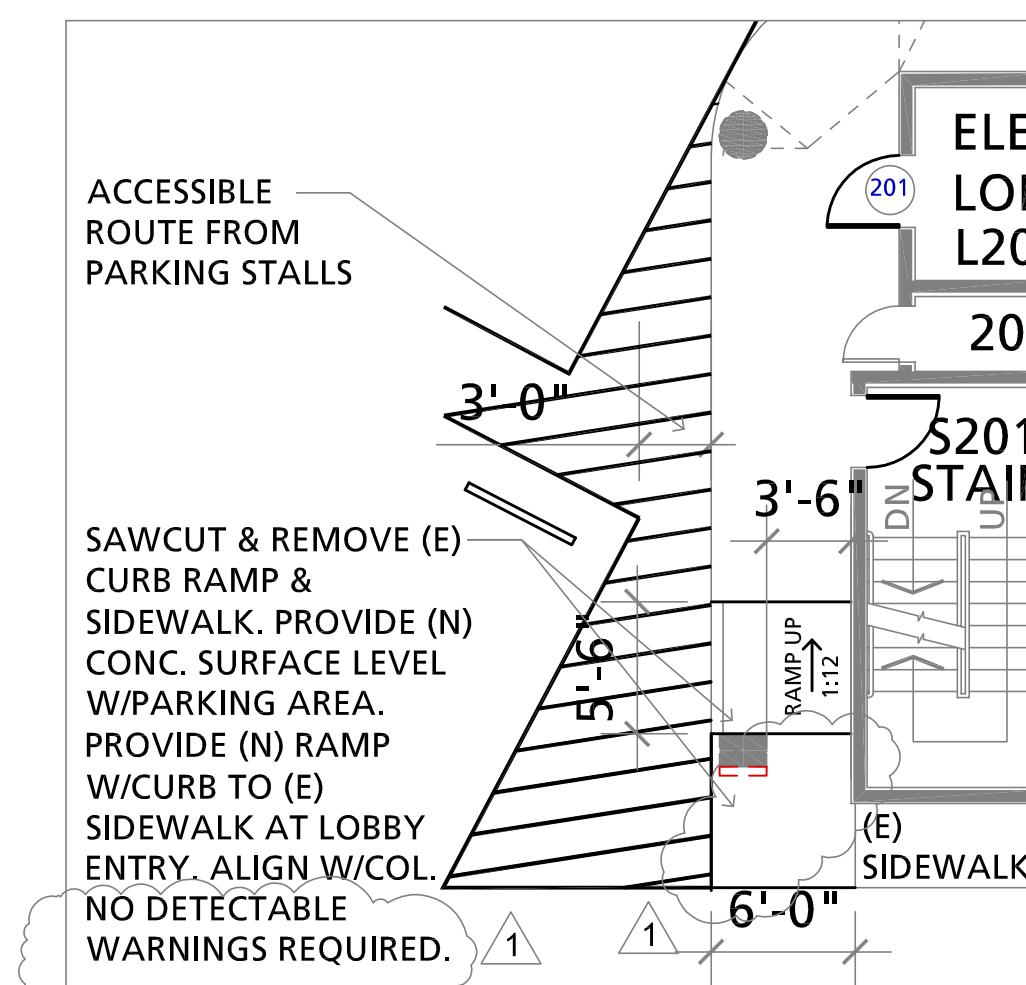
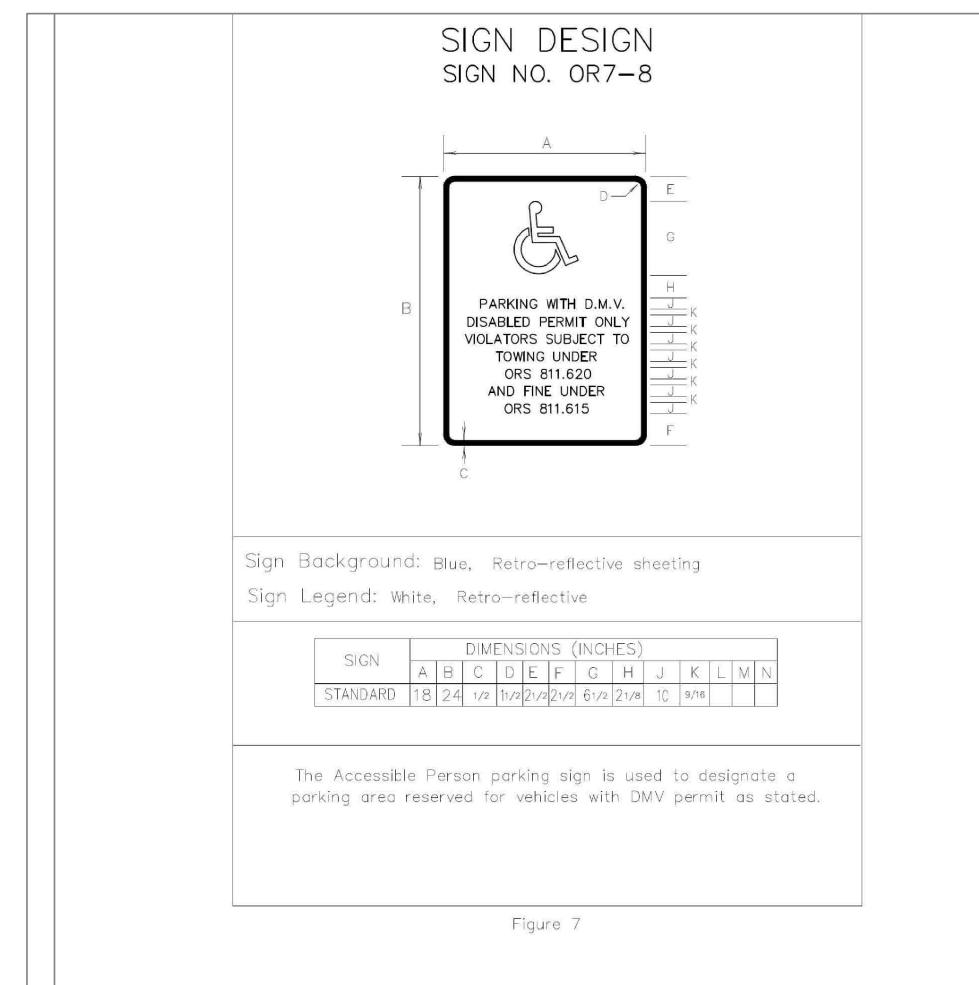
Notes

1. See specification sheet for notes. R



7 accessible pavement marking
 - NO SCALE

4 accessible parking stalls
 -



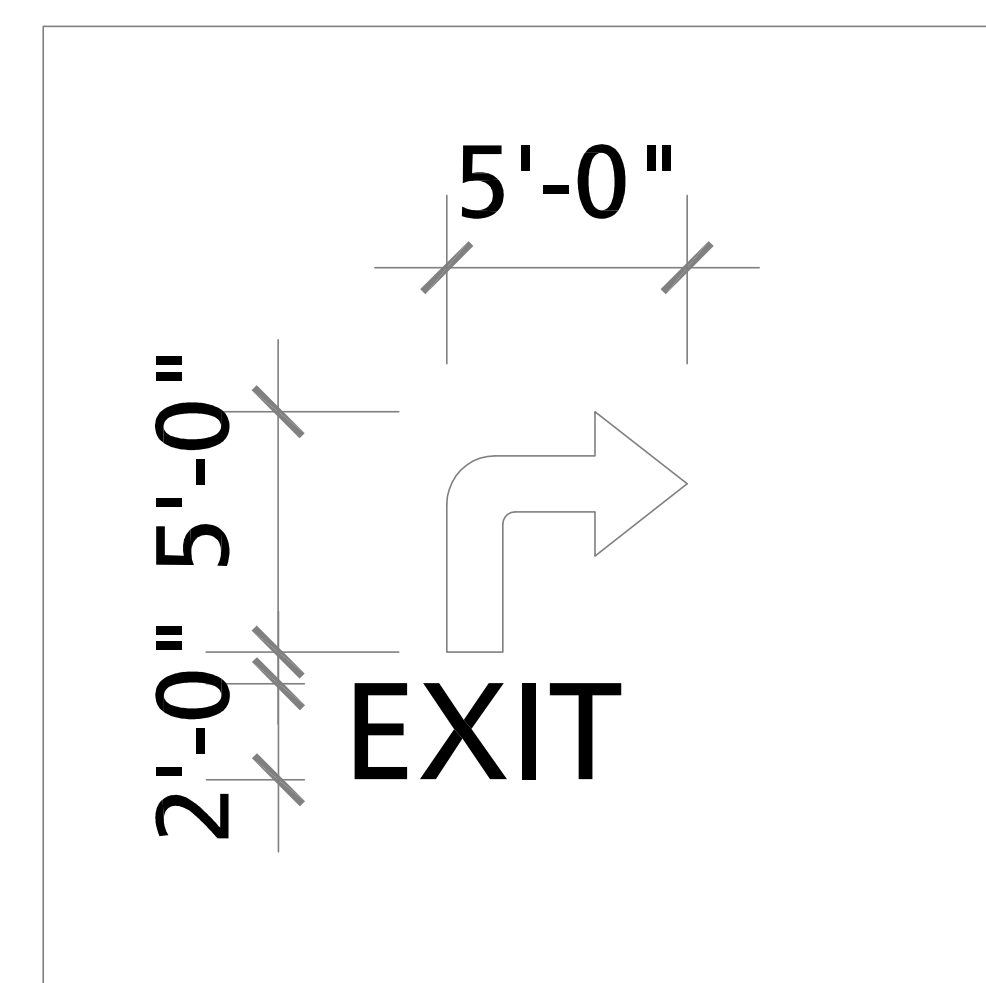
8 accessible parking pole signage
 - NO SCALE

5 curb ramp @ park'g level 2
 - 1/8" = 1' - 0"

2 curb ramp @ park'g level 1
 - 1/8" = 1' - 0"



6 typ. signs
 - NO SCALE



3 directional arrows
 - NO SCALE

4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

Revisions :	Date :
1 5 / 4 / 12 ADDENDUM #1	4/17/12

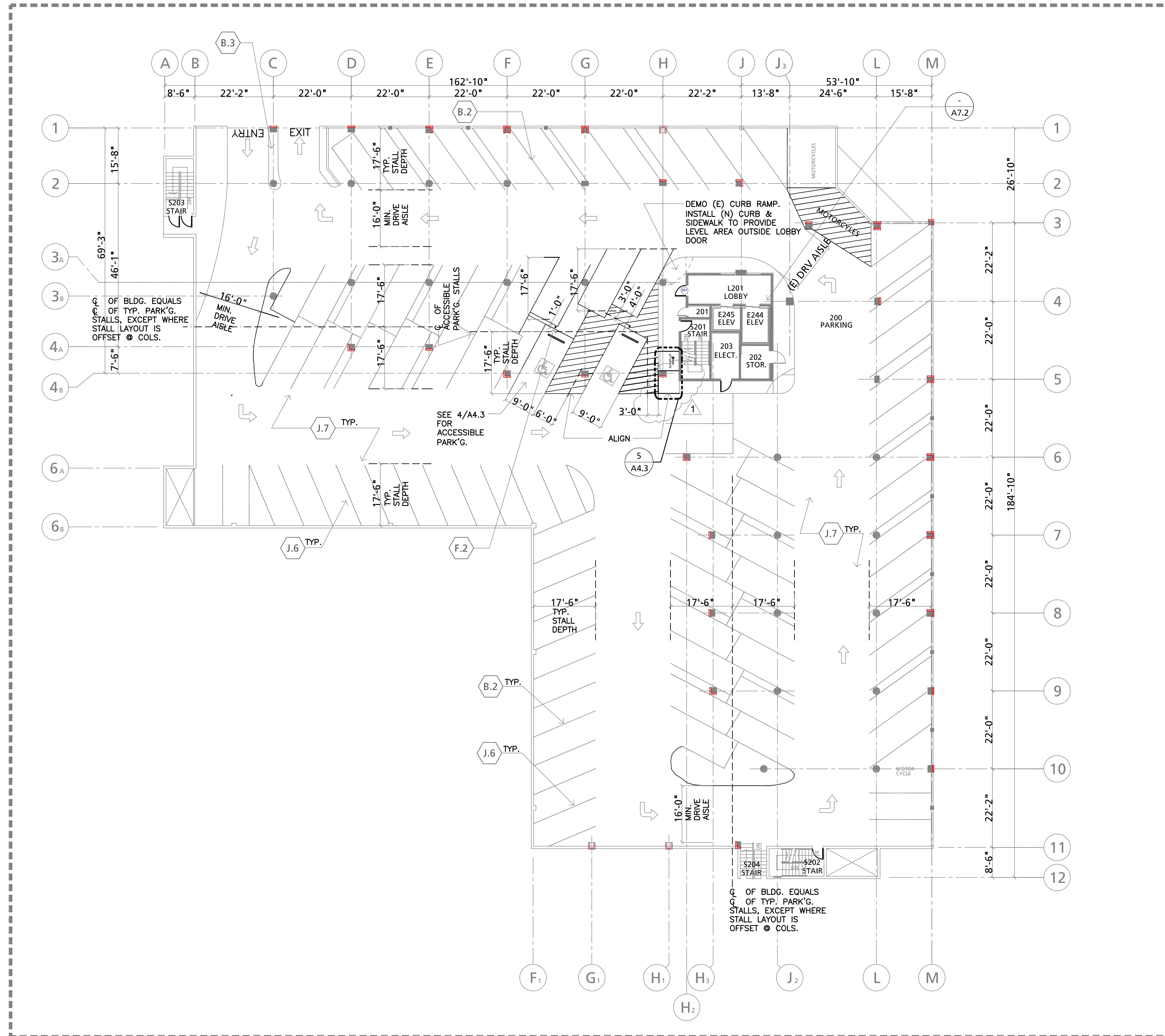
Drawn :

Checked :

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

1. See specification sheet for notes.
2. Prior to paint stripping removal, inventory parking stall layout and total spaces. Replicate layout and number of spaces, with the exception of the accessible parking and minimum drive aisle areas.



ABI # 11

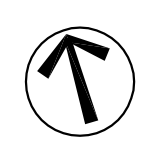
4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

2nd Floor Plan - Parking

Revisions :	Date :
1 5 / 4 / 12 ADDENDUM #1	4/17/12
Drawn :	
Checked :	



2nd floor plan - parking

1/16" = 1' - 0"

A5.1

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

1. See specification sheet for notes.
2. See E5.0 for lighting demolition.

ABI # 11

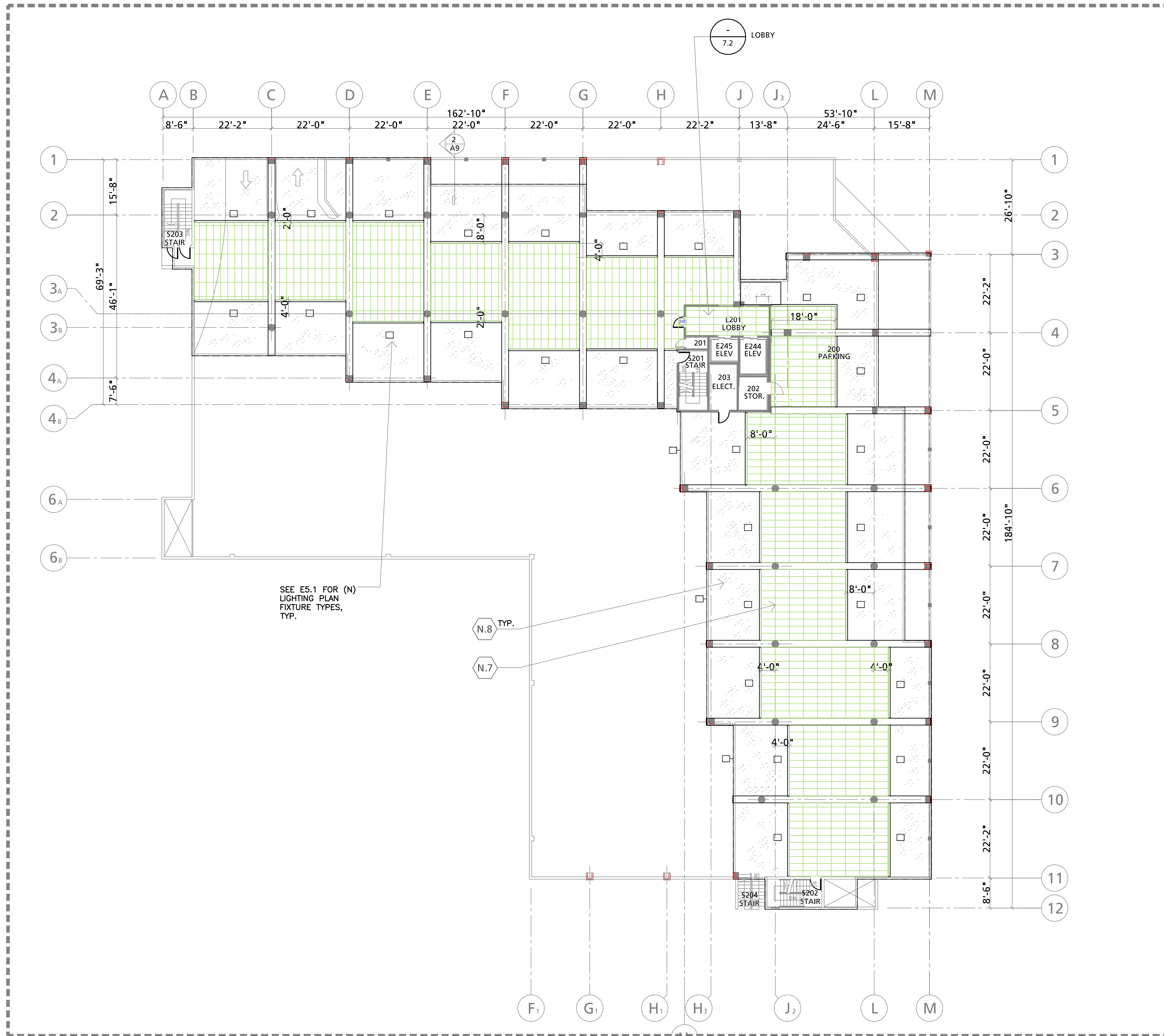
4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

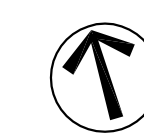
Revisions :	Date :
	4/17/12
Drawn :	
Checked :	

A5.2



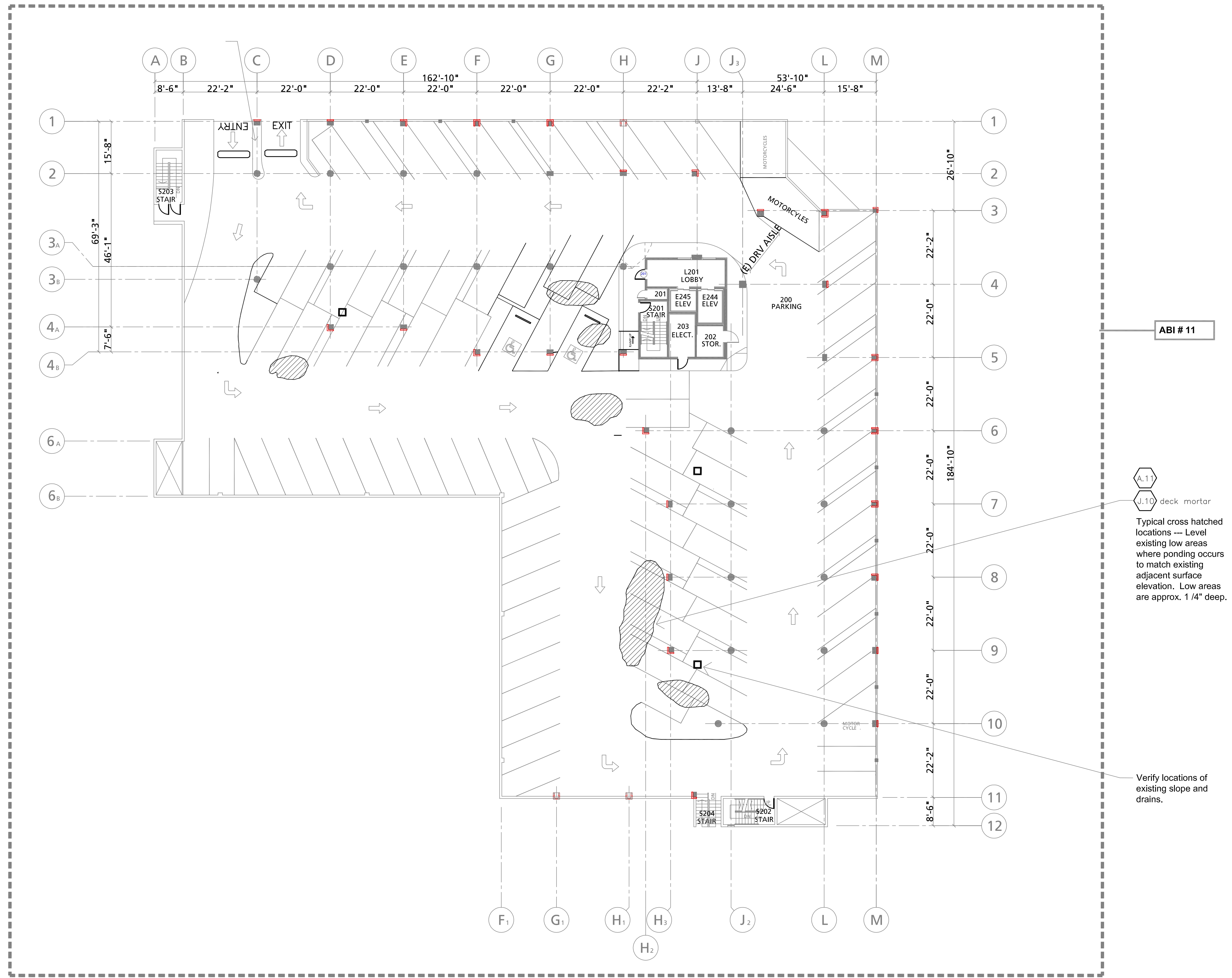
2nd ceiling w/ demo

1/16" = 1' - 0"



Plan Notes

1. See specification sheet for notes.



4/17/12
 issued for bid/permit



2nd Floor Plan
Ponding Repair

Revisions :	Date :
	4/17/12
Drawn :	
Checked :	

A5.3

2nd floor plan - ponding repair

1/16" = 1' - 0"

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

- 1. See specification sheet for notes.

4/17/12
 issued for bid/permit



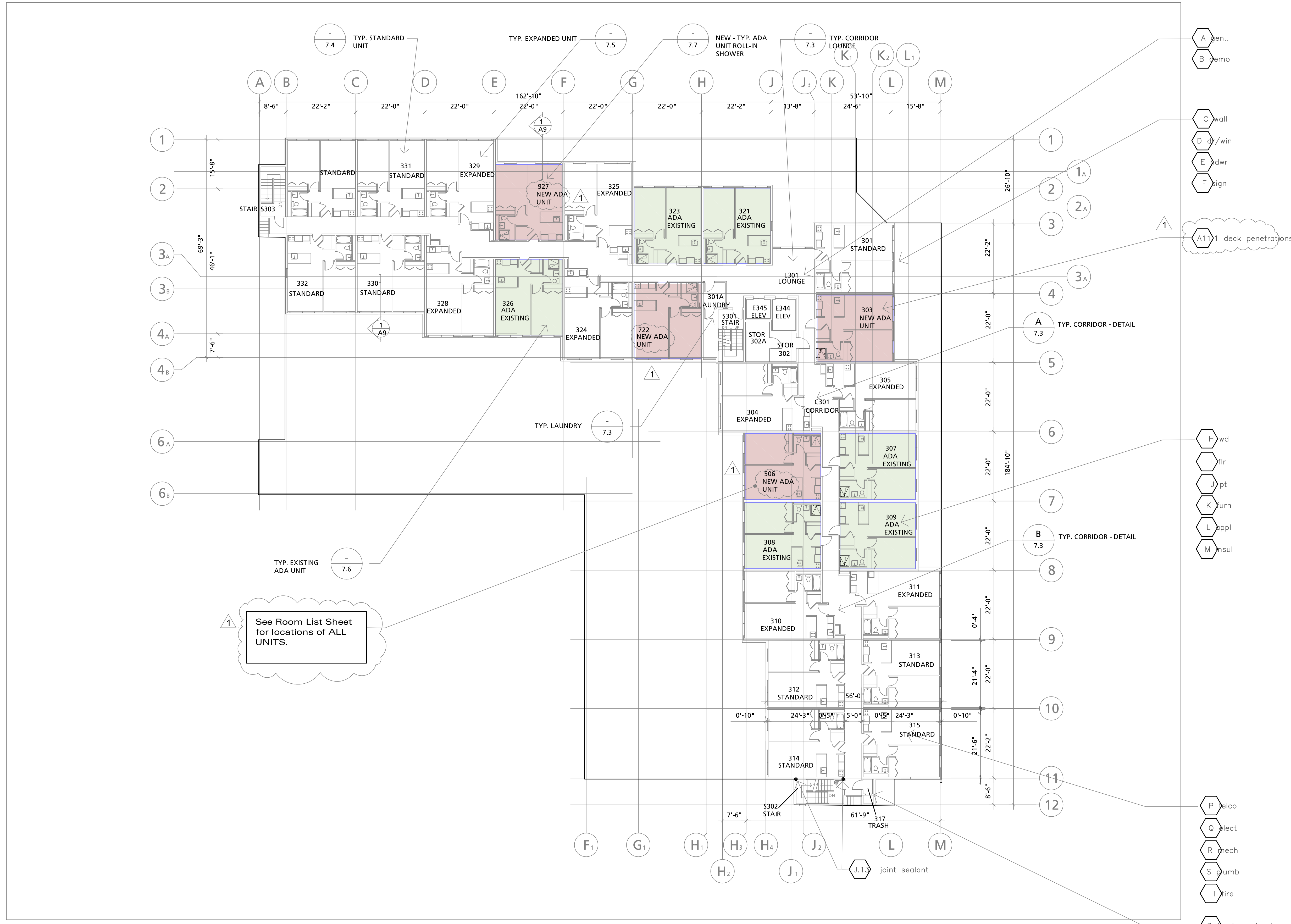
FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

3rd - 9th Floor Plans

Revisions :	Date :
5 / 4 / 12 ADDENDUM #1	4/17/12

Drawn :
 Checked :

A6.1



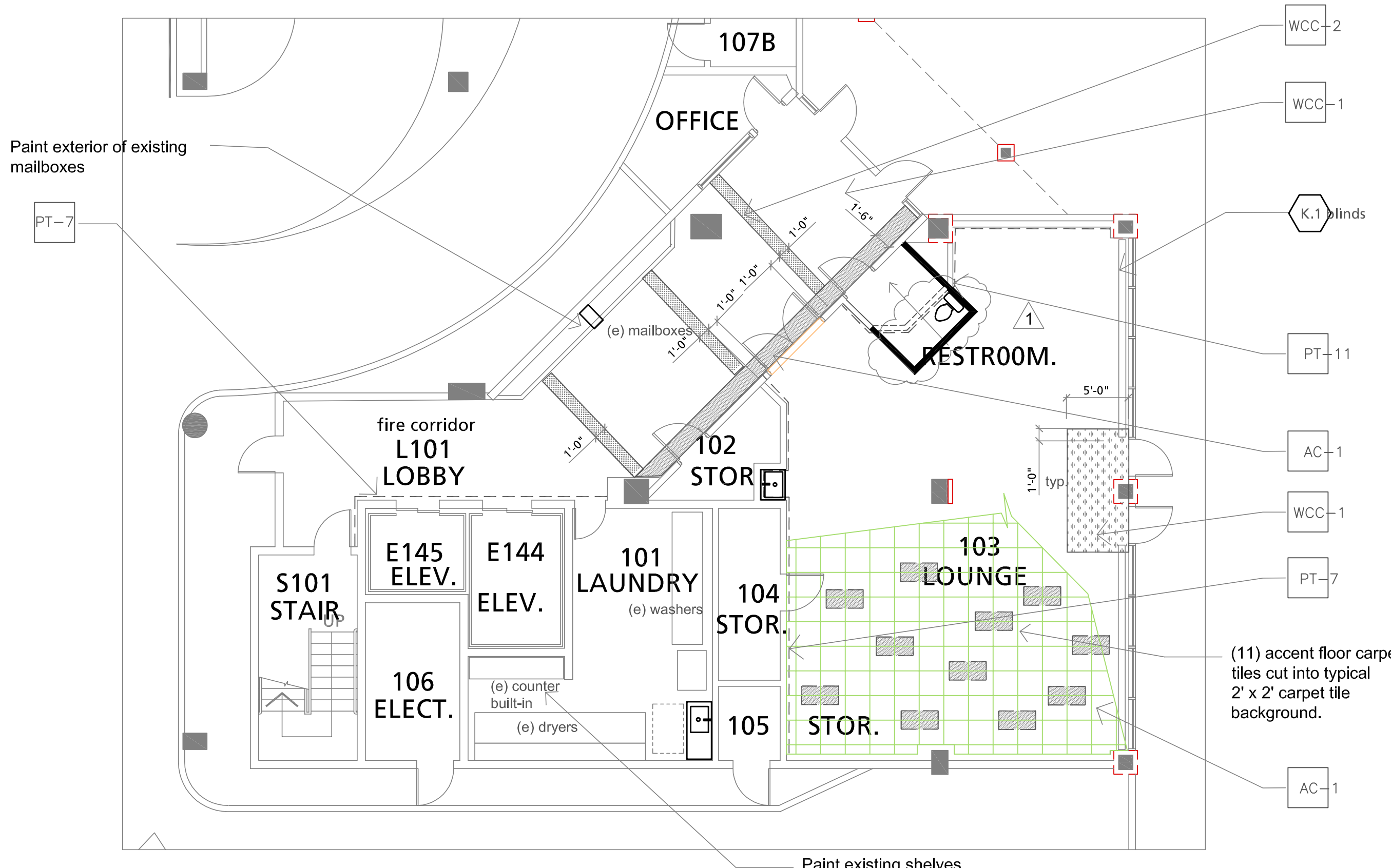
typ.3rd thru 9th floor (see enlarged plans for details)

1/16" = 1' - 0"

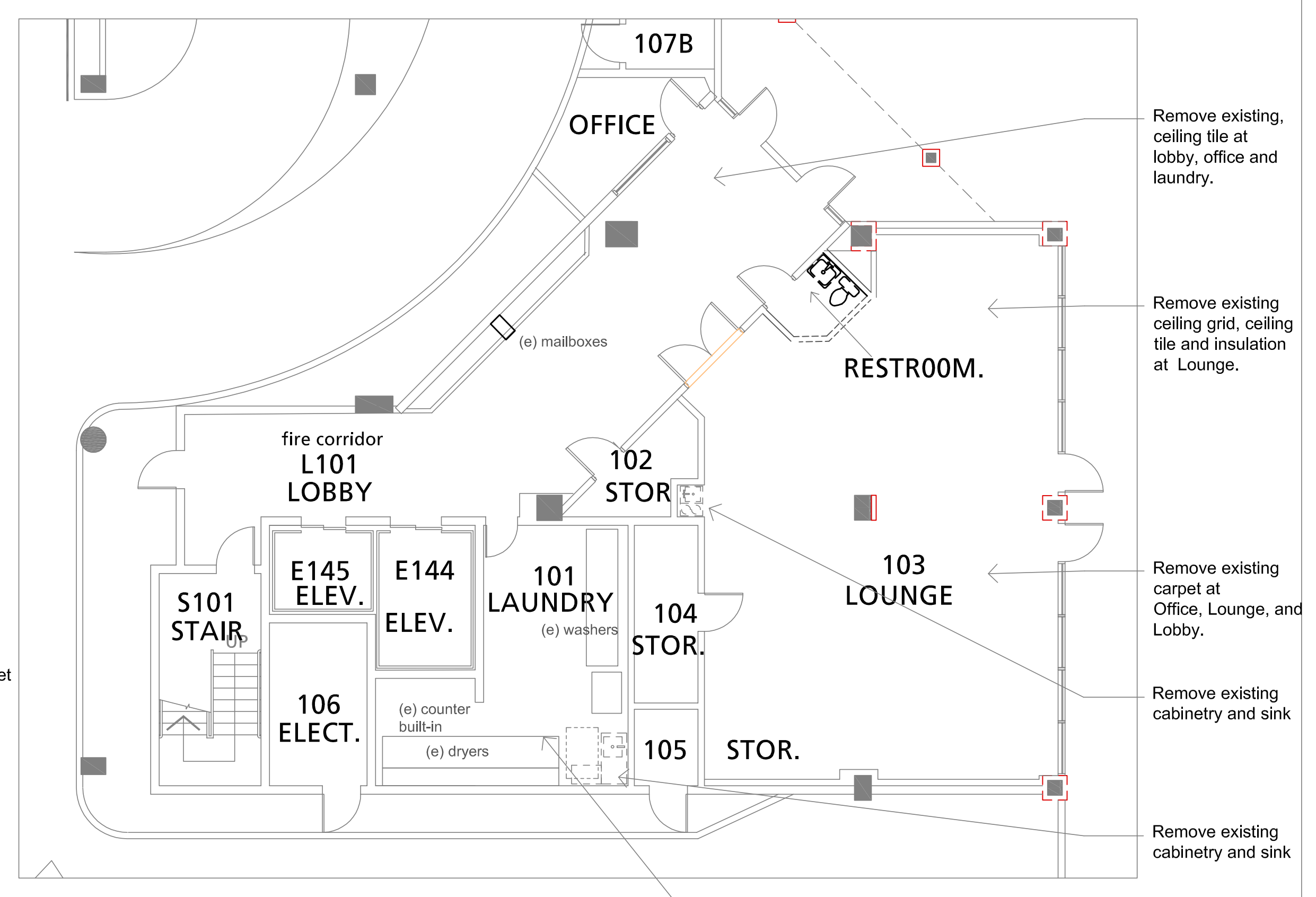
PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

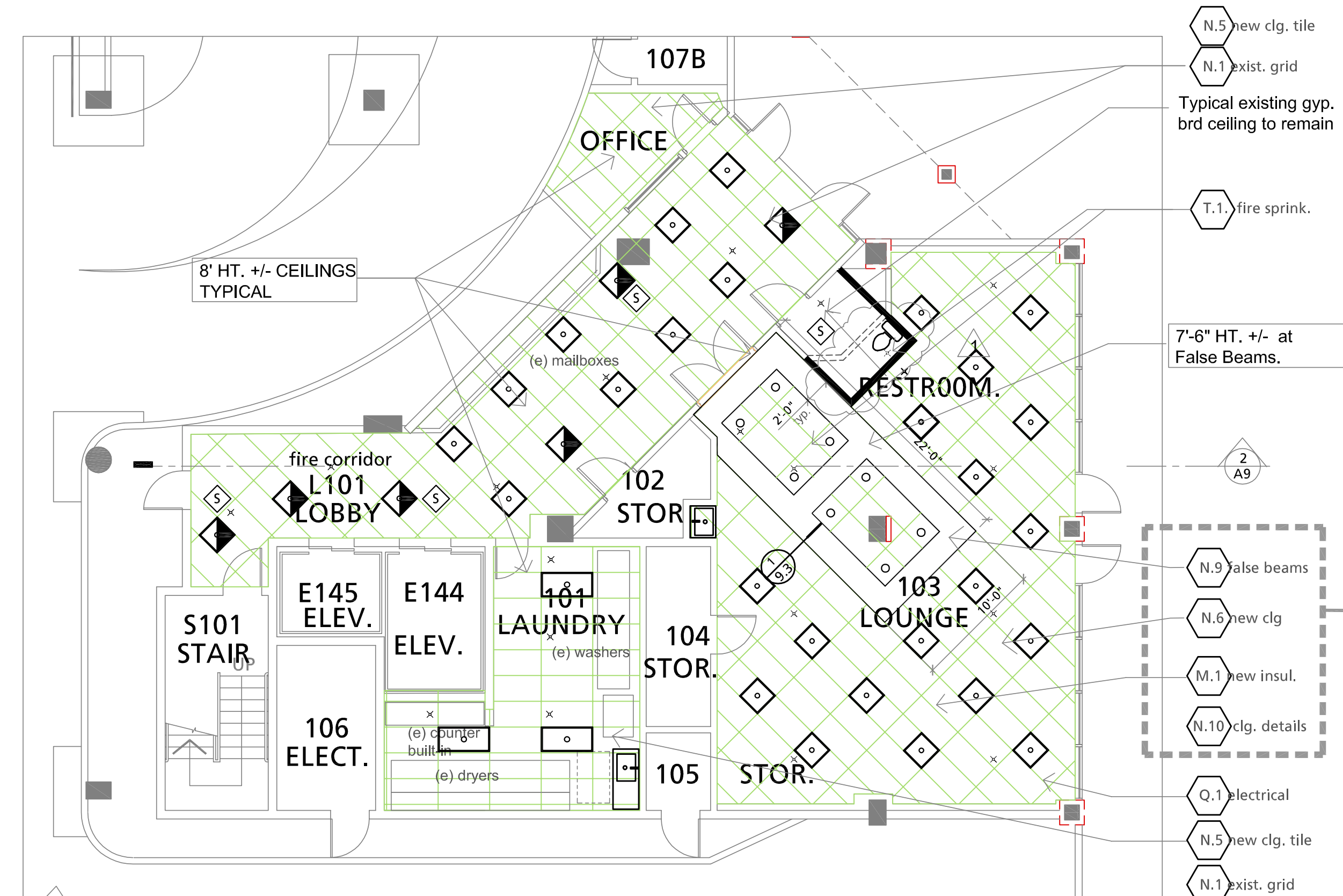
1. See specification sheet for notes. A
2. See Finish Schedule for finish notes. PT



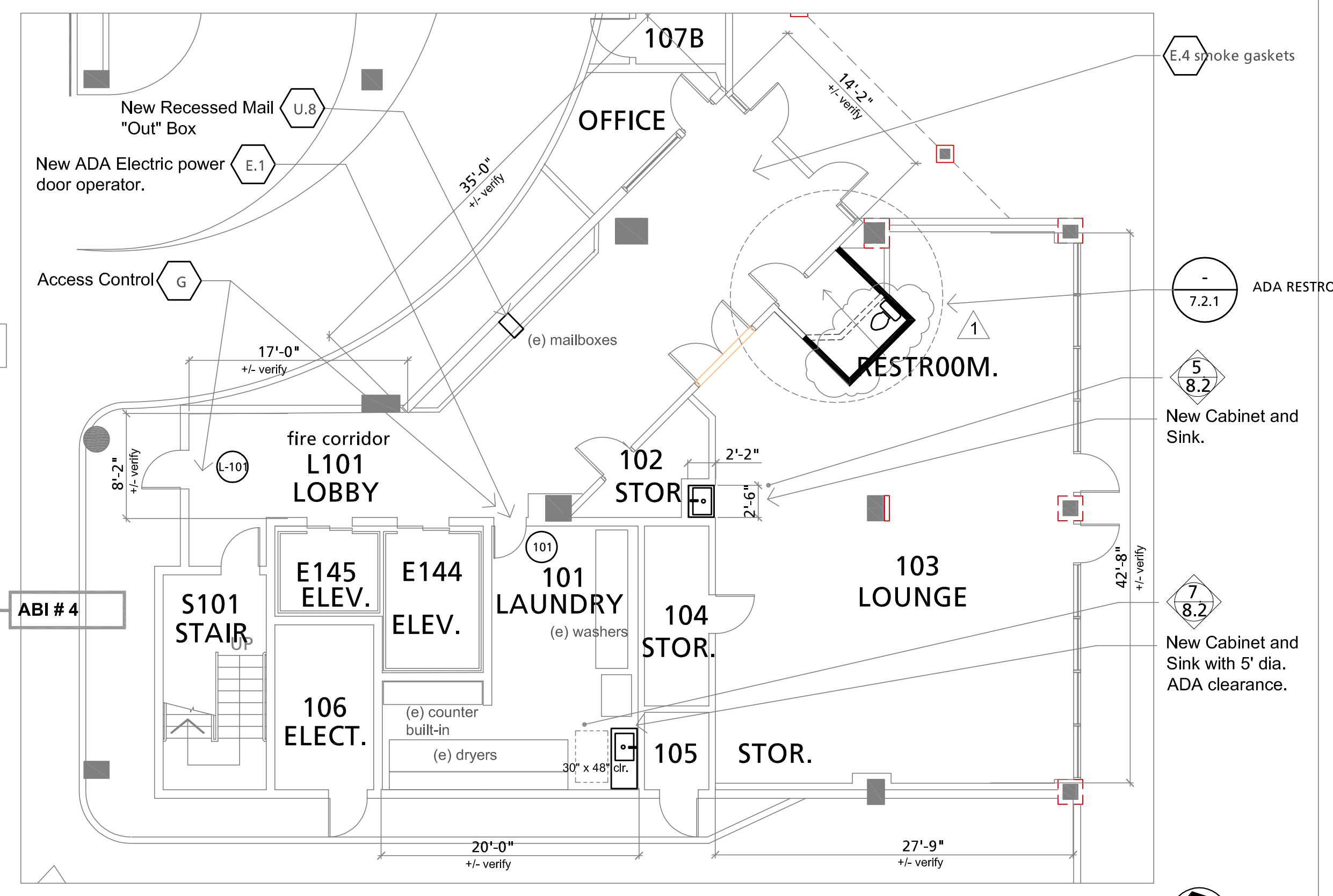
finish plan



demo plan



1st floor - lobby/lounge/ laundry - ceiling plan



floor plan

4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

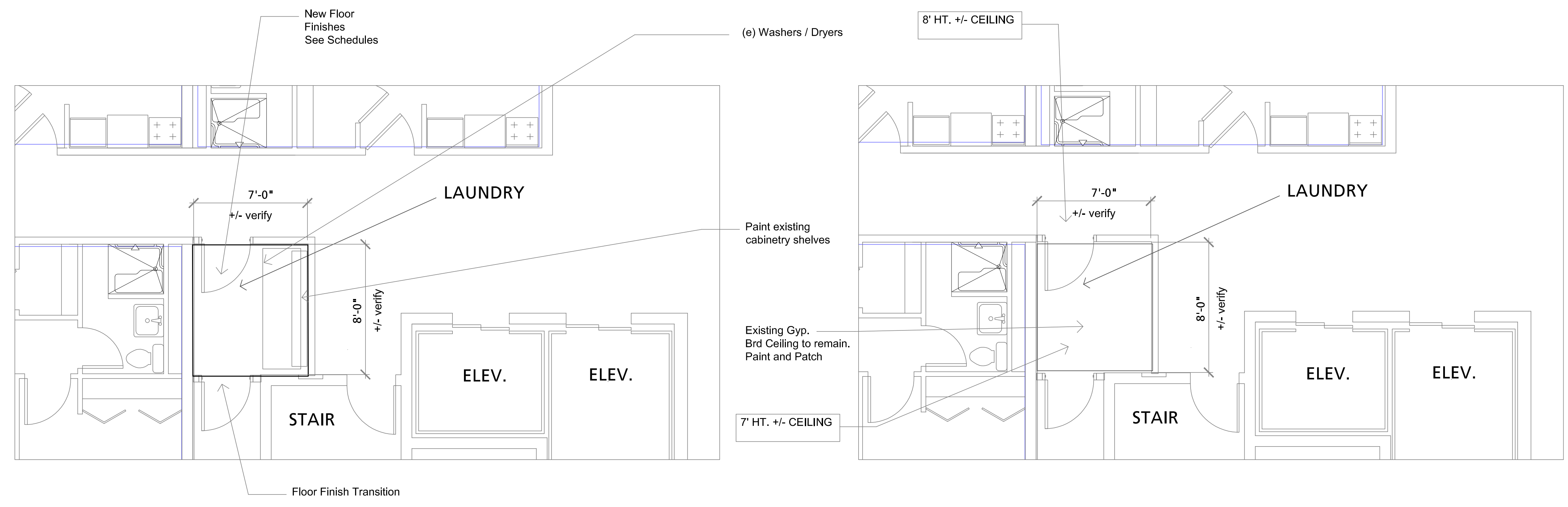
1st - Lobby Area

Revisions :	Date :
1 5/4/12 ADDENDUM #1	4/17/12
Drawn : SS, TA	Checked :

A7.1

Plan Notes

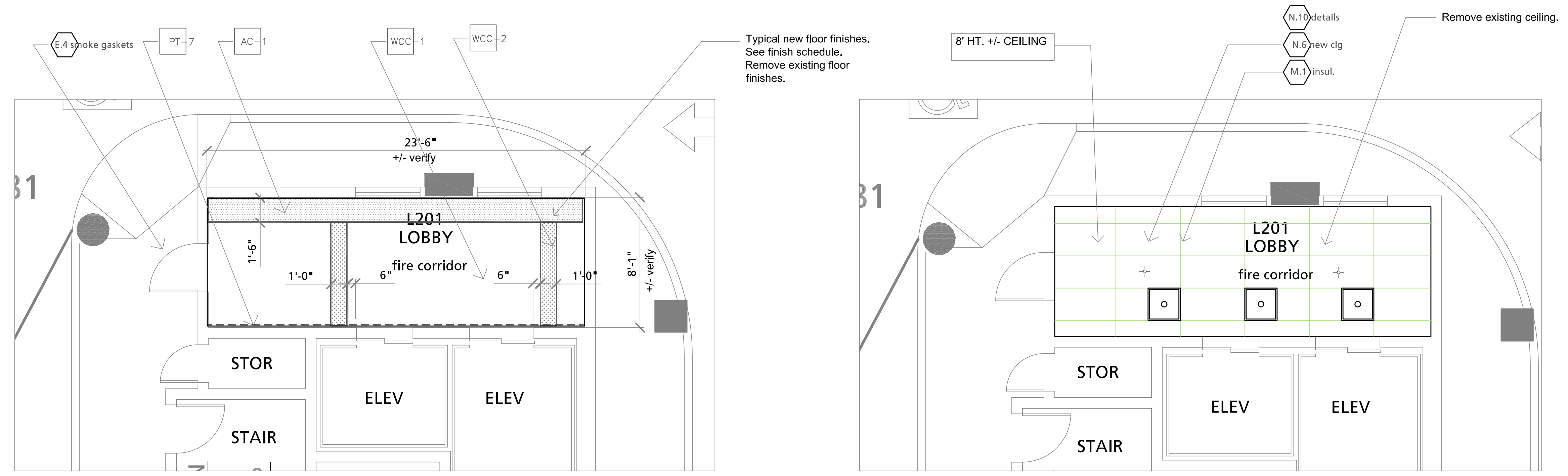
1. See specification sheet for notes. A
2. See Finish Schedule for finish notes. PT



3,5,7,9th floors - laundry - typ. floor plan

typ. ceiling plan

1/4" = 1'-0"



2nd floor - lobby - floor plan

ceiling plan

1/4" = 1'-0"

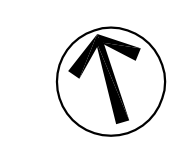
4/17/12
 issued for bid/permit



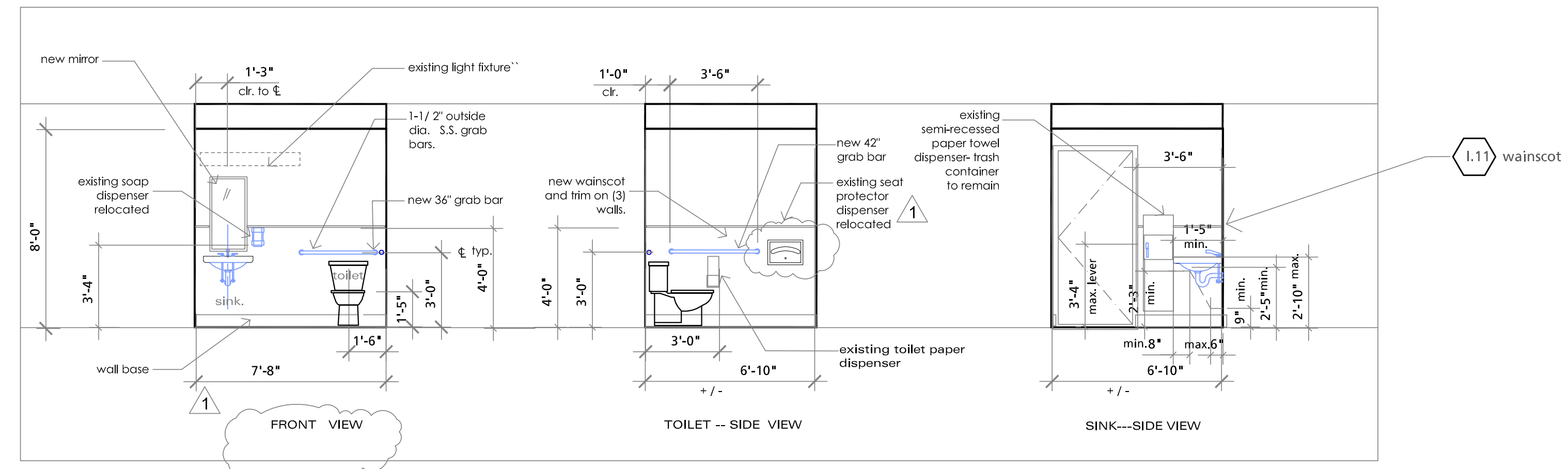
FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

2nd - Lobby
3rd - 9th Laundry

Revisions :	Date :
	4/17/12
Drawn : SS, TA	
Checked :	

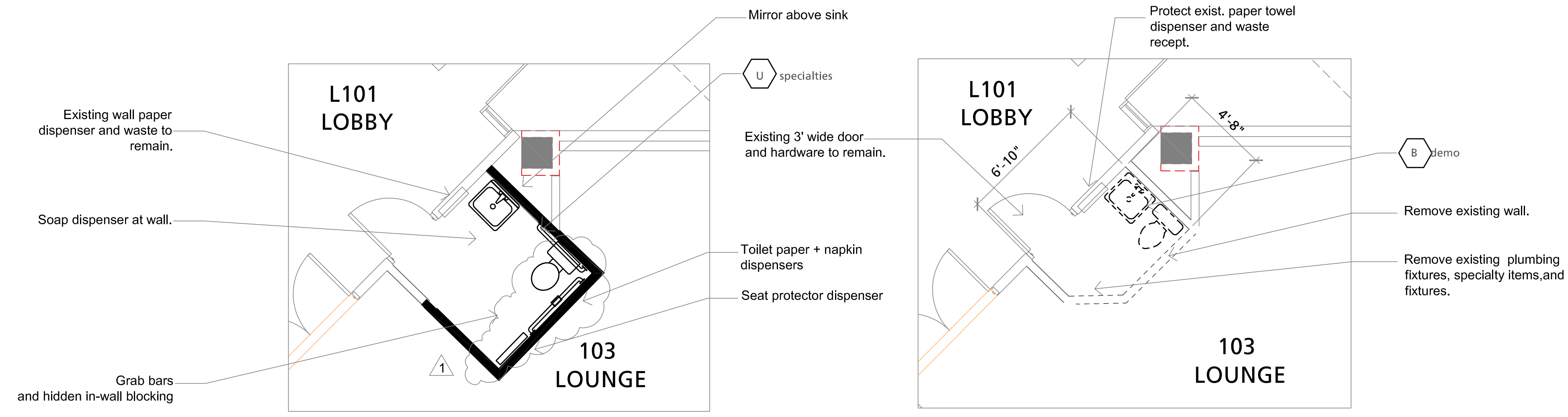


A7.2



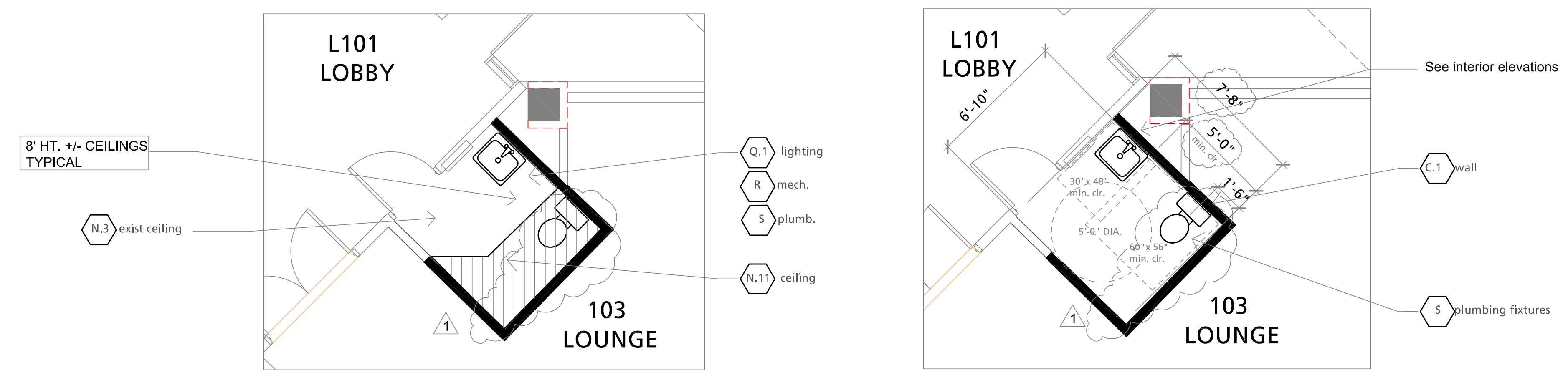
restroom -- interior elevations

1/4" = 1' - 0"



finish plan

demo plan



ceiling plan

floor plan

Plan Notes

1. See specification sheet for notes. A
2. See Interior Material Finish Schedule

4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

1st - ADA Restroom

Revisions :	Date :
1 5 / 4 / 12 ADDENDUM #1	4/17/12

Drawn :

Checked :

1st floor - ADA restroom

1/4" = 1' - 0"

A7.2.1

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

1. See specification sheet for notes. A
2. See Finish Schedule for finish notes. PT



typ. lounge / laundry

1/4" = 1'-0"

"partial"
 3rd - 9th floor - corridor plan

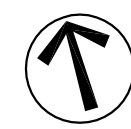
1/4" = 1'-0"

A

detail

B

detail



Corridors

Revisions :	Date :
	4/17/12
Drawn :	
Checked :	



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

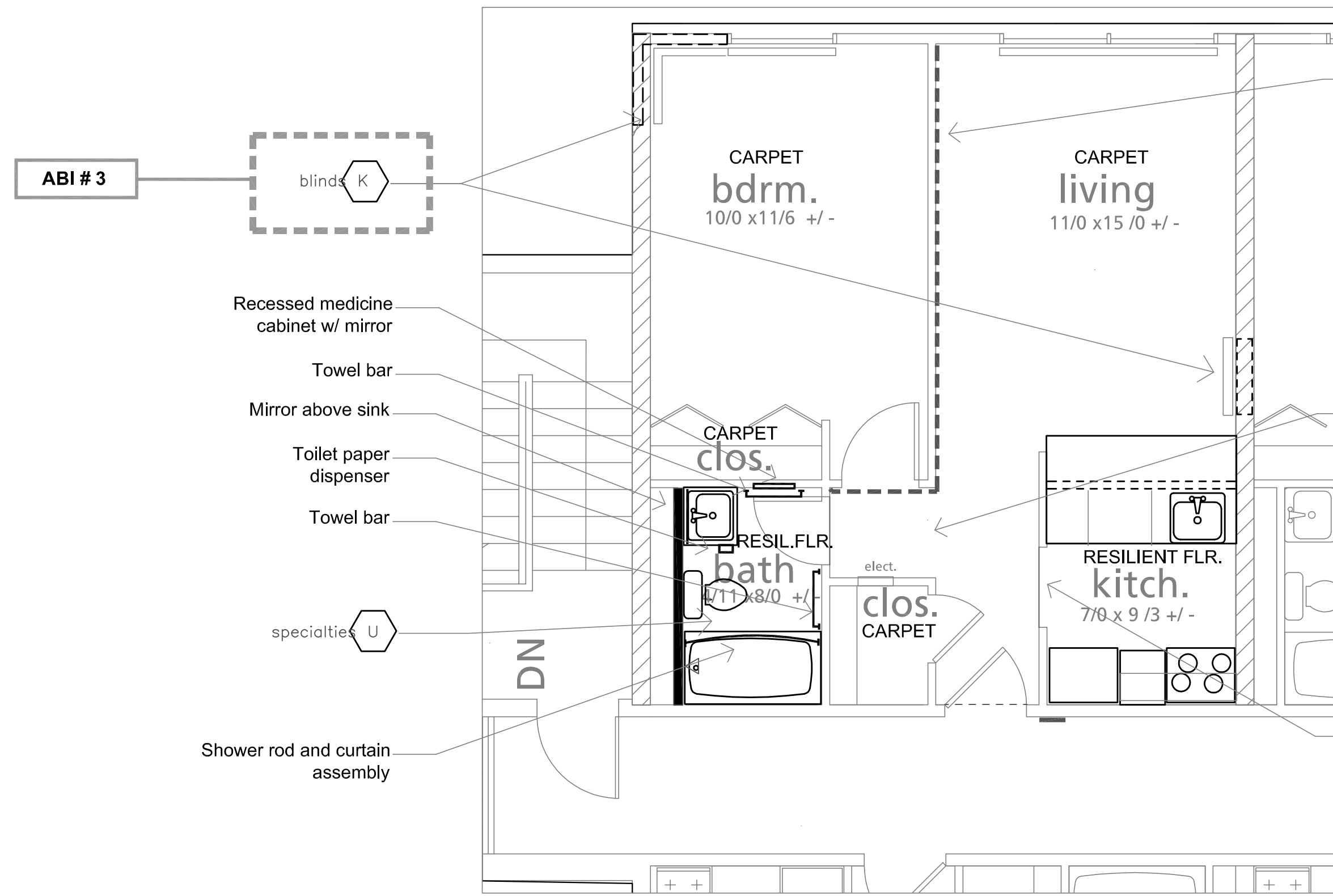
4/17/12
 issued for bid/permit

A7.3

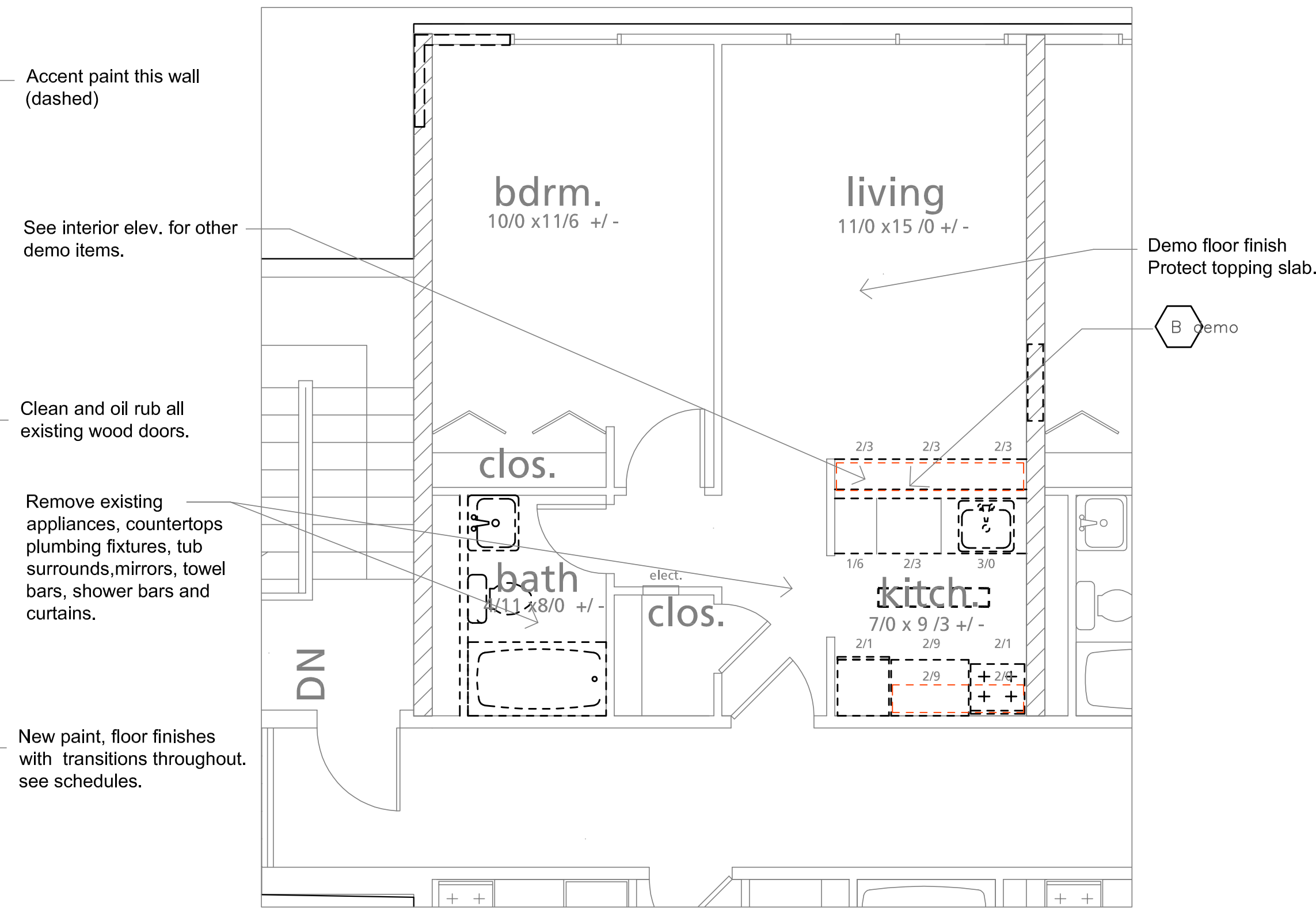
PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

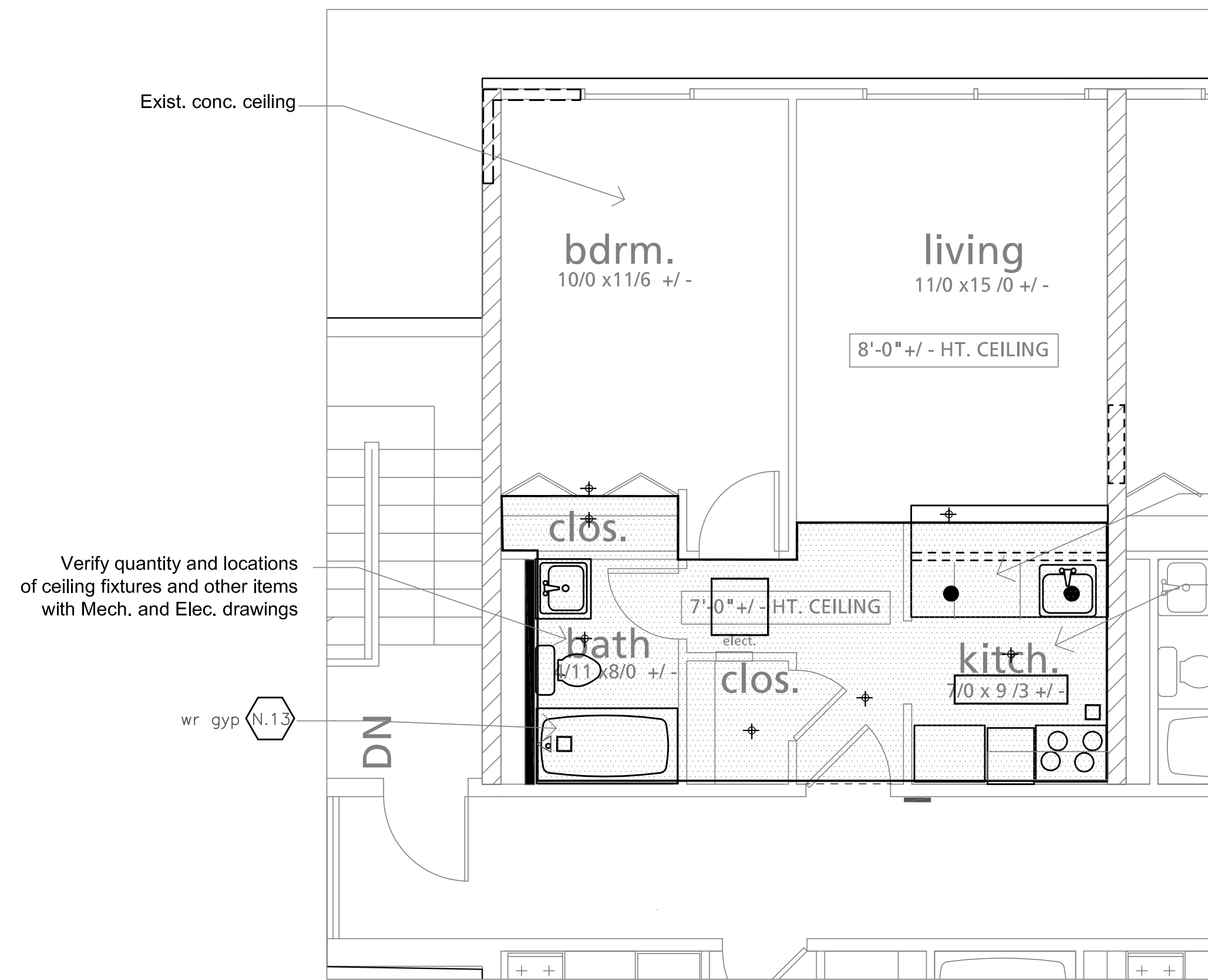
1. See specification sheet for notes. A
2. Notes listed are typical Plan Notes for Units.



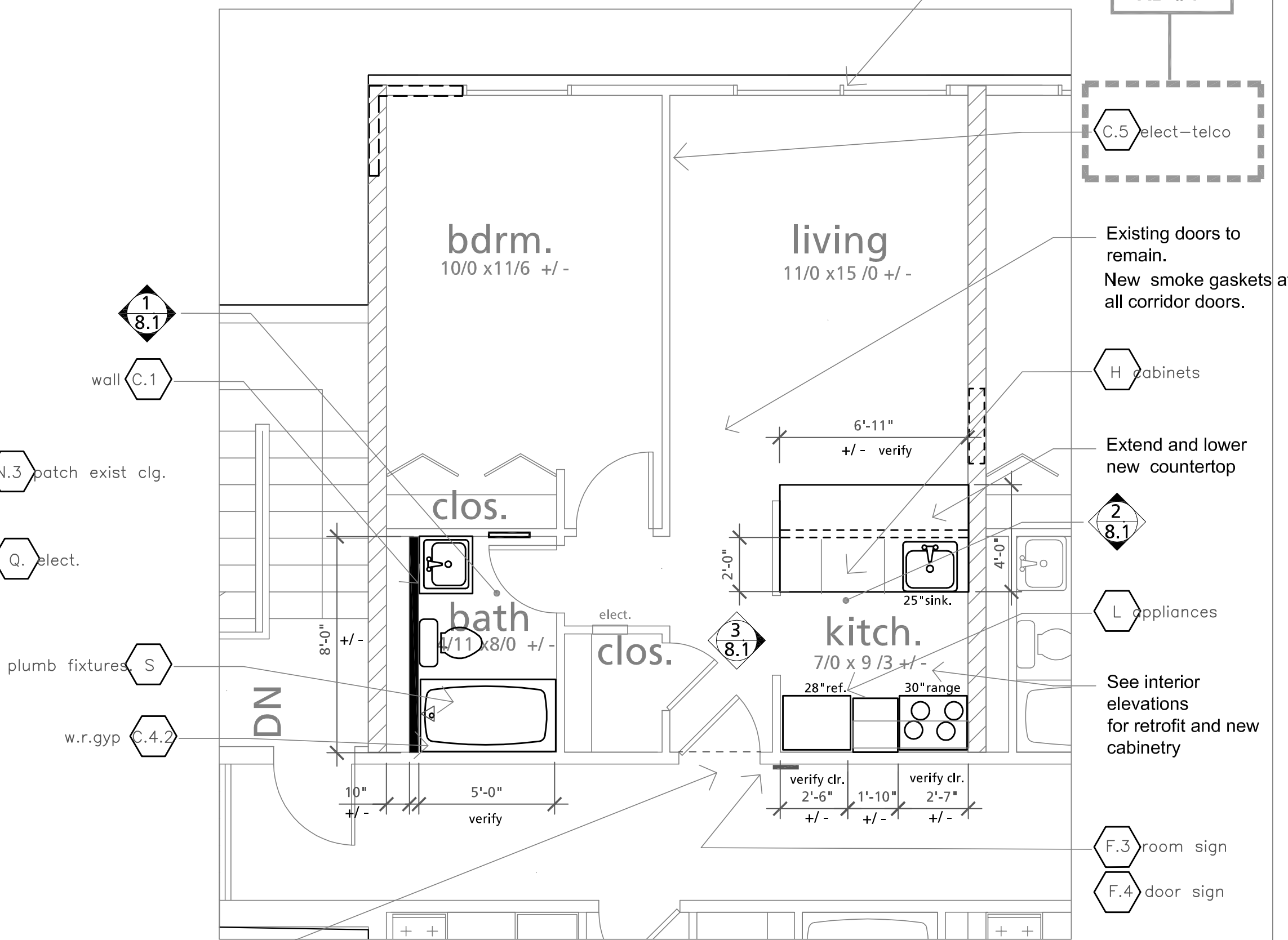
finish plan



demo plan



ceiling plan



floor plan

4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO - AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

Standard Unit

Revisions :	Date :
	4/17/12
Drawn :	
Checked :	

typ. standard unit

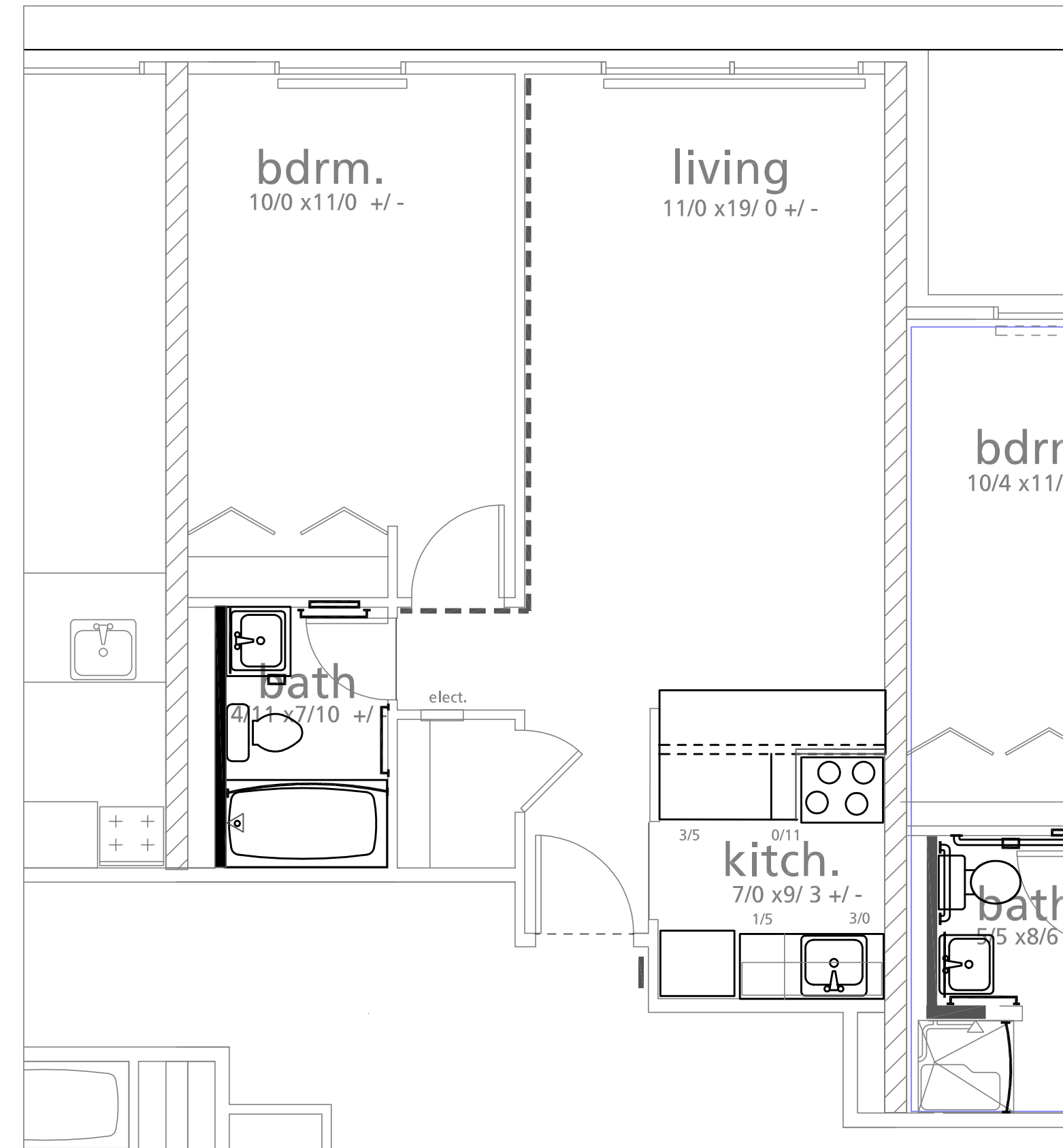
1/4" = 1' - 0"

A7.4

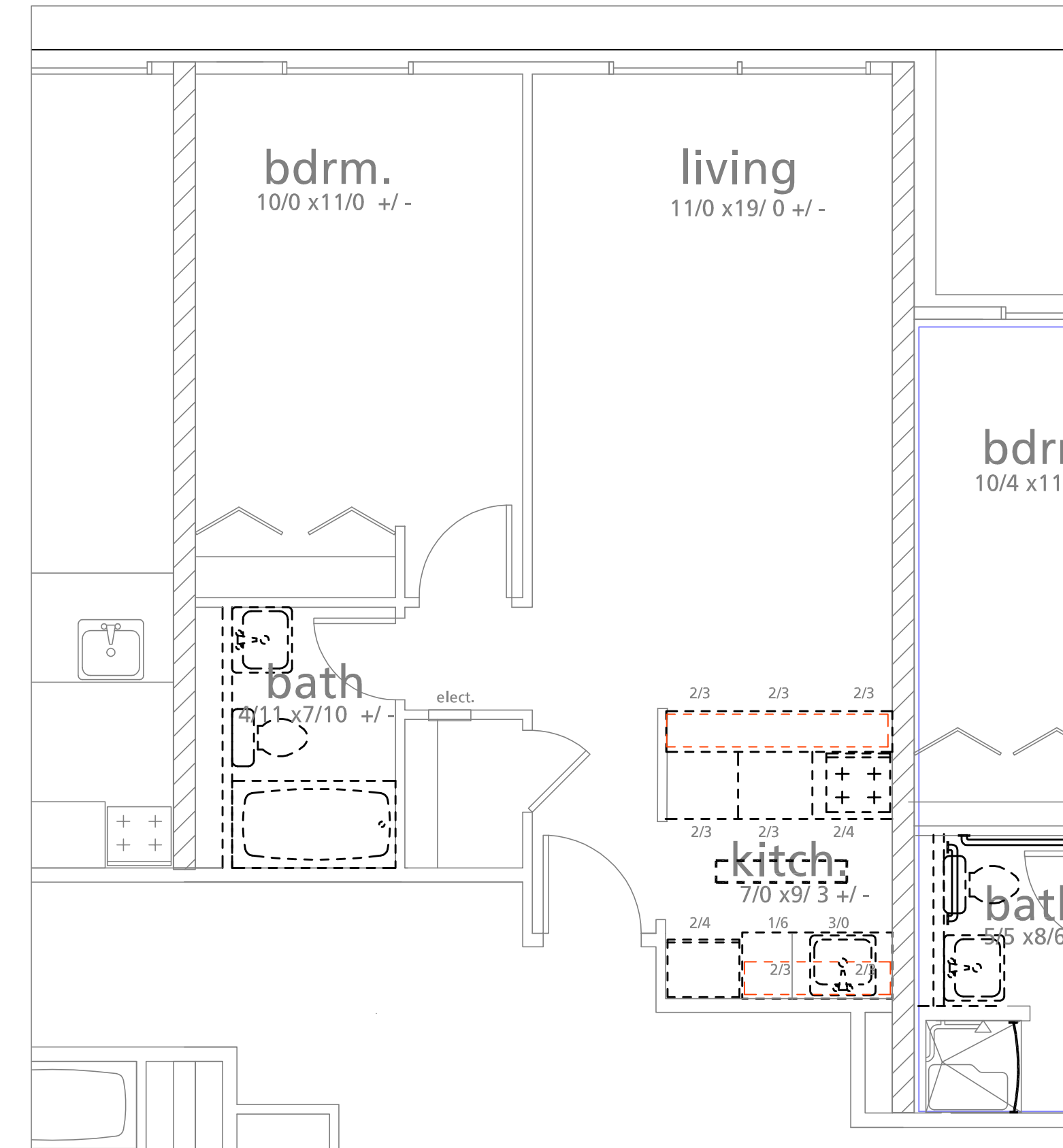
PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Plan Notes

1. See specification sheet for notes. A
2. See Standard Unit notes for typical Plan Notes.

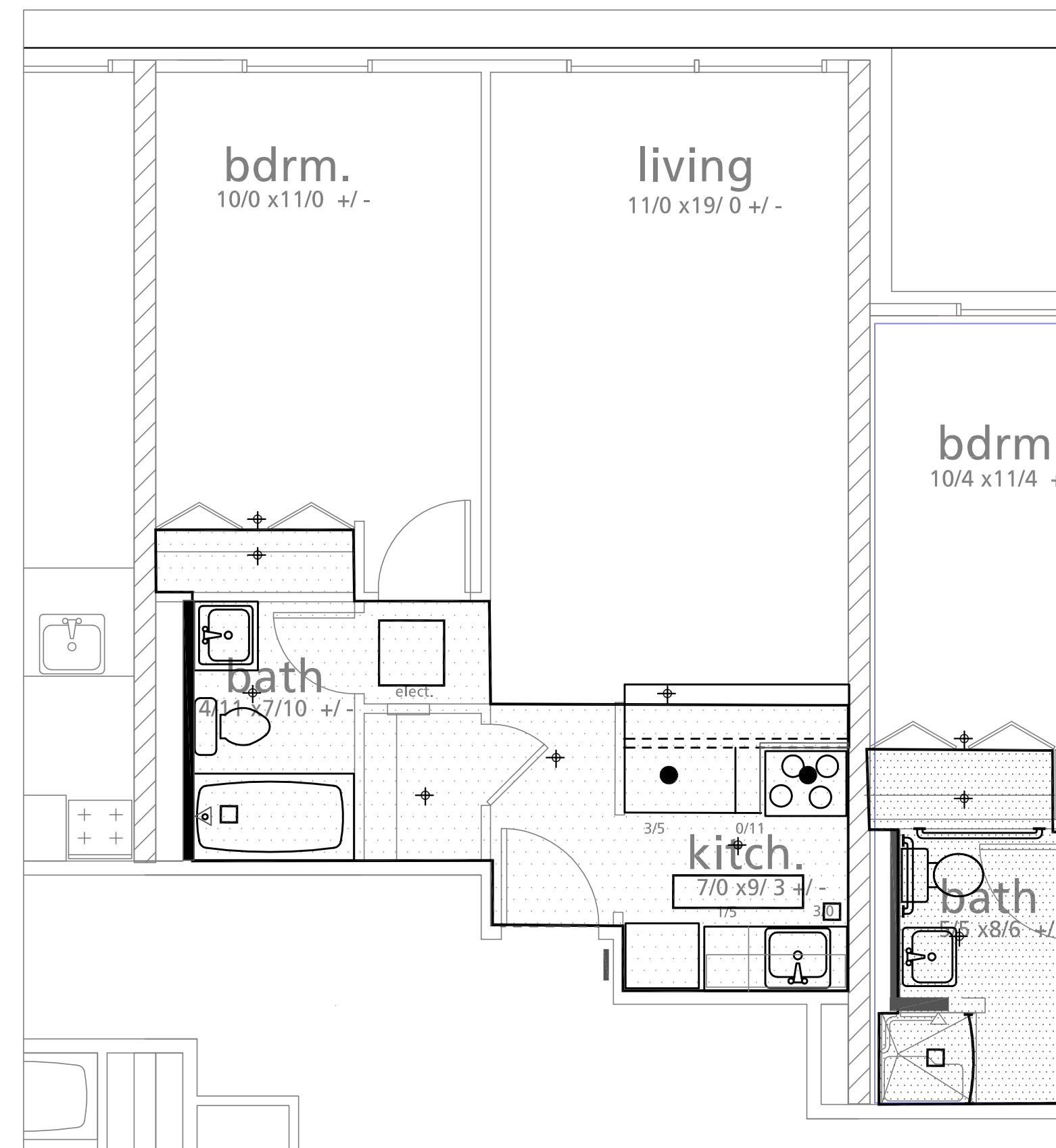


finish plan



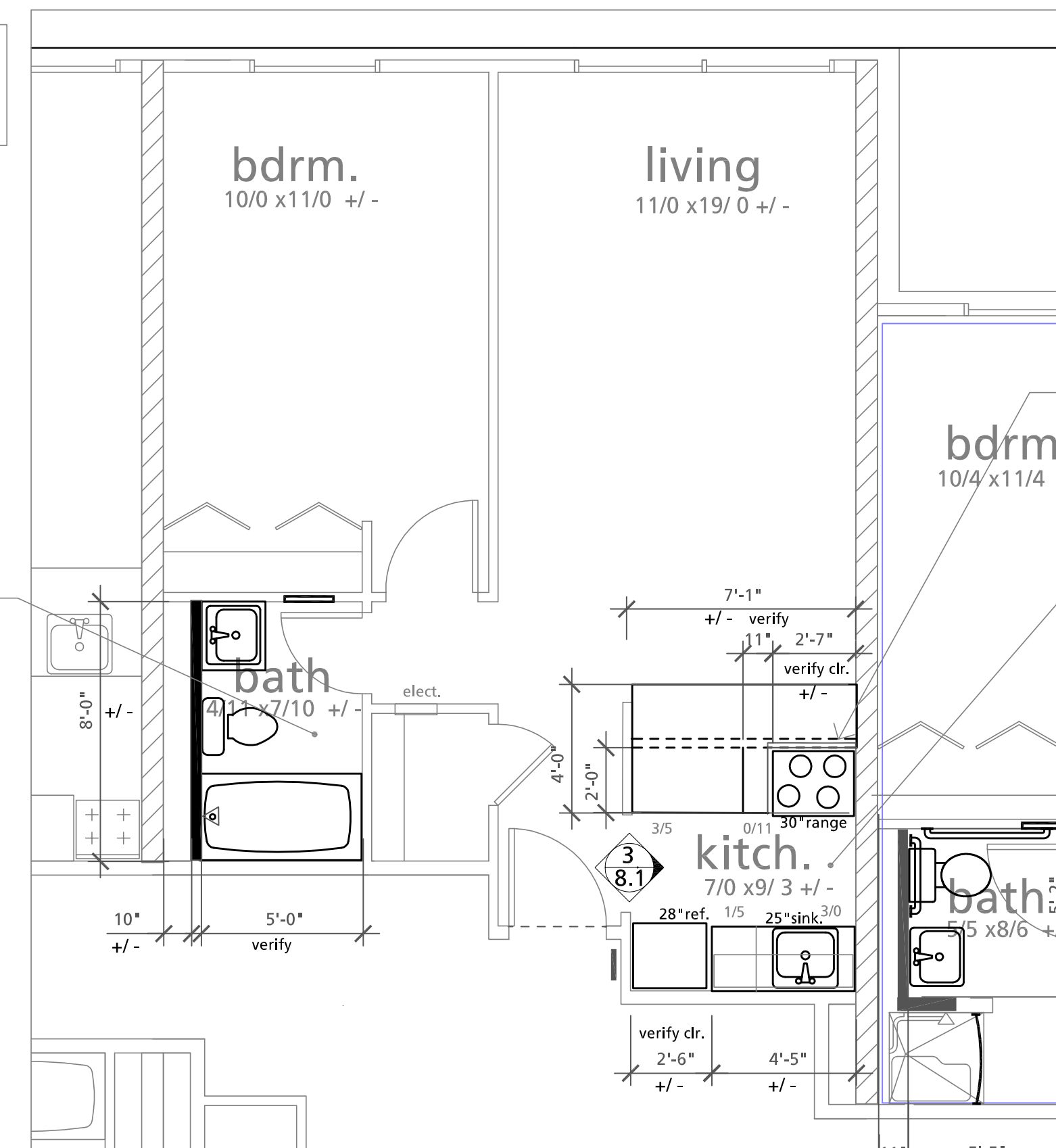
demo plan

1/4" = 1' - 0"



ceiling plan

For other typical notes see Standard Unit Plan.



floor plan

4/17/12
 issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

Expanded Unit

Revisions :	Date :
	4/17/12
Drawn :	
Checked :	

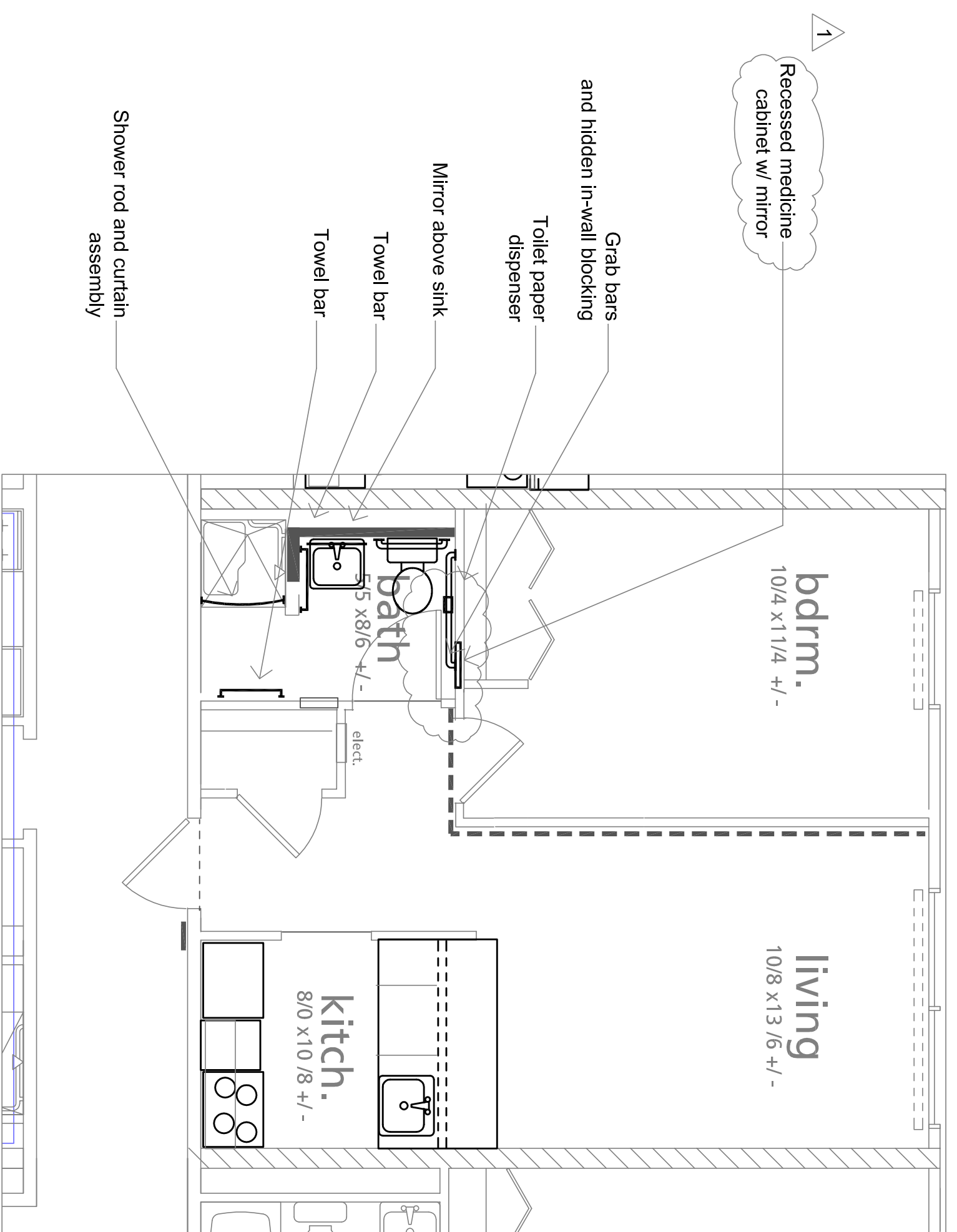
typ. expanded unit

1/4" = 1' - 0"

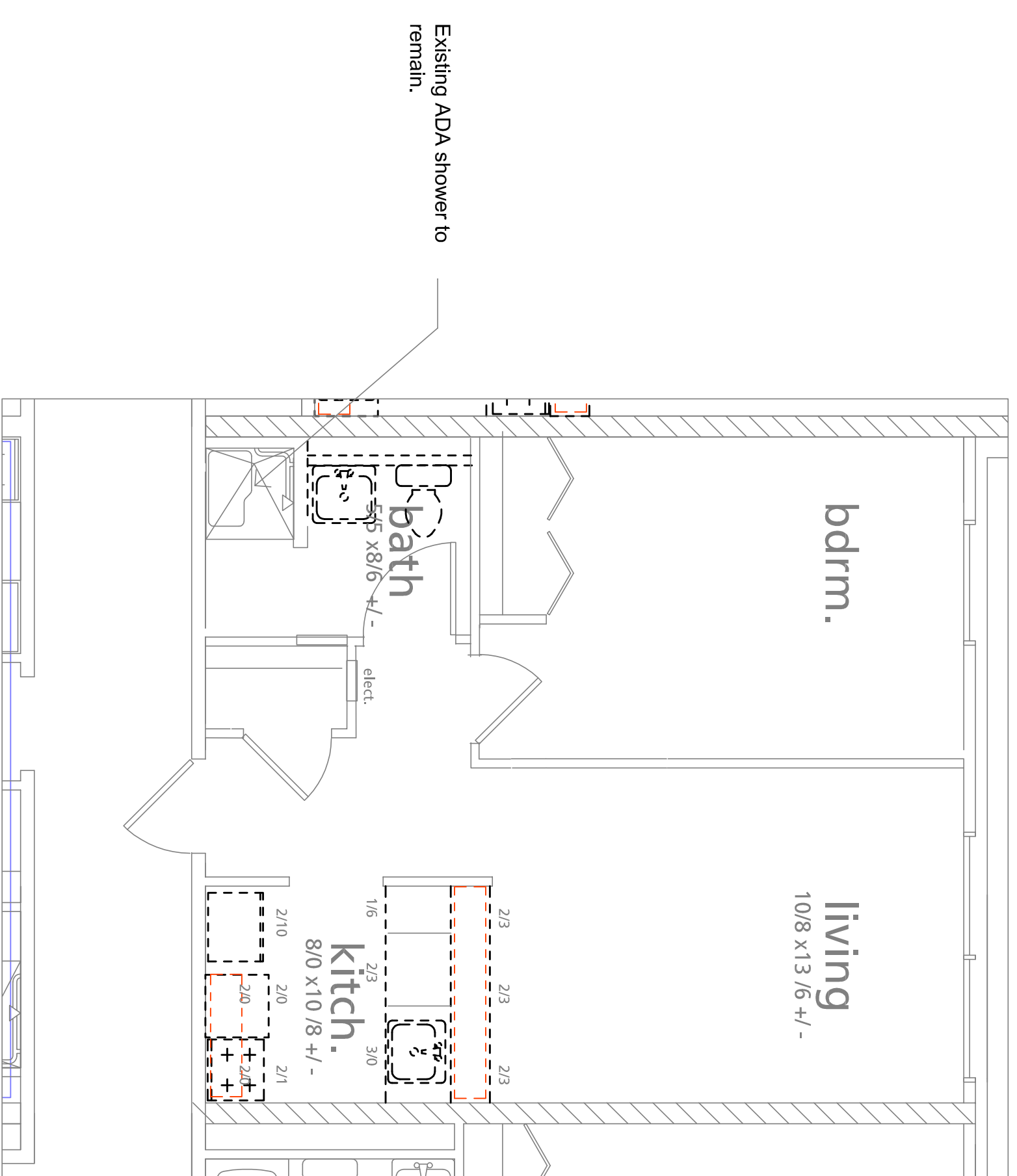
A7.5

Plan Notes 1

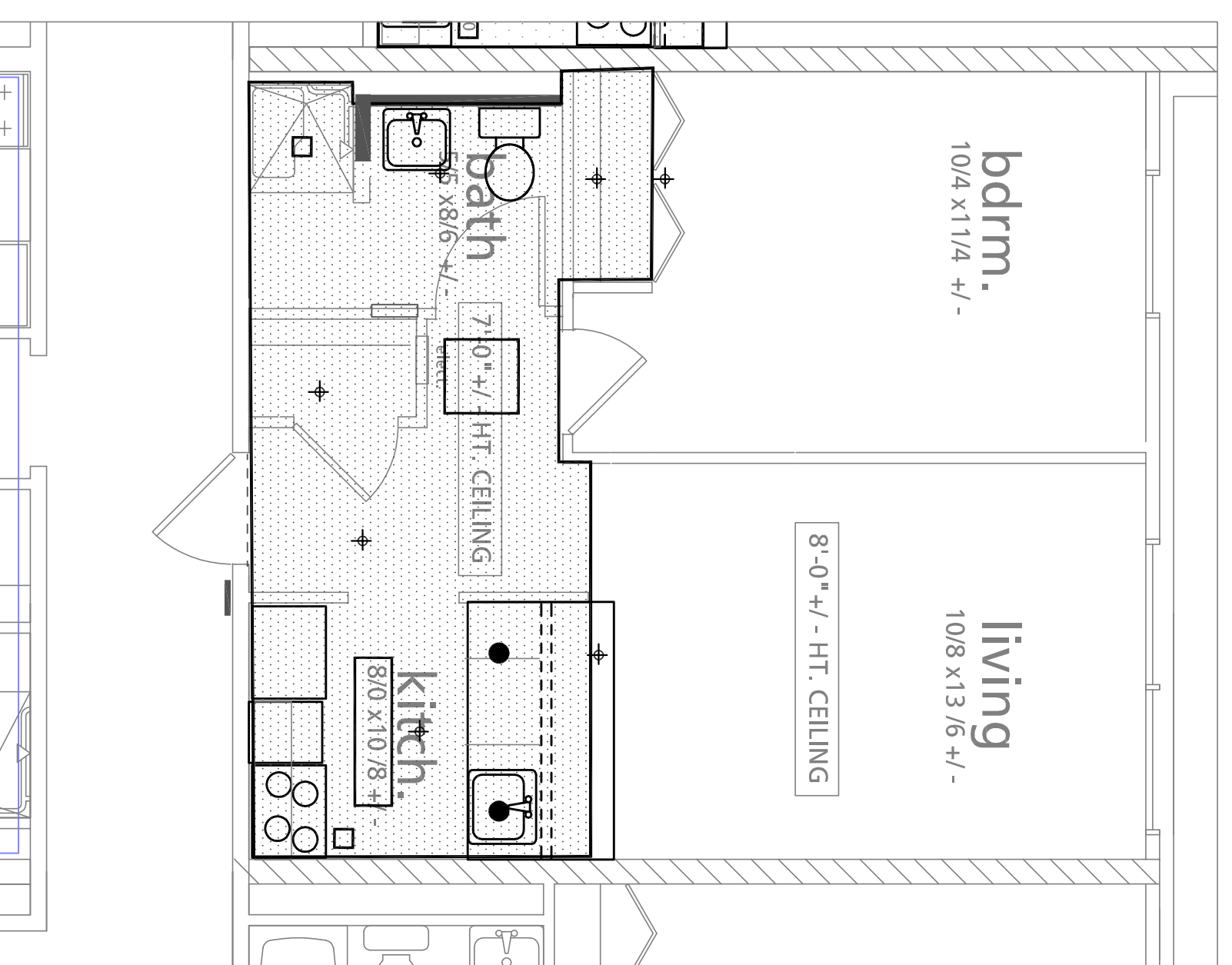
1. See specification sheet for notes.
2. See Standard Unit notes for typical Plan Notes.



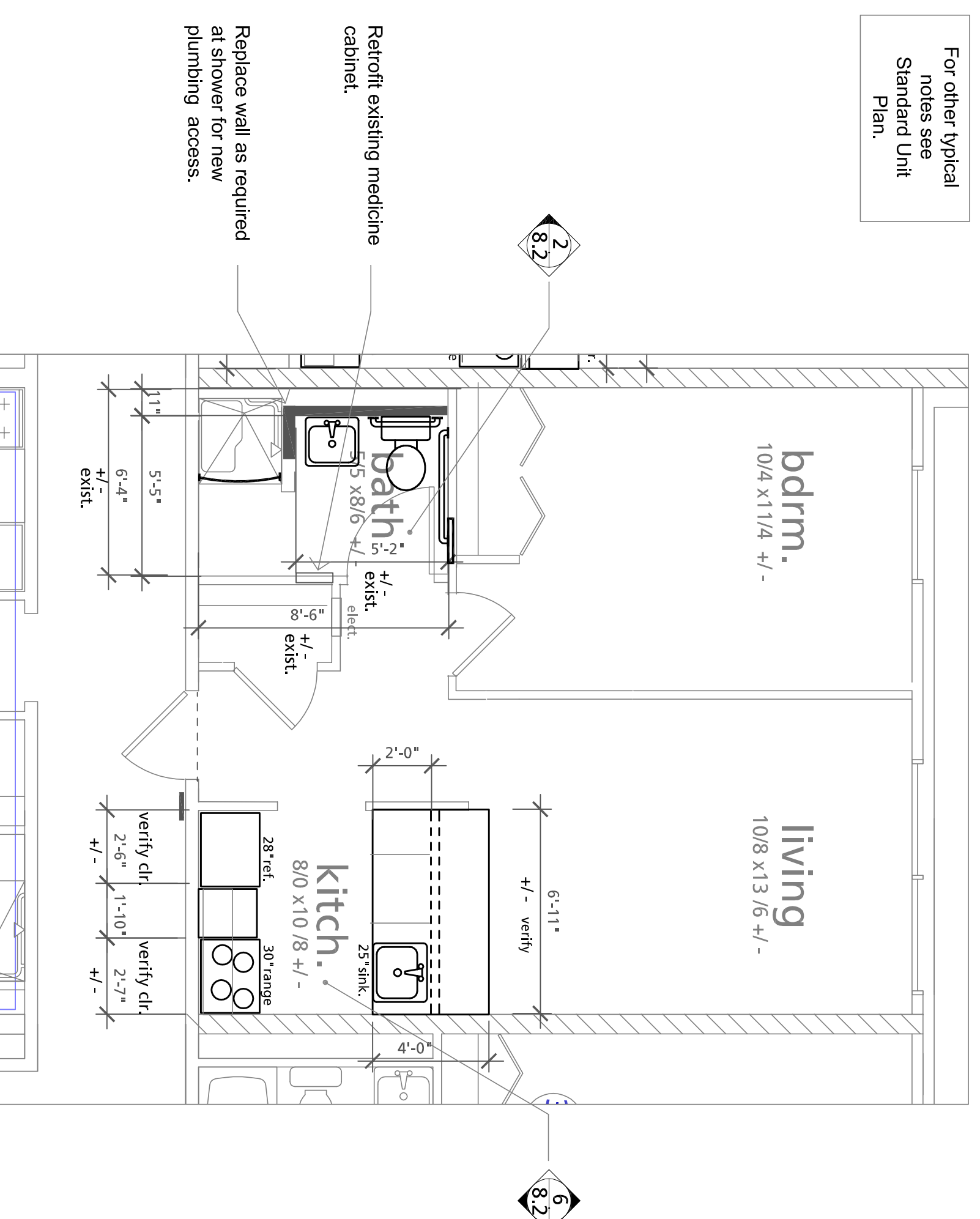
finish plan



demo plan



ceiling plan



floor plan

For other typical notes see Standard Unit Plan.

4/17/12
issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEERS' DRAWINGS AND SPECIFICATIONS.

Existing ADA Unit

Revisions :
1 5/4/12 ADDENDUM #1 Date : 4/17/12

Drawn :

Checked :

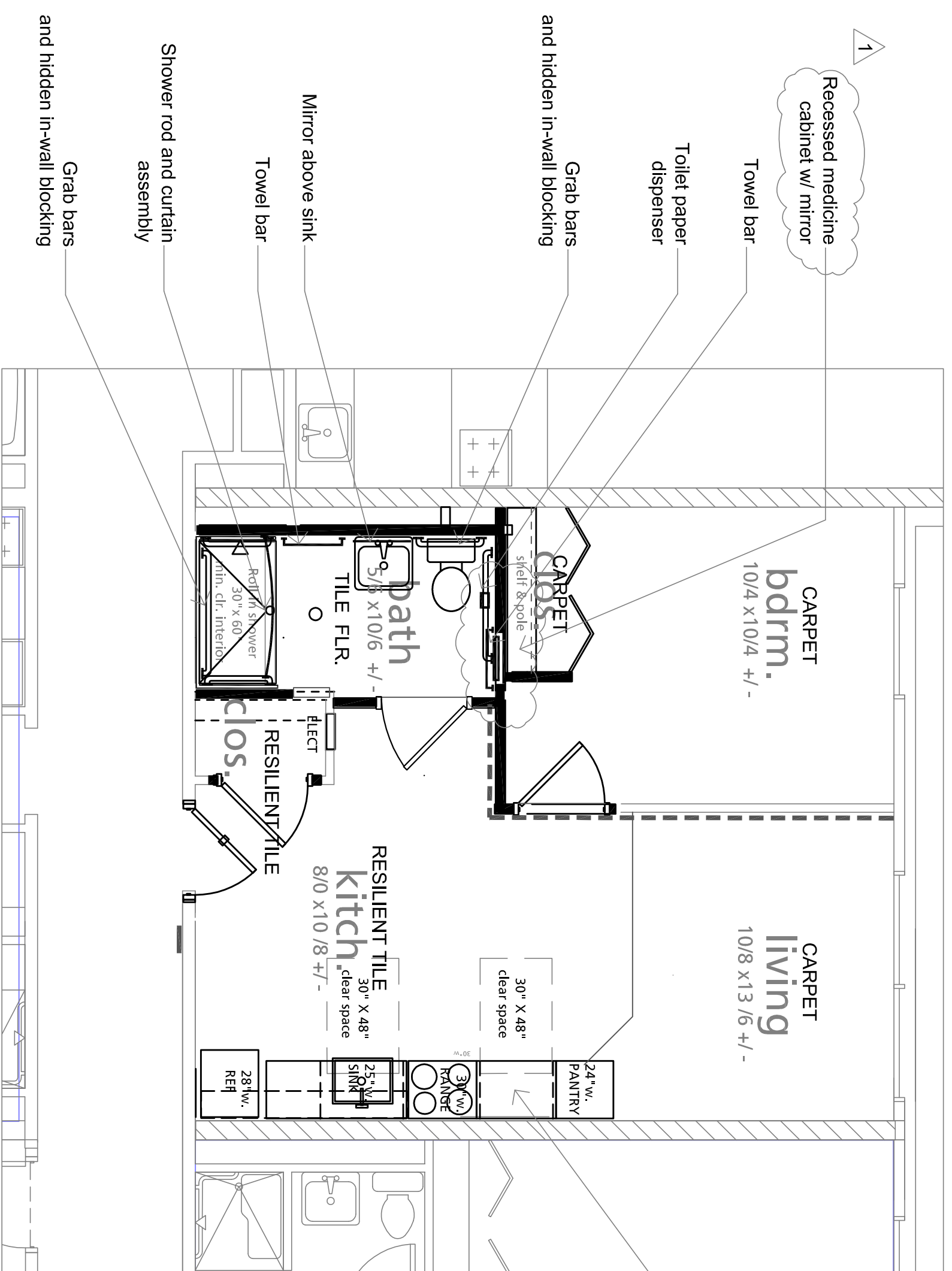
PSU Facilities and Planning
**Joseph C. Blumel
Hall**

Residence Hall
RE-PIPE REMODEL
(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

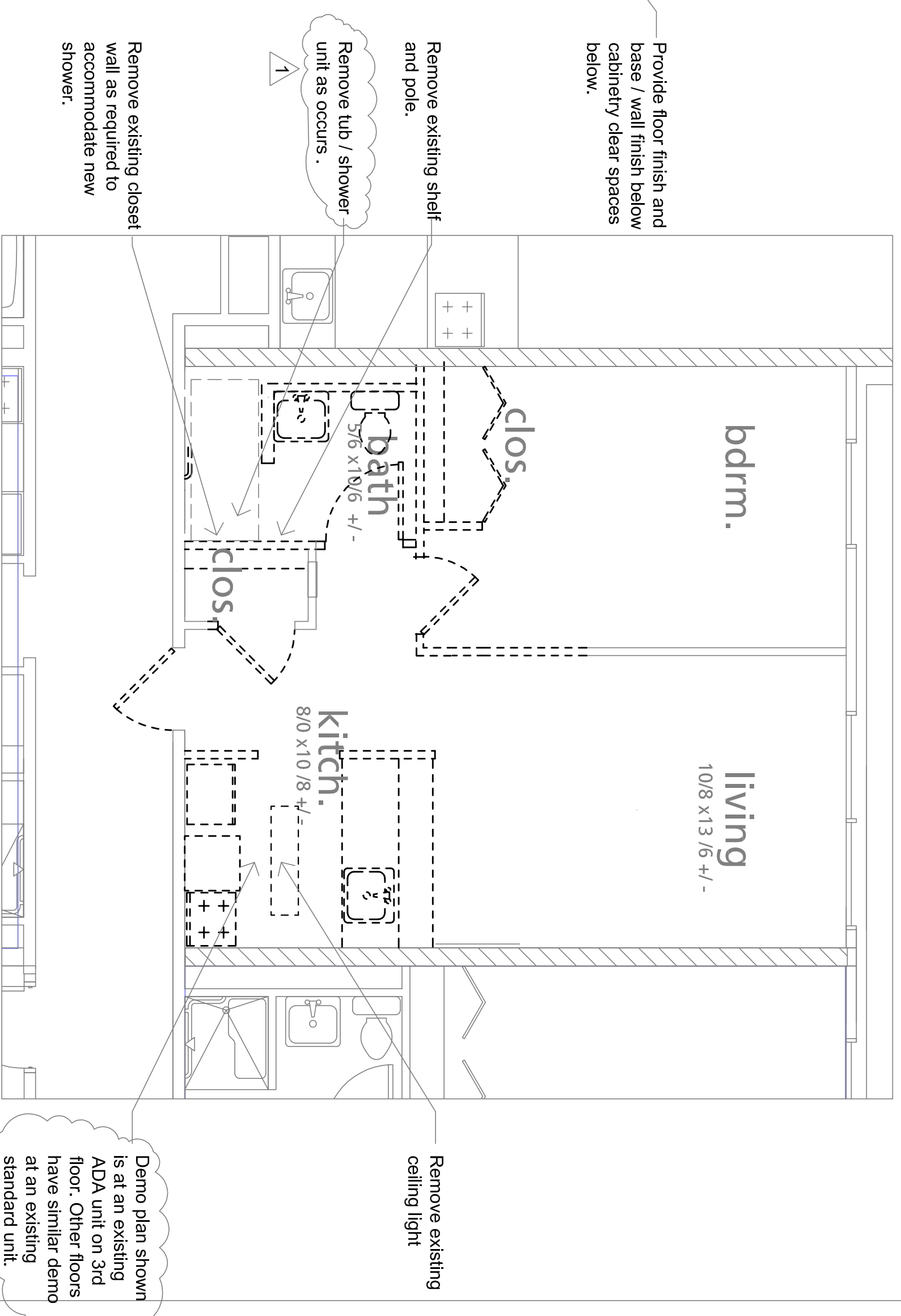
Plan Notes

1. See specification sheet for notes.
2. See Standard Unit notes for Typical Plan Notes.

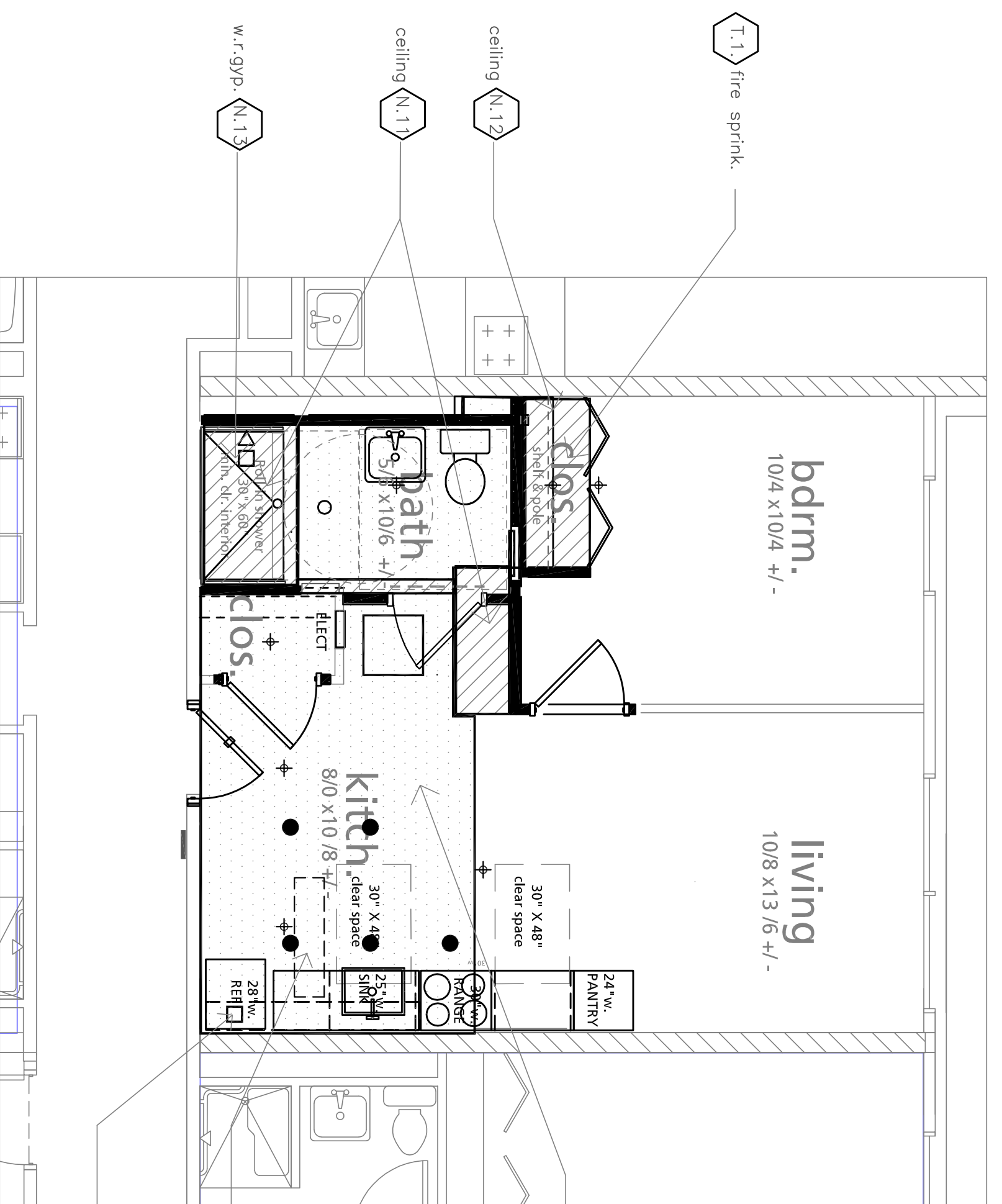
A



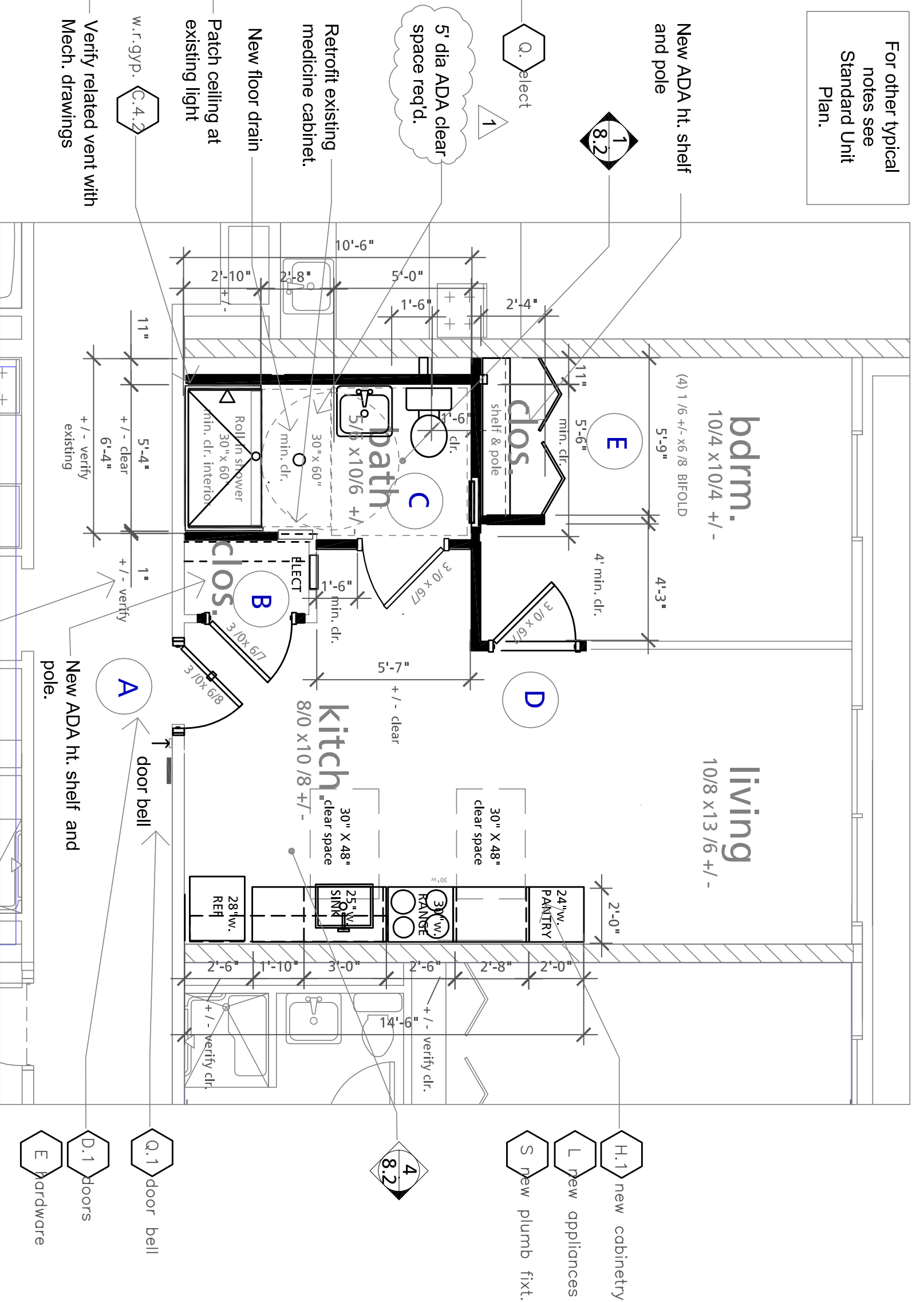
finish plan



demo plan



ceiling plan



floor plan

For other typical notes see Standard Unit Plan.

issued for bid/permit
4/17/12



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO - AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEERS' DRAWINGS AND SPECIFICATIONS.

New ADA Unit

Revisions :
1 5/4/12 APPENDUM #1
Date :
4/17/12

Drawn :
Checked :

A7.7

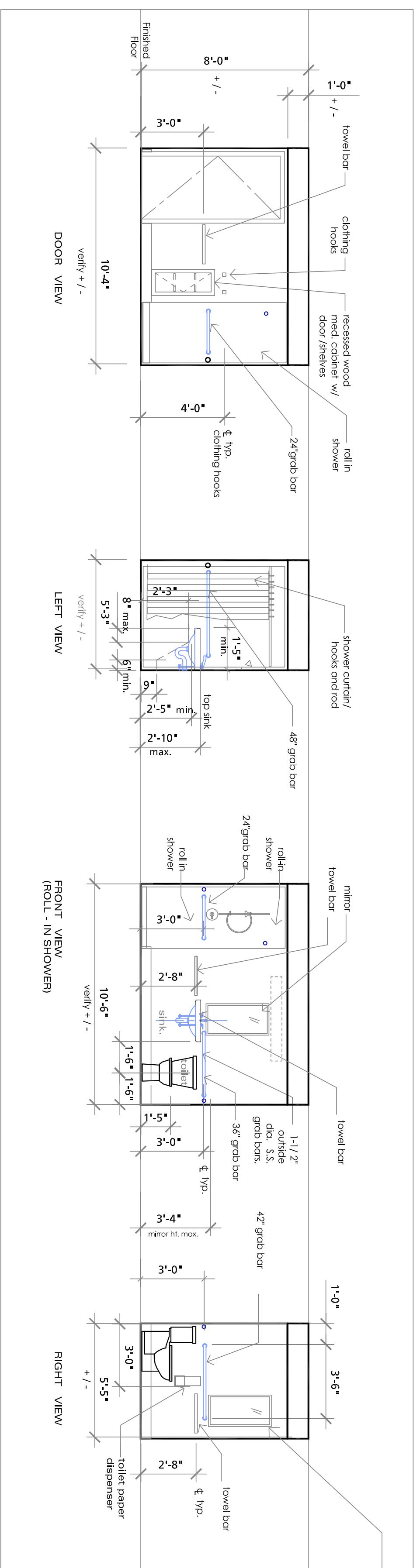
"roll-in shower"
typ. new ada unit

1/4" = 1' - 0"

Elevation Notes

- See specification sheet for notes.

A

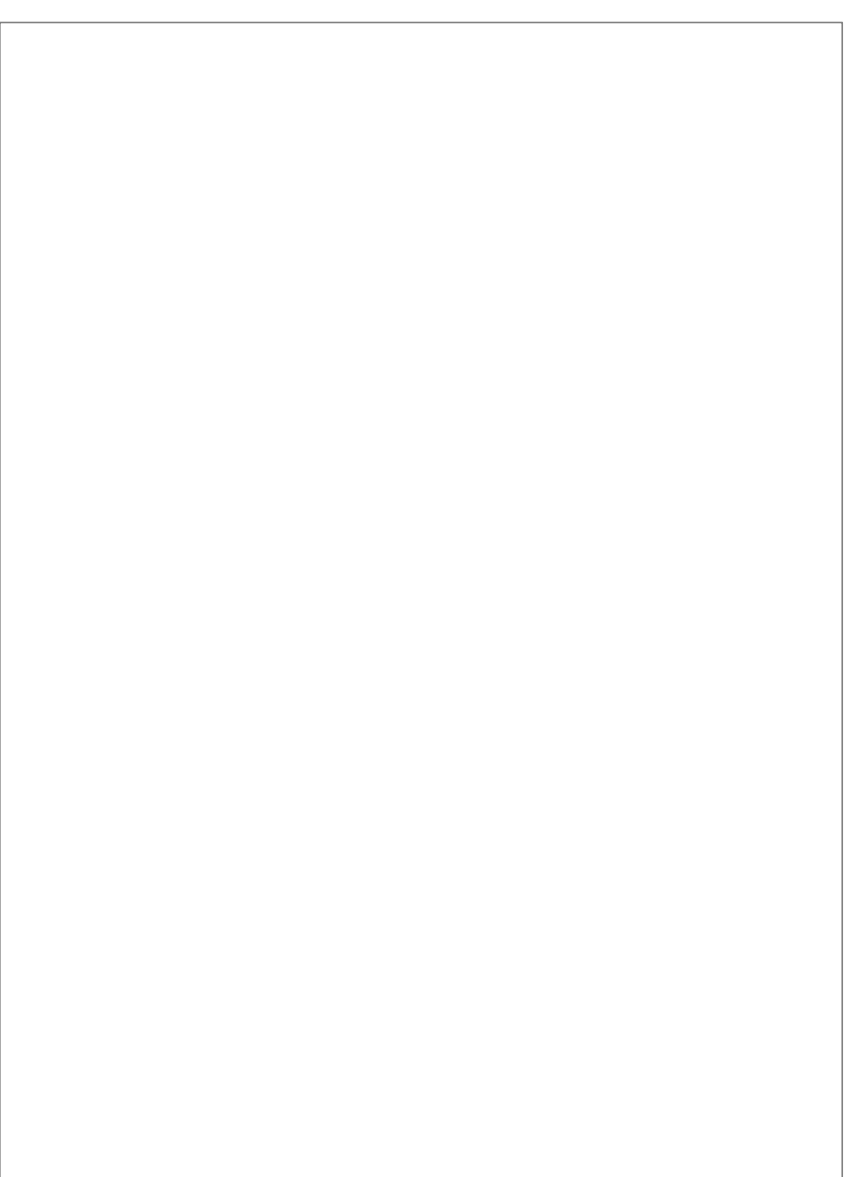
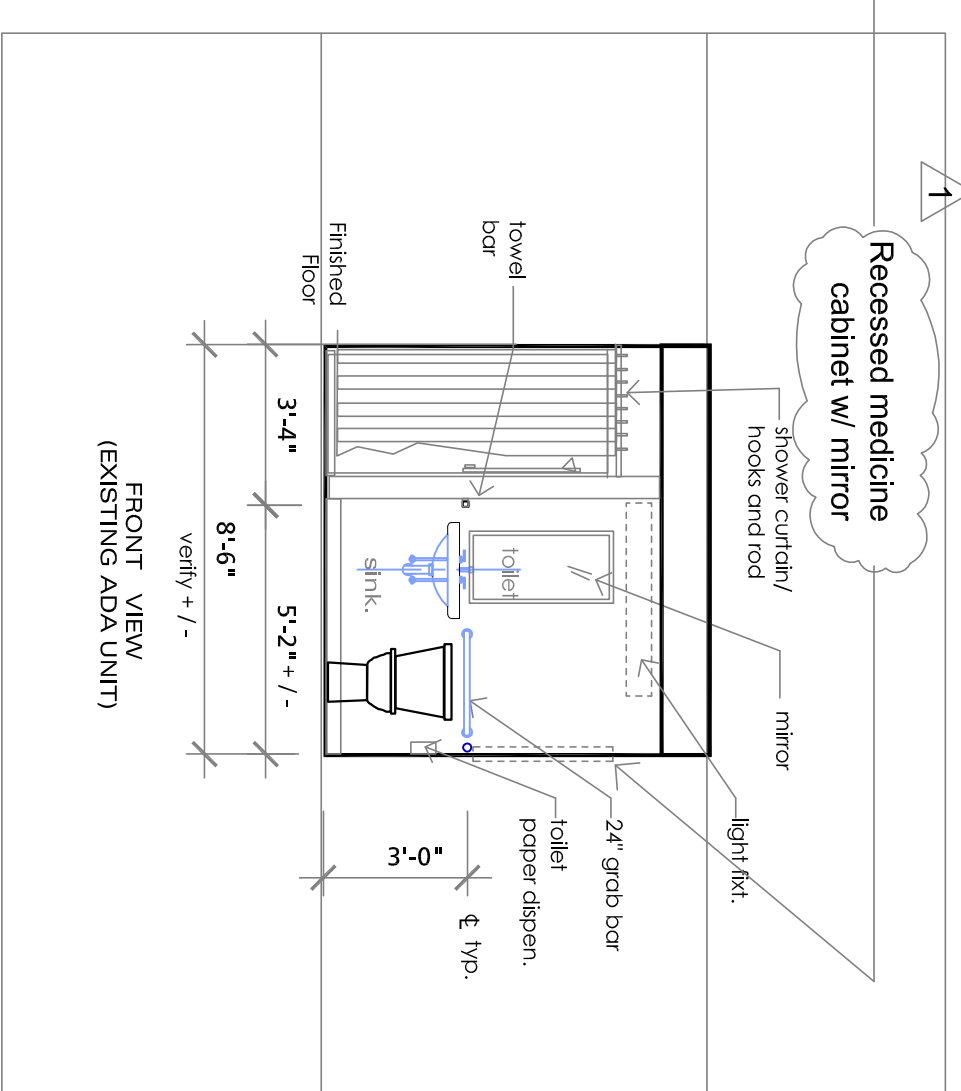


1 Bathrooms

1/4" = 1' - 0"

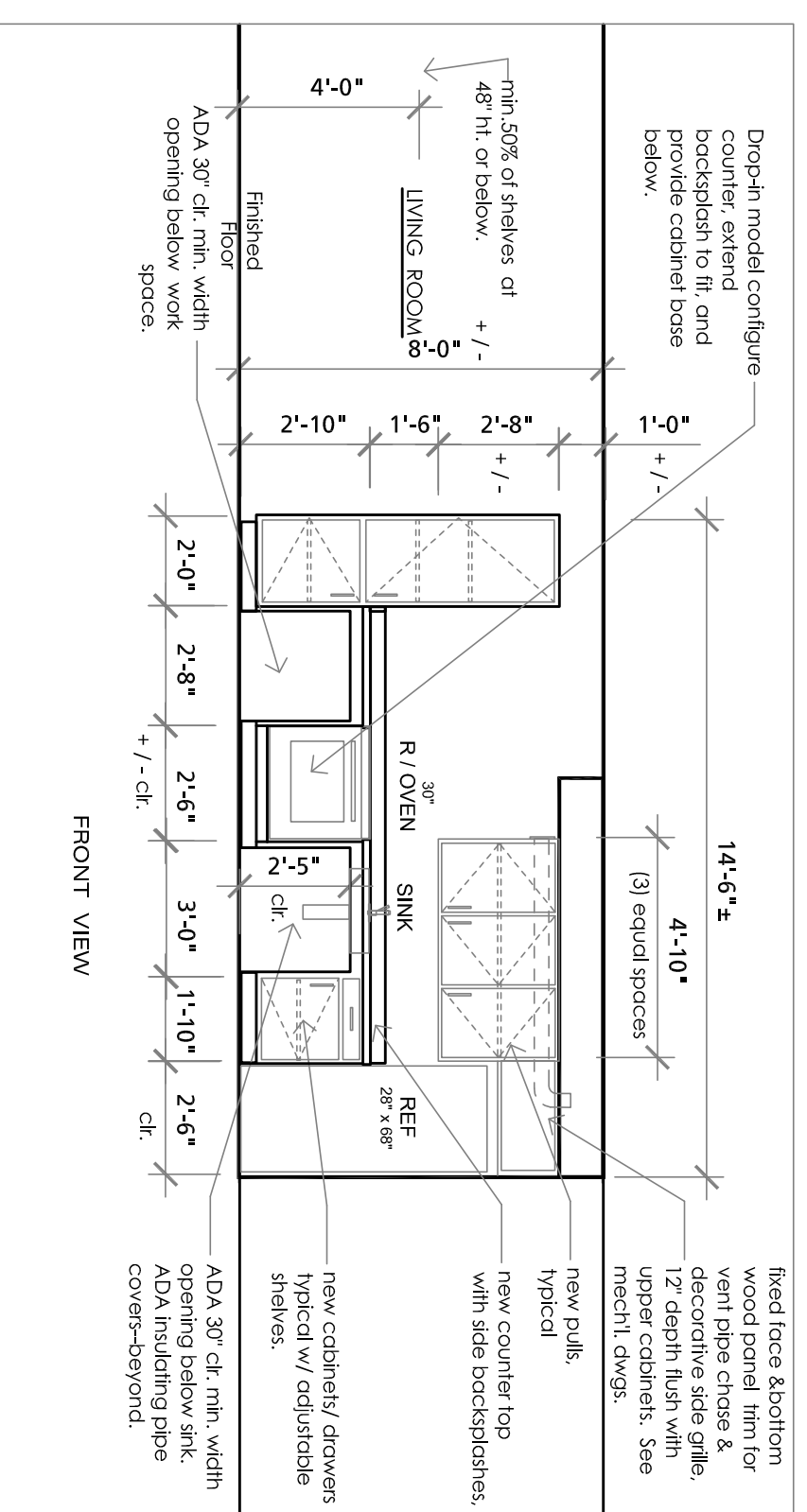
2

EXISTING ADA UNITS with TRANSFER SHOWERS



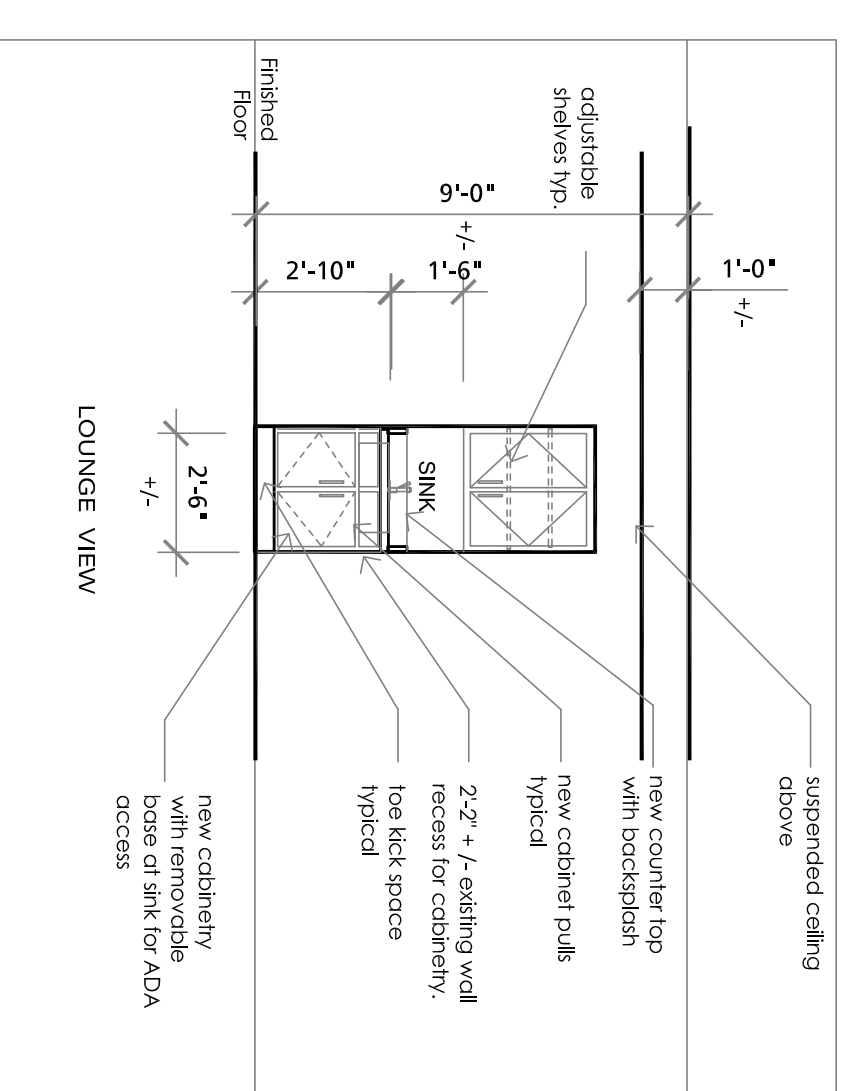
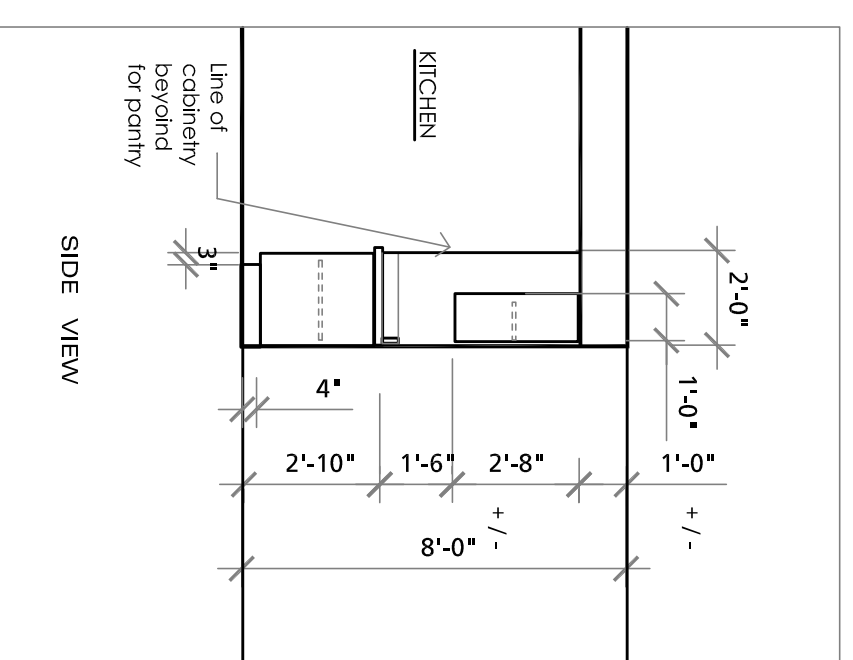
3 Bathrooms

1/4" = 1' - 0"



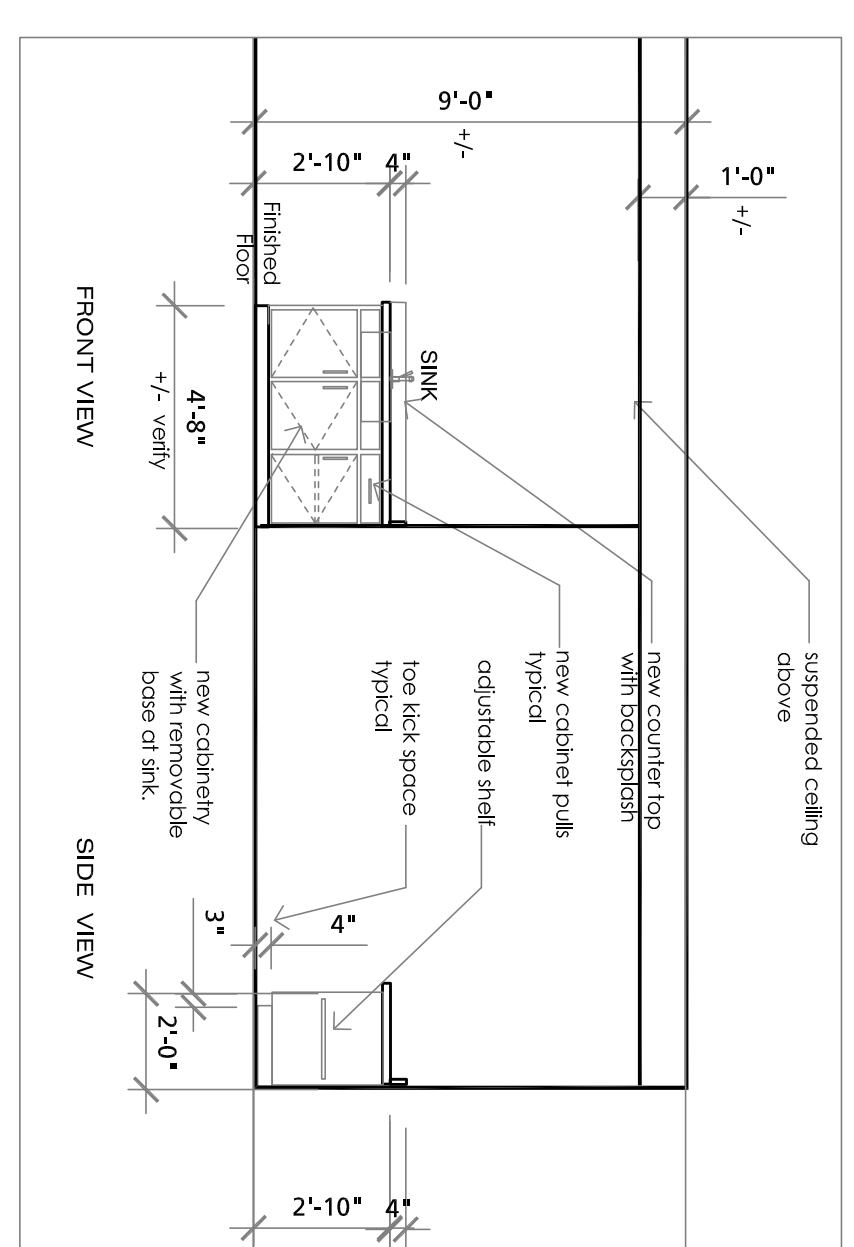
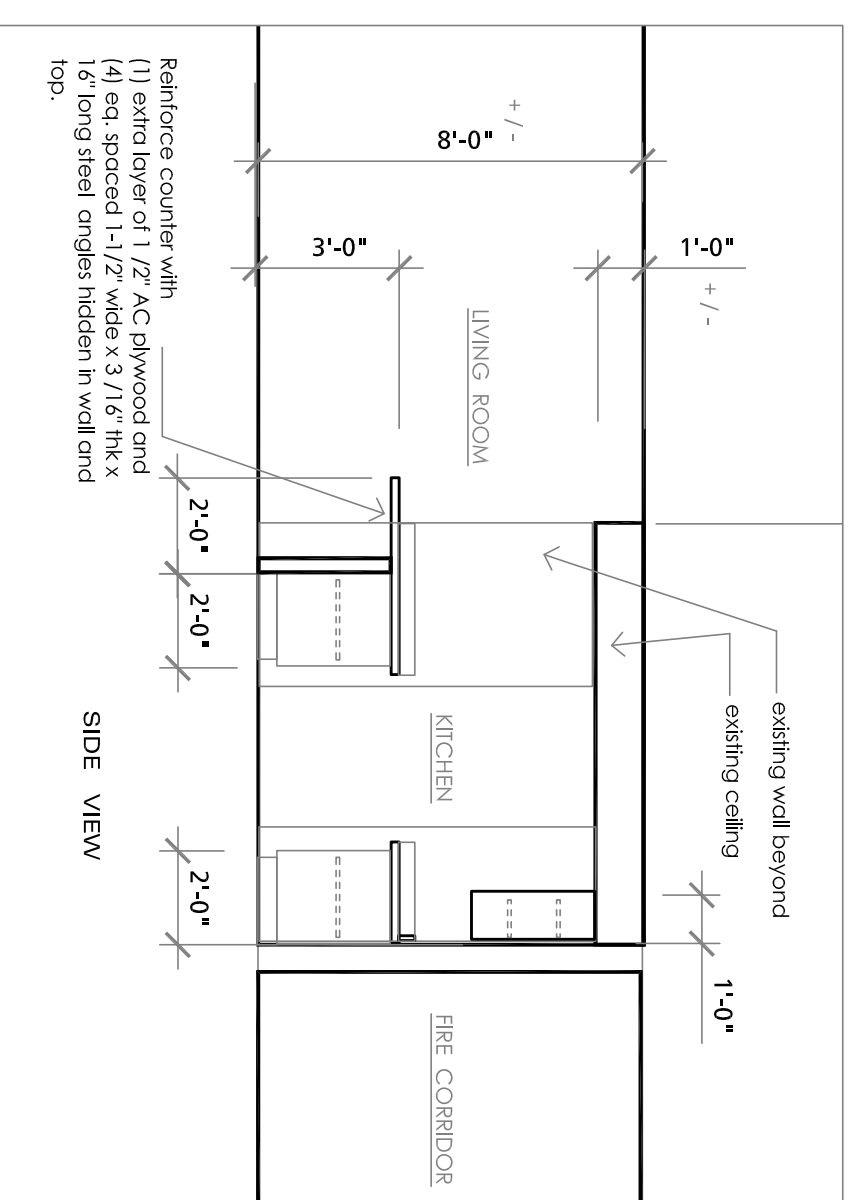
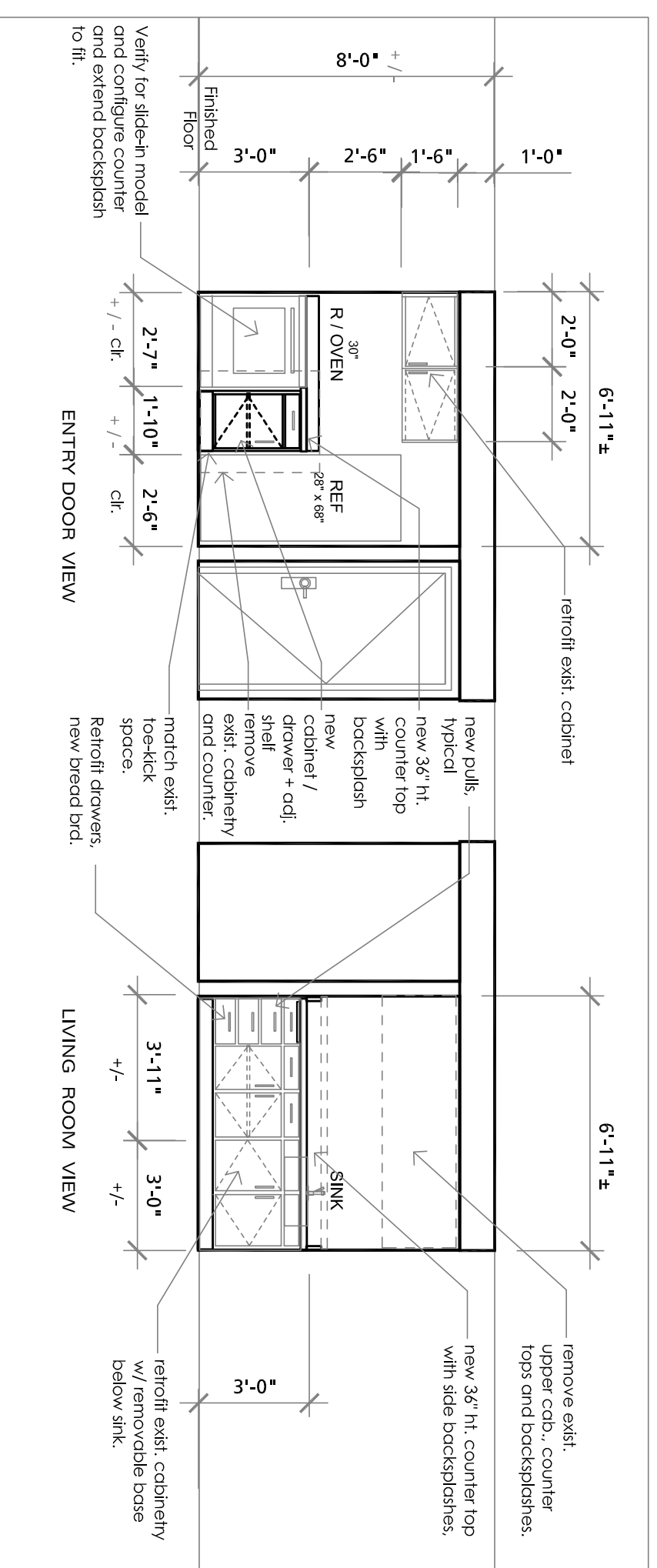
4 Kitchens

1/4" = 1' - 0"



5 Lounge

1st Floor - Sink / Cabinet



6 Interior Elevations - Details

1/4" = 1' - 0"

7 Laundry

1st Floor - Sink / Cabinet

FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEERS' DRAWINGS AND SPECIFICATIONS.

Interior Elevations

Revisions :
 1/ 5 / 4 / 12 ADDENDUM #1
 Date :
 4/17/12

Drawn :

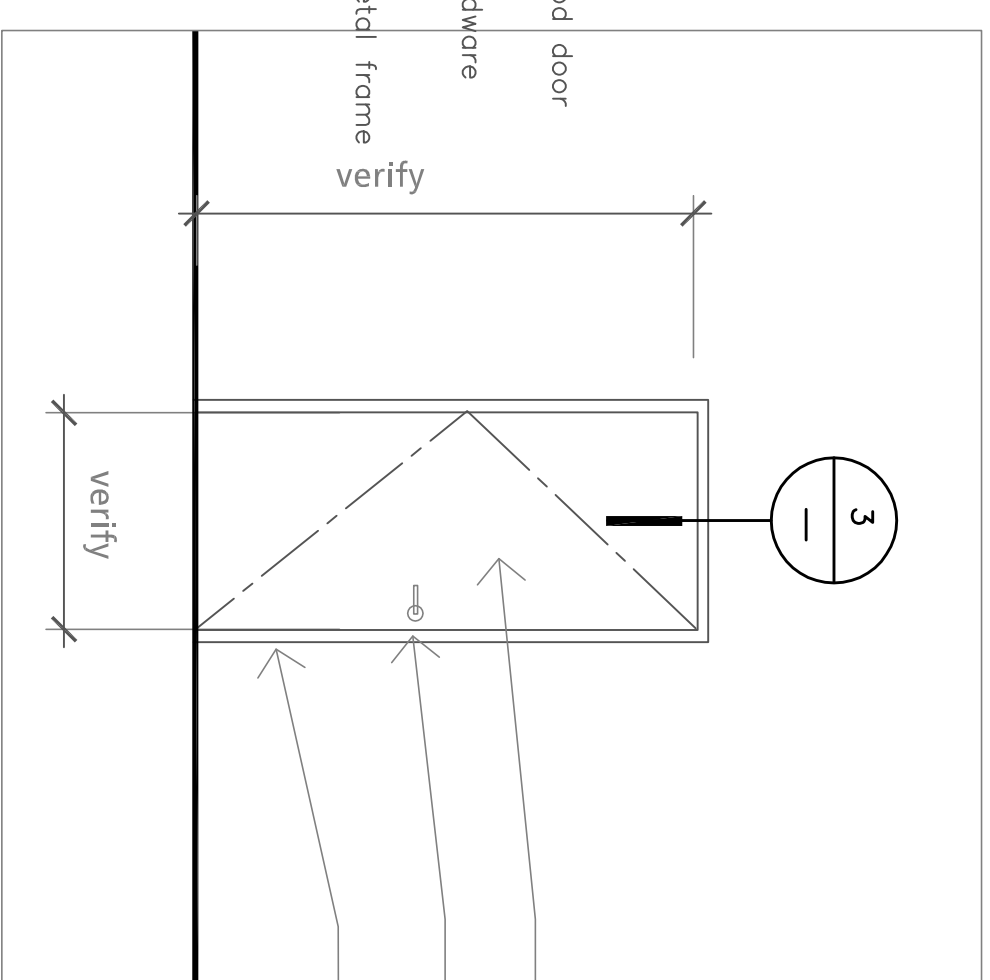
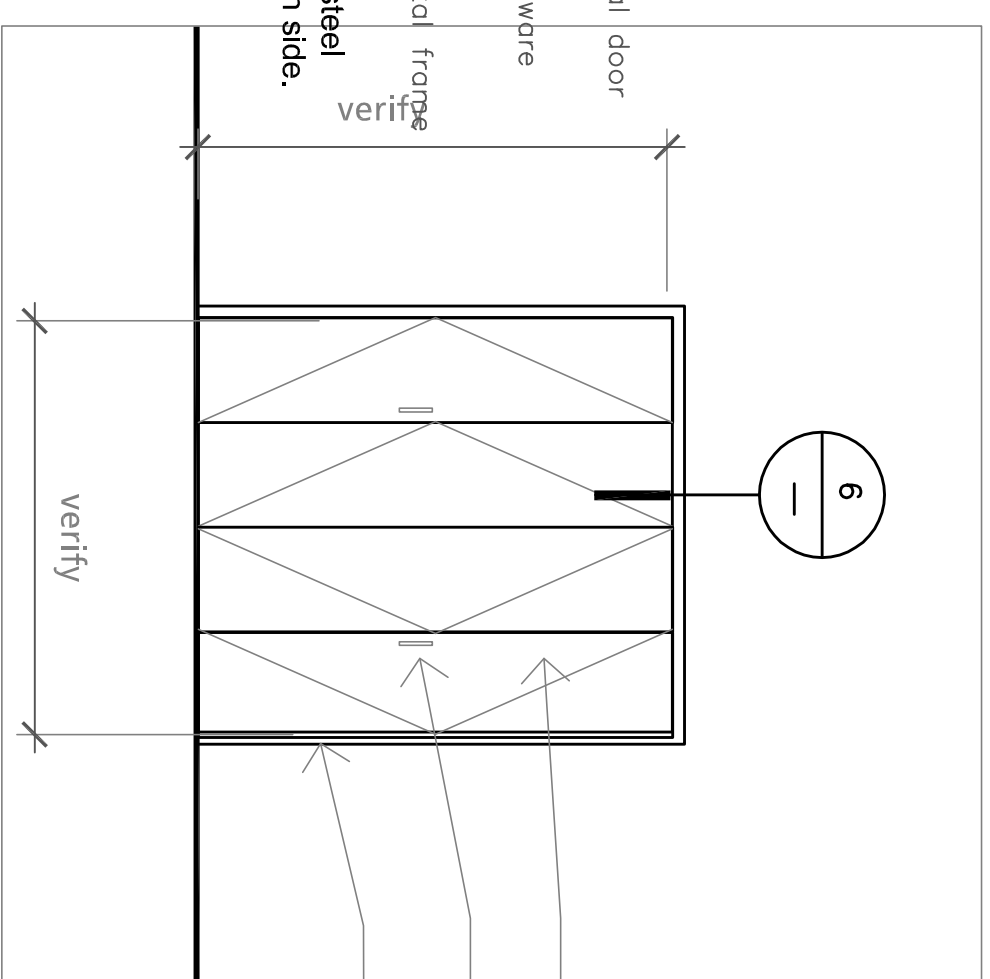
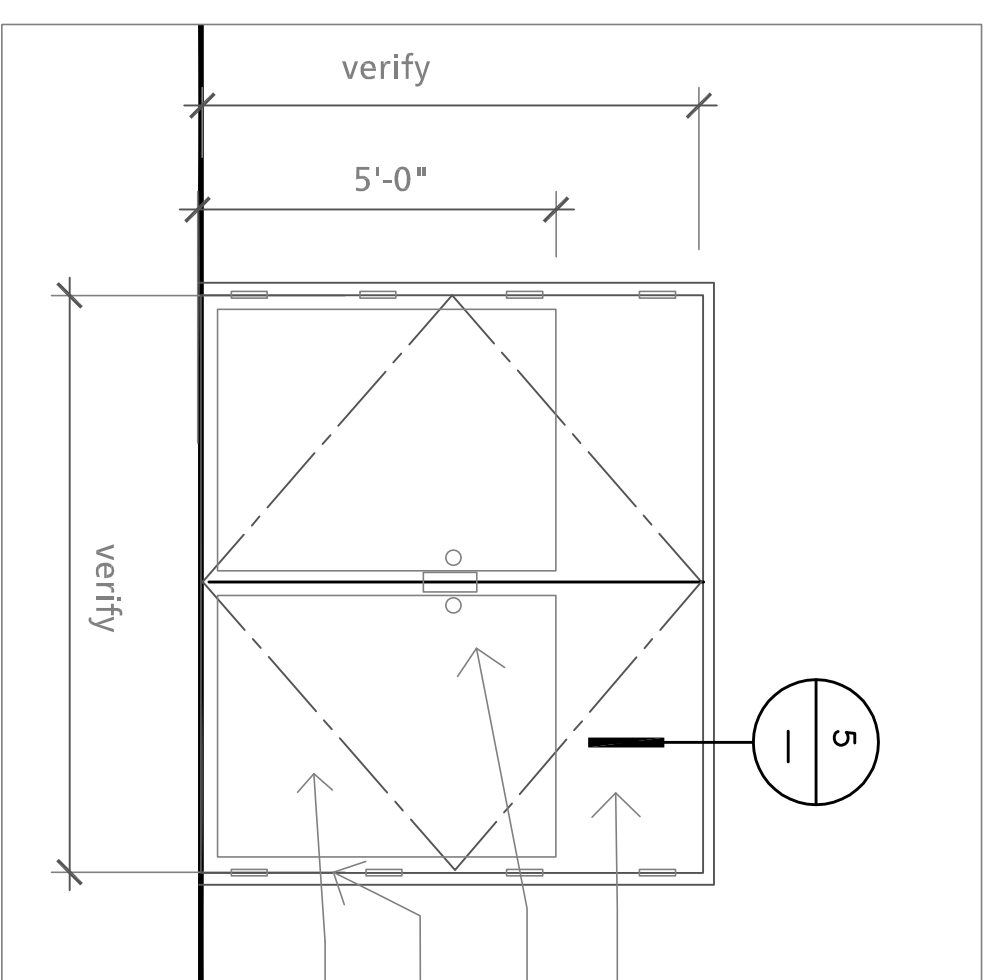
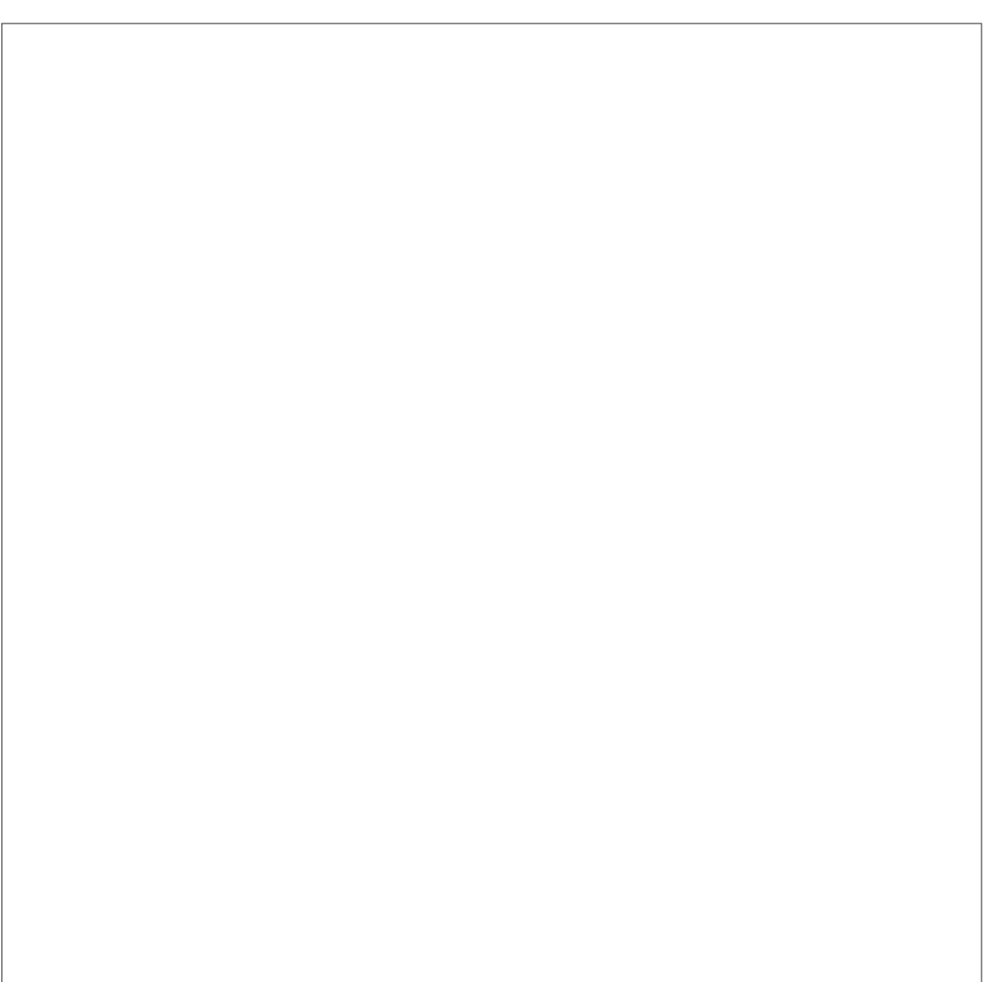
Checked :

4/17/12
 issued for bid/permit



Notes

1. See specification sheet for notes. A

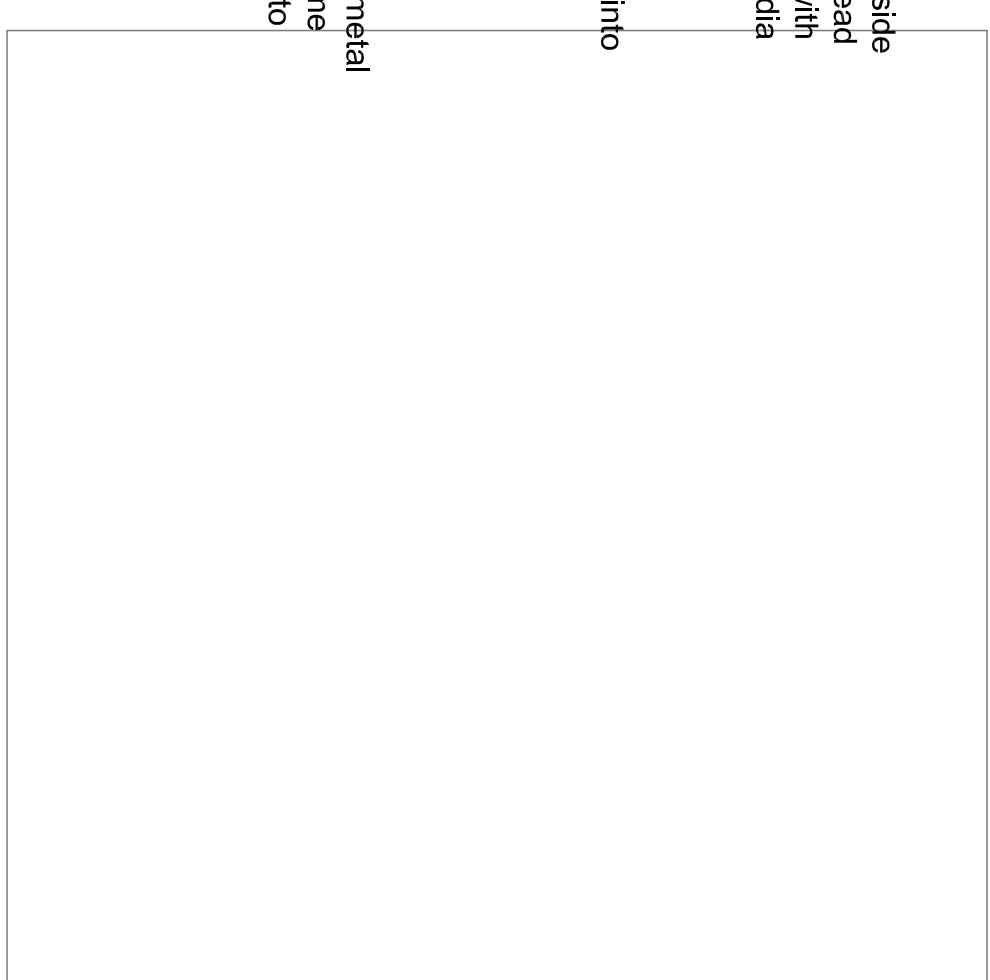
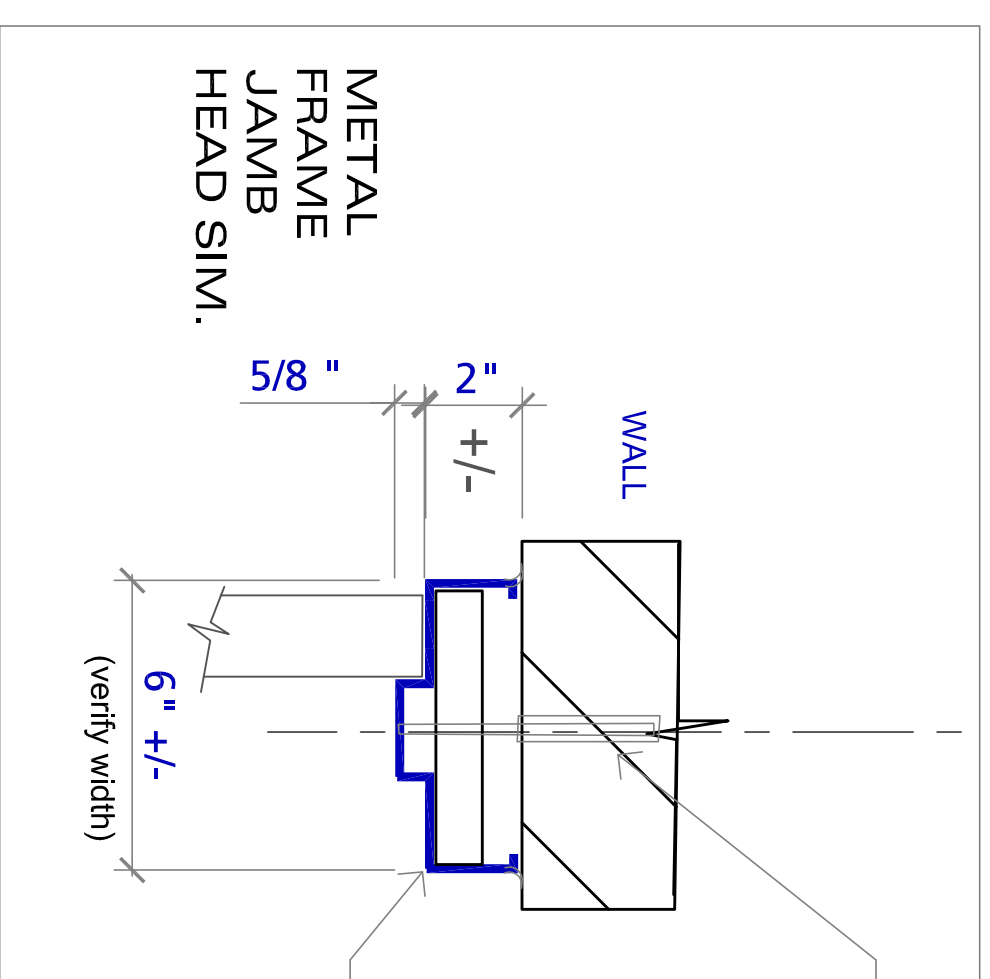
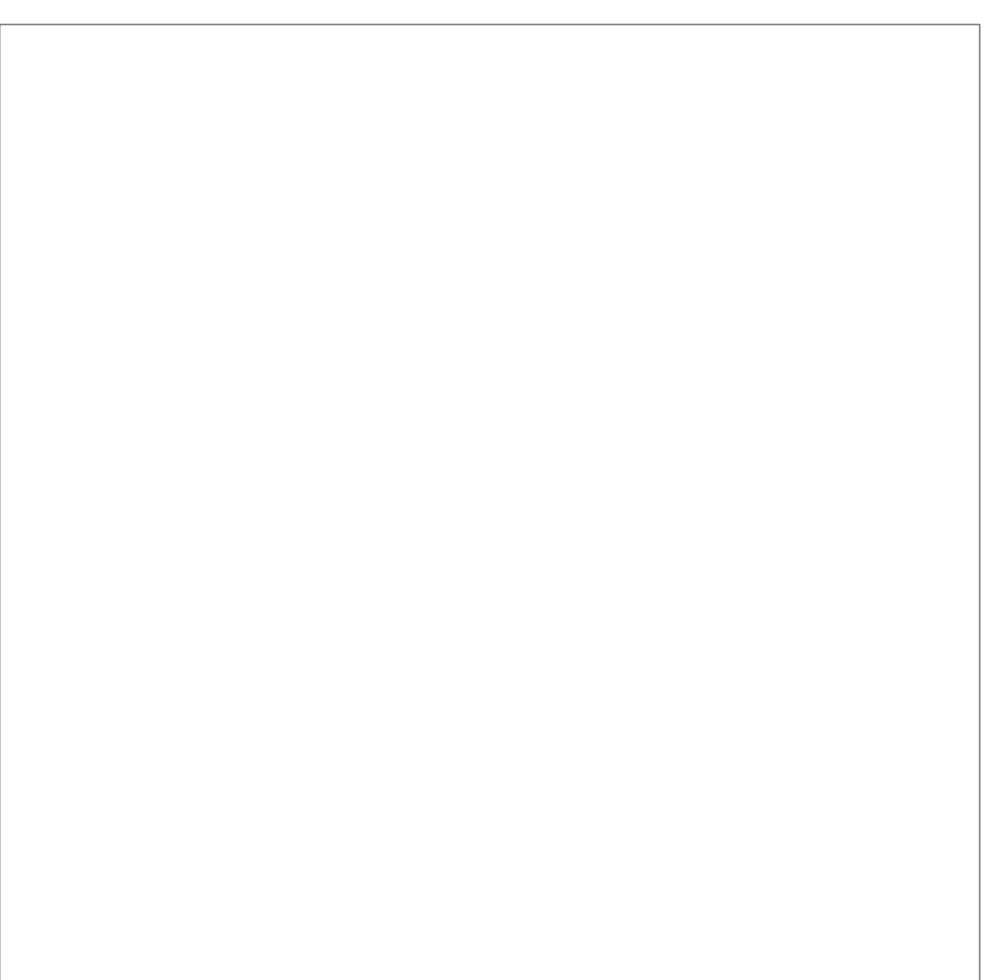
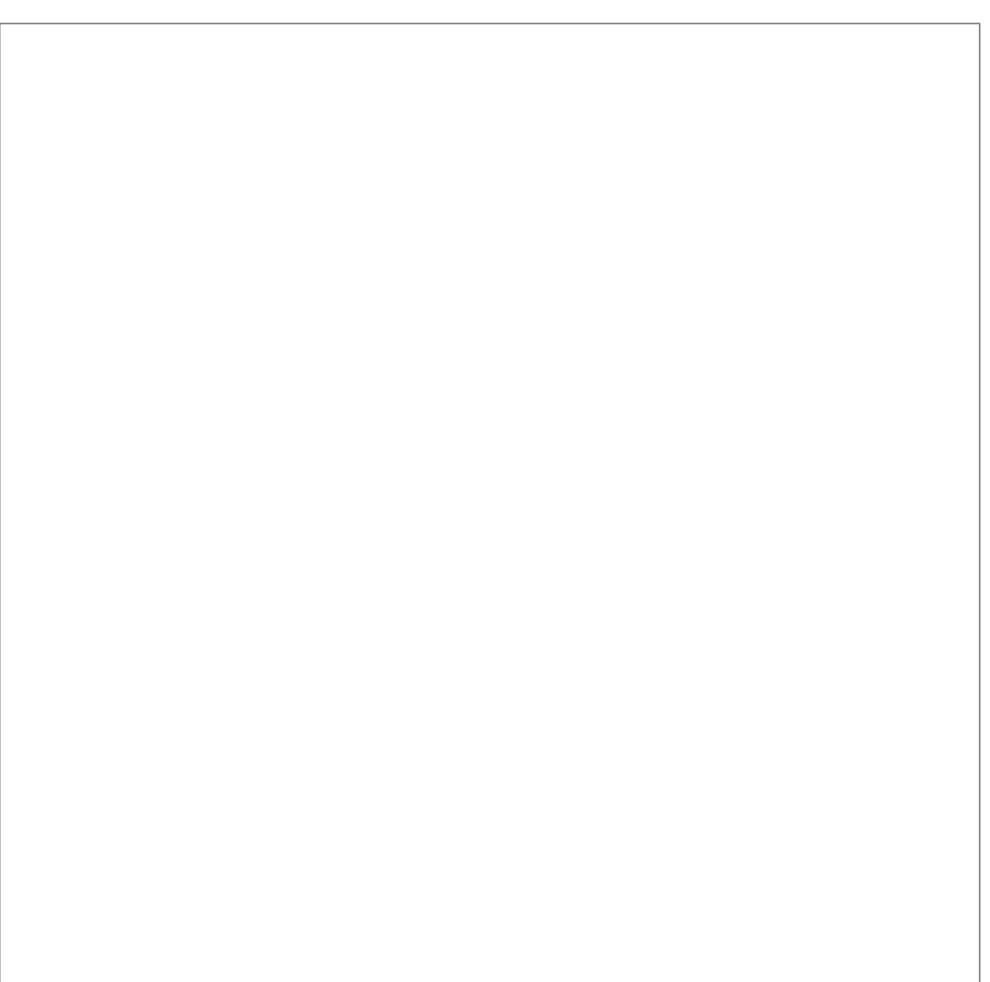


5 detail
1 1/2" = 1'-0"

7 ext. trash doors
3/8" = 1'-0"

4 bi-fold closet door
3/8" = 1'-0"

1 int. typ. flush door
3/8" = 1'-0"

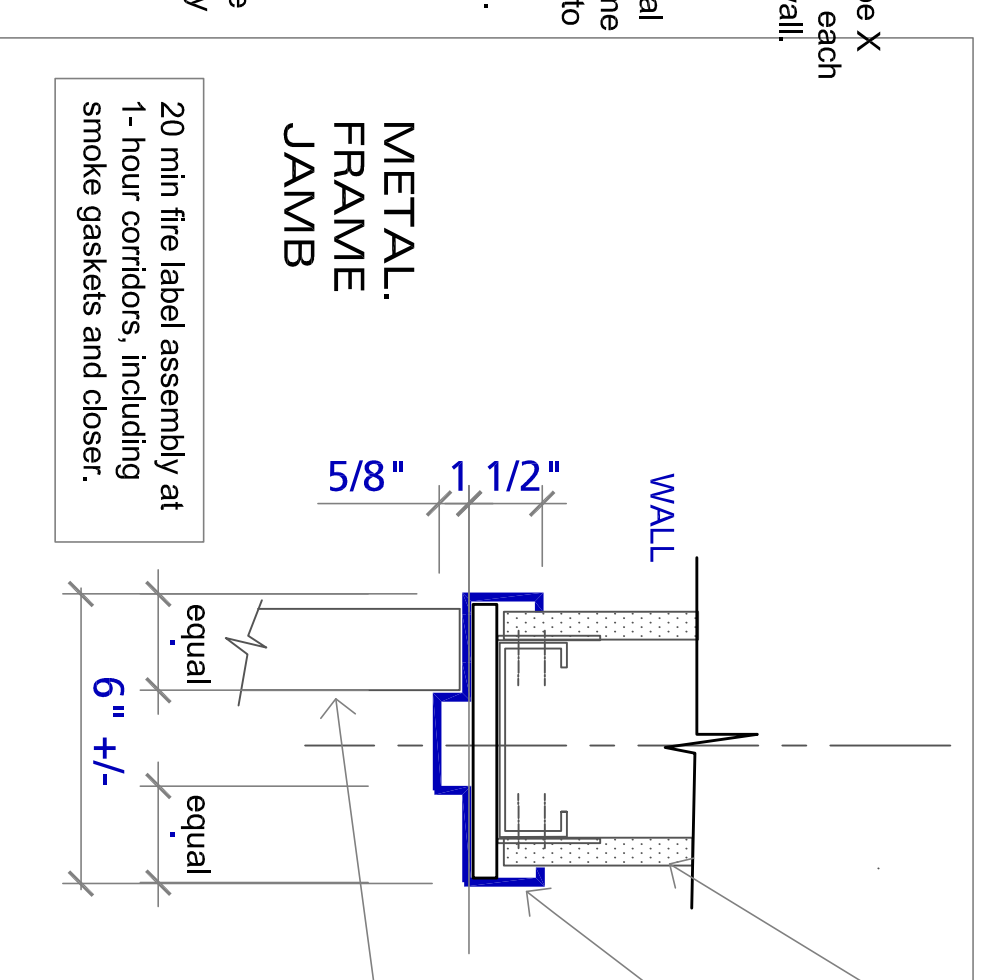
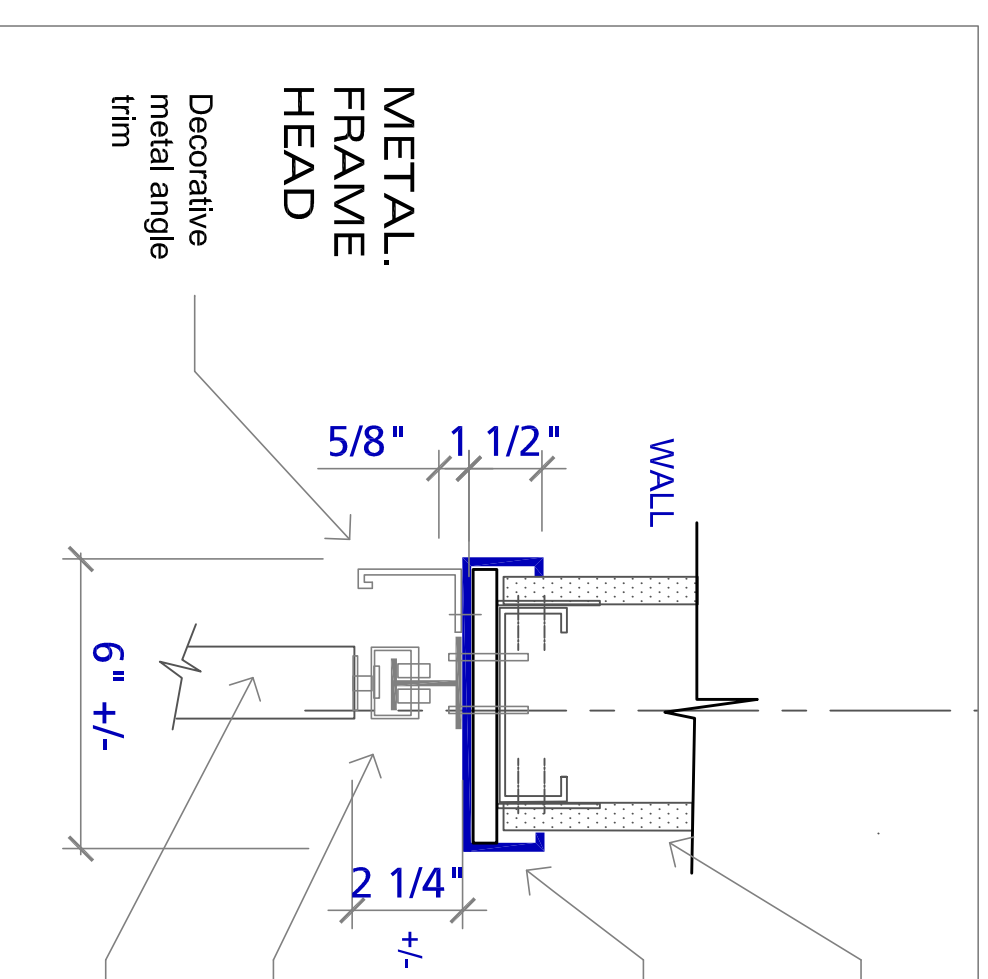
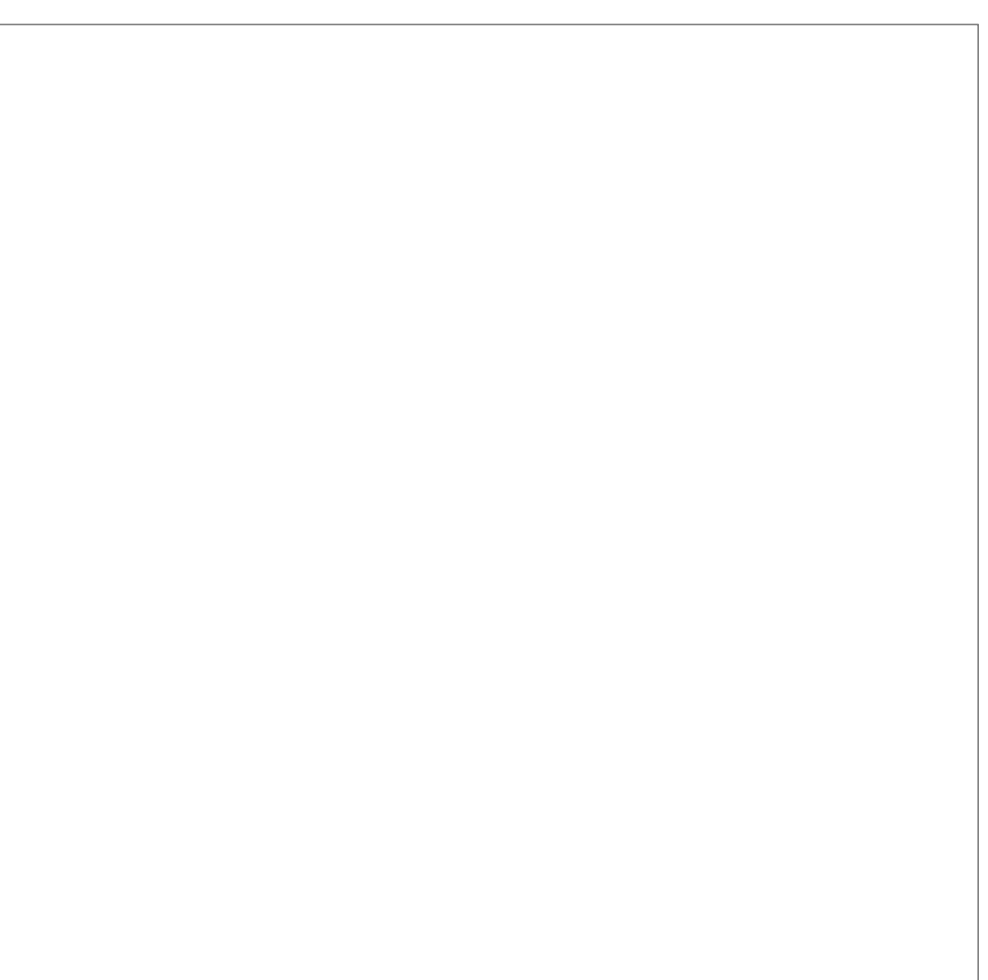
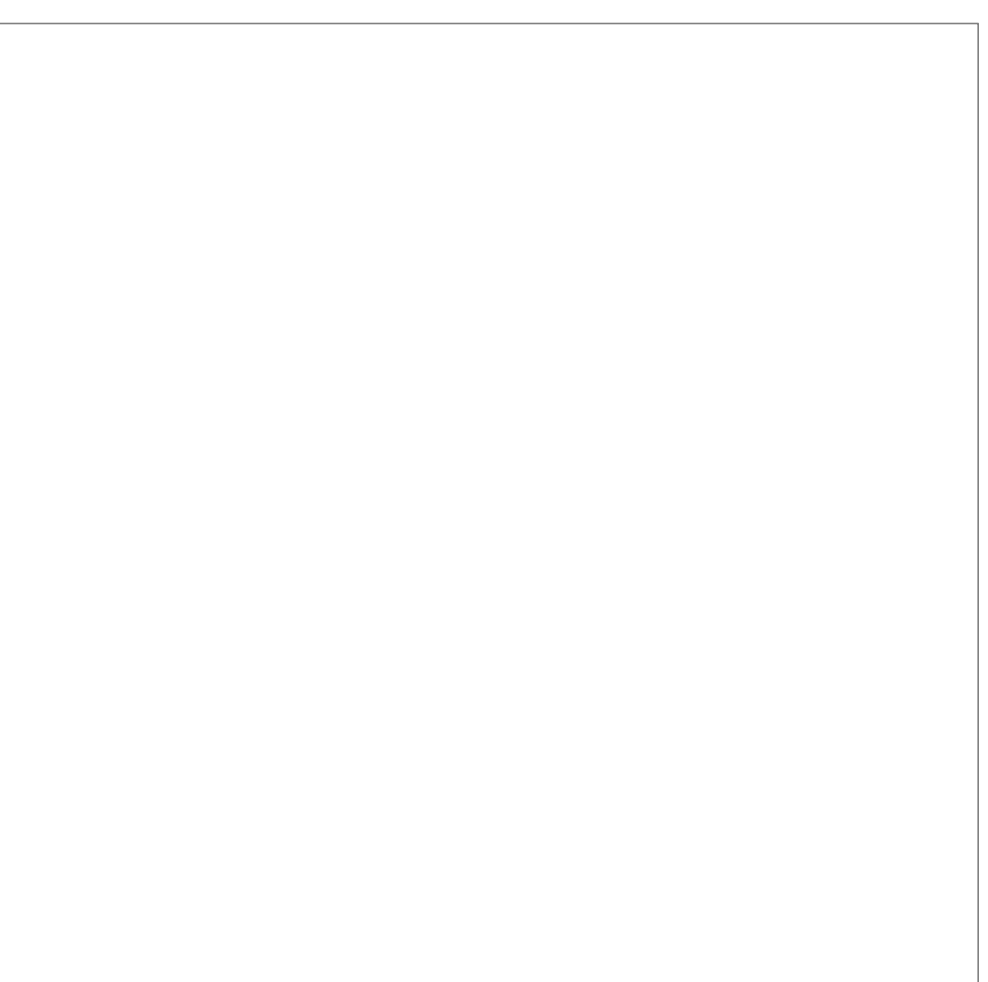


5 detail
1 1/2" = 1'-0"

5 detail
1 1/2" = 1'-0"

5 ext. trash doors.
3" = 1'-0"

5 detail
3/8" = 1'-0"



6 detail
1 1/2" = 1'-0"

6 detail
1 1/2" = 1'-0"

6 bi-fold detail.
3" = 1'-0"

3 interior metal door frame
3" = 1'-0"

FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEERS' DRAWINGS AND SPECIFICATIONS.



4/17/12
issued for bid/permit

Details

Revisions :

Date :

4/17/12

Drawn :

Checked :

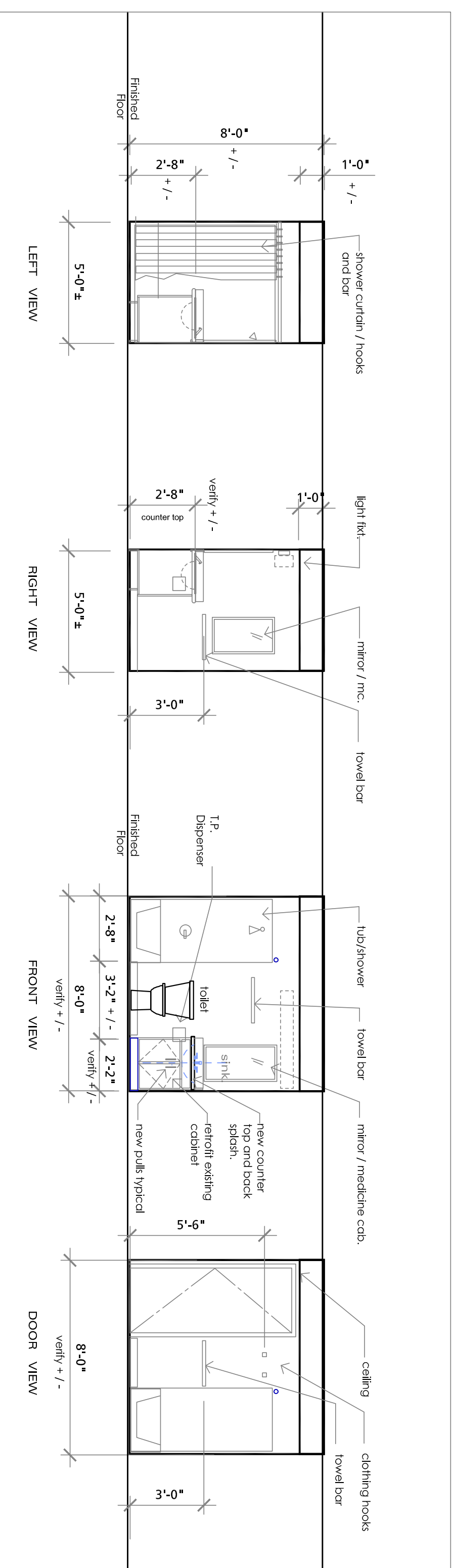
A9.2

Details

scale as noted

PSU Facilities and Planning
**Joseph C. Blumel
Hall**

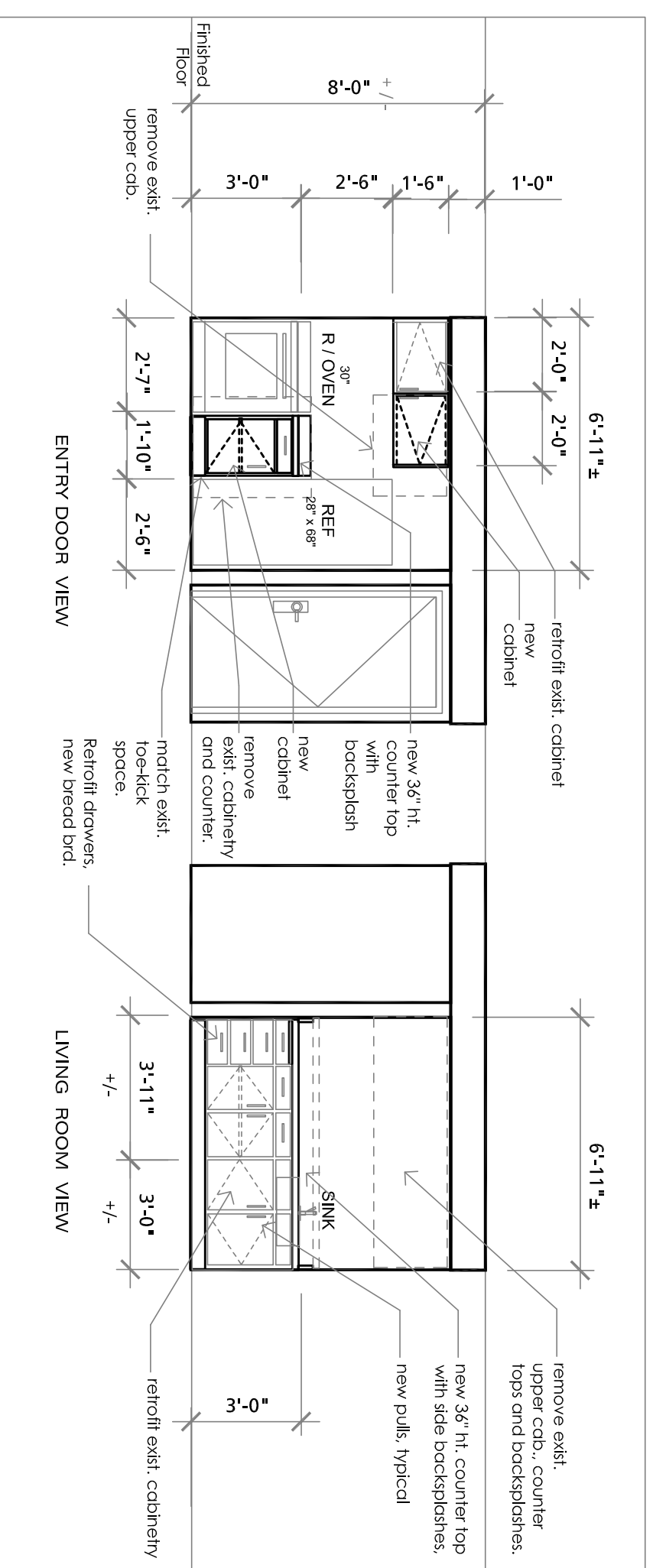
Residence Hall
RE-PIPE REMODEL
(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201



TYPICAL STANDARD and EXPANDED UNITS

1
Bathrooms

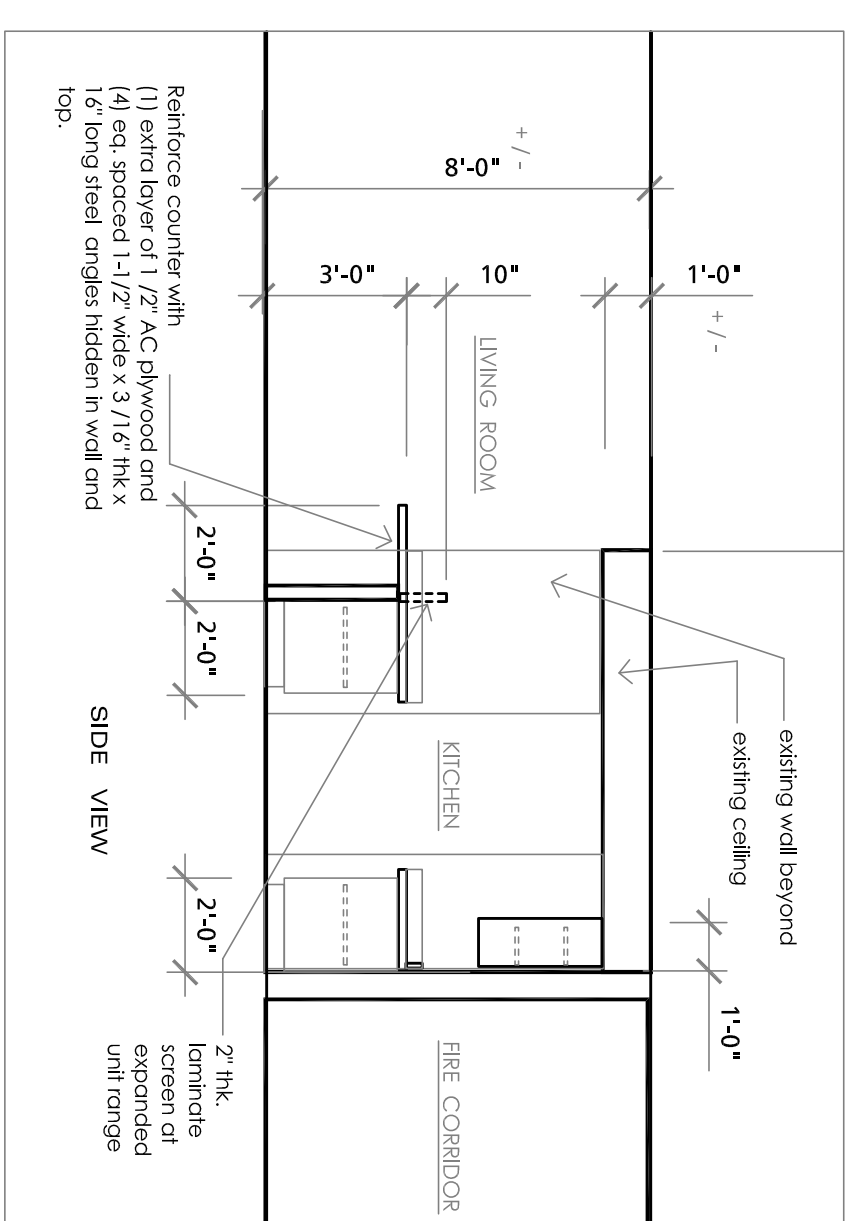
1/4" = 1' - 0"



TYPICAL STANDARD UNITS

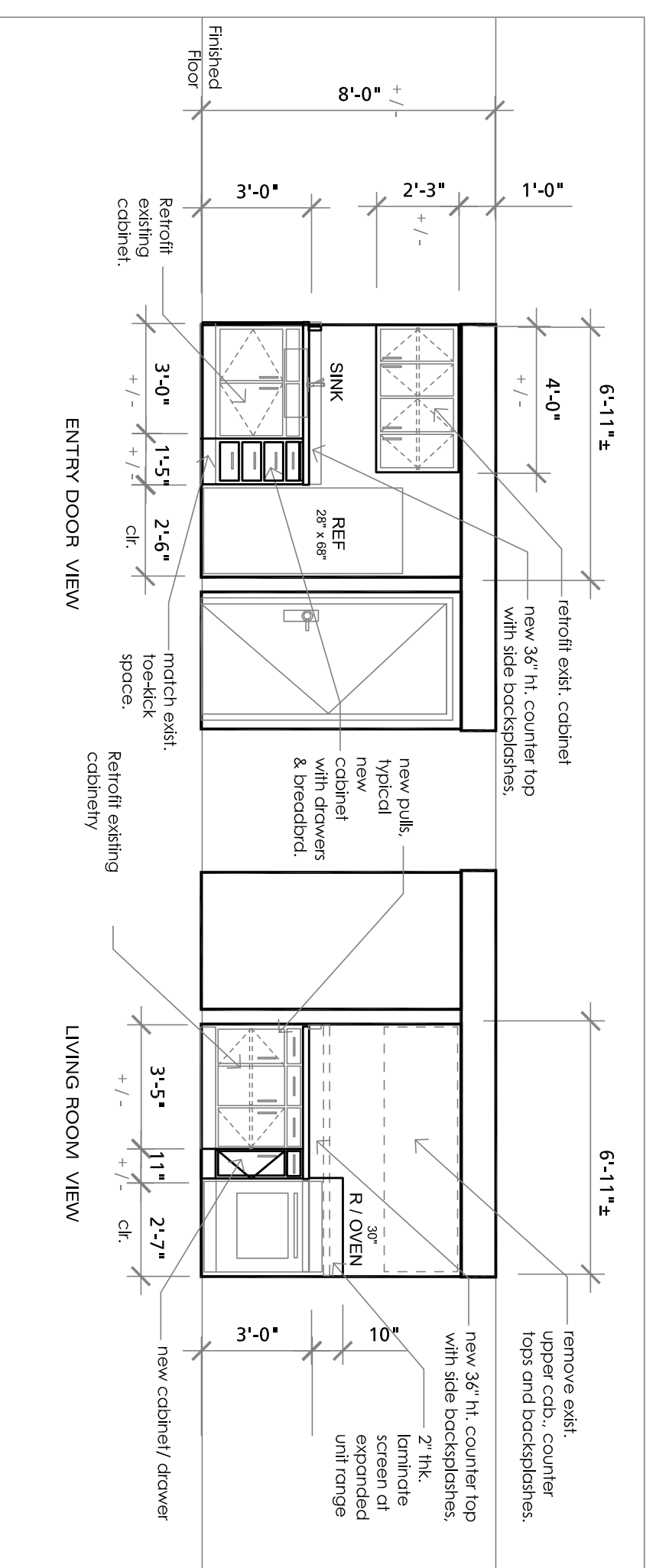
2
Kitchens

1/4" = 1' - 0"



SIMILAR at STANDARD and EXPANDED UNITS

3



TYPICAL EXPANDED UNITS

4
Interior Elevations - Details

1/4" = 1' - 0"

Elevation Notes

1. See specification sheet for notes.



4/17/12
issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL,
TELECO - AV, AND FIRE SPRINKLER / ALARM INFORMATION
SEE ENGINEERS' DRAWINGS AND SPECIFICATIONS.

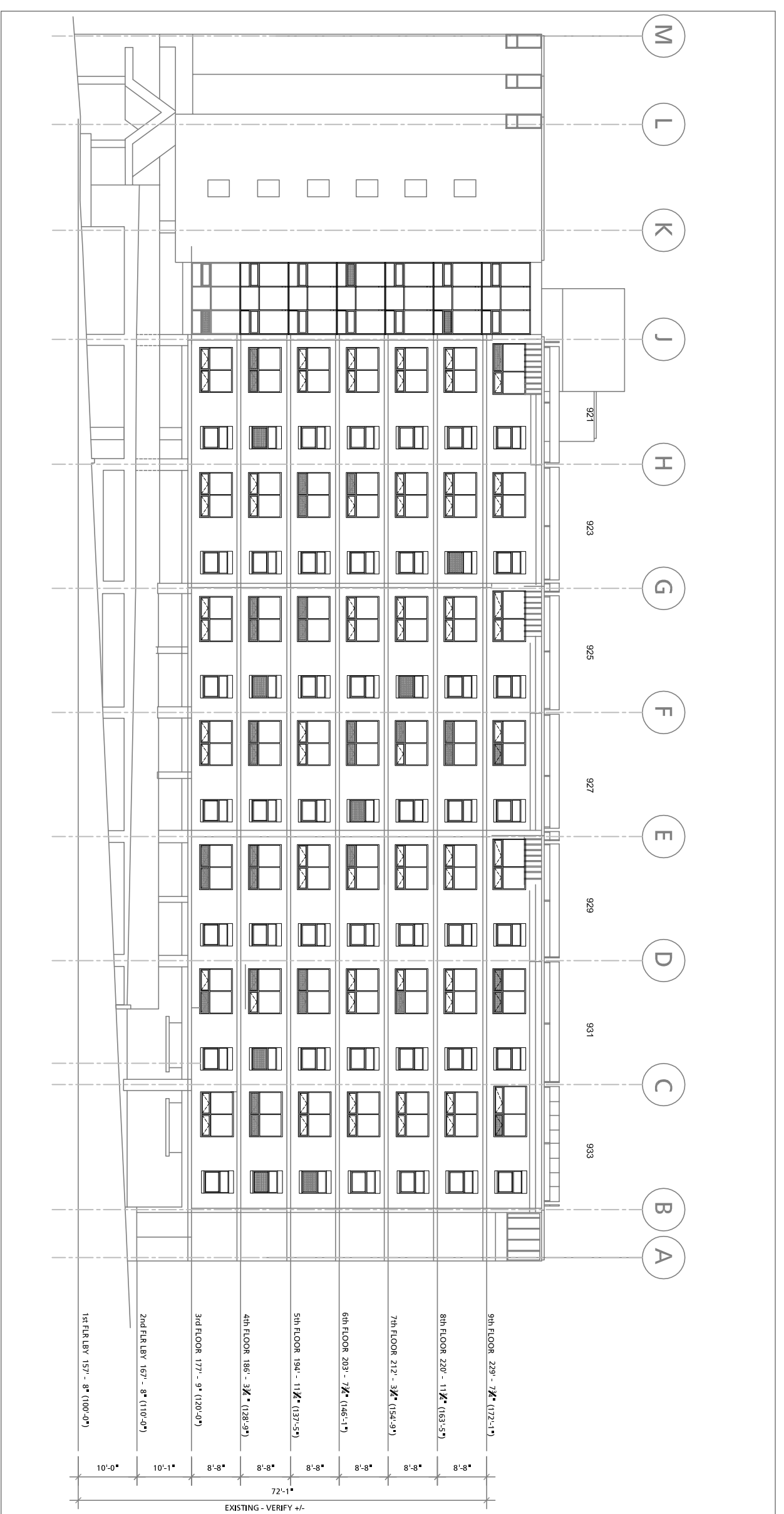
Interior Elevations

Revisions : _____ Date : _____

Drawn : _____ 4/17/12

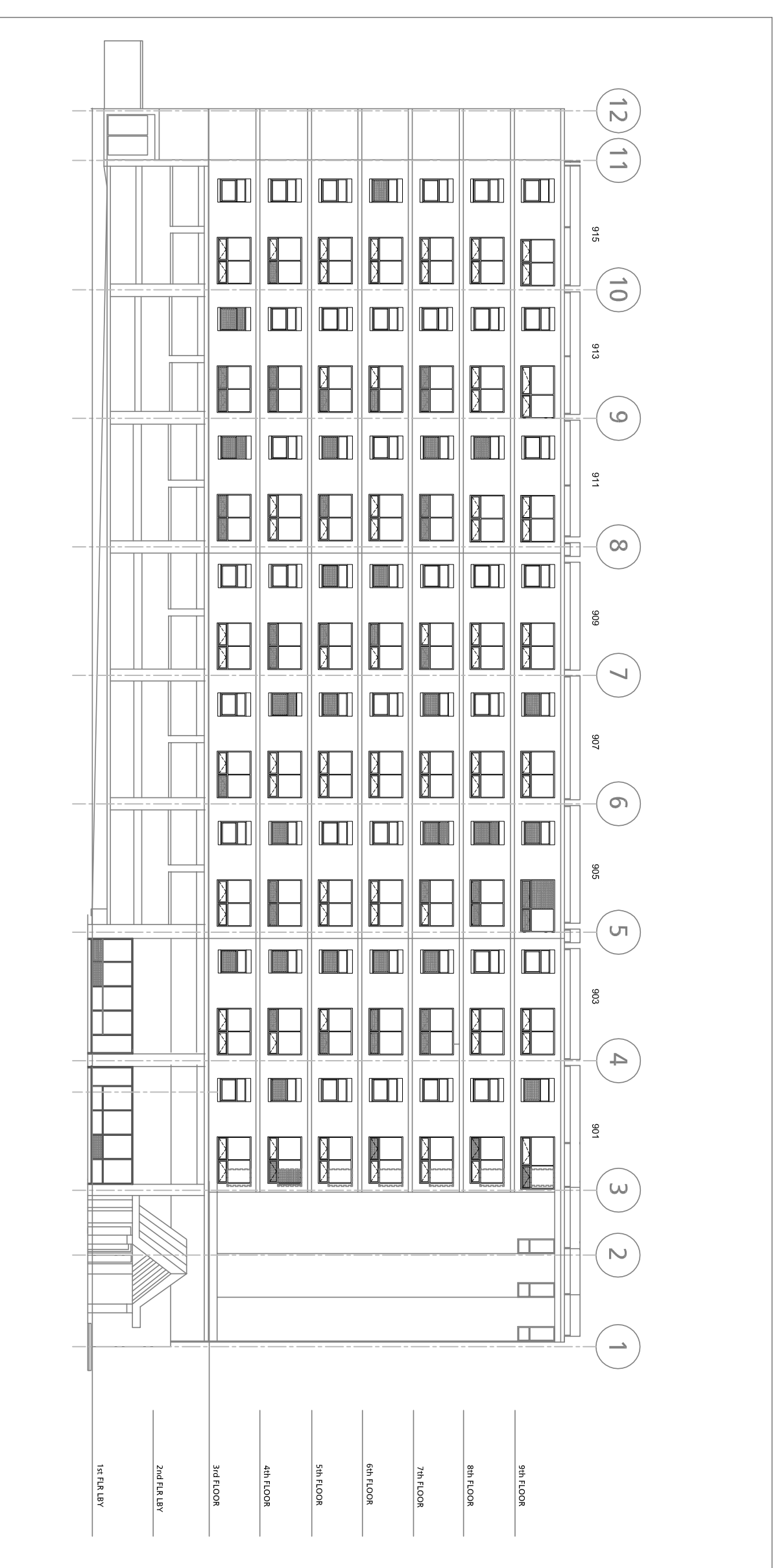
Checked : _____

A8.1



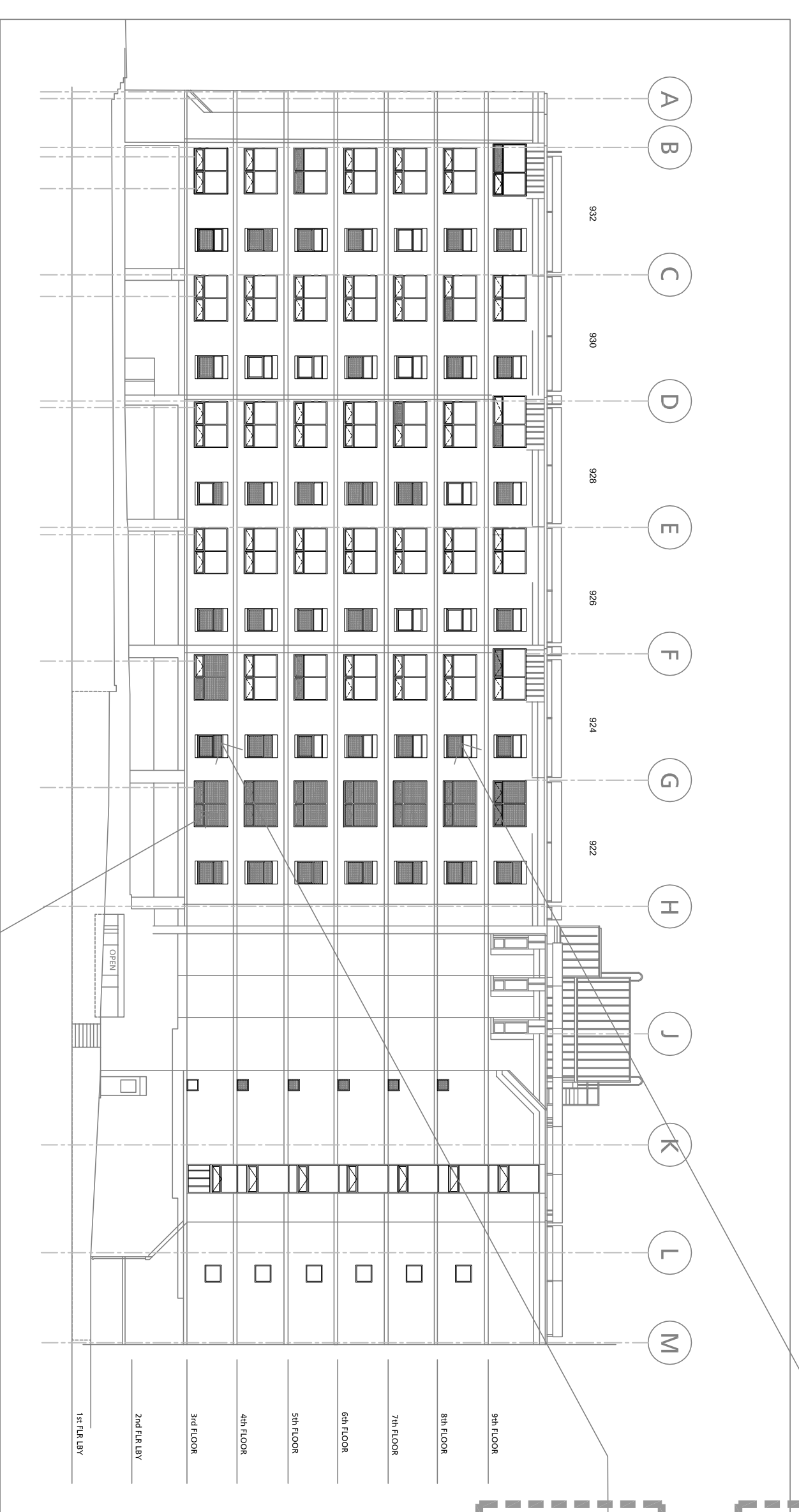
North Elevation

3/64" = 1' - 0"



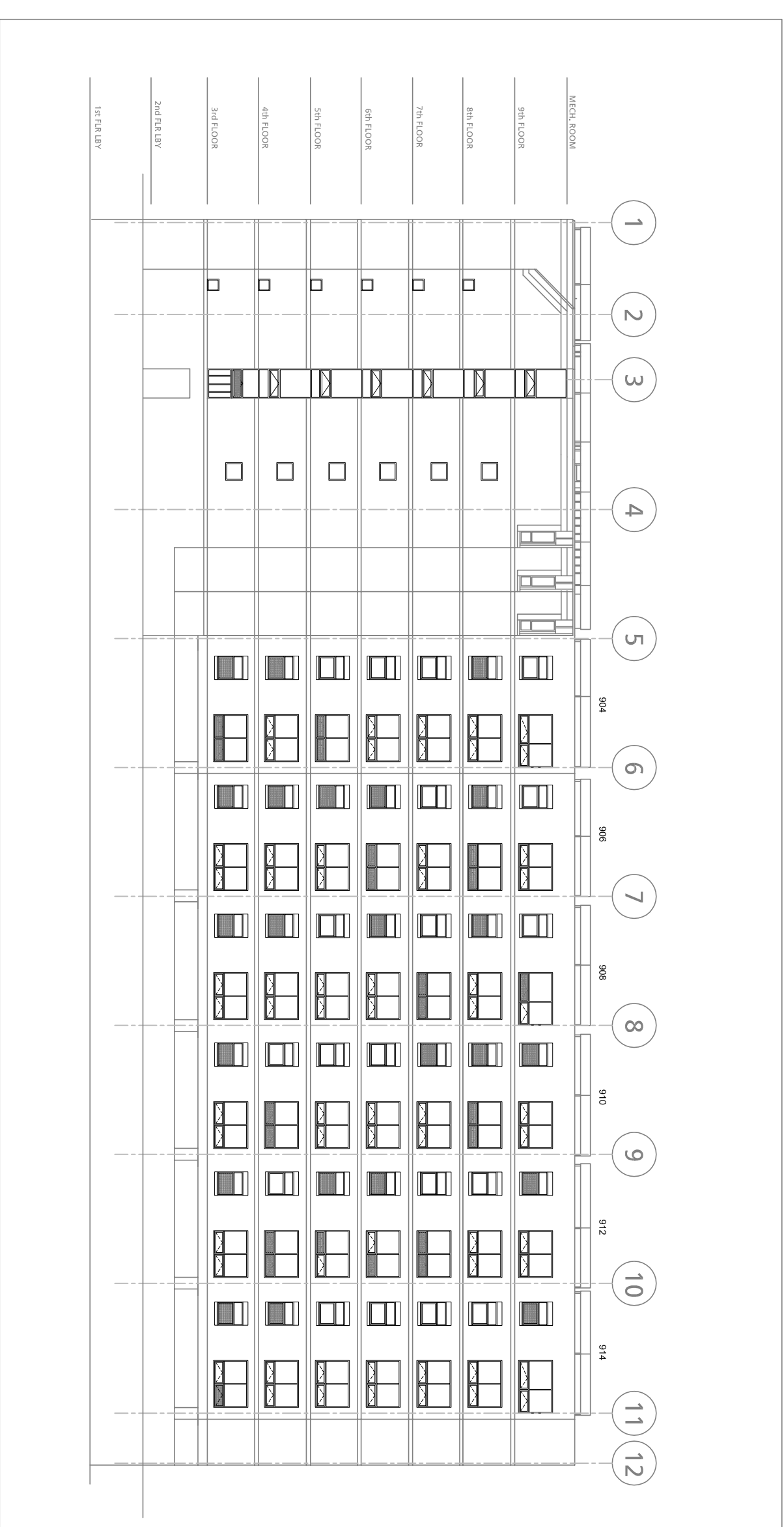
East Elevation

3/64" = 1' - 0"



South Elevation

Typical Notes for All Elevations.



West Elevation

ABI # 8

0.5 glass
0.5

ABI # 1

0.5 Clean/seed
1.9 caulk

Shaded windows denote glass replacement--see schedule.

Clean all exterior masonry thoroughly to include removing all efflorescence and mold areas.
New Caulk at all joints and around windows and doors at exterior of bldg.

- Elevation Notes**
- See specification sheet for note text. **A**

4/17/12
issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO - AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

Exterior Elevations

Revisions :
1 5/4/12 APPENDUM #1
Date :
4/17/12

Drawn :
Checked :
A10.1

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

(Block 28)
1705 SW 11th Ave.
Portland, Oregon 97201

New Interior Material / Color / Finish Schedule

1 Typical Note on Plan

		INTERIOR FINISH SCHEDULE (XXX = Use at Location Shown)										
NEW MATERIAL	COLOR / ITEM (MANUF. OR APPROVED EQUAL)	STANDARD / EXPANDED UNITS	ADA UNITS	CORRIDORS	LOBBY 1ST-2ND FLR.	LOUNGE	LAUNDRY ROOMS	OFFICE	ENCLOSED STAIRWAYS	STORAGE, MECHANICAL, ELECTRICAL RMS.	NEW ADA UNITS W/ ROLL-IN SHOWER	ADA RESTROOM 1ST FLR.
1	KITCHEN APPLIANCES	1 GE SILVER 18.1 CU. FT. TOP FREEZER REFRIGERATOR, MODEL GTJ18CB0SA 2 GE SILVER 30" FREEZING AND FREEZER, MODEL JBS079SA 3 GE ENERGY STAR 16.5 CU. FT. TOP FREEZER REFRIGERATOR, MODEL GTK171BDBS 4 GE DROPH-IN ELECTRIC RANGE WITH SELF-CLEANING OVEN, MODEL JDP423T5S	XXX								XXX	
2	CABINETS	MAPLE - NATURAL TRANSPARENT FINISH WILSONART, 4883 ANTIQUE TOPAZ	XXX	XXX		XXX	XXX				XXX	
3	COUNTER TOP LAMINATE		XXX	XXX		XXX	XXX				XXX	
4	PAINT	WALLS CEILING METAL DOORS DOOR FRAMES WALL ACCENT WALL ACCENT										
		PF-1 MILLER, 7742WV LIGHT TOAST PF-2 MILLER, CW065W CAMELE PF-5 SHERWIN WILLIAMS, SW6102 PORTABELLO PF-6 MILLER, 9738N CORNWOOD BEHR, U200-20 RETRO AVAQUAO PF-7 MILLER, 7735D TOPAZ MATCH CORRIDORS PF-11 MILLER, 7735D TOPAZ MATCH CORRIDORS PF-20 NO PAINT - EXISTING TO REMAIN PF-21 NO PAINT - EXISTING TO REMAIN										
5	CARPET	1 SHAW CONTRACT DIFUSE TILE 59575.MOVEMENT 75481 2 SHAW CONTRACT, HORIZONTAL EDGE TILE 59115-BRITE GREEN FRINGE 67586, INSTALLATION METHOD-BOXED IN 3 SHAW CONTRACT, GILMMER TILE 59229-BRONZED 27750	XXX	XXX		XXX	XXX	XXX			XXX	
		AB1 # 2										
6	TRANSITIONS	1 JOHNSONITE, CIA-XX-2 3/8" TO .080 -4/7 BROWN 2 JOHNSONITE, EG-XX-J 3/16" MATL TO HOOR-4/7 BROWN 3 JOHNSONITE, 31T-XX-B .080" TO 1/8 -4/7 BROWN 4 JOHNSONITE, CIA-XX-C 1/4" TO 1/8 -4/7 BROWN 5 ROPE #176 1/2" MULTI-USE REDUCER-100 BLACK 6 ROPE, #56 TILE TO CARPET JOINER 1/2"-100 BLACK										
7	ACCENT CARPET	AC-1 SHAW CONTRACT, COLOUR PLANK 59595-BRITE GREEN 95325 AC-2 SHAW CONTRACT, COLOUR PLANK 59595-DAVONN BLUE 95495		XXX		XXX	XXX	XXX				
8	WALK-OFF CARPET	WCC-1 CONNEXUS SUPER NOP 52 WALK-OFF TILE 7 GRILLS WCC-2 CONNEXUS SUPER NOP 52 WALK-OFF TILE, 19 BERG			XXX	XXX						
9	RESILIENT FLOORING	1 FORBO, MARMOLEUM, FRESCO 3876 CAMEL 2 FORBO, MARMOLEUM, MCT TILE-3233 SHITAKE 3 FORBO, MARMOLEUM, MCS SHEET-3233 SHITAKE 4 ARMSTRONG, MEDLEY-H8645 COFFEE	XXX	XXX		XXX	XXX				XXX	XXX
10	TILE	1 KO, MOSAIC FLOOR TILE A89 (4" x 4" x 1/4") 2 KO, MOSAIC FLOOR TILE A89 (4" x 4" x 1/4") 3 KO, MOSAIC FLOOR TILE A89 (4" x 4" x 1/4") 4 #42 MOCHA GROUT									XXX	
11	WALL BASE	1 JOHNSONITE, TIGHTLOCK WALL BRUSHED WOODWORK 2 JOHNSONITE, TIGHTLOCK WALL MANDALAY 4-1/2" X 3/8" WALL BASE-47 BROWN 3 JOHNSONITE, TIGHTLOCK WALL MANDALAY 4-1/2" X 3/8" WALL BASE-47 BROWN 4 JOHNSONITE, TIGHTLOCK WALL MANDALAY 4-1/2" X 3/8" WALL BASE-47 BROWN	XXX	XXX		XXX	XXX	XXX			XXX	
		AB1 # 2										
12	WAINSCOT - 1ST FLOOR RESTROOM	SEE SPECIFICATIONS										XXX

Plan Notes
1. See specification sheet for notes.



4/17/12
issued for bid/permit



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

Interior Schedule

Revisions: Date: 4/17/12

Drawn: _____

Checked: _____

A11.3

schedules

no scale

Plan Notes

1. See specification sheet for notes. A

FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

Room Schedule

Revisions :

Date :

4/17/12

Drawn :

Checked :

A11.4

Room / Finish Schedule

ROOM / FINISH SCHEDULE (see interior material / finish schedule and specifications)												
ROOM / ITEM	NEW FLOOR MATERIAL	NEW WAX or SEAL FLOOR FINISH	WALL MATERIAL (SEE FLOOR PLAN FOR NEW)	NEW WALL BASE	NEW WALL FINISH	CEILING MATERIAL (SEE CEILING PLAN FOR NEW)	NEW CEILING FINISH					NOTES
1 STANDARD, EXPANDED, ADA DORM UNITS												
LIVING ROOM	CARPET		CONC/ BLK. OR GYP BRD.	YES	PAINT	CONCRETE	PAINT					
BEDROOM	CARPET		CONC/ BLK. OR GYP BRD.	YES	PAINT	CONCRETE	PAINT					
KITCHEN	RESILIENT	WAX	CONC/ BLK. OR GYP BRD.	YES	PAINT	GYP BRD	PAINT					
BATHROOM	RESILIENT	WAX	GYP BRD.	YES	PAINT	GYP BRD	PAINT					
ENTRY HALLWAY	CARPET		GYP BRD.	YES	PAINT	GYP BRD	PAINT					
BEDROOM CLOSET	CARPET		CONC/ BLK. OR GYP BRD.	YES	PAINT	GYP BRD	PAINT					
ENTRY CLOSET	CARPET		GYP BRD.	YES	PAINT	GYP BRD	PAINT					
NEW ADA BATHROOM	TILE	SEAL	GYP BRD.	YES	PAINT	GYP BRD	PAINT					
NEW ADA ENTRY CLOSET	RESILIENT	WAX	GYP BRD.	YES	PAINT	GYP BRD	PAINT					
2 CORRIDORS	CARPET		GYP BRD.	YES	PAINT	CONCRETE	PAINT					
3 1ST / 2ND FLR. LOBBIES	CARPET		GYP BRD.	YES	PAINT	SUSPENDED ACOUST. TILE						
4 1ST FLOOR LOUNGE	CARPET		GYP BRD.	YES	PAINT	SUSPENDED ACOUST. TILE						
5 1ST FLR. LAUNDRY RM.	RESILIENT	WAX	GYP BRD.	YES	PAINT	SUSPENDED ACOUST. TILE						
6 1ST FLR. OFFICE	CARPET		GYP BRD.	YES	PAINT	SUSPENDED ACOUST. TILE						
7 1ST FLOOR RESTROOM	RESILIENT	WAX	GYP BRD.	YES	PAINT	GYP BRD.	PAINT					
8 3RD, 5TH, 7TH, and 9TH LAUNDRY ROOMS	RESILIENT	WAX	GYP BRD.	YES	PAINT	GYP BRD.	PAINT					
9 ENCLOSED STAIRWELLS	EXISTING TO REMAIN		GYP BRD. / CONCRETE / MASONRY		PAINT	CONCRETE	PAINT					
10 STORAGE, MECHANICAL, ELECTRICAL, and UTILITY ROOMS.	EXISTING TO REMAIN		GYP BRD. / MASONRY		EXISTING TO REMAIN	GYP BRD.	PAINT					
11 WOOD DOORS												NEW DOORS to MATCH EXISTING. CLEAN AND OIL EXISTING DOORS.
12 METAL DOORS												PAINT
13 METAL DOOR FRAMES												PAINT

4/17/12
 issued for bid/permit



GENERAL STRUCTURAL NOTES

GENERAL NOTES:

- ALL CONSTRUCTION AND DESIGN SHALL CONFORM TO THE 2009 INTERNATIONAL BUILDING CODE AS AMENDED BY THE STATE OF OREGON.
- THE STRUCTURAL DRAWINGS SHALL BE UTILIZED IN CONJUNCTION WITH OTHER DESIGN CONSULTANT'S DRAWINGS (ARCHITECTURAL, MECHANICAL, ETC.). IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REQUIREMENTS OF THE DRAWINGS INTO THEIR SHOP DRAWINGS AND CONSTRUCTION.
- THE GENERAL STRUCTURAL NOTES ARE INTENDED FOR USE IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS. IN THE EVENT OF A CONFLICT BETWEEN THE TWO, THE GENERAL STRUCTURAL NOTES SHALL SUPERSEDE THE PROJECT SPECIFICATIONS. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER.
- CONSTRUCTION SEQUENCE AND METHODS:**
 - THE STRUCTURAL DRAWINGS ARE INTENDED FOR THE STRUCTURE TO ACT AS A WHOLE ONCE CONSTRUCTION IS COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE SAFETY AND STABILITY (I.E. TEMPORARY BRACING IF REQUIRED) DURING CONSTRUCTION AS A RESULT OF CONSTRUCTION METHODS AND SEQUENCES.
 - THE CONTRACTOR SHALL TAKE INTO ACCOUNT COLD WEATHER CONSTRUCTION AND THE EFFECTS OF THERMAL MOVEMENT DURING THE CONSTRUCTION SCHEDULE.
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS. THE ARCHITECT AND/OR ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY BETWEEN THE EXISTING CONDITIONS AND CONSTRUCTION DOCUMENTS.
- SUBMITTALS:**
 - SHOP DRAWINGS FOR ALL STRUCTURAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION. SUCH ITEMS INCLUDE:
 - NONE
 - SHOP DRAWINGS OR CONTRACTOR ENGINEERED DETAILS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED STRUCTURAL ENGINEER IN THE STATE OF OREGON IF IT DIFFERS FROM THE DESIGN OF THE STRUCTURAL DRAWINGS. ANY REVISION FROM THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND IS SUBJECT TO THE REVIEW AND ACCEPTANCE BY THE ENGINEER.
 - CALCULATIONS, DESIGN DRAWINGS, AND SHOP DRAWINGS FOR THE DESIGN, FABRICATION, AND CONSTRUCTION OF BIDDER DESIGN ITEMS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED STRUCTURAL ENGINEER IN THE STATE OF OREGON AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION. BIDDER DESIGN ITEMS FOR THIS PROJECT INCLUDE:
 - NONE
 - CALCULATIONS AND BIDDER DESIGN DRAWINGS SHALL INCLUDE THE DESIGN, CONNECTION TO THE STRUCTURE, AND ACCOUNTING OF ANY LOCALIZED EFFECTS THE CONNECTIONS OR SYSTEMS MAY INDUCE ON THE STRUCTURE. ALL SUCH BIDDER DESIGNED ITEMS SHALL BE BASED ON THE DESIGN REQUIREMENTS AS SPECIFIED IN THE GENERAL STRUCTURAL NOTES.
 - SEISMIC BRACING AND RESTRAINT TO THE STRUCTURE OF ANY MEP EQUIPMENT, MACHINERY, AND ASSOCIATED PIPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONNECTIONS NOT IN COMPLIANCE WITH SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION) OR THE MEP DESIGN DRAWINGS, SHALL BEAR THE SEAL OF REGISTERED ENGINEER IN THE STATE OF OREGON AND SHALL BE SUBMITTED ALONG WITH CALCULATIONS TO THE ARCHITECT FOR APPROVAL PRIOR TO FABRICATION.
- DESIGN CRITERIA:**
 - CODE:** 2009 INTERNATIONAL BUILDING CODE AS AMENDED BY THE STATE OF OREGON (2010 OSSC).
 - LOADS AND DESIGN CRITERIA:** THE FOLLOWING LIVE LOADS AND CRITERIA WERE USED IN ADDITION TO THE DEAD LOAD OF THE STRUCTURE.
 - LATERAL CRITERIA:**
 - WIND 95 MPH, EXPOSURE B lw = 1.0 (COMPONENTS)
 - SEISMIC $I_e = 1.0$ (COMPONENTS)
 - $S_s = 0.995g$ $S_1 = 0.347g$
 - SITE CLASS D (PER IBC 1815.1.1 DEFAULT)
 - $S_{ds} = 0.727g$ $S_{d1} = 0.395g$
 - SEISMIC DESIGN CATEGORY D

COLD-FORMED STEEL

- STEEL STUDS SHALL BE OF THE SIZE, GAGE, AND SPACING SHOWN ON THE DRAWINGS AND SHALL CONFORM TO THE INDUSTRY STANDARD STEEL STUD MANUFACTURERS ASSOCIATION (SSMA) DESIGNATION.
- STEEL STUDS AND TRACKS SHALL BE OF THE SIZE SHOWN BELOW AND HAVE A MINIMUM YIELD OF 33,000 PSI FOR 18 AND 20 GAGE, AND 50,000 PSI FOR 12, 14, AND 16 GAGE. ALL STEEL STUDS SHALL HAVE A MINIMUM 1-5/8" FLANGE WIDTH UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- PROVIDE BRIDGING IN CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ADEQUATE FOR DEVELOPMENT OF THE FULL MOMENT CAPACITY OF THE STUDS. FOR LOAD BEARING STUDS, TRACK SHALL BE OVERSIZED TO PROVIDE FULL STUD BEARING.
- SCREWS SHALL BE ELCO DRIL-FLEX, HILTI KWIK-FLEX, OR APPROVED EQUAL.
- WELDING SHALL CONFORM WITH AWS D1.3, CURRENT EDITION.

DRAWING INDEX

- S1 GENERAL STRUCTURAL NOTES, DRAWING INDEX, AND SPECIAL INSPECTION PROGRAM
- S2 DETAILS

SPECIAL INSPECTION PROGRAM

TABLE 1				
REQUIRED STRUCTURAL SPECIAL INSPECTIONS				
SYSTEM or MATERIAL	INSPECTION			REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY	
Continuous			Periodic	
POST INSTALLED CONCRETE ANCHORS				
INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE	1912.1	ICC EVALUATION REPORT ACI 318: 3.8.8, 8.1.3, 21.1.8		X SPECIAL INSPECTIONS APPLY TO ANCHOR PRODUCT NAME, TYPE, AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, ADHESIVE EXPIRATION DATE, ANCHOR/ADHESIVE INSTALLATION, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE

SPECIAL INSPECTION FOOTNOTES

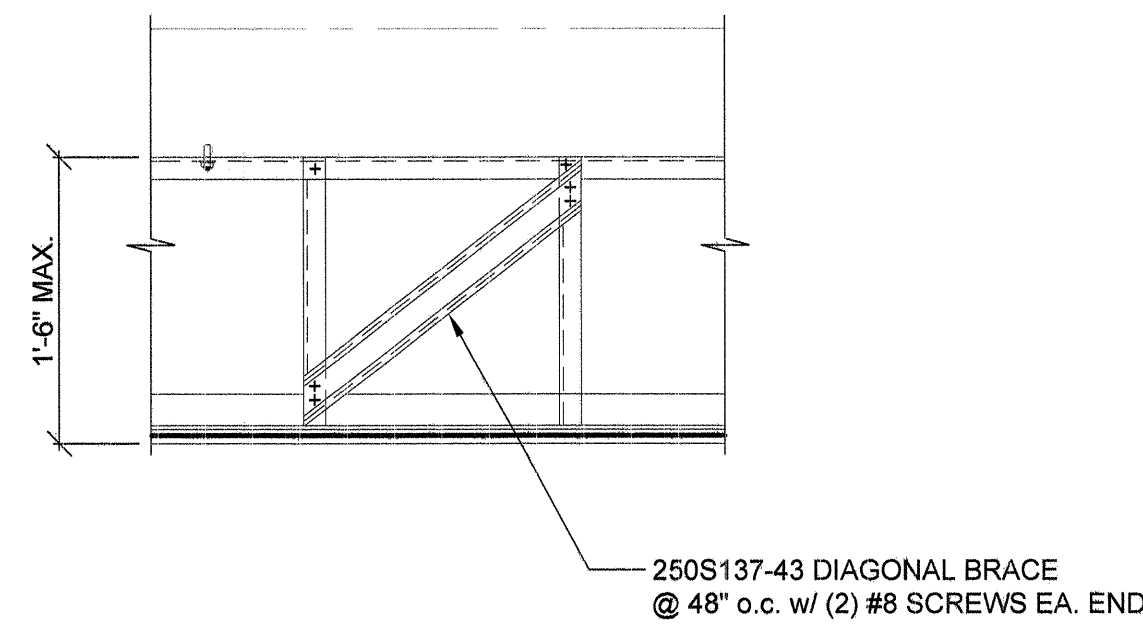
SPECIAL INSPECTIONS SHALL CONFORM TO CHAPTER 17 OF THE 2009 "INTERNATIONAL BUILDING CODE" AND OREGON AMENDMENTS. REFER TO THE TABLE 2 FOR SPECIAL INSPECTION AND TESTING REQUIREMENTS.

SPECIAL INSPECTIONS AND ASSOCIATED TESTING SHALL BE PERFORMED BY AN APPROVED ACCREDITED INDEPENDENT AGENCY MEETING THE REQUIREMENTS OF ASTM E329 (MATERIALS), ASTM D3740 (SOILS), ASTM C1077 (CONCRETE), ASTM A880 (STEEL), AND ASTM E543 (NON-DESTRUCTIVE). THE INSPECTION AND TESTING AGENCY SHALL FURNISH TO THE STRUCTURAL ENGINEER A COPY OF THEIR SCOPE OF ACCREDITATION. SPECIAL INSPECTORS SHALL BE CERTIFIED BY THE BUILDING OFFICIAL. WELDING INSPECTORS SHALL BE QUALIFIED PER SECTION 6.1.4.1.1 OF AWS D1.1. THE OWNER SHALL SECURE AND PAY FOR SERVICES OF THE INSPECTION AND TESTING AGENCY TO PERFORM ALL SPECIAL INSPECTIONS AND TESTS.

THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, NOTED IN THE INSPECTION REPORTS, AND IF NOT CORRECTED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER AND THE BUILDING OFFICIAL.

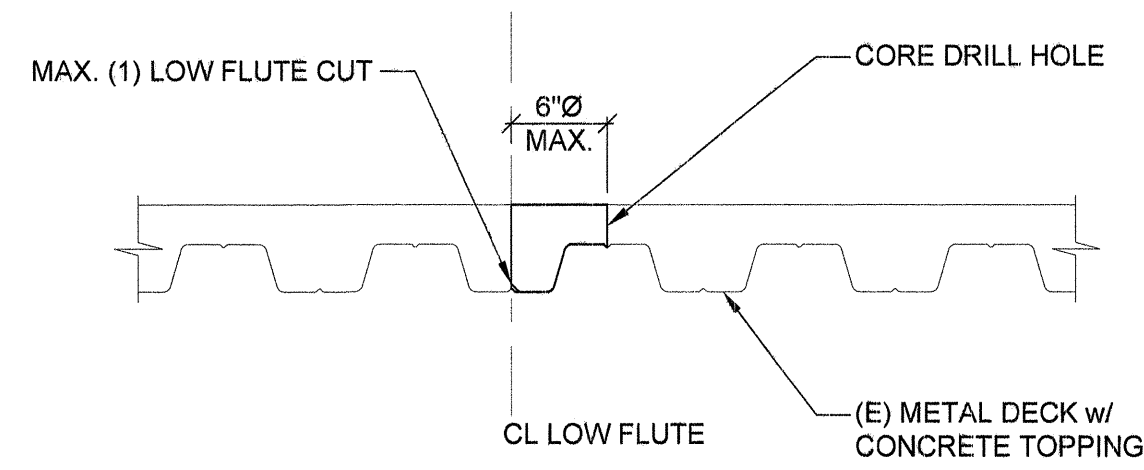
THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL, STRUCTURAL ENGINEER, CONTRACTOR, AND OWNER. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT INDICATING THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED AND IS IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THAT ALL DISCREPANCIES NOTED IN THE INSPECTION REPORTS HAVE BEEN CORRECTED.

STRUCTURAL OBSERVATION: THE STRUCTURAL ENGINEER OF RECORD WILL PERFORM STRUCTURAL OBSERVATION BASED ON THE REQUIREMENTS OF THE 2010 OREGON STRUCTURAL SPECIALTY CODE (OSSC) AND THE FOLLOWING CRITICAL STAGES OF CONSTRUCTION: PERIODICALLY DURING CORE DRILLING OF EXISTING FLOOR PLANKS. COPIES OF SITE OBSERVATION REPORTS AND FINAL OBSERVATION REPORT WILL BE SUBMITTED TO THE BUILDING OFFICIAL, ARCHITECT, CONTRACTOR AND OWNER.



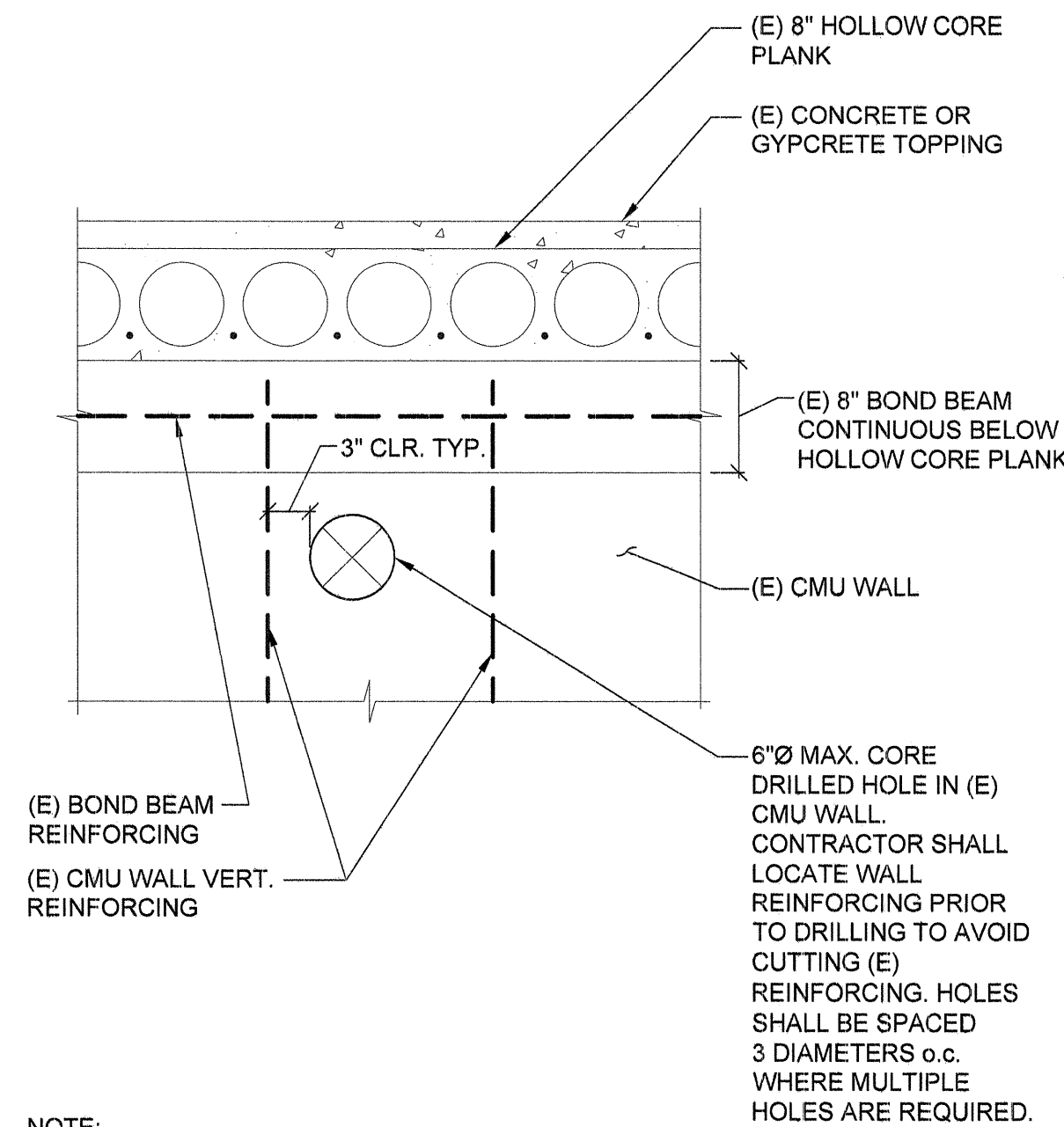
NOTE:
 REF. DETAIL 6/S2 FOR ALL OTHER
 INFORMATION NOT SHOWN.

7 FALSE BEAM LONGITUDINAL BRACE DETAIL
 1"=1'-0"



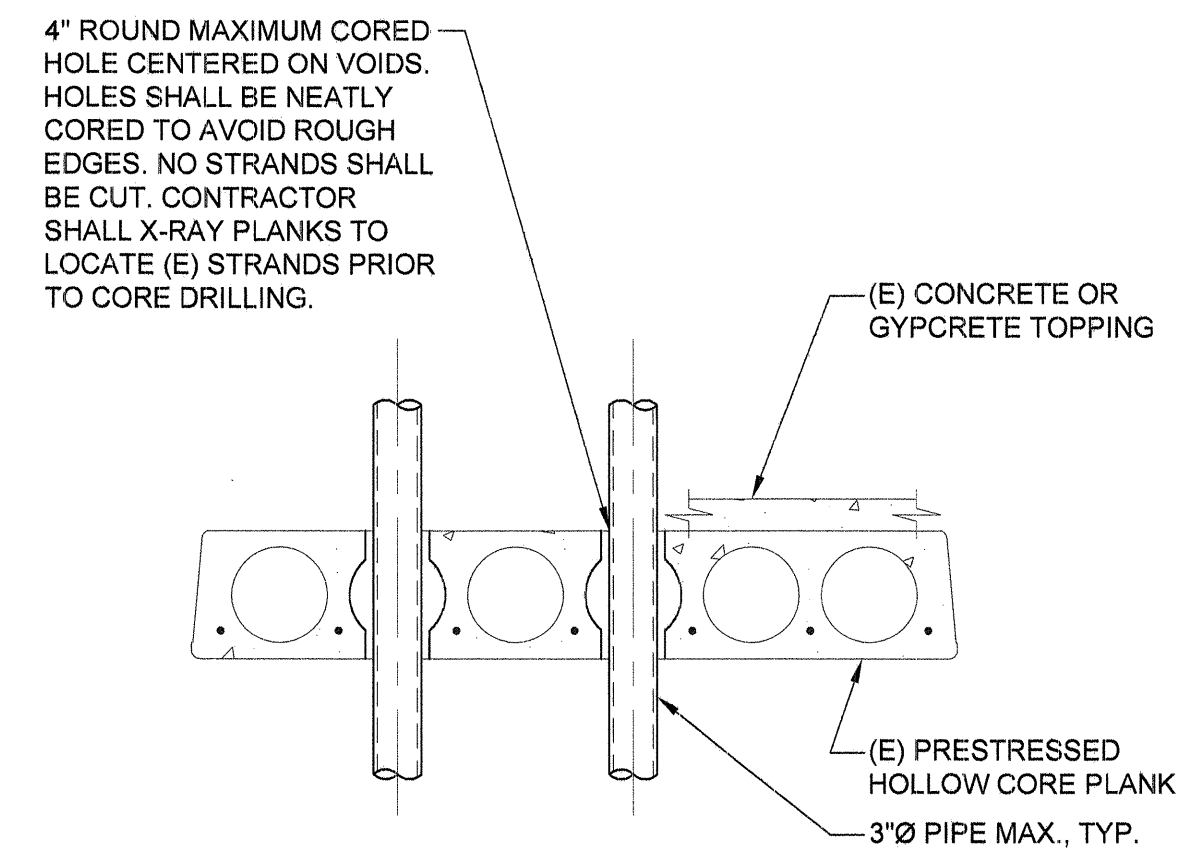
NOTE:
 WHERE EXISTING HOLES IN COMPOSITE DECK ARE TO BE
 RE-USED BUT MUST BE MADE LARGER TO ACCOMMODATE NEW
 PIPING, CORE NEW HOLE CENTERED ON EXISTING HOLES.

5 EXISTING COMPOSITE DECK PENETRATION
 1"=1'-0"



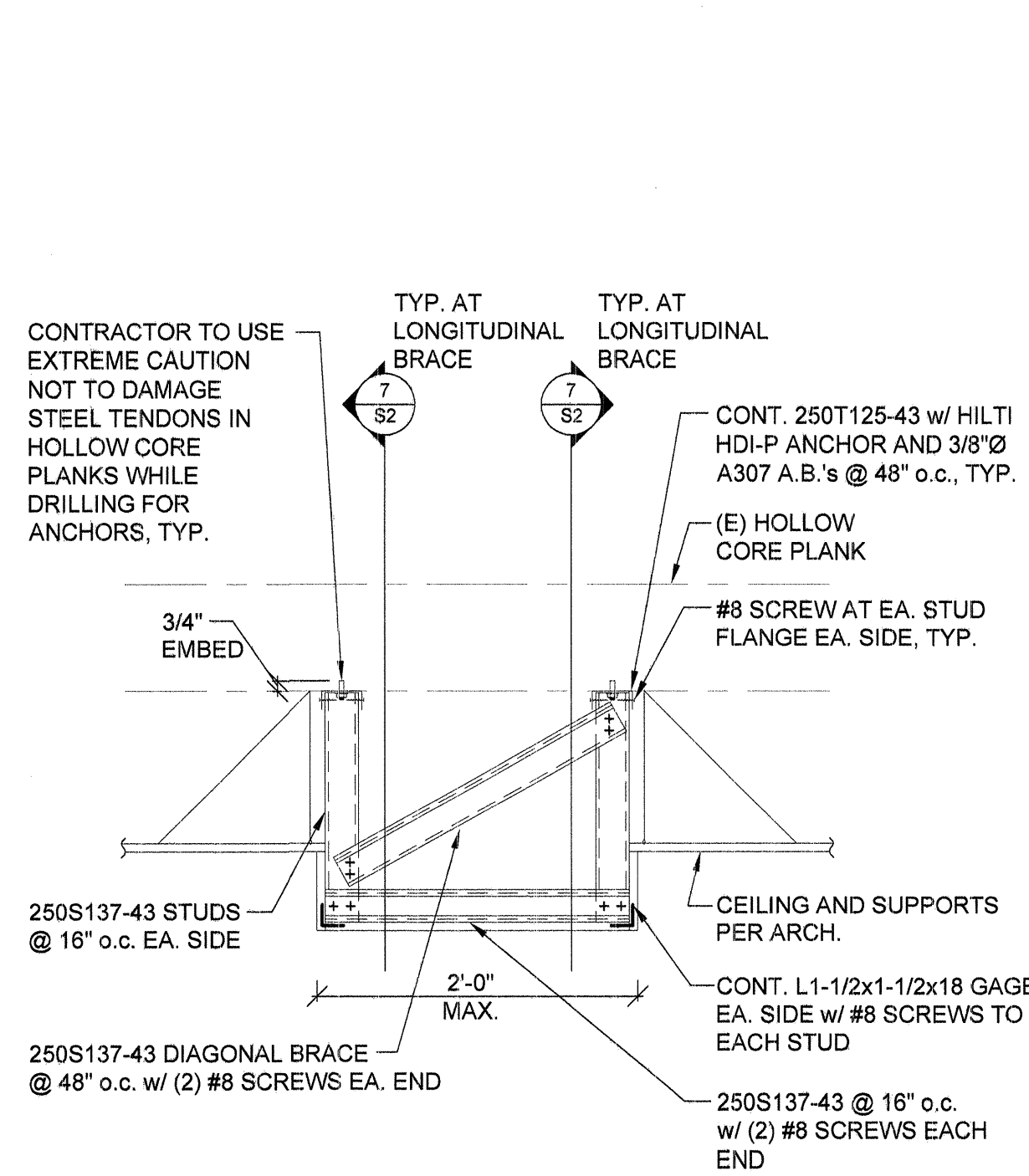
NOTE:
 WHERE EXISTING HOLES IN CMU ARE TO BE RE-USED BUT
 MUST BE MADE LARGER TO ACCOMMODATE NEW PIPING,
 CORE NEW HOLE CENTERED ON EXISTING HOLE.

3 (E) CMU WALL PENETRATION
 1"=1'-0"



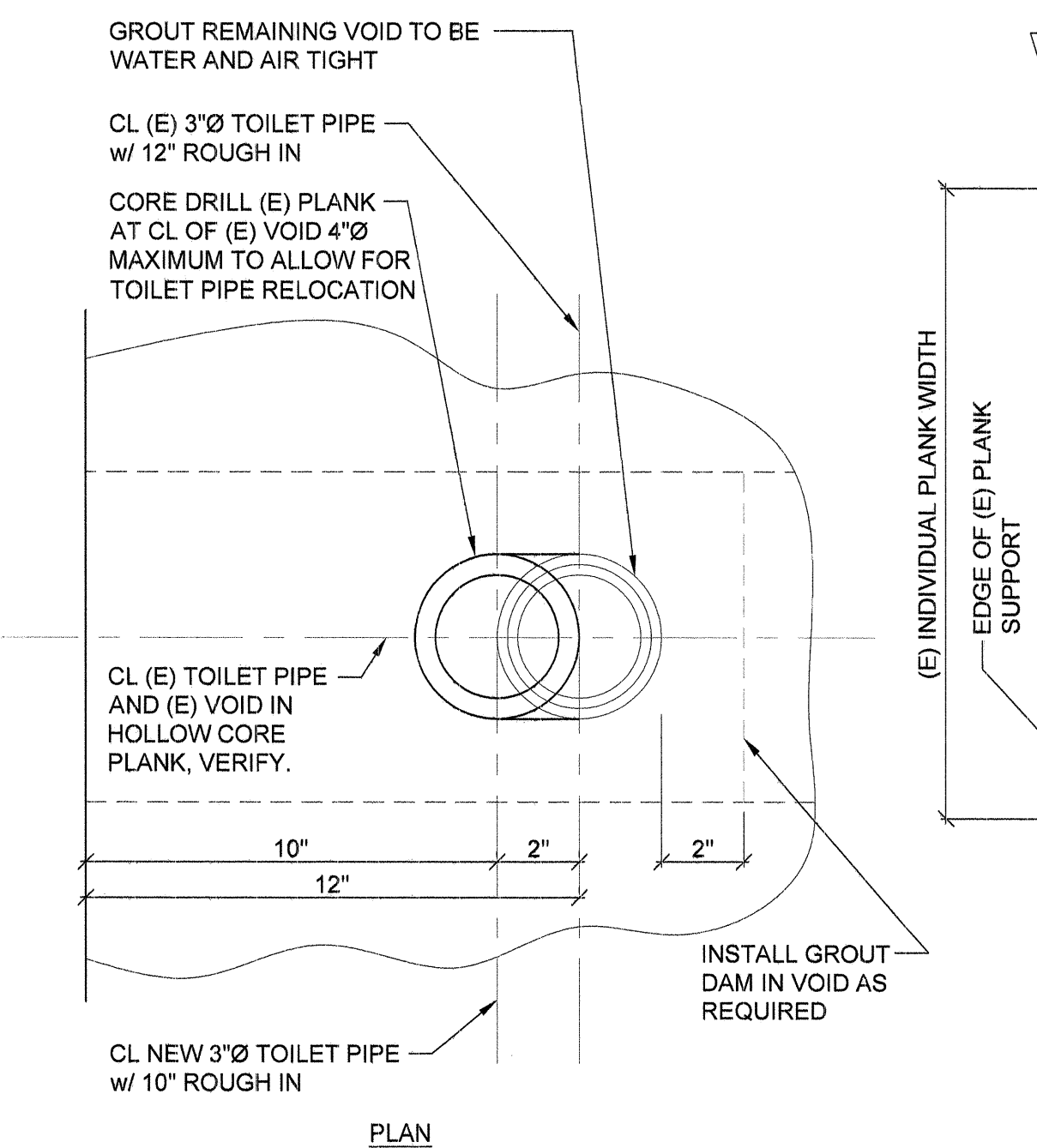
NOTES:
 1. REF. DETAIL 2/S2 FOR PLAN VIEW OF HOLES THROUGH PLANK.
 2. WHERE EXISTING HOLES IN PLANKING ARE TO BE RE-USED BUT MUST
 BE MADE LARGER TO ACCOMMODATE NEW PIPING, CORE LARGER
 HOLE CENTERED ON EXISTING HOLE PER THE INSTRUCTIONS
 DESCRIBED ON THIS DETAIL FOR NEW HOLES.

1 PIPE PENETRATION DETAIL
 IN (E) HOLLOW CORE PLANK
 1"=1'-0"



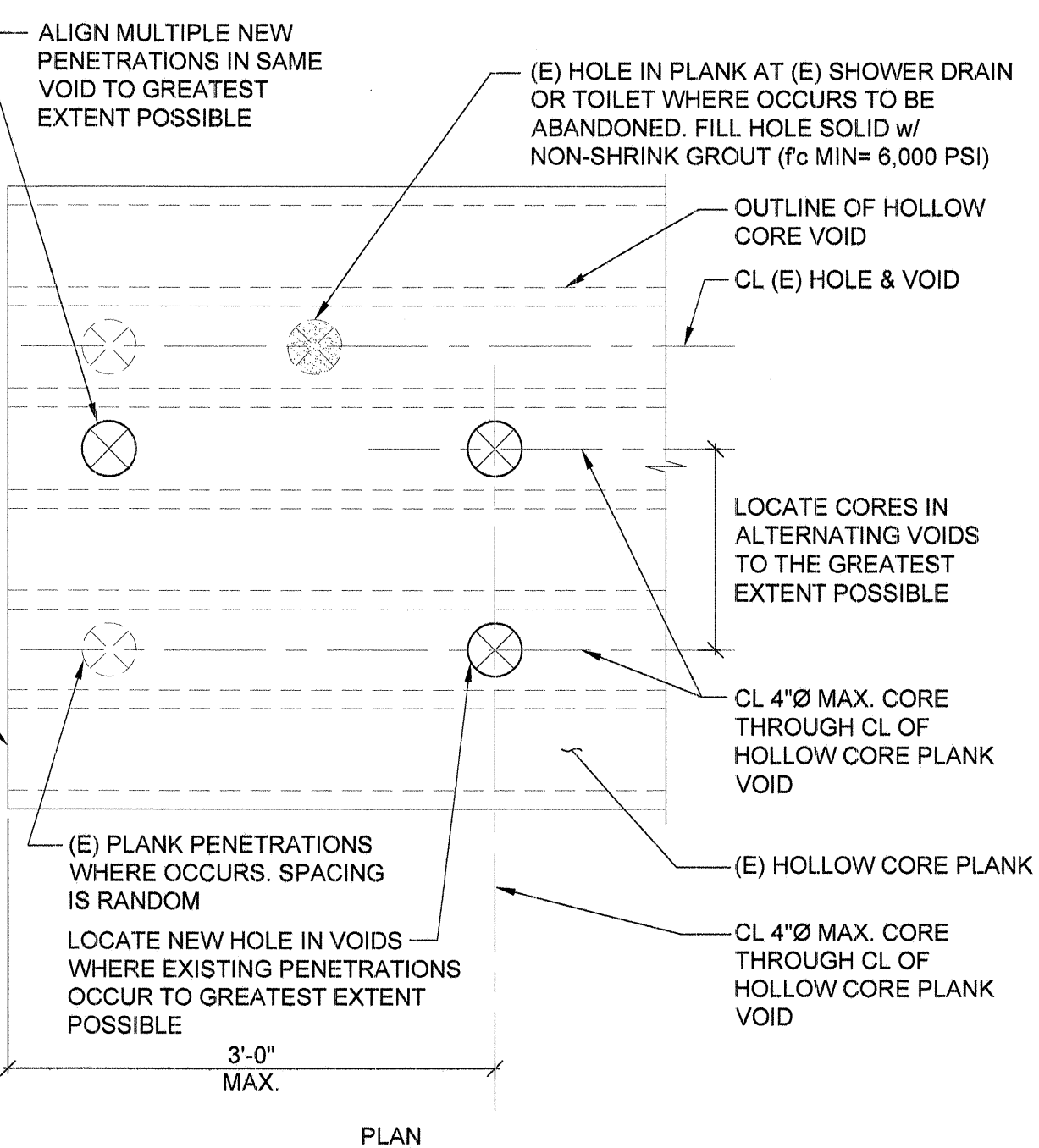
NOTE:
 ANCHORS INSTALLED IN HARDENED CONCRETE SHALL BE PERIODICALLY
 SPECIAL INSPECTED IN ACCORDANCE WITH THE MFR. REQUIREMENTS
 AND THE ANCHOR'S ICC EVALUATION REPORT.

6 TYPICAL FALSE BEAM SECTION
 1"=1'-0"



NOTES:
 1. CONTRACTOR TO X-RAY PLANK TO LOCATE STRANDS
 PRIOR TO CORE DRILLING.
 2. NO (E) STRANDS SHALL BE CUT.

4 TOILET PIPE PENETRATION DETAIL
 IN (E) HOLLOW CORE PLANK AT ADA ROOMS
 3"=1'-0"



NOTE:
 LIMIT THE TOTAL NUMBER OF VOIDS PENETRATED BY NEW & EXISTING HOLES TO
 (4) WITHIN EA. 4'-0" WIDE PLANK, TYP. NOTIFY ARCHITECT AND ENGINEER PRIOR
 TO CORE DRILLING WHERE TOTAL NUMBER OF VOIDS PENETRATED EXCEEDS THE
 LIMIT INDICATED.

2 PIPE PENETRATION AND TYPICAL INFILL
 IN (E) HOLLOW CORE PLANK
 1"=1'-0"

ABHT
 STRUCTURAL ENGINEERS
 1640 NW JOHNSON STREET
 PORTLAND, OR 97209
 Tel 503.243.6682
 Fax 503.243.6622
 www.abht-structural.com



Revisions :	Date :
△ Addendum #1 5/04/2012	5/08/2012
Drawn : RKL	
Checked : CJA	

PSU Facilities and Planning
Joseph C. Blumel Hall

Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

Door Schedule

DOOR SCHEDULE (see hardware list)																							
DOOR LOCATION	DOOR AND HARDWARE REQUIRED	DOOR SYMBOL	WIDTH (VERIFY)	HT. (VERIFY)	THICK SOLID CORE	EXTERIOR OR INTERIOR	FIRE LABEL ASSEMBLY W/ FRAME	FINISH	DOOR - WOOD OR METAL	METAL DOOR FRAME	SOLID CORE FLUSH	NEW ADA HARDWARE	1 LOCKS AND HANDLES	2 CLOSERS	3 BUTTS	4 DOOR STOPS	5 SMOKE GASKETS	6 KICK PLATES	7 BI-FOLD HARDWARE	8 POWER CLOSER / OPENER	9 DOOR VIEWER	10 ACCESS CONTROL	NOTES (SEE DOOR DETAILS, SPECIFICATIONS SHEET, AND PLANS)
1 NEW DOORS AT NEW ADA UNITS DOORS RM. 303, 506, 722, 927	NEW	A	3'-0"	6'-7"	1-3/4"	INT.	20 MIN.	MATCH EXISTING	WOOD	YES	YES	YES	1A	2A	3A	4A	5A	-	-	-	9A	-	ENTRY DOORS --SWING *IN*
	NEW	B	3'-0"	6'-7"	1-3/4"	INT.	NO	MATCH EXISTING	WOOD	YES	YES	YES	1B	-	3A	4A	-	-	-	-	-	-	ENTRY CLOSET DOORS.
	NEW	C	3'-0"	6'-7"	1-3/4"	INT.	NO	MATCH EXISTING	WOOD	YES	YES	YES	1C	-	3A	4A	-	-	-	-	-	-	BATHROOM DOORS
	NEW	D	3'-0"	6'-7"	1-3/4"	INT.	NO	MATCH EXISTING	WOOD	YES	YES	YES	1B	-	3A	4A	-	-	-	-	-	-	BEDROOM DOORS
	NEW	E	(4) 1'-6"	6'-7"	1-3/4"	INT.	NO	MATCH EXISTING	WOOD	YES	YES	YES	7B	-	7A	-	-	-	-	7A	-	-	BI-FOLD CLOSET DOORS
2 1ST FLOOR LAUNDRY RM. DOOR	Existing to Remain See Hardware Items	101	-	-	-	-	-	-	-	-	-	YES	1A	-	-	4A	5A	-	-	8A	-	10A	
3 3RD FLOOR LAUNDRY RM. CORRRIOR DOOR	Existing to Remain See Hardware Items	-	-	-	-	-	-	-	-	-	-	YES	1A	-	-	4A	5A	-	-	-	-	-	
4 EXTERIOR DOORS PAIR at GARBAGE RM. 109	NEW	-	(2) 3'-0" +/- verify width in field.	7'-0" +/- verify ht. in field.	1-3/4"	EXT.	NO	METAL	METAL	YES	YES	-	1D	-	3B	-	-	6A	-	-	-	-	PAIR OF DOORS
5 FIRE CORRIDOR DOORS	Existing to Remain See Hardware Items	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5A	-	-	-	-	-	
6 ALL OTHER DOORS	Existing to Remain	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7 1ST FLOOR LOBBY DOOR AT PARKING	Existing to Remain See Hardware Items	L-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8B	-	10A	

Plan Notes

- 1. See specification sheet for notes. A

4/17/12
 issued for bid/permit



Door Hardware List

Door hardware -- Reference Door Schedule and details and Specification Sheets: Match existing finishes.

- Locks and Handles** by Schlage or approved equal. Match existing lever style and color. Use Schlage "ND" series, Vandalgard entrance lock.
 - Storeroom lock-- ND96LD
 - Lever Passage lock -- ND10S,
 - Lever Privacy lock -- ND40S.
 - Re-use existing stainless steel lockable Orbit knob and dummy knob .
- Closers** - by LCN
 - #1260 hinge side, top jamb mount ADA model.

- Butts---** Lawrence or approved equal.
 - (1-1/2) pr. and to be ball bearing type, use non-removable-pin @corridor entry doors.
 - At each door leaf , Stanley or approved equal (2) pr, 5-knuckle pivot reinforced hinges, heavy weight ball bearing, stainless steel, FBB223, 5" x 4 1/2" , two-in-one combination door plate on top.
- Door Stops** - by lves or approved equal.
 - Wall mount type WS 407 - 2-1 /2" dia.
- Smoke Gaskets** -- by Pemko or approved equal
 - AM 88, black, At All doors in fire corridors on all levels.

- Kick Plates** by Trimco or approved equal.
 - 5' height 16 ga. satin stainless steel kick plate each side of doors secured with stainless steel screws.
- Bi-Fold Hardware** -- Johnson or approved equal.
 - Use complete hardware model #200 FD including track , pivots, butts, ball bearing roller guides, and brackets ,
 - Door handles -- 7" wire pulls --.Baldwin or approved equal

- ADA Power Door Opener** -- LCN 9140.
 - Complete electric opener / closer mounted at door head pull side to include (2) wall plate actuators, with key card access at exterior. Retro-fit for ANSI 10- 025 electric strike. Actuators ADA wall mount each side of door. Accommodate lever hardware with and key lock operation. Satin chrome finish.
 - Activate existing power door opener and install exterior wall plate actuator adjacent to door latch access. Retro-fit for ANSI 10-025 electric strike.

- Door Viewer** --
 - ADA model by Harney Hardware or approved equal, 180 degree, 1 /2" bore, Oil rubbed bronze, # 31843. Verify ADA height requirements.
- Access Control**
 - Key card access control at exterior entry point. Retro-fit existing or provide at new doors for ANSI 10- 025 electric strike. Coordinate with existing PSU system, door hardware, or power opening device.

FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS and SPECIFICATIONS.

Doors + Hardware

Revisions : 1 5 / 4 /12 ADDENDUM #1 Date : 4/17/12

Drawn :

Checked :

schedules

no scale

A11.5

MISC. FITTINGS & SYMBOLS	
	DIRECTION OF FLOW
	DIRECTION OF SLOPE
	PIPE SLEEVE
	REDUCER
	ANCHOR
	ELBOW (90°)
	ELBOW (45°)
	TEE
	CROSS
	JOINT OR COUPLING POINT
	UNION
	FLANGED CONNECTION
	CAP
	PLUG OR BLIND FLANGE
	RISER
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	HORIZONTAL TEE
	FLEXIBLE CONNECTION
	BALL JOINT
	MECHANICAL COUPLING

MISC. VALVES & COCKS	
	SHUT-OFF VALVE
	GLOBE VALVE
	SHUT-OFF VALVE W/ TAMPER SWITCH
	TRIPLE DUTY VALVE
	CHECK VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	BALANCING VALVE
	FLOW CONTROL VALVE
	SOLENOID VALVE
	PRESSURE REDUCING VALVE
	AIR VENT (MANUAL / AUTOMATIC)
	RELIEF VALVE
	STRAINER
	STRAINER W/ BLOWDOWN
	DRAIN VALVE
	PRESSURE GAUGE
	PRESSURE/TEMPERATURE TEST PLUG
	TEMPERATURE GAGE
	FLOW SWITCH
	TEMPERATURE TRANSMITTER
	VACUUM BREAKER
	WATER FLOW METER

SYMBOLS	
	ACCESS PANEL
	BELOW GRADE / FLOOR
	NOT USED
	EXISTING TO REMAIN
	CAP EXISTING / CAP FOR FUTURE
	NEW
	THERMOSTAT
	REMOVE EXISTING
	NOTE
	RELOCATE EXISTING
	CONNECT TO EXISTING
	COLD WATER
	HOT WATER
	EXIST. EXISTING

LEGEND	
DEMO	
	DEMO PIPING
NEW	
	NEW DRAIN/WASTE PIPING
	NEW COLD WATER PIPING
	NEW HOT WATER PIPING
	NEW HOT WATER RECIRCULATION PIPING
	NEW DUCT WORK
	NATURAL GAS PIPING
EXISTING	
	EXIST. COLD WATER PIPING
	EXIST. HOT WATER PIPING
	EXIST. HOT WATER RECIRCULATION PIPING
	EXIST. DUCT WORK
	EXIST. WASTE

I: GENERAL CONDITIONS
A. NOT USED

B. SEE GENERAL CONDITIONS PROVIDED WITH THE BID PACKAGE FOR ADDITIONAL PROJECT REQUIREMENTS. WHERE CONFLICT EXIST BETWEEN THE GENERAL CONDITIONS INCLUDED IN BID PACKAGE AND GENERAL CONDITIONS IDENTIFIED ON THE DRAWINGS, THE FORMER SHALL TAKE PRECEDENCE.

C. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PROVIDE THE OWNER WITH COMPLETE AND FULLY OPERATIONAL SYSTEMS. ANY WORK NOT SPECIFICALLY INDICATED BUT REASONABLY IMPLIED SHALL BE INCLUDED.

D. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES AND REGULATIONS AND PSU STANDARDS.

E. PSU WILL OBTAIN ALL REQUIRED PERMITS AND PAY ALL ASSOCIATED PERMIT FEES THROUGH THE FACILITY PERMIT PROGRAM. CONTRACTOR IS RESPONSIBLE FOR COORDINATING TRADE INSPECTIONS WITH THE CITY AND OBTAIN FINAL OCCUPANCY PERMIT FROM THE CITY.

F. ALL SIZES, DIMENSIONS, EQUIPMENT MOUNTING HEIGHTS AND LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO INSTALLATION.

G. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AT THE TIME OF DISCOVERY.

F. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE OWNER A CONSTRUCTION SCHEDULE NOTING ANY WORK WILL BE DONE IN OCCUPIED AREAS OR WORK THAT MAY EFFECT THE UNIVERSITY COMMUNITY.

G. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE APPROVED SCHEDULE.

H. CONTRACTOR IS REQUIRED TO COORDINATE WITH OWNERS CONSTRUCTION MANAGER FOR ANY WORK THAT MAY AFFECT BUILDING FIRE DETECTION AND FIRE PROTECTION DEVICES. TAG OUT SYSTEM IF REQUIRED.

I. ALL CONSTRUCTION SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER, KEEPING NOISE AND DUST PRODUCED TO A MINIMUM LEVEL. WHEN APPLICABLE PROVIDE TEMPORARY PROTECTION (PLYWOOD, PLASTIC SHIELD, ETC.) TO SHIELD OFF EQUIPMENT/ MATERIALS FROM DUST AND CONSTRUCTION DEBRIS.

J. CONTRACTOR SHALL MAINTAIN THE SITE IN AN ORDERLY AND BROOM-CLEAN CONDITION AT ALL TIMES. CLEANUP AND DEBRIS REMOVAL SHALL BE DONE AT THE END OF EACH WORKING DAY. ALL DEMOLITION DEBRIS, AND ALL MATERIAL AND EQUIPMENT INDICATED TO BE REMOVED, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR, UNLESS OTHERWISE DIRECTED BY THE OWNER. REMOVALS OR INSTALLATION OF NEW WORK SHALL BE PATCHED. ALL WALLS, CEILING, AND FLOORS FROM WHICH PARTITIONS, EQUIPMENT, PIPES AND CONDUITS, ETC. HAVE BEEN REMOVED SHALL BE PATCHED.

K. REMOVED ITEMS ARE PROPERTY OF PSU. VERIFY WITH CONSTRUCTION MANAGER PRIOR TO DISPOSE OF EQUIPMENT. FOLLOW PSU DISPOSE GUIDELINE FOR DISPOSING OF EQUIPMENTS.

L. ALL SURFACES WHICH HAVE BEEN DAMAGED DUE TO PATCHING, EXTENSIONS, REPLACEMENTS, ETC. SHALL BE PATCHED, MATCHED AND ALIGNED WITH ALL EXISTING WORK SURFACES.

M. PENETRATIONS THROUGH RATED WALLS SHALL BE SEALED TO RESTORE THE EXISTING RATING WITH HILTI UL FIRE PROTECTION PRODUCTS OR APPROVED EQUAL. PERFORM SUCH WORK IN ACCORDANCE WITH THE

MANUFACTURER'S INSTALLATION INSTRUCTIONS, IN ACCORDANCE WITH UL REQUIREMENTS. FIRE PROTECTION PRODUCTS SHALL BE HILTI OR APPROVED EQUAL.

N. PROVIDE SLEEVES AT ALL WALL PENETRATIONS, UNLESS INDICATED OTHERWISE. ALL CONSTRUCTION MATERIALS, FINISHES, AND EQUIPMENT SHOWN ON DRAWINGS ARE NEW UNLESS NOTED OTHERWISE.

O. ALL NEW MATERIAL, FINISHES, EQUIPMENT, AND MISCELLANEOUS ITEMS TO BE USED SHALL BE AS SPECIFIED IN THE CONSTRUCTION DOCUMENTS. ALL SUCH ITEMS TO BE USED THAT ARE NOT SPECIFIED IN THE CONSTRUCTION DOCUMENTS SHALL BE SUBMITTED TO THE OWNER OR HIS REPRESENTATIVE FOR APPROVAL.

P. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, SAMPLES, AND CATALOG CUTS TO THE OWNER FOR REVIEW. SUBMIT 3 COPIES OF ALL SUBMITTALS FOR ALL MATERIAL AND EQUIPMENT SPECIFIED. ALLOW 2 WEEKS FOR REVIEW FOR EACH SUBMITTAL PACKAGE OR AS NOTED IN CONSTRUCTION PROJECT SCHEDULE. DO NOT PROCEED WITH INSTALLATION UNTIL SUBMITTAL HAS OWNER'S FINAL APPROVAL.

Q. CONTRACTOR SHALL PROVIDE REDLINED DRAWINGS NOTING THE AS-BUILT CONDITION OF THE PROJECT. THESE DRAWINGS SHALL BE SUBMITTED TO THE OWNER WITHIN 2 WEEKS AFTER THE FINAL PUNCH LIST IS ISSUED OR AS NOTED ON THE CONSTRUCTION PROJECT SCHEDULE.

R. THE CONTRACTOR SHALL MEET ALL INSURANCE BONDING AND REGISTRATION REQUIREMENTS AS REQUIRED BY OWNER AS WELL THOSE REQUIRED BY STATE AND LOCAL AUTHORITIES.

S. DIMENSIONS CONDITIONS INVOLVED, OR DUE TO THE DIFFERENCES BETWEEN ACTUAL SHOWN ON THE DRAWINGS ARE APPROXIMATE AND MUST BE VERIFIED AT THE SITE. THE CONTRACTOR SHALL ADAPT THE WORK TO COMPENSATE FOR INCONSISTENCIES BETWEEN EXISTING CONDITIONS AND CONTRACT DOCUMENTS WITHOUT ADDITIONAL COST TO THE OWNER.

II: GENERAL NOTES

A. REFER TO SHEET M-0.1 FOR PROJECT GENERAL CONDITIONS. M-0.1 IS GENERAL LEGEND PAGE, NOT ALL ITEMS ON THE LEGEND SHEET WILL BE USED.

B. REFER TO 1986-87 AND 1987-88 DRAWINGS FOR ADDITIONAL BUILDING / SYSTEMS INFORMATION. PROVIDED UPON REQUEST.

C. DRAWINGS ARE DIAGRAMMATIC. DRAWINGS ARE NOT INTENDED TO BE ABSOLUTELY PRECISE, AND DO NOT SPECIFY OR SHOW EVERY OFFSET, FITTING, AND COMPONENT. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEM CONCEPT, THE MAIN COMPONENTS OF THE SYSTEMS, AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS. BASED ON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS AND THE GEOMETRICAL RELATIONSHIPS THE CONTRACTOR SHALL PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEM FULLY COMPLETE AND OPERATIONAL. CONTRACTOR SHALL ROUTE PIPING OR PROVIDE OFFSETS TO AVOID INTERFERENCE WITH STRUCTURAL ELEMENTS, ELECTRICAL PANELS AND JUNCTION BOXES ETC. VERIFY LOCATIONS, DIMENSIONS, EXISTING FLOW DIRECTIONS, ETC. BEFORE CONSTRUCTION.

D. FIELD VERIFY ALL SIZES, DIMENSIONS AND EQUIPMENT LOCATIONS PRIOR TO CONSTRUCTION OR MATERIAL PROCUREMENT.

E. PROVIDE FIRE-SAFING TO MAINTAIN WALL RATINGS, AND SYSTEM INTEGRITY. PROVIDE CHROME ESCUTCHEON RINGS WHERE DUCTS AND PIPES PENETRATE THE FINISHED SIDE OF WALLS AND CEILINGS.

F. DEMOLISHED DUCTWORK OPENING SHALL BE CAPPED, SEALED AND INSULATED TO MATCH EXISTING.

G. SEAL ALL DUCTWORK CONNECTIONS AND JOINTS WITH HARDCAST OUTDOOR (WHEN APPLICABLE) ADHESIVE OR PRESSURE SENSITIVE TAPE.

H. ALL CONSTRUCTION TO MEET OR EXCEED CODE AND PER MANUFACTURER'S SPECIFICATION AND RECOMMENDATIONS. COORDINATE CONSTRUCTION WITH ALL CONTRACT DOCUMENTS, TESTING AND BALANCING, ABATEMENT, INSPECTIONS, AND SITE OBSERVATION REQUIREMENTS.

I. COORDINATE FLOOR / BUILDING SHUT DOWN WITH PSU FACILITIES DEPARTMENT.

J. VERIFY EXISTING PIPING LOCATIONS, CONDITIONS AND NEW ROUGH-IN REQUIREMENTS PRIOR TO INSTALLING NEW PIPING.

K. VERIFY EXISTING CONDITIONS INCLUDING ELECTRICAL, PIPING AND DUCTWORK ETC. PRIOR TO DEMOLITION AND CONNECTING TO NEW EQUIPMENT.

L. REMOVE UNUSED WIRING, TUBING, PIPING, DUCTWORK RELATED TO THE SCOPE WORK TO MAIN OR PANEL. DO NOT ABANDON WIRING, DUCTWORK, PIPING AND ACCESSORIES IN PLACE. REMOVE AND CAP AT MAIN.

M. PATCH WALL TO MATCH CONDITION ORIGINAL RATING AND PAINT WALL TO MATCH ADJACENT COLOR AS REQUIRED AFTER REMOVING OF EXISTING AND INSTALLATION OF NEW EQUIPMENT OR SYSTEMS.

N. PROVIDE FINAL CLOSEOUT DOCUMENTS ON A CD AND THREE HARD COPIES OF THE O&M MANUAL. CLOSEOUT DOCUMENTS INCLUDE PUNCH LIST, AS-BUILT DOCUMENT, AND OPERATIONS AND MAINTENANCE MANUALS. THE DRAWINGS SHALL BE IN ACAD DWG AND PDF FORMAT. ALL OTHER DOCUMENTS SHALL BE IN PDF FORMAT.

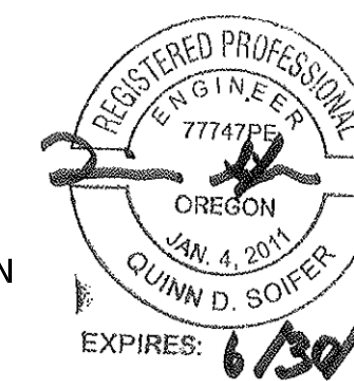
O. CONTRACTOR IS RESPONSIBLE FOR REMOVING/RELOCATING AND REINSTALLING, LIGHTS, CEILING ELEMENTS, CEILING GRID, SOFFITS, CEILING TILE, HARD LID CEILING, ELECTRICAL COMPONENTS, FIRE SPRINKLER PIPING AND DUCTWORK DUE TO THE DEMOLITION AND NEW INSTALLATION WORK.

P. COORDINATE WITH OTHER TRADES, PSU DEPARTMENTS, PSU USING, AND FACILITIES DEPARTMENT PRIOR TO CONSTRUCTION.

Q. WHEN ROUTING DUCTWORK AND PIPING IN STRUCTURAL SPACE. FIELD VERIFY EXISTING STRUCTURAL BEAM OPENINGS. PROVIDE TRANSITION AS REQUIRED FOR DUCTWORK THROUGH EXISTING STRUCTURAL OPENINGS.

R. PROVIDE A PROJECT SPECIFIC SAFETY PLAN AND HAVE IT POSTED ON SITE. CONTRACTOR REQUIRED TO ADHERE TO ALL SAFETY REGULATIONS AS REQUIRED BY THE LOCAL, STATE AND NATIONAL JURISDICTIONS.

S. STRUCTURAL ENGINEER APPROVALS - PENETRATIONS OF STRUCTURE BY CONTRACTOR -- ANY PENETRATION OF STRUCTURE, INCLUDING ANCHORING, CORING, SCRAPING, CUTTING OR REMOVAL IS NOT PERMITTED UNLESS APPROVED BY PSU STRUCTURAL ENGINEER. UPON HIS DETERMINATION, WORK SHALL BE SUBJECT TO SPECIAL INSPECTION AND OR CERTIFIED LOCATION SERVICES AND REPORTS TO DETERMINE LOCATION OF STEEL REINFORCING. ANY EXISTING IRREGULARITIES, FLAWS, OR WEAR OF STRUCTURE THAT IS UNCOVERED OR DISCOVERED BY CONTRACTOR DURING THE PROCESS OF THE WORK SHALL BE IMMEDIATELY REPORTED TO PSU STRUCTURAL ENGINEER AND SUBJECT TO HIS REVIEW AND RECOMMENDATIONS. SEE STRUCTURAL ENGINEER'S DRAWINGS FOR MORE DETAIL.



PSU Facilities and Planning
Joseph C. Blumel
Hall

Residence Hall
RE-PIPE REMODEL
(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

DRAWING INDEX

MP0.1 - SYMBOLS / ABBREVIATIONS / SPECS

MP0.2 - SPECS. CONTINUED

MP1 - LL PARKING - DEMO PLAN

MP2 - UL PARKING - DEMO PLAN

MP3 - TYPICAL FLOOR - DEMO PLAN

MP4 - 8TH FLOOR - DEMO PLAN

MP5 - ROOF TOP - DEMO PLAN

MP6 - HOT WATER AND COLD WATER RISER DIAGRAMS - NEW PIPING

MP7 - LL PARKING - NEW PIPING

MP8 - UL PARKING - NEW PIPING

MP9 - TYPICAL FLOOR - NEW PIPING

MP10 - 8TH FLOOR - NEW PIPING

MP11 - ROOF TOP - NEW WORK

MP12 - TYPICAL UNITS - DEMO PLAN / NEW WORK

MP13 - ADA UNITS - DEMO PLAN / NEW WORK

MP14 - PENTHOUSE - DEMO PLAN / NEW WORK

MP15 - MECHANICAL AND PLUMBING DETAILS

MP16 - MECHANICAL AND PLUMBING SCHEDULES

04/17/12
ISSUED for BID/PERMIT

Revisions :	Date : 4/17/2012
Drawn : L. Rinder	
Checked : Q. Soifer	

Mechanical Specifications (Continued)

III: DUCT WORK

A. LOW PRESSURE DUCT WORK

1. MATERIALS

a. STEEL DUCTS: ASTM A 525 A 527 G90 GALVANIZED OR 304 STAINLESS STEEL.

b. STEEL SHEET, LOCK-FORMING QUALITY. FASTENERS: RIVETS, BOLTS, PITTSBURG LOCKS OR SHEET METAL SCREWS FOR STEEL DUCTS.

2. FITTINGS

a. CONSTRUCT TEES, BENDS AND ELBOWS WITH RADIUS OF NOT LESS THAN ½ TIMES WIDTH OF DUCT CENTERLINE.

b. INCREASE DUCT SIZE GRADUALLY, NOT EXCEEDING 15-DEGREE TRANSITION ANGLE WHEREVER POSSIBLE NOT TO EXCEED 45 DEGREES ON CONCENTRIC TRANSITIONS AND 30 DEGREES ON ECCENTRIC TRANSITIONS.

c. PROVIDE STANDARD 45-DEGREE ENTRY TAKE OFF'S UNLESS OTHERWISE INDICATED AS A 90-DEGREE CONICAL TEE CONNECTION.

3. DUCTWORK ACCESSORIES

a. FABRICATE MOTOR CONTROL DAMPERS IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE" AND AS INDICATED.

b. PROVIDE DUCT SEALANT TO ALL JOINTS HARDCAST FOILED TAPE, HARDCAST DUCT SEALANT OR APPROVED EQUAL. ALL PRODUCTS TO BE WEATHER / WATER PROOF.

4. QUALITY ASSURANCE

a. FABRICATE AND SUPPORT DUCTWORK IN ACCORDANCE WITH SMACNA - HVAC DUCT CONSTRUCTION STANDARDS. PROVIDE DUCT MATERIAL, GAUGES AND REINFORCING FOR APPLICABLE OPERATING PRESSURES.

b. REINFORCE DUCTS TO PREVENT BUCKLING,BREATHING, VIBRATIONS OR UNNECESSARY NOISES, AS DURING START UP, SHUT DOWN AND CONTINUOUS OPERATION OF AIR HANDLING SYSTEM. REINFORCING SHALL BE AS RECOMMENDED BY ASHRAE GUIDE AND DATA BOOK AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS-METAL AND FLEXIBLE.

c. ALL SHEET METAL WORK SHALL BE FABRICATED TO ELIMINATE ALL SHARP CORNERS AND SCREW POINTS FROM BECOMING POSSIBLE SAFETY HAZARD.

d. CLEAN DUCT SYSTEM AND FORCE AIR AT HIGH VELOCITY THROUGH DUCT TO REMOVE ACCUMULATED DUST. PROTECT EQUIPMENT OR PROPERTY THAT MAY BE HARMED BY EXCESSIVE DIRT.

IV: ROOF TOP UNITS

A. MAKE UP AIR UNITS

1. GENERAL: UNIT TO BE FULLY PACKAGED FACTORY ASSEMBLED, PIPED AND INTERNALLY WIRED.

2. CONTROLS: CONTRACTOR AND/OR MANUFACTURER TO PROVIDE ALL PROGRAMMING AND CONTROL WIRING FOR TURNKEY OPERATION OF NEW UNITS. NEW UNITS TO COME EQUIPPED WITH DIGITAL INTERFACE AND CONTROL COMPONENTS THAT WILL ALLOW FOR FUTURE CONNECTION TO PSU BUILDING AUTOMATION SYSTEM (BAS). BAS IS SIEMENS APOGEE. FUTURE MONITORING POINTS INCLUDE:

- a. SPACES SENSORS.
- b. DISCHARGE AIR TEMPERATURE.

B. AIR CONDITIONING UNIT (AC-1)

1. GENERAL: UNIT TO BE FULLY PACKAGED FACTORY ASSEMBLED, PIPED AND INTERNALLY WIRED.

2. CONTROLS: CONTRACTOR AND/OR MANUFACTURER TO PROVIDE ALL PROGRAMMING AND CONTROL WIRING FOR TURNKEY OPERATION OF NEW UNITS. NEW UNITS TO COME EQUIPPED WITH DIGITAL INTERFACE AND CONTROL COMPONENTS THAT WILL ALLOW FOR FUTURE CONNECTION TO PSU BUILDING AUTOMATION SYSTEM (BAS). BAS IS SIEMENS APOGEE. FUTURE MONITORING POINTS INCLUDE:

- a. SPACES SENSOR.

V: PIPE AND PIPE FITTINGS

A. MATERIALS

1. COPPER PIPING: PROVIDE HARD TEMPER COPPER WATER TUBE CONFORMING TO REQUIREMENTS OF CURRENT ASTM SPECIFICATION B-88. TUBING SHALL BE TYPE K OR L. TUBING JOINTS SHALL BE SOLDERED OR BRAZED.

a. SERVICE: ALL DOMESTIC WATER PIPING MAINS AND RISERS SHALL BE COPPER TUBING TYPE K OR L.

2. POLYETHYLENE (PEX) PIPING: PROVIDE PEX HOT AND COLD POTABLE WATER DISTRIBUTION, WHICH COMPLIES WITH NSF STANDARD 14 AND 61 AND MUST SHOW COMPLIANCE WITH ASTM F877 AND F876. WIRSBO OR APPROVED EQUAL.

a. SERVICE: ALL DOMESTIC WATER PIPING BRANCH LINES CONNECTING FROM MAINS AND RISERS TO PLUMBING FIXTURES.

B. FITTINGS

1. COPPER FITTINGS: PROVIDE WROUGHT SOLDER JOINT COPPER TUBE FITTINGS CONFORMING TO ANSI STANDARD B16.22. RATED FOR 150 PSI.

2. DIELECTRIC FITTINGS: DIELECTRIC FITTINGS SHALL BE NATIONALLY LISTED, HAVE A DIELECTRIC THERMOPLASTIC INTERIOR LINING, AND MEET REQUIREMENTS OF ASTM F-492-77.

3. POLYETHYLENE (PEX) FITTINGS:MANUFACTURED IN ACCORDANCE WITH ASTM F1807 OR ASTM F2159 AND/OR COMPLY WITH ASTM F877 SYSTEM STANDARD AS IDENTIFIED ON THE FITTING.

C. UNIONS - PROVIDE UNIONS OR FLANGED JOINT IN EACH LINE MATERIAL AND PRESSURE RATING REQUIRED BY PIPING SYSTEM. WHERE PIPING SYSTEMS OF DISSIMILAR MATERIALS ARE JOINED TOGETHER PROVIDE DIELECTRIC UNION. PROVIDE UNIONS ON ALL SYSTEM COMPONENTS IN ORDER TO SERVICE OR REPLACE. INCLUDING BUT NOT LIMITED TO VALVES, BOILER'S, PUMPS AND THEIR ASSOCIATED PIPING.

D. EXECUTION

1. MEASUREMENTS, LINES AND LEVELS: CHECK DIMENSION AT THE BUILDING SITE AND ESTABLISH LINES AND LEVELS.

2. PIPING INSTALLATION: INSTALL UNIONS IN ALL NON-FLANGED PIPING CONNECTIONS TO APPARATUS AND ADJACENT TO ALL SCREWED CONTROL VALVES, TRAPS AND APPURTENANCES REQUIRING REMOVAL FOR SERVING SO LOCATED THAT PIPING MAY BE DISCONNECTED WITHOUT DISTURBING THE GENERAL SYSTEM.

a. SUPPORT ALL PIPING INDEPENDENTLY AT APPARATUS SO THAT ITS WEIGHT SHALL NOT BE CARRIED BY THE EQUIPMENT.

b. PROVIDE DIELECTRIC COUPLINGS, UNIONS OR FLANGES BETWEEN DISSIMILAR METALS.

c. PROVIDE TEMPORARY LABELS ON ALL PIPING DURING CONSTRUCTION.

d. PROVIDE HORIZONTAL AND VERTICAL SUPPORTS SPACED PER THE LOCAL PLUMBING CODES

3. COPPER PIPING JOINTS: PIPE AND FITTINGS SHALL BE JOINED USING METHODS AND MATERIALS RECOMMENDED BY MANUFACTURER IN CONFORMANCE WITH STANDARD PRACTICE AND APPLICABLE CODES. HACKSAW PIPE CUTTING PROHIBITED.

a. SOLDERED JOINTS: PIPE CUT EVENLY WITH CUTTER, REAM TO FULL INSIDE DIAMETER; END OF PIPE AND INSIDE FITTING THOROUGHLY CLEANED AND POLISHED. JOINT SHALL BE UNIFORMLY HEATED AND CAPILLARY SPACE COMPLETELY FILLED WITH SOLDER, LEAVE FULL BEAD AROUND ENTIRE CIRCUMFERENCE. PROVIDE WESTINGHOUSE PHOSE-COPPER OR APPROVED EQUAL.

b. BRAZED JOINTS: ALL JOINTS USING MECHANICALLY EXTRACTED COLLARS SHALL BE BRAZED IN ACCORDANCE WITH THE COPPER DEVELOPMENT ASSOCIATION COPPER TUBE HANDBOOK USING B-CUP SERIES FILLER METAL. SOFT SOLDER JOINTS WILL NOT BE ACCEPTED.

4. POLYETHYLENE (PEX) TUBING: WIRSBO OR APPROVED EQUAL.

a. DO NOT INSTALL WITHIN 6 INCHES OF GAS APPLIANCE VENTS OR WITHIN 12 INCHES OF ANY RECESSED LIGHT FIXTURES.

b. DO NOT SOLDER WITHIN 18 INCHES OF PEX TUBING IN THE SAME WATERLINE. MAKE SWEAT CONNECTIONS PRIOR TO MAKING PEX CONNECTIONS.

c. ENSURE NO GLUES, SOLVENTS, SEALANTS OR CHEMICALS COME IN CONTACT WITH THE TUBING.

d. DO NOT EXPOSE PEX TO SUNLIGHT FOR MORE THAN 6 HOURS.

e. USE FIRE STOP SEALER THAT IS COMPATIBLE FOR USE WITH PEX.

f. USE GROMMETS OR SLEEVES AT THE PENETRATION FOR PEX TUBING PASSING THROUGH METAL STUDS.

g. PROTECT PEX WITH SLEEVES WHEN ABRASION MAY OCCUR.

h.USE NAIL PLATES WHERE PEX TUBING PENETRATES WALL STUDS OR JOISTS AND HAS THE POTENTIAL FOR BEING STRUCK WITH A SCREW OR NAIL.

i. ALLOW SLACK OF APPROXIMATELY 1/8 INCH PER FOOT OF TUBE LENGTH TO COMPENSATE FOR EXPANSION AND CONTRACTION.

j. MINIMUM HORIZONTAL SUPPORTS ARE TO BE INSTALLED NOT LESS THAN 32 INCHES BETWEEN HANGERS IN ACCORDANCE WITH LOCAL PLUMBING CODES.

E. TESTING: TEST ALL PROJECT RELATED PIPING PER THE THE PROJECT CONSTRUCTION DOCUMENTS OR TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.

F. CLEANING

1. CLEAN INTERIOR OF PIPE BEFORE INSTALLATION.

2. FLUSH SEDIMENT OUT OF ALL PIPING SYSTEMS. PRE-PURGE ALL HYDRONIC PIPING SYSTEMS WITH FRESH WATER.

3. CIRCULATE FOR AT LEAST 48 HOURS WITH STRAINERS IN PLACE.

4. REMOVE ALL STRAINER BASKETS AND CLEAN SCREENS WITH BRUSH.

5. PREPARE REPORT DOCUMENTING PROPER EXECUTION OF PIPING SYSTEM FLUSHING AND CLEANING.

6. DOMESTIC WATER CHLORINATION:

a. UPON COMPLETION OF ALL TESTS AND NECESSARY REPLACEMENTS, ALL DOMESTIC WATER PIPING SHALL BE DISINFECTED.

b. AS A MINIMUM POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE AS OUTLINED BY THE UNIFORM PLUMBING CODE.

c. BACTERIOLOGICAL SAMPLES SHALL BE SUBMITTED TO A CERTIFIED LABORATORY WHO SHALL CERTIFY THAT THE WATER IS SUITABLE FOR DRINKING.

VI: INSULATION

A. OUTDOOR DUCT WORK INSULATION

1. ACCEPTED MANUFACTURER: OWENS-CORNING, JOHNS MANVILLE OR APPROVED EQUAL.

2. INSULATION:SHALL BE FIBER GLASS BOARD WITH 3 PCF MINIMUM DENSITY, 2 INCH THICK, 'K' VALUES OF 0.23 AT 75 F MEAN. RATED FOR OUTDOOR USE AND MUST MEET ASTM C 177.

3. ADHESIVE: WATERPROOF VAPOR BARRIER TYPE, CHILDERS CP-82 OR APPROVED EQUAL.

4. GLASS CLOTH AND TAPE: WEATHER PROOF, COMPLY WITH MIL-C-20079H, TYPE 1 FOR CLOTH AND TYPE II FOR TAPE. WOVEN GLASS FIBER FABRICS, PLAIN WEAVE, PRESIZED A MINIMUM OF 8 OZ. / SQ. YD.

5. IMPALE ANCHORS: GALVANIZED STEEL, 12 GAGE SELF-ADHESIVE PAD.

6. TIE WIRE: ANNEALED STEEL, 16 GAGE.

7. ALUMINUM JACKETING: COVER INSULATION WITH ALUMINUM JACKETING SEAL ALL LAPS AND JOINTS WITH SILICONE CAULK AND HOLD IN PLACE WITH STAINLESS STEEL BANDS AND SHEET METAL SCREWS. JACKETING MUST CONFORM TO ASTM B-209. PROVIDE ITW PABCO/CHILDERS ALUMINUM ROLL JACKETING OR APPROVED EQUAL.

B. DOMESTIC WATER PIPING INSULATION

1. LOCATIONS

a. FOR DOMESTIC COLD WATER PIPING PROVIDE FIBER GLASS INSULATION WITH ALL PURPOSE JACKET FOR ALL ABOVE GROUND PIPING. 1 IN. THICK. PROVIDE VAPOR BARRIER PROTECTION.

b. FOR DOMESTIC HOT WATER PIPING, SUPPLY AND RETURN. PROVIDE FIBER GLASS INSULATION WITH ALL PURPOSE JACKET FOR ALL ABOVE GROUND PIPING. 1 IN. THICK. FOR PIPING 2-INCHES AND SMALLER. 1-1/2 IN THICK FOR PIPING GREATER THAN 2-INCHES.

c. INSULATION SHALL INCLUDE ALL FITTINGS, MECHANICAL COUPLINGS, VALVE BODIES, VALVE BONNETS, PIPING THROUGH SLEEVES. COVER FITTINGS TO THICKNESS ADJACENT WITH PRE-MOLDED FITTING COVERS. COVERS TO BE REMOVABLE FOR COMPONENTS REQUIRING ACCESS.

d. WHERE PIPE HANGERS ARE PRESENT,INSULATED PIPE SHALL BE FURNISHED WITH RIBBED GALVANIZED STEEL SHIELDS OF NOT LESS THAN 18 GUAGE, TWO-PIECE, PRE-MOLDED, HIGH COMPRESSIVE STRENGTH, INSULATION INSERTS (360 DEGREES AROUND PIPE), AND VAPOR BARRIER JACKET COVERING THE INSULATION INSERTS. INSERTS SHALL BE CONSTRUCTED OF HIGH DENSITY, 100 PSI, WATERPROOFED CALCIUM SILICATE, ENCASED IN 360 DEGREE SHEET METAL SHIELD.

2. FIBER GLASS INSULATION: PROVIDE SPLIT SECTIONAL OR SNAP-ON TYPE WITH 0.23 PER INCH MAXIMUM K-FACTOR AT 75 F MEAN TEMPERATURE, 850 F MAXIMUM SERVICE RATING AND WHITE, VAPOR BARRIER JACKET WITH PRESSURE SENSITIVE CLOSURE SYSTEM. JOHNS MANVILLE OR APPROVED EQUAL. INSTALL PER MANUFACTURER RECOMMENDATION.

a. FILL ALL VOIDS WITH, CHIPPED CORNERS AND OTHER OPENINGS WITH INSULATING CEMENT OR MATERIAL COMPATIBLE WITH INSULATING MATERIAL.

b. FIBER GLASS INSULATION TO HAVE A VAPOR BARRIER JACKET. JACKET TO BE KRAFT PAPER

REINFORCED WITH GLASS YARN AND BONDED TO ALUMINIZED FILM. INSTALL PER MANUFACTURE RECOMMENDATION.

VII: HANGERS AND SUPPORTS - SUPPORTS, ANCHORAGES AND SEISMIC RESTRAINTS FOR EQUIPMENT, PIPING, DUCTWORK AND CONDUIT; CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR COMPLETE DESIGN. IF DESIGN DIFFERS FROM CONSTRUCTION DOCUMENTS THAN CONTRACTOR DESIGN TO TAKE PRECEDENCE PENDING OWNER APPROVAL.

A. HORIZONTAL COPPER PIPING: ALL HORIZONTAL COPPER PIPING SHALL HAVE HANGERS. FOR PIPING 2 NCHES AND SMALLER PROVIDE GRINNEL 65, 70, 104 OR 260. LARGER THAN 2INCH PROVIDE GRINNEL 260. PROVIDE INSULATION PROTECTION SHIELDS.

VIII: ADJUSTING AND BALANCING

A. STANDARDS - ALL TESTING AND ADJUSTING COMPLY WITH NEBB AND APPLICABLE SECTIONS OF ASHRAE AND ANSI INDUSTRIAL STANDARDS.

B. INSTRUMENT STANDARDS - ALL INSTRUMENTS USED SHALL BE ACCURATELY CALIBRATED AND CERTIFIED WITHIN 6 MONTHS OF BALANCING AND MAINTAINED IN GOOD WORKING ORDER.

C. FIELD CONDITIONS: - DO NOT PERFORM TESTING, ADJUSTING OR BALANCING UNTIL ALL APPLICABLE PIECES OF EQUIPMENT HAVE BEEN STARTED UP AND OPERATING CONTINUOUSLY.

1. FILTER'S TO BE REPLACED PRIOR TO AIR BALANCING; STRAINERS TO BE CLEANED PRIOR TO HYDRONIC BALANCING.

D. DOCUMENTATION:

1. BALANCING LOG: INCLUDE ALL AIR AND WATER OUTLETS, ACTUAL FIELD MEASURED AIR AND WATER VOLUME, AND PERCENTAGE OF DESIGN VOLUMES. PROVIDE DRAWINGS IDENTIFYING LOCATION OF ALL OUTLETS.

2. EQUIPMENT DATA SHEETS: INDICATE ACTUAL EQUIPMENT PERFORMANCE, MODEL NUMBERS, BEARING AND BELT DATA, MOTOR NAMEPLATE DATA AND FINAL BALANCED MOTOR DATA.

3. SUBMIT CALIBRATION CERTIFICATES FOR ALL EQUIPMENT BEING USED.

E. EXECUTION - AIR AND WATER BALANCE ALL AIR OUTLET'S AND DOMESTIC WATER PIPING AS NOTED ON CONSTRUCTION DOCUMENTS AND VERIFY THAT EQUIPMENT IS OPERATING PER ITS APPLICABLE CONTROL STRATEGY.

IX: PLUMBING FIXTURES

A. AMERICANS WITH DISABILITIES ACT

1. THOSE FIXTURES INDICATED BY "ADA" SHALL COMPLY WITH AND BE INSTALLED IN ACCORDANCE WITH DISABILITIES ACT GUIDELINES (A.D.A.A.G.). WHERE APPLICABLE BUILDING CODE REQUIREMENTS ARE MORE STRINGENT THAN ADAAG GUIDELINES, BUILDING CODE REQUIREMENTS SHALL BE FOLLOWED.

2. LAVATORIES AND SINKS: PROVIDE INSULATION KITS ON EXPOSED HOT WATER SUPPLY PIPING AND WASTE PIPING BENEATH ADA SINKS.

B. FIXTURE TRIM

1. PROVIDE PLUMBING FIXTURE TRIM ON FIXTURES, INCLUDING BUT NOT LIMITED TO SUPPLY STOPS, TRAPS AND SUPPORT RIMS.

2. PROVIDE ROUGH IN AND FINAL PIPING CONNECTIONS TO FIXTURES. CAREFULLY REVIEW ALL CONSTRUCTION DOCUMENTS TO ASSURE THAT ALL FIXTURES ARE PROVIDED WITH NECESSARY SERVICES FOR A COMPLETE OPERATING SYSTEM.

3. RIGIDLY SECURE ROUGH-IN PIPING, CARRIERS AND SUPPORTS, AND OTHER SERVICE PIPING TO STRUCTURE.

4. WHEN A FIXTURE REQUIRES BOTH HOT AND COLD WATER, CONNECT THE HOT ON THE LEFT AND COLD ON THE RIGHT.

X: LABELING

A. ALL PIPING TO BE CLEARLY MARKED WITH MANUFACTURERS NAME AND WEIGHT.

B.ALL UNIONS AND FLANGES TO BE CLEARLY MARKED WITH MANUFACTURERS NAME AND PRESSURE CLASS RATING.

C. THE CONTRACTOR SHALL PROVIDE AND INSTALL PHENOLIC NAMEPLATES TO DESIGNATE EQUIPMENT. THE NAMEPLATES SHALL HAVE 5/8" WHITE LETTERING ON BLACK BACKGROUND. TAGS SHALL BE PROVIDED FOR THE FOLLOWING EQUIPMENT:

1. HVAC AND PLUMBING EQUIPMENT.

2. CONTROL PANEL & SENSORS.

3. TAGS SHALL BE SCREW MOUNTED AND LOCATED SO AS TO BE EASILY READABLE FROM A NORMALLY OCCUPIED POSITION.

D. LABEL ALL UTILITY, PIPING AND DUCTWORK WITH ANSI LABELS OF THE APPROPRIATE SIZE, COLOR AND LOCATION.

E. TAG ALL SHUT OFF VALVES PER CONTRACTOR PROVIDED SHUT OFF SCHEDULE.

XI: VALVING / GUAGES.

A. SHUT OFF VALVES

1.PROVIDE NIBCO, LEGEND, RED AND WHITE OR APPROVED EQUAL.

2. CONTRACTOR TO PROVIDE A SHUT OFF VALVE SCHEDULE AT CONCLUSION OF PROJECT. VALVES SHALL BE TAGGED IN FIELD PER SCHEDULE. SCHEDULE TO INDICATE WHERE VALVE ARE LOCATED AND WHAT IT SHUTS DOWN.

3. PROVIDE AT CONNECTIONS TO EQUIPMENT, WHERE SHOWN OR REQUIRED FOR EQUIPMENT ISOLATION. INSTALL IN ACCESSIBLE LOCATION.

4. FOR PIPING 2 INCHES AND SMALLER PROVIDE BALL VALVES. FOR PIPING 2-1/2" AND LARGER PROVIDE BUTTERFLY VALVES.

B. CHECK VALVES - CONTRACTOR TO PROVIDE SILENT CHECK VALVE NIBCO OR APPROVED EQUAL.

1. EXECUTION: FOR PIPING 2 INCHES AND SMALLER PROVIDE BRONZE SWING CHECK. FOR PIPING 2-1/2" AND LARGER PROVIDE IRON SWING CHECK.

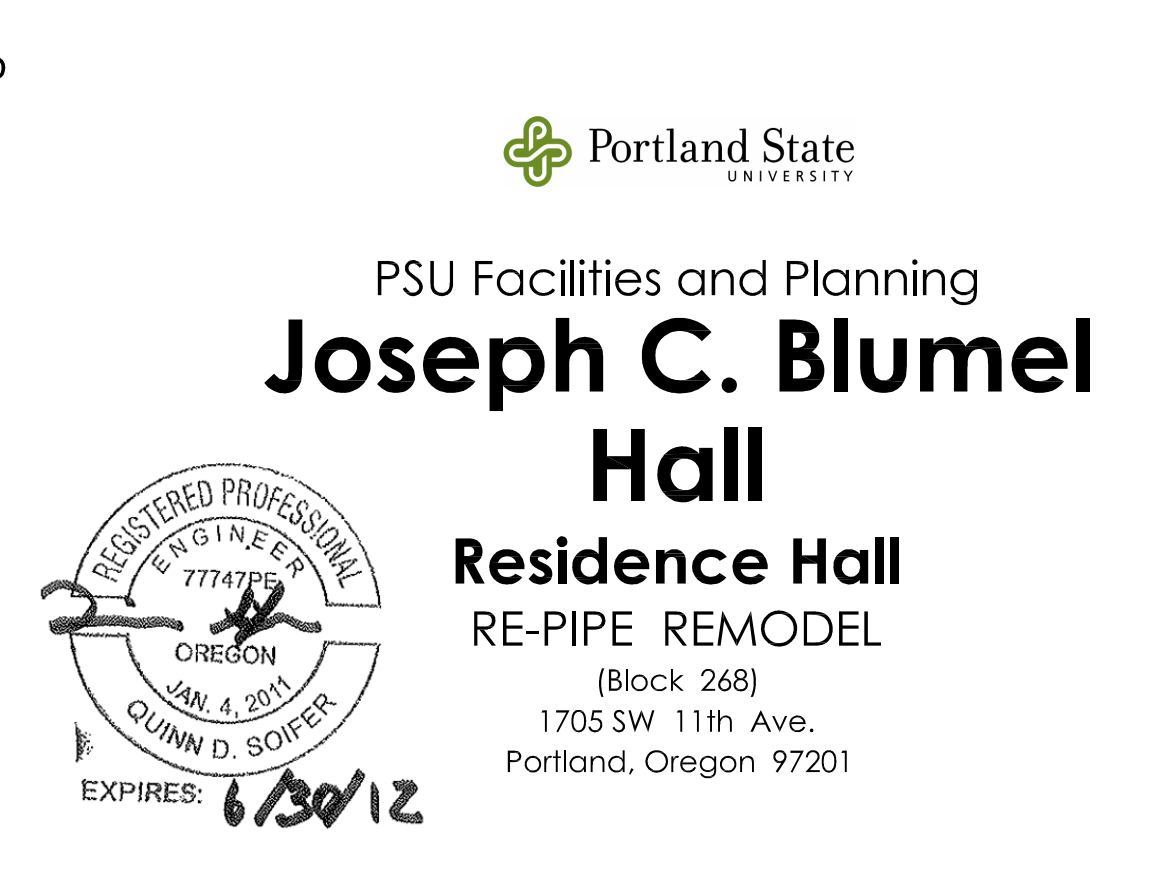
D. HOSE BIBS - PROVIDE WOODFORD OR APPROVED EQUAL. HOSE BIB'S TO BE FROST PROOF AND KEYED. PROVIDE ACCESSIBLE SHUT OFF VALVE DIRECTLY UPSTREAM OF HOSE BIB.

E. DRAIN DOWNS VALVES - PROVIDE DRAIN DOWN DOWN VALVES AT ALL LOW POINTS IN DOMESTIC WATER PIPING MAINS AND RISERS. INSTALL DOWN STREAM OF SHUT OFF VALVES. PROVIDE 3/4 INCH BOILER DRAINS, NIBCO OR APPROVED EQUAL.

F. BALANCING VALVES - PROVIDE BRONZE BODY, BRASS BALL, DIFFERENTIAL PRESSURE READOUT VALVES WITH INTEGRAL CHECKS, CALIBRATED PLATE, SUITABLE FOR TIGHT SHUTOFF, MEMORY STOPS, THREADED OR SOLDERED ENDS, 175 PSI WATER, BELL AND GOSSETT CB OR APPROVED EQUAL.


G. TEMPERATURE GAGES - PROVIDE ASHCROFT OR APPROVED EQUAL. DIRECT DRIVE 5-INCH DIAL TYPE, STAINLESS STEEL CASE AND SEPARABLE SOCKETS, ADJUSTABLE FACE, EXTENSION NECKS WHERE REQUIRED TO CLEAR INSULATION.

H. GAS COCK - FORGED BRASS BODY, HARD CHROMIUM PLATED FORGED BRASS BALL, THREADED WITH HANDLE, 175 PSI WOG. UL LISTED. WOOSTER, WATTS OR APPROVED EQUAL.



I. PRESSURE GAGES - PROVIDE ASHCROFT OR APPROVED EQUAL. 4-1/2" DIAL, MOLDED BLACK POLYPROPYLENE TURRET CASE. 0-160 PSI RANGE AND 1 PSI GRADUATIONS.

J. ALL SHUT OFF VALVES LOCATED 8 FEET ABOVE FINISHED FLOOR SHALL BE INSTALLED WITH STEM HORIZONTAL AND EQUIPPED WITH CHAIN WHEELS AND CHAINS EXTENDING TO 6 FEET ABOVE FLOOR.

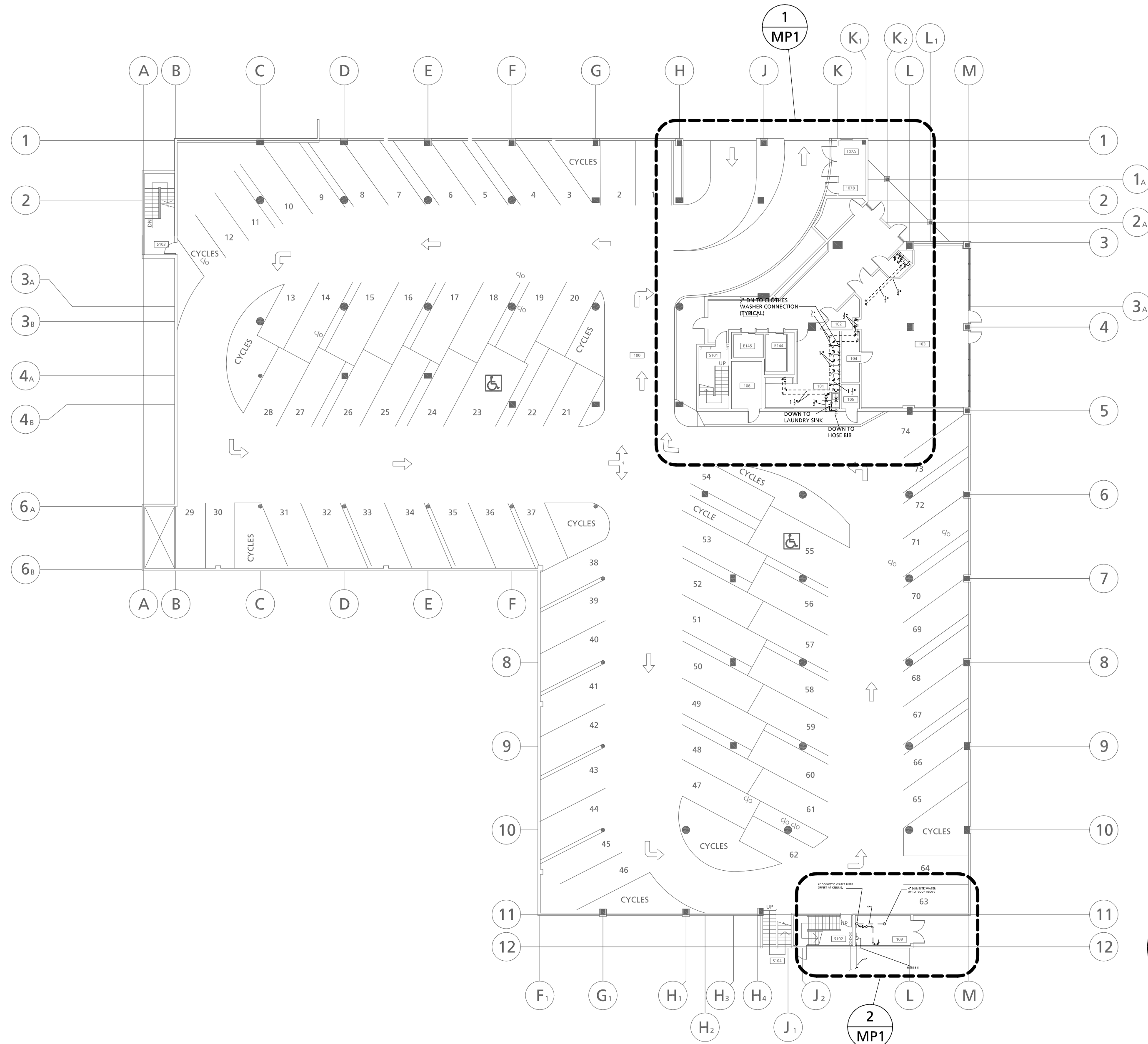
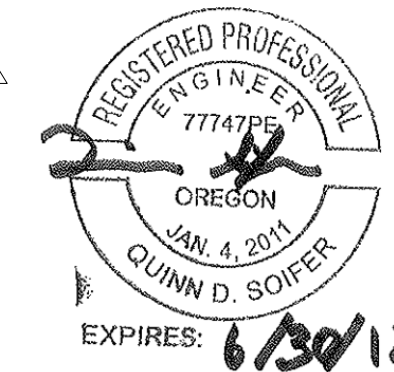
Revisions :  5/4/2012 ADDENDUM #1		Date : 4/17/2012
Drawn : L. Rinder		
Checked : Q. Soifer		

04/17/12
ISSUED for BID/PERMIT

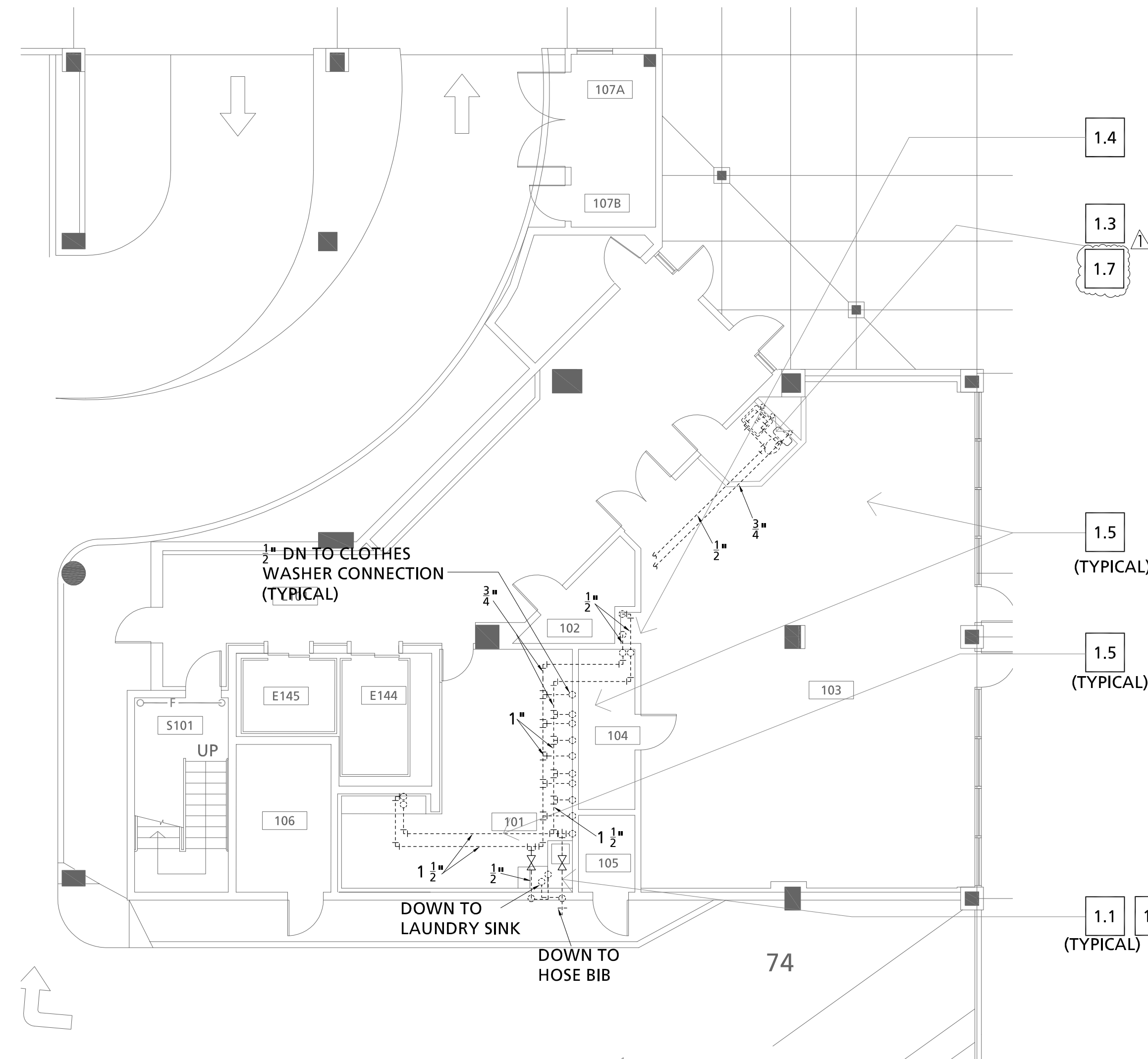
MPO.2

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall

RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



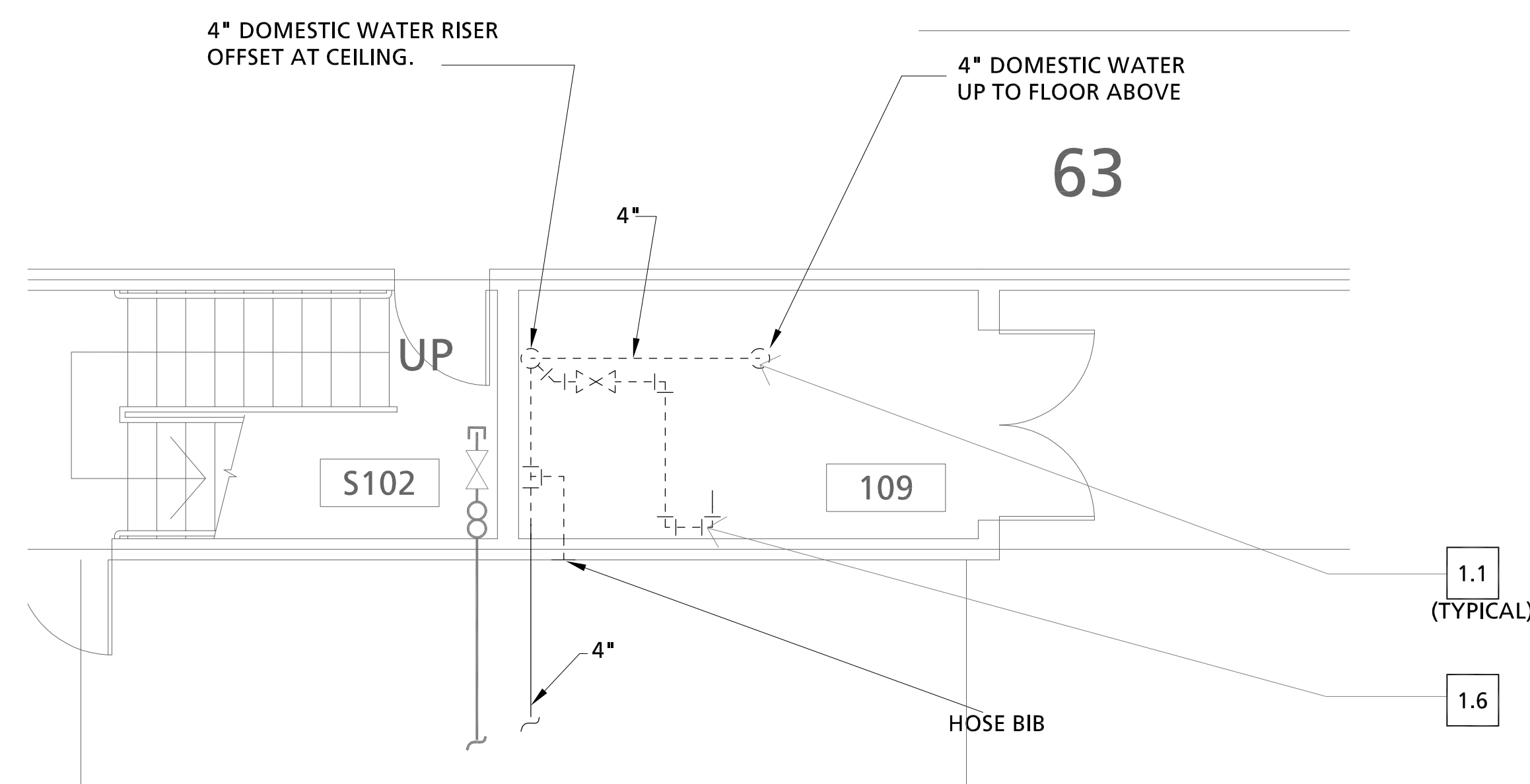
key plan



1
MP1

lower level parking - demolition plan

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



2
MP1

lower level parking - demolition plan

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

GENERAL

CONTRACTOR TO DEMOLISH BUILDING ARCHITECTURE PRIOR TO DEMOLISHING PIPING. CONTRACTOR TO VERIFY EXISTING PIPE RISERS AND PIPE ROUTING AND THAT THEY MATCH THE NEW PIPING RISERS AND NEW PIPE ROUTING. IF THERE ARE DISCREPANCIES CONTRACTOR TO NOTIFY ENGINEER. RELOCATE EXISTING UTILITIES AS REQUIRED.

1. DEMO

1.1 - CONTRACTOR TO DEMO ALL HOT WATER COLD WATER, HOT WATER RETURN PIPING AND ALL ASSOCIATED COMPONENTS AND VALVES. DEMO ALL MAINS RISERS AND BRANCH PIPING. BEGIN DEMO AS MAIN WATER LINE ENTERS THE BUILDING. ISOLATE SYSTEM AT MAIN BACKFLOW PREVENTER LOCATED IN STREET VAULT. DEMO SHEET ROCK WALLS, CEILINGS AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLER PIPING AS NEEDED.

1.2 - CONTRACTOR TO DEMO ALL HOT WATER AND COLD WATER PIPING AND LAUNDRY SINK SERVING THE LOWER LEVEL LAUNDRIES ROOM 101. DEMO EXISTING SHEET ROCK AS NEEDED. DETACH EXISTING WASHER BOXES, LAUNDRY SINK AND REUSE.

1.3 - CONTRACTOR TO DEMO EXISTING COLD WATER, HOT WATER PIPING AND FIXTURES FEEDING LOBBY BATHROOM. DEMO EXISTING SHEET ROCK AS NEEDED.

1.4 - CONTRACTOR TO DEMO HOT WATER, COLD WATER PIPING AND LOUNGE SINK. DEMO EXISTING SHEET ROCK AS NEEDED.

1.5 - CONTRACTOR TO REMOVE AND REINSTALL DROP CEILING AND INSULATION AS NEEDED IN ORDER TO DEMO. CONTRACTOR RESPONSIBLE TO REPLACE ANY DAMAGED CEILING TILES, INSULATION AND CEILING COMPONENTS DURING REMOVAL AND REINSTALL.

1.6 - CONTRACTOR TO CAP 1" LINE SERVING TRASH CHUTE CLEANING SYSTEM.

1.7 - CONTRACTOR TO DEMO EXISTING CONCRETE SLAB IN ORDER TO ACCESS EXISTING 3" WASTE PIPING. DEMO EXISTING 3" WASTE PIPING AS REQUIRED IN ORDER TO RELOCATE AND CONNECT TO NEW WC.

04/17/12
 ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

Revisions: 5/4/2012
 ADDENDUM #1

Date: 4/17/2012

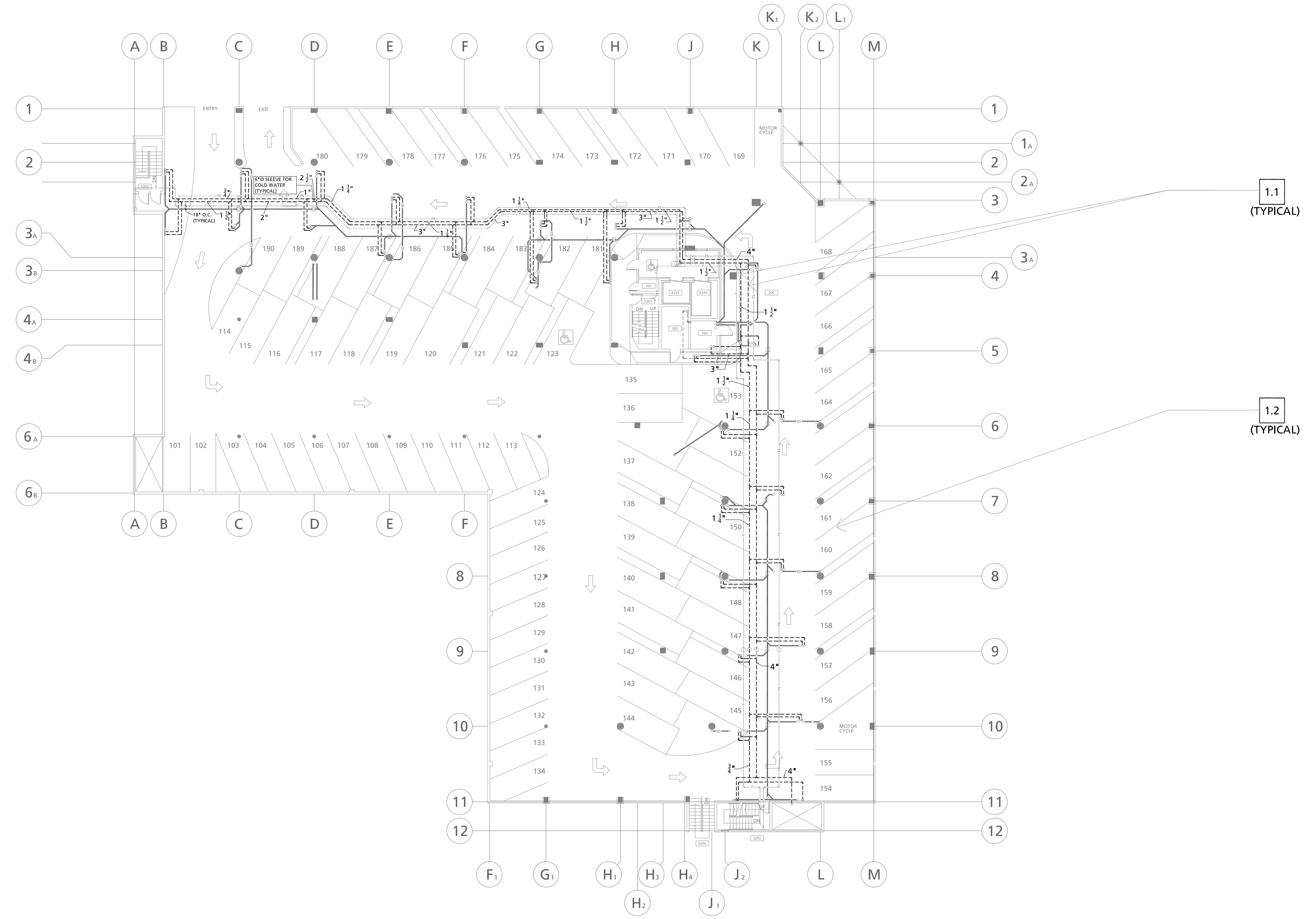
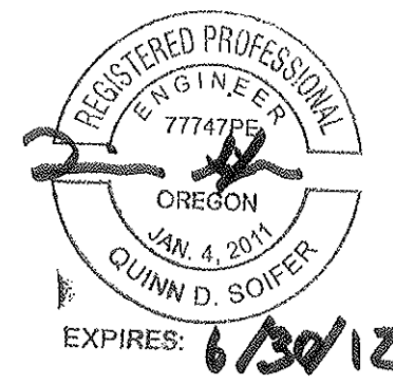
Drawn: L. Rinder

Checked: Q. Soifer

MP1

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall

RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



GENERAL

CONTRACTOR TO DEMOLISH BUILDING ARCHITECTURE PRIOR TO DEMOLISHING PIPING. CONTRACTOR TO VERIFY EXISTING PIPE RISERS AND PIPE ROUTING AND THAT THEY MATCH THE NEW PIPING RISERS AND NEW PIPE ROUTING. IF THERE ARE DISCREPANCIES CONTRACTOR TO NOTIFY ENGINEER.

1. DEMO

1.1 - CONTRACTOR TO DEMO ALL HOT WATER COLD WATER, HOT WATER RETURN PIPING AND ALL ASSOCIATED COMPONENTS AND VALVES. DEMO MAINS RISERS AND BRANCH PIPING. DEMO WALLS, CEILINGS AND RELOCATE ELECTRICAL UTILITIES AS NEEDED IN ORDER TO ACCESS PIPING.

1.2 - CONTRACTOR TO REMOVE AND REINSTALL DROP CEILING AND INSULATION AS NEEDED IN ORDER TO DEMO. CONTRACTOR RESPONSIBLE TO REPLACE ANY DAMAGED CEILING TILES, INSULATION AND CEILING COMPONENTS DURING REMOVAL AND REINSTALL.

04/17/12
 ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

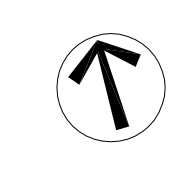
Revisions :	Date : 4/17/2012
-------------	---------------------

Drawn : L. Rinder

Checked : Q. Soifer

upper level parking - demolition plan

SCALE: 1/16" = 1' - 0"

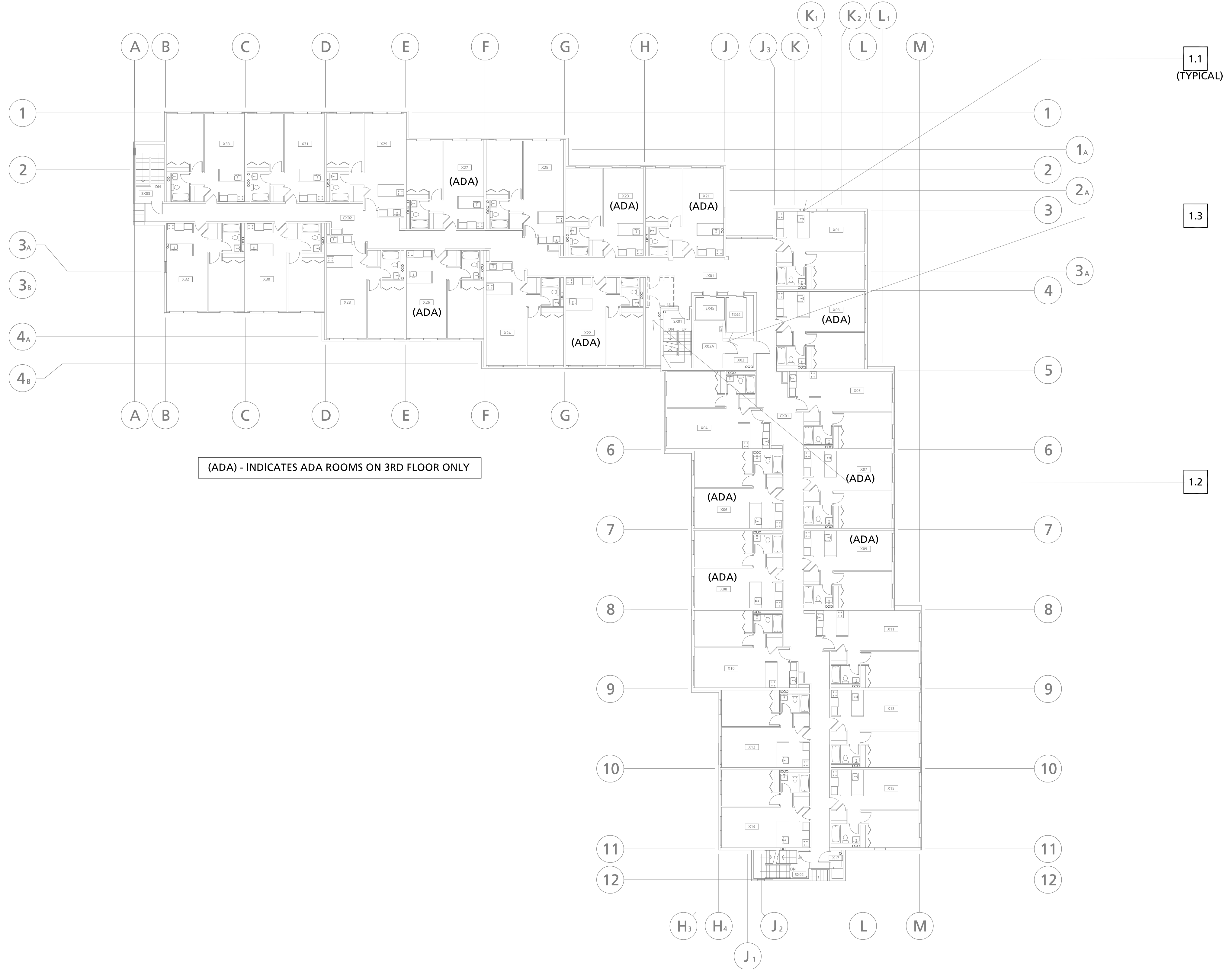
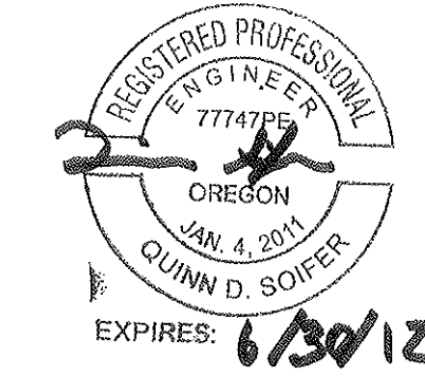


MP2

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL
(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201



(ADA) - INDICATES ADA ROOMS ON 3RD FLOOR ONLY

GENERAL

CONTRACTOR TO DEMOLISH BUILDING ARCHITECTURE PRIOR TO DEMOLISHING PIPING. CONTRACTOR TO VERIFY EXISTING PIPE RISERS AND PIPE ROUTING AND THAT THEY MATCH THE NEW PIPING RISERS AND NEW PIPE ROUTING. IF THERE ARE DISCREPANCIES CONTRACTOR TO NOTIFY ENGINEER.

1. DEMO

1.1 - CONTRACTOR TO DEMO ALL HOT WATER COLD WATER, HOT WATER RETURN PIPING AND ALL ASSOCIATED COMPONENTS AND VALVES. DEMO ALL MAINS RISERS AND BRANCH PIPING. DEMO SHEET ROCK WALLS, CEILING AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLER PIPING AS NEEDED.

1.2 - CONTRACTOR TO DEMO ALL HOT WATER AND COLD WATER PIPING SERVING THE LAUNDRIES ON FLOORS 3,5,7 AND 9. DEMO EXISTING SHEET ROCK AS NEEDED. DETACH EXISTING WASHER BOXES AND REUSE.

1.3 - CONTRACTOR TO DEMO ALL HOT WATER AND COLD WATER PIPING SERVING MOP SINKS ON FLOORS 3,5,7,9. DEMO EXISTING SHEET ROCK AND REMOVE AND REINSTALL MOP SINK AS NEEDED.

04/17/12
ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

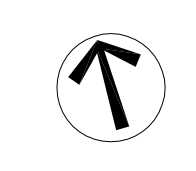
Revisions :	Date : 4/17/2012
-------------	---------------------

Drawn : L. Rinder

Checked : Q. Soifer

typical floor - demolition plan

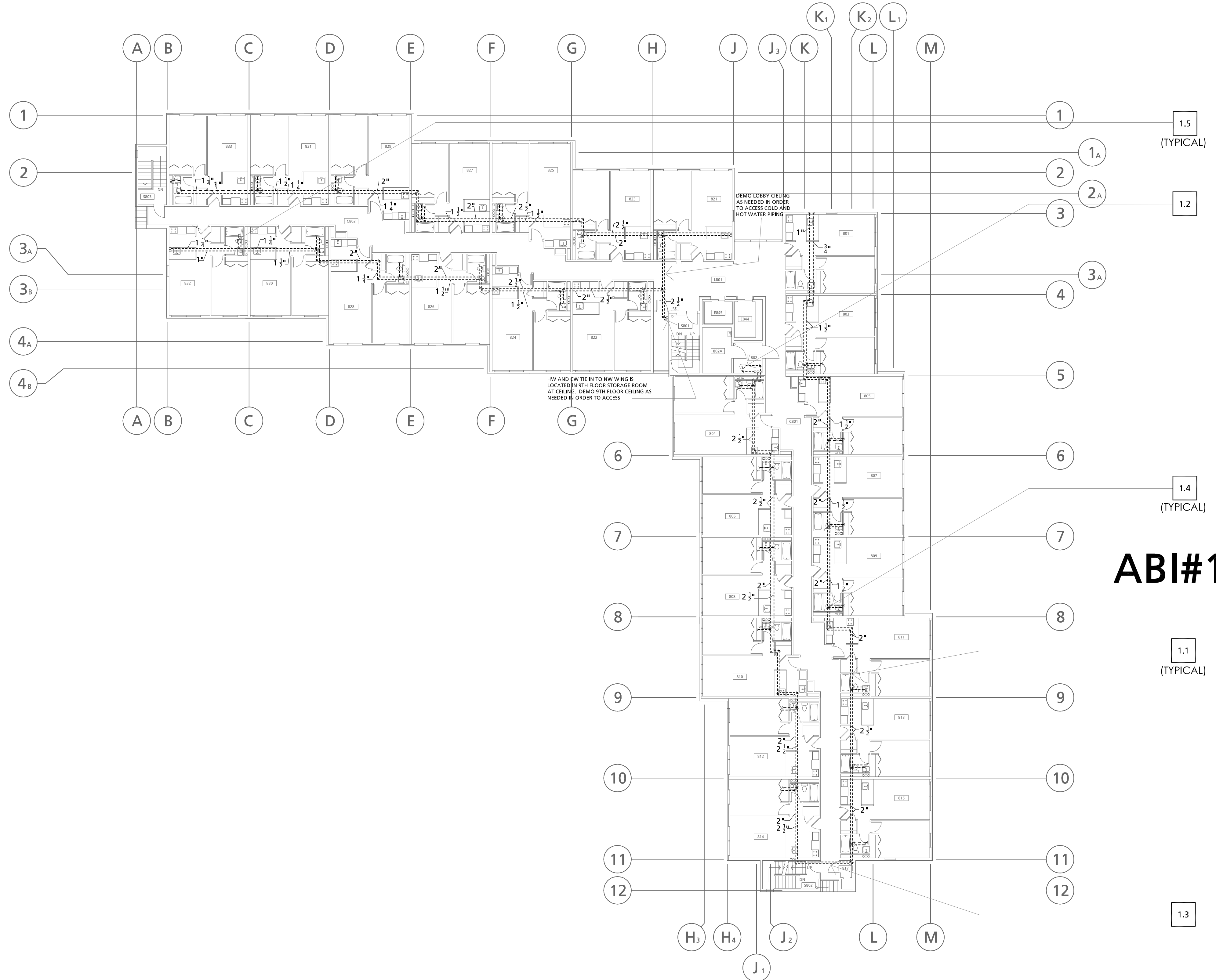
SCALE: 1/16" = 1' - 0"



MP3

PSU Facilities and Planning
Joseph C. Blumel Hall
Hall

Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



- GENERAL**
- CONTRACTOR TO DEMOLISH BUILDING ARCHITECTURE PRIOR TO DEMOLISHING PIPING. CONTRACTOR TO VERIFY EXISTING PIPE RISERS AND PIPE ROUTING AND THAT THEY MATCH THE NEW PIPING RISERS AND NEW PIPE ROUTING. IF THERE ARE DISCREPANCIES CONTRACTOR TO NOTIFY ENGINEER.
- 1. DEMO**
- 1.1 - CONTRACTOR TO DEMO ALL HOT WATER COLD WATER, HOT WATER RETURN PIPING AND ALL ASSOCIATED COMPONENTS AND VALVES. DEMO ALL MAINS, RISERS AND BRANCH PIPING. DEMO EXISTING ACCESS PANELS. DEMO 8TH FLOOR SOFFIT. RELOCATE ELECTRICAL UTILITIES AND FIRE SPINKLER AS REQUIRED IN ORDER TO DEMO PIPING.
 - 1.2 - CONTRACTOR TO SALVAGE EXISTING BOOSTER PUMP. DEMO PIPING AND PRESSURE REDUCING VALVES.
 - 1.3 - CONTRACTOR TO SALVAGE EXISTING PIPE CHASE. RE-USE FOR NEW PIPING.
 - 1.4 - CONTRACTOR TO DEMO COLD WATER, HOT WATER PIPING SERVING 7TH, 8TH AND 9TH FLOORS
 - 1.5 - CONTRACTOR TO DEMO EXISTING 12" X 12" ACCESS PANELS IN EACH UNIT BATHROOM.

ABI#12

04/17/12
 ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

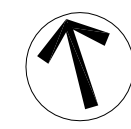
Revisions : _____ Date : 4/17/2012

Drawn : L. Rinder

Checked : Q. Soifer

8th floor - demolition plan

SCALE: 1/16" = 1' - 0"

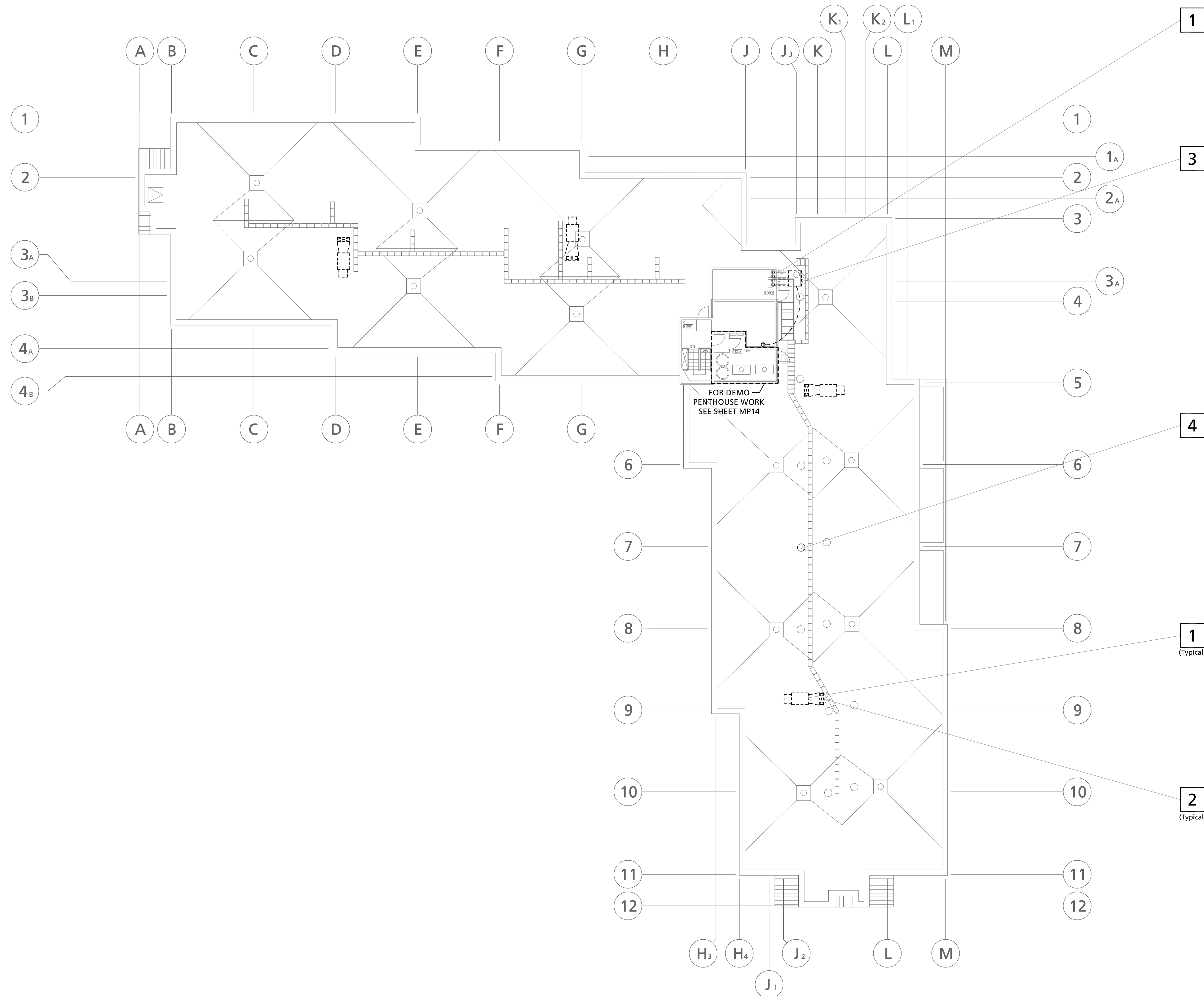


MP4

Joseph C. Blumel Hall

Residence Hall RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201



1. DEMO EXISTING ROOF TOP UNITS - CONTRACTOR TO DEMO EXISTING 100% OUTSIDE AIR UNITS AND EXISTING AIR CONDITIONING UNIT. DEMO EXISTING ROOF CURBS, POWER AND CONTROL WIRING. DEMO GAS PIPING TO JUST ABOVE EXISTING ROOF LINE.
2. DEMO EXISTING DUCT WORK - CONTRACTOR TO DEMO EXISTING DUCT WORK TAKING OFF OF EXISTING ROOF TOP UNIT. STOP DEMOLITION JUST ABOVE EXISTING ROOF LINE.
3. DEMO EXISTING DUCT WORK - CONTRACTOR TO DEMO EXISTING SUPPLY AND RETURN DUCT WORK TAKING OFF OF EXISTING ROOF TOP UNIT. STOP DEMOLITION JUST OUTSIDE OF THE UNDERSIDE OF THE ELEVATOR MECHANICAL ROOM.
4. EXISTING EXHAUST FANS - CONTRACTOR TO REMOVE THE 24 (FIELD VERIFY) EXISTING EXHAUST FANS IN ORDER TO RE-ROOF. DISCONNECT POWER AND DUCT WORK AS REQUIRED. PROVIDE TEMPORARY WATER PROOF CAPS FOR ANY OPENINGS. EXHAUST FAN'S TO BE REINSTALLED UPON COMPLETION OF THE ROOF. CONTRACTOR TO VERIFY, DOCUMENT AND CONFIRM WITH OWNER EACH FAN'S FUNCTIONALITY PRIOR TO REMOVAL.

04/17/12
ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

Revisions : _____ Date : 4/17/2012

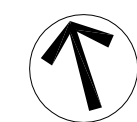
Drawn : L. Rinder

Checked : Q. Soifer

MP5

roof top - demolition plan

SCALE: 1/16" = 1' - 0"

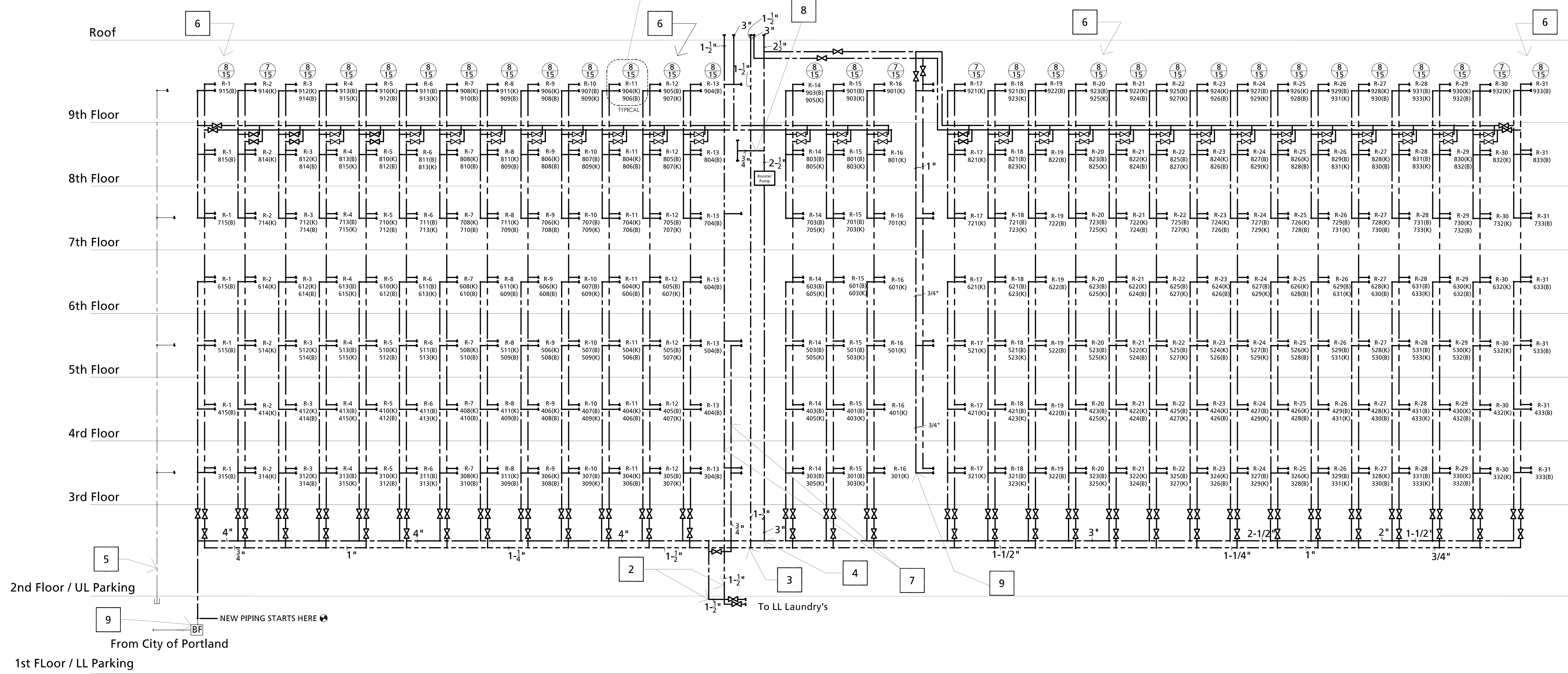


PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall

RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



$\frac{X}{15}$ = REFERENCES INDIVIDUAL RISER DETAIL
 R-X = RISER TAG
 XXX(K or B) = ROOM NUMBER
 (RISER SERVES EITHER KITCHEN, BATHROOM or BOTH)



- GENERAL**
- THIS DRAWING IS SCHEMATIC AND IS ONLY FOR INFORMATIONAL PURPOSES. EXACT PIPE ROUTING, CONNECTIONS AND SIZES SHOULD BE BASED OFF OF MP7, MP8, MP9 AND MP10.
- NOTES**
1. LAUNDRY RISER SERVES LAUNDRIES ON FLOORS 3, 5, 7 AND 9.
 2. 1-1/2" LINES DOWN TO LOWER LEVEL LAUNDRY.
 3. 1-1/2" HWR LINE UP TO PENTHOUSE.
 4. 3" CW TO BOOSTER PUMP ON 8TH FLOOR.
 5. CAP 1" LINE SERVING GARBAGE SHUT ON 3, 5, 7, AND 9.
 6. SIMILAR TO MP 8/15, BUT NO KITCHEN SINK.
 7. HW AND CW PIPNG SERVING MOP SINKS ON FLOORS 3 AND 5.
 8. HW AND CW PIPNG SERVING MOP SINKS ON FLOORS 7 AND 9.
 9. EXISTING BUILDING BACKFLOW PREVENTER LOCATED IN STREET VAULT.

04/17/12
 ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

Revisions :	Date : 4/17/2012
Drawn : L. Rinder	
Checked : Q. Soifer	

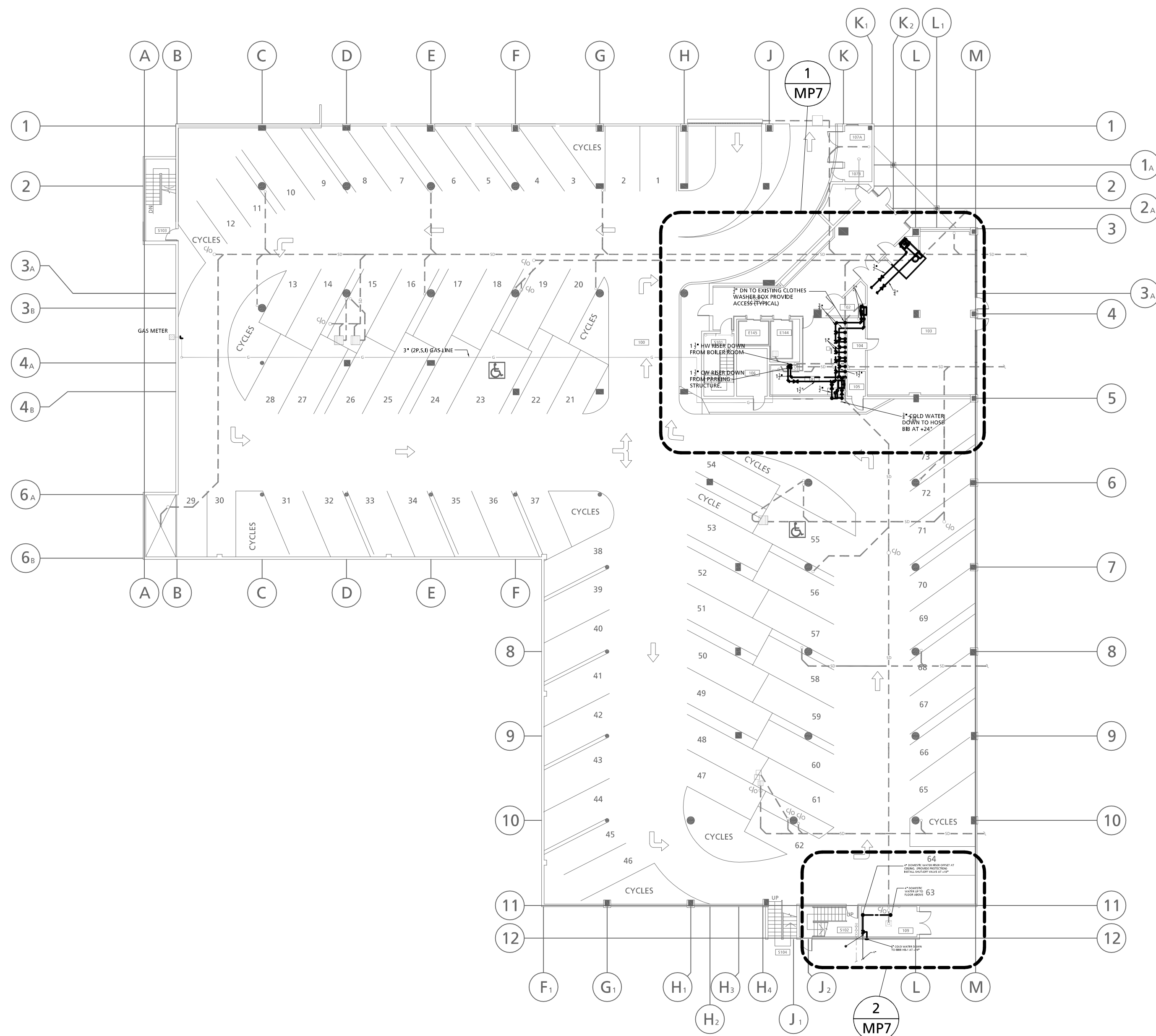
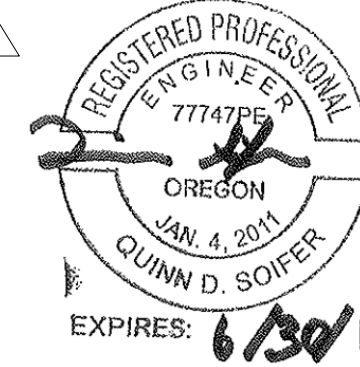
new plumbing riser diagram / schedule

NOT TO SCALE

MP6

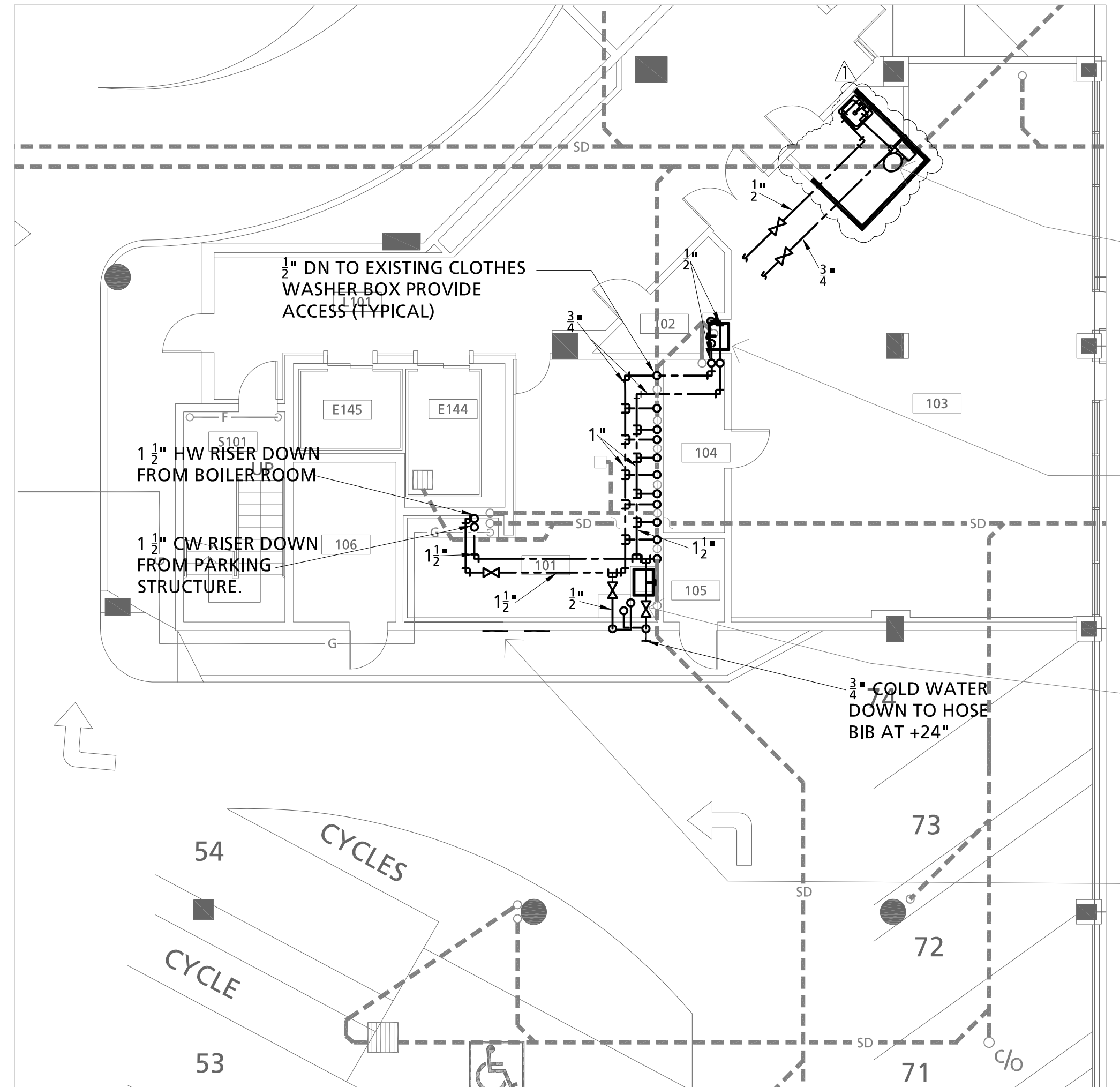
PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL

(Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



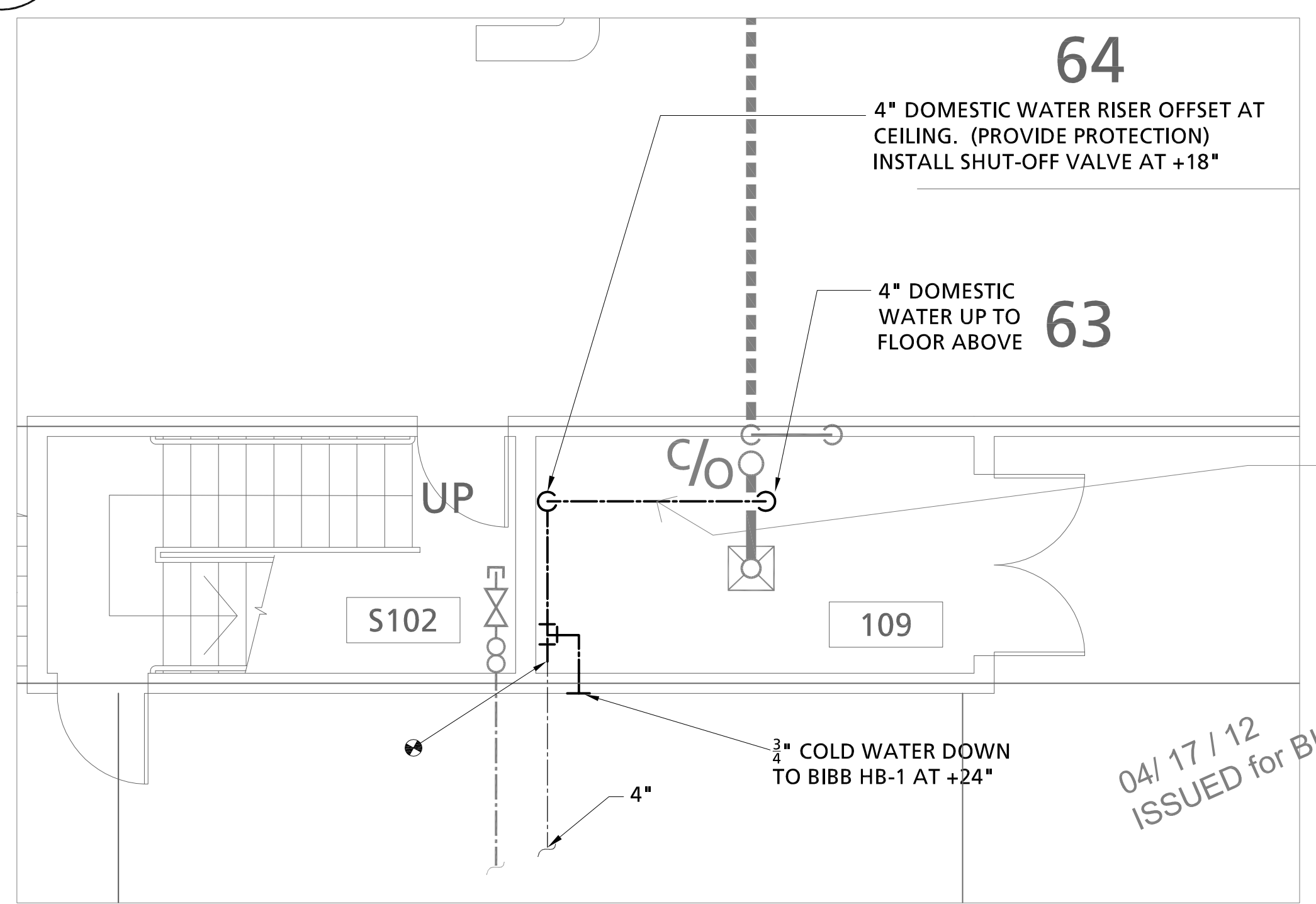
key plan

1.8 - CONTRACTOR TO PROVIDE NEW 3" WASTE PIPING AND CONNECT TO EXISTING. PATCH CONCRETE SLAB AIR AND WATER TIGHT.



1 lower level parking - new work

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



2 lower level parking - new work

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

General:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLYSIS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

1. NEW WORK

1.1 - CONTRACTOR TO PROVIDE NEW COLD WATER, HOT WATER AND HOT WATER RECIRCULATION PIPING. PROVIDE NEW MAINS, RISERS AND BRANCH PIPING. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. REUSE EXISTING STRUCTURAL OPENINGS. PROVIDE VALVES AND PIPING COMPONENTS AS SHOWN AND WHICH ARE REQUIRED BY CODE. PATCH, PAINT WALLS AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLER PIPING AS REQUIRED, REINSTALL DROP CEILING AND INSULATION.

1.2 - CONTRACTOR TO PROVIDE NEW COLD WATER, HOT WATER PIPING SERVING THE LOWER LEVEL LAUNDRY ROOM. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. PATCH, PAINT WALLS AS REQUIRED, REINSTALL DROP CEILING AND INSULATION. BRANCH PIPING TO SERVICE SINK AND CLOTHES WASHERS TO BE PEX AND REUSE WASHER BOXES. PROVIDE NEW SINK KS-2 REFER TO MP12/6.2.

1.3 - CONTRACTOR TO PROVIDE NEW 3/4" COLD WATER AND 1/2" HOT WATER PIPING SERVING THE LOBBY BATHROOM. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. PATCH, AND PAINT WALLS AS REQUIRED. PROVIDE NEW ADA LAVATORY (L-2) AND WATER CLOSET (WC-2) REFERENCE SHEET MP12/4.2, MP12/3.2. BRANCH PIPING TO FIXTURES SHALL BE PEX.

1.4 - CONTRACTOR TO PROVIDE NEW 1/2" COLD WATER AND 1/2" HOT WATER PIPING SERVING THE NEW LOUNGE SINK. NEW SINK SHALL BE KS-1, REFERENCE SHEET MP12/6.1. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. PATCH, AND PAINT WALLS AS REQUIRED. 1/2" CW, HW BRANCH PIPING TO NEW FIXTURES SHALL BE PEX.

1.5 - CONTRACTOR TO PROVIDE HEAT TAPE FOR ALL CW PIPING IN UNHEATED TRASH AREA ROOM 101. COORDINATE WITH ELECTRICAL CONTRACTOR. PROVIDE RAYCHEM XL TRACE OR APPROVED EQUAL. SIZE FOR 5 W/FT. AND 120V POWER SUPPLY. PROVIDE CONNECTION KITS, END SEALS AND CONTROLLER FOR A FULLY FUNCTIONAL SYSTEM. PROVIDE FLAME RETARDANT INSULATION AND WATER PROOF COVERING.

1.6 - PROVIDE DRAIN VALVES AT LOW POINT IN DOMESTIC WATER PIPING SYSTEM. REFERENCE SPECIFICATION ON MP0.2/XL.E.

1.7 - CONTRACTOR TO FIRE CAULK BOTH SIDES OF STRUCTURE AROUND 12 (FIELD VERIFY) EXISTING 4" DRYER DUCT DISCHARGE. FIRE CAULK SHALL BE HILTI OR APPROVED EQUAL, UL RATED AND 2-HOUR RATED.

Revisions: 5/4/2012 ADDENDUM #1 Date: 4/17/2012

Drawn: L. Rinder

Checked: Q. Soifer

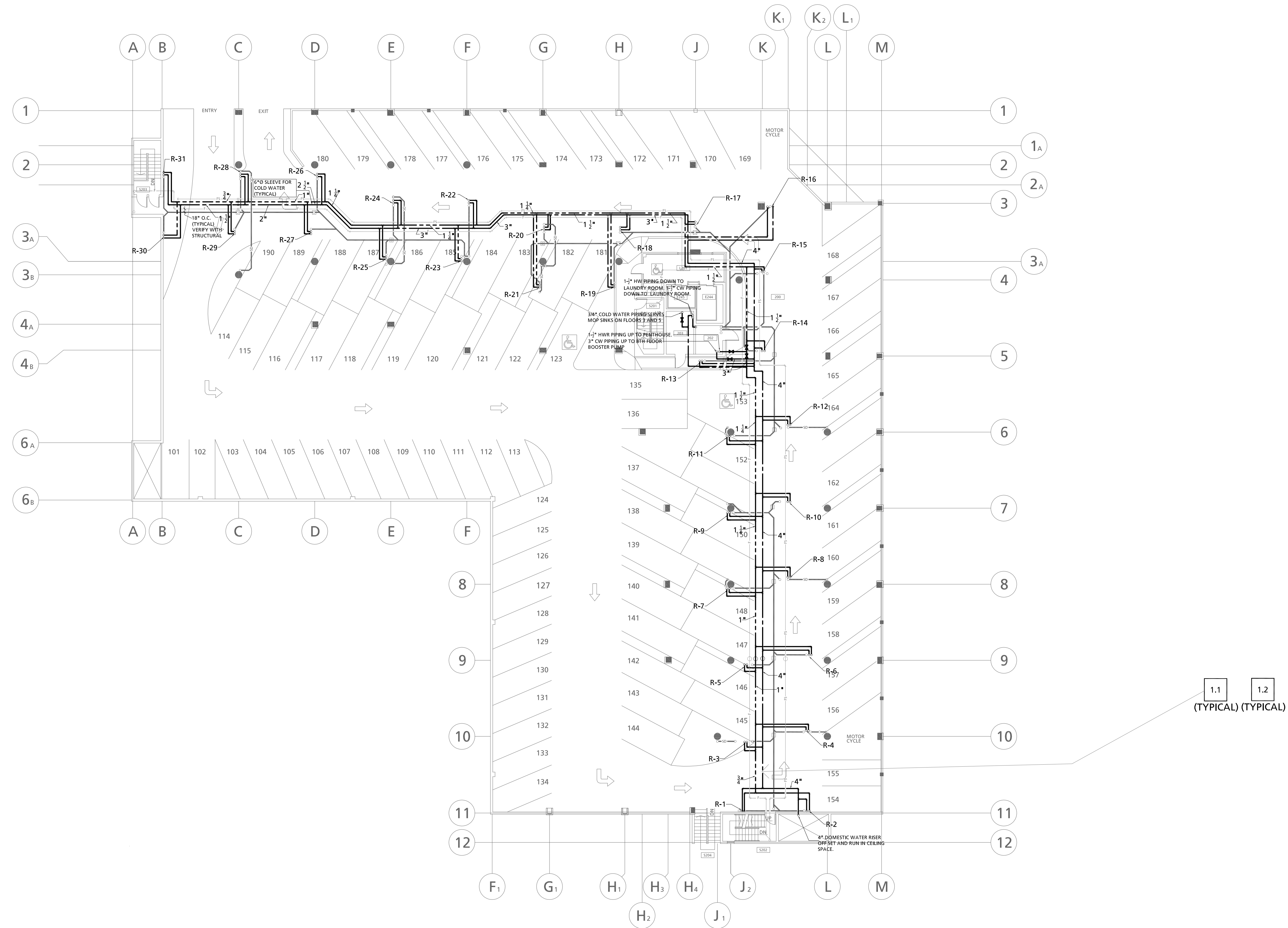
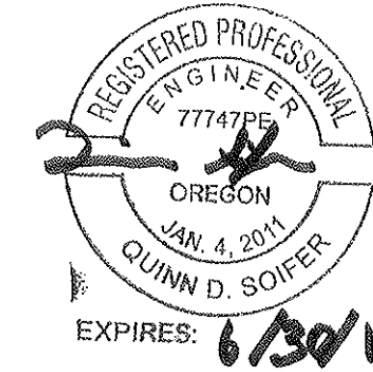
Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

MP7

04/17/12 ISSUED for BID/PERMIT

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall

RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



GENERAL:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLYSIS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

1. NEW WORK

- 1.1 - CONTRACTOR TO PROVIDE NEW COLD WATER, HOT WATER AND HOT WATER RECIRCULATION PIPING. PROVIDE NEW MAINS, RISERS AND BRANCH PIPING. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. REUSE EXISTING AND ANCHOR NEW PIPING TO STRUCTURE. REUSE EXISTING STRUCTURAL OPENINGS. PROVIDE VALVES AND PIPING COMPONENTS AS SHOWN AND WHICH ARE REQUIRED BY CODE. PATCH, PAINT WALLS AND CEILINGS AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLER PIPING AS REQUIRED, REINSTALL DROP CEILING AND INSULATION.
- 1.2 - PROVIDE DRAIN VALVES AT ALL LOW POINTS IN SYSTEM AND AT THE BASE OF EACH RISER. REFERENCE SPECIFICATIONS MP0.2/XI.

1.1 (TYPICAL)
 1.2 (TYPICAL)

04/17/12
 ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

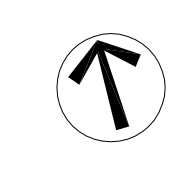
Revisions :	Date : 4/17/2012
-------------	---------------------

Drawn : L. Rinder

Checked : Q. Soifer

upper level parking - new piping plan

SCALE: 1/16" = 1' - 0"

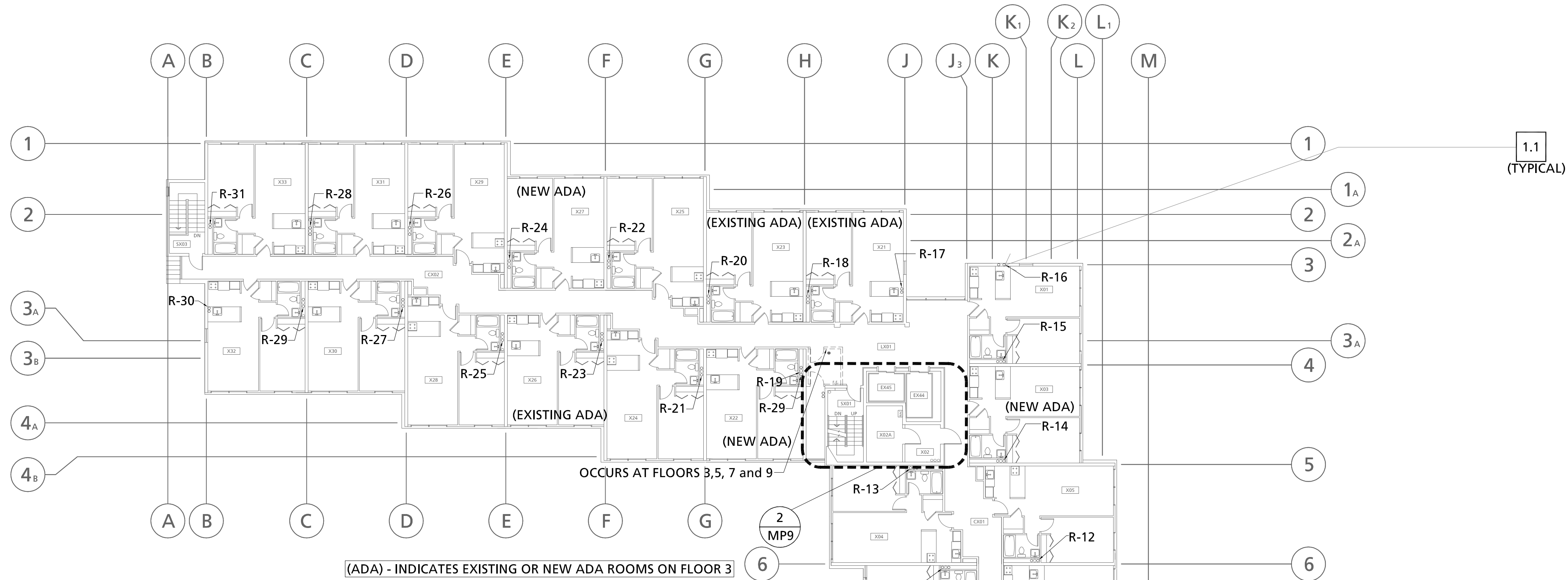
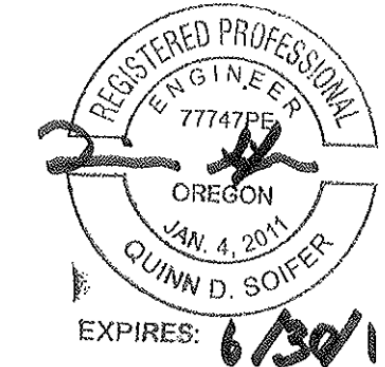


MP8

Joseph C. Blumel Hall

Residence Hall RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201



(ADA) - INDICATES EXISTING OR NEW ADA ROOMS ON FLOOR 3

GENERAL:

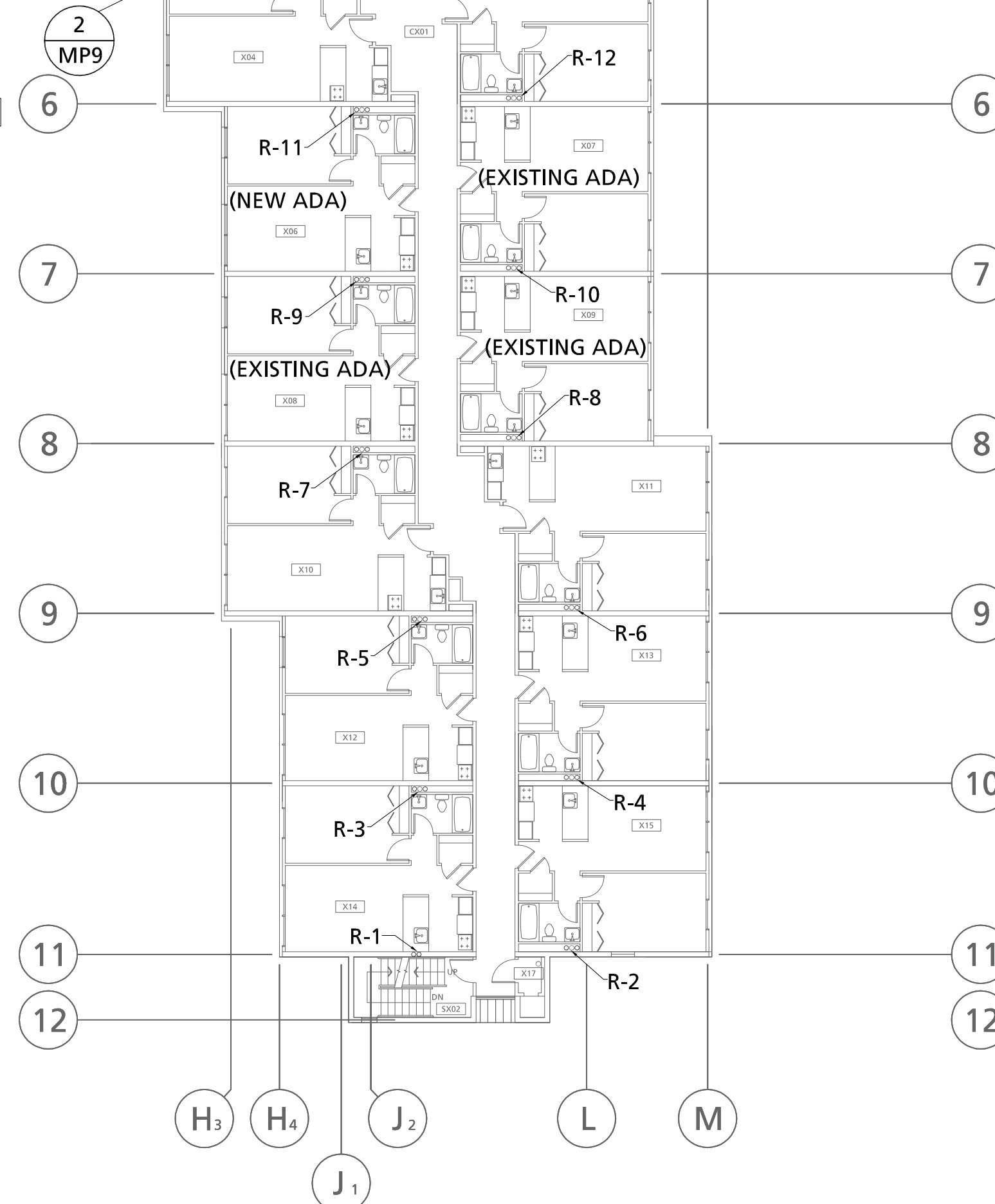
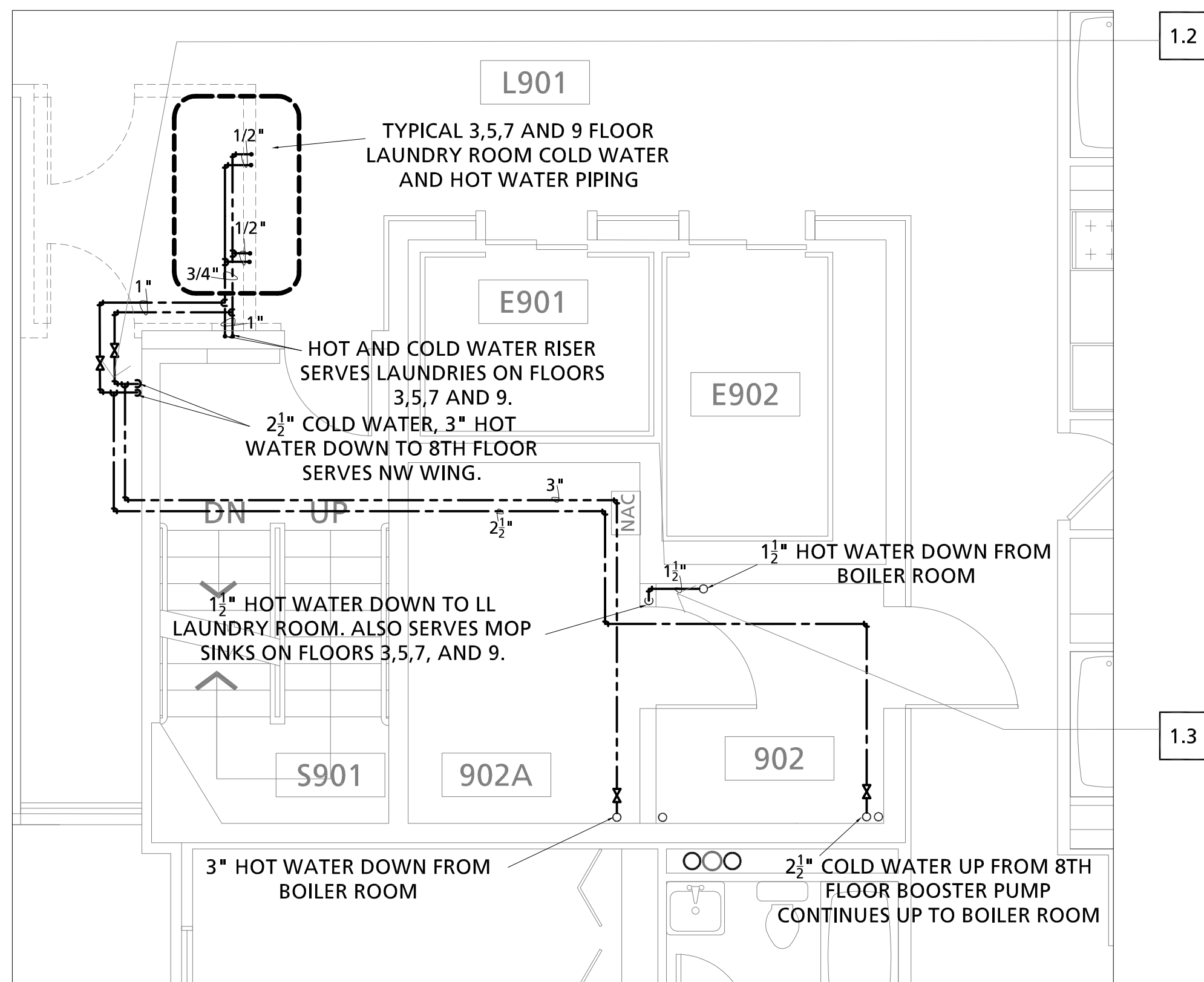
THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLYSIS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING. TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

1. NEW WORK

1.1 - CONTRACTOR TO PROVIDE NEW COLD WATER, HOT WATER AND HOT WATER RECIRCULATION PIPING. PROVIDE NEW MAINS, RISERS AND BRANCH PIPING. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. REUSE EXISTING STRUCTURAL OPENINGS. PROVIDE VALVES AND PIPING COMPONENTS AS SHOWN AND WHICH ARE REQUIRED BY CODE. PATCH, PAINT WALLS AND CEILINGS AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLERS AS REQUIRED.

1.2 - CONTRACTOR TO PROVIDE NEW HOT WATER AND COLD WATER PIPING SERVING LAUNDRIES ON FLOORS 3, 5, 7 AND 9. TAKE OFF OF HOT WATER AND COLD WATER MAINS IN 9TH FLOOR STORAGE ROOM WITH NEW 1" COLD WATER AND HOT WATER PIPING ROUTE IN WALL DOWN TO 3RD FLOOR. CONNECT TO NEW WASHERS WITH 1/2" COLD WATER AND HOT WATER PEX PIPING CONNECT TO EXISTING WASHER BOXES. PAINT AND PATCH WALLS AND CEILINGS AND RELOCATE ELECTRICAL UTILITIES AS REQUIRED.

1.3 - CONTRACTOR TO TAKE OFF OF HOT WATER PIPING WITH NEW 1/2" PEX HW PIPING. ROUTE AND CONNECT TO MOP SINKS ON FLOORS, 3, 5, 7, AND 9. REINSTALL EXISTING MOP SINKS. PAINT AND PATCH WALLS AND CEILINGS AS REQUIRED.



04/17/12
ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional information.

Revisions : _____ Date : 4/17/2012

Drawn : L. Rinder

Checked : Q. Soifer

2
MP9
9th floor laundry room
SCALE: 1/4" = 1' - 0"

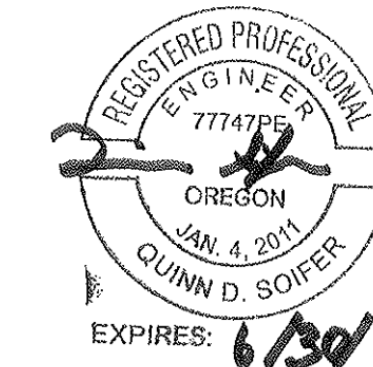
1
MP9
typical floor - new piping plan
SCALE: 1/16" = 1' - 0"

MP9

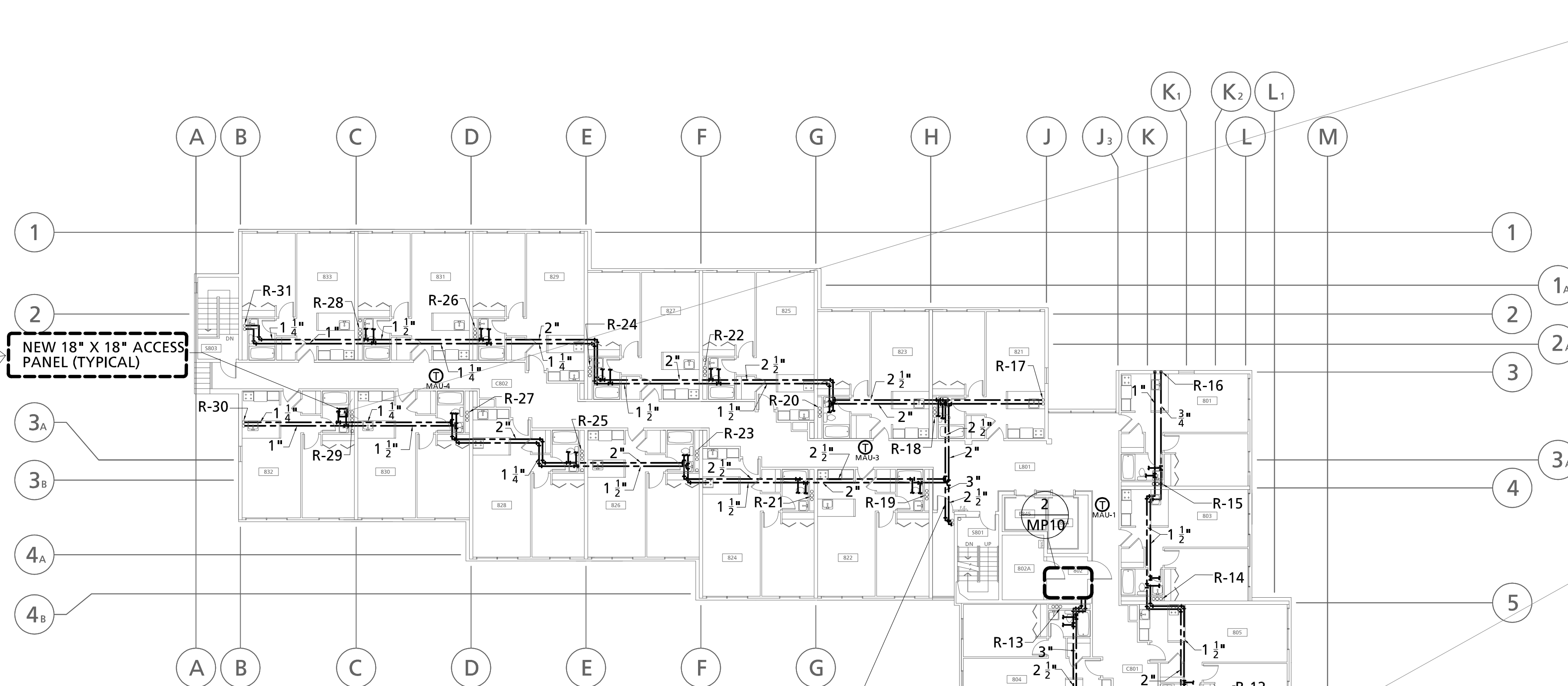
PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall

RE-PIPE REMODEL

(Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

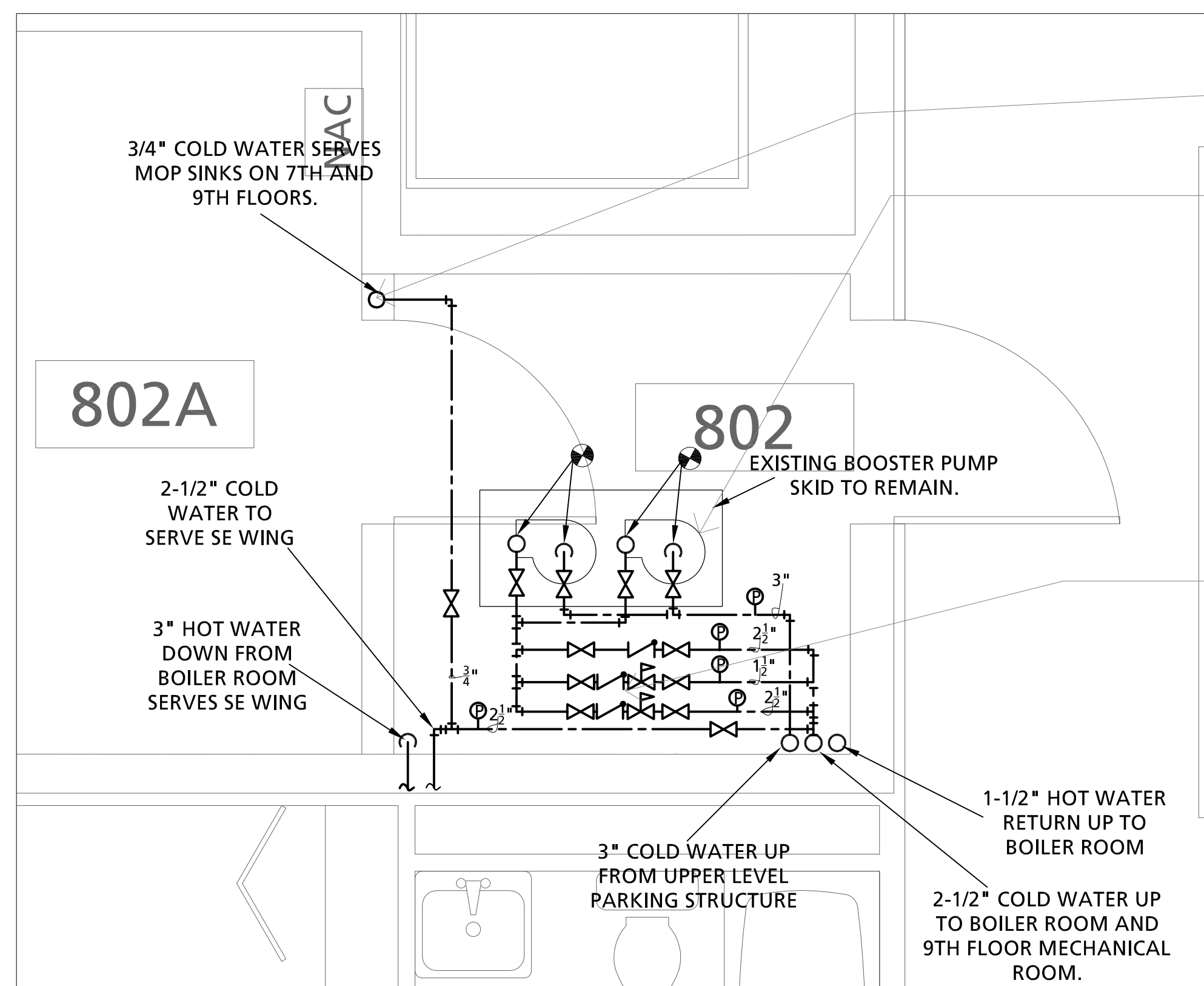


ABI#12



MODIFY EXISTING SOFFIT
 IN ORDER TO ROUTE
 NEW PIPING

ABI#12



8th floor mechanical room

MP10 SCALE: 1/2" = 1'-0"

8th floor - new piping plan

MP10 SCALE: 1/16" = 1'-0"

General:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLYSIS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS CLAMPS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

1. NEW WORK

1.1 - CONTRACTOR TO PROVIDE NEW COLD WATER, HOT WATER AND HOT WATER RECIRCULATION PIPING. PROVIDE NEW MAINS, RISERS AND BRANCH PIPING. INSULATE AND ANCHOR NEW PIPING TO STRUCTURE. REUSE EXISTING STRUCTURAL OPENINGS. PROVIDE VALVES AND PIPING COMPONENTS AS SHOWN AND WHICH ARE REQUIRED BY CODE. PATCH, PAINT WALLS AND CEILINGS AND RELOCATE ELECTRICAL UTILITIES AND FIRE SPRINKLER PIPING AS REQUIRED.

1.2 - CONTRACTOR TO INSTALL NEW 18" X 18" ACCESS PANEL IN 8TH FLOOR ROOMS EACH RISER TO HAVE A PANEL. ACCESS PANEL SHALL BE JL INDUSTRIES OR APPROVED EQUAL PANEL SHALL BE PAINTED TO MATCH ADJACENT FINISH. RE-FRAME OPENING AS REQUIRED. PLACE SHUT OFF VALVES AND DRAIN VALVES DIRECTLY ABOVE PANEL.

1.3 - CONTRACTOR TO PROVIDE PROGRAMMABLE THERMOSTAT FOR NEW MIXED AIR UNITS. HONEYWELL OR APPROVED EQUAL. REUSE EXISTING CHASE TO ROOF TOP AND PROVIDE LOCKABLE COVER. NEW THERMOSTAT TO BE ABLE TO SHUT DOWN UNITS IN THE EVENT OF A FIRE. REFERENCE ELECTRICAL DRAWINGS.

1.4 - EXISTING PUMP SKID TO REMAIN. PROVIDE NEW HOT WATER AND COLD WATER PIPING CONNECTIONS WITH DIELECTRIC UNIONS AND REINSTALL LOCAL PUMP CONTROLS, PROVIDE NEW WELL(S) AND CONTROL WIRING AS REQUIRED. PROVIDE STAINLESS STEEL FLEXIBLE HOT WATER AND COLD WATER CONNECTIONS. PROVIDE START UP AND COMMISSIONING OF PUMP SKID FOR A FULLY FUNCTIONAL SYSTEM.

1.5 - CONTRACTOR TO PROVIDE NEW 1-1/2" PRESSURE REDUCING VALVE (PRV-1). PRV-1 SHALL BE A WATTS SERIES 25UAB OR APPROVED EQUAL. PRV-1 SHALL BE RATED FOR 0-80 GPM AND 25-75 PSI. VALVE TO COME WITH FACTORY PROVIDED STRAINER SET PRV-1 FOR 50 PSI.

1.6 - CONTRACTOR TO PROVIDE NEW 2-1/2" PRESSURE REDUCING VALVE (PRV-2). PRV-2 SHALL BE A WATTS SERIES ES-223-S OR APPROVED EQUAL. PRV-2 SHALL BE RATED FOR 0-250 GPM AND 25-75 PSI. VALVE TO COME WITH FACTORY PROVIDED STRAINER. SET PRV-2 FOR 45 PSI.

1.7 - CONTRACTOR TO TAKE OFF OF 3/4" CW PIPING WITH NEW 1/2" PEX CW PIPING. ROUTE AND CONNECT TO MOP SINKS ON FLOORS 7, AND 9. REINSTALL EXISTING MOP SINK. PAINT, PATCH WALLS AND CEILINGS AS REQUIRED. RELOCATE ELECTRICAL UTILITIES AS NEEDED.

Revisions :

Date :
4/17/2012

Drawn : L. Rinder

Checked : Q. Soifer

MP10

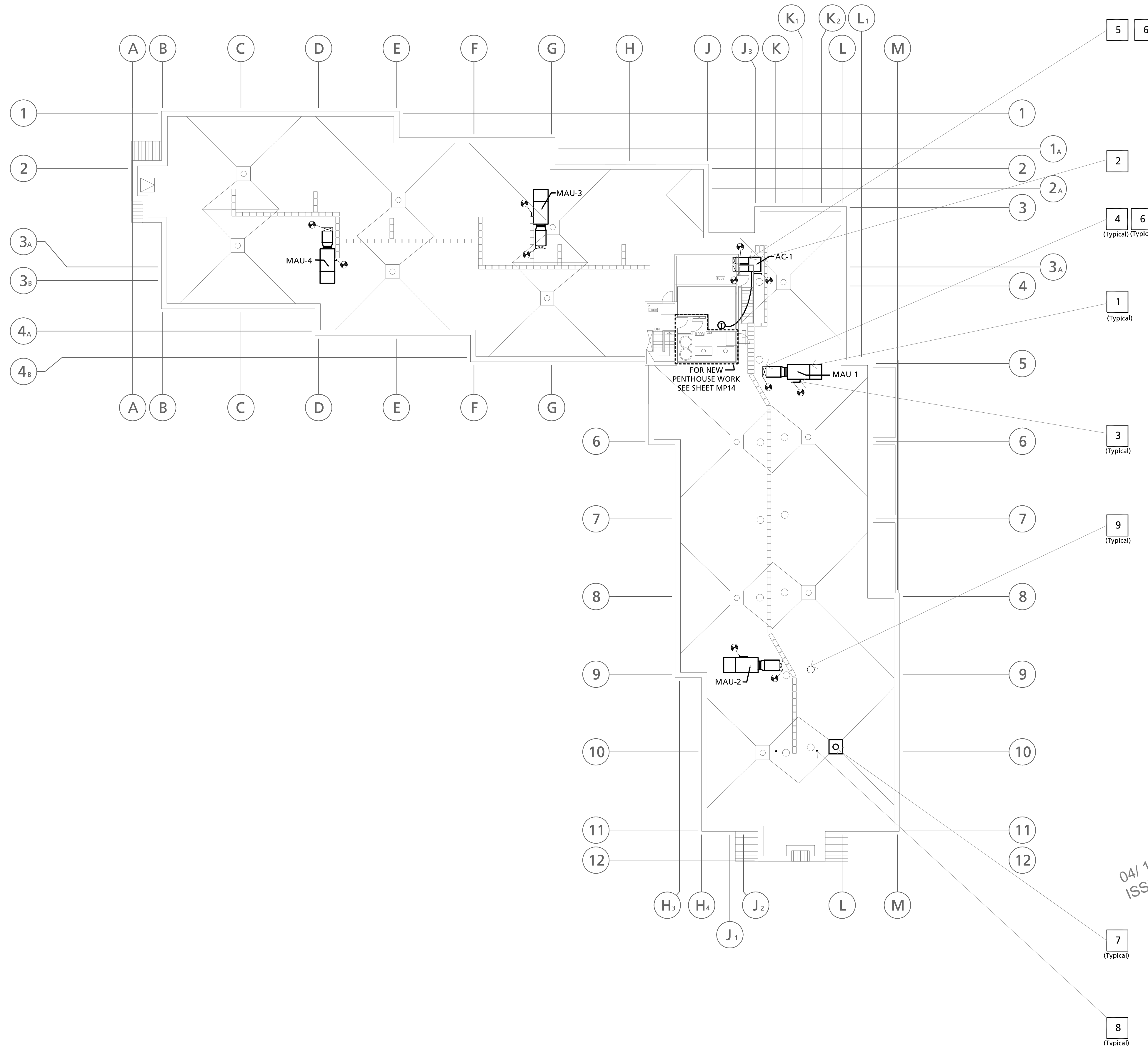
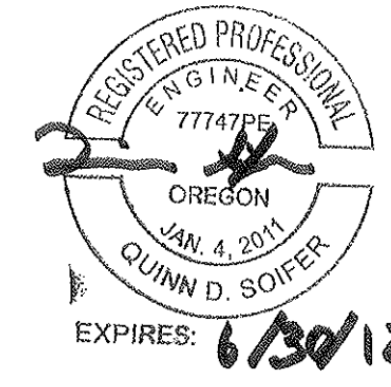
Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

04/17/12
 ISSUED for BID/PERMIT

Joseph C. Blumel Hall

Residence Hall RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201



Notes

- MAKE UP AIR UNITS** - CONTRACTOR TO PROVIDE NEW 100% OUTSIDE AIR UNITS (MAU-1 THRU MAU-4). NEW MAU'S SHALL BE REZNOR, MODEL RDH-300 OR APPROVED EQUAL. MAU'S TO BE SIZED FOR 2800 CFM AT 0.5" OF ESP. HEATING INPUT CAPACITY SHALL BE 300 MBH INPUT 283.5 OUTPUT. MAU'S TO HAVE A 208V/3/60 POWER SUPPLY. MAU'S TO BE MOUNTED ON ROOF CURB AND STRUCTURALLY ANCHORED PER SHEET SEE MP15/6. RE-USE EXISTING CHASE FOR NEW CONTROL AND POWER WIRING. INTAKE OF MAU'S TO BE A MINIMUM 10' AWAY FROM EXISTING EXHAUST FAN DISCHARGE. PROVIDE ROOF WALKING PAD'S AROUND NEW UNIT FOR ACCESS. PROVIDE START UP AND AIR BALANCING.
- AIR CONDITIONING UNIT** - CONTRACTOR TO PROVIDE NEW AIR CONDITIONING UNIT AC-1. NEW AC-1 SHALL BE A LENNOX MODEL GCS10 OR APPROVED EQUAL. AC-1 SHALL BE SIZED FOR 1200 CFM AT 0.3" OF ESP AND 2.5 TONS OF COOLING. HEATING INPUT SHALL BE 50 MBH, 40 MBH OUT PUT. PROVIDE ECONOMIZER WITH BAROMETRIC RELIEF DAMPER. AC-1 TO HAVE A 208-230/1/60 POWER SUPPLY. AC-1 WEIGHS TO BE MOUNTED ON ROOF CURB AND STRUCTURALLY ANCHORED. SEE MP15/6. RE-USE EXISTING CHASE FOR NEW CONTROL AND POWER WIRING. INSTALL NEW THERMOSTAT IN ELEVATOR MECHANICAL ROOM. PROVIDE ROOF WALKING PAD'S AROUND NEW UNIT FOR ACCESS. PROVIDE START UP AND AIR BALANCING.
- NEW GAS PIPING** - CONTRACTOR TO CONNECT NEW 3/4" GAS PIPING TO EXISTING GAS PIPING AT ROOF LINE AND CONNECT TO NEW PER DETAIL MP15/4. NEW GAS PIPING SHALL BE SCHEDULE 40 CARBON STEEL AND FINISHED WITH WEATHER / RUST RESISTANT FINISH. PROVIDE NEW GAS REGULATOR MAXITROL 325-AL OR APPROVED EQUAL.
- NEW DUCT WORK** - CONTRACTOR TO TRANSITION FROM NEW MAU UNIT AND CONNECT TO EXISTING 36" X 12" DUCT WORK. PROVIDE WEATHER PROOF FLEXIBLE CONNECTION FITTING FOR TRANSITION FROM NEW UNIT.
- NEW DUCT WORK** - CONTRACTOR TO TRANSITION FROM NEW AC-1 AND AND CONNECT TO EXISTING 25" X 14" SUPPLY AIR AND 25"X14" RETURN AIR DUCT WORK. PROVIDE WEATHER PROOF FLEXIBLE CONNECTION FITTING FOR TRANSITION FROM NEW UNIT.
- NEW INSULATION** - CONTRACTOR TO INSULATE ALL NEW AND EXISTING DUCT WORK UP TO ROOF LINE AND UP TO ELEVATOR ROOM EXTERIOR FLOOR.
- EXISTING ROOF DRAINS** - CONTRACTOR TO REPLACE EXISTING CLAMPING COLLAR AND DOME ON EXISTING ROOF DRAINS AND OVERFLOW ROOF DRAINS. WITH NEW. FIELD VERIFY EXISTING DRAIN(S) SIZES AND THE NUMBER OF DRAIN(S). REFERENCE ROOFING SHEETS FOR FURTHER DETAILS. PROVIDE NEW:

ROOF DRAIN'S - MANUFACTURER JAY R. SMITH OR APPROVED EQUAL. PART NUMBER'S 1010C (COLLAR) AND 1010D (DOME).

OVERFLOW ROOF DRAIN'S - MANUFACTURER JAY R. SMITH OR APPROVED EQUAL. PART NUMBER'S 1080WDC (COLLAR) AND 1010D (DOME).
- EXISTING VENT PIPING** - CONTRACTOR TO EXTEND EXISTING VENT PIPING 16" ABOVE FINISHED ROOF LINE. FIELD VERIFY EXISTING PIPE SIZES AND THE NUMBER OF VENTS. NEW VENT PIPING TO MATCH EXISTING. REFERENCE ARCH. SHEETS FOR FINISHED ROOF LINE DETAILS. THERE ARE 31 VENT PENETRATIONS, FIELD VERIFY.
- EXISTING EXHAUST FAN'S** - CONTRACTOR TO REINSTALL EXHAUST FAN'S. RECONNECT DUCT WORK AND ELECTRICAL CONNECTIONS. CONTRACTOR TO VERIFY AND DOCUMENT FUNCTIONALITY OF EXHAUST FAN'S WITH OWNER. EXHAUST FAN'S TO BE AIR BALANCED.

04/ 17 / 12
ISSUED for BID/PERMIT

Revisions :	Date :
	4/17/2012

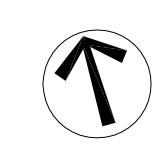
Drawn : L. Rinder
Checked : Q. Soifer

MP11

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

roof top - new work plan

SCALE: 1/16" = 1' - 0"



GENERAL:

REFERENCE STRUCTURAL DETAIL'S ADDENDUM #1: 5/4/12 FOR EXISTING AND NEW CORE DRILL REQUIREMENTS.

GENERAL:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLYSIS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

GENERAL NOTE:

THESE FLOOR PLANS DEPICT THE UNITS ON THE NORTH WING OF THE BUILDING. THESE FLOOR PLANS ARE ALSO TYPICAL OF UNITS ON THE EAST WING. CONTRACTOR TO TRANSLATE THE ORIENTATION OF BUILDING INFRASTRUCTURE AND FIXTURE LOCATION ACCORDINGLY.



PSU Facilities and Planning Joseph C. Blumel Hall

Residence Hall RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201



WASTE AND OVERFLOW: CONTRACTOR TO PROVIDE NEW WATCO INNOVATOR PLUS MODEL: 951-FA, ABS, CHROME FINISH. PROVIDE SCHEDULE 40 ABS DRAIN PIPING AND FITTINGS AS NEEDED FOR INSTALLATION AND CONNECT TO EXISTING 1-1/2" DRAIN PIPING.

MIXING VALVE: CONTRACTOR TO PROVIDE DELTA MODEL: R10700-UNWS OR APPROVED EQUAL. CHROME FINISH, ESCUTCHEON RING AND SINGLE LEVER. SECURE TO TUB SPOUT AND SHOWER RISER, SHOWER RISER TO BE COPPER.

SHOWERHEAD: CONTRACTOR TO PROVIDE DELTA MODEL: RP54752 OR APPROVED EQUAL. 1.5 GPM, CHROME FINISH.

TUB SPOUT: CONTRACTOR TO PROVIDE DELTA MODEL: RP36498 OR APPROVED EQUAL. SLIP ON METALLIC, CHROME FINISH.

5.2 - ADA UNITS (ROLL IN SHOWER, SH-2): CONTRACTOR TO PROVIDE SHOWER WALL KIT AND BARRIER FREE SHOWER FLOOR IN ROOMS 303, 506, 722 AND 827. SEE ARCHITECTURAL FINISH SCHEDULE AND SPECIFICATION FOR PRODUCT DATA. NEW 1/2" CW/HW PIPING TO BE FIRE CAULKED AROUND PENETRATION THROUGH SHAFT WALL.

WASTE: CONTRACTOR TO CORE DRILL CONCRETE SLAB FOR NEW DRAIN. PROVIDE NEW 2" SIOUX CHIEF JACK RABBIT SHOWER DRAIN AND STRAINER, OR APPROVED EQUAL. STRAINER FINISH SHALL BE CHROME.

ADA COMPONENTS: CONTRACTOR TO PROVIDE NEW SYMMONS TEMPTROL II SHOWER SYSTEM WITH HAND SPRAY OR APPROVED EQUAL. SYSTEM IS EQUIPPED WITH PRESSURE BALANCING MIXING VALVE, SHOWER HEAD WITH ARM AND FLANGE, LEVER DIVERTER, WALLMOUNT SHOWER WITH FLEXIBLE METAL HOSE AND SLIDE BAR. SYSTEM IS ADA COMPLIANT. SECURE NEW MIXING VALVE AND CONNECT WITH NEW 1/2" HW/CW PIPING.

6. NEW KITCHEN SINK

6.1 - STANDARD AND EXPANDED UNITS (KS-1): CONTRACTOR TO PROVIDE ELKAY ELUMINA MODEL: EG2522 OR APPROVED EQUAL. SINK SHALL BE 18 GAUGE STAINLESS STEEL, SELF RIMMING, THREE FAUCET HOLES AT 4" ON CENTER. PROVIDE NEW SCHEDULE 40 ABS P-TRAP AND CONNECT TO EXISTING 2" WASTE PIPING.

FAUCET: CONTRACTOR TO PROVIDE DELTA MODEL: 100-DST OR APPROVED EQUAL. 3-HOLE, 1.8 GPM, ADA COMPLIANT, CHROME FINISH. ADA COMPLIANT.

ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

6.2 - ADA UNITS (KS-2): CONTRACTOR TO PROVIDE ELKAY CELEBRITY MODEL: GECR2521 OR APPROVED EQUAL. SINK SHALL BE 18 GAUGE STAINLESS STEEL, SELF RIMMING, THREE FAUCET HOLES AT 4" ON CENTER. SINK SHALL BE ADA COMPLIANT, PROVIDE NEW ADA COMPLIANT PIPE COVERS, TRUEBRO LAV-GUARD OR APPROVED EQUAL. PROVIDE NEW SCHEDULE 40ABS P-TRAP AND CONNECT TO EXISTING 2" WASTE PIPING.

FAUCET: CONTRACTOR TO PROVIDE DELTA MODEL: 100-DST OR APPROVED EQUAL. 3-HOLE, 1.8 GPM, ADA COMPLIANT, CHROME FINISH.

ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

7. NEW WALL - CONTRACTOR TO COVER AND FINISH PLUMBING WALL PER ARCHITECTURAL DRAWINGS.

8. NEW FLOOR DRAIN (FD-1) - CONTRACTOR, TO CORE DRILL CONCRETE SLAB. PROVIDE NEW 2" FLOOR DRAIN TO ACCOMMODATE THIN SET TILE INSTALLATION. NEW FLOOR DRAIN SHALL BE ZURN OR APPROVED EQUAL. PROVIDE TRAP PRIMER. PROVIDE 1-1/2" VENT, CONNECT TO EXISTING IN PLUMBING CHASE. CORE DRILL REQUIRED.

9. ADA TOILET FLANGE: CONTRACTOR TO CORE DRILL CONCRETE SLAB FOR NEW WATER CLOSET WASTE. ROUTE TO EXISTING WASTE AND VENT STACK. PROVIDE NEW TOILET FLANGE AND SEAL PENETRATION WATER TIGHT.

10. KITCHEN EXHAUST: REMOVE EXISTING KITCHEN EXHAUST GRILLE AND CONNECT TO EXISTING DUCT WITH NEW 5" DUCT WORK TIGHT AND ROUTE TO UNDERSIDE OF UPPER CABINETS. TERMINATE AT THE EDGE OF CABINET WITH NEW 6" X 6" SIDE WALL GRILL PROVIDE STAINLESS STEEL FINISH.

Revisions :
1. 5/4/2012
ADDENDUM #1

Drawn : L. Rinder

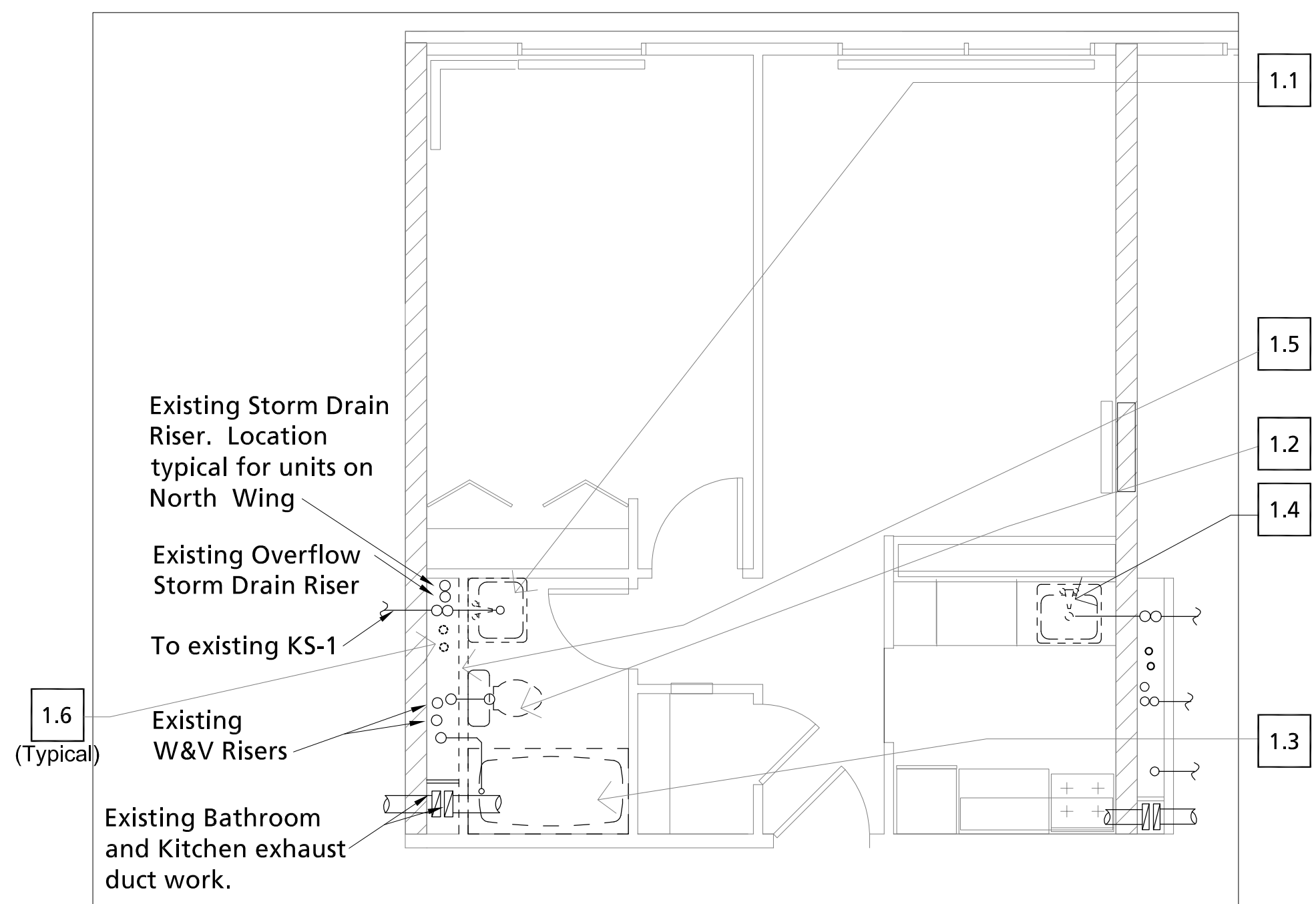
Checked : Q. Soifer

Date :
4/17/2012

04/17/12
ISSUED FOR BID/PERMIT

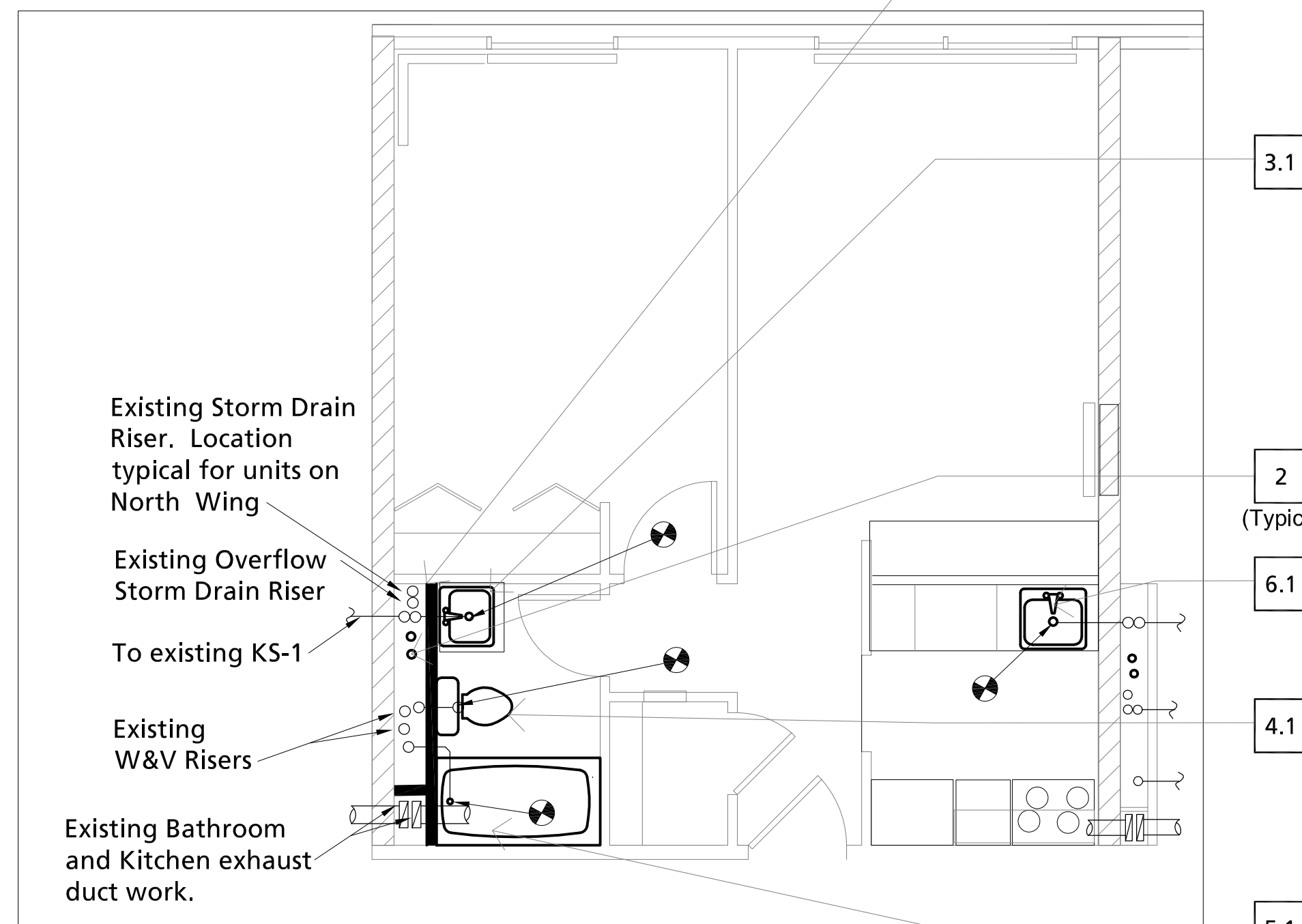
MP12

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional information.



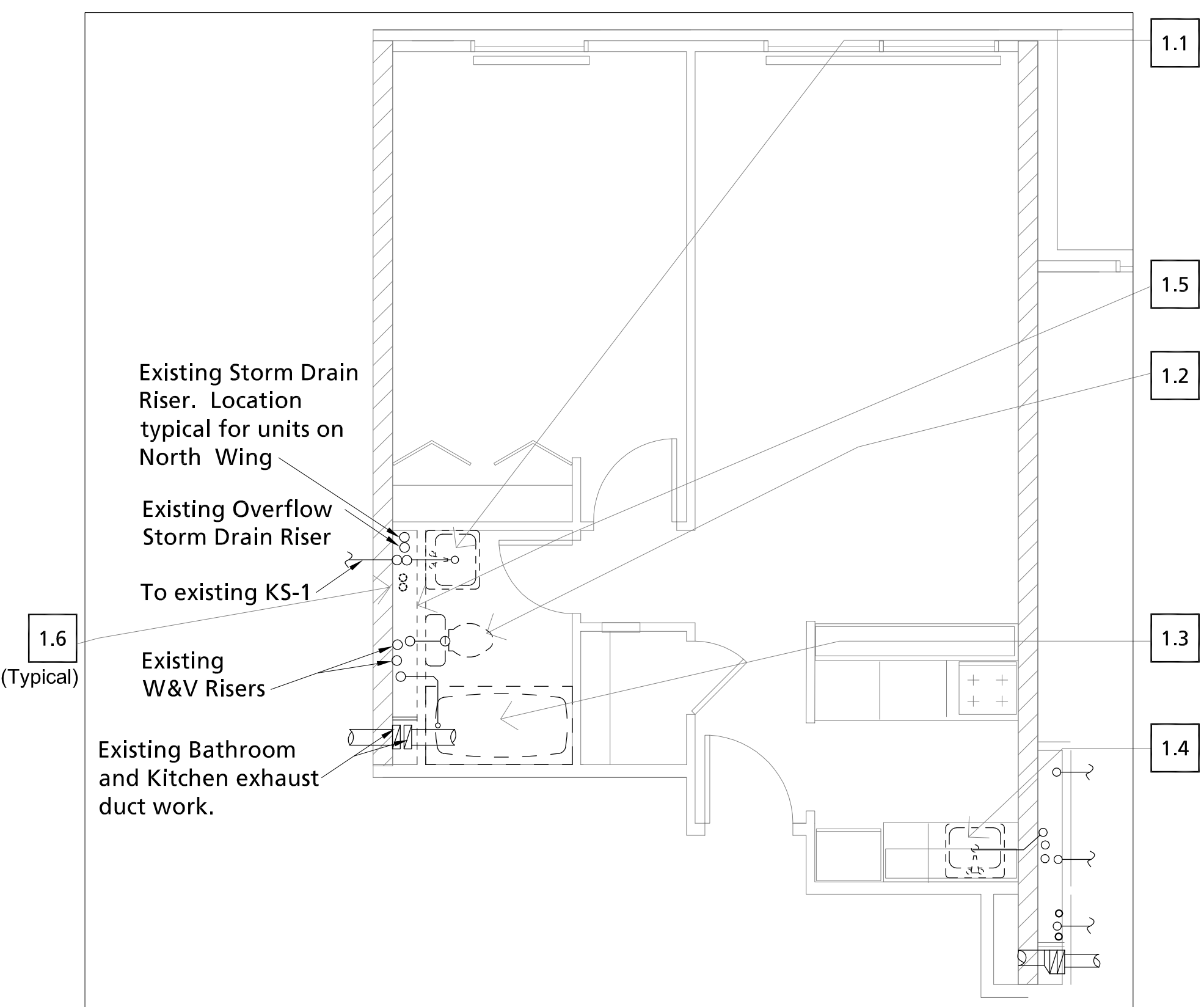
demo plan - standard unit

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



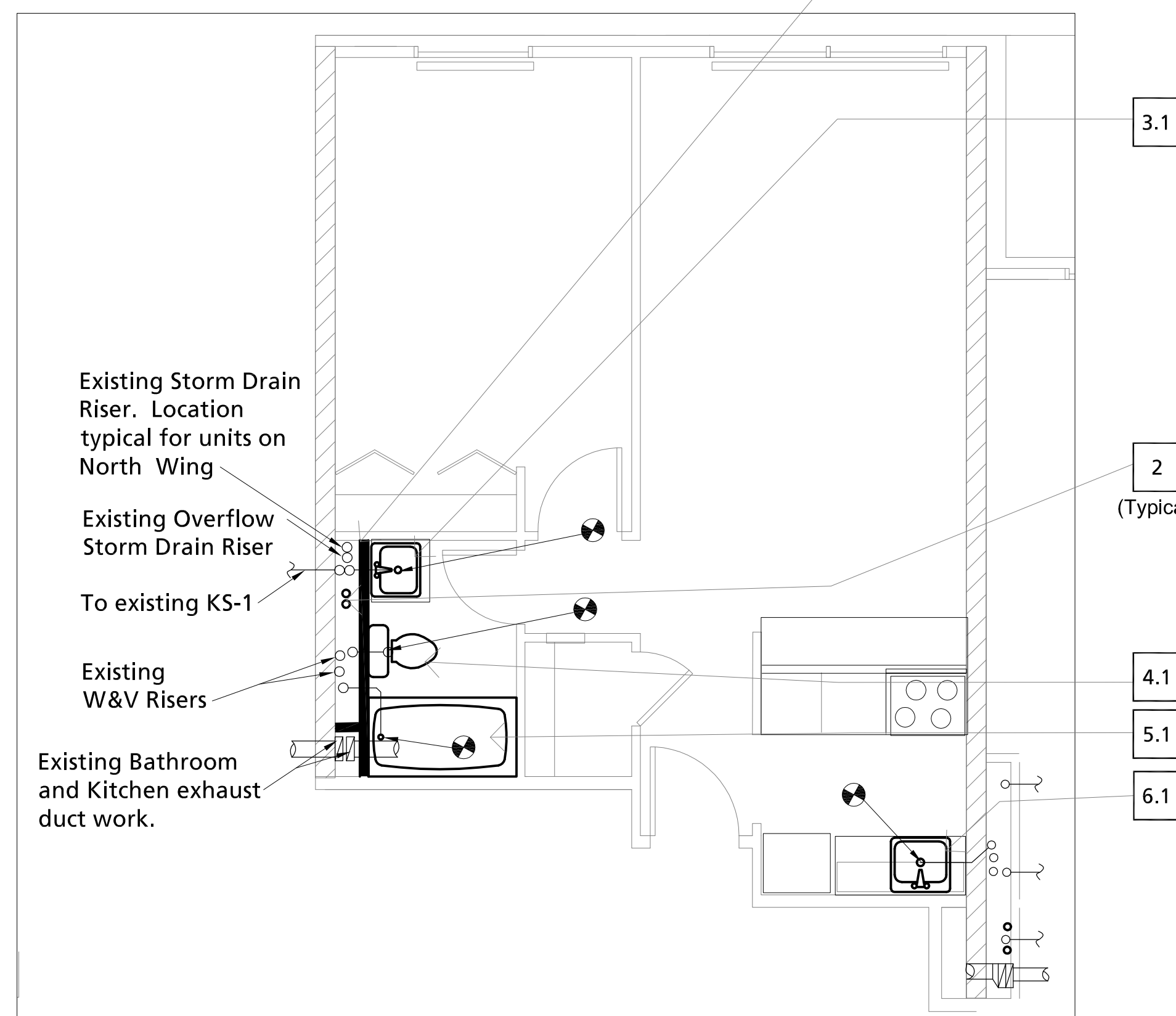
new work - standard unit

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



demo plan - expanded unit

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



new work - expanded unit

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

Plan Notes

1. DEMO WORK:

- 1.1 - CONTRACTOR TO DEMO EXISTING LAVATORY. DEMO EXISTING P-TRAP.
- 1.2 - CONTRACTOR TO DEMO EXISTING WATER CLOSET.
- 1.3 - CONTRACTOR TO DEMO EXISTING BATH TUB / SHOWER. DEMO EXISTING DRAIN OVERFLOW FITTING.
- 1.4 - CONTRACTOR TO DEMO EXISTING KITCHEN SINK AND P-TRAP.
- 1.5 - CONTRACTOR TO DEMO EXISTING WALL IN ORDER TO ACCESS PLUMBING.
- 1.6 - CONTRACTOR TO DEMO EXISTING DOMESTIC HW AND CW PIPING RISERS AND BRANCH CW AND HW PIPING TO FIXTURES.
- 1.7 - CONTRACTOR TO DEMO EXISTING ADA UNIT WATER CLOSET. DEMO EXISTING TOILET FLANGE AND WASTE PIPING. CAP AT MAIN. PATCH OPENING WATER AND AIR TIGHT WITH 2-HOUR FIRE RATED MATERIAL.
- 1.8 - CONTRACTOR TO DEMO EXISTING ADA UNIT WATER CLOSET.

1.9 - CONTRACTOR TO DEMO EXISTING SHOWER DRAIN. CAP AT MAIN. PATCH OPENING WATER AND AIR TIGHT WITH 2-HOUR FIRE RATED MATERIAL. UL APPROVED HILTI OR APPROVED EQUAL.

2. NEW PIPING - CONTRACTOR TO PROVIDE NEW HW AND CW DOMESTIC WATER PIPING RISERS, TAKE OFF OF NEW RISERS AND CONNECT TO NEW FIXTURES. REFERENCE DETAIL MP15/7,8. ANCHOR TO STRUCTURE AND INSULATE.

3. NEW LAVATORIES:

3.1 - STANDARD AND EXPANDED UNITS (L-1): CONTRACTOR TO PROVIDE NEW AMERICAN STANDARD ROSELYN COUNTER TOP SINK 0498.400 OR APPROVED EQUAL. VITREOUS CHINA, SELF RIMMING, FAUCET HOLES ON 4" CENTERS. PROVIDE NEW P-TRAP. CONNECT TO EXISTING DRAIN PIPING. PROVIDE NEW SCHEDULE 40 ABS P-TRAP AND CONNECT TO EXISTING 1-1/2" WASTE PIPING.

FAUCET: SYMMONS S-20-2 OR APPROVED EQUAL, CHROME, ADA COMPLIANT.

ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

3.2 - ADA UNITS (L-2): CONTRACTOR TO PROVIDE NEW AMERICAN STANDARD COMRADE 0124.024 OR APPROVED EQUAL. VITREOUS CHINA, WALL HUNG, ADA COMPLIANT, FAUCET HOLES ON 4" CENTERS. PROVIDE NEW P-TRAP AND CONNECT TO EXISTING DRAIN PIPING. PROVIDE NEW ADA COMPLIANT PIPE COVERS, TRUEBRO LAV-GUARD OR APPROVED EQUAL. PROVIDE NEW SCHEDULE 40 ABS P-TRAP AND CONNECT TO EXISTING 1-1/2" WASTE PIPING.

FAUCET: SYMMONS S-20-2 OR APPROVED EQUAL, CHROME, ADA COMPLIANT.

ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

4. NEW WATER CLOSETS: (ALL WATER CLOSETS TO COME WITH MANUFACTURER PROVIDED INTERNAL COMPONENTS, I.E. FILL VALVE, FLOAT, ETC.)

4.1 - STANDARD AND EXPANDED UNITS (WC-1): CONTRACTOR TO PROVIDE NEW NIAGRA STEALTH MODEL: N7717/N7714 OR APPROVED EQUAL. VITREOUS CHINA, FLOOR MOUNTED, ROUND BOWL, 0.8 GALLONS PER FLUSH. PROVIDE NEW NO SEEP NO. 1 WAX RING AND CONNECT TO EXISTING 3" WASTE PIPING

ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

4.2 - NEW ADA UNITS (WC-2): CONTRACTOR TO PROVIDE NEW AMERICAN STANDARD CADET 2467.100 OR APPROVED EQUAL, VITREOUS CHINA, FLOOR MOUNTED, ADA COMPLIANT, ELONGATED BOWL 16-1/2" HIGH, 1.1 GALLONS PER FLUSH. PROVIDE NEW NO SEEP NO. 1 WAX RING AND CONNECT TO EXISTING 3" WASTE PIPING. PROVIDE 1/2" TOILET SEAT TO ACHIEVE ADA REQUIRED HEIGHT.

ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

4.3 - EXISTING ADA UNITS (WC-3): CONTRACTOR TO PROVIDE NEW AMERICAN STANDARD CADET 3 RIGHT HEIGHT 2385.010 OR APPROVED EQUAL, VITREOUS CHINA, FLOOR MOUNTED, ADA COMPLIANT, 10" ROUGH IN, ELONGATED BOWL 16-1/2" HIGH, 1.28 GALLONS PER FLUSH. PROVIDE NEW NO SEEP NO. 1 WAX RING AND CONNECT TO EXISTING 3" WASTE PIPING. PROVIDE 1/2" TOILET SEAT TO ACHIEVE ADA REQUIRED HEIGHT.

ANGLE STOPS: PROVIDE LEGEND MODEL T-595 OR APPROVED EQUAL.

CONNECTIONS: PROVIDE FLUIDMASTER WATER SUPPLY CONNECTORS OR APPROVED EQUAL. NEW CONNECTORS TO BE OF BRAIDED STAINLESS STEEL WIRE. FIELD VERIFY REQUIRED LENGTHS.

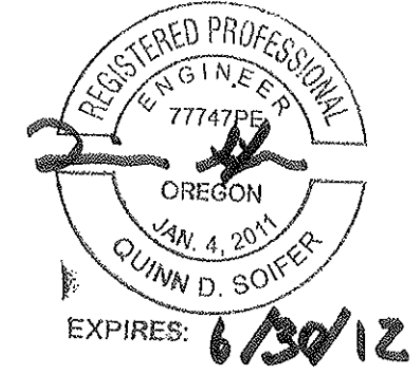
5. NEW BATH / SHOWERS

5.1 - STANDARD AND EXPANDED UNITS (SH-1): CONTRACTOR TO PROVIDE NEW BATH TUB AND 3-PIECE SHOWER ENCLOSURE FIBERFAB DELUXE MODEL 1037WKD OR APPROVED EQUAL. BATH TUB TO BE DESIGNED FOR CONCRETE INSTALLATION, LEAVING ENOUGH DEPTH FOR NEW SHOE TO BE INSTALLED. NEW 1/2" CW/HW PIPING TO BE FIRE CAULKED AROUND PENETRATION THROUGH SHAFT WALL.

PSU Facilities and Planning
Joseph C. Blumel Hall
Hall

Residence Hall
 RE-PIPE REMODEL

(Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



GENERAL NOTE:

THESE FLOOR PLANS DEPICT THE UNITS ON THE NORTH WING OF THE BUILDING. THESE FLOOR PLANS ARE ALSO TYPICAL OF UNITS ON THE EAST WING. CONTRACTOR TO TRANSLATE THE ORIENTATION OF BUILDING INFRASTRUCTURE AND FIXTURE LOCATION ACCORDINGLY.

GENERAL:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLYSIS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

GENERAL:

REFERENCE STRUCTURAL DETAIL'S ADDENDUM #1: 5/4/12 FOR EXISTING AND NEW CORE DRILL REQUIREMENTS.

Plan Notes 1

* SEE MP12

04/17/12
 ISSUED for BID/PERMIT

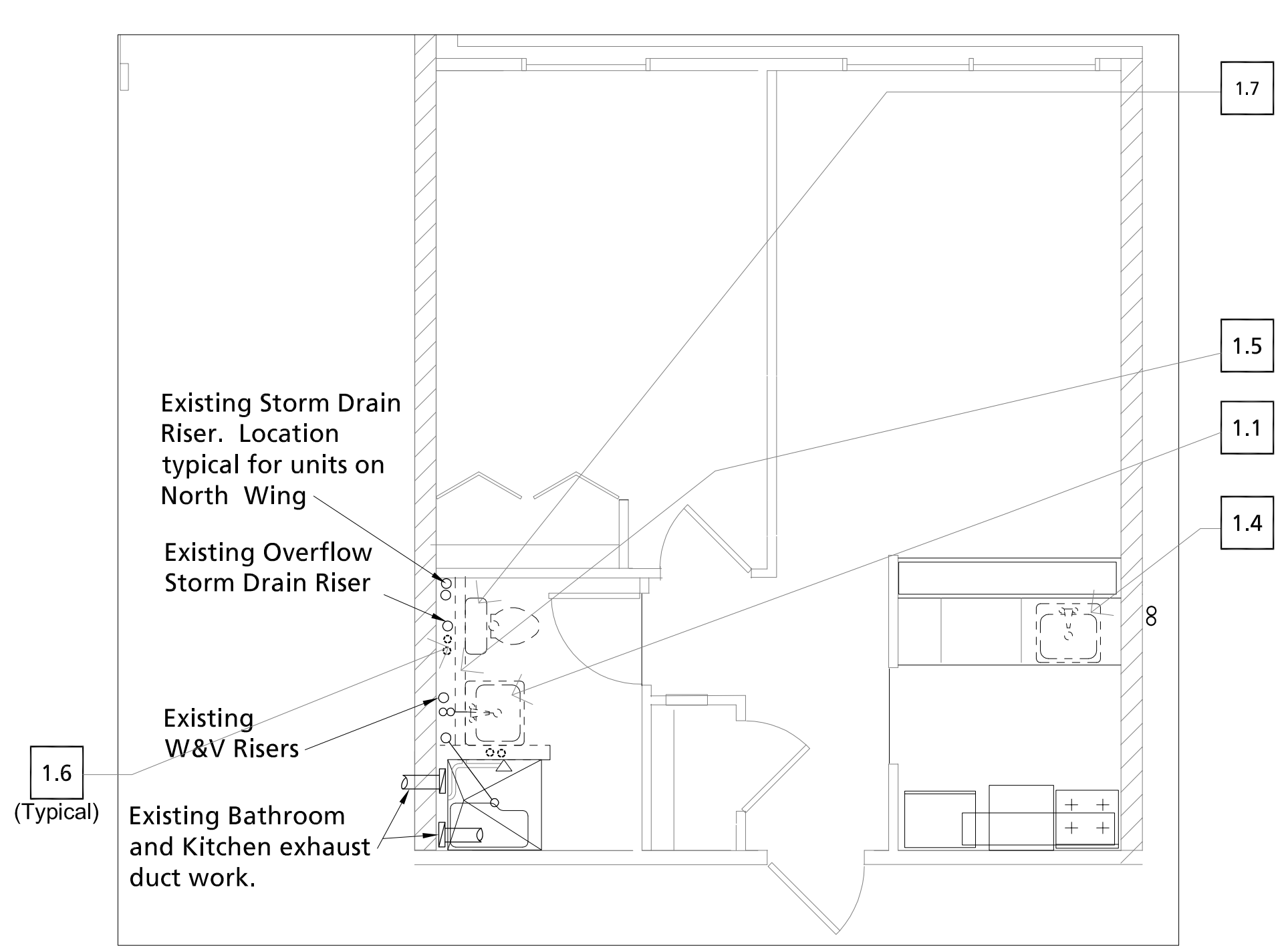
Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

Revisions: 5/4/2012
 ADDENDUM #1

Date: 4/17/2012

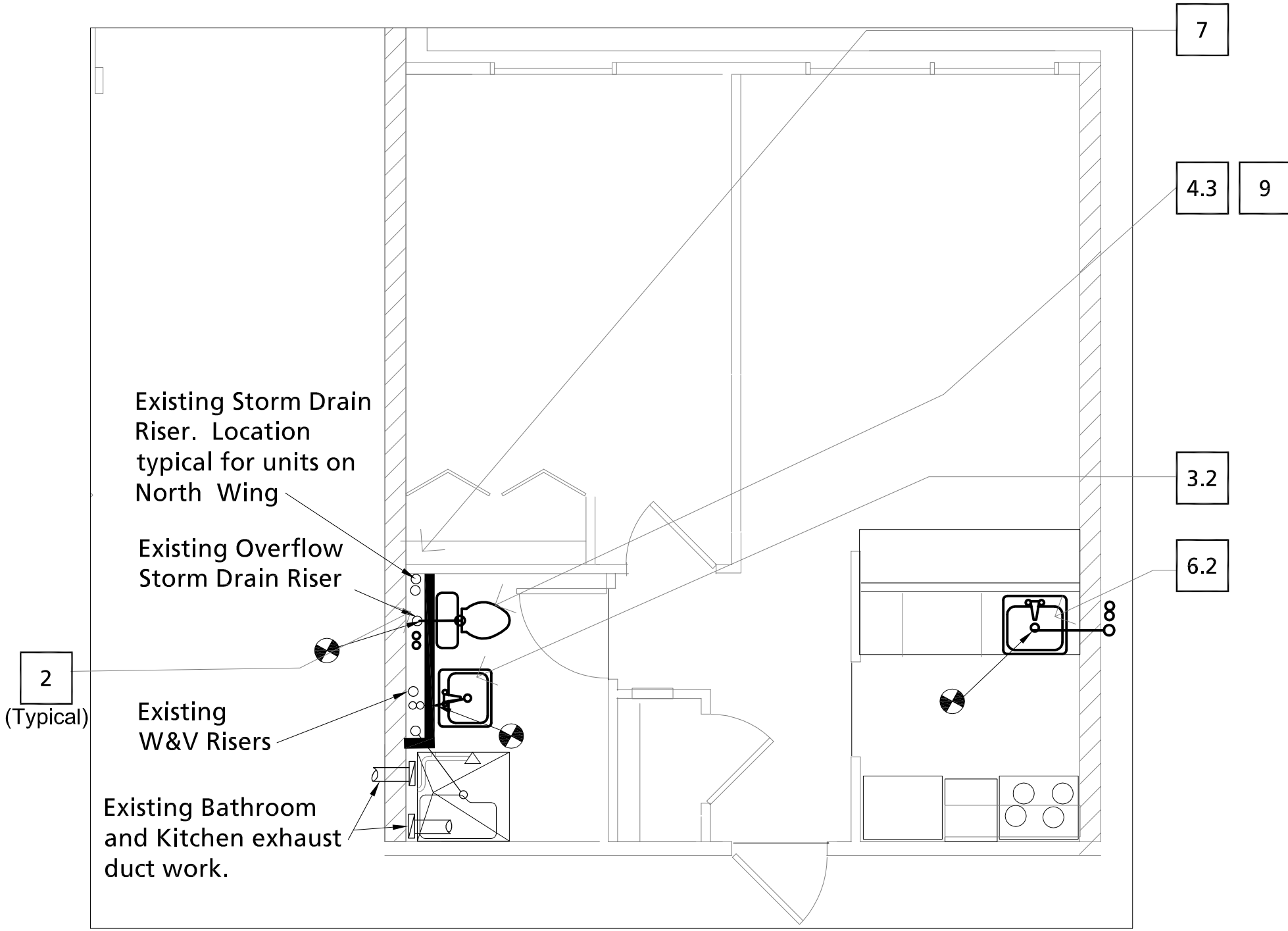
Drawn: L. Rinder

Checked: Q. Soifer

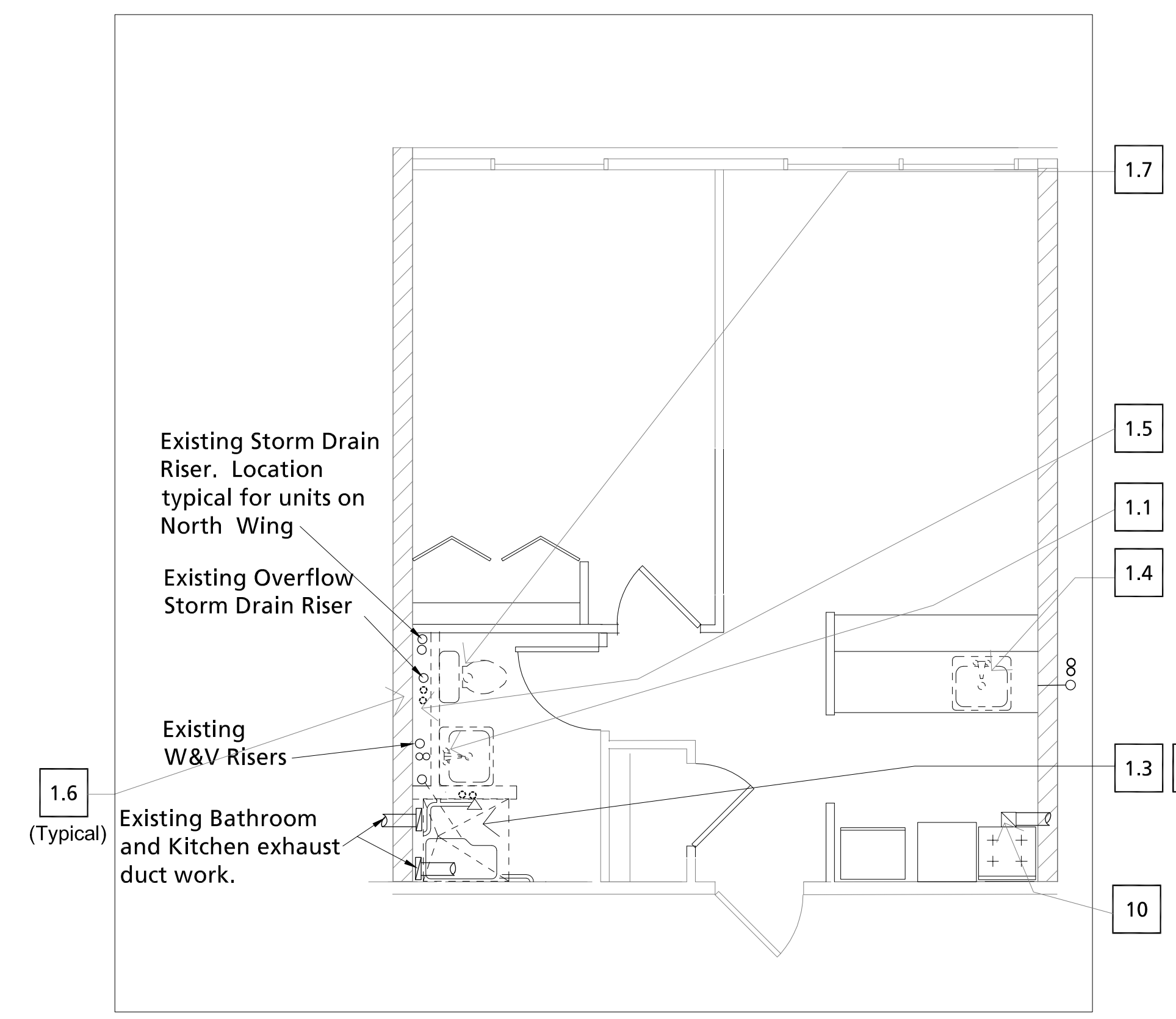
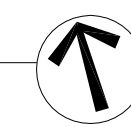


demo plan - existing ADA units

1/4" = 1' - 0"

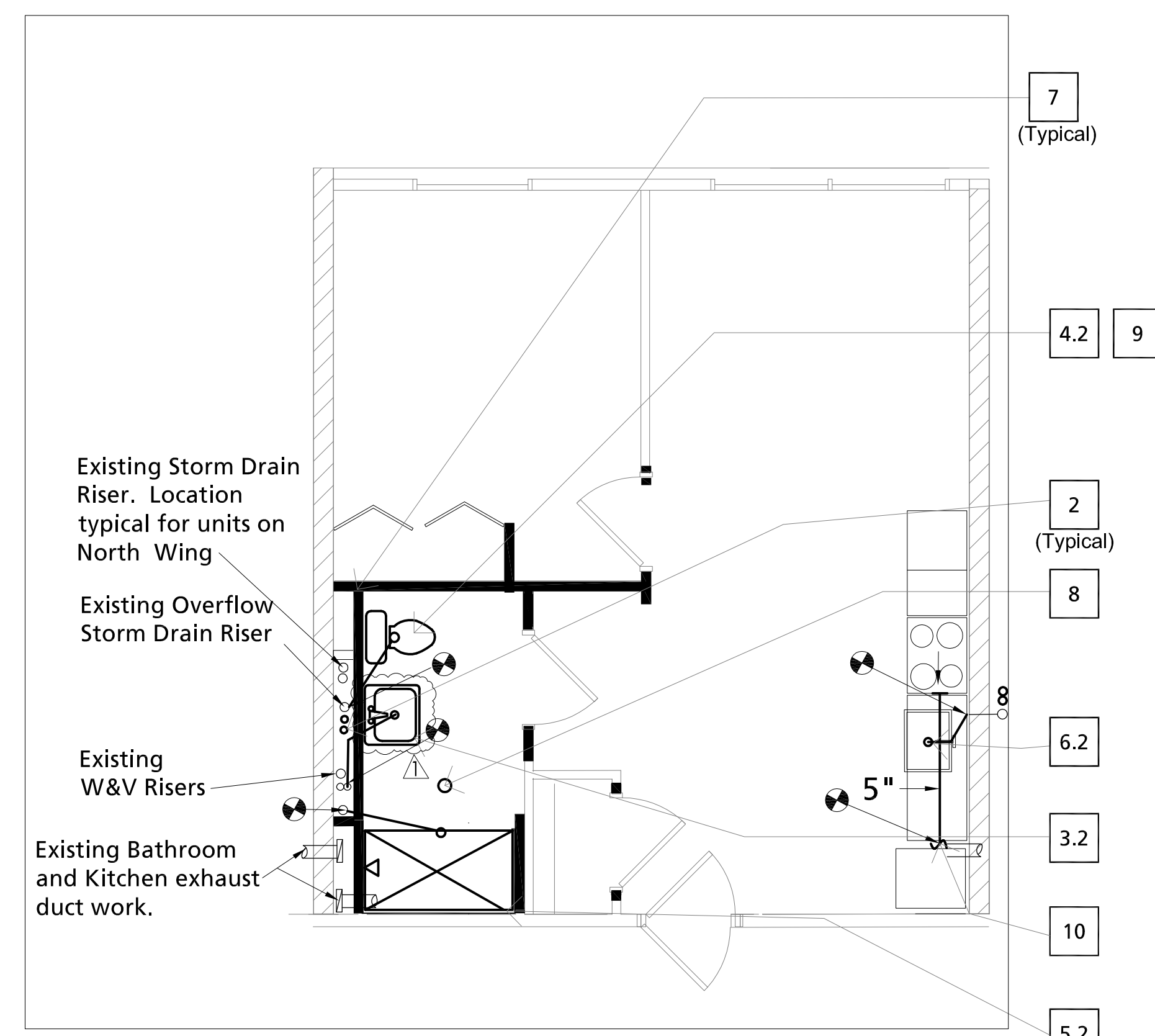


new work - existing ADA units

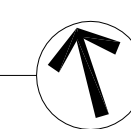


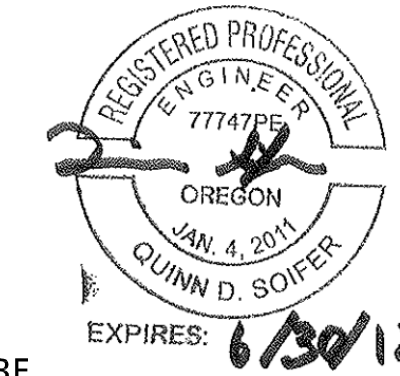
demo plan - new ADA units

1/4" = 1' - 0"



new work - new ADA units





GENERAL:

THE PREVIOUS HOT AND COLD WATER PIPING HAS FAILED DUE TO ELECTROLYSIS. IN NO SITUATION IS IT ACCEPTABLE FOR THE NEW PIPING TO COME IN CONTACT WITH A DISSIMILAR METAL. CONTRACTOR TO NOT LAY PIPING ON TOP OF WALL FRAMING, TO NOT CUT OUT SECTIONS OF INSULATION IN ORDER TO CREATE SPACE FOR ADJACENT PIPING ATTACHMENTS. APPROPRIATE MEASURES HAVE TO BE IMPLEMENTED IN ORDER TO AVOID THIS SAME FAILURE.

Notes

1. DEMO

- 1.1 - CONTRACTOR TO DEMO EXISTING BOILER'S, STORAGE TANKS, EXPANSION TANK AND RECIRCULATING PUMPS. DEMO POWER AND CONTROL WIRING. COORDINATE WITH ELECTRICAL AND CONTROLS CONTRACTORS.
- 1.2 - CONTRACTOR TO DEMO EXISTING HOT WATER, COLD WATER, HOT WATER RECIRCULATION, CONDENSATE AND NATURAL GAS PIPING. DEMO ALL VALVES.
- 1.3 - CONTRACTOR TO DEMO EXISTING GAS FLUE PIPING. PROVIDE TEMPORARY WATER PROOF PATCH OVER ROOF PENETRATION.

2. NEW EQUIPMENT

- 2.1 - CONTRACTOR TO PROVIDE NEW HOT WATER BOILERS B-1, B-2, B-3. NEW BOILER'S SHALL BE A.O. SMITH CYCLONE BTH-500 OR APPROVED EQUAL. NEW BOILER'S ARE SIZED 499 MBH AND 822 GALLONS / HOUR AT 70 F TEMPERATURE RISE, 96% EFFICIENT AND A 120/1/60 POWER SUPPLY. PROVIDE NEW HOUSE KEEPING PADS OR MODIFY EXISTING AND SEISMICALLY STRAP PER CODE. CONTRACTOR TO PROVIDE STRUCTURAL ENGINEERED STAMPED CALCULATIONS AND DESIGN. NEW BOILER TO BE PLACED ON 3/8" BLACK SYNTHETIC RUBBER PAD. PROVIDE FACTORY START UP AND COMMISSIONING FOR A FULLY FUNCTIONAL SYSTEM.
- 2.2 - CONTRACTOR TO PROVIDE NEW STORAGE TANK ST-1. ST-1 SHALL BE A A.O. SMITH HD24-140 OR APPROVED EQUAL. ST-1 SHALL PROVIDE 150 GALLONS OF STORAGE AND BE ASME APPROVED RATED FOR 150 PSI WORKING PRESSURE AND GLASS LINED. SEISMICALLY ANCHOR PER CODE CONTRACTOR TO PROVIDE STRUCTURAL ENGINEERED STAMPED CALCULATIONS AND DESIGN. PROVIDE FACTORY JACKETING AND INSULATION, ANGLE LEGS AND LIFTING LUGS. ORDER TANK TO ACCOMMODATE REQUIRED PIPING CONNECTIONS.
- 2.3 - CONTRACTOR TO PROVIDE NEW EXPANSION TANK ET-1. ET-1 SHALL BE A AMTROL ST-70V-C OR APPROVED EQUAL. ET-1 SHALL HAVE A 150 PSI MAXIMUM WORKING PRESSURE A TANK VOLUME OF 34 GALLON AND AN ACCEPTANCE VOLUME OF 11.4 GALLONS. ANCHOR TO EXISTING BOILER ROOM SLAB.
- 2.4 - CONTRACTOR TO PROVIDE NEW HOT WATER RECIRCULATING PUMP (RP-1). RP-1 SHALL BE A TACO 1600 SERIES OR APPROVED EQUAL. RP-1 SHALL BE SIZED FOR 41 GPM AT 20 FEET OF HEAD, CAST IRON CASING AND BRONZE IMPELLER. RP-1 SHALL REQUIRE A 120/1/60 POWER SUPPLY. WIRE PUMP INTO THE STORAGE TANKS AQUASTAT.
- 2.5 - CONTRACTOR TO PROVIDE NEW RECIRCULATING PUMP RP-2. RP-2 SHALL BE A GRUNDFOS UP 26 99BF OR APPROVED EQUAL. RP-2 SHALL BE SIZED FOR 16 GPM AT 24 FEET OF HEAD, CAST IRON CASING AND BRONZE IMPELLER. RP-2 SHALL REQUIRE A 120/1/60 POWER SUPPLY.

3. NEW WORK

- 3.1 - CONTRACTOR TO ROUTE 2-1/2" COLD WATER PIPING FROM 8TH FLOOR BOOSTER PUMP AND CONNECT TO ST-1. ROUTE PIPING AS HIGH AS POSSIBLE.
- 3.2 - CONTRACTOR TO ROUTE 1-1/2" HOT WATER RETURN LINE FROM UL PARKING STRUCTURE AND CONNECT TO 2-1/2" COLD WATER MAKE UP LINE.

3.3 - CONTRACTOR TO CONNECT TO EXISTING 2" NATURAL GAS PIPING AND CONNECT TO NEW BOILER'S. BOILER'S REQUIRE A 1-1/2" CONNECTION. PROVIDE NEW GAS REGULATOR MAXITROL 325-7 OR APPROVED EQUAL. PROVIDE TEST PORTS ON INLET AND OUTLET SIDE OF REGULATOR.

3.4 - CONTRACTOR TO TAKE OFF OF ST-1 WITH NEW 4" HOT WATER MAIN. VICTAULIC FITTING ARE ACCEPTABLE FOR THIS SECTION OF PIPE.

3.5 - TAKE OFF OF 4" HOT WATER MAIN WITH NEW 3" HOT WATER PIPING. NEW 3" PIPING TO BE ROUTED TO 8TH FLOOR CEILING SPACE.

3.6 - TAKE OFF OF NEW 4" HOT WATER MAIN WITH NEW 1-1/2" HOT WATER PIPING TO BE ROUTED TO 9TH FLOOR STORAGE SPACE AND TO LOWER LEVEL LAUNDRY ROOM.

3.7 - ROUTE 4" BOILER GAS FLUE PIPING TO EXISTING ROOF OPENING. PATCH OPENING AIR AND WATER TIGHT PER ARCHITECTURAL DETAIL MP12.3/2. GAS FLUE PIPING TO BE PVC, INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND ANCHOR TO STRUCTURE. ROUTE PIPING AS HIGH AS POSSIBLE.

3.8 - TAKE OFF OF FLUE PIPING ELBOW WITH NEW 1/2" PVC PIPING PROVIDE CONDENSATE TRAP AND ASSEMBLE PER MANUFACTURER'S RECOMMENDATION. PROVIDE CONDENSATE NEUTRALIZER AO SMITH PART NUMBER: 9007960005 OR APPROVED EQUAL. ROUTE CONDENSATE TO EXISTING FLOOR DRAIN.

3.9 - PROVIDE ASME APPROVED T&P RELIEF VALVE SET FOR 150 PSI. WATTS OR APPROVED EQUAL. ROUTE TO 1" CONDENSATE LINE AND ROUTE TO DRAIN.

3.10 - CONTRACTOR TO PROVIDE NEW 2" HOT WATER SUPPLY AND RETURN PIPING TO AND FROM ST-1. PROVIDE UNIONS IN APPROPRIATE LOCATIONS TO ACCOMMODATE FUTURE BOILER REPLACEMENTS. BOILER'S TO BE PIPED REVERSE RETURN.

3.11 - CONTRACTOR TO TAKE OFF OF COLD WATER PIPING WITH NEW 3/4" PIPING AND CONNECT TO ET-1.

3.12 - PROVIDE NEW RED MUSHROOM OPERATOR SWITCH. PROVIDE SQUARED OR APPROVED EQUAL. MOUNT SWITCH IN SURFACE MOUNTED WALL BOX WITH HINGED PLEXIGLASS COVER. LABEL AS "BOILER EMERGENCY STOP". WIRE INTO BOILER FOR EMERGENCY SHUTDOWN.

3.13 - PROVIDE HEAT TRACE ON BOILER ROOM PIPING. COORDINATE WITH ELECTRICAL CONTRACTOR. REFERENCE MP7/1.5.

3.14 - PROVIDE NEW HONEYWELL AQUASTAT T675A1540 OR APPROVED EQUAL. INSTALL IN STORAGE TANK AND WIRE INTO RP-1.

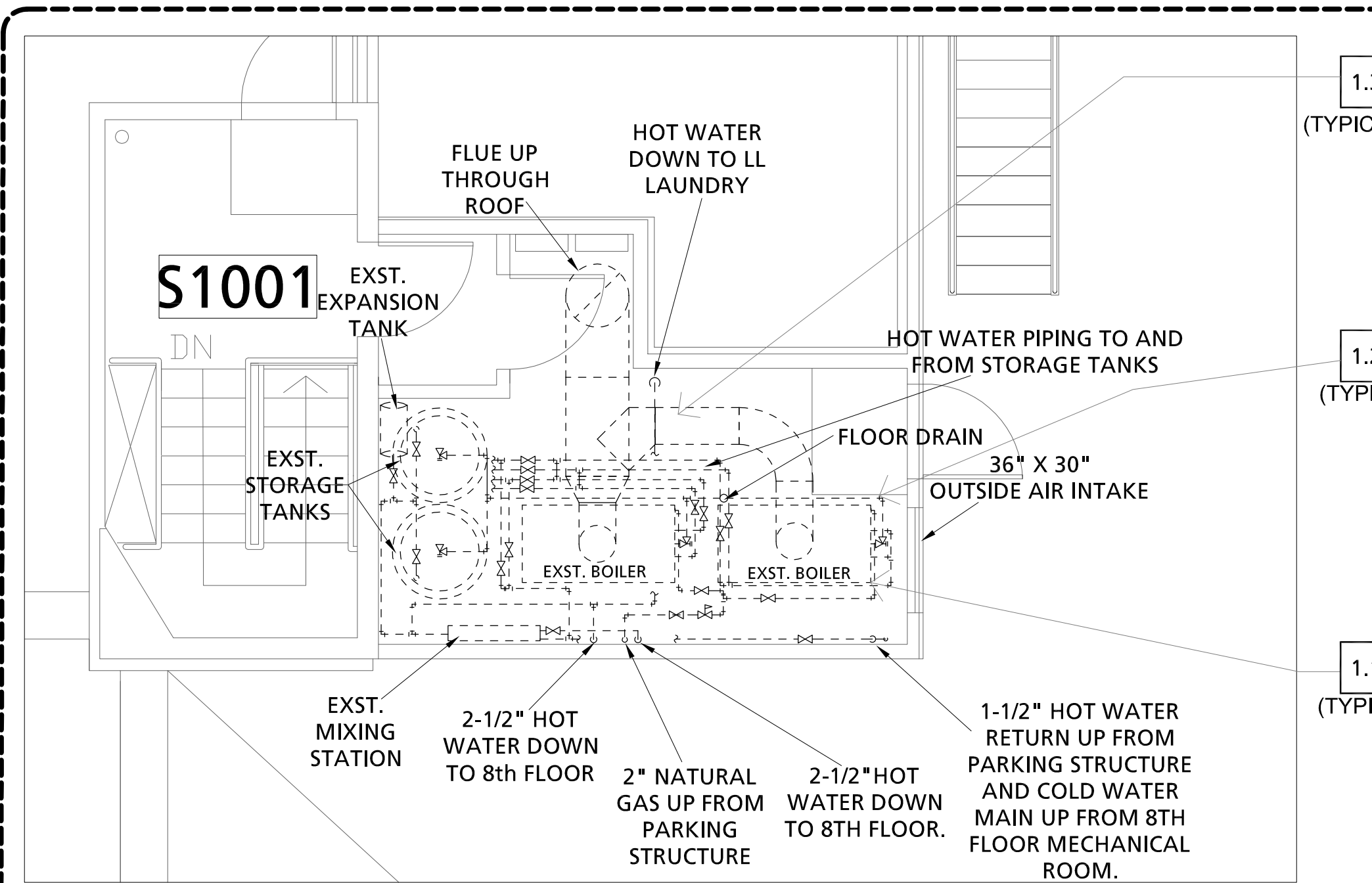
Revisions :	Date : 4/17/2012
-------------	------------------

Drawn : L. Rinder

Checked : Q. Soifer

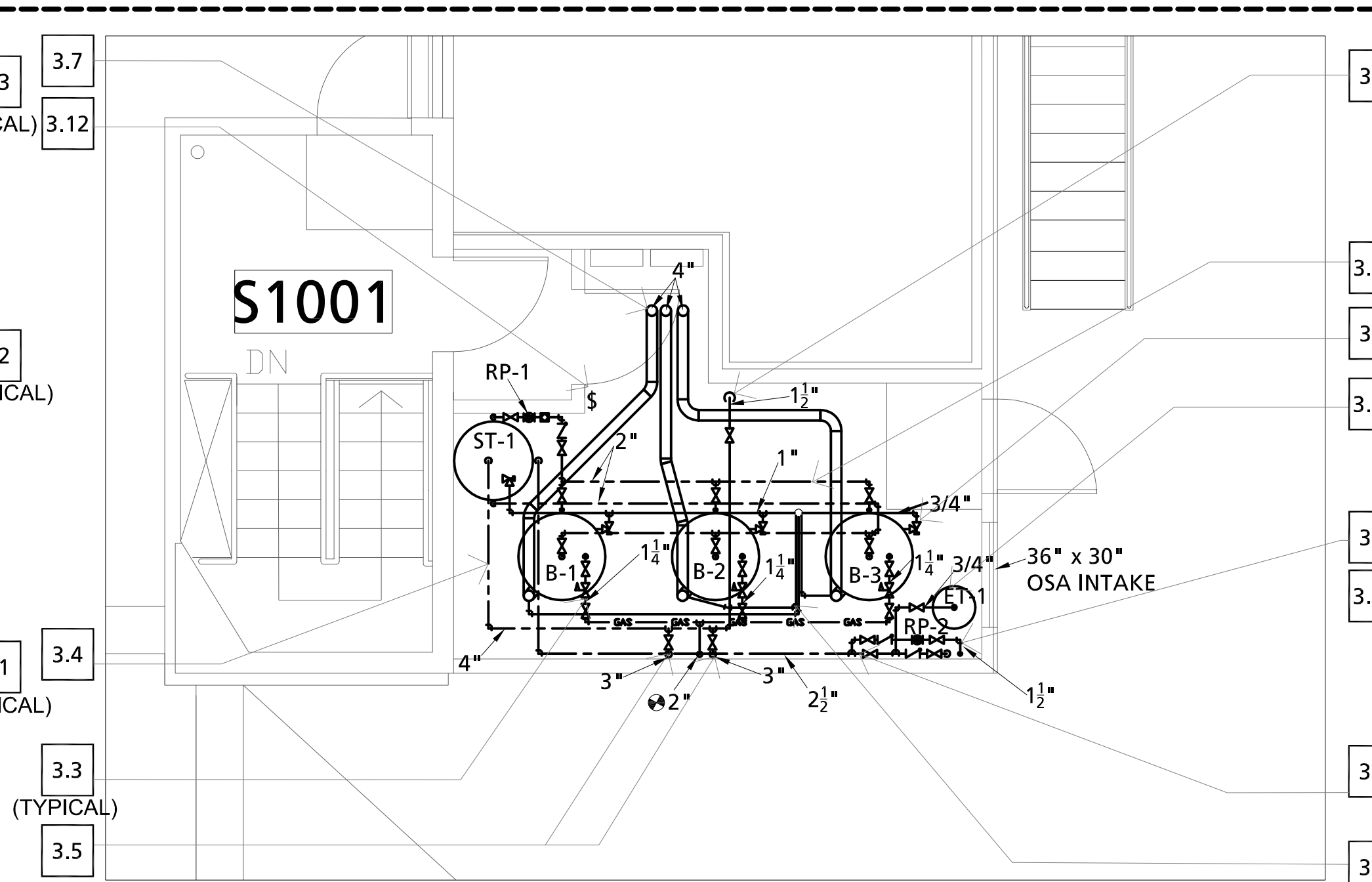
MP14

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional information.



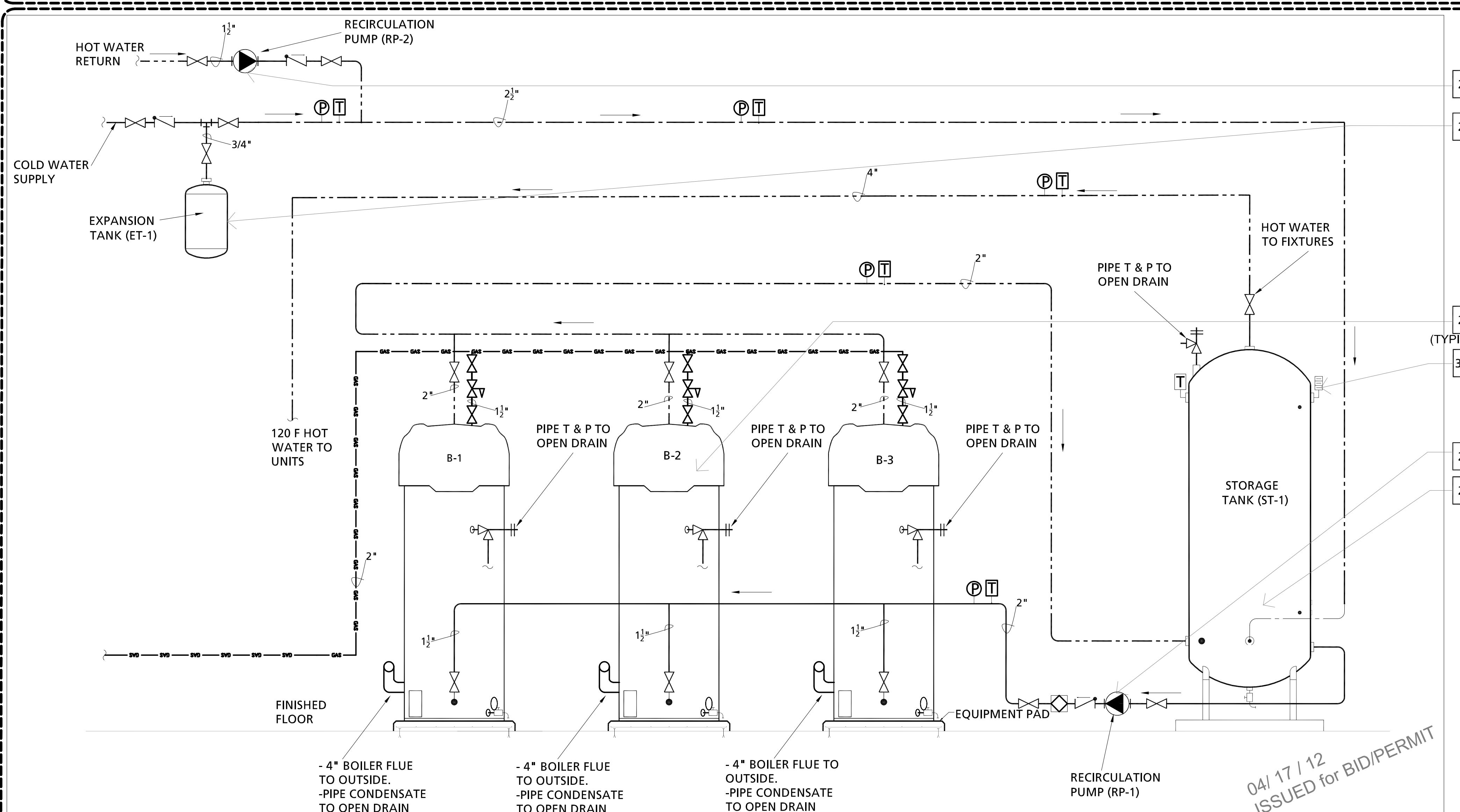
mechanical penthouse - demolition

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



mechanical penthouse - new work

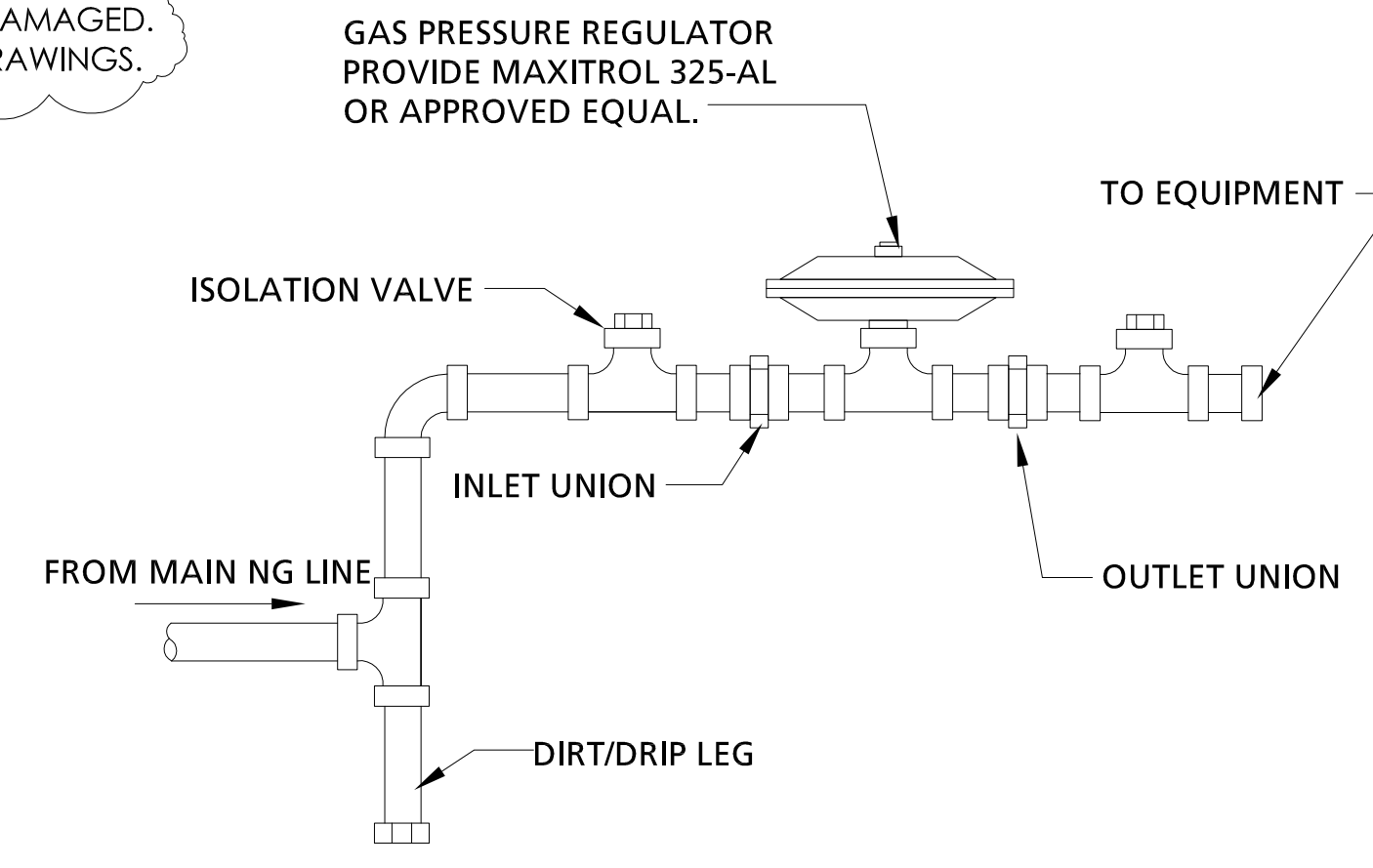
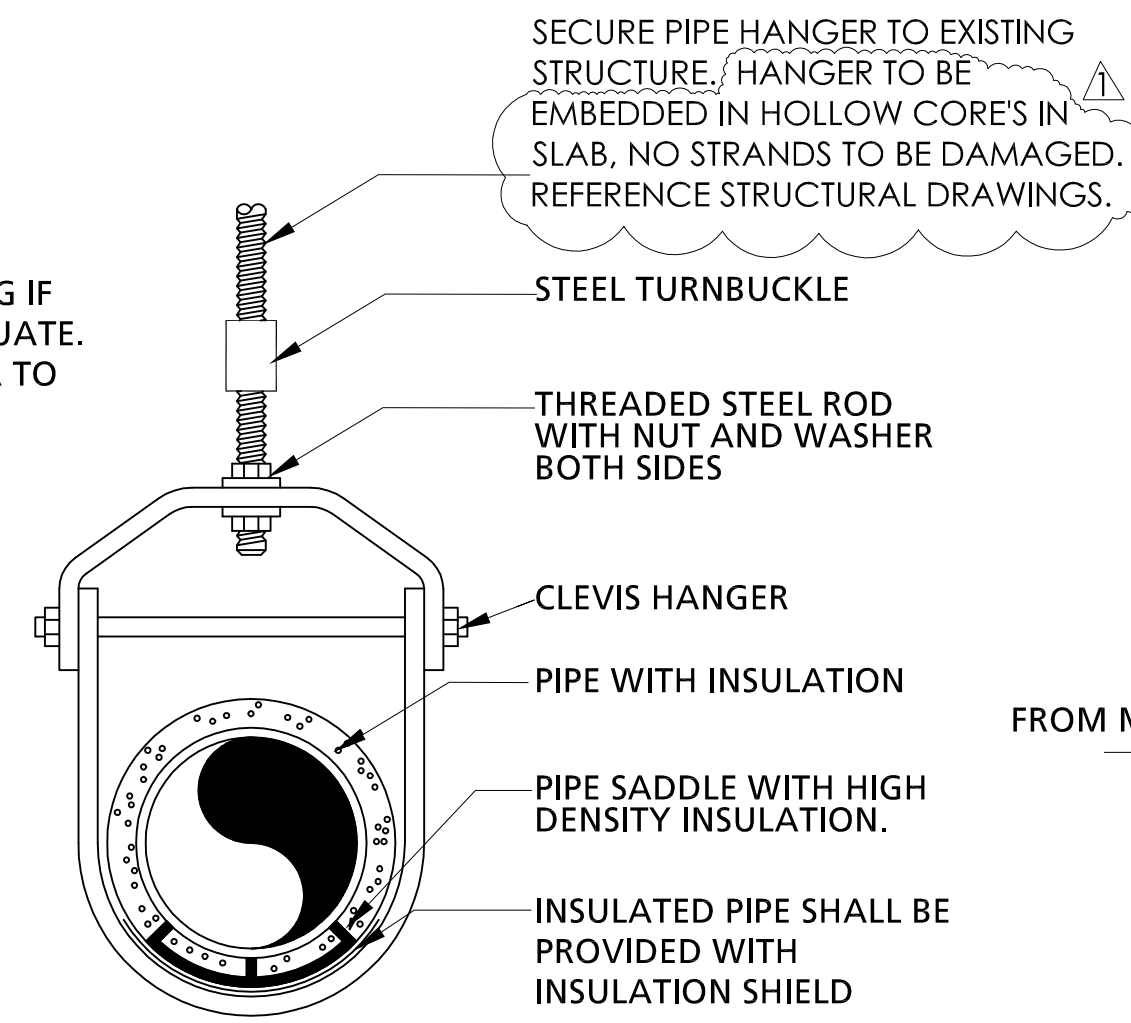
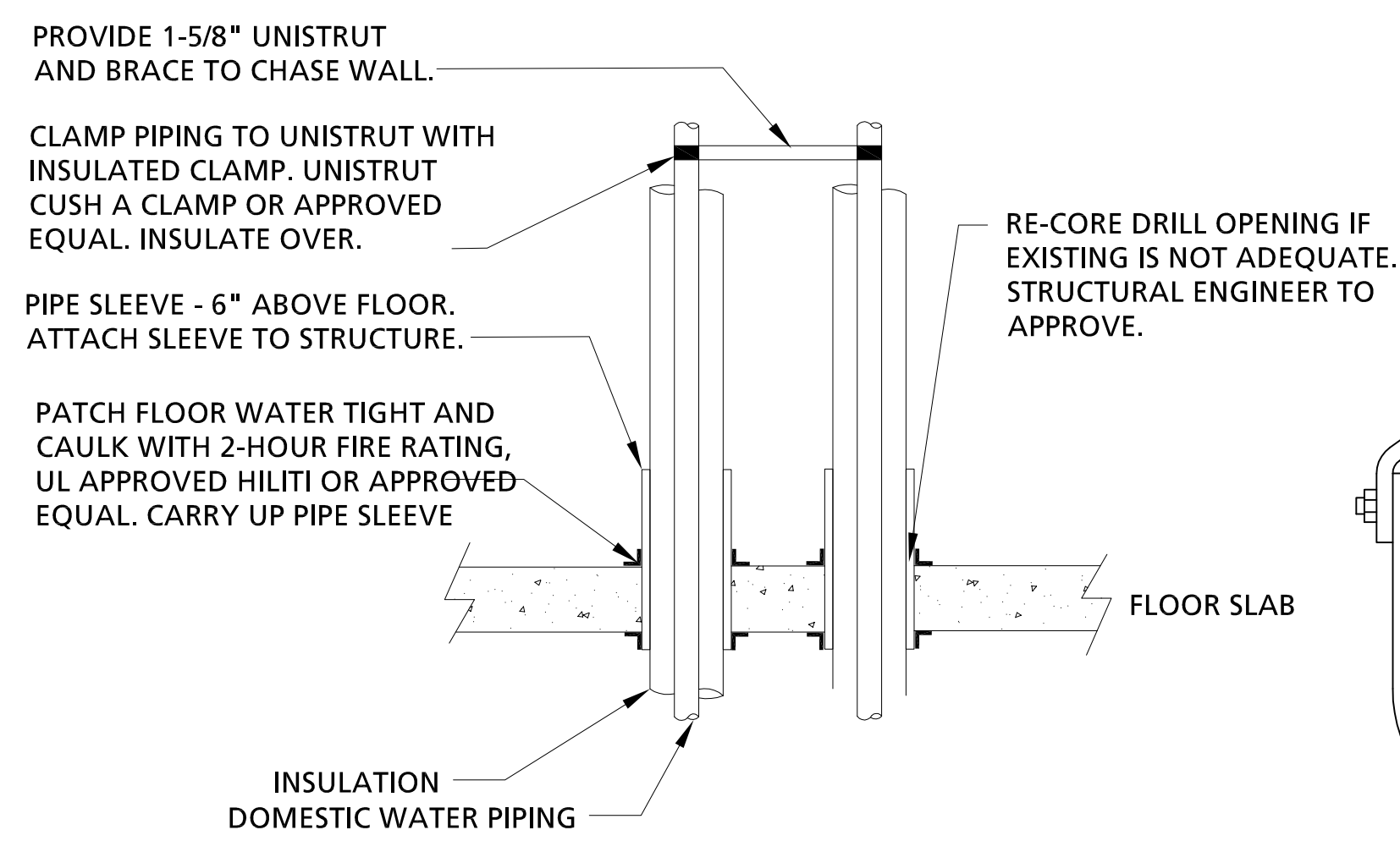
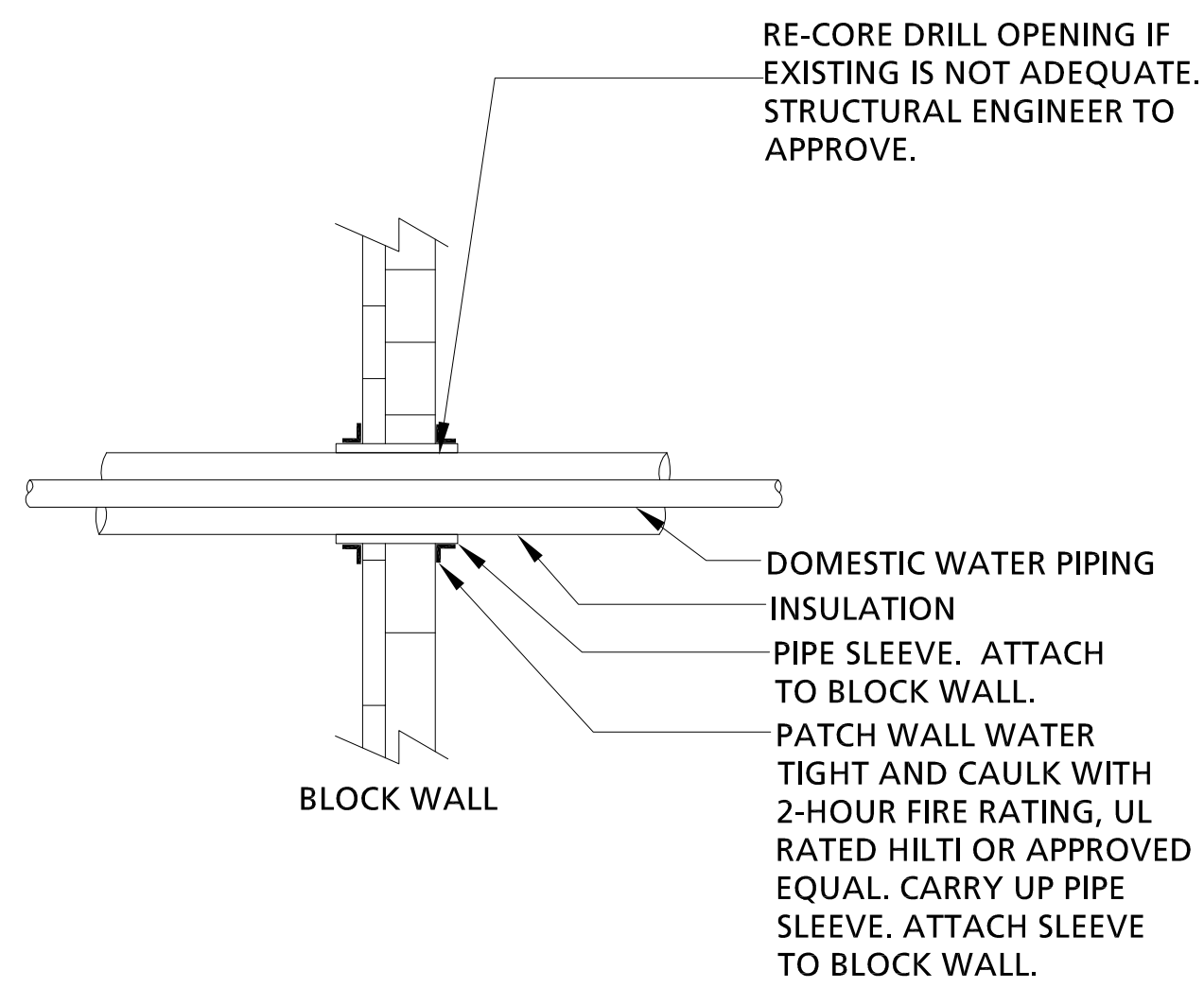
SCALE: 1/4" = 1' - 0"



mechanical penthouse - new work: hot water boiler schematic

NOT TO SCALE

04/17/12
ISSUED for BID/PERMIT

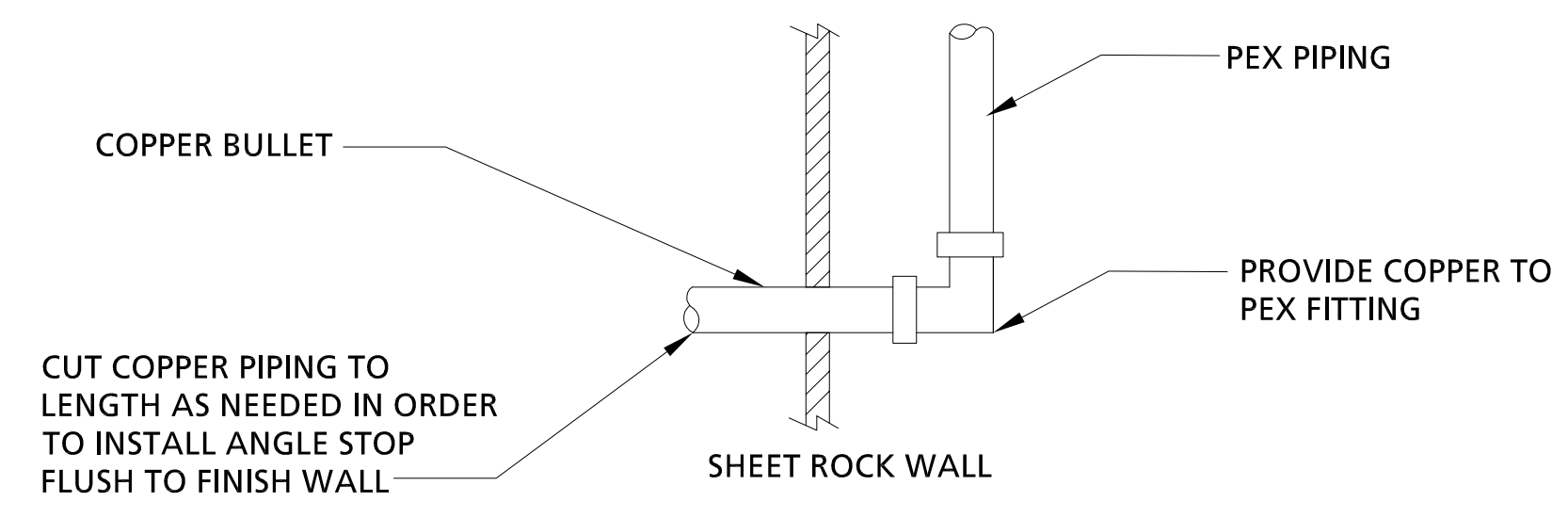
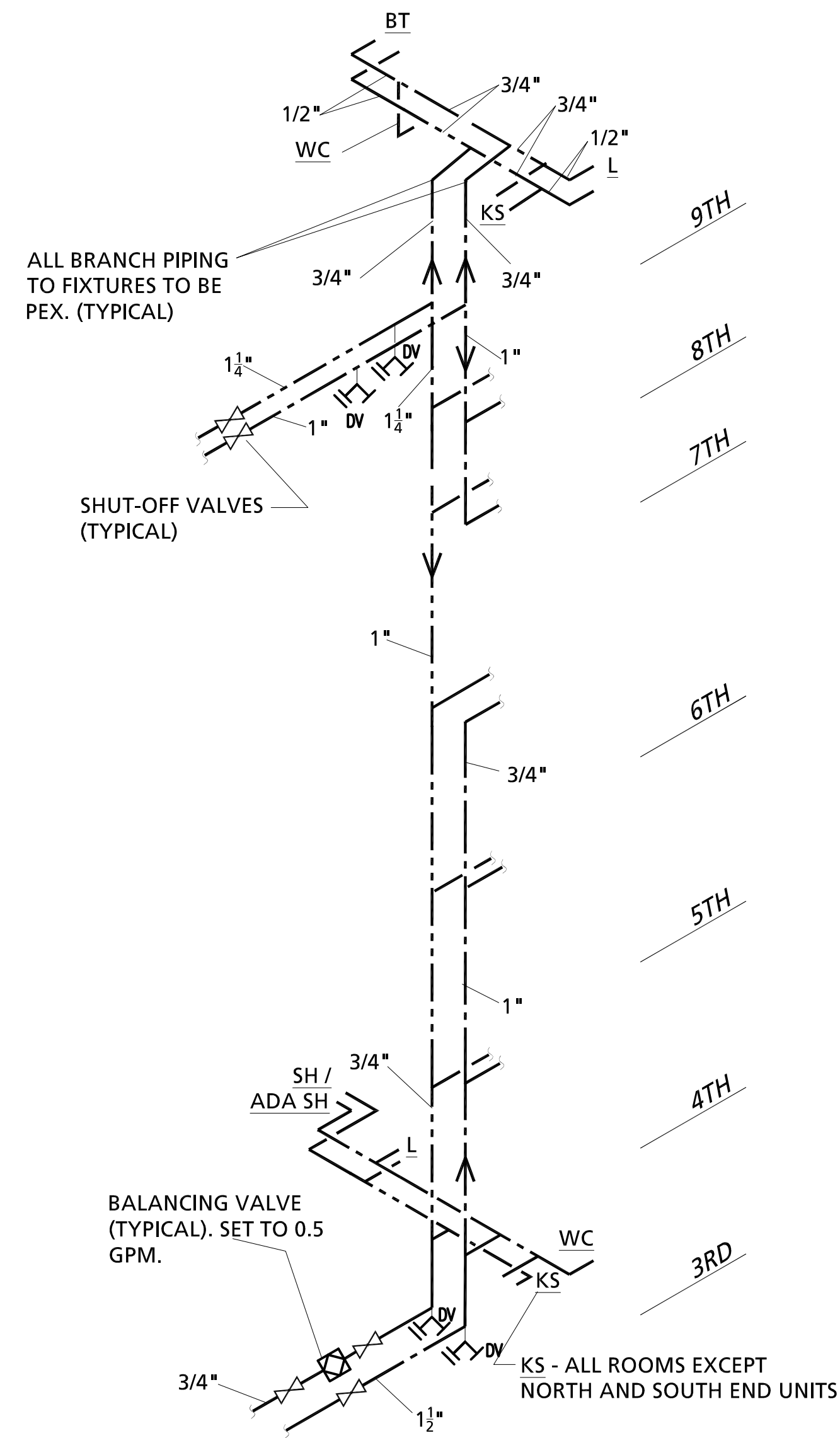
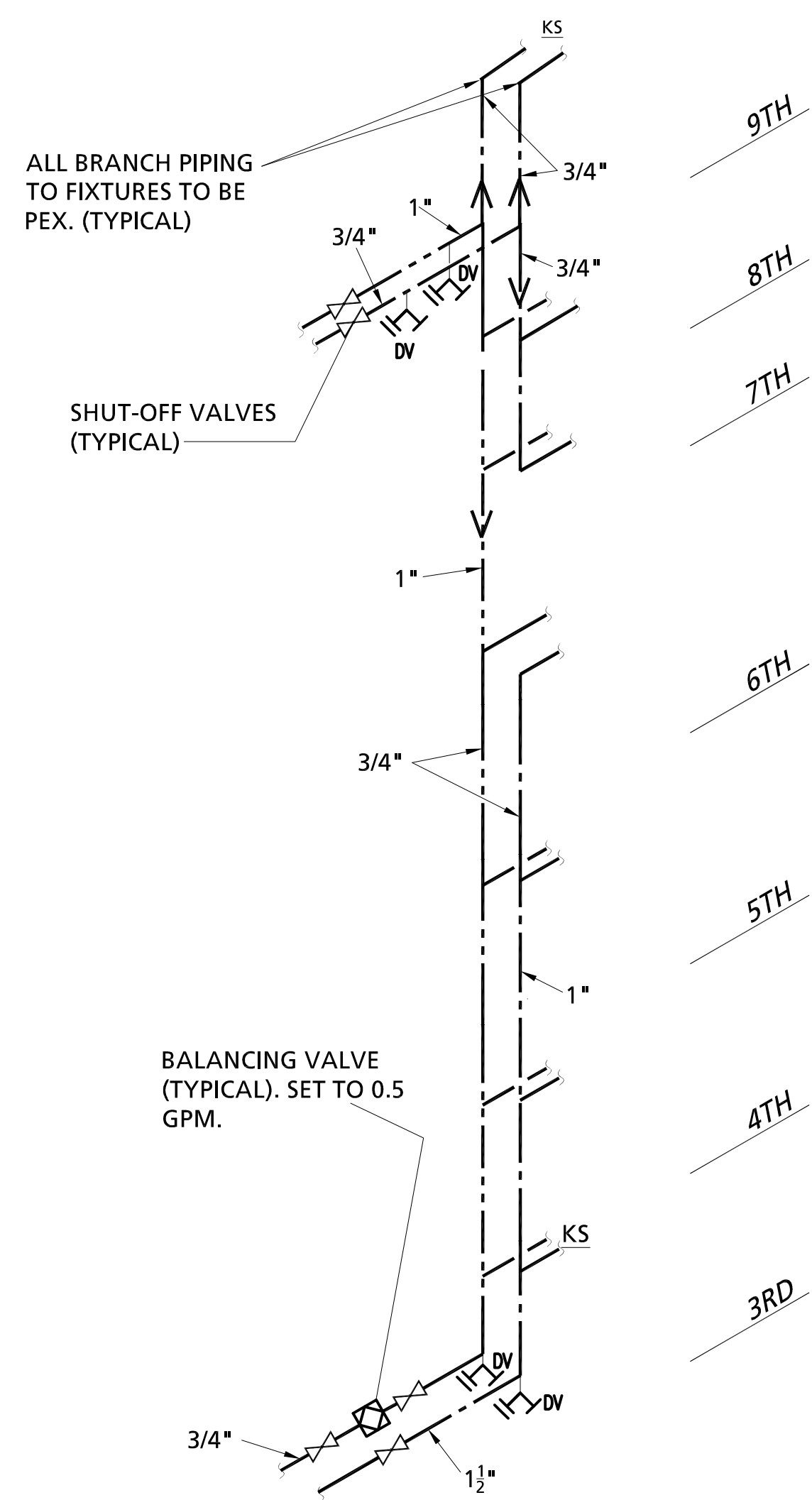


1
15
BLOCK WALL PENETRATION DETAIL
N.T.S.

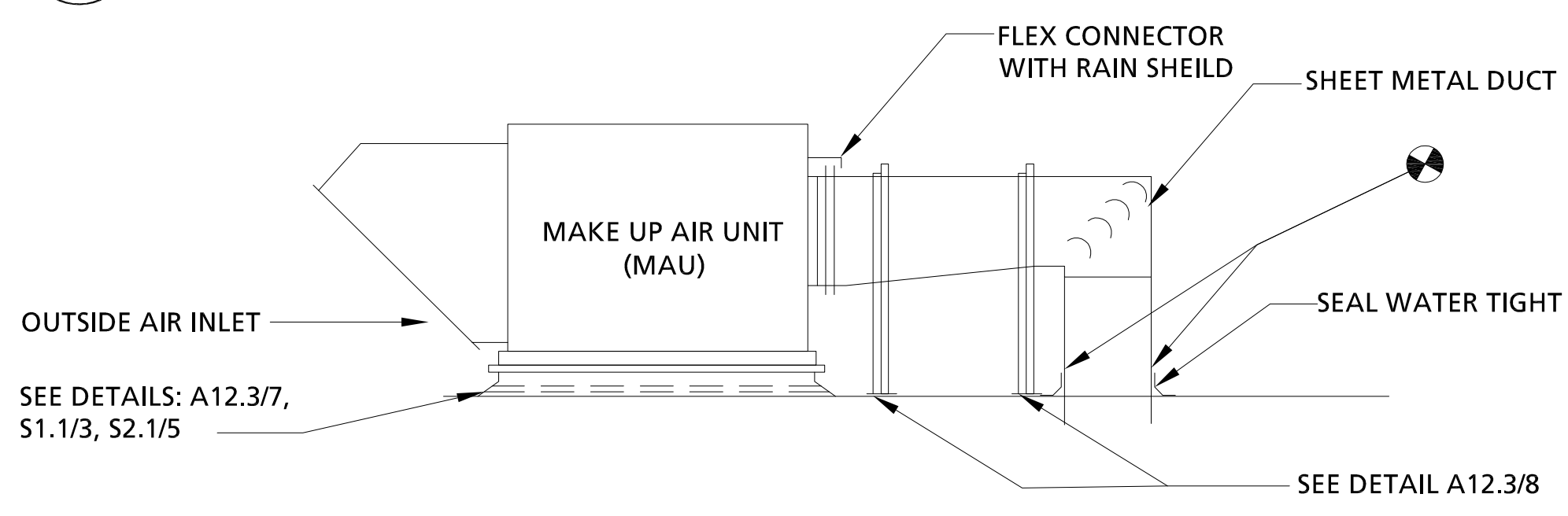
2
15
CONCRETE SLAB PENETRATION DETAIL
N.T.S.

3
15
PIPE HANGER DETAIL
N.T.S.

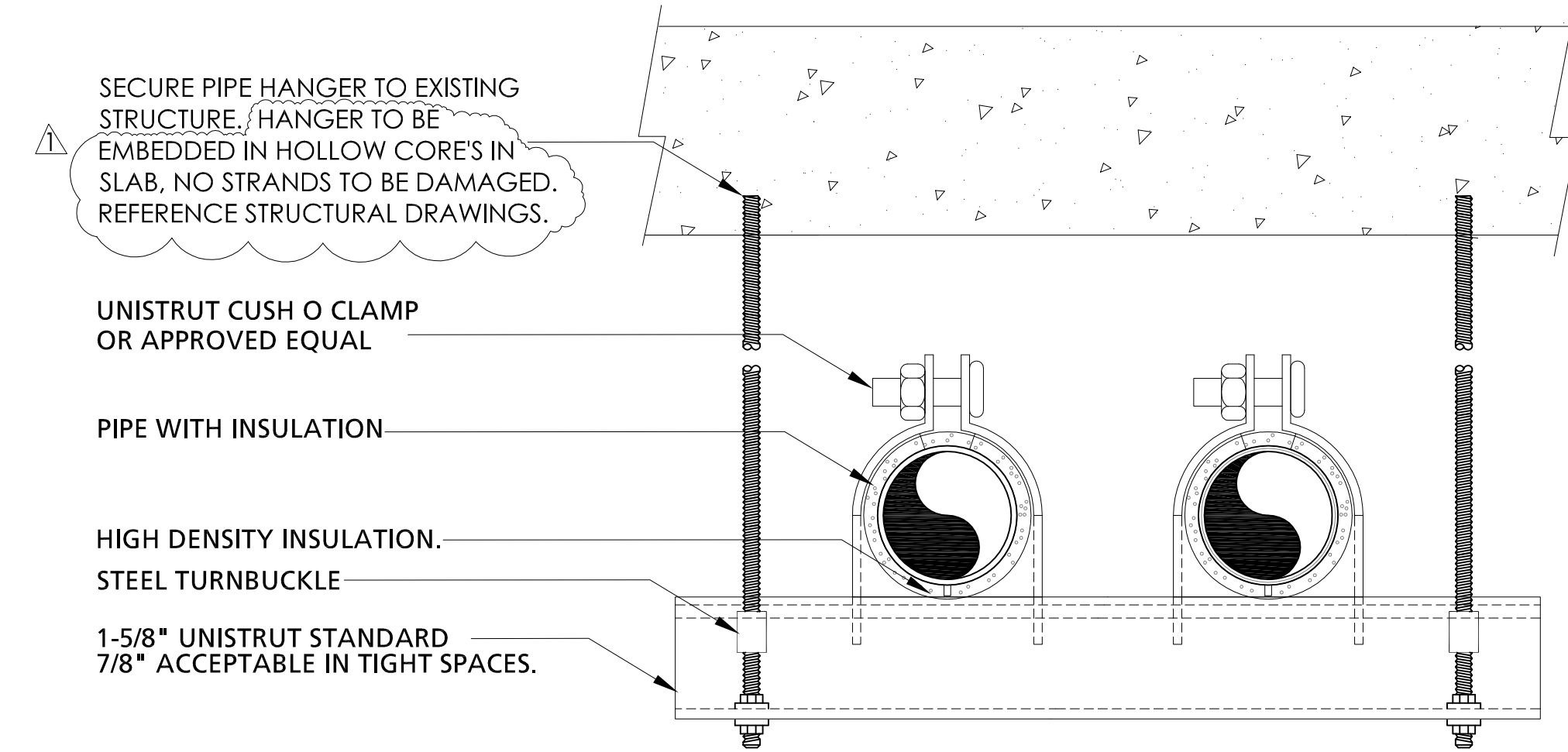
4
15
HVAC UNIT GAS CONNECTION DETAIL
N.T.S.



5
15
FIXTURE PIPING DETAIL
N.T.S.



6
15
MAKE UP AIR UNIT DETAIL
N.T.S.



9
15
PIPE HANGER DETAIL - DOMESTIC HOT AND COLD WATER MAINS
N.T.S.

7
15
HW & CW RISER DIAGRAM
N.T.S.

8
15
HW & CW RISER DIAGRAM
N.T.S.



Notes

- GENERAL:
- 1) REFERENCE STRUCTURAL DETAIL'S ADDENDUM #1: 5/4/12 FOR EXISTING AND NEW CORE DRILL REQUIREMENTS.
 - 2) UNISTRUT BEING USED IN OUTDOOR ENVIRONMENT TO BE COATED WITH WEATHER PROOF FINISH.

04/17/12
ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications

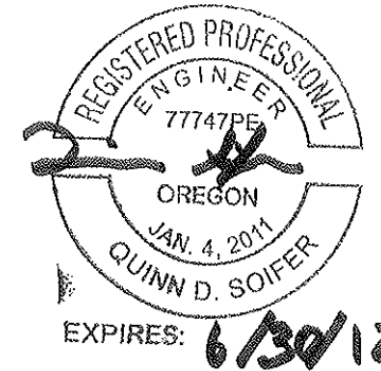
Revisions :	Date : 4/17/2012
Drawn : L. Rinder	
Checked : Q. Soifer	

Joseph C. Blumel Hall

Residence Hall

RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201



Water Service Calculations								
Description	Fixture Quantity			Appendix A - 2009 UPC - Water Supply Fixture Units (WSFU)			Total Fixture Units	
	Private Individual Dwelling	Public General Use	Public Heavy Use Assembly	Private Individual Dwelling	Public General Use	Public Heavy Use Assembly	Cold Water	Hot Water
Bathub or Combination Bath/Shower	190	-	-	4.0	-	-	760	760
Clothes Washer	-	13	-	-	4.0	-	52	52
Hose Bibs	-	1	-	-	2.5	-	3	-
Hose Bibs Additional	-	1	-	-	1.0	-	1	-
Lavatory	189	1	-	1.0	1.0	-	190	190
Sinks - Kitchen, domestic	189	1	-	1.5	1.5	-	285	285
Sinks - Laundry	-	1	-	-	1.5	-	2	2
Sinks - Service or Mop Basin	-	5	-	-	3.0	-	15	15
Water Closet, 1.6 GPF Gravity Tank	189	1	-	2.5	2.5	-	475	-
Total							1782	1304
Total GPM Required (Per Table A-2)							295	245

Notes

NOTES

MECHANICAL EQUIPMENT SCHEDULE			
TAG	EQUIPMENT	BASIS OF DESIGN	DATA
B-1, B-2, B-2	DOMESTIC HOT WATER BOILERS	A.O. SMITH BTH-500	500 MBH, 822 GALLONS/HOUR @ 70 F TEMPERATURE RISE. 120V/1/60 POWER SUPPLY
ET-1	EXPANSION TANK	AMTROL ST-70V-C	34 GALLON, 11.4 ACCEPTANCE VOLUME
ST-1	STORAGE TANK	A.O. SMITH HD24-140	150 GALLON STORAGE
RP-1	RECIRCULATING PUMP	TACO 1600	41 GPM, 20 FT., 120V/1/60 POWER SUPPLY
RP-2	RECIRCULATING PUMP	GRUNDFOS UP 26 99 BF	16 GPM, 24 FT., 120V/1/60 POWER SUPPLY

HVAC UNIT SCHEDULE		
TAG NO.	AREAS SERVED	PRODUCT DATA
MAU-1	NORTHEAST CORRIDORS - FLOORS 4-9	2800 CFM, 0.5" ESP. 300 MBH INPUT, 284 MBH OUTPUT. 208V/3P/60HZ.
MAU-2	SOUTHEAST CORRIDORS - FLOORS 4-9	
MAU-3	NORTHEAST CORRIDORS - FLOORS 4-9	
MAU-4	NORTHWEST CORRIDORS - FLOORS 4-9	
AC-1	ROOF TOP ELEVATOR MECHANICAL ROOM - 1002	1200 CFM, 0.3" ESP. 50 MBH INPUT, 40 MBH OUTPUT. 30,000 MBH COOLING. 208-230V/1P/60HZ.

PLUMBING FIXTURE SCHEDULE								
TAG	FIXTURE	CONNECTION SIZES				MODEL	FITTINGS	NOTES
		W	V	CW	HW			
L-1	STANDARD LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD. ROSELYN OR APPROVED EQUAL	FAUCET: SYMMONDS S-20-2 OR APPROVED EQUAL	
L-2	ADA LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	AMERICAN STANDARD. COMRADE OR APPROVED EQUAL	FAUCET: SYMMONDS S-20-2 OR APPROVED EQUAL	PROVIDE ADA COMPLIANT PIPE COVERS
WC-1	STANDARD WATER CLOSET	3"	2"	1/2"	-	NIAGRA. STEALTH OR APPROVED EQUAL	-	-
WC-2	ADA WATER CLOSET - NEW	3"	2"	1/2"	-	AMERICAN STANDARD. CADET OR APPROVED EQUAL	-	-
WC-3	ADA WATER CLOSET - EXISTING	3"	2"	1/2"	-	AMERICAN STANDARD. CADET OR APPROVED EQUAL	-	-
SH-1	STANDARD BATH TUB / SHOWER	1-1/2"	1-1/2"	1/2"	1/2"	FIBERFAB. 103TWKD OR APPROVED EQUAL	MIXING VALVE: DELTA R10700-UNWS OR APPROVED EQUAL	-
SH-2	ADA ROLL IN SHOWER	2"	1-1/2"	1/2"	1/2"	SEE ARCHITECTURAL DRAWINGS	MIXING VALVE: SYMMONS OR APPROVED EQUAL	-
KS-1	STANDARD KITCHEN SINK	2"	1-1/2"	1/2"	1/2"	ELKAY. ELUMINA OR APPROVED EQUAL	FAUCET: DELTA. 100-DST OR APPROVED EQUAL	-
KS-2	ADA KITCHEN SINK	2"	1-1/2"	1/2"	1/2"	ELKAY. CELEBRITY OR APPROVED EQUAL	FAUCET: DELTA. 100-DST OR APPROVED EQUAL	PROVIDE ADA COMPLIANT PIPE COVERS
FD-1	FLOOR DRAIN	2"	1-1/2"	-	-	ZURN OR APPROVED EQUAL	-	PROVIDE TRAP PRIMER

PIPING MATERIAL SCHEDULE												
PIPING						FITTINGS			MAX WORKING		FIELD TEST	
SYSTEM	SIZE	TYPE	SCHEDULE	GRADE	ASTM	MATERIAL	MATERIAL	TYPE	PRESSURE	TEMP	PRESSURE	TIME
NATURAL GAS	1/2"-2"	E/S	40	B	A53	BLACK IRON	BLACK IRON	THREADED	120	40-180	150	1
DOMESTIC WATER	3/4"-4"	L,K	-	-	B88	COPPER	COPPER	SOLDERED	120	40-180	150	1
DOMESTIC WATER (BRANCH)	1/2" - 1"	PEX	-	-	F877	POLYETHYLENE (PEX)	BRASS	MECHANICAL	120	40-200	150	1
DRAIN/WASTE/VENT	1"-3"	ABS	40	-	D2661	ABS	ABS	SOLVENT CEMENT / MECHANICAL	-	40-200	TEST PER CODE	

04/17/12
ISSUED for BID/PERMIT

Reference MP0.1 and MP0.2 for Specifications and MP15 for additional Information.

Revisions : 5/4/2012
ADDENDUM #1

Date : 4/17/2012

Drawn : L. Rinder

Checked : Q. Soifer

MP16

ELECTRICAL SYMBOLS

	BRANCH CIRCUIT CONDUCTORS: GROUND, NEUTRAL, HOT (OR SWITCHED HOT) #12 THIN IN CONDUIT (UNO.)
	BRANCH CIRCUIT HOME RUN WITH PANELBOARD DESIGNATION AND CIRCUIT BREAKER NO.
	BRANCH CIRCUIT UNDERFLOOR/BELOW GRADE CONDUIT
	DISCONNECT SWITCH - '60/3/40/3R' DENOTES AMPERES/POLE/FUSE/ENCLOSURE NEMA RATINGS. NF= NON-FUSED, CB= CIRCUIT BREAKER (40/3/CB).
	EXISTING LIGHT FIXTURE
	LIGHT FIXTURE TO BE REMOVED
	LIGHT FIXTURE WITH FIXTURE TYPE DESIGNATION
	LIGHT FIXTURE WITH FIXTURE TYPE DESIGNATION. FIXTURE OPERATES AS AN EMERGENCY FIXTURE.
	LIGHT FIXTURE WITH FIXTURE TYPE DESIGNATION. FIXTURE OPERATES AS A NIGHT LIGHT. LIGHT CONTROLLED FROM BREAKER IN PANELBOARD.
	LIGHT FIXTURE WITH FIXTURE TYPE DESIGNATION. FIXTURE OPERATES AS AN EMERGENCY/NIGHT LIGHT FIXTURE.
	MALL MOUNTED LIGHT FIXTURE
	POLE MOUNTED LIGHT FIXTURE
	LIGHT FIXTURE ON EMERGENCY POWER
	LIGHT FIXTURE TO BE REMOVED
	SURFACE MOUNTED 2T1 VAC EXIT LIGHT
	LED TYPE EXIT EMERGENCY LIGHT FIXTURE
	LIGHT SWITCH, TOGGLE TYPE, SINGLE POLE, 20 AMP, 120-277 VOLT AC, HUBBELL CAT. NO. HBL121W
	JUNCTION BOX
	CARD READER
	HARD-WIRED ELECTRIC DOORBELL
	DOOR SENSOR
	DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR
	DOOR BELL SIGNALER
	DOOR BELL VISIBLE SIGNAL
	MAGNETIC DOOR HOLD-OPEN
	ADA DOOR PUSH BUTTON
	POWER PACK FOR OCCUPANCY SENSOR

ELECTRICAL SYMBOLS

	CONTROL MODULE
	TAMPER SWITCH
	MONITOR MODULE
	FIRE ALARM PULL STATION, MOUNTED 4'-0" A.F.F.
	FIRE ALARM SPEAKER, MOUNTED 6'-8" A.F.F.
	FIRE ALARM STROBE DEVICE, MOUNTED 6'-8" A.F.F.
	FIRE ALARM SPEAKER/STROBE DEVICE, MOUNTED 6'-8" A.F.F.
	SMOKE DETECTOR
	MULTIPLE STATION SMOKE DETECTOR WITH VISIBLE SIGNAL
	NEW CARBON MONOXIDE SENSOR. CONNECT TO EXISTING 120 VAC CIRCUIT.
	DUPLEX CONVENIENCE RECEPTACLE
	GROUNDING TYPE DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, 20 AMP, 120 VOLT AC, NEMA 5-20 R, HEAVY DUTY, HUBBELL CAT. NO. 6F38626Y.
	DUPLEX CONVENIENCE RECEPTACLE ABOVE COUNTER
	TELEPHONE OUTLET
	COAXIAL CABLE OUTLET
	PLAN NOTE DESIGNATION
	SECTION/ELEVATION/PLAN REFERENCE NUMBER SECTION/ELEVATION/PLAN SHEET NUMBER
	EQUIPMENT DESIGNATION
	CONNECT TO EXISTING

ELECTRICAL NOTATIONS

AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
ATS	AUTOMATIC TRANSFER SWITCH
C	CELLING MOUNTED
E	EXISTING
FACP	FIRE ALARM CONTROL PANEL
FAP	FIRE ALARM REMOTE ANNUNCIATOR PANEL
MDP	MAIN DISTRIBUTION PANEL
NAC	REMOTE NOTIFICATION APPLIANCE CIRCUIT (NAC)
UNO	UNLESS NOTED OTHERWISE
TSP	TWISTED SHIELDED PAIR
TP	TYPICAL
1/C	INDICATES SINGLE CONDUCTOR CABLE.
'A' OR 'M'	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES DEVICE BOTTOM TO BE MOUNTED 4" ABOVE COUNTERTOP BACKSPASH.
'G'	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES GROUND FAULT INTERRUPTER.
'IG'	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES ISOLATED GROUND DEVICE.
'TL'	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES LOCKING OR TWIST-LOCK TYPE DEVICE.
'W'	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES WEATHER-PROOF ENCLOSURE.
'XP'	THESE LETTERS ADJACENT TO ANY SYMBOL INDICATES EXPLOSION-PROOF ENCLOSURE.
60"	DIMENSIONS ADJACENT TO ANY SYMBOL INDICATES MOUNTING HEIGHT TO CENTERLINE OF DEVICE.
REF. E2	REFERENCE DESIGNATION
1	SHEET NUMBER
1	DETAIL/PLAN NUMBER

ELECTRICAL GENERAL NOTES:

- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND INTENDED TO DEPICT THE GENERAL SCOPE OF WORK ON THIS PROJECT. FIELD VERIFICATION OF EXISTING CONDITIONS IS REQUIRED. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN CONFORMANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES HAVING JURISDICTION AND INSPECTION.
- COORDINATE POWER REQUIREMENTS AND FINAL LOCATIONS OF ALL EQUIPMENT, DEVICES, ETC. WITH FINAL EQUIPMENT SELECTION AND INSTALL ALL NECESSARY DEVICES ALLOWING FOR END TERMINATION CONNECTIONS.
- ALL WIRING SHALL BE IN EMT TUBING OR MC CABLE AND SHALL BE CONCEALED. LOW VOLTAGE/COMMUNICATION WIRING IN MAY BE EXPOSED IN PLENUM SPACES, BUT MUST BE PLENUM RATED. LOW VOLTAGE WIRING IN OR ON WALLS SHALL BE IN EMT CONDUIT. PROVIDE 90 DEGREE ELBOW WHEN ENTERING PLENUM SPACES WITH APPROVED BUSHINGS AT CONDUIT TERMINATIONS.
- ALL FIRE RATED ASSEMBLIES SHALL BE MAINTAINED. CAULK AROUND ELECTRICAL PENETRATIONS WITH 3M CP-25 FIRE BARRIER CAULK (THICKNESS AS REQUIRED AND RECOMMENDED BY MANUFACTURER) TO MAINTAIN FIRE RESISTANCE RATINGS OF THE FIRE RATED ASSEMBLY.
- FURNISH, INSTALL AND CONNECT ALL WIRE, WIRING, CONDUIT, CONNECTORS, OUTLETS, ETC. NECESSARY TO ACHIEVE A COMPLETE ELECTRICAL INSTALLATION. ALTHOUGH SUCH WORK IS NOT SPECIFICALLY SHOWN OR SPECIFIED EQUIPMENT SHALL BE INSTALLED PER CODE REQUIREMENTS PROVIDING A SOUND, SECURE AND COMPLETE INSTALLATION.
- COORDINATE WORK WITH ALL OTHER TRADES.
- ALL LOW VOLTAGE WIRING (CLASS 2 OR CLASS 3) ROUTED IN PLENUM SPACES AND NOT INSTALLED IN CONDUIT MUST BE NON-COMBUSTIBLE, NON-TOXIC WHEN BURNING, TYPE CL2P, CL3P, CL2R OR CL3R AS STATED IN THE NEC ARTICLE 125.
- REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- BRANCH CIRCUITING CONVENTION - #12 AWG PER PHASE AND NEUTRAL (WHERE REQUIRED) AND 20 AMPERE CIRCUIT BREAKER, UNLESS OTHERWISE NOTED. PROVIDE QUANTITY AND SIZE SWITCH CONDUCTORS AS REQUIRED TO MAKE SYSTEM OPERATIONAL. WHERE EQUIPMENT GROUNDING CONDUCTOR AND CONDUIT ARE NOT INDICATED ON DOCUMENTS, CONTRACTOR SHALL SIZE EQUIPMENT GROUNDING CONDUCTOR AND CONDUIT PER NEC.
- ELECTRICAL CONTRACTOR TO CONNECT TO EXISTING PANELBOARDS AS NOTED ON THE DRAWINGS. PROVIDE ALL NECESSARY CIRCUIT BREAKERS, DISCONNECTS, ETC. FOR COMPLETE OPERATING SYSTEM.
- ALL WALL PENETRATIONS AND/OR FLANS WITHIN WALL/FLOORS RESULTING FROM THE REMOVAL OF ELECTRICAL EQUIPMENT AND DEVICES SHALL BE PATCHED AND PAINTED TO MATCH ADJACENT SURFACES.
- ALL CONDUIT AND WIRING SHALL BE MOUNTED TIGHT TO BOTTOM OF STRUCTURE.
- VERIFY THE LOADS OF EACH CIRCUIT AFFECTED BY REMODELING WORK. THE MAXIMUM LOAD OF ANY BRANCH CIRCUIT MUST NOT EXCEED 80% OF ITS RATING.
- WHEN RELOCATING EXISTING CIRCUITS MAKE CERTAIN THAT CONTINUITY IS MAINTAINED. RE-ESTABLISH SERVICE TO ALL OUTLETS THAT MAY BE INTERRUPTED BECAUSE OF REMODELING WORK.
- PROVIDE ALL AFFURTENANCES REQUIRED TO REROUTE, RELOCATED, REMOVE OR REINSTALL ALL ITEMS INDICATED IN THESE DOCUMENTS.
- REMOVE ALL OUTLETS AND WIRING ASSOCIATED WITH ALL EQUIPMENT BEING REMOVED UNLESS IT IS TO BE REUSED.
- PROVIDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR WITH ALL FEEDERS AND BRANCH CIRCUITS, WHERE THE DRAWINGS DO NOT SPECIFY THE EQUIPMENT GROUNDING CONDUCTOR SIZE DIVISION 26 SHALL PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR SIZED PER NEC.
- PROVIDE CONDUCTORS FOR POWER CIRCUITS AS FOLLOWS: TYPE THHN, 600 VOLT, 90 DEGREES F (194 DEGREES F) THERMOPLASTIC INSULATED BUILDING CONDUCTOR.
- ALL CIRCUIT BREAKERS SERVING HVAC EQUIPMENT SHALL BE HACR TYPE CIRCUIT BREAKERS.
- THE OWNER AND ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM HIS/HER WORK.
- CONTRACTOR SHALL TEST EMERGENCY LIGHTING IN CORRIDORS. THIS HAS BEEN REQUESTED BY THE AHJ. COORDINATE TESTING WITH PORTLAND STATE UNIVERSITY FOR OPERATION OF STAND-BY GENERATOR. TESTING SHALL INCLUDE FLOOR LEVEL FOOT-CANDLE READINGS AT 10'-0" INTERVALS. CONTRACTOR TO PROVIDE DRAWINGS TO AHJ SHOWING TESTING RESULTS AND DOCUMENTATION. DOCUMENTATION TO INCLUDE THE FOLLOWING:
 - FLOOR LEVEL FOOT-CANDLE READINGS AT 10'-0" INTERVALS ON APPROVED FLOOR PLANS.
 - FLOOR LEVEL AVERAGE FOOT-CANDLE CALCULATION FOR ENTIRE CORRIDOR.
 - MAXIMUM-TO-MINIMUM ILLUMINATION UNIFORMITY RATIO FOR ENTIRE CORRIDOR.

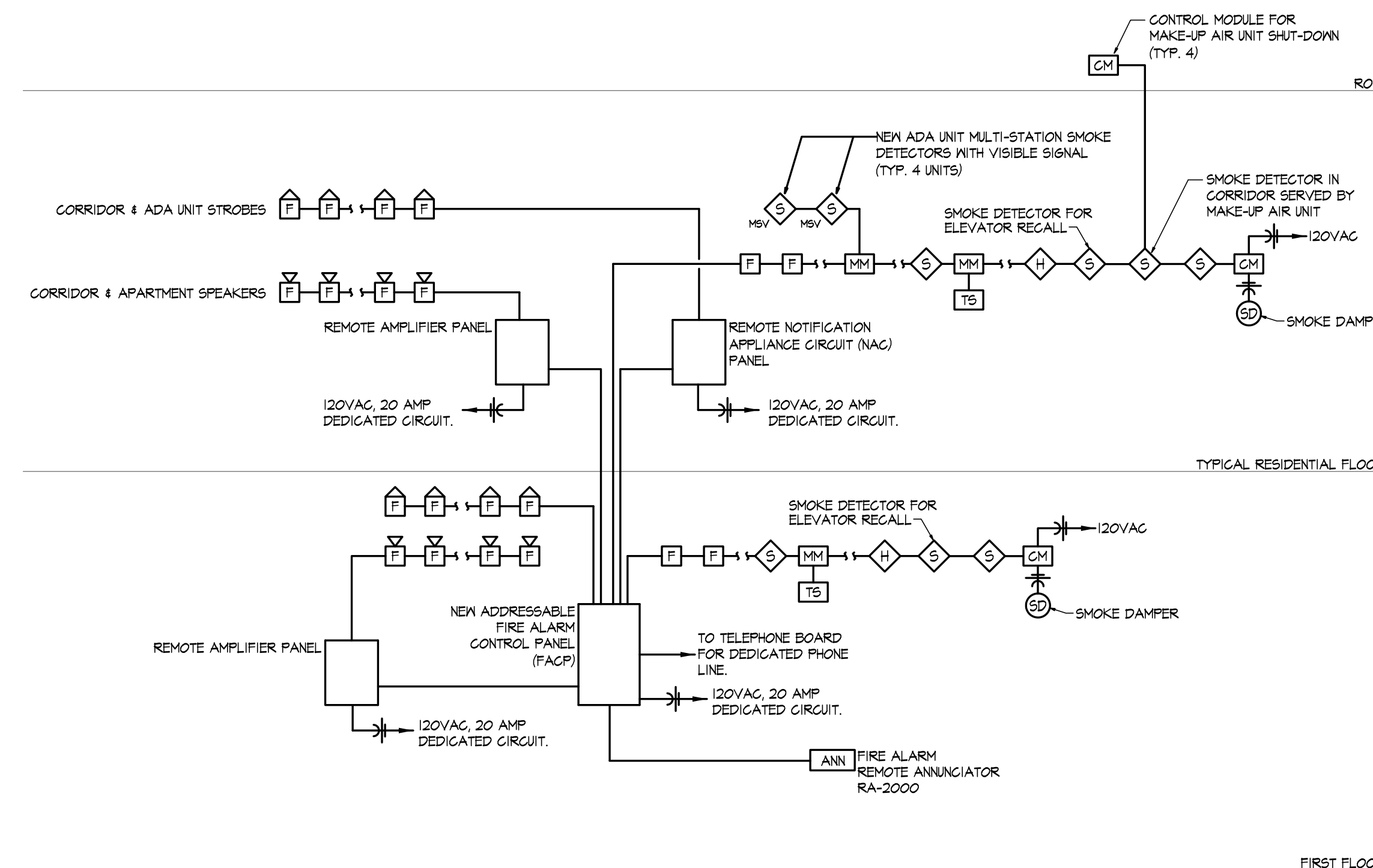
THE EMERGENCY LIGHTING ILLUMINATION AT FLOOR LEVEL SHALL HAVE AN AVERAGE ILLUMINATION OF AT LEAST 1 FOOT-CANDLE. THE EMERGENCY LIGHTING ILLUMINATION AT FLOOR LEVEL SHALL BE AT LEAST 0.1 FOOT-CANDLE AT ANY POINT. A MAXIMUM-TO-MINIMUM ILLUMINATION UNIFORMITY RATIO OF 40 TO 1 SHALL NOT BE EXCEEDED. IF THESE REQUIREMENTS ARE NOT MET THEN CONTACT THE ENGINEER.
- ELECTRICAL CONTRACTOR TO UPDATE ENTIRE PANEL SCHEDULES FOR EACH PANEL BOARD OR LOAD CENTER SERVING AREAS WHERE ELECTRICAL NEW WORK OCCURS.
- WHERE EXISTING ELECTRICAL DEVICES ARE REMOVED AND NOT REPLACED, PATCH WALLS AND CEILINGS AND PAINT TO MATCH NEW OR EXISTING.
- WHERE CEILING GRIDS AND/OR CEILING TILES ARE BEING REPLACED, ELECTRICAL CONTRACTOR IS TO RETAIN EXISTING DEVICES IN THE CEILING TO REMAIN AND REINSTALL THEM IN THE NEW CEILING.
- WHERE CIRCUIT NUMBERS AND PANEL DESIGNATIONS ARE SHOWN CONTRACTOR TO VERIFY AVAILABLE AND EXISTING CIRCUITRY. CIRCUIT NUMBERS AND PANEL DESIGNATIONS SHOWN ON PLANS ARE FROM AS-BUILT DRAWINGS AND EXISTING PANEL SCHEDULES.



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

ELECTRICAL GENERAL NOTES AND SYMBOLS

Revisions :	Date : 4/17/2012
Drawn : DAB	
Checked : CCW	



- NOTES:**
1. THIS DIAGRAM DOES NOT SHOW ALL FIRE ALARM DEVICES. CONTRACTOR SHALL FIELD VERIFY NUMBER OF EXISTING DEVICES TO BE CONNECTED TO THE NEW FIRE ALARM CONTROL PANEL.
 2. THE NEW FIRE ALARM CONTROL PANEL SHALL BE THE FA95NHT JFF-2000V1P. CONTRACTOR SHALL PROVIDE ALL NECESSARY AMPLIFIERS, REMOTE NOTIFICATION APPLIANCE CIRCUIT (NAC) PANELS, RELAYS, BATTERIES, SPEAKERS, REMOTE ANNUNCIATORS, ETC. FOR COMPLETE OPERATIONAL SYSTEM.
 3. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR SUBMISSION TO THE AHJ SHOWING ALL DEVICE LOCATIONS, CALCULATIONS, ETC. AS REQUIRED BY THE AHJ.

- FIRE ALARM SEQUENCE OF OPERATION:**
- A. WHEN A FIRE ALARM CONDITION IS DETECTED BY ANY OF THE SYSTEM ALARM INITIATING DEVICES, THE FOLLOWING FUNCTIONS SHALL OCCUR:**
1. THE SYSTEM COMMON ALARM LED ON THE CPU MODULE SHALL FLASH. THE INTERNAL AUDIBLE TROUBLE DEVICE SHALL SOUND. ACKNOWLEDGEMENT OR SILENCING THE ALARM CONDITION SHALL SILENCE THE ALARM SIGNALS AND CAUSE FLASHING ALARM LED'S TO ILLUMINATE STEADY.
 2. AN 80 CHARACTER BACK-LIT LCD DISPLAY SHALL INDICATE ALL APPLICABLE INFORMATION ASSOCIATED WITH THE ALARM CONDITION INCLUDING: ZONE DEVICE TYPE, DIVIDE LOCATION AND TIME OF ALARM. LOCATION AND ZONING MESSAGES SHALL BE CUSTOM FIELD PROGRAMMED TO RESPECTIVE PREMISES.
 3. ANY REMOTE OR LOCAL ANNUNCIATOR LED'S ASSOCIATED WITH THE ALARM ZONE SHALL BE ILLUMINATED AS HEREIN SPECIFIED.
 4. A THREE CHANNEL DIGITAL ALARM COMMUNICATOR SHALL BE INTEGRALLY PROVIDED AND TRANSMIT TROUBLE AND ALARM SIGNALS TO AN APPROVED REMOTE STATION (REMOTE STATION CONNECTION AND SERVICE PROVIDED BY OWNER).
 5. ALL AUTOMATIC EVENTS PROGRAMMED TO THE ALARM POINT SHALL BE EXECUTED AND THE ASSOCIATED INDICATING DEVICES AND/OR OUTPUTS ACTIVATED. AS EACH INDICATING CIRCUIT OR CONTROL RELAY IS ACTIVATED, ITS ASSOCIATED 'ON' LED SHALL BE ILLUMINATED.
 6. ACTIVATE ALL AUDIBLE/VISUAL ALARM DEVICES.
 7. DE-ACTIVATE HVAC SYSTEMS OVER 2000 CFM.
 8. DISPLAY SYSTEM STATUS CHANGES ON THE REMOTE ANNUNCIATOR.
 9. RECALL ELEVATORS TO GROUND FLOOR AS SPECIFIED HEREIN, OR TO THE ALTERNATE FLOOR IF THE ALARM CONDITION ORIGINATES ON THE GROUND FLOOR. EACH ELEVATOR LOBBY SHALL BE PROVIDED WITH A SMOKE DETECTOR. ACTIVATION OF THIS SMOKE DETECTOR SHALL RECALL THE RESPECTIVE ELEVATOR CARS TO THE GROUND FLOOR. IN THE EVENT OF A FIRE ON THE GROUND FLOOR, THE ELEVATOR CARS SHALL BE RECALLED TO LEVEL 2.
- B. WHEN A SUPERVISORY CONDITION IS DETECTED BY THE FIRE ALARM CONTROL PANEL, THE FOLLOWING FUNCTIONS SHALL OCCUR:**
1. THE FIRE ALARM CONTROL PANEL SUPERVISORY INDICATOR SHALL FLASH AND THE INTERNAL AUDIBLE DEVICE SHALL SOUND. ACKNOWLEDGEMENT OF THE SUPERVISORY CONDITION SHALL SILENCE THE AUDIBLE DEVICE AND CAUSE THE SUPERVISORY INDICATOR TO ILLUMINATE STEADY.
 2. THE 80 CHARACTER LIQUID CRYSTAL DISPLAY SHALL DISPLAY ALL APPLICABLE INFORMATION ASSOCIATED WITH THE RESPECTIVE SUPERVISORY CONDITION.
 3. ACTIVATE A SUPERVISORY CONTACT CLOSURE TO INTERFACE WITH THE OWNER PROVIDED CENTRAL STATION MONITORING SERVICE.
 4. DISPLAY THE SYSTEM STATUS CHANGE ON THE REMOTE ANNUNCIATOR(S).
- C. WHEN SMOKE IS DETECTED BY A SMOKE DETECTOR IN A CORRIDOR SERVED BY A MAKE-UP AIR UNIT, THE ASSOCIATED MAKE-UP AIR UNIT SHALL BE SHUT-DOWN.**
- D. WHEN SMOKE IS DETECTED BY A MULTIPLE STATION SMOKE DETECTOR WITH VISIBLE SIGNAL IN AN ADA UNIT, A SUPERVISORY TROUBLE SIGNAL SHALL BE SENT TO THE FIRE ALARM REMOTE ANNUNCIATOR PANEL.**

1 TYPICAL FIRE ALARM RISER
 NO SCALE



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

FIRE ALARM RISER	
Revisions :	Date : 4/17/2012
Drawn : DAB	
Checked : CCW	

E3.2

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

LIGHTING FIXTURE SCHEDULE																	
MARK	MANUFACTURER	FIXTURE DESCRIPTION	MODEL NUMBER	MOUNTING TYPE	MOUNTING HEIGHT (FT)	FINISH	LAMP					BALLAST (QUANTITY/TYPE)	VOLTS	WATTS	NOTES		
							QTY	TYPE	CODE	W/LAMP	CR					CT	
A	CREE	LED LOW-PROFILE PARKING STRUCTURE LUMINAIRE LISTED FOR NET LOCATIONS. PROVIDE WITH INTEGRAL OCCUPANCY SENSOR, AMBIENT LIGHT SENSOR, AND MULTI-LEVEL OUTPUT. PROVIDE WITH INTEGRAL SURGE PROTECTION. SAME AS FIXTURE 'A' EXCEPT LUMINAIRE TO BE USED AS AN EMERGENCY FIXTURE.	FK6-304-5M-DM-04-D-JL-SV-350-ML	STRUCTURE SURFACE	STRUCTURE SURFACE (APPROX. 4.5)	SILVER	40	LED				10	5100K	CLASS I LED DRIVER	120	41	2, 3
AE	CREE	SAME AS FIXTURE 'A' EXCEPT LUMINAIRE TO BE USED AS AN EMERGENCY FIXTURE.	FK6-304-5M-DM-04-D-JL-SV-350-ML	STRUCTURE SURFACE	STRUCTURE SURFACE (APPROX. 4.5)	SILVER	40	LED				10	5100K	CLASS I LED DRIVER	120	41	2, 3
B	CREE	POLE MOUNT LED FIXTURE WITH TYPE III MEDIUM DISTRIBUTION. INSTALL ON EXISTING POLE. PROVIDE WITH INTEGRAL OCCUPANCY SENSOR AND MULTI-LEVEL OUTPUT. PROVIDE WITH INTEGRAL SURGE PROTECTION.	ARE-E6D-3MB-DA-02-D-UL-BZ-100-ML-P	POLE	10	NOTE 1	20	LED				10	5100K	CLASS I LED DRIVER	120	50	1, 2
BN	CREE	WALL MOUNT LED FIXTURE WITH TYPE III MEDIUM DISTRIBUTION. PROVIDE WITH INTEGRAL OCCUPANCY SENSOR AND MULTI-LEVEL OUTPUT. PROVIDE WITH INTEGRAL SURGE PROTECTION.	SEC-ED6-3M-MM-02-UL-BZ-100 ML-P	WALL	10	NOTE 1	20	LED				10	5100K	CLASS I LED DRIVER	120	50	1, 2
C	CORELITE	DIRECT-INDIRECT LUMINAIRE WITH HIGH EFFICIENCY LOUVER AND 10% DOWNLIGHT	VM-5M-1T8-1C-UNV-SU-WA-48-DL6	WALL	7	WHITE	1	FLUOR	F32T8	32	85	3500K	(1) 1-LAMP ELECTRONIC INSTANT	120	32		
CE	CORELITE	SAME AS FIXTURE 'C' EXCEPT WITH EMERGENCY CIRCUIT.	VM-5M-1T8-1E-UNV-SU-WA-48-DL6	WALL	7	WHITE	1	FLUOR	F32T8	32	85	3500K	(1) 1-LAMP ELECTRONIC INSTANT	120	32		
C2	CORELITE	SUSPENDED DIRECT-INDIRECT LUMINAIRE WITH HIGH EFFICIENCY LOUVER AND 10% DOWNLIGHT.	VB-5M-2T8-1C-UNV-AC48-ST-DL6	STRUCTURE	7'-6"	WHITE	2	FLUOR	F32T8	32	85	3500K	(1) 2-LAMP ELECTRONIC PROGRAMMED	120	64		
D	COLUMBIA LIGHTING	2'x4' ZERO PLENUM TROFFER WITH LINEAR PRISMATIC LENS.	ZPT24-2286-L5RR-EPJ	CEILING RECESSED	CEILING	WHITE	2	FLUOR	F28T5	28	85	3500K	(1) 2-LAMP ELECTRONIC PROGRAMMED	120	56		
F	COLUMBIA LIGHTING	2'x2' ZERO PLENUM TROFFER WITH LINEAR PRISMATIC LENS.	ZPT22-2146-L5RR-EPJ	CEILING RECESSED	CEILING	WHITE	2	FLUOR	F14T5	14	85	3500K	(1) 2-LAMP ELECTRONIC PROGRAMMED	120	36		
FE	COLUMBIA LIGHTING	SAME AS FIXTURE 'F' CONNECTED TO EMERGENCY POWER CIRCUIT.	ZPT22-2146-L5RR-EPJ	CEILING RECESSED	CEILING	WHITE	2	FLUOR	F14T5	14	85	3500K	(1) 2-LAMP ELECTRONIC PROGRAMMED	120	36		
G	FORECAST	EDGE 2-LIGHT WALL FIXTURE WITH SATIN NICKEL FINISH AND WHITE RIBBED GLASS.	F350336U	WALL	ABOVE MIRROR 6'-6"	SATIN NICKEL	2	FLUOR	T5HO	34	85	2100K	ELECTRONIC	120	76	1	
H	FORECAST	2-LIGHT WALL MOUNT SCONCE WITH SATIN NICKEL FINISH AND ETCHED WHITE GLASS.	F541036U	WALL	WALL	SATIN NICKEL	2	CFL	13W QUAD 4-PIN	13	85	2100K	ELECTRONIC	120	26	1	
I	PRESCOLITE	6" DIAMETER HORIZONTAL COMPACT FLUORESCENT WITH FRESNEL LENS.	LF6CFHI-32-EB-6CFHI-FL-WT	CEILING RECESSED	CEILING	WHITE TRIM	1	CFL	32W TT	32	85	2100K	ELECTRONIC	120	32	1	
J	FORECAST	2-LIGHT CEILING FIXTURE WITH SATIN NICKEL FINISH AND WHITE ACRYLIC DIFFUSER. 18" DIAMETER.	F245T36U	STRUCTURE	SURFACE	SATIN NICKEL	2	CFL	26W QUAD 4-PIN	26	85	2100K	ELECTRONIC	120	52	1	
K	PHILLIPS	9" LED ULTRA LOW PROFILE UNDERCABINET LIGHT.	0M-4.25	UNDER CABINET		WHITE		LED				14	3000K	LED DRIVER	120	6	1
L	PRESCOLITE	6" HORIZONTAL COMPACT FLUORESCENT LENSED DOWNLIGHT.	LF6CFHI-32-EB-6CFHI-FL-B24	LAY-IN	CEILING	ALZAK	1	CFL	32W TT	32	85	3500K	ELECTRONIC	120	32	1	
L2	PRESCOLITE	8" HORIZONTAL COMPACT FLUORESCENT LENSED DOWNLIGHT.	LF8CFHI-32-EB-8CFHI-FL-B6	CEILING RECESSED	CEILING	ALZAK	1	CFL	32W TT	32	85	3500K	ELECTRONIC	120	32	1	
M	ESGO LIGHTING	8" DIAMETER WALL MOUNTED ALUMINUM CYLINDER WITH LOUVER GUARD.	CAX6-200-85-6-W	WALL	MATCH EXISTING	BRONZE	1	CFL	42W QUAD 4-PIN	42	85	3500K	ELECTRONIC	120	42	1	
N	FOCAL POINT	SURFACE MOUNTED LINEAR WALL WASH FIXTURE WITH CROSS BAFFLES.	FAVAS-RL-1T5-1C-120-9-5M-L035-WH-4'	STRUCTURE	STRUCTURE	WHITE	1	FLUOR	T5	28	85	3500K	ELECTRONIC	120	28	1	
X	COOPER LIGHTING	LED EXIT SIGN. ALUMINUM HOUSING WITH GREEN LETTERING. PROVIDE WITH MIRESAURD.	CAX6-200-85-6-W-KS10	SEE PLANS		WHITE		LED					N/A	120	38		

1) ABI-05
 ABI-05a
 ABI-11

NOTES:
 1) COORDINATE AND CONFIRM FINAL LIGHT FIXTURE FINISH WITH ARCHITECT PRIOR TO ORDERING LIGHT FIXTURE.
 2) PROVIDE CREE FIXTURE LISTED IN SCHEDULE OR APPROVED EQUAL UNDER ABI-05a AND ABI-11.

3) PROVIDE SIMPLY LEDS MODEL CL6-10-C-PP WITH INTEGRAL OCCUPANCY SENSOR FOR 360 DEGREE DETECTION COVERAGE OR APPROVED EQUAL UNDER ABI-05.



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

LIGHT FIXTURE SCHEDULE

Revisions :
 5/4/2012 - ADDENDUM #1
 Date :
 4/17/2012

Drawn : DAB
 Checked : CCW

LIGHT FIXTURE SCHEDULE

E3.3

PSU Facilities and Planning
Joseph C. Blumel Hall

Residence Hall
 RE-PIPE REMODEL

(Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

3RD FLOOR UNIT KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE		
UNIT NUMBER	REPLACE LAMP & BALLAST?	
	YES	NO
301	X	
303		X
304	X	
305		X
306		X
307	X	
308	X	
309	X	
310	X	
311	X	
312	X	
313	X	
314		X
315	X	
321		X
322		X
323	X	
324	X	
325		X
326	X	
327		X
328		X
329		X
330	X	
331		X
332		X
333		X
TOTAL:	13	14

4TH FLOOR UNIT KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE		
UNIT NUMBER	REPLACE LAMP & BALLAST?	
	YES	NO
401	X	
403		X
404		X
405		X
406	X	
407		X
408		X
409	X	
410		X
411		X
412		X
413	X	
414		X
415		X
421		X
422	X	
423		X
424		X
425		X
426	X	
427		X
428	X	
429		X
430		X
431	X	
432		X
433		X
TOTAL:	8	19

5TH FLOOR UNIT KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE		
UNIT NUMBER	REPLACE LAMP & BALLAST?	
	YES	NO
501		X
503	X	
504		X
505		X
506		X
507	X	
508		X
509		X
510		X
511		X
512	X	
513		X
514	X	
515		X
521	X	
522		X
523	X	
524		X
525		X
526		X
527	X	
528		X
529	X	
530		X
531	X	
532	X	
533		X
TOTAL:	10	17

6TH FLOOR UNIT KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE		
UNIT NUMBER	REPLACE LAMP & BALLAST?	
	YES	NO
601	X	
603	X	
604	X	
605	X	
606	X	
607		X
608		X
609		X
610		X
611	X	
612		X
613		X
614		X
615		X
621		X
622		X
623		X
624	X	
625	X	
626		X
627	X	
628		X
629		X
630	X	
631		X
632		X
633		X
TOTAL:	10	17

GENERAL NOTES:
 1) RE: SHEETS E7.6, E7.7, AND E7.8 FOR FLOOR PLANS SHOWING ADDITIONAL DETAILS ABOUT THE EXISTING KITCHEN LIGHTING FIXTURE REQUIREMENTS.

7TH FLOOR UNIT KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE		
UNIT NUMBER	REPLACE LAMP & BALLAST?	
	YES	NO
701	X	
703		X
704	X	
705	X	
706	X	
707	X	
708	X	
709	X	
710	X	
711	X	
712	X	
713	X	
714	X	
715	X	
721	X	
722	X	
723	X	
724	X	
725	X	
726	X	
727	X	
728	X	
729	X	
730	X	
731		X
732		X
733		X
TOTAL:	1	26

8TH FLOOR UNIT KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE		
UNIT NUMBER	REPLACE LAMP & BALLAST?	
	YES	NO
801	X	
803		X
804	X	
805		X
806		X
807	X	
808	X	
809	X	
810		X
811		X
812	X	
813		X
814	X	
815	X	
821	X	
822		X
823	X	
824		X
825	X	
826	X	
827	X	
828	X	
829	X	
830		X
831	X	
832	X	
833		X
TOTAL:	13	14

9TH FLOOR UNIT KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE		
UNIT NUMBER	REPLACE LAMP & BALLAST?	
	YES	NO
901		X
903		X
904	X	
905		X
906		X
907	X	
908		X
909		X
910		X
911		X
912		X
913	X	
914	X	
915		X
921		X
922		X
923	X	
924	X	
925	X	
926		X
927		X
928	X	
929		X
930		X
931	X	
932	X	
933		X
TOTAL:	10	17



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

LAMP & BALLAST REPLACEMENT SCHEDULES

Revisions : _____ Date : 4/17/2012

Drawn : DAB

Checked : CCW

LAMP & BALLAST REPLACEMENT SCHEDULES

E3.4

PSU Facilities and Planning
Joseph C. Blumel
Hall
Residence Hall
RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

16100 - BASIC ELECTRICAL REQUIREMENTS

16100.01 - DRAWINGS AND SPECIFICATIONS
THE CONTRACT DRAWINGS FOR DIVISION 16 WORK ARE IN PART SCHEMATIC, INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE THE GENERAL LAYOUT, DESIGN AND ARRANGEMENT THEREOF. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY DISCONNECT SWITCHES REQUIRED. AFTER INSTALLATION OF THE CONTROL INTERLOCK WIRING, THE CONTRACTOR SHALL VERIFY THAT EACH MOTOR LOAD HAS THE CORRECT PHASE ROTATION. THIS CONTRACTOR SHALL VERIFY THE ACTUAL WIRE SIZES AMPS FOR MECHANICAL EQUIPMENT FROM THE EQUIPMENT NAMEPLATE. ELECTRICAL INSTALLATION SHALL BE BASED ON ACTUAL REQUIRED AMPERAGES WHICH MAY VARY SOMEWHAT FROM THE WIRE AND EQUIPMENT SIZES SHOWN ON THE DRAWINGS. PROPERLY SIZED ELECTRICAL WIRING AND EQUIPMENT SHALL BE FURNISHED WITHOUT EXTRA COST TO THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL CHANGES TO BE MADE IN THE ELECTRICAL INSTALLATION DUE TO EQUIPMENT VARIANCES THAT THE IMPACT ON FEEDERS, PANELS, FUSE AND BREAKER SIZES CAN BE CHECKED PRIOR TO THE INSTALLATION.

WHERE SPECIFIC DETAILS AND DIMENSIONS FOR DIVISION 16 WORK ARE NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL TAKE MEASUREMENTS AND MAKE LAYOUTS AS REQUIRED FOR THE PROPER INSTALLATION OF THE WORK AND COORDINATION WITH ALL OTHER WORK ON THE PROJECT. IN CASE OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE SPECIFICATIONS THAT HAVE NOT BEEN CLARIFIED BY ADDENDUM PRIOR TO BIDDING, IT SHALL BE ASSUMED BY THE SIGNING OF THE CONTRACT THAT THE HIGHER COST IS INCLUDED IN THE CONTRACT PRICE.

16100.02 - WORK INCLUDED
THIS WORK SHALL INCLUDE ALL PLANT, LABOR, MATERIAL AND EQUIPMENT AS REQUIRED TO FURNISH AND INSTALL DIVISION 16 WORK INCLUDING DEMOLITION AS SHOWN ON THE DRAWINGS AND AS HEREINAFTER SPECIFIED. FURNISH AND INSTALL ALL MATERIALS, EQUIPMENT, DEVICES AND ACCESSORIES NOT SPECIFICALLY CALLED FOR BY ITEM BUT THAT ARE NECESSARY TO PROVIDE THE REQUIREMENTS IN OPERATION AND FUNCTION THAT IS ESTABLISHED BY THE DESIGN AND BY THE EQUIPMENT SPECIFIED.

WORK TO INCLUDE THE PROCUREMENT OF AND PAYMENT OF ALL PERMITS AND LICENSES REQUIRED FOR THE PERFORMANCE OF THE WORK. WORK TO INCLUDE ALL FEES AND DIRECT EXPENSES INVOLVED IN ANY INSPECTIONS REQUIRED FOR THE PROJECT. ALL SCAFFOLDS, STAGING, RUNWAYS AND EQUIPMENT REQUIRED FOR THE PERFORMANCE OF THE WORK. THE REMOVAL FROM THE PREMISES, AS IT ACCUMULATES, OF ALL DIRT AND REFUSE RESULTING IN THE PERFORMANCE OF THE WORK.

16100.03 - PROTECTION AND DUST CONTROL
THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION TO PREVENT DAMAGE TO ADJACENT AREAS, EQUIPMENT OR FURNISHINGS TO PREVENT ACCIDENTAL INJURY TO THE BUILDING OCCUPANTS AND THE PUBLIC. TO PREVENT THE SPREADING OF DUST, DIRT, DEBRIS, AND MOISTURE FROM GETTING ON OR IN THE BUILDING OCCUPANTS FURNISHINGS OR EQUIPMENT.

16100.04 - EXISTING CONDITIONS
EACH BIDDER SHALL INSPECT THE SITE AS REQUIRED FOR KNOWLEDGE OF EXISTING CONDITIONS AND FAILURE TO OBTAIN SUCH KNOWLEDGE SHALL NOT RELIEVE THE SUCCESSFUL BIDDER OF THE RESPONSIBILITY TO MEET THE EXISTING CONDITIONS IN PERFORMING THE WORK UNDER THE CONTRACT.

WHERE EXISTING POWER, LIGHTING OR CONTROL CIRCUITRY IS BROKEN BY REMOVAL OF EXISTING DEVICES, EQUIPMENT OR FIXTURES, OR BY DEMOLITION WORK, CUTTING OR REMOVAL OF EXISTING BUILDING CONSTRUCTION, AND WHERE THE EXISTING CIRCUITRY IS REQUIRED BY REMAINING DEVICES OR EQUIPMENT TO STAY IN SERVICE, THEN THE CIRCUITRY SHALL BE COMPLETED AS REQUIRED BY JOB CONDITIONS.

16100.05 - MATERIAL AND MANUFACTURE
ALL MATERIAL AND EQUIPMENT SHALL BE NEW EXCEPT AS STATED OTHERWISE. SHALL BE OF THE BEST QUALITY AND DESIGN. SHALL BE FREE FROM DEFECTS AND IMPERFECTIONS AND SHALL HAVE MARKINGS OR A NAMEPLATE IDENTIFYING THE MANUFACTURER AND PROVIDING SUFFICIENT REFERENCE TO ESTABLISH QUALITY, SIZE AND CAPACITY.

16100.06 - SUBSTITUTIONS
ALL PRODUCTS PROPOSED FOR USE, INCLUDING THOSE SPECIFIED BY REQUIRED ATTRIBUTES AND PERFORMANCE, SHALL REQUIRE APPROVAL BY THE ENGINEER BEFORE BEING INCORPORATED INTO THE WORK.

WHERE THE PHRASE "OR EQUAL" OR "APPROVED EQUAL" OCCURS IN THE CONTRACT DOCUMENTS, DO NOT ASSUME THAT MATERIALS, EQUIPMENT OR METHODS WILL BE APPROVED AS EQUAL UNLESS THE ITEM HAS BEEN SPECIFICALLY APPROVED FOR THIS WORK BY THE ENGINEER/ARCHITECT.

16100.07 - SAFETY REGULATIONS
ALL DIVISION 16 WORK SHALL BE PERFORMED IN COMPLIANCE WITH ALL APPLICABLE AND GOVERNING SAFETY REGULATIONS OF THE OCCUPATIONAL AND SAFETY HEALTH ACT.

16100.08 - CODES, ORDINANCES, REGULATIONS AND UL APPROVAL
ALL DIVISION 16 WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE CODES, ORDINANCES AND REGULATIONS INCLUDING THE CURRENT RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE, THE NATIONAL FIRE PROTECTION ASSOCIATION, OSHA AND ALL STATE AND LOCAL LAWS, CODES AND ORDINANCES.

FIXTURES, APPLIANCES, EQUIPMENT AND MATERIALS WHICH ARE SUBJECT TO UNDERWRITERS LABORATORY TESTS SHALL BEAR SUCH APPROVAL.

16100.09 - OPENINGS IN FIRE RATED ASSEMBLIES
WHERE OPENINGS ARE MADE, OR LEFT DUE TO CONSTRUCTION THROUGH FIRE RATED ASSEMBLIES FOR CONDUIT OR NIPPLES, FOR SLEEVES CONTAINING CABLE OR WIRE, AND OPEN CONDUITS THROUGH FIRE RATED ASSEMBLIES THE AREA AROUND THE OPENINGS, SLEEVES AND CONDUITS SHALL BE FILLED WITH CHASE TECHNOLOGY CORP. #C7CF-255 OR DON CORNINGS #3-6548 RTV SILICONE OR APPROVED EQUAL, FIRE RESISTANT FOAM SEALANT AS APPROVED BY THE AUTHORITY HAVING JURISDICTION

16100.10 - ROOF PENETRATIONS
ALL OPENINGS IN THE ROOF FOR ELECTRICAL CONDUITS SHALL BE MADE WEATHER AND WATER TIGHT USING "STONEMAN" MULTI-FLASH OR VERSA-FLASH SEAMLESS FLASHING ASSEMBLY FOR CONDUIT THROUGH 2" DIAMETER. CONDUIT SIZES OVER 2" DIAMETER SHALL HAVE PITCH POCKETS FILLED WITH PITCH AND GALVANIZED DRIP SHIELD INSTALLED AROUND CONDUITS. THE DRIP SHIELD SHALL COMPLETELY COVER THE PITCH POCKET.

16100.11 - EXCAVATION AND BACK FILLING
NOT USED ON THIS PROJECT.

16100.12 - SHOP DRAWINGS AND SAMPLES
SUBMIT FOR APPROVAL SIX (6) SETS OF MANUFACTURER'S SHOP DRAWINGS OF ALL MAJOR ITEMS OF EQUIPMENT AND ALL ITEMS REQUIRING COORDINATION BETWEEN CONTRACTORS. ACCEPTANCE OF THE WORK SHALL BE SUBJECT TO THE ENGINEERS/ARCHITECTS APPROVAL OF SHOP DRAWINGS, PRODUCT DATA AND SAMPLES. SHOP DRAWINGS SHALL INCLUDE MANUFACTURERS DETAIL DRAWINGS OF EQUIPMENT AND MATERIAL AND CONTRACTORS SHOP DETAILS FOR INSTALLATION OF MATERIAL AND EQUIPMENT. DESCRIPTIVE LITERATURE SHALL INCLUDE CATALOG DATA COVERING DESIGN, SIZE AND CAPACITY OF MATERIAL AND EQUIPMENT. SUBMITTALS SHALL INCLUDE THE MANUFACTURERS MODEL NUMBER, CAPACITY, PERFORMANCE DATA, ELECTRICAL CHARACTERISTICS, ETC., ALL CLEARLY SHOWN AND MARKED FOR THE SPECIFIC ITEM OF EQUIPMENT BEING FURNISHED ON THIS PROJECT.

16100.13 - RECORD DRAWINGS
THE CONTRACTOR SHALL KEEP DAY-TO-DAY RECORD OF ALL CHANGES OR VARIATIONS MADE FROM THE CONTRACT DOCUMENTS AND AT THE END OF THE PROJECT SHALL PROVIDE TO THE OWNER/ARCHITECT/ENGINEER WITH REPRODUCIBLE SETS AS REQUESTED.

16100 - BASIC ELECTRICAL REQUIREMENTS (CONT)

16100.14 - WIRING OF MECHANICAL EQUIPMENT
FURNISH AND INSTALL ALL POWER WIRING, AND ALL CONTROL AND INTERLOCK WIRING OF ALL UNITS, PUMPS, FANS, WATER HEATERS, ETC. CONNECT PER MANUFACTURERS WIRING DIAGRAMS. FURNISH AND INSTALL ALL NECESSARY DISCONNECT SWITCHES REQUIRED. AFTER INSTALLATION OF THE CONTROL INTERLOCK WIRING, THE CONTRACTOR SHALL VERIFY THAT EACH MOTOR LOAD HAS THE CORRECT PHASE ROTATION. THIS CONTRACTOR SHALL VERIFY THE ACTUAL WIRE SIZES AMPS FOR MECHANICAL EQUIPMENT FROM THE EQUIPMENT NAMEPLATE. ELECTRICAL INSTALLATION SHALL BE BASED ON ACTUAL REQUIRED AMPERAGES WHICH MAY VARY SOMEWHAT FROM THE WIRE AND EQUIPMENT SIZES SHOWN ON THE DRAWINGS. PROPERLY SIZED ELECTRICAL WIRING AND EQUIPMENT SHALL BE FURNISHED WITHOUT EXTRA COST TO THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL CHANGES TO BE MADE IN THE ELECTRICAL INSTALLATION DUE TO EQUIPMENT VARIANCES THAT THE IMPACT ON FEEDERS, PANELS, FUSE AND BREAKER SIZES CAN BE CHECKED PRIOR TO THE INSTALLATION.

16100.15 - WIRING OF THERMOSTATS AND TEMPERATURE CONTROLS
FURNISH AND INSTALL ALL POWER WIRING, AND ALL CONTROL AND INTERLOCK WIRING OF ALL THERMOSTATS AND TEMPERATURE CONTROL DEVICES INCLUDING NIGHTSTATS, TIME SWITCHES, OVERRIDE TIMERS, ETC. SEE MECHANICAL DRAWINGS FOR LOCATIONS AND TEMPERATURE CONTROL DIAGRAMS.

16100.16 - TELEPHONE SYSTEM PROVISIONS
NOT REQUIRED.

16100.17 - DATA SYSTEM PROVISIONS
NOT REQUIRED.

16100.18 - ADJUSTING ALIGNING AND TESTING
ALL ELECTRICAL EQUIPMENT ON THIS PROJECT FURNISHED UNDER THIS DIVISION AND ALL ELECTRICAL EQUIPMENT FURNISHED BY OTHERS SHALL BE ADJUSTED, ALIGNED AND TESTED FOR PROPER OPERATION BY THE ELECTRICAL CONTRACTOR. COMPLETE WIRING CIRCUITS SHALL BE FREE FROM SHORT CIRCUITS. ALL MOTORS SHALL BE VERIFIED FOR PROPER PHASE ROTATION. THE CONTRACTOR SHALL PROVIDE TEST DATA READINGS AS REQUESTED OR AS NOTED. THE CONTRACTOR SHALL HAVE THE FOLLOWING READILY ACCESSIBLE AT ALL TIMES DURING THIS PROJECT. A TRUE RMS READING VOLTMETER, A TRUE RMS READING AMMETER, AND A MEGGER INSULATION RESISTANCE METER.

16100.19 - OPERATION AND MAINTENANCE INSTRUCTIONS
SUBMIT TO THE ARCHITECT THREE COPIES EACH OF MATERIAL FOR MAINTENANCE AND OPERATION INSTRUCTION MANUALS, APPROPRIATELY BOUND INTO MANUAL FORM INCLUDING APPROVED COPIES OF THE FOLLOWING, REVISED IF NECESSARY TO SHOW SYSTEM AND EQUIPMENT AS ACTUALLY INSTALLED: MANUFACTURER'S CATALOG SHEETS, WIRING DIAGRAMS, MAINTENANCE INSTRUCTIONS, OPERATING INSTRUCTIONS, PARTS LIST. CONTRACTOR SHALL ALSO PROVIDE ADEQUATE VERBAL INSTRUCTIONS OF SYSTEM OPERATION TO OWNER'S REPRESENTATIVE AT THE TERMINATION OF THE WORK.

16100.20 - STARTUP OF SYSTEMS
PRIOR TO STARTUP OF THE ELECTRICAL SYSTEMS, THE CONTRACTOR SHALL CHECK ALL COMPONENTS AND BOLTED CONNECTIONS ACCORDINGLY, AND TIGHTEN ALL SCREWED AND BOLTED CONNECTIONS. ADJUST TAPS ON EACH TRANSFORMER FOR RATED SECONDARY VOLTAGE. CHECK SERVICE ENTRANCE VOLTAGE, GROUNDING CONDITIONS, GROUNDING RESISTANCE AND PROPER PHASING. BALANCE SINGLE PHASE LOADS AT EACH PANELBOARD AND REDISTRIBUTING BRANCH CIRCUIT CONNECTIONS UNTIL BALANCE IS ACHIEVED. AFTER ALL SYSTEMS HAVE BEEN INSPECTED AND ADJUSTED, CONFIRM ALL OPERATING FEATURES REQUIRED BY THE DRAWINGS AND SPECIFICATIONS AND MAKE FINAL ADJUSTMENTS AS NECESSARY.

16100.21 - GUARANTEE
GUARANTEE AGAINST WORKMANSHIP AND MATERIAL. FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL PAYMENT. GUARANTEE SHALL INCLUDE MATERIAL TO BE REPLACED AND ALL LABOR REQUIRED.

1604 - ELECTRICAL IDENTIFICATION

1604.01 - DESCRIPTION OF WORK
PROVIDE AND INSTALL REQUIRED IDENTIFICATION FOR THE SYSTEMS AND EQUIPMENT SHOWN ON THE DRAWINGS AND/OR SPECIFIED. FOR NEW DISCONNECTS, RECEPTACLES AND EQUIPMENT PROVIDE EQUIPMENT LABEL SHOWING EQUIPMENT TAG, PANEL SERVED BY AND CIRCUIT NUMBER(S).

CABLE/CONDUCTOR IDENTIFICATION BANDS: MANUFACTURERS STANDARD VINYL SELF-ADHESIVE SELF LAMINATING CABLE/CONDUCTOR MARKERS, WRAP AROUND TYPE; PRE-NUMBERED PLASTIC COATED, OR WRITE-ON TYPE WITH CLEAR PLASTIC SELF-ADHESIVE COVER FLAP; LETTERING TO SHOW CIRCUIT IDENTIFICATION. SIMILAR TO PANDUIT "INSTACODE" OR ACCEPTED EQUIVALENT BY T4B OR TYTON. IDENTIFY CABLES/CONDUCTORS PER NEC.

SELF-ADHESIVE PLASTIC SIGNS: MANUFACTURERS STANDARD SELF ADHESIVE, PRE-PRINTED, FLEXIBLE VINYL SIGNS FOR OPERATIONAL INSTRUCTIONS OR MARKINGS.

ANGER SIGNS: MANUFACTURERS STANDARD "DANGER" SIGNS, BAKED ENAMEL FINISH ON 20 GAUGE STEEL; STANDARD RED, BLACK AND WHITE GRAPHICS.

1610 - RACEWAYS

1610.01 - DESCRIPTION OF WORK
INSTALLATION OF RACEWAY SYSTEMS FOR ALL WORK IN DIVISION 16 INCLUDING REQUIRED FITTINGS AND SUPPORTS.

ALL CONDUCTORS SHALL BE INSTALLED IN METALLIC CONDUIT UNLESS SPECIFIED.

1610.02 - PRODUCTS
ALL CONDUIT SHALL BE ELECTRICAL METALLIC TUBING (EMT), EXCEPT CONDUIT LARGER THAN 4" DIAMETER, CONDUIT OUTDOORS OR IN WET OR DAMP LOCATIONS, OR IN NEC CLASSIFIED HAZARDOUS LOCATIONS, CONDUIT IN EARTH OR BELOW GRADE, AND EXCEPT AS OTHERWISE NOTED ON THE DRAWINGS OR SPECIFIED OTHERWISE.

ELECTRICAL METALLIC TUBING TO BE THREE-LEADLESS, STEEL TYPE CONFORMING TO ANSI STANDARD C80.3, NEC 348, AND UL 391, GALVANIZED INSIDE AND OUT.

ALL EMT FITTINGS TO BE COMPRESSION TYPE UNLESS OTHERWISE NOTED.

ALL EXTERIOR CONDUIT SHALL BE RIGID.

SHORT SECTIONS OF FLEXIBLE CONDUIT (GREENFIELD) SHALL BE USED FROM JUNCTION OR OUTLET BOXES TO LIGHTING FIXTURES AS PERMITTED BY THE NATIONAL ELECTRICAL CODE. CONNECTIONS FROM OUTLET BOXES ABOVE CEILINGS TO FLUORESCENT FIXTURES RECESSED IN CEILING SHALL BE MADE WITH FLEXIBLE METALLIC STEEL CONDUIT NOT TO EXCEED 6 FEET IN LENGTH. FINAL CONNECTIONS TO MOTORS, TRANSFORMERS, AND TO ANY PIECE OF EQUIPMENT THAT WILL TRANSMIT MOTION, NOISE OR VIBRATION, SHALL BE FLEXIBLE METAL CONDUIT. FLEXIBLE CONDUIT SHALL NOT BE INSTALLED OUTDOORS OR IN DAMP LOCATIONS.

LIQUID TIGHT FLEXIBLE STEEL CONDUIT SHALL BE USED WHEN MAKING CONNECTIONS IN THE FOLLOWING CONDITIONS: EXPOSED TO LIQUIDS, EXPOSED TO VAPORS, EXPOSED TO SUNLIGHT.

1610.03 - INSTALLATION
CONDUITS SHALL BE RUN PARALLEL AND PERPENDICULAR TO BUILDING LINES AND SHALL BE RUN AGAINST THE STRUCTURE IN A NEAT WORKMANLIKE MANNER.

1610 - RACEWAYS (CONT)

CONDUIT SHALL BE INSTALLED CONCEALED ABOVE SUSPENDED CEILINGS OR CONCEALED IN WALLS OR FLOORS WHEREVER POSSIBLE. CONDUIT SHALL BE INSTALLED TO CLEAR ALL OPENINGS, DEPRESSIONS, PIPES, DUCTS, REINFORCING STEEL, ETC. ALL CONDUIT SHALL BE RUN CONTINUOUS. CONDUIT SHALL BE RUN CONTINUOUS BETWEEN CONNECTIONS TO OUTLET BOXES AND CABINETS WITH MINIMUM POSSIBLE NUMBER OF BENDS. RADIUS OF BENDS SHALL BE AS LONG AS POSSIBLE AND NEVER SHORTER THAN THE CORRESPONDING TRADE ELBOW. LONG RADIUS ELBOWS SHALL BE USED WHERE NECESSARY. CONDUITS SHALL BE SECURELY FASTENED IN PLACE WITH APPROVED STRAPS, HANGERS AND STEEL SUPPORTS AS REQUIRED. SINGLE CONDUITS FOR FEEDERS SHALL BE HUNG WITH MALLEABLE SPLIT RING HANGERS WITH RGD AND TURNBUCKLE SUSPENSION FROM INSERTS SPACED NOT OVER 10 FEET APART FROM CONSTRUCTION ABOVE. GROUPS OF HORIZONTAL FEEDER CONDUITS SHALL BE CLAMPED TO UNISTRUT STEEL CHANNELS AND SUSPENDED FROM INSERTS NOT SPACED OVER 10 FEET APART IN CONSTRUCTION ABOVE. HORIZONTAL FEEDER CONDUITS SHALL BE CLAMPED TO STRUCTURAL STEEL MEMBERS ATTACHED TO THE STRUCTURE. CABLE CLAMPS SHALL BE INSTALLED FOR SUPPORT OF VERTICAL FEEDERS WHERE REQUIRED. CONDUIT SUPPORTS SHALL BE ADDED WITHIN 12" AT ONE END OF ALL BENDS. CONDUIT SHALL NOT BE SUSPENDED FROM SUSPENDED CEILING COMPONENTS.

CONDUIT ENDS SHALL BE GEMED BEFORE INSTALLATION AND ALL CONDUIT SHALL BE THOROUGHLY CLEANED BEFORE INSTALLATION AND KEPT CLEAN AFTER INSTALLATION. PLUS CONDUIT AND BOXES AS REQUIRED DURING CONSTRUCTION TO KEEP CONDUIT CLEAN.

CONDUIT SHALL BE OF AMPLE SIZE TO PULL CONDUCTORS AND NOT SMALLER THAN THE CODE REQUIRED. MINIMUM SIZE CONDUIT SHALL BE 1/2" FOR THIS PROJECT.

WHERE BUILDING EXPANSION JOINTS ARE SHOWN ON THE DRAWINGS PROVIDE PROPER CONDUIT EXPANSION FITTING.

INSTALL A PULL WIRE IN EACH EMPTY CONDUIT WHICH IS LEFT BY THE CONTRACTOR.

ALL CONDUITS AND/OR SURFACE RACEWAYS SHALL BE PAINTED WHERE INSTALLED EXPOSED IN FINISHED SPACES. PAINTING OF SURFACE RACEWAYS SHALL BE AS DIRECTED BY THE ENGINEER/ARCHITECT.

16100 - CONDUCTORS (LOW VOLTAGE, 600 VOLTS)

16100.01 - DESCRIPTION OF WORK
FURNISH AND INSTALL 600 VOLT CONDUCTORS AND ASSOCIATED SPLICES, CONNECTORS AND TERMINATIONS FOR LIGHTING, POWER AND AUXILIARY SYSTEMS AS SHOWN ON THE CONTRACT DOCUMENTS.

16100.02 - MATERIAL
98% CONDUCTIVITY COPPER. NEG TYPE THINWTHN (90 C DRY/75 C WET) WITH UL LABEL. ALL CONDUCTORS TO BE IN CONDUIT.

SINGLE CONDUCTOR, STRANDED (ALL SIZES), SOFT ANNEALED COPPER CONDUCTORS WITH 600 VOLT THERMOPLASTIC INSULATION AND NYLON JACKET.

WIRE SMALLER THAN #12 GAUGE SHALL NOT BE USED UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS OR IN THESE SPECIFICATIONS.

WIRE INSULATION SHALL BE COLOR COATED AS FOLLOWS OR PER LOCAL ORDINANCES:
120/240V - A-BLACK, B-RED, C-ORANGE, NEUTRAL-WHITE, G-GREEN
120/208V - A-BLACK, B-RED, C-BLUE, NEUTRAL-WHITE, G-GREEN
277/480V - A-BROWN, B-ORANGE, C-YELLOW, NEUTRAL-GRAY, G-GREEN

BLACK INSULATION IS ACCEPTABLE FOR #8 WIRE AND LARGER. CONDUCTOR ENDS SHALL BE WRAPPED WITH COLORED TAPE AS INDICATED ABOVE.

IF NO WIRE SIZE IS INDICATED ON THE DRAWINGS FOR A BRANCH CIRCUIT, PROVIDE #12 AWG WIRE AND A 20A CIRCUIT BREAKER. CONTROL WIRING SHALL HAVE 600V INSULATION AND BE OF THE PROPER TYPE, SIZE AND NUMBER REQUIRED TO ACCOMPLISH SPECIFIED FUNCTION.

16100.03 - INSTALLATION
ALL WIRING SHALL BE INSTALLED IN APPROVED RACEWAYS OR ENCLOSURES. WIRE IN CONDUIT SHALL RAN CONTINUOUS WITHOUT SPICES OR TAPS. ALL SPLICES OR TAPS SHALL OCCUR IN APPROVED BOXES AND ENCLOSURES AND SHALL BE KEPT TO A MINIMUM, AND SHALL BE MADE WITH APPROVED SOLDERLESS CONNECTIONS. ALL SPLICES, TAPS AND JOINTS SHALL BE INSULATED PER THE NATIONAL ELECTRICAL CODE. ALL MATERIALS USED TO TERMINATE, SPLICE OR TAP CONDUCTORS SHALL BE DESIGNED FOR PROPER SIZE FOR, AND UL LISTED FOR THE SPECIFIC APPLICATION AND CONDUCTORS INVOLVED, AND SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, USING THE MANUFACTURER'S RECOMMENDED TOOLS.

WHERE WIRE IS TO BE INSTALLED, BUT THE CONNECTION IS INDICATED "FUTURE" OR "BY OTHERS", THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 3 FEET OF "FUTURAL" AT THE BOX. TAPE ALL CONDUCTOR ENDS AND COVER THE BOX.

VOLTAGE DROP IN BRANCH CIRCUITS SHALL NOT EXCEED 2%. ALL BRANCH CIRCUITS SHALL HAVE EQUIPMENT GROUNDING CONDUCTORS AND SHALL BE SIZED PER NEC TABLE 250-45.

16100 - OUTLET BOXES, JUNCTION BOXES AND WIRING BODIES/GUTTERS (CONT)

16100.01 - DESCRIPTION OF WORK
FURNISH AND INSTALL OUTLET BOXES, FLOOR BOXES, PULL BOXES, JUNCTION BOXES AND WIRING FIXTURES AS SHOWN ON THE CONTRACT DOCUMENTS OR AS REQUIRED.

16100.02 - OUTLET/JUNCTION BOXES
PROVIDE WIRING DEVICES, FIXTURES AND SPECIAL SYSTEM DEVICES WITH OUTLET BOX. USE GALVANIZED STEEL BOXES CONFORMING TO UL STANDARD 514A FOR CONCEALED AND EXPOSED DRY LOCATIONS. ALL BOXES SHALL HAVE MATCHING COVER PLATES.

USE 1/8" THICK STEEL BOXES AND COVERS OF FORM AND DIMENSION ADAPTED TO ITS SPECIFIC USE AND LOCATION, KIND OF FIXTURE OR DEVICE TO BE USED AND NUMBER, SIZE AND ARRANGEMENT OF CONNECTION CONDUITS AND NUMBER OF WIRES IN OUTLET, ALL IN ACCORDANCE WITH THE NEC. ALL BOXES SHALL BE SET IN WALLS, COLUMNS, FLOORS, OR CEILINGS SO AS TO BE FLUSH WITH THE FINISHED SURFACE AND BE ACCURATELY SET AND RIGIDLY SECURED IN POSITION. PROVIDE PLASTER RINGS, EXTENSION RINGS AND MASONRY RINGS AS REQUIRED FOR FLUSH MOUNTING.

MANUFACTURERS: NATIONAL ELECTRICAL, APPLETON, STEEL CITY OR RAGO

16100.03 - LARGE PULL BOXES
FURNISH PULL, TAP AND CABLE SUPPORT BOXES REQUIRED BY THE NEC FOR EXCESSIVE NUMBER OF 90 DEGREE CONDUIT BENDS, CONDUIT TAPS AND CABLE SUPPORTS.

BOX CONSTRUCTION PER NEC AND CONFORMING TO UL STANDARD #50. BOX TO BE MANUFACTURED WITH MINIMUM 12 GAUGE GALVANIZED STEEL.

PROVIDE SEPARATE PULL BOX FOR EACH FEEDER.

BOXES LOCATED IN DAMP OR WET LOCATIONS SHALL BE WELDED CONSTRUCTION AND FINISHED WHITE INSIDE AND GRAY OUTSIDE WITH WATERPROOF PAINT. PROVIDE GASKETED DOOR AND CORNERS. PROVIDE RAIN DRIP SHIELDS. BOXES SHALL CARRY NEMA 3R (WEATHERPROOF) OR NEMA 4 (WATERTIGHT) LABELS AS SPECIFIED.

ACCEPTABLE MANUFACTURERS: HOFFMAN, KEYSTONE, BURNS

16100 - OUTLET BOXES, JUNCTION BOXES AND WIRING BODIES/GUTTERS (CONT)

CONDUIT BODIES SHALL BE INSTALLED TO PROVIDE EASE OF CONDUCTORS AND TO PROVIDE NEAT APPEARANCE TO CONDUIT INSTALLATION, AND AS SHOWN ON THE DRAWINGS. CONDUIT BODIES SHALL BE CONSTRUCTED OF MALLEABLE IRON OR COPPER FREE ALUMINUM CASTINGS. BODIES SHALL BE FINISHED WITH STANDARD DURABLE, EXTERIOR COATINGS OF MANUFACTURER SPECIFIED. PROVIDE ROLLERS IN TYPE 'C' AND TYPE 'LB' BODIES, 1-1/4" SIZE AND LARGER. PROVIDE GASKETED PLATED STEEL OR MALLEABLE IRON COVERS.

ACCEPTABLE MANUFACTURERS: CROUSE-HINDS, KILLARK, APPLETON

16100.05 - GUTTERS (WIREWAYS)
8"X8" AND SMALLER - USE STANDARD ASSEMBLY CONSISTING OF CODE GAUGE GALVANIZED OR PAINTED STEEL AND COMBINATION HINGED/SCREENED COVERS.

ACCEPTABLE MANUFACTURERS - SQUARE-D, GENERAL ELECTRIC, WALKER ELECTRIC, B+C STAMPING CO.

16100.06 - SURFACE METAL RACEWAYS
WHERE INDICATED ON THE DRAWINGS, WIRING SHALL BE RUN IN EXPOSED METAL RACEWAYS COMPLETE WITH OUTLET BOXES AND FITTINGS. ALL CIRCUITS RUN IN SURFACE METAL RACEWAYS SHALL HAVE GROUND CONDUCTOR WITH GREEN INSULATION SIZED PER NEC, BUT NOT SMALLER THAN #12 AWG SCREEN CONNECTED TO EACH OUTLET BOX.

ACCEPTABLE MANUFACTURERS - WIREMOLD, PANDUIT

16104 - PANELBOARDS

16104.01 - DESCRIPTION OF WORK
PROVIDE AND INSTALL LIGHTING AND POWER PANEL BOARDS, RATED FOR 600 VOLTS OR LESS, AS SPECIFIED HEREIN AND AS SHOWN OR INDICATED ON THE DRAWINGS AND SCHEDULES.

16104.02 - SUBMITTALS
PROVIDE SHOP DRAWINGS FOR EACH PANELBOARD. INCLUDE INDIVIDUAL DIAGRAM OF EACH PANELBOARD SHOWING ALL SPECIFIED REQUIREMENTS. IN ADDITION, SUBMITTALS SHALL INDICATE OVERALL PANELBOARD DIMENSIONS, INTERIOR DIMENSIONS, BUS CONFIGURATION, WIRE GUTTER DIMENSIONS, SHORT CIRCUIT RATING PANELBOARD AND OVERCURRENT DEVICES.

16104.03 - STANDARDS
INSTALL PANELBOARDS IN ACCORDANCE WITH THE LATEST ADDITION OF THE FOLLOWING STANDARDS:
UL STANDARDS NO. 50, 61, 88, 484, AND 443
NEMA PUBLICATION PF-1
NEC ARTICLE 384

16104.04 - BASIC PANELBOARD CONSTRUCTION
PANELBOARDS TO BE SAME MANUFACTURER AS OTHER DISTRIBUTION EQUIPMENT

PANELBOARDS, BUSSES AND OVERCURRENT DEVICE SHALL HAVE INTEGRATED EQUIPMENT FAULT RATINGS EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT.

BUSSES SHALL BE 98% CONDUCTIVITY COPPER SIZED TO NEC AND NEMA STANDARDS.

NEUTRAL BUSES SHALL BE COPPER AND SIZED FOR 100% ON THE SAME BASIS AS PHASE BUSES AS DESCRIBED AND INSULATED FROM THE CABINET.

PROVIDE 100% CAPACITY CONTINUOUS COPPER GROUND BUS IN EACH PANEL CABINET. GROUND BUSES SHALL BE BOLTED TO THE CABINET UNLESS SPECIFIED TO BE ISOLATED

FURNISH PANELBOARDS WITH VOLTAGE, CURRENT, SHORT CIRCUIT RATING, SIZE AND MOUNTING AS INDICATED ON THE DRAWINGS AND SCHEDULES. IF THE DRAWINGS DO NOT STATE THE INTERRUPT RATING IT SHALL BE 100,000AIC.

16104.05 - POWER DISTRIBUTION PANELBOARDS (1200A AND SMALLER)
NOT USED ON THIS PROJECT.

16104.06 - LIGHTING AND APPLIANCE PANELBOARDS
LIGHTING AND APPLIANCE PANELBOARDS SHALL BE SQUARE-D TYPE NOOD OR NEHB OR APPROVED EQUAL. PANELBOARDS SHALL BE DESIGNED AS SHOWN ON THE DRAWINGS. NUMBER AND SIZE OF CIRCUIT BREAKERS IN EACH PANELBOARD SHALL BE AS SCHEDULED ON THE DRAWINGS.

BREAKERS SHALL BE THERMAL MAGNETIC TYPE, QUICK MAKE, QUICK BREAK, ENCLOSURE COMPENSATED, OF SINGLE CONSTRUCTION, TWO OR THREE POLE BREAKERS, WHERE CALLED FOR, SHALL BE SINGLE UNIT COMMON TRIP. BREAKERS SHALL BE BOLT-ON TYPE.

CABINETS SHALL BE CONSTRUCTED OF ONE PIECE CODE GAUGE GALVANIZED STEEL THE MOUNTING STUDS AND KNOCKOUTS FOR CONDUIT CONNECTIONS AS REQUIRED. FRONTS SHALL BE ONE PIECE ON CODE GAUGE FINITURE STEEL WITH ADJUSTABLE FASTENERS AND RECESSED DOORS FITTED WITH CONCEALED HINGES, FLUSH CATCH AND LOCK. CABINETS SHALL BE SURFACE OR FLUSH MOUNTED AS INDICATED ON THE DRAWINGS. ALL FRONTS AND ALL SURFACE MOUNTED CABINETS SHALL HAVE RUSTPROOF PRIME COAT AND 2 FINISHED COATED OF ENAMEL OR LAQUER.

ALL BRANCH CIRCUITS TO PANELBOARDS SHALL BE CONNECTED IN A MANNER SO THAT LOADS ARE BALANCED OVER EACH PHASE AS EQUALLY AS POSSIBLE. THE BACK DOOR SHALL BE FITTED WITH A GLASS OR PLASTIC COVERED TYPEWRITTEN SCHEDULE IDENTIFYING ALL BRANCH CIRCUITS.

BREAKERS USED AS SWITCHES FOR 120 OR 277 VOLT CIRCUITS SHALL BE APPROVED FOR THE PURPOSE AND AND MARKED '5MB'.

BREAKERS USED FOR PROTECTION OF HVAC EQUIPMENT SHALL BE HACR TYPE.

BREAKERS SERVING DWELLING UNITS SHALL BE ARC FAULT TYPE WHERE REQUIRED BY THE NEC.

16104-07 - IDENTIFICATION
PERMANENTLY ATTACH NAMEPLATES AND CIRCUIT NUMBERS TO EACH PANEL.

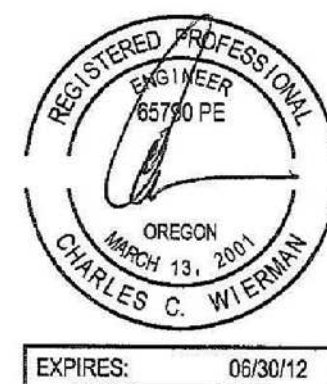
PROVIDE EACH PANELBOARD WITH NAMEPLATE SHOWING PANEL DESIGNATION, VOLTAGE RATING AND PHASE.

LABEL SHALL BE ENGRAVED LAMINATED-PLASTIC NAMEPLATE. NAMEPLATES SHALL BE BLACK WITH 1/4" HIGH WHITE LETTERS UNLESS OTHERWISE SPECIFIED.

16104.08 - ACCEPTABLE MANUFACTURERS
SQUARE-D
SIEMENS
CUTLER-HAMMER
GENERAL ELECTRIC

16104.09 - INSTALLATION
MOUNT PANELBOARDS SECURELY TO BUILDING STRUCTURE WITH 3/8" MINIMUM DIAMETER GALVANIZED BOLTS AND INSERTS NUMBERED AS REQUIRED FOR THE SIZE OF THE PANEL, BUT NOT LESS THAN 4. MOUNT PANELBOARDS WITH CENTERLINE 4'-6" APPROXIMATELY ABOVE FINISHED FLOOR WITH THE TOP A MAXIMUM OF 74" AFF. WHERE PANELS OF DIFFERENT HEIGHTS ARE MOUNTED ADJACENT, INSTALL THE TOP PANEL TRIM AT THE SAME HEIGHT ABOVE THE FLOOR. CLOSE ALL UNUSED OPENINGS.

PANELBOARDS INSTALLED IN ADA DWELLING UNITS SHALL BE MOUNTED SO THAT THE HIGHEST CIRCUIT BREAKER IS NO HIGHER THAN 48" AFF.



InSite Group, Inc.
Consulting Engineers
310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
Portland, OR 97204 Fax: (503) 222-5924

ELECTRICAL SPECIFICATIONS

Revisions :	Date : 4/17/2012
Drawn : DAB	
Checked : CCW	

ELECTRICAL SPECIFICATIONS

E3.5

PSU Facilities and Planning
**Joseph C. Blumel
Hall**
Residence Hall
RE-PIPE REMODEL
(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

16184 - PANELBOARDS

16184.01 - DESCRIPTION OF WORK
PROVIDE AND INSTALL LIGHTING AND POWER PANEL BOARDS, RATED FOR 600 VOLTS OR LESS, AS SPECIFIED HEREIN AND AS SHOWN OR INDICATED ON THE DRAWINGS AND SCHEDULES.

16184.02 - SUBMITTALS
PROVIDE SHOP DRAWINGS FOR EACH PANELBOARD. INCLUDE INDIVIDUAL DIAGRAM OF EACH PANELBOARD SHOWING ALL SPECIFIED REQUIREMENTS. IN ADDITION, SUBMITTALS SHALL INDICATE OVERALL PANELBOARD DIMENSIONS, INTERIOR DIMENSIONS, BUS CONFIGURATION, WIRE GUTTER DIMENSIONS, SHORT CIRCUIT RATINGS, PANELBOARD AND OVERCURRENT DEVICES.

16184.03 - STANDARDS
CONSTRUCT PANELBOARDS IN ACCORDANCE WITH THE LATEST ADDITION OF THE FOLLOWING STANDARDS:
UL STANDARDS NO. 50, 61, 98, 484, AND 493
NEMA PUBLICATION PB-1
NEC ARTICLE 384

16184.04 - BASIC PANELBOARD CONSTRUCTION
PANELBOARDS TO BE SAME MANUFACTURER AS OTHER DISTRIBUTION EQUIPMENT

PANELBOARDS, BUSES AND OVERCURRENT DEVICE SHALL HAVE INTEGRATED EQUIPMENT FAULT RATING EQUAL TO OR GREATER THAN THE AVAILABLE FAULT CURRENT.

BUSES SHALL BE 98% CONDUCTIVITY COPPER SIZED TO NEC AND NEMA STANDARDS.

NEUTRAL BUSES SHALL BE COPPER AND SIZED FOR 100% ON THE SAME BASIS AS PHASE BUSES AS DESCRIBED AND INSULATED FROM THE CABINET.

PROVIDE 100% CAPACITY CONTINUOUS COPPER GROUND BUS IN EACH PANEL CABINET. GROUND BUSES SHALL BE BOLTED TO THE CABINET UNLESS SPECIFIED TO BE ISOLATED

FURNISH PANELBOARDS WITH VOLTAGE, CURRENT, SHORT CIRCUIT RATINGS, SIZE AND MOUNTING AS INDICATED ON THE DRAWINGS AND SCHEDULES. IF THE DRAWINGS DO NOT STATE THE INTERRUPT RATING IT SHALL BE 100,000AIC.

16184.05 - POWER DISTRIBUTION PANELBOARDS (1200A AND SMALLER)
NOT USED ON THIS PROJECT.

16184.06 - LIGHTING AND APPLIANCE PANELBOARDS
LIGHTING AND APPLIANCE PANELBOARDS SHALL BE SQUARE-D TYPE NOOD OR NEHB OR APPROVED EQUAL. PANELBOARDS SHALL BE DESIGNED AS SHOWN ON THE DRAWINGS. NUMBER AND SIZE OF CIRCUIT BREAKERS IN EACH PANELBOARD SHALL BE AS SCHEDULED ON THE DRAWINGS.

BREAKERS SHALL BE THERMAL MAGNETIC TYPE, QUICK MAKE, QUICK BREAK, ENCLOSURE COMPENSATED, OF SINGLE CONSTRUCTION. TWO OR THREE POLE BREAKERS, WHERE CALLED FOR, SHALL BE SINGLE UNIT COMMON TRIP. BREAKERS SHALL BE BOLT-ON TYPE.

CABINETS SHALL BE CONSTRUCTED OF ONE PIECE CODE GAUGE GALVANIZED STEEL. THE MOUNTING STUDS AND KNOCKOUTS FOR CONDUIT CONNECTIONS AS REQUIRED. FRONTS SHALL BE ONE PIECE OR CODE GAUGE FURNITURE STEEL WITH ADJUSTABLE FASTENERS AND RECESSED DOORS FITTED WITH CONCEALED HINGES, FLUSH CATCH AND LOCK. CABINETS SHALL BE SURFACE OR FLUSH MOUNTED AS INDICATED ON THE DRAWINGS. ALL FRONTS AND ALL SURFACE MOUNTED CABINETS SHALL HAVE RUSTPROOF PRIME COAT AND 2 FINISHED COATED OF ENAMEL OR LAQUER.

ALL BRANCH CIRCUITS TO PANELBOARDS SHALL BE CONNECTED IN A MANNER SO THAT LOADS ARE BALANCED OVER EACH PHASE AS EQUALLY AS POSSIBLE. THE BACK DOOR SHALL BE FITTED WITH A GLASS OR PLASTIC COVERED TYPEDWRITTEN SCHEDULE IDENTIFYING ALL BRANCH CIRCUITS.

BREAKERS USED AS SWITCHES FOR 120 OR 277 VOLT CIRCUITS SHALL BE APPROVED FOR THE PURPOSE AND AND MARKED 'SMB'.

BREAKERS USED FOR PROTECTION OF HVAC EQUIPMENT SHALL BE HACR TYPE.

BREAKERS SERVING DWELLING UNITS SHALL BE ARC FAULT TYPE WHERE REQUIRED BY THE NEC.

16184.07 - IDENTIFICATION
PERMANENTLY ATTACH NAMEPLATES AND CIRCUIT NUMBERS TO EACH PANEL

PROVIDE EACH PANELBOARD WITH NAMEPLATE SHOWING PANEL DESIGNATION, VOLTAGE RATING AND PHASE.

LABEL SHALL BE ENGRAVED LAMINATED-PLASTIC NAMEPLATE. NAMEPLATES SHALL BE BLACK WITH 1/4" HIGH WHITE LETTERS UNLESS OTHERWISE SPECIFIED.

16184.08 - ACCEPTABLE MANUFACTURERS
SQUARE-D
SIEMENS
CUTLER-HAMMER
GENERAL ELECTRIC

16184.09 - INSTALLATION
MOUNT PANELBOARDS SECURELY TO BUILDING STRUCTURE WITH 3/8" MINIMUM DIAMETER GALVANIZED BOLTS AND INSERTS NUMBERED AS REQUIRED FOR THE SIZE OF THE PANEL, BUT NOT LESS THAN 4. MOUNT PANELBOARDS WITH CENTERLINE 4'-6" APPROXIMATELY ABOVE FINISHED FLOOR WITH THE TOP A MAXIMUM OF 74" AFF. WHERE PANELS OF DIFFERENT HEIGHTS ARE MOUNTED ADJACENT, INSTALL THE TOP PANEL TRIM AT THE SAME HEIGHT ABOVE THE FLOOR. CLOSE ALL UNUSED OPENINGS.

PANELBOARDS INSTALLED IN ADA DWELLING UNITS SHALL BE MOUNTED SO THAT THE HIGHEST CIRCUIT BREAKER IS NO HIGHER THAN 48" AFF.

16140- SWITCHES AND RECEPTACLES

16140.01 - DESCRIPTION OF WORK
MIRING DEVICES, PLATES AND INSTALLATION.

16140.02 - DEVICES
FURNISH AND INSTALL DEVICES AND ASSOCIATED DEVICE PLATES AS SHOWN ON THE DRAWINGS. ALL OUTLETS AND SWITCHES SHALL BE OF THE SAME MANUFACTURER. COLORS OF SWITCHES AND RECEPTACLES SHALL BE AS REQUESTED BY THE ARCHITECT.

STANDARD RECEPTACLES, UNLESS OTHERWISE NOTED SHALL BE 3 WIRE GROUNDED TYPE, NEMA CONFIGURATION 5-20R, DUPLEX RECEPTACLE RATED AT 20 AMPS AT 125VAC. RECEPTACLES TO COMPLY WITH UL STANDARD 44B AND FEDERAL SPECIFICATION M-C-546. PASS AND SEYMOUR #5952.

GROUND-FAULT INTERRUPTER (GFCI) RECEPTACLES: UL STANDARD 943, 'GROUND FAULT INTERRUPTERS' FEED-THROUGH TYPE, WITH INTEGRAL NEMA 5-20R DUPLEX RECEPTACLE. ARRANGE THE GFCI RECEPTACLE TO PROTECT CONNECTED DOWNSTREAM RECEPTACLES ON THE SAME CIRCUIT AS SHOWN OR AS REQUIRED. PASS AND SEYMOUR #2041.

PENDENT CORD/CONNECTOR DEVICES: MATCHING LOCKING TYPE, PLUG AND RECEPTACLE BODY CONNECTOR, NEMA L5-20P AND L5-20R, HEAVY DUTY GRADE UNLESS OTHERWISE SPECIFIED.

CORD AND PLUG SETS: MATCH VOLTAGE AND CURRENT RATINGS AND THE NUMBER OF CONDUCTORS TO THE REQUIREMENTS OF THE EQUIPMENT BEING CONNECTED. THE CORD SHALL BE RUBBER INSULATED, STRANDED COPPER CONDUCTORS, WITH TYPE 50W-A JACKET.

SNAP SWITCHES: QUIET TYPE A.C. SWITCHES, LISTED AND LABELED TO COMPLYING WITH UL STANDARD 20 'GENERAL USE SNAP SWITCHES' AND FEDERAL SPECIFICATION M-5-846.
SINGLE POLE SWITCH: PASS AND SEYMOUR #20AC1
THREE WAY SWITCH: PASS AND SEYMOUR #20AC3
KEY SWITCH: PASS AND SEYMOUR #20AC1-L
DIMMER SWITCH: PASS AND SEYMOUR #15B1
PILOT LIGHT SWITCH: PASS AND SEYMOUR #20AC1-RPL

WHERE INDICATED ON THE PLANS PROVIDE PILOT LIGHT WITH THE ABOVE SNAP SWITCHES. PILOT LIGHT SHALL AND SWITCH TO BE INSTALLED IN A TWO GANG PLATE WITH FLUSH NEON PILOT LIGHT FOR 125 OR 221 VOLT OPERATION AS APPLICABLE, WITH A RED PLASTIC JEREL LENS.

16140.03 - ACCEPTABLE MANUFACTURERS
PASS AND SEYMORE/LEGRAND
HUBBELL
LEVITON
BRYANT
EAGLE

16140.04 - DEVICE PLATES
FURNISH AND INSTALL ALL DEVICE COVER PLATES, 0.1" THICK SMOOTH PLASTIC COVER PLATES IN DWELLING UNITS AND P15 SIERRA SATIN STAINLESS STEEL IN LOBBY/LOUNGE. VERIFY COLOR AND MATERIAL WITH THE ARCHITECT BEFORE INSTALLATION. SWITCH PLATES IN UNFINISHED ROOMS SHALL BE STAMPED STEEL PLATES, CADMIUM PLATED.

DEVICE PLATE SHALL BE MANUFACTURED BY THE DEVICE MANUFACTURER WHERE APPLICABLE.

FURNISH WEATHER PROOF DEVICES WITH INDIVIDUAL GASKETED ALUMINUM OR STAINLESS STEEL COVERS.

16140.05 - MULTI-OUTLET ASSEMBLIES
COMPLY WITH STANDARD UL-5 'SURFACE METAL RECEPTAYS AND FITTINGS'.

COMPONENTS OF ASSEMBLIES: PRODUCTS OF A SINGLE MANUFACTURER DESIGNED TO BE USED TOGETHER TO PROVIDE A COMPLETE MATCHING ASSEMBLY OF RECEPTAYS AND RECEPTACLES.

RECEPTAY MATERIAL: METAL WITH MANUFACTURERS STANDARD CORROSION RESISTANT FINISH.

WIRE, NO. 12 AWG MINIMUM.

ACCEPTABLE MANUFACTURERS
WIRDMOLD 6-3000 SERIES
EQUAL BY CONDUIT
EQUAL BY HUBBELL

16140.06 - INSTALLATION
INSTALL DEVICES VERTICAL 48" AFF FOR SWITCHES AND 18" AFF FOR RECEPTACLES UNLESS OTHERWISE SHOWN. DEVICES SHALL BE INSTALLED FLUSH AND SECURE ON ALL SIDES. INSTALL RECEPTACLES WITH GROUND SLOT DOWN.

16170- DISCONNECTS (MOTOR CIRCUIT AND SEPARATE CIRCUIT BREAKERS)

16170.01 - DESCRIPTION OF WORK
FURNISH AND INSTALL SAFETY SWITCHES, DISCONNECTS AND SEPARATELY MOUNTED ENCLOSED CIRCUIT BREAKERS RATED TO 1200 AMPERES, 600 VOLTS AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.

16170.02 - STANDARDS
UL STANDARD 98
NEMA STANDARD KSI-198B FOR ENCLOSED SWITCHES
NEMA A81-1996 FOR MOLD CASE CIRCUIT BREAKERS AND SWITCHES

16170.03 - DISCONNECT SWITCHES
DISCONNECT SWITCHES SHALL BE HEAVY DUTY, RATED FOR 250 OR 600 VOLTS AS REQUIRED. SWITCHES SHALL BE QUICK-MAKE, QUICK-BREAK OPERATION AND HORSPOWER RATED. THE OPERATING HANDLE SHALL BE INTERLOCKED WITH THE SWITCH DOOR TO PREVENT OPENING OF THE DOOR WITH THE SWITCH CLOSED. PROVIDE MECHANICAL OVERRIDE FOR AUTHORIZED PERSONNEL TO OPEN THE SWITCH DOOR WITHOUT OPERATING THE SWITCH HANDLE.

SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE AS SHOWN. FURNISH ONE TIME, DUAL ELEMENT CLASS K5 REJECTION TYPE FUSES FOR EACH FUSIBLE POSITION, RATINGS AS SHOWN. FURNISH 3 SPARE FUSES FOR EACH RATING.

FUSIBLE SWITCHES LARGER THAN 600 AMPS SHALL BE SUITABLE FOR CLASS L FUSES. FUSES SERVING PREDOMINANTLY MOTOR OR TRANSFORMER LOADS SHALL BE DUAL ELEMENT, TIME DELAY TYPE, OTHERWISE NON-TIME DELAY FAST ACTING TYPE IS REQUIRED. FUSES SHALL BE CURRENT LIMITING WITH 200,000AIC.

FURNISH SOLID NEUTRAL FOR EACH SWITCH BEING INSTALLED IN A CIRCUIT WHICH INCLUDES A NEUTRAL CONDUCTOR. FURNISH A GROUNDING PAD FOR CONNECTION OF CIRCUIT GROUND WIRES.

PROVIDE MECHANICAL LUGS AND POWER DISTRIBUTION CONNECTORS FOR NUMBER, SIZE, AND MATERIAL OF CONDUCTORS AS INDICATED ON THE DRAWINGS.

ACCEPTABLE FUSE MANUFACTURERS
BUSGMAN
LITTLEFUSE
CHASE SHANNUT

16170- DISCONNECTS (MOTOR CIRCUIT AND SEPARATE CIRCUIT BREAKERS) (CONT)

THE DISCONNECT SWITCH SHALL BE FURNISHED WITH PROVISIONS FOR LOCKING WITH A PADLOCK. ENCLOSURES FOR SWITCHES TO BE NEMA 1, GENERAL PURPOSE INDOOR, OR NEMA 3R OR 4 FOR OUTDOOR LOCATIONS, WATERTIGHT.

ACCEPTABLE SWITCH MANUFACTURERS
SQUARE-D
SIEMENS
GENERAL ELECTRIC
CUTLER HAMMER/VESTINGHOUSE

16170.04 - SEPARATELY MOUNTED CIRCUIT BREAKERS
THIS SECTION INCLUDES SEPARATELY MOUNTED CIRCUIT BREAKERS FOR OVERCURRENT PROTECTION OF FEEDERS AND BRANCH CIRCUITS WHERE SHOWN ON THE DRAWINGS.

CIRCUIT BREAKERS SHALL BE THERMAL-MAGNETIC, MOLDED CASE TYPE, RATED FOR 600 VOLTS, THE INTERRUPT RATING SHALL BE AS SHOWN OR ON THE DRAWINGS. IF NO INTERRUPT RATINGS ARE SHOWN ON THE DRAWINGS THEY SHALL BE RATED FOR 100,000AIC.

ENCLOSURES FOR INDIVIDUAL CIRCUIT BREAKERS TO BE NEMA 1, GENERAL PURPOSE INDOOR, OR NEMA 3R OR 4 FOR OUTDOOR LOCATIONS, WATERTIGHT.

ACCEPTABLE CIRCUIT BREAKER MANUFACTURERS
SQUARE-D
SIEMENS
GENERAL ELECTRIC
CUTLER HAMMER/VESTINGHOUSE

16450- GROUNDING

16450.01 - DESCRIPTION OF WORK
THIS SECTION INCLUDES GROUNDING OF ELECTRICAL SYSTEMS AND EQUIPMENT AND BASIC REQUIREMENTS FOR GROUNDING FOR PROTECTION OF LIFE, EQUIPMENT, CIRCUITS, AND SYSTEMS.

16450.02 - STANDARDS
NFPA 70, ARTICLE 250 - GROUNDING
IEEE STANDARD 142 (GREEN BOOK)

16450.03 - ELECTRICAL SYSTEM AND EQUIPMENT GROUNDING
ALL PRODUCTS SHALL BE UL LISTED AND LABELED.

BOND THE GROUND MAIN SERVICE NEUTRAL, CABINETS, EQUIPMENT, CONDUITS, ETC., PER LATEST EDITION OF THE NEC AND AS SHOWN ON THE DRAWINGS, AND SPECIFIED HEREIN.

GROUND CONDUCTORS SHALL BE 98% CONDUCTIVITY COPPER. OTHER CONDUCTOR REQUIREMENTS SHALL BE THE SAME AS DESCRIBED FOR LOW VOLTAGE, 600 VOLT, CONDUCTORS AND SPECIFIED HEREIN.

ALL CONDUIT SYSTEMS, BOXES, ELECTRICAL EQUIPMENT, ENCLOSURES, MOTOR FRAMES, ETC., SHALL BE GROUNDED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC, LOCAL AUTHORITIES AND AS SPECIFIED.

A SEPARATE EQUIPMENT GROUND CONDUCTOR SHALL BE INSTALLED INSIDE OF EACH CONDUIT RUN FOR GROUNDING ALL CIRCUITS ABOVE 48 VOLTS. THE METALLIC CONDUIT SHALL NOT BE USED AS A GROUNDING CONDUCTOR.

GROUND WIRE SIZE THRU #10 SHALL BE STRANDED COPPER, GREEN TYPE THIN 75 DEGREES C INSULATION. GROUND WIRES SIZED #8 AND LARGER SHALL BE STRANDED COPPER, TYPE THHN OR THW WITH GREEN INSULATION OR GREEN TRACER.

GROUNDING CONDUCTORS IN CONTACT WITH EARTH SHALL BE SOLID BARE TINNED COPPER.

NO ELECTRICAL SYSTEM NEUTRAL SHALL BE USED AS A EQUIPMENT GROUND.

GROUND WIRES SHALL BE RAN CONTINUOUS FROM TERMINATION POINT TO TERMINATION POINT WITHOUT SPLICES.

ALL OUTLET BOXES AND JUNCTION BOXES, DISCONNECTS, ETC., SHALL BE GROUNDED. THE GROUND WIRE TERMINAL OF EACH DEVICE SHALL BE CONNECTED TO THE GROUND CONDUCTOR.

ALL METAL ENCLOSURES FOR ELECTRICAL DISTRIBUTION AND CONTROLS, ALL METAL EQUIPMENT SUPPORTS FOR ELECTRICAL CONTROLS AND ALL SIMILAR ITEMS SHALL BE CONNECTED TO THE GROUND SYSTEM.

FLEXIBLE CONDUIT SHALL BE BONDED AND GROUNDED IN ACCORDANCE WITH THE NEC.

ALL FLEXIBLE CONDUITS WITH CIRCUITS CONTAINING AN AMPACITY GREATER THAN 20 AMPS SHALL INCLUDE A GROUND WIRE AS WELL AS ANY FLEXIBLE CONDUIT OVER 6 FEET IN LENGTH.

16500- LUMINAIRES

16500.01 - DESCRIPTION OF WORK
THIS SECTION SPECIFIES MATERIALS USED FOR LIGHTING LUMINAIRES, THEIR INSTALLATION AND LAMPING. SPECIFIC LUMINAIRE TYPES ARE SPECIFIED BY CATALOG NUMBER IN THE LUMINAIRE (LIGHTING) SCHEDULE ON THE DRAWINGS.

16500.02 - STANDARDS
CMB - CERTIFIED BALLAST MANUFACTURERS
ETL - ELECTRICAL TESTING LABORATORY
IES - ILLUMINATING ENGINEERS SOCIETY

16500.03 - LUMINAIRES
FURNISH LUMINAIRES AS SHOWN ON THE DRAWINGS IN THE LUMINAIRE (LIGHTING) SCHEDULE. THIS SHALL INCLUDE ALL LAMPS, MATERIAL AND LABOR TO SECURELY HANG FIXTURES, CLEAN THEM AND MAKE THEM COMPLETE AND READY FOR USE. ALL FIXTURES SHALL INCLUDE ALL NECESSARY ACCESSORIES REQUIRED.

VERIFY EXACT TYPE CEILING AND RECESSING DEPTH OF RECESSED LUMINAIRES AND FURNISH SPECIFIC MOUNTING TRIMS AND ACCESSORIES REQUIRED.

VERIFY PROPER VOLTAGE FOR EACH LUMINAIRE AND PROVIDE BALLASTS TO MATCH ACTUAL APPLIED VOLTAGE AS SHOWN ON DRAWINGS.

16500.04 - FLUORESCENT BALLASTS
FLUORESCENT BALLASTS SHALL BE RAPID START, HIGH FREQUENCY, ENERGY EFFICIENT, ELECTRONIC TYPE. BALLASTS SHALL BE APPROVED BY ETL AND PROVIDED WITH UL AND GBM LABELS.

BALLAST FACTOR SHALL BE 0.81. BALLAST POWER FACTORS SHALL BE 0.95 OR HIGHER. INTERIOR BALLAST NOISE LEVEL ESSENTIALLY QUIET IN NORMAL AMBIENT NOISE LEVEL (CLASS A OR BETTER). BALLASTS SHALL NOT GENERATE MORE THAN 10% TOTAL HARMONIC DISTORTION (THD), AND SHALL HAVE LESS THAN 2% FLICKER.

INTERIOR BALLASTS INSTALLED TO FUNCTION WITHOUT INTERRUPTIONS WHEN OPERATING IN A ROOM AMBIENT TEMPERATURE OF 50-80 DEGREES F AND PLENUM AMBIENT TEMPERATURE OF 50-120 DEGREES F.

PROVIDE LOW TEMPERATURE STARTING (0 DEGREES F) WHERE SPECIFIED OR REQUIRED FOR PROPER OPERATION.

ACCEPTABLE ELECTRONIC FLUORESCENT BALLAST MANUFACTURERS
ADVANCE
MAGNETEK
GENERAL ELECTRIC
UNIVERSAL

16500.05 - HID BALLASTS
NOT APPLICABLE.

16500.06 - LAMPS
FLUORESCENT - SIZE, LENGTH AND TYPE SHOWN IN LUMINAIRE SCHEDULE ON THE DRAWINGS.

ACCEPTABLE LAMP MANUFACTURERS
GENERAL ELECTRIC
OSRAM/PENNSYLVANIA
PHILLIPS

GUARANTEE LAMPS AS FOLLOWS: FLUORESCENT AND HID LAMPS, ONE YEAR. GUARANTEES BEGIN FROM DATE OF SUBSTANTIAL COMPLETION.

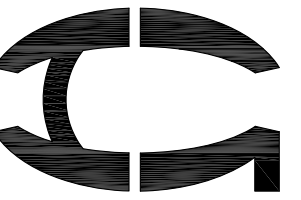
16500.07 - LUMINAIRE INSTALLATION
SUPPORT LUMINAIRES FROM STRUCTURAL MEMBERS OF BUILDING, INDEPENDENT FROM THE CEILING. SUPPORT GRID TYPE LUMINAIRES FROM THE CEILING. ARRANGE WITH THE CEILING CONTRACTOR FOR EXTRA SUPPORT. PROVIDE ONE SUPPORT AT EACH CORNER OF 2'x4' AND LARGER LUMINAIRES, AND ONE AT EACH END AT OPPOSITE CORNERS OF 1'x4' AND 2'x2' FIXTURES

PROVIDE DEVICES FOR SECURING LUMINAIRE TO CEILING GRID TO COMPLY WITH ARTICLE 410-16C OF THE NATIONAL ELECTRICAL CODE (EARTHQUAKE CLIPS).

LIGHT FIXTURES SHOWN ON THE DRAWINGS REPRESENT GENERAL ARRANGEMENTS ONLY. REFER TO THE ARCHITECTURAL DRAWINGS FOR MORE EXACT LOCATIONS. COORDINATE LOCATION WITH ALL OTHER TRADES BEFORE INSTALLATION TO AVOID CONFLICTS. LIGHT FIXTURES LOCATIONS IN MECHANICAL ROOMS SHALL BE COORDINATED WITH FINAL INSTALLED PIPING AND DUCTWORK LAYOUTS.



InSite Group, Inc.
Consulting Engineers
310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
Portland, OR 97204 Fax: (503) 222-5924



ELECTRICAL SPECIFICATIONS

Revisions :	Date :
	4/17/2012
Drawn : DAB	
Checked : CCW	

ELECTRICAL SPECIFICATIONS

E3.6

16120 - DIGITAL ADDRESSABLE FIRE ALARM SYSTEM

- 1 - GENERAL
- 1.1 RELATED DOCUMENTS
 - A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
- 1.2 SUMMARY
 - A. SECTION INCLUDES:
 1. FIRE-ALARM CONTROL UNIT.
 2. MANUAL FIRE-ALARM BOXES.
 3. SYSTEM SMOKE DETECTORS.
 4. NONSYSTEM SMOKE DETECTORS.
 5. HEAT DETECTORS.
 6. NOTIFICATION APPLIANCES.
 7. DEVICE GUARDS.
 8. FIREFIGHTERS' TWO-WAY TELEPHONE COMMUNICATION SERVICE.
 9. MAGNETIC DOOR HOLDERS.
 10. REMOTE ANNUNCIATOR.
 - II. ADDRESSABLE INTERFACE DEVICE.
 - 12. DIGITAL ALARM COMMUNICATOR TRANSMITTER.
 - 13. NETWORK COMMUNICATIONS.
 - 14. THIS IS AN EXISTING HIGH RISE FACILITY WHERE THE EXISTING FIRE ALARM SYSTEM IS BEING REPLACED WITH NEW. EXISTING DEVICES SHALL BE RE-USED INCLUDING SMOKE DETECTORS, HEAT DETECTORS, PULL STATIONS, STROBES, SPEAKERS, NAC PANELS, WIRING, ETC. CONTRACTOR TO DOCUMENT ALL EXISTING DEVICES WITHIN THE FACILITY.
- 1.3 DEFINITIONS
 - A. EMT: ELECTRICAL METALLIC TUBING.
 - B. FACP: FIRE ALARM CONTROL PANEL.
 - C. HLI: HIGH LEVEL INTERFACE.
 - D. NICET: NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES.
 - E. PC: PERSONAL COMPUTER.
 - F. VESDA: VERY EARLY SMOKE-DETECTION APPARATUS.
- 1.4 ACTION SUBMITTALS
 - A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT, INCLUDING FURNISHED OPTIONS AND ACCESSORIES.
 1. INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS, PROFILES, AND FINISHES.
 2. INCLUDE RATED CAPACITIES, OPERATING CHARACTERISTICS, AND ELECTRICAL CHARACTERISTICS.
 - B. SHOP DRAWINGS: FOR FIRE-ALARM SYSTEM.
 1. COMPLY WITH RECOMMENDATIONS AND REQUIREMENTS IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS" CHAPTER IN NFPA*12.
 2. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
 3. INCLUDE DETAILS OF EQUIPMENT ASSEMBLIES. INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATIONS. INDICATE CONDUCTOR SIZES, INDICATE TERMINATION LOCATIONS AND REQUIREMENTS, AND DISTINGUISH BETWEEN FACTORY AND FIELD WIRING.
 4. DETAIL ASSEMBLY AND SUPPORT REQUIREMENTS.
 5. INCLUDE VOLTAGE DROP CALCULATIONS FOR NOTIFICATION-APPLIANCE CIRCUITS.
 6. INCLUDE BATTERY-SIZE CALCULATIONS.
 7. INCLUDE INPUT/OUTPUT MATRIX.
 8. INCLUDE STATEMENT FROM MANUFACTURER THAT ALL EQUIPMENT AND COMPONENTS HAVE BEEN TESTED AS A SYSTEM AND MEET ALL REQUIREMENTS IN THIS SPECIFICATION AND IN NFPA*12.
 9. INCLUDE PERFORMANCE PARAMETERS AND INSTALLATION DETAILS FOR EACH DETECTOR.
 10. INCLUDE VOICE/ALARM SIGNALING-SERVICE EQUIPMENT RACK OR CONSOLE LAYOUT, GROUNDING SCHEMATIC, AMPLIFIER POWER CALCULATION, AND SINGLE-LINE CONNECTION DIAGRAM.
 11. INCLUDE FLOOR PLANS TO INDICATE FINAL OUTLET LOCATIONS SHOWING ADDRESS OF EACH ADDRESSABLE DEVICE, SHOW SIZE AND ROUTE OF CABLE AND CONDUITS AND POINT-TO-POINT WIRING DIAGRAMS.
 - C. GENERAL SUBMITTAL REQUIREMENTS:
 1. SUBMITTALS SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION PRIOR TO SUBMITTING THEM TO ARCHITECT.
 2. SHOP DRAWINGS SHALL BE PREPARED BY PERSONS WITH THE FOLLOWING QUALIFICATIONS:
 - a. TRAINED AND CERTIFIED BY MANUFACTURER IN FIRE-ALARM SYSTEM DESIGN.
 - b. NICET-CERTIFIED, FIRE-ALARM TECHNICIAN, LEVEL "III" MINIMUM.
 - c. LICENSED OR CERTIFIED BY AUTHORITIES HAVING JURISDICTION.
 - D. DELEGATED-DESIGN SUBMITTAL: FOR NOTIFICATION APPLIANCES AND SMOKE AND HEAT DETECTORS, IN ADDITION TO SUBMITTALS LISTED ABOVE, INDICATE COMPLIANCE WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.
 1. DRAWINGS SHOWING THE LOCATION OF EACH NOTIFICATION APPLIANCE AND SMOKE AND HEAT DETECTOR, RATINGS OF EACH, AND INSTALLATION DETAILS AS NEEDED TO COMPLY WITH LISTING CONDITIONS OF THE DEVICE.
 2. DESIGN CALCULATIONS: CALCULATE REQUIREMENTS FOR SELECTING THE SPACING AND SENSITIVITY OF DETECTION, COMPLYING WITH NFPA*12. CALCULATE SPACING AND INTENSITIES FOR STROBE SIGNALS AND SOUND-PRESSURE LEVELS FOR AUDIBLE APPLIANCES.
 3. INDICATE AUDIBLE APPLIANCES REQUIRED TO PRODUCE SQUARE WAVE SIGNAL PER NFPA*12.
 - 1.5 INFORMATIONAL SUBMITTALS
 - A. QUALIFICATION DATA: FOR INSTALLER.
 - B. SEISMIC QUALIFICATION CERTIFICATES: FOR FIRE-ALARM CONTROL UNIT, ACCESSORIES, AND COMPONENTS, FROM MANUFACTURER.

- 1. BASIS FOR CERTIFICATION: INDICATE WHETHER WITHSTAND CERTIFICATION IS BASED ON ACTUAL TEST OF ASSEMBLED COMPONENTS OR ON CALCULATION.
- 2. DIMENSIONED OUTLINE DRAWINGS OF EQUIPMENT UNIT: INDENTIFY CENTER OF GRAVITY AND LOCATE AND DESCRIBE MOUNTING AND ANCHORAGE PROVISIONS.
- 3. DETAILED DESCRIPTION OF EQUIPMENT ANCHORAGE DEVICES ON WHICH THE CERTIFICATION IS BASED AND THEIR INSTALLATION REQUIREMENTS.
- C. FIELD QUALITY-CONTROL REPORTS.
- 1.6 SAMPLE WARRANTY: FOR SPECIAL WARRANTY.
- 1.7 CLOSEOUT SUBMITTALS
 - A. OPERATION AND MAINTENANCE DATA: FOR FIRE-ALARM SYSTEMS AND COMPONENTS TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.
 1. PROVIDE THE FOLLOWING AND DELIVER COPIES TO AUTHORITIES HAVING JURISDICTION:
 - a. COMPLY WITH THE "RECORDS" SECTION OF THE "INSPECTION TESTING AND MAINTENANCE" CHAPTER IN NFPA*12.
 - b. PROVIDE "FIRE ALARM AND EMERGENCY COMMUNICATIONS SYSTEM RECORD OF COMPLETION DOCUMENTS" ACCORDING TO THE "COMPLETION DOCUMENTS" ARTICLE IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS" CHAPTER IN NFPA*12.
 - c. COMPLETE WIRING DIAGRAMS SHOWING CONNECTIONS BETWEEN ALL DEVICES AND EQUIPMENT. EACH CONDUCTOR SHALL BE NUMBERED AT EVERY JUNCTION POINT WITH INDICATION OF ORIGIN AND TERMINATION POINTS.
 - d. RISER DIAGRAM.
 - e. DEVICE ADDRESSES.
 - f. AIR-SAMPLING SYSTEM SAMPLE PORT LOCATIONS AND MODELING PROGRAM REPORT SHOWING LAYOUT MEETS PERFORMANCE CRITERIA.
 - g. RECORD COPY OF SITE-SPECIFIC SOFTWARE.
 - h. PROVIDE "INSPECTION AND TESTING FORM" ACCORDING TO THE "INSPECTION, TESTING AND MAINTENANCE" CHAPTER IN NFPA*12, AND INCLUDE THE FOLLOWING:
 - 1) EQUIPMENT TESTED.
 - 2) FREQUENCY OF TESTING OF INSTALLED COMPONENTS.
 - 3) FREQUENCY OF INSPECTION OF INSTALLED COMPONENTS.
 - 4) REQUIREMENTS AND RECOMMENDATIONS RELATED TO RESULTS OF MAINTENANCE.
 - 5) MANUFACTURER'S USER TRAINING MANUALS.
 - i. MANUFACTURER'S REQUIRED MAINTENANCE RELATED TO SYSTEM WARRANTY REQUIREMENTS.
 - j. ABBREVIATED OPERATING INSTRUCTIONS FOR MOUNTING AT FIRE-ALARM CONTROL UNIT AND EACH ANNUNCIATOR UNIT.
 - B. SOFTWARE AND FIRMWARE OPERATIONAL DOCUMENTATION:
 1. SOFTWARE OPERATING AND UPGRADE MANUALS.
 2. PROGRAM SOFTWARE BACKUP: ON MAGNETIC MEDIA OR COMPACT DISK, COMPLETE WITH DATA FILES.
 3. DEVICE ADDRESS LIST.
 4. PRINTOUT OF SOFTWARE APPLICATION AND GRAPHIC SCREENS.
- 1.8 MAINTENANCE MATERIAL SUBMITTALS
 - A. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
 1. LAMPS FOR REMOTE INDICATING LAMP UNITS: QUANTITY EQUAL TO 10 PERCENT OF AMOUNT INSTALLED, BUT NO FEWER THAN ONE UNIT.
 2. LAMPS FOR STROBE UNITS: QUANTITY EQUAL TO 10 PERCENT OF AMOUNT INSTALLED, BUT NO FEWER THAN ONE UNIT.
 3. SMOKE DETECTORS, FIRE DETECTORS AND FLAME DETECTORS: QUANTITY EQUAL TO 10 PERCENT OF AMOUNT OF EACH TYPE INSTALLED, BUT NO FEWER THAN ONE UNIT OF EACH TYPE.
 4. DETECTOR BASES: QUANTITY EQUAL TO TWO PERCENT OF AMOUNT OF EACH TYPE INSTALLED, BUT NO FEWER THAN ONE UNIT OF EACH TYPE.
 5. KEYS AND TOOLS: ONE EXTRA SET FOR ACCESS TO LOCKED OR TAMPERPROOFED COMPONENTS.
 6. AUDIBLE AND VISUAL NOTIFICATION APPLIANCES: ONE OF EACH TYPE INSTALLED.
 7. FUSES: TWO OF EACH TYPE INSTALLED IN THE SYSTEM, PROVIDE IN A BOX OR CABINET WITH COMPARTMENTS MARKED WITH FUSE TYPES AND SIZES.
- 1.9 QUALITY ASSURANCE
 - A. INSTALLER QUALIFICATIONS: INSTALLATION SHALL BE BY PERSONNEL CERTIFIED BY NICET AS FIRE-ALARM LEVEL "II" TECHNICIAN.
 - B. NFPA CERTIFICATION: OBTAIN CERTIFICATION ACCORDING TO NFPA*12 BY A UL-LISTED ALARM COMPANY.
- 1.10 PROJECT CONDITIONS
 - A. PERFORM A FULL TEST OF THE EXISTING SYSTEM PRIOR TO STARTING WORK. DOCUMENT ANY EQUIPMENT OR COMPONENTS NOT FUNCTIONING AS DESIGNED.
 - B. INTERRUPTION OF EXISTING FIRE-ALARM SERVICE: DO NOT INTERRUPT FIRE-ALARM SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY GUARD SERVICE ACCORDING TO REQUIREMENTS INDICATED:
 1. NOTIFY OWNER NO FEWER THAN SEVEN DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF FIRE-ALARM SERVICE.
 2. DO NOT PROCEED WITH INTERRUPTION OF FIRE-ALARM SERVICE WITHOUT OWNER'S WRITTEN PERMISSION.
 - C. USE OF DEVICES DURING CONSTRUCTION: PROTECT DEVICES DURING CONSTRUCTION UNLESS DEVICES ARE PLACED IN SERVICE TO PROTECT THE FACILITY DURING CONSTRUCTION.
- 1.11 SEQUENCING AND SCHEDULING
 - A. EXISTING FIRE-ALARM EQUIPMENT: MAINTAIN EXISTING EQUIPMENT FULLY OPERATIONAL UNTIL NEW EQUIPMENT HAS BEEN TESTED AND ACCEPTED. AS NEW EQUIPMENT IS INSTALLED, LABEL IT "NOT IN SERVICE" UNTIL IT IS ACCEPTED. REMOVE LABELS FROM NEW EQUIPMENT WHEN PUT INTO SERVICE, AND LABEL EXISTING FIRE-ALARM EQUIPMENT "NOT IN SERVICE" UNTIL REMOVED FROM THE BUILDING.
 - B. EQUIPMENT REMOVAL: AFTER ACCEPTANCE OF NEW FIRE-ALARM SYSTEM, REMOVE EXISTING DISCONNECTED FIRE-ALARM EQUIPMENT AND WIRING.

1.12 WARRANTY

- A. SPECIAL WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE FIRE-ALARM SYSTEM EQUIPMENT AND COMPONENTS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
 1. WARRANTY EXTENT: ALL EQUIPMENT AND COMPONENTS NOT COVERED IN THE MAINTENANCE SERVICE AGREEMENT.
 2. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
- PART 2 - PRODUCTS
 - 2.1 SYSTEM DESCRIPTION
 - A. SOURCE LIMITATIONS FOR FIRE-ALARM SYSTEM AND COMPONENTS: COMPONENTS SHALL BE COMPATIBLE WITH AND OPERATE AS AN EXTENSION OF EXISTING SYSTEM. PROVIDE SYSTEM MANUFACTURER'S CERTIFICATION THAT ALL COMPONENTS PROVIDED HAVE BEEN TESTED AS, AND WILL OPERATE AS, A SYSTEM.
 - B. NONCODED, UL-CERTIFIED ADDRESSABLE SYSTEM, WITH MULTIPLEXED SIGNAL TRANSMISSION AND VOICE/STROBE EVACUATION.
 - C. AUTOMATIC SENSITIVITY CONTROL OF CERTAIN SMOKE DETECTORS.
 - D. ALL COMPONENTS PROVIDED SHALL BE LISTED FOR USE WITH THE SELECTED SYSTEM.
 - E. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA*10, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
 - 2.2 SYSTEMS OPERATIONAL DESCRIPTION
 - A. FIRE-ALARM SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND SYSTEMS:
 1. MANUAL STATIONS.
 2. HEAT DETECTORS.
 3. FLAME DETECTORS.
 4. SMOKE DETECTORS.
 5. DUCT SMOKE DETECTORS.
 6. CARBON MONOXIDE DETECTORS.
 7. AUTOMATIC SPRINKLER SYSTEM WATER FLOW.
 8. FIRE STANDPIPE SYSTEM.
 - B. FIRE-ALARM SIGNAL SHALL INITIATE THE FOLLOWING ACTIONS:
 1. CONTINUOUSLY OPERATE ALARM NOTIFICATION APPLIANCES, INCLUDING VOICE EVACUATION NOTICES.
 2. IDENTIFY ALARM AND SPECIFIC INITIATING DEVICE AT FIRE-ALARM CONTROL UNIT, CONNECTED NETWORK CONTROL PANELS, OFF-PREMISES NETWORK CONTROL PANELS, AND REMOTE ANNUNCIATORS.
 3. TRANSMIT AN ALARM SIGNAL TO THE REMOTE ALARM RECEIVING STATION.
 4. UNLOCK ELECTRIC DOOR LOCKS IN DESIGNATED EGRESS PATHS.
 5. RELEASE FIRE AND SMOKE DOORS HELD OPEN BY MAGNETIC DOOR HOLDERS.
 6. ACTIVATE VOICE/ALARM COMMUNICATION SYSTEM.
 7. SWITCH HEATING, VENTILATING, AND AIR-CONDITIONING EQUIPMENT CONTROLS TO FIRE-ALARM MODE.
 8. CLOSE SMOKE DAMPERS IN AIR DUCTS OF DESIGNATED AIR-CONDITIONING DUCT SYSTEMS.
 9. RECALL ELEVATORS TO PRIMARY OR ALTERNATE RECALL FLOORS.
 10. ACTIVATE ELEVATOR POWER SHUNT TRIP.
 - II. RECORD EVENTS IN THE SYSTEM MEMORY.
 - 12. RECORD EVENTS BY THE SYSTEM PRINTER.
 - 13. INDICATE DEVICE IN ALARM ON THE GRAPHIC ANNUNCIATOR.
 - C. SUPERVISORY SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND ACTIONS:
 1. VALVE SUPERVISORY SWITCH.
 2. ELEVATOR SHUNT-TRIP SUPERVISION.
 3. INDEPENDENT FIRE-DETECTION AND SUPPRESSION SYSTEMS.
 4. USER DISABLING OF ZONES OR INDIVIDUAL DEVICES.
 5. LOSS OF COMMUNICATION WITH ANY PANEL ON THE NETWORK.
 - D. SYSTEM TROUBLE SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND ACTIONS:
 1. OPEN CIRCUITS, SHORTS, AND GROUNDS IN DESIGNATED CIRCUITS.
 2. OPENING, TAMPERING WITH, OR REMOVING ALARM-INITIATING AND SUPERVISORY SIGNAL-INITIATING DEVICES.
 3. LOSS OF COMMUNICATION WITH ANY ADDRESSABLE SENSOR INPUT MODULE, RELAY, CONTROL MODULE, REMOTE ANNUNCIATOR, PRINTER INTERFACE, OR ETHERNET MODULE.
 4. LOSS OF PRIMARY POWER AT FIRE-ALARM CONTROL UNIT.
 5. GROUND OR A SINGLE BREAK IN INTERNAL CIRCUITS OF FIRE-ALARM CONTROL UNIT.
 6. ABNORMAL AC VOLTAGE AT FIRE-ALARM CONTROL UNIT.
 7. BREAK IN STANDBY BATTERY CIRCUITRY.
 8. FAILURE OF BATTERY CHARGING.
 9. ABNORMAL POSITION OF ANY SWITCH AT FIRE-ALARM CONTROL UNIT OR ANNUNCIATOR.
 10. VOICE SIGNAL AMPLIFIER FAILURE.
 - E. SYSTEM SUPERVISORY SIGNAL ACTIONS:
 1. INITIATE NOTIFICATION APPLIANCES.
 2. IDENTIFY SPECIFIC DEVICE INITIATING THE EVENT AT FIRE-ALARM CONTROL UNIT, CONNECTED NETWORK CONTROL PANELS, OFF-PREMISES NETWORK CONTROL PANELS, AND REMOTE ANNUNCIATORS.
 3. RECORD THE EVENT ON SYSTEM PRINTER.
 4. AFTER A TIME DELAY OF 200 SECONDS, TRANSMIT A TROUBLE OR SUPERVISORY SIGNAL TO THE REMOTE ALARM RECEIVING STATION.
 5. TRANSMIT SYSTEM STATUS TO BUILDING MANAGEMENT SYSTEM.
 6. DISPLAY SYSTEM STATUS ON GRAPHIC ANNUNCIATOR.

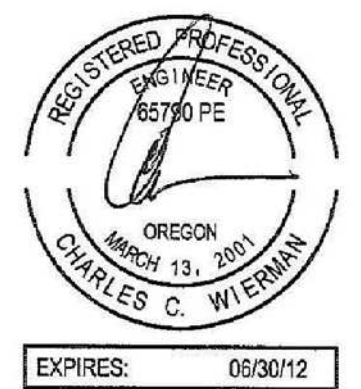
2.3 PERFORMANCE REQUIREMENTS

- A. SEISMIC PERFORMANCE: FIRE-ALARM CONTROL UNIT AND RACENAYS SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE/SEI*17.
 1. THE TERM "WITHSTAND" MEANS THE UNIT WILL REMAIN IN PLACE WITHOUT SEPARATION OF ANY PARTS FROM THE DEVICE WHEN SUBJECTED TO THE SEISMIC FORCES SPECIFIED.*
- 2.4 FIRE-ALARM CONTROL UNIT
 - A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT INDICATED ON DRAWINGS:
 1. SILENT KNIGHT - FARENHYT IFF-2000VIF.
 - B. GENERAL REQUIREMENTS FOR FIRE-ALARM CONTROL UNIT:
 1. FIELD-PROGRAMMABLE, MICROPROCESSOR-BASED, MODULAR, POWER-LIMITED DESIGN WITH ELECTRONIC MODULES, COMPLYING WITH UL*864.
 - a. SYSTEM SOFTWARE AND PROGRAMS SHALL BE HELD IN NONVOLATILE FLASH, ELECTRICALLY ERASABLE, PROGRAMMABLE, READ-ONLY MEMORY, RETAINING THE INFORMATION THROUGH FAILURE OF PRIMARY AND SECONDARY POWER SUPPLIES.
 - b. INCLUDE A REAL-TIME CLOCK FOR TIME ANNOTATION OF EVENTS ON THE EVENT RECORDER AND PRINTER.
 - c. PROVIDE COMMUNICATION BETWEEN THE FACP AND REMOTE CIRCUIT INTERFACE PANELS, ANNUNCIATORS, AND DISPLAYS.
 - d. THE FACP SHALL BE LISTED FOR CONNECTION TO A CENTRAL-STATION SIGNALING SYSTEM SERVICE.
 - e. PROVIDE NONVOLATILE MEMORY FOR SYSTEM DATABASE, LOGIC, AND OPERATING SYSTEM AND EVENT HISTORY. THE SYSTEM SHALL REQUIRE NO MANUAL INPUT TO INITIALIZE IN THE EVENT OF A COMPLETE POWER DOWN CONDITION. THE FACP SHALL PROVIDE A MINIMUM 500-EVENT HISTORY LOG.
 2. ADDRESSABLE INITIATION DEVICE CIRCUITS: THE FACP SHALL INDICATE WHICH COMMUNICATION ZONES HAVE BEEN SILENCED AND SHALL PROVIDE SELECTIVE SILENCING OF ALARM NOTIFICATION APPLIANCE BY BUILDING COMMUNICATION ZONE.
 3. ADDRESSABLE CONTROL CIRCUITS FOR OPERATION OF NOTIFICATION APPLIANCES AND MECHANICAL EQUIPMENT: THE FACP SHALL BE LISTED FOR RELEASING SERVICE.
 - C. ALPHANUMERIC DISPLAY AND SYSTEM CONTROLS: ARRANGED FOR INTERFACE BETWEEN HUMAN OPERATOR AT FIRE-ALARM CONTROL UNIT AND ADDRESSABLE SYSTEM COMPONENTS INCLUDING ANNUNCIATION AND SUPERVISION. DISPLAY ALARM, SUPERVISORY, AND COMPONENT STATUS MESSAGES AND THE PROGRAMMING AND CONTROL MENU.
 1. ANNUNCIATOR AND DISPLAY: LIQUID-CRYSTAL TYPE, TWO LINE(S) OF 80 CHARACTERS, MINIMUM.
 2. KEYPAD: ARRANGED TO PERMIT ENTRY AND EXECUTION OF PROGRAMMING, DISPLAY, AND CONTROL COMMANDS.
 - D. INITIATING-DEVICE, NOTIFICATION-APPLIANCE, AND SIGNALING-LINE CIRCUITS:
 1. PATHWAY CLASS DESIGNATIONS: NFPA*12, CLASS "B."
 2. PATHWAY SURVIVABILITY: LEVEL "0."
 3. INSTALL NO MORE THAN 1000 ADDRESSABLE DEVICES ON EACH SIGNALING-LINE CIRCUIT.
 4. SERIAL INTERFACES:
 - a. ONE DEDICATED RS*485 PORT FOR REMOTE STATION OPERATION USING POINT TO POINT.
 - b. ONE RS*485 PORT FOR REMOTE ANNUNCIATORS, ETHERNET MODULE, OR MULTI-INTERFACE MODULE (PRINTER PORT).
 - c. ONE USB PORT FOR PC CONFIGURATION.
 - d. ONE RS*232 PORT FOR VESDA HLI CONNECTION.
 - e. ONE RS*232 PORT FOR VOICE EVACUATION INTERFACE.
 5. SMOKE-ALARM VERIFICATION:
 1. INITIATE AUDIBLE AND VISIBLE INDICATION OF AN "ALARM-VERIFICATION" SIGNAL AT FIRE-ALARM CONTROL UNIT.
 2. ACTIVATE AN APPROVED "ALARM-VERIFICATION" SEQUENCE AT FIRE-ALARM CONTROL UNIT AND DETECTOR.
 3. RECORD EVENTS BY THE SYSTEM PRINTER.
 4. SOUND GENERAL ALARM IF THE ALARM IS VERIFIED.
 5. CANCEL FIRE-ALARM CONTROL UNIT INDICATION AND SYSTEM RESET IF THE ALARM IS NOT VERIFIED.
 - F. NOTIFICATION-APPLIANCE CIRCUIT:
 1. AUDIBLE APPLIANCES SHALL SOUND IN A THREE-PULSE TEMPORAL PATTERN, AS DEFINED IN NFPA*12.
 2. WHERE NOTIFICATION APPLIANCES PROVIDE SIGNALS TO SLEEPING AREAS, THE ALARM SIGNAL SHALL BE A 520-HZ SQUARE WAVE WITH AN INTENSITY 15 DB ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 DB ABOVE THE MAXIMUM SOUND LEVEL, OR AT LEAST 15 DBA, WHICHEVER IS GREATER, MEASURED AT THE FLOOR.
 3. VISUAL ALARM APPLIANCES SHALL FLASH IN SYNCHRONIZATION WHERE MULTIPLE APPLIANCES ARE IN THE SAME FIELD OF VIEW, AS DEFINED IN NFPA*12.
 - 6. ELEVATOR RECALL:
 1. ELEVATOR RECALL SHALL BE INITIATED ONLY BY ONE OF THE FOLLOWING ALARM-INITIATING DEVICES:
 - a. ELEVATOR LOBBY DETECTORS EXCEPT THE LOBBY DETECTOR ON THE DESIGNATED FLOOR.
 - b. SMOKE DETECTOR IN ELEVATOR MACHINE ROOM.
 - c. SMOKE DETECTORS IN ELEVATOR HOISTWAY.
 2. ELEVATOR CONTROLLER SHALL BE PROGRAMMED TO MOVE THE CARS TO THE ALTERNATE RECALL FLOOR IF LOBBY DETECTORS LOCATED ON THE DESIGNATED RECALL FLOORS ARE ACTIVATED.
 3. WATER-FLOW ALARM CONNECTED TO SPRINKLER IN AN ELEVATOR SHAFT AND ELEVATOR MACHINE ROOM SHALL SHUT DOWN ELEVATORS ASSOCIATED WITH THE LOCATION WITHOUT TIME DELAY.
 - a. WATER-FLOW SWITCH ASSOCIATED WITH THE SPRINKLER IN THE ELEVATOR PIT MAY HAVE A DELAY TO ALLOW ELEVATORS TO MOVE TO THE DESIGNATED 2.4 FLOOR.
 4. DOOR CONTROLS: DOOR HOLD-OPEN DEVICES THAT ARE CONTROLLED BY SMOKE DETECTORS AT DOORS IN SMOKE-BARRIER WALLS SHALL BE CONNECTED TO FIRE-ALARM SYSTEM.
 5. TRANSMISSION TO REMOTE ALARM RECEIVING STATION: AUTOMATICALLY TRANSMIT ALARM, SUPERVISORY, AND TROUBLE SIGNALS TO A REMOTE ALARM STATION.

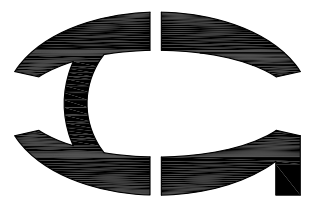
- VOICE/ALARM SIGNALING SERVICE: CENTRAL EMERGENCY COMMUNICATION SYSTEM WITH REDUNDANT MICROPHONES, PREAMPLIFIERS, AMPLIFIERS, AND TONE GENERATORS PROVIDED IN A SEPARATE CABINET(S) LOCATED IN THE FIRE COMMAND CENTER.
 1. INDICATE NUMBER OF ALARM CHANNELS FOR AUTOMATIC, SIMULTANEOUS TRANSMISSION OF DIFFERENT ANNOUNCEMENTS TO DIFFERENT ZONES OR FOR MANUAL TRANSMISSION OF ANNOUNCEMENTS BY USE OF THE CENTRAL-CONTROL MICROPHONE. AMPLIFIERS SHALL COMPLY WITH UL*1711.
 - a. ALLOW THE APPLICATION OF AND EVACUATION SIGNAL TO, INDICATED NUMBER OF ZONES AND AT THE SAME TIME, ALLOW VOICE PAGING TO THE OTHER ZONES SELECTIVELY OR IN ANY COMBINATION.
 - b. PROGRAMMABLE TONE AND MESSAGE SEQUENCE SELECTION.
 - c. STANDARD DIGITALLY RECORDED MESSAGES FOR "EVACUATION" AND "ALL CLEAR."
 - d. GENERATE TONES TO BE SEQUENCED WITH AUDIO MESSAGES OF TYPE RECOMMENDED BY NFPA*12 AND THAT ARE COMPATIBLE WITH TONE PATTERNS OF NOTIFICATION-APPLIANCE CIRCUITS OF FIRE-ALARM CONTROL UNIT.
 2. STATUS ANNUNCIATOR: INDICATE THE STATUS OF VARIOUS VOICE/ALARM SPEAKER ZONES AND THE STATUS OF FIREFIGHTERS' TWO-WAY TELEPHONE COMMUNICATION ZONES.
 3. PREAMPLIFIERS, AMPLIFIERS, AND TONE GENERATORS SHALL AUTOMATICALLY TRANSFER TO BACKUP UNITS, ON PRIMARY EQUIPMENT FAILURE.
 - K. PRINTOUT OF EVENTS: ON RECEIPT OF SIGNAL, PRINT ALARM SUPERVISORY, AND TROUBLE EVENTS. IDENTIFY ZONE, DEVICE AND FUNCTION. INCLUDE TYPE OF SIGNAL (ALARM, SUPERVISORY, OR TROUBLE) AND DATE AND TIME OF OCCURRENCE. DIFFERENTIATE ALARM SIGNALS FROM ALL OTHER PRINTED INDICATIONS. ALSO PRINT SYSTEM RESET EVENT, INCLUDING SAME INFORMATION FOR DEVICE, LOCATION, DATE, AND TIME. COMMANDS INITIATE THE PRINTING OF A LIST OF EXISTING ALARM, SUPERVISORY, AND TROUBLE CONDITIONS IN THE SYSTEM AND A HISTORICAL LOG OF EVENTS.
 - L. PRIMARY POWER: 24-V*DC OBTAINED FROM 120-V*AC SERVICE AND A POWER-SUPPLY MODULE. INITIATING DEVICES, NOTIFICATION APPLIANCES, SIGNALING LINES, TROUBLE SIGNALS, SUPERVISORY AND DIGITAL ALARM COMMUNICATOR TRANSMITTERS SHALL BE POWERED BY 24-V*DC SOURCE.
 1. ALARM CURRENT DRAIN OF ENTIRE FIRE-ALARM SYSTEM SHALL NOT EXCEED 80 PERCENT OF THE POWER-SUPPLY MODULE RATING.
 - M. SECONDARY POWER: 24-V*DC SUPPLY SYSTEM WITH BATTERIES, AUTOMATIC BATTERY CHARGER, AND AUTOMATIC TRANSFER SWITCH.
 1. BATTERIES: SEALED LEAD CALCIUM.
 - N. INSTRUCTIONS: COMPUTER PRINTOUT OR TYPEWRITTEN INSTRUCTION CARD MOUNTED BEHIND A PLASTIC OR GLASS COVER IN A STAINLESS-STEEL OR ALUMINUM FRAME. INCLUDE INTERPRETATION AND DESCRIBE APPROPRIATE RESPONSE FOR DISPLAYS AND SIGNALS. BRIEFLY DESCRIBE THE FUNCTIONAL OPERATION OF THE SYSTEM UNDER NORMAL, ALARM, AND TROUBLE CONDITIONS.
 - 2.5 MANUAL FIRE-ALARM BOXES
 - A. EXISTING.
 - 2.6 SYSTEM SMOKE DETECTORS
 - A. EXISTING.
 - 2.7 CARBON MONOXIDE DETECTORS
 - A. GENERAL: CARBON MONOXIDE DETECTOR LISTED FOR CONNECTION TO FIRE-ALARM SYSTEM.
 1. MOUNTING: ADAPTER PLATE FOR OUTLET BOX MOUNTING.
 2. TESTABLE BY INTRODUCING TEST CARBON MONOXIDE INTO THE SENSING CELL.
 3. DETECTOR SHALL PROVIDE ALARM CONTACTS AND TROUBLE CONTACTS.
 4. DETECTOR SHALL SEND TROUBLE ALARM WHEN NEARING END-OF-LIFE, POWER SUPPLY PROBLEMS, OR INTERNAL FAILURES.
 5. COMPLY WITH UL*2075.
 6. LOCATE, MOUNT, AND WIRE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
 7. PROVIDE MEANS FOR ADDRESSABLE CONNECTION TO FIRE-ALARM SYSTEM.
 8. TEST BUTTON SIMULATES AN ALARM CONDITION.
 - 2.8 NONSYSTEM SMOKE DETECTORS
 - A. GENERAL REQUIREMENTS FOR NONSYSTEM SMOKE DETECTORS:
 1. NONSYSTEM SMOKE DETECTORS SHALL BE LISTED AS COMPATIBLE WITH THE FIRE-ALARM EQUIPMENT INSTALLED OR SHALL HAVE A CONTACT CLOSURE INTERFACE LISTED FOR THE CONNECTED LOAD.
 2. NONSYSTEM SMOKE DETECTORS SHALL MEET THE MONITORING FOR INTEGRITY REQUIREMENTS IN NFPA*12.
 - B. SINGLE-STATION SMOKE DETECTORS:
 1. COMPLY WITH UL*217; SUITABLE FOR NFPA*10, RESIDENTIAL OCCUPANCIES; OPERATING AT 120-V*AC WITH 4-V*DC BATTERY AS THE SECONDARY POWER SOURCE. PROVIDE WITH "LOW" OR "MISSING" BATTERY CHIRPING-SOUND DEVICE.
 2. AUXILIARY RELAYS: ONE FORM "C", RATED AT 0.5*A.
 3. AUDIBLE NOTIFICATION APPLIANCE: PIEZOELECTRIC SOUNDER RATED AT 90 DBA AT 10 FEET (3*1M) ACCORDING TO UL*464.
 4. VISIBLE NOTIFICATION APPLIANCE: 171-CD STROBE.
 5. HEAT SENSOR, 135 DEG*F (57 DEG*C) FIXED TEMPERATURE.
 6. TEST SWITCH: PUSH TO TEST; SIMULATES SMOKE AT RATED OBSCURATION.
 7. TANDEM CONNECTION: ALLOW TANDEM CONNECTION OF NUMBER OF INDICATED DETECTORS; ALARM ON ONE DETECTOR SHALL ACTUATE NOTIFICATION ON ALL CONNECTED DETECTORS.
 8. PLUS-IN ARRANGEMENT: DETECTOR AND ASSOCIATED ELECTRONIC COMPONENTS SHALL BE MOUNTED IN A PLUS-IN MODULE THAT CONNECTS TO A FIXED BASE. PROVIDE TERMINALS IN THE FIXED BASE FOR CONNECTION TO BUILDING WIRING.
 9. SELF-RESTORING: DETECTORS SHALL NOT REQUIRE RESETTING OR READJUSTMENT AFTER ACTUATION TO RESTORE THEM TO NORMAL OPERATION.
 10. INTEGRAL VISUAL-INDICATING LIGHT: LED TYPE, INDICATING DETECTOR HAS OPERATED AND POWER-ON STATUS.
 - HEAT DETECTORS
 - A. EXISTING.



PSU Facilities and Planning
Joseph C. Blumel
Hall
Residence Hall
RE-PIPE REMODEL
(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201



InSite Group, Inc.
Consulting Engineers
310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
Portland, OR 97204 Fax: (503) 222-9324



ELECTRICAL SPECIFICATIONS

Revisions :	Date :
	4/17/2012

Drawn : DAB

Checked : CCW

ELECTRICAL SPECIFICATIONS

E3.7

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

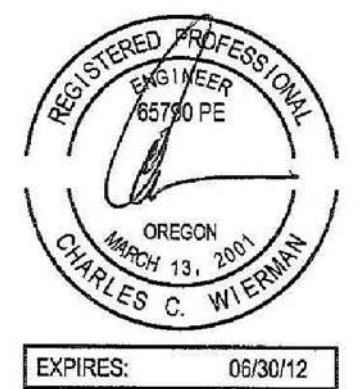
16720 - DIGITAL ADDRESSABLE FIRE ALARM SYSTEM - CONT

- 2.10 NOTIFICATION APPLIANCES
- A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
- COOPER WHEELLOCK
 - FEDERAL SIGNAL CORPORATION
 - GE UTC FIRE & SECURITY, A UNITED TECHNOLOGIES COMPANY
 - GENTEX CORPORATION
- B. GENERAL REQUIREMENTS FOR NOTIFICATION APPLIANCES: CONNECTED TO NOTIFICATION-APPLIANCE SIGNAL CIRCUITS, ZONED AS INDICATED, EQUIPPED FOR MOUNTING AS INDICATED, AND WITH SCREEN TERMINALS FOR SYSTEM CONNECTIONS.
- COMBINATION DEVICES: FACTORY-INTEGRATED AUDIBLE AND VISIBLE DEVICES IN A SINGLE-MOUNTING ASSEMBLY, EQUIPPED FOR MOUNTING AS INDICATED, AND WITH SCREEN TERMINALS FOR SYSTEM CONNECTIONS.
- C. VISIBLE NOTIFICATION APPLIANCES: XENON STROBE LIGHTS COMPLYING WITH UL1471, WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS MOUNTED ON AN ALUMINUM FACEPLATE. THE WORD "FIRE" IS ENGRAVED IN MINIMUM 1-INCH- (25-MM-) HIGH LETTERS ON THE LENS.
- RATED LIGHT OUTPUT:
 - 15/30/75/110 CD, SELECTABLE IN THE FIELD.
 - MOUNTING: WALL MOUNTED UNLESS OTHERWISE INDICATED.
 - FOR UNITS WITH GUARDS TO PREVENT PHYSICAL DAMAGE, LIGHT OUTPUT RATINGS SHALL BE DETERMINED WITH GUARDS IN PLACE.
 - FLASHING SHALL BE IN A TEMPORAL PATTERN, SYNCHRONIZED WITH OTHER UNITS.
 - STROBE LEADS: FACTORY CONNECTED TO SCREEN TERMINALS.
 - MOUNTING FACEPLATE: FACTORY FINISHED, RED.
- D. VOICE/TONE NOTIFICATION APPLIANCES:
- COMPLY WITH UL1480.
 - SPEAKERS FOR VOICE NOTIFICATION: LOCATE SPEAKERS FOR VOICE NOTIFICATION TO PROVIDE THE INTELLIGIBILITY REQUIREMENTS OF THE NOTIFICATION APPLIANCES' AND 'EMERGENCY COMMUNICATIONS SYSTEMS' CHAPTERS IN NFPA72.
 - HIGH-RANGE UNITS: RATED 2 TO 15"K.
 - LOW-RANGE UNITS: RATED 1" TO 2"K.
 - MOUNTING: FLUSH OR SURFACE MOUNTED AND BIDIRECTIONAL.
 - MATCHING TRANSFORMERS: TAP RANGE MATCHED TO ACOUSTICAL ENVIRONMENT OF SPEAKER LOCATION.
- E. EXIT MARKING AUDIBLE NOTIFICATION APPLIANCE:
- EXIT MARKING AUDIBLE NOTIFICATION APPLIANCES SHALL MEET THE AUDIBILITY REQUIREMENTS IN NFPA72.
 - PROVIDE EXIT MARKING AUDIBLE NOTIFICATION APPLIANCES AT THE ENTRANCE TO ALL BUILDING EXITS.
 - PROVIDE EXIT MARKING AUDIBLE NOTIFICATION APPLIANCES AT THE ENTRANCE TO AREAS OF REFUGE WITH AUDIBLE SIGNALS DISTINCT FROM THOSE USED FOR BUILDING EXIT MARKINGS.
- 2.11 MAGNETIC DOOR HOLDERS
- A. DESCRIPTION: UNITS ARE EQUIPPED FOR WALL OR FLOOR MOUNTING AS INDICATED AND ARE COMPLETE WITH MATCHING DOORPLATE.
- ELECTROMAGNETS: REQUIRE NO MORE THAN 3"K TO DEVELOP 25-LBF (111-N) HOLDING FORCE.
 - WALL-MOUNTED UNITS: FLUSH MOUNTED UNLESS OTHERWISE INDICATED.
 - RATING: 24-V*AC OR DC.
 - RATING: 120-V*AC.
- B. MATERIAL AND FINISH: MATCH DOOR HARDWARE.
- 2.12 REMOTE ANNUNCIATOR
- A. DESCRIPTION: ANNUNCIATOR FUNCTIONS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT FOR ALARM, SUPERVISORY, AND TROUBLE INDICATIONS. MANUAL SWITCHING FUNCTIONS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT, INCLUDING ACKNOWLEDGING, SILENCING, RESETTING, AND TESTING.
- MOUNTING: FLUSH CABINET, NEMA250, TYPE1.
- B. DISPLAY TYPE AND FUNCTIONAL PERFORMANCE: ALPHANUMERIC DISPLAY AND LED INDICATING LIGHTS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT. PROVIDE CONTROLS TO ACKNOWLEDGE, SILENCE, RESET, AND TEST FUNCTIONS FOR ALARM, SUPERVISORY, AND TROUBLE SIGNALS.
- 2.13 ADDRESSABLE INTERFACE DEVICE
- A. GENERAL:
- INCLUDE ADDRESS-SETTING MEANS ON THE MODULE.
 - STORE AN INTERNAL IDENTIFYING CODE FOR CONTROL PANEL USE TO IDENTIFY THE MODULE TYPE.
 - LISTED FOR CONTROLLING HVAC FAN MOTOR CONTROLLERS.
- B. MONITOR MODULE: MICROELECTRONIC MODULE PROVIDING A SYSTEM ADDRESS FOR ALARM-INITIATING DEVICES FOR WIRED APPLICATIONS WITH NORMALLY OPEN CONTACTS.
- C. INTEGRAL RELAY: CAPABLE OF PROVIDING A DIRECT SIGNAL TO ELEVATOR CONTROLLER TO INITIATE ELEVATOR RECALL AND TO CIRCUIT-BREAKER SHUNT TRIP FOR POWER SHUTDOWN.
- ALLOW THE CONTROL PANEL TO SWITCH THE RELAY CONTACTS ON COMMAND.
 - HAVE A MINIMUM OF TWO NORMALLY OPEN AND TWO NORMALLY CLOSED CONTACTS AVAILABLE FOR FIELD WIRING.
- D. CONTROL MODULE:
- OPERATE NOTIFICATION DEVICES.
- 2.14 DIGITAL ALARM COMMUNICATOR TRANSMITTER
- A. DIGITAL ALARM COMMUNICATOR TRANSMITTER SHALL BE ACCEPTABLE TO THE REMOTE CENTRAL STATION AND SHALL COMPLY WITH UL682.
- B. FUNCTIONAL PERFORMANCE: UNIT SHALL RECEIVE AN ALARM, SUPERVISORY, OR TROUBLE SIGNAL FROM FIRE-ALARM CONTROL UNIT AND AUTOMATICALLY CAPTURE TWO TELEPHONE LINES AND DIAL A PRESET NUMBER FOR A REMOTE CENTRAL STATION. WHEN CONTACT IS MADE WITH CENTRAL STATION(S), SIGNALS SHALL BE TRANSMITTED. IF SERVICE ON EITHER LINE IS INTERRUPTED FOR LONGER THAN 45 SECONDS, TRANSMITTER SHALL INITIATE A LOCAL TROUBLE SIGNAL AND TRANSMIT THE SIGNAL INDICATING LOSS OF TELEPHONE LINE TO THE REMOTE ALARM RECEIVING STATION OVER THE REMAINING LINE. TRANSMITTER SHALL AUTOMATICALLY REPORT TELEPHONE SERVICE RESTORATION TO THE CENTRAL STATION. IF SERVICE IS LOST ON BOTH TELEPHONE LINES, TRANSMITTER SHALL INITIATE THE LOCAL TROUBLE SIGNAL.

- SINGLE-STATION SMOKE DETECTORS: WHERE MORE THAN ONE SMOKE ALARM IS INSTALLED WITHIN A DWELLING OR SUITE, THEY SHALL BE CONNECTED SO THAT THE OPERATION OF ANY SMOKE ALARM CAUSES THE ALARM IN ALL SMOKE ALARMS TO SOUND.
- A. REMOTE STATUS AND ALARM INDICATORS: INSTALL IN A VISIBLE LOCATION NEAR EACH SMOKE DETECTOR, SPRINKLER WATER-FLOW SWITCH, AND VALVE-TAMPER SWITCH THAT IS NOT READILY VISIBLE FROM NORMAL VIEWING POSITION.
- B. AUDIBLE ALARM-INDICATING DEVICES: INSTALL NOT LESS THAN 6 INCHES (150 MM) BELOW THE CEILING. INSTALL BELLS AND HORNS ON FLUSH-MOUNTED BACK BOXES WITH THE DEVICE-OPERATING MECHANISM CONCEALED BEHIND A GRILLE. INSTALL ALL DEVICES AT THE SAME HEIGHT UNLESS OTHERWISE INDICATED.
- C. VISIBLE ALARM-INDICATING DEVICES: INSTALL ADJACENT TO EACH ALARM BELL OR ALARM HORN AND AT LEAST 6 INCHES (150 MM) BELOW THE CEILING. INSTALL ALL DEVICES AT THE SAME HEIGHT UNLESS OTHERWISE INDICATED.
- 3.3 PATHWAYS
- A. PATHWAYS ABOVE RECESSED CEILING AND IN NONACCESSIBLE LOCATIONS MAY BE ROUTED EXPOSED.
- EXPOSED PATHWAYS LOCATED LESS THAN 46 INCHES (2440 MM) ABOVE THE FLOOR SHALL BE INSTALLED IN EMT.
- B. PATHWAYS SHALL BE INSTALLED IN EMT.
- C. EXPOSED EMT SHALL BE PAINTED RED ENAMEL.
- 3.4 CONNECTIONS
- A. FOR FIRE-PROTECTION SYSTEMS RELATED TO DOORS IN FIRE-RATED WALLS AND PARTITIONS AND TO DOORS IN SMOKE PARTITIONS, COMPLY WITH REQUIREMENTS IN SECTION 081100 'DOOR HARDWARE.' CONNECT HARDWARE AND DEVICES TO FIRE-ALARM SYSTEM.
- VERIFY THAT HARDWARE AND DEVICES ARE LISTED FOR USE WITH INSTALLED FIRE-ALARM SYSTEM BEFORE MAKING CONNECTIONS.
- B. MAKE ADDRESSABLE CONNECTIONS WITH A SUPERVISED INTERFACE DEVICE TO THE FOLLOWING DEVICES AND SYSTEMS. INSTALL THE INTERFACE DEVICE LESS THAN 36 INCHES (910 MM) FROM THE DEVICE CONTROLLED. MAKE AN ADDRESSABLE CONFIRMATION CONNECTION WHEN SUCH FEEDBACK IS AVAILABLE AT THE DEVICE OR SYSTEM BEING CONTROLLED.
- MAGNETICALLY HELD-OPEN DOORS.
 - ALARM-INITIATING CONNECTION TO ELEVATOR RECALL SYSTEM AND COMPONENTS.
 - SUPERVISORY CONNECTIONS AT VALVE SUPERVISORY SWITCHES.
 - SUPERVISORY CONNECTIONS AT ELEVATOR SHUNT-TRIP BREAKER.
 - DATA COMMUNICATION CIRCUITS FOR CONNECTION TO MASS NOTIFICATION SYSTEM.
- 3.5 IDENTIFICATION
- A. IDENTIFY SYSTEM COMPONENTS, WIRING, CABLING, AND TERMINALS. COMPLY WITH REQUIREMENTS FOR IDENTIFICATION SPECIFIED IN SECTION 260555 'IDENTIFICATION FOR ELECTRICAL SYSTEMS.'
- B. INSTALL FRAMED INSTRUCTIONS IN A LOCATION VISIBLE FROM FIRE-ALARM CONTROL UNIT.
- 3.6 GROUNDING
- A. GROUND FIRE-ALARM CONTROL UNIT AND ASSOCIATED CIRCUITS, COMPLY WITH IEEE1100. INSTALL A GROUND WIRE FROM MAIN SERVICE GROUND TO FIRE-ALARM CONTROL UNIT.
- B. GROUND SHIELDED CABLES AT THE CONTROL PANEL LOCATION ONLY. INSULATE SHIELD AT DEVICE LOCATION.
- 3.7 FIELD QUALITY CONTROL
- A. FIELD TESTS SHALL BE WITNESSED BY AUTHORITIES HAVING JURISDICTION.
- B. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO TEST AND INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS.
- C. PERFORM TESTS AND INSPECTIONS.
- D. PERFORM THE FOLLOWING TESTS AND INSPECTIONS WITH THE ASSISTANCE OF A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE:
- VISUAL INSPECTION: CONDUCT VISUAL INSPECTION PRIOR TO TESTING.
 - INSPECTION SHALL BE BASED ON COMPLETED RECORD DRAWINGS AND SYSTEM DOCUMENTATION THAT IS REQUIRED BY THE 'COMPLETION DOCUMENTS PREPARATION' TABLE IN THE 'DOCUMENTATION' SECTION OF THE 'FUNDAMENTALS' CHAPTER IN NFPA72.
 - COMPLY WITH THE 'VISUAL INSPECTION FREQUENCIES' TABLE IN THE 'INSPECTION' SECTION OF THE 'INSPECTION, TESTING AND MAINTENANCE' CHAPTER IN NFPA72; RETAIN THE 'INITIAL/REACCEPTANCE' COLUMN AND LIST ONLY THE INSTALLED COMPONENTS.
 - SYSTEM TESTING: COMPLY WITH THE 'TEST METHODS' TABLE IN THE 'TESTING' SECTION OF THE 'INSPECTION, TESTING AND MAINTENANCE' CHAPTER IN NFPA72.
 - TEST AUDIBLE APPLIANCES FOR THE PUBLIC OPERATING MODE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. PERFORM THE TEST USING A PORTABLE SOUND-LEVEL METER COMPLYING WITH TYPE2 REQUIREMENTS IN ANSI S1.4.
 - TEST AUDIBLE APPLIANCES FOR THE PRIVATE OPERATING MODE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - TEST VISIBLE APPLIANCES FOR THE PUBLIC OPERATING MODE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - FACTORY-AUTHORIZED SERVICE REPRESENTATIVE SHALL PREPARE THE 'FIRE ALARM SYSTEM RECORD OF COMPLETION' IN THE 'DOCUMENTATION' SECTION OF THE 'FUNDAMENTALS' CHAPTER IN NFPA72 AND THE 'INSPECTION AND TESTING FORM' IN THE 'RECORDS' SECTION OF THE 'INSPECTION, TESTING AND MAINTENANCE' CHAPTER IN NFPA72.
- E. REACCEPTANCE TESTING: PERFORM REACCEPTANCE TESTING TO VERIFY THE PROPER OPERATION OF ADDED OR REPLACED DEVICES AND APPLIANCES.
- F. FIRE-ALARM SYSTEM WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.
- G. PREPARE TEST AND INSPECTION REPORTS.
- H. MAINTENANCE TEST AND INSPECTION: PERFORM TESTS AND INSPECTIONS LISTED FOR WEEKLY, MONTHLY, QUARTERLY, AND SEMIANNUAL PERIODS. USE FORMS DEVELOPED FOR INITIAL TESTS AND INSPECTIONS.
- ANNUAL TEST AND INSPECTION: ONE YEAR AFTER DATE OF SUBSTANTIAL COMPLETION, TEST FIRE-ALARM SYSTEM COMPLYING WITH VISUAL AND TESTING INSPECTION REQUIREMENTS IN NFPA72. USE FORMS DEVELOPED FOR INITIAL TESTS AND INSPECTIONS.

- 2.15 NETWORK COMMUNICATIONS
- A. PROVIDE NETWORK COMMUNICATIONS FOR FIRE-ALARM SYSTEM ACCORDING TO FIRE-ALARM MANUFACTURER'S WRITTEN REQUIREMENTS.
- B. PROVIDE NETWORK COMMUNICATIONS PATHWAY PER MANUFACTURER'S WRITTEN REQUIREMENTS AND REQUIREMENTS IN NFPA72 AND NFPA70.
- 2.16 SYSTEM PRINTER
- A. PRINTER SHALL BE LISTED AND LABELED AS AN INTEGRAL PART OF FIRE-ALARM SYSTEM.
- 2.17 DEVICE GUARDS
- A. DESCRIPTION: WELDED WIRE MESH OF SIZE AND SHAPE FOR THE MANUAL STATION SMOKE DETECTOR, GONG, OR OTHER DEVICE REQUIRING PROTECTION.
- FACTORY FABRICATED AND FURNISHED BY DEVICE MANUFACTURER.
 - FINISH: PAINT OF COLOR TO MATCH THE PROTECTED DEVICE.
- PART 3 - EXECUTION
- 3.1 EXAMINATION
- A. EXAMINE AREAS AND CONDITIONS FOR COMPLIANCE WITH REQUIREMENTS FOR VENTILATION, TEMPERATURE, HUMIDITY, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
- VERIFY THAT MANUFACTURER'S WRITTEN INSTRUCTIONS FOR ENVIRONMENTAL CONDITIONS HAVE BEEN PERMANENTLY ESTABLISHED IN SPACES WHERE EQUIPMENT AND WIRING ARE INSTALLED, BEFORE INSTALLATION BEGINS.
- B. EXAMINE ROUGH-IN FOR ELECTRICAL CONNECTIONS TO VERIFY ACTUAL LOCATIONS OF CONNECTIONS BEFORE INSTALLATION.
- C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- 3.2 EQUIPMENT INSTALLATION
- A. COMPLY WITH NFPA72, NFPA701, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION FOR INSTALLATION AND TESTING OF FIRE-ALARM EQUIPMENT. INSTALL ALL ELECTRICAL WIRING TO COMPLY WITH REQUIREMENTS IN NFPA70 INCLUDING, BUT NOT LIMITED TO, ARTICLE160, 'FIRE ALARM SYSTEMS.'
- DEVICES PLACED IN SERVICE BEFORE ALL OTHER TRADES HAVE COMPLETED CLEANUP SHALL BE REPLACED.
 - DEVICES INSTALLED BUT NOT YET PLACED IN SERVICE SHALL BE PROTECTED FROM CONSTRUCTION DUST, DEBRIS, DIRT, MOISTURE, AND DAMAGE ACCORDING TO MANUFACTURER'S WRITTEN STORAGE INSTRUCTIONS.
- B. CONNECTING TO EXISTING EQUIPMENT: VERIFY THAT EXISTING FIRE-ALARM SYSTEM IS OPERATIONAL BEFORE MAKING CHANGES OR CONNECTIONS.
- CONNECT NEW EQUIPMENT TO EXISTING CONTROL PANEL IN EXISTING PART OF THE BUILDING.
 - CONNECT NEW EQUIPMENT TO EXISTING MONITORING EQUIPMENT AT THE SUPERVISING STATION.
 - EXPAND, MODIFY, AND SUPPLEMENT EXISTING MONITORING EQUIPMENT AS NECESSARY TO EXTEND EXISTING MONITORING FUNCTIONS TO THE NEW POINTS. NEW COMPONENTS SHALL BE CAPABLE OF MERGING WITH EXISTING CONFIGURATION WITHOUT DEGRADING THE PERFORMANCE OF EITHER SYSTEM.
- C. INSTALL WALL-MOUNTED EQUIPMENT, WITH TOPS OF CABINETS NOT MORE THAN 18 INCHES (460 MM) ABOVE THE FINISHED FLOOR.
- COMPLY WITH REQUIREMENTS FOR SEISMIC-RESTRAINT DEVICES SPECIFIED IN SECTION 260548 'VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS.'
- D. SMOKE- OR HEAT-DETECTOR SPACINGS:
- COMPLY WITH THE 'SMOKE-SENSING FIRE DETECTORS' SECTION IN THE 'INITIATING DEVICES' CHAPTER IN NFPA72, FOR SMOKE-DETECTOR SPACINGS.
 - COMPLY WITH THE 'HEAT-SENSING FIRE DETECTORS' SECTION IN THE 'INITIATING DEVICES' CHAPTER IN NFPA72, FOR HEAT-DETECTOR SPACINGS.
 - SMOOTH CEILING SPACINGS SHALL NOT EXCEED 30 FEET (91M).
 - SPACINGS OF DETECTORS FOR IRREGULAR AREAS, FOR IRREGULAR CEILING CONSTRUCTION, AND FOR HIGH CEILING AREAS SHALL BE DETERMINED ACCORDING TO ANNEX 'A' IN NFPA72.
 - HVAC: LOCATE DETECTORS NOT CLOSER THAN 36 INCHES (910 MM) FROM AIR-SUPPLY DIFFUSER OR RETURN-AIR OPENINGS.
 - LIGHTING FIXTURES: LOCATE DETECTORS NOT CLOSER THAN 12 INCHES (300 MM) FROM ANY PART OF A LIGHTING FIXTURE AND NOT DIRECTLY ABOVE PENDANT MOUNTED OR INDIRECT LIGHTING.
- E. INSTALL A COVER ON EACH SMOKE DETECTOR THAT IS NOT PLACED IN SERVICE DURING CONSTRUCTION. COVER SHALL REMAIN IN PLACE EXCEPT DURING SYSTEM TESTING. REMOVE COVER PRIOR TO SYSTEM TURNOVER.
- F. ELEVATOR SHAFTS: COORDINATE TEMPERATURE RATINGS AND LOCATION WITH SPRINKLER RATING AND LOCATION. DO NOT INSTALL SMOKE DETECTORS IN SPRINKLERED ELEVATOR SHAFTS.

- 3.8 MAINTENANCE SERVICE
- A. INITIAL MAINTENANCE SERVICE: BEGINNING AT SUBSTANTIAL COMPLETION, MAINTENANCE SERVICE SHALL INCLUDE 12 MONTHS' FULL MAINTENANCE BY SKILLED EMPLOYEES OF MANUFACTURER'S DESIGNATED SERVICE ORGANIZATION. INCLUDE PREVENTIVE MAINTENANCE, REPAIR OR REPLACEMENT OF WORN OR DEFECTIVE COMPONENTS, LUBRICATION, CLEANING, AND ADJUSTING AS REQUIRED FOR PROPER OPERATION. PARTS AND SUPPLIES SHALL BE MANUFACTURER'S AUTHORIZED REPLACEMENT PARTS AND SUPPLIES.
- INCLUDE VISUAL INSPECTIONS ACCORDING TO THE 'VISUAL INSPECTION FREQUENCIES' TABLE IN THE 'TESTING' PARAGRAPH OF THE 'INSPECTION, TESTING AND MAINTENANCE' CHAPTER IN NFPA72.
 - PERFORM TESTS IN THE 'TEST METHODS' TABLE IN THE 'TESTING' PARAGRAPH OF THE 'INSPECTION, TESTING AND MAINTENANCE' CHAPTER IN NFPA72.
 - PERFORM TESTS PER THE 'TESTING FREQUENCIES' TABLE IN THE 'TESTING' PARAGRAPH OF THE 'INSPECTION, TESTING AND MAINTENANCE' CHAPTER IN NFPA72.
- 3.9 SOFTWARE SERVICE AGREEMENT
- A. COMPLY WITH UL1664.
- B. TECHNICAL SUPPORT: BEGINNING AT SUBSTANTIAL COMPLETION, SERVICE AGREEMENT SHALL INCLUDE SOFTWARE SUPPORT FOR TWO YEARS.
- C. UPGRADE SERVICE: AT SUBSTANTIAL COMPLETION, UPDATE SOFTWARE TO LATEST VERSION, INSTALL AND PROGRAM SOFTWARE UPGRADES THAT BECOME AVAILABLE WITHIN TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION. UPGRADING SOFTWARE SHALL INCLUDE OPERATING SYSTEM AND NEW OR REVISED LICENSES FOR USING SOFTWARE.
- UPGRADE NOTICE: AT LEAST 30 DAYS TO ALLOW OWNER TO SCHEDULE ACCESS TO SYSTEM AND TO UPGRADE COMPUTER EQUIPMENT IF NECESSARY.
- 3.10 DEMONSTRATION
- A. TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN FIRE-ALARM SYSTEM.
- END OF SECTION 26311

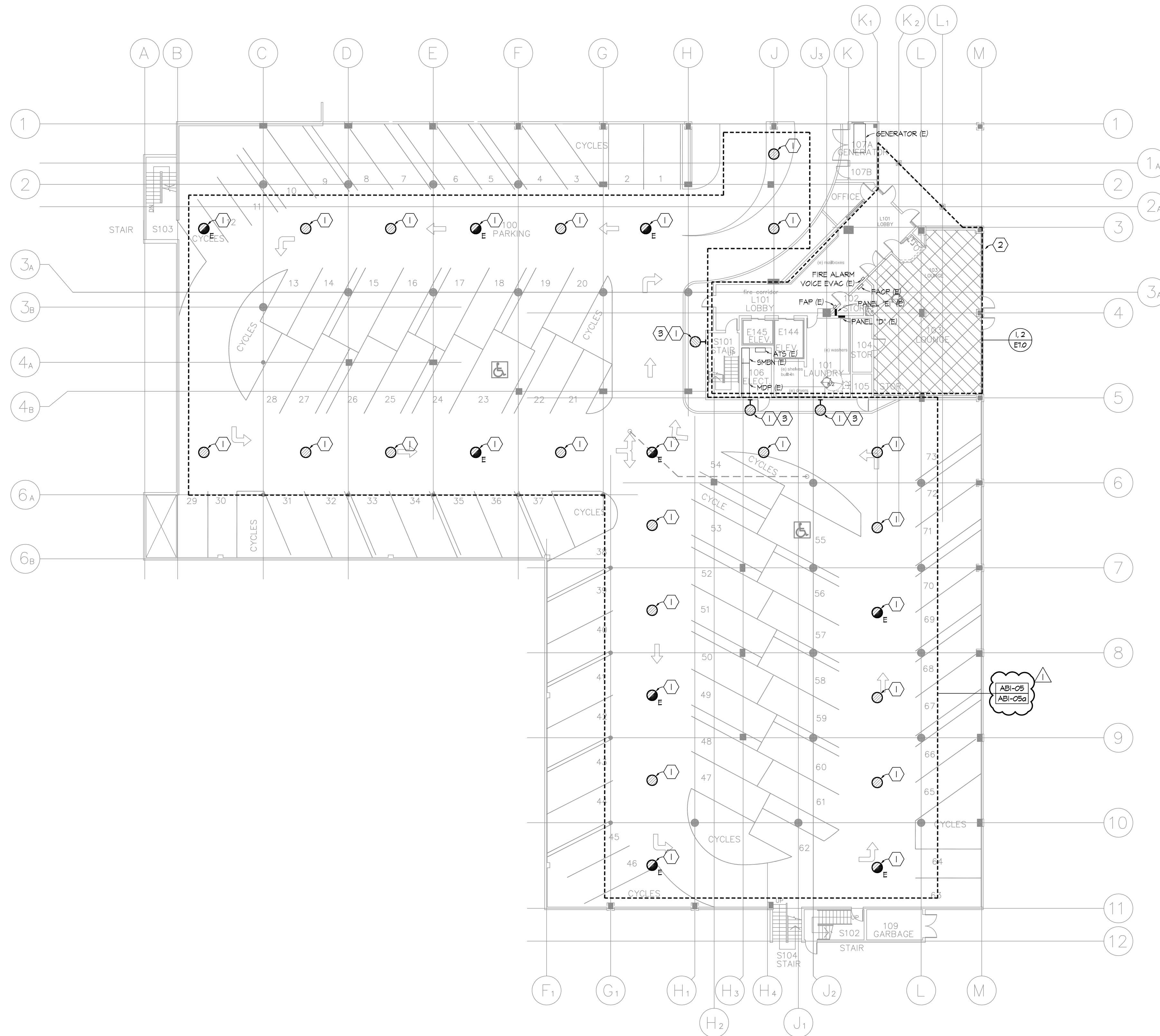


InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

ELECTRICAL SPECIFICATIONS

Revisions :	Date :
	4/17/2012
Drawn : DAB	
Checked : CCW	

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



PLAN NOTES:

- ① REMOVE EXISTING LUMINAIRE. MAINTAIN EXISTING CIRCUITRY FOR NEW WORK.
- ② RE: IETLO AND 2ETLO FOR WORK IN THIS AREA.
- ③ PATCH WALL TO MATCH EXISTING.

GENERAL NOTES:
 1) ALL LIGHTING WORK WITHIN THE PARKING AREAS SHOWN ON THIS SHEET SHALL BE UNDER ABI-05a AND ABI-11.

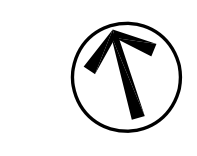


InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

**1ST FLOOR PLAN
 ELECTRICAL DEMOLITION**

Revisions :
 ① 5/4/2012 - ADDENDUM #1 Date : 4/17/2012

Drawn : DAB
 Checked : CCW

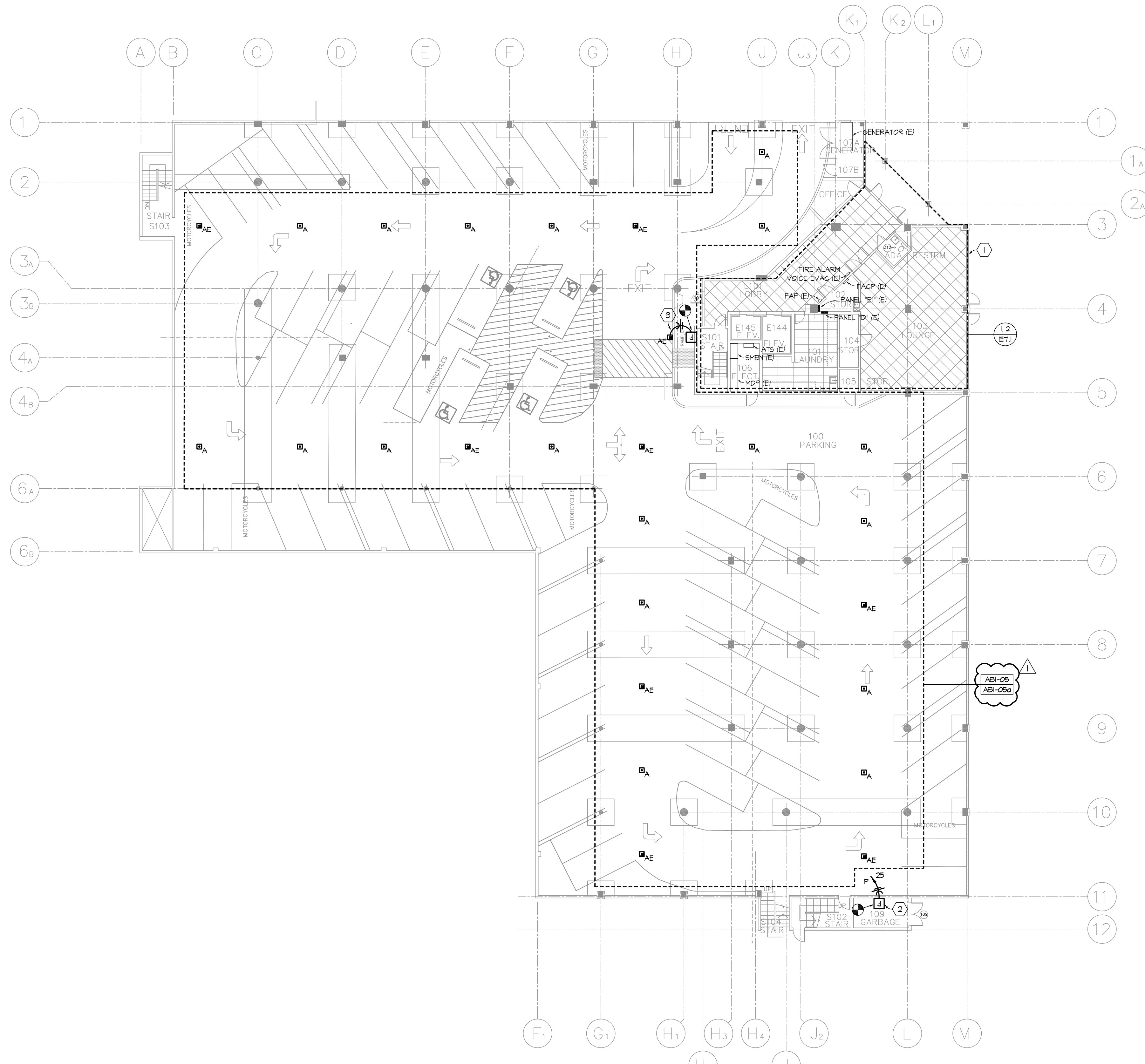


1ST FLOOR PLAN - ELECTRICAL DEMOLITION

1/16" = 1' - 0"

E4.0

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



PLAN NOTES:

- ① RE: 1E1J AND 2E1J FOR WORK IN THIS AREA.
- ② PROVIDE 120 VAC POWER TO NEW HEAT TRACE. COORDINATE WITH PLUMBING CONTRACTOR. CONNECT TO EXISTING HEAT TRACE CIRCUIT.
- ③ EXTEND EXISTING CONDUIT AND CIRCUITRY TO NEW LUMINAIRE LOCATION.

GENERAL NOTES:
 1) ALL LIGHTING FIXTURES SHOWN ON THIS SHEET ARE NEW. MOUNT PER MANUFACTURERS RECOMMENDATIONS. CONNECT TO EXISTING POWER CIRCUITRY MAINTAINED DURING DEMOLITION.

GENERAL NOTES:
 1) ALL LIGHTING WORK WITHIN THE PARKING AREAS SHOWN ON THIS SHEET SHALL BE UNDER ABI-050 AND ABI-11. ABI-S SHALL BE DESIGN-BUILD AND SHALL MEET THE REQUIREMENTS BELOW.

- ABI-05 PERFORMANCE REQUIREMENTS:**
- MINIMUM HORIZONTAL ILLUMINATION FOR COVERED PARKING:
1.0 FOOT-CANDLE AT FLOOR LEVEL
 - MINIMUM VERTICAL ILLUMINATION FOR COVERED PARKING:
0.5 FOOT-CANDLE
 - MAXIMUM TO MINIMUM HORIZONTAL UNIFORMITY RATIO FOR COVERED PARKING:
10:1
 - MINIMUM HORIZONTAL ILLUMINATION FOR UNCOVERED PARKING:
0.3 FOOT-CANDLE AT FLOOR LEVEL
 - MINIMUM VERTICAL ILLUMINATION FOR UNCOVERED PARKING:
0.25 FOOT-CANDLE
 - MAXIMUM TO MINIMUM HORIZONTAL UNIFORMITY RATIO FOR UNCOVERED PARKING:
20:1
- ADDITIONAL REQUIREMENTS:**
- PROVIDE LIGHTING CALCULATIONS USING AG132 LIGHTING SIMULATION SOFTWARE. SUBMIT AG132 MODEL FILE TO ENGINEER FOR REVIEW.
 - MODEL AND CALCULATIONS TO USE THE FOLLOWING:
 - 1) LIGHT LOSS FACTOR: 0.75
 - 2) MOUNTING HEIGHTS OF LIGHT FIXTURES LISTED ON THE DRAWINGS.
 - 3) ALL OPAQUE SURFACES.
 - 4) SOFTWARE CALCULATION GRID: 2 FEET
 - TESTING: SPOT CHECKS OF THE ABOVE REQUIREMENTS SHALL BE PERFORMED WITH THE OWNER AND ENGINEER. IF ANY OF THE ABOVE REQUIREMENTS ARE NOT MET THEN THE CONTRACTOR SHALL MODIFY THE INSTALLATION AS REQUIRED AT NO COST TO THE OWNER.

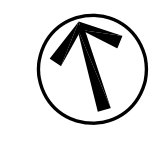


InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

**1ST FLOOR PLAN
 ELECTRICAL LIGHTING NEW WORK**

Revisions :	Date :
△ 5/4/2012 - ADDENDUM #1	4/17/2012

Drawn : DAB
 Checked : CCW

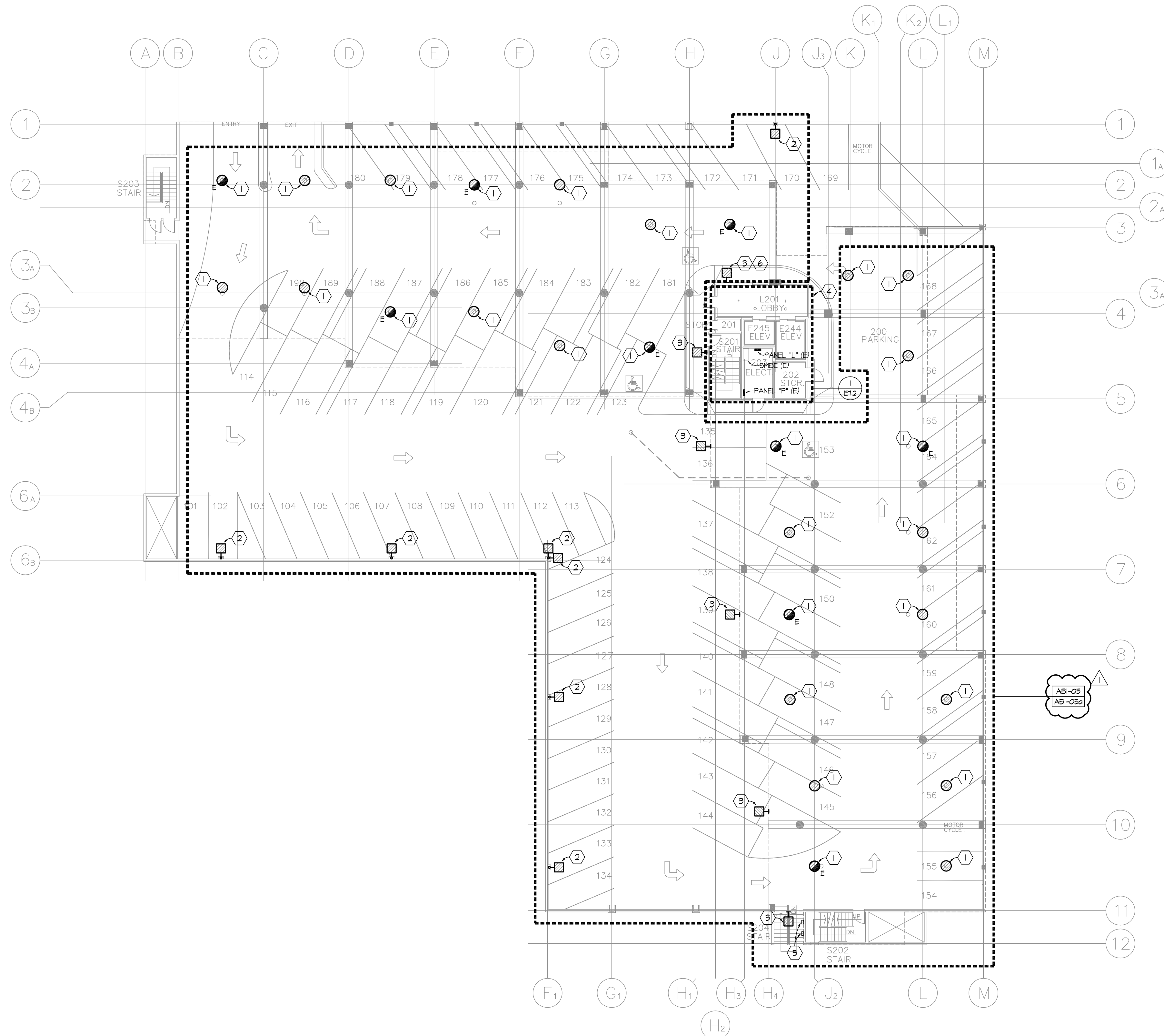


1ST FLOOR PLAN - LIGHTING NEW WORK

1/16" = 1' - 0"

E4.1

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



PLAN NOTES:

- ① REMOVE EXISTING HIGH PRESSURE SODIUM LUMINAIRE. MAINTAIN EXISTING CIRCUITRY FOR NEW WORK.
- ② REMOVE EXISTING LUMINAIRE FROM POLE. MAINTAIN POLE & WIRING FOR NEW LUMINAIRE.
- ③ REMOVE EXISTING WALL MOUNTED LUMINAIRE. MAINTAIN CIRCUITRY FOR NEW WORK.
- ④ RE: IET2 FOR WORK IN THIS AREA.
- ⑤ DISCONNECT POWER TO EXISTING STEP LIGHTING FIXTURES.
- ⑥ PATCH WALL TO MATCH EXISTING.

GENERAL NOTES:
 ① ALL LIGHTING WORK WITHIN THE PARKING AREAS SHOWN ON THIS SHEET SHALL BE UNDER ABI-05a AND ABI-II.

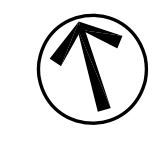


InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

**2ND FLOOR PLAN
 ELECTRICAL DEMOLITION**

Revisions :
 ① 5/4/2012 - ADDENDUM #1 Date : 4/17/2012

Drawn : DAB
 Checked : CCW



2ND FLOOR PLAN - ELECTRICAL DEMOLITION

1/16" = 1' - 0"

E5.0

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

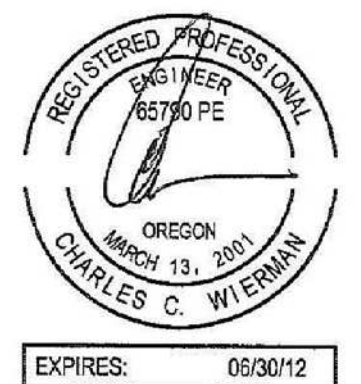
PLAN NOTES:

- 1) CONNECT NEW LIGHT FIXTURE TO EXISTING POLE.
- 2) RE: 2E1.2 FOR WORK IN THIS AREA.
- 3) MOUNT NEW PHOTOCELL FACING NORTH. RE: 2E5.1 FOR LIGHTING CONTROL RISER DIAGRAM.
- 4) ROUTE (2) #12, (1) #12 GROUND IN 1/2" CONDUIT TO NEW LIGHTING FIXTURE. THIS LIGHTING FIXTURE LOCATION NOW REQUIRES EMERGENCY POWER. CONNECT TO EXISTING EMERGENCY POWER LIGHTING CIRCUIT.
- 5) EXTEND EXISTING CONDUIT AND CIRCUITRY TO NEW LUMINAIRE LOCATION.

GENERAL NOTES:
 1) ALL LIGHTING FIXTURES SHOWN ON THIS SHEET ARE NEW. MOUNT PER MANUFACTURERS RECOMMENDATIONS. CONNECT TO EXISTING POWER CIRCUITRY MAINTAINED DURING DEMOLITION.

GENERAL NOTES:
 1) ALL LIGHTING WORK WITHIN THE PARKING AREAS SHOWN ON THIS SHEET SHALL BE UNDER ABI-05a AND ABI-II. ABI-S SHALL BE DESIGN-BUILD AND SHALL MEET THE REQUIREMENTS BELOW.

ABI-05 PERFORMANCE REQUIREMENTS:
 MINIMUM HORIZONTAL ILLUMINATION FOR COVERED PARKING:
 1.0 FOOT-CANDLE AT FLOOR LEVEL
 MINIMUM VERTICAL ILLUMINATION FOR COVERED PARKING:
 0.5 FOOT-CANDLE
 MAXIMUM TO MINIMUM HORIZONTAL UNIFORMITY RATIO FOR COVERED PARKING:
 10:1
 MINIMUM HORIZONTAL ILLUMINATION FOR UNCOVERED PARKING:
 0.3 FOOT-CANDLE AT FLOOR LEVEL
 MINIMUM VERTICAL ILLUMINATION FOR UNCOVERED PARKING:
 0.25 FOOT-CANDLE
 MAXIMUM TO MINIMUM HORIZONTAL UNIFORMITY RATIO FOR UNCOVERED PARKING:
 20:1
ADDITIONAL REQUIREMENTS:
 • PROVIDE LIGHTING CALCULATIONS USING AGI32 LIGHTING SIMULATION SOFTWARE. SUBMIT AGI32 MODEL FILE TO ENGINEER FOR REVIEW.
 • MODEL AND CALCULATIONS TO USE THE FOLLOWING:
 1) LIGHT LOSS FACTOR: 0.75
 2) MOUNTING HEIGHTS OF LIGHT FIXTURES LISTED ON THE DRAWINGS.
 3) ALL OPAQUE SURFACES.
 4) SOFTWARE CALCULATION GRID: 2 FEET
 • TESTING: SPOT CHECKS OF THE ABOVE REQUIREMENTS SHALL BE PERFORMED WITH THE OWNER AND ENGINEER. IF ANY OF THE ABOVE REQUIREMENTS ARE NOT MET THEN THE CONTRACTOR SHALL MODIFY THE INSTALLATION AS REQUIRED AT NO COST TO THE OWNER.



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

**2ND FLOOR PLAN
 ELECTRICAL NEW WORK**

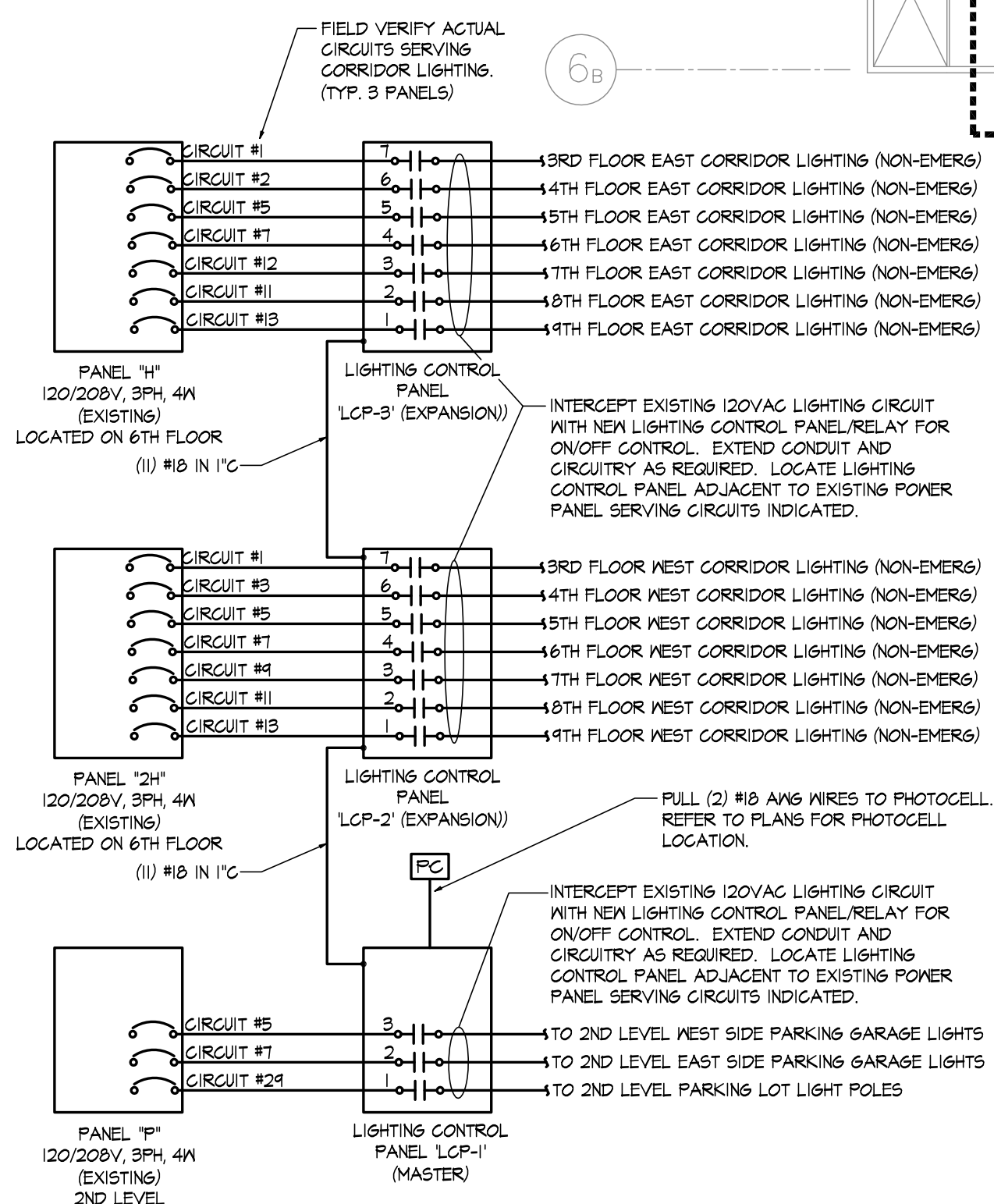
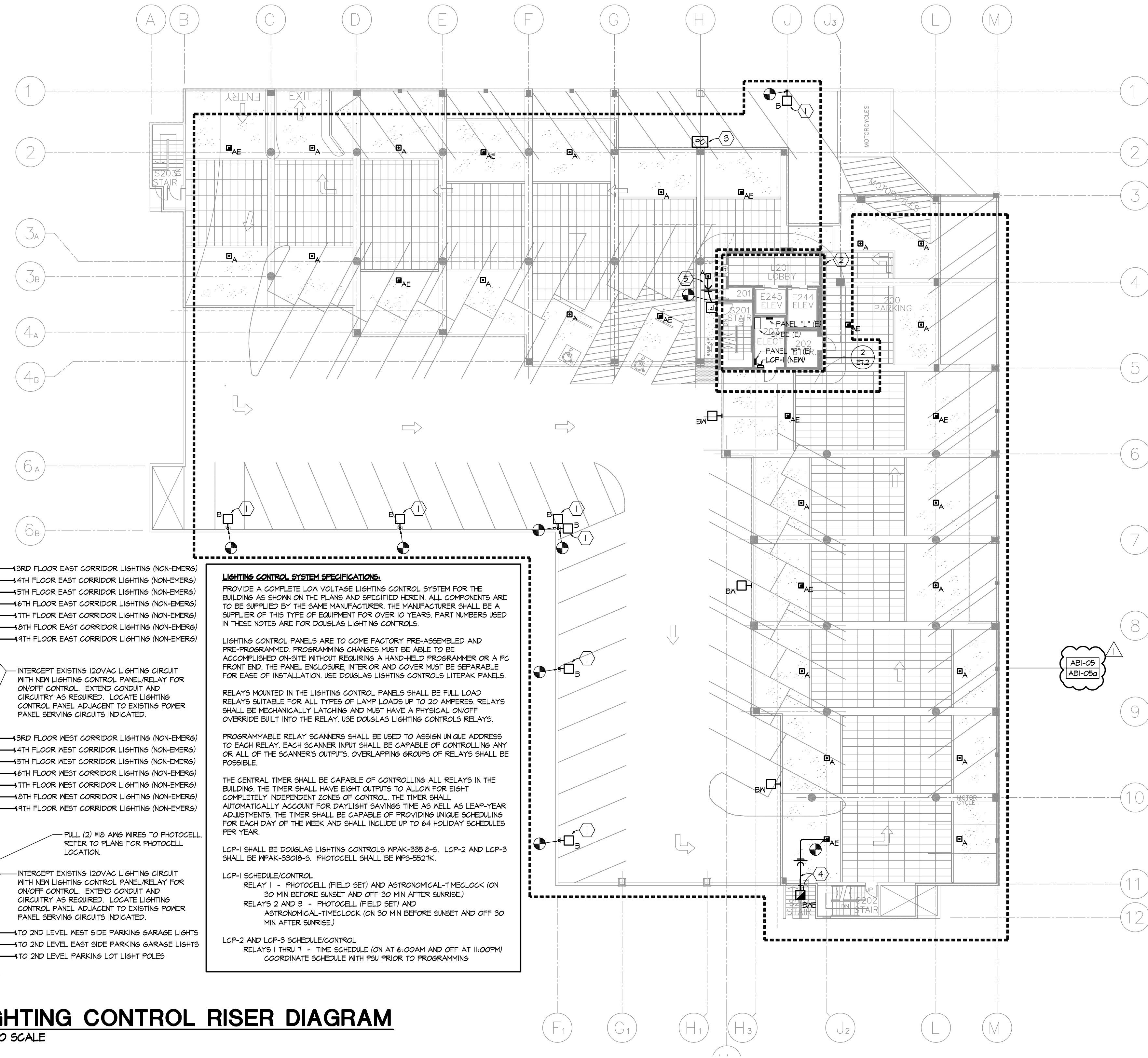
Revisions :
 △ 5/4/2012 - ADDENDUM #1 Date : 4/17/2012

Drawn : DAB

Checked : CCW



E5.1



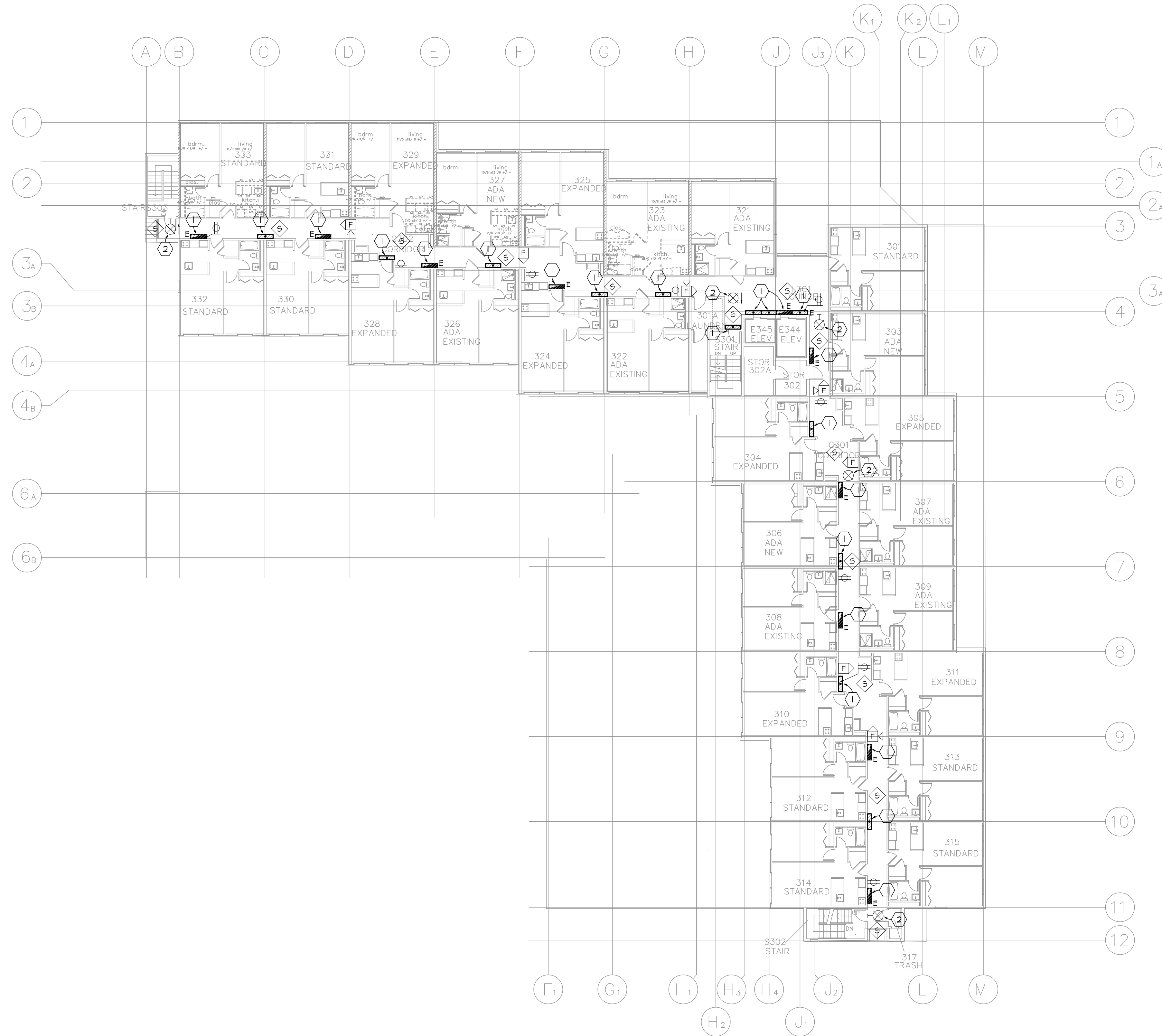
LIGHTING CONTROL SYSTEM SPECIFICATIONS:
 PROVIDE A COMPLETE LOW VOLTAGE LIGHTING CONTROL SYSTEM FOR THE BUILDING AS SHOWN ON THE PLANS AND SPECIFIED HEREIN. ALL COMPONENTS ARE TO BE SUPPLIED BY THE SAME MANUFACTURER. THE MANUFACTURER SHALL BE A SUPPLIER OF THIS TYPE OF EQUIPMENT FOR OVER 10 YEARS. PART NUMBERS USED IN THESE NOTES ARE FOR DOUGLAS LIGHTING CONTROLS.
 LIGHTING CONTROL PANELS ARE TO COME FACTORY PRE-ASSEMBLED AND PRE-PROGRAMMED. PROGRAMMING CHANGES MUST BE ABLE TO BE ACCOMPLISHED ON-SITE WITHOUT REQUIRING A HAND-HELD PROGRAMMER OR A PC FRONT END. THE PANEL ENCLOSURE, INTERIOR AND COVER MUST BE SEPARABLE FOR EASE OF INSTALLATION. USE DOUGLAS LIGHTING CONTROLS LITEPAK PANELS.
 RELAYS MOUNTED IN THE LIGHTING CONTROL PANELS SHALL BE FULL LOAD RELAYS SUITABLE FOR ALL TYPES OF LAMP LOADS UP TO 20 AMPERES. RELAYS SHALL BE MECHANICALLY LATCHING AND MUST HAVE A PHYSICAL ON/OFF OVERRIDE BUILT INTO THE RELAY. USE DOUGLAS LIGHTING CONTROLS RELAYS.
 PROGRAMMABLE RELAY SCANNERS SHALL BE USED TO ASSIGN UNIQUE ADDRESS TO EACH RELAY. EACH SCANNER INPUT SHALL BE CAPABLE OF CONTROLLING ANY OR ALL OF THE SCANNER'S OUTPUTS. OVERLAPPING GROUPS OF RELAYS SHALL BE POSSIBLE.
 THE CENTRAL TIMER SHALL BE CAPABLE OF CONTROLLING ALL RELAYS IN THE BUILDING. THE TIMER SHALL HAVE EIGHT OUTPUTS TO ALLOW FOR EIGHT COMPLETELY INDEPENDENT ZONES OF CONTROL. THE TIMER SHALL AUTOMATICALLY ACCOUNT FOR DAYLIGHT SAVING'S TIME AS WELL AS LEAP-YEAR ADJUSTMENTS. THE TIMER SHALL BE CAPABLE OF PROVIDING UNIQUE SCHEDULING FOR EACH DAY OF THE WEEK AND SHALL INCLUDE UP TO 64 HOLIDAY SCHEDULES PER YEAR.
 LCP-1 SHALL BE DOUGLAS LIGHTING CONTROLS WPAK-33518-S. LCP-2 AND LCP-3 SHALL BE WPAK-33018-S. PHOTOCELL SHALL BE WPS-5521K.
 LCP-1 SCHEDULE/CONTROL
 RELAY 1 - PHOTOCELL (FIELD SET) AND ASTRONOMICAL-TIMELOCK (ON 30 MIN BEFORE SUNSET AND OFF 30 MIN AFTER SUNRISE)
 RELAYS 2 AND 3 - PHOTOCELL (FIELD SET) AND ASTRONOMICAL-TIMELOCK (ON 30 MIN BEFORE SUNSET AND OFF 30 MIN AFTER SUNRISE)
 LCP-2 AND LCP-3 SCHEDULE/CONTROL
 RELAYS 1 THRU 7 - TIME SCHEDULE (ON AT 6:00AM AND OFF AT 11:00PM) COORDINATE SCHEDULE WITH PSU PRIOR TO PROGRAMMING

2 LIGHTING CONTROL RISER DIAGRAM
 NOT TO SCALE

2ND FLOOR PLAN - ELECTRICAL NEW WORK

1/16" = 1' - 0"

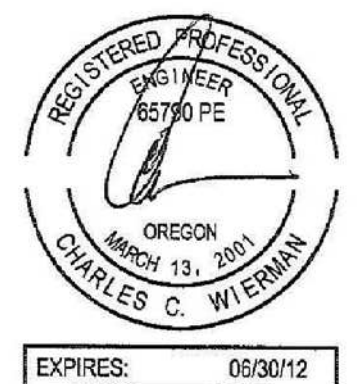
PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



PLAN NOTES:

- 1 REMOVE EXISTING LUMINAIRE. MAINTAIN CONDUIT AND CIRCUITRY FOR NEW WORK.
- 2 EXISTING EXIT SIGN TO REMAIN.

GENERAL NOTES:
 1) EXISTING FIRE ALARM DEVICES SHOWN ON THIS DRAWING SHALL REMAIN AND SHALL BE CONNECTED TO THE NEW FIRE ALARM PANEL.
 2) NOT ALL FIRE ALARM DEVICES / POWER SUPPLIES (NACS) MAY BE SHOWN ON THIS DRAWING. CONTRACTOR TO FIELD VERIFY ALL DEVICES ON ALL FLOORS.



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

**3RD THRU 9TH FLOOR PLAN
 ELECTRICAL DEMOLITION**

Revisions :	Date : 4/17/2012
Drawn : DAB	
Checked : CCW	

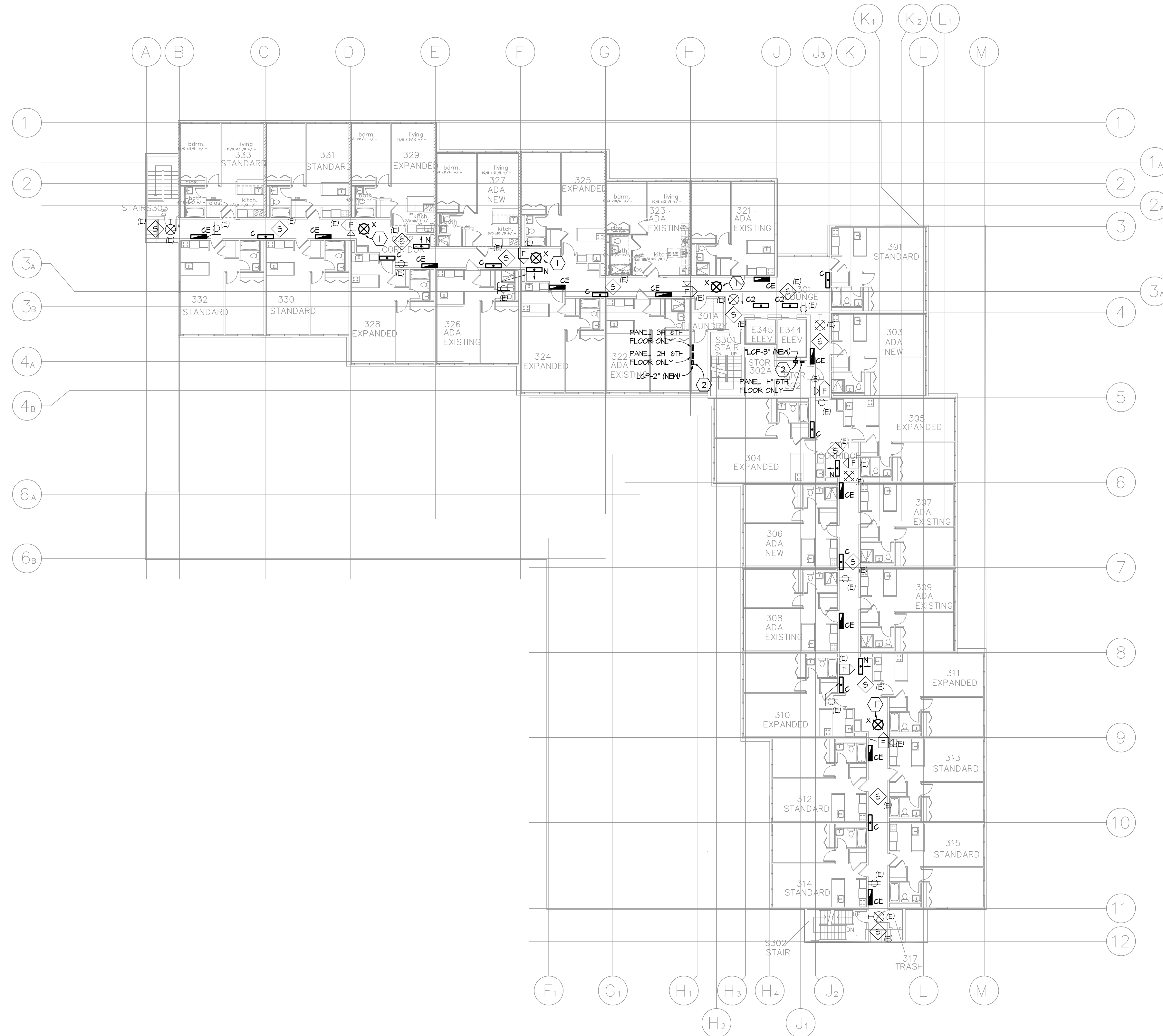


3RD THRU 9TH FLOOR PLAN - ELECTRICAL DEMOLITION

1/16" = 1' - 0"

E6.0

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



PLAN NOTES:

- 1) PROVIDE AND INSTALL NEW EXIT SIGN. CONNECT TO EXISTING NEARBY EMERGENCY CIRCUIT. ROUTE WIRE/MOLD ON CEILING TO NEW FIXTURE.
- 2) PROVIDE AND INSTALL NEW LIGHTING CONTROL PANEL ON THE 6TH FLOOR ONLY. RE: 2E51 FOR LIGHTING CONTROL RISER DIAGRAM.

GENERAL NOTES:

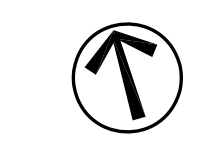
- 1) SEE SHEET E51 FOR CORRIDOR EMERGENCY LIGHTING TESTING REQUIREMENTS.
- 2) ALL LIGHTING FIXTURES SHOWN ON THIS SHEET ARE NEW EXCEPT FOR (B) EXIT SIGNS. ALL NEW FIXTURES ARE IN DIFFERENT LOCATIONS THAN EXISTING. THEREFORE CONDUIT AND CIRCUITRY MUST BE EXTENDED TO ALL NEW FIXTURES. PAINT AND PATCH WALLS/CEILINGS TO MATCH EXISTING.
- 3) EXISTING FIRE ALARM DEVICES SHOWN ON THIS DRAWING SHALL REMAIN AND SHALL BE CONNECTED TO THE NEW FIRE ALARM PANEL.
- 4) NOT ALL FIRE ALARM DEVICES / POWER SUPPLIES (NACS) MAY BE SHOWN ON THIS DRAWING. CONTRACTOR TO FIELD VERIFY ALL DEVICES ON ALL FLOORS.



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

3RD THRU 9TH FLOOR PLAN
ELECTRICAL NEW WORK

Revisions :	Date : 4/17/2012
Drawn : DAB	
Checked : CCW	



3RD THRU 9TH FLOOR PLAN - ELECTRICAL NEW WORK

1/16" = 1' - 0"

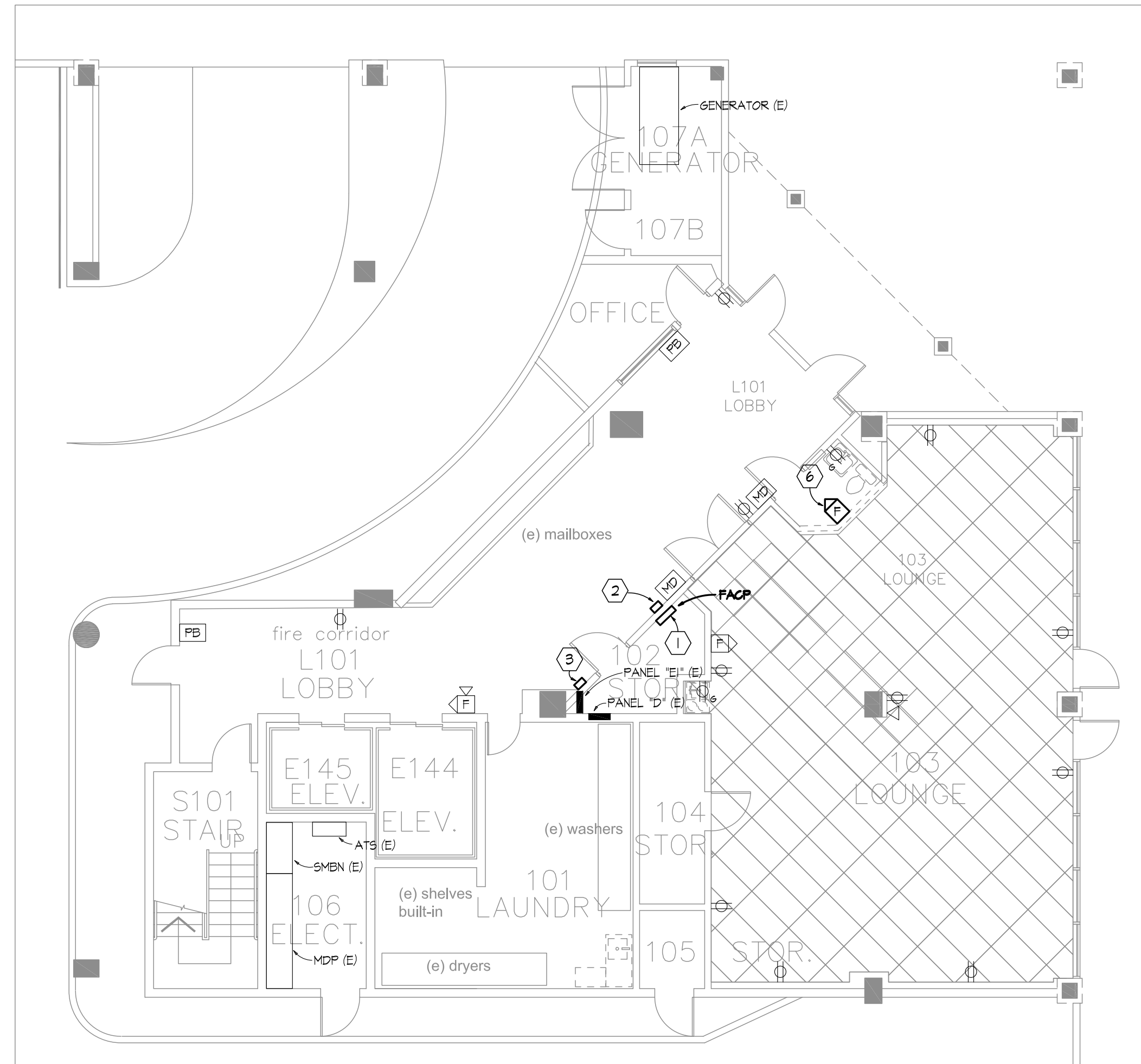
E6.2

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

PLAN NOTES:

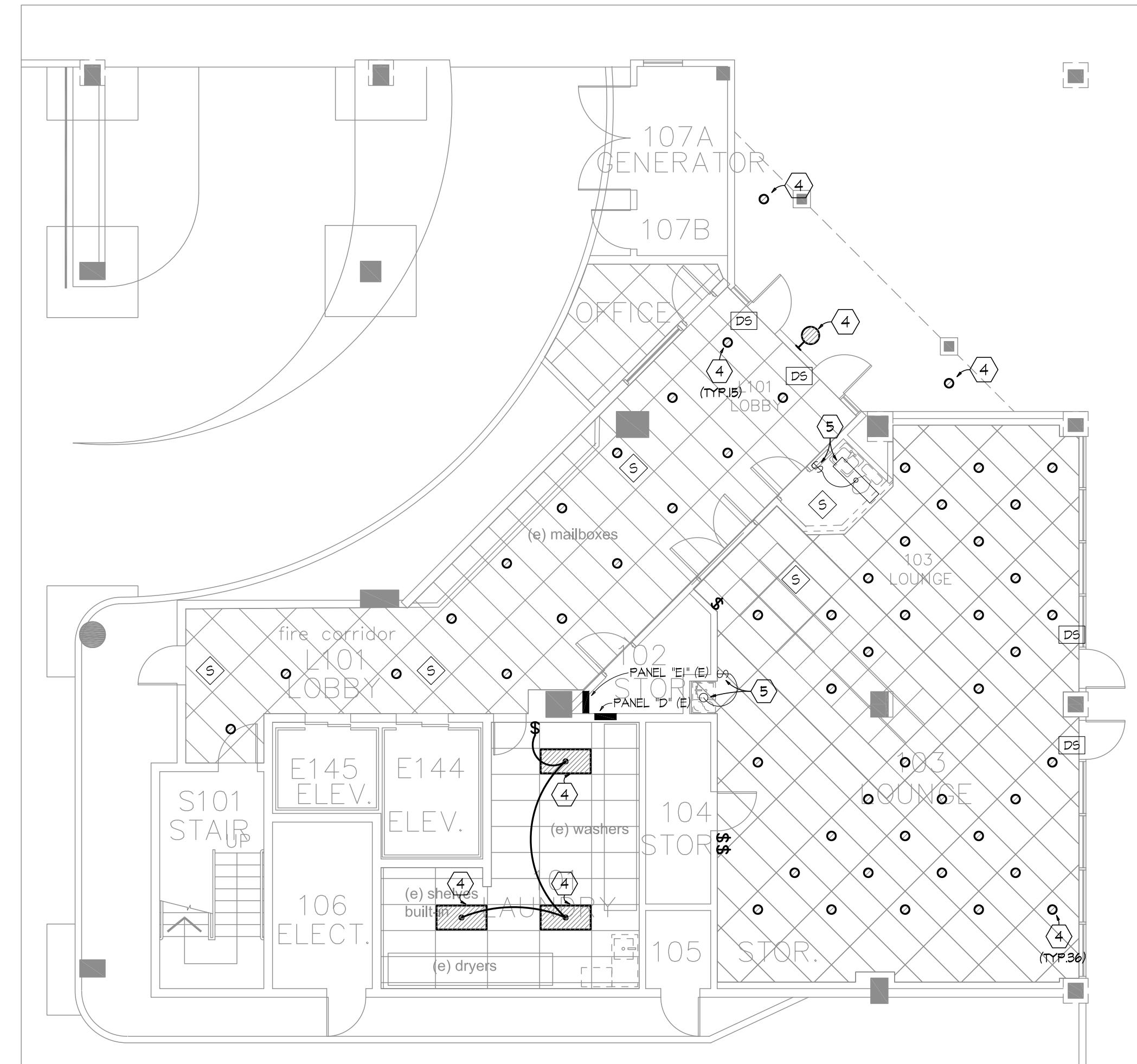
- 1 REMOVE EXISTING FIRE ALARM CONTROL PANEL AND TURN OVER TO THE OWNER. MAINTAIN EXISTING WIRING FOR RE-CONNECTION.
- 2 REMOVE EXISTING VOICE COMMUNICATION PANEL. PAINT AND PATCH WALL. MAINTAIN EXISTING WIRING FOR RE-CONNECTION TO NEW FIRE ALARM PANEL.
- 3 REMOVE EXISTING REMOTE ANNUNCIATOR PANEL.
- 4 REMOVE EXISTING LIGHTING FIXTURE IN ITS ENTIRETY. REMOVE CONDUIT AND CIRCUITRY NOT TO BE REUSED UNDER NEW WORK.
- 5 LIGHT FIXTURE AND ASSOCIATED SWITCH TO REMAIN.
- 6 REMOVE AND RETAIN EXISTING FIRE ALARM STROBE DEVICE TO BE REINSTALLED IN NEW WALL. RE- IETJ FOR NEW LOCATION.

- GENERAL NOTES:**
- 1) ALL LIGHT SWITCHES SHOWN ON PLANS ARE TO BE REMOVED UNLESS NOTED OTHERWISE. RETAIN CONDUIT AND CIRCUITRY TO BE REUSED UNDER NEW WORK.
 - 2) EXISTING DEVICES TO REMAIN WITHIN THE CEILING SHALL BE TEMPORARILY REMOVED AND REINSTALLED FOR NEW CEILING GRIDS. THIS INCLUDES SMOKE DETECTORS, OCCUPANCY SENSORS, ETC.



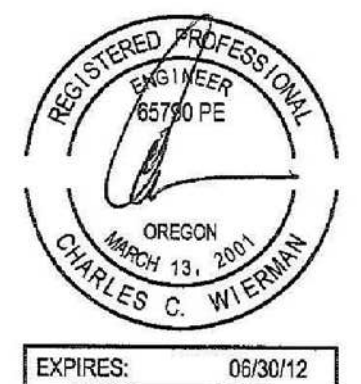
1 1ST FLOOR - LOBBY / LOUNGE PLAN
ELECTRICAL POWER DEMOLITION

1/8" = 1' - 0"



2 1ST FLOOR - LOBBY / LOUNGE PLAN
ELECTRICAL LIGHTING DEMOLITION

1/8" = 1' - 0"



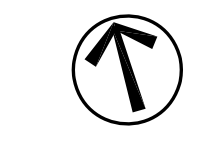
InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

1ST FLOOR - LOBBY / LOUNGE PLAN
 ELECTRICAL DEMOLITION

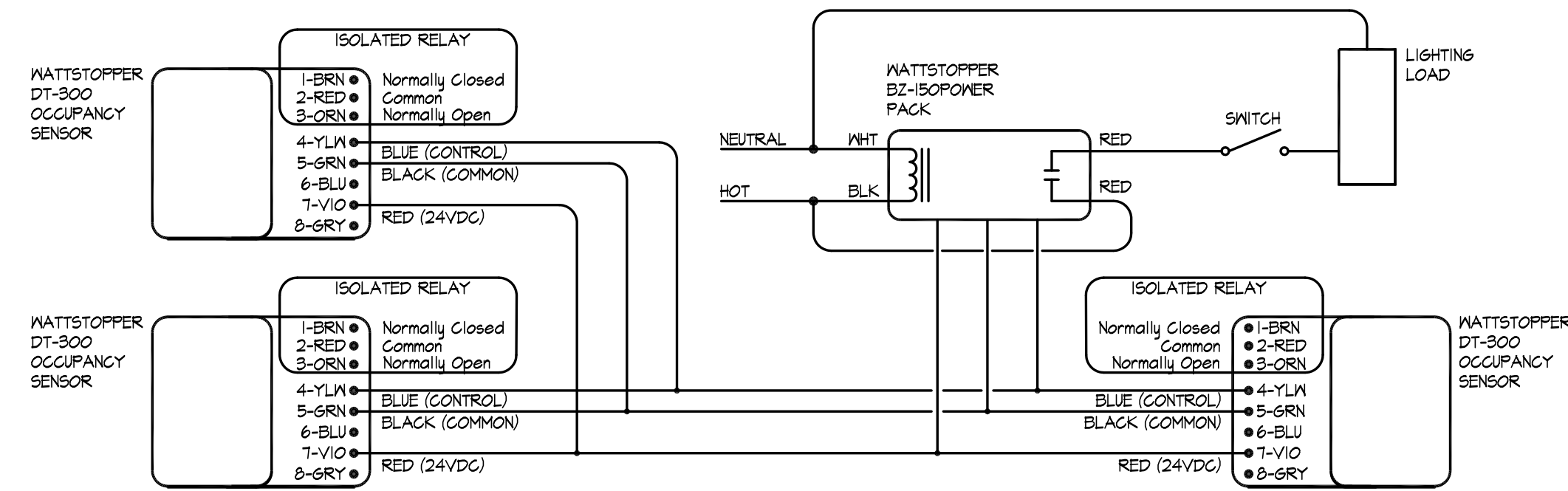
Revisions : _____ Date : 4/17/2012

Drawn : DAB

Checked : CCW

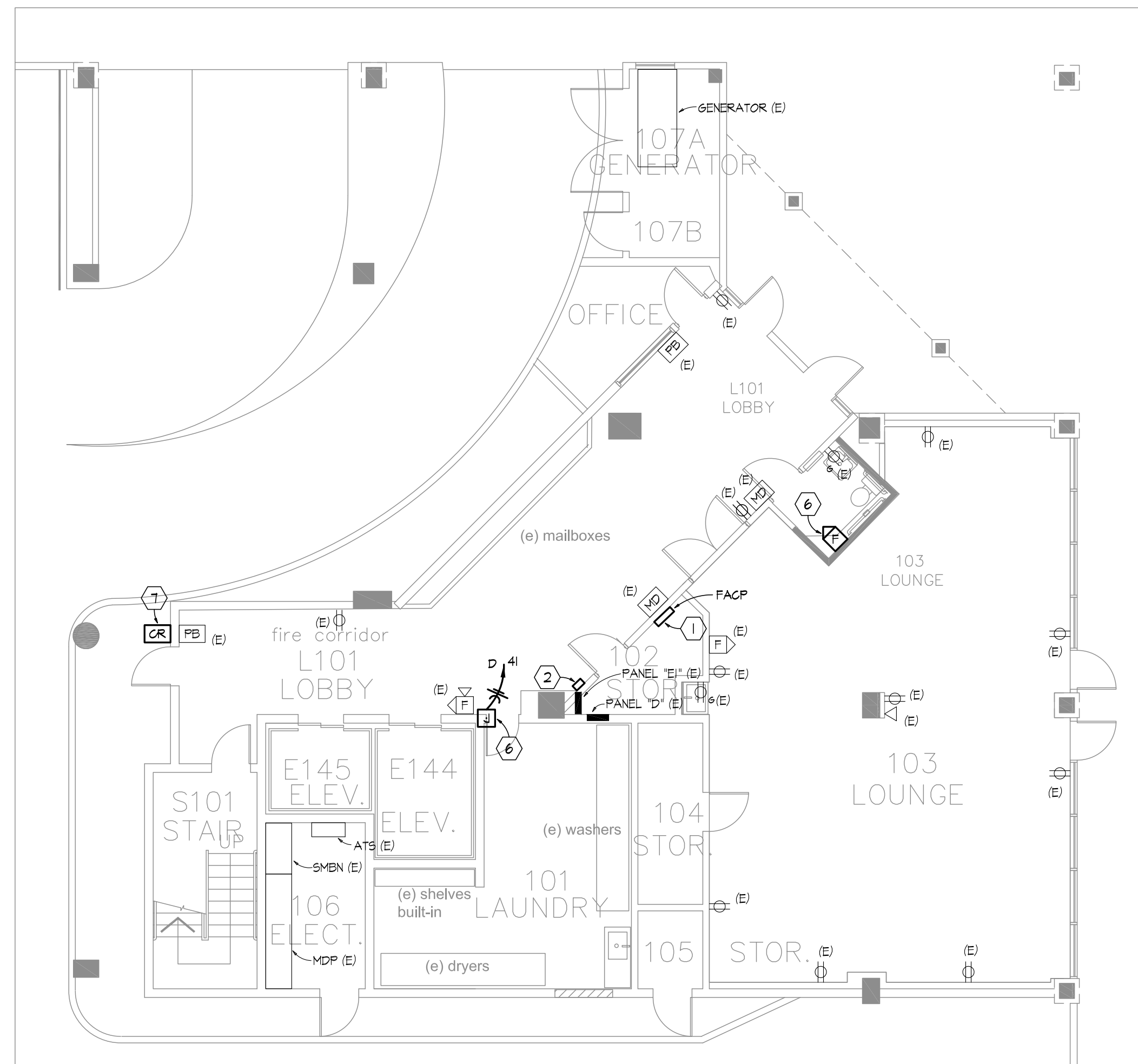


E7.0



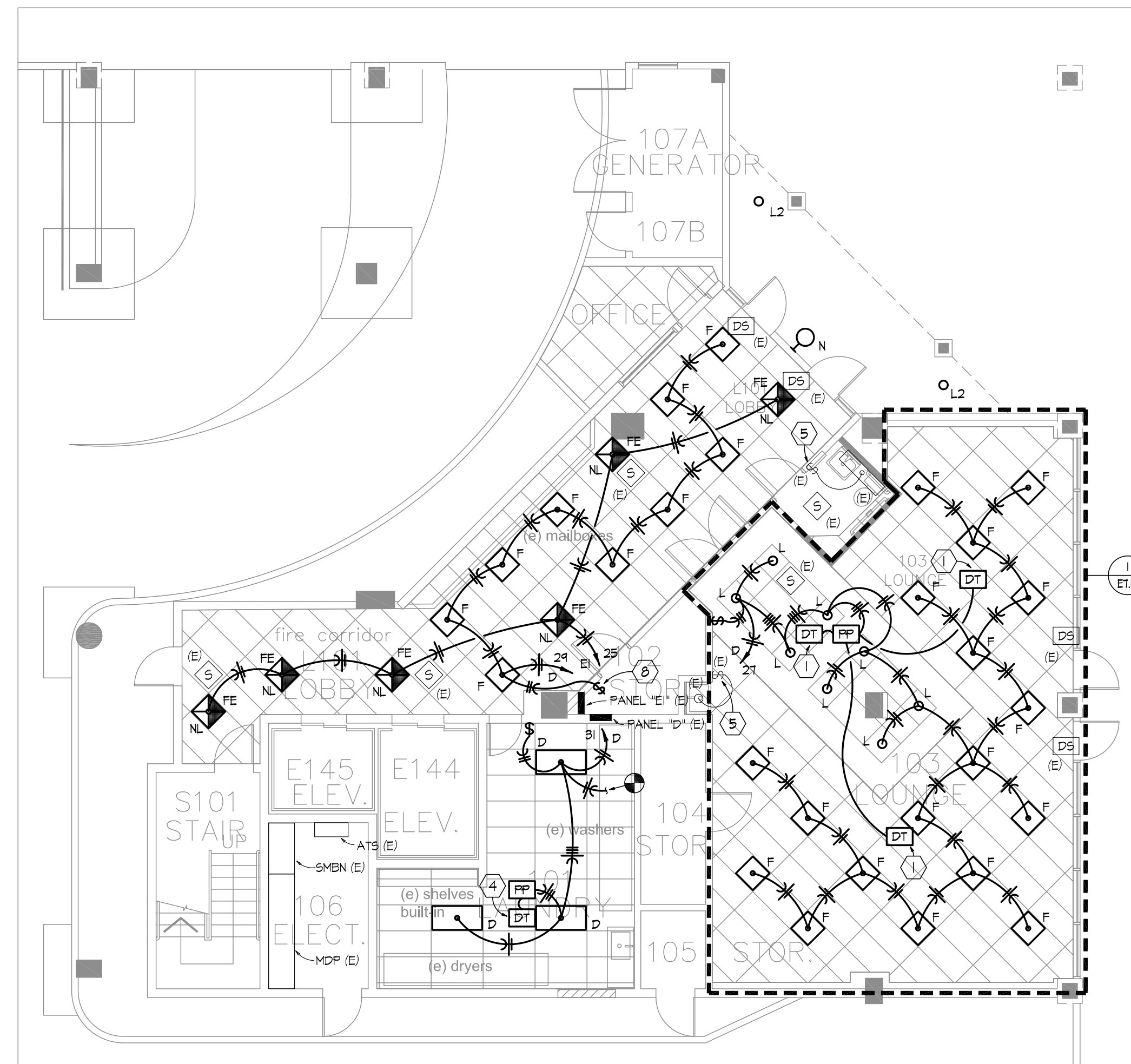
3 TYPICAL OCCUPANCY SENSOR WIRING DIAGRAM

NOT TO SCALE



1 1ST FLOOR - LOBBY / LOUNGE PLAN ELECTRICAL POWER NEW WORK

1/8" = 1' - 0"



2 1ST FLOOR - LOBBY / LOUNGE PLAN ELECTRICAL LIGHTING NEW WORK

1/8" = 1' - 0"

PLAN NOTES:

- 1) PROVIDE AND INSTALL NEW FIRE ALARM CONTROL PANEL WITH VOICE INTEGRATION. PROVIDE FAHREHYT MODEL IFP-2000VIP. RECONNECT POWER, MONITOR, AND SIGN WIRING. PROVIDE ALL NECESSARY POWER SUPPLIES, AMPLIFIERS, ETC.
- 2) PROVIDE AND INSTALL NEW REMOTE ANNUNCIATOR PANEL.
- 3) REINSTALL EXISTING WALL MOUNTED FIRE ALARM STROBE RETAINED FROM DEMOLITION.
- 4) PROVIDE AND INSTALL NEW DUAL TECHNOLOGY OCCUPANCY SENSOR FOR FULL ROOM COVERAGE. OCCUPANCY SENSOR SHALL BE MATTSTOPPER MODEL # DT-300 WITH BZ-150 POWER PACK OR APPROVED EQUAL. RE: SET1 FOR WIRING DIAGRAM. CEILING MOUNT AND INSTALL PER MANUFACTURER'S INSTRUCTIONS.
- 5) EXISTING LIGHT SWITCH TO REMAIN.
- 6) PROVIDE 120VAC POWER TO NEW ADA POWER OPERATED DOOR. RE: ARCHITECTURAL DRAWINGS.
- 7) NEW CARD READER FOR ENTRY DOOR. ROUTE 3/4" CONDUIT FROM READER TO ROOM 203 ELECTRICAL ROOM.
- 8) PROVIDE PLACARD ON WALL NEAR SWITCH THAT LABELS SWITCH AS "CORRIDOR LIGHTS".

- GENERAL NOTES:**
- 1) ALL LIGHT SWITCHES SHOWN ON PLANS ARE TO BE NEW UNLESS NOTED OTHERWISE.
 - 2) CONTRACTOR TO FIELD VERIFY THAT CIRCUITS LISTED ON THIS DRAWING ARE AVAILABLE FOR USE. IF CIRCUITS LISTED PROVIDE POWER FOR EXISTING EQUIPMENT TO REMAIN, CONTACT ENGINEER FOR FURTHER DIRECTION.
 - 3) EXISTING FIRE ALARM DEVICES SHOWN ON THIS DRAWING SHALL REMAIN AND SHALL BE CONNECTED TO THE NEW FIRE ALARM PANEL.
 - 4) NOT ALL FIRE ALARM DEVICES / POWER SUPPLIES (NACS) MAY BE SHOWN ON THIS DRAWING. CONTRACTOR TO FIELD VERIFY ALL DEVICES ON ALL FLOORS.



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

1ST FLOOR - LOBBY / LOUNGE PLAN ELECTRICAL NEW WORK

Revisions :	Date : 4/17/2012
Drawn : DAB	
Checked : CCW	

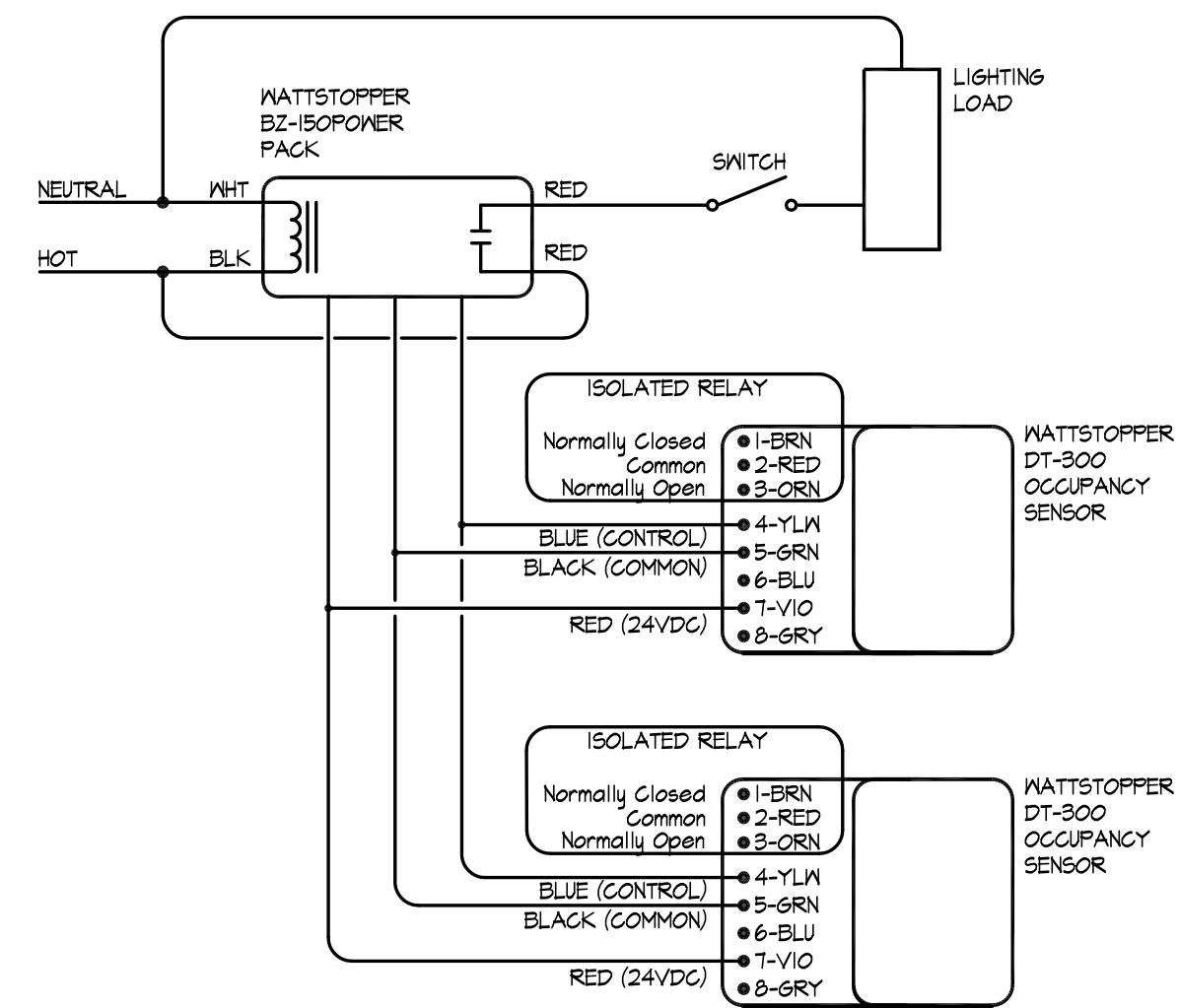
E7.1

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

PLAN NOTES:

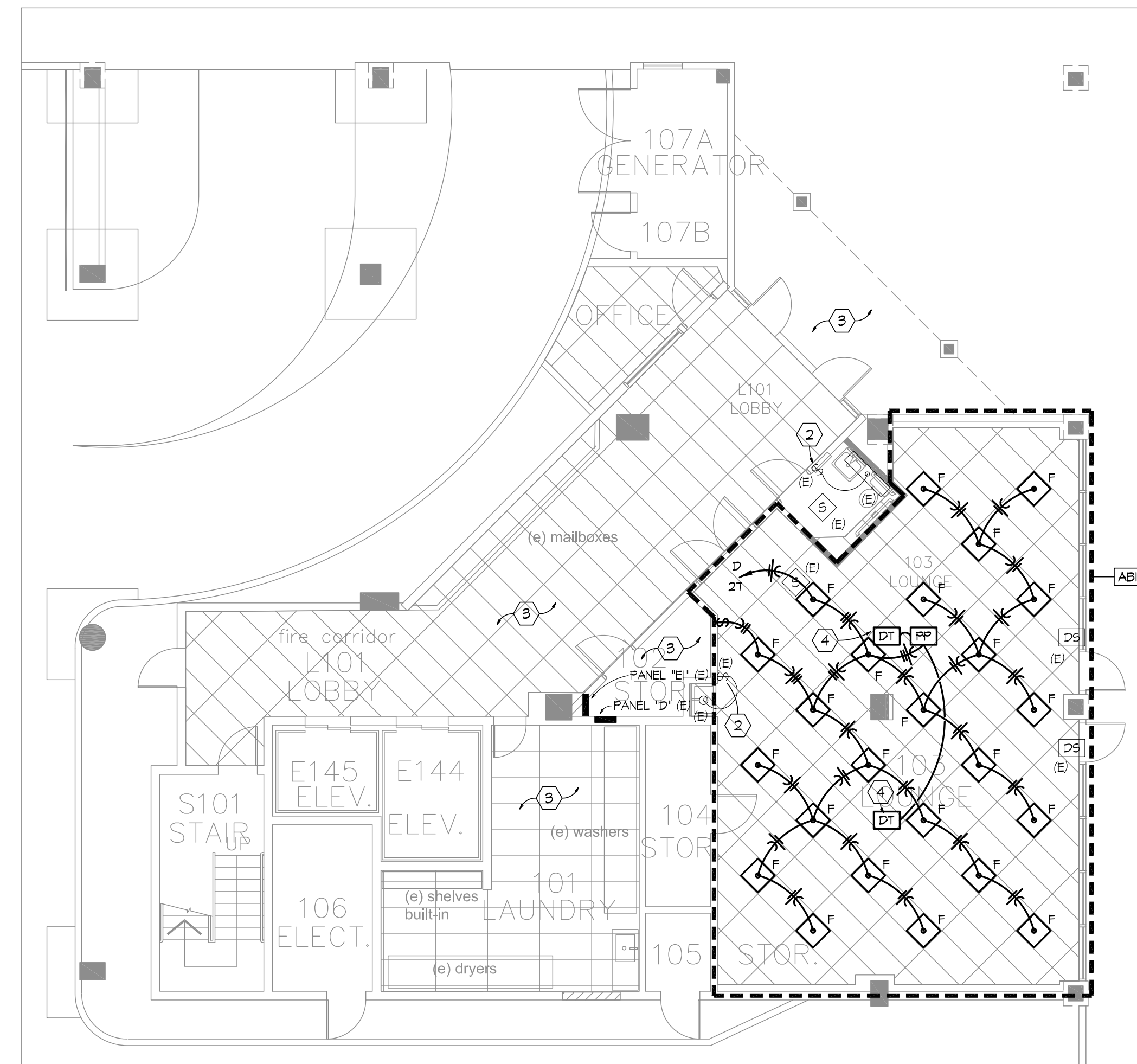
- 1) PROVIDE AND INSTALL NEW DUAL TECHNOLOGY OCCUPANCY SENSOR FOR FULL ROOM COVERAGE. OCCUPANCY SENSOR SHALL BE WATTSTOPPER MODEL# DT-300 WITH BZ-150 POWER PACK OR APPROVED EQUAL. RE: 4ETJ FOR WIRING DIAGRAM. CEILING MOUNT AND INSTALL PER MANUFACTURER'S INSTRUCTIONS.
- 2) EXISTING LIGHT SWITCH TO REMAIN.
- 3) SEE SHEET ETJ FOR WORK IN THIS AREA.

GENERAL NOTES:
 1) ALL LIGHT SWITCHES SHOWN ON PLANS ARE TO BE NEW UNLESS NOTED OTHERWISE.
 2) CONTRACTOR TO FIELD VERIFY THAT CIRCUITS LISTED ON THIS DRAWING ARE AVAILABLE FOR USE. IF CIRCUITS LISTED PROVIDE POWER FOR EXISTING EQUIPMENT TO REMAIN, CONTACT ENGINEER FOR FURTHER DIRECTION.



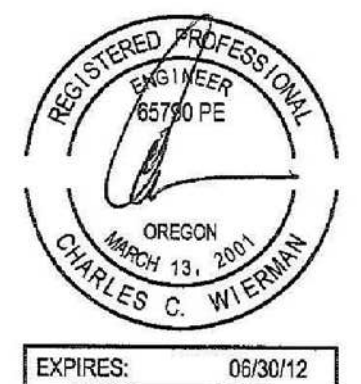
2 **TYPICAL OCCUPANCY SENSOR WIRING DIAGRAM**

NOT TO SCALE



1 **1ST FLOOR - LOBBY / LOUNGE PLAN ELECTRICAL LIGHTING NEW WORK**

1/8" = 1' - 0"



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

1ST FLOOR - LOBBY / LOUNGE PLAN ELECTRICAL LIGHTING NEW WORK

Revisions : Date :
 4/17/2012

Drawn : DAB
 Checked : CCW

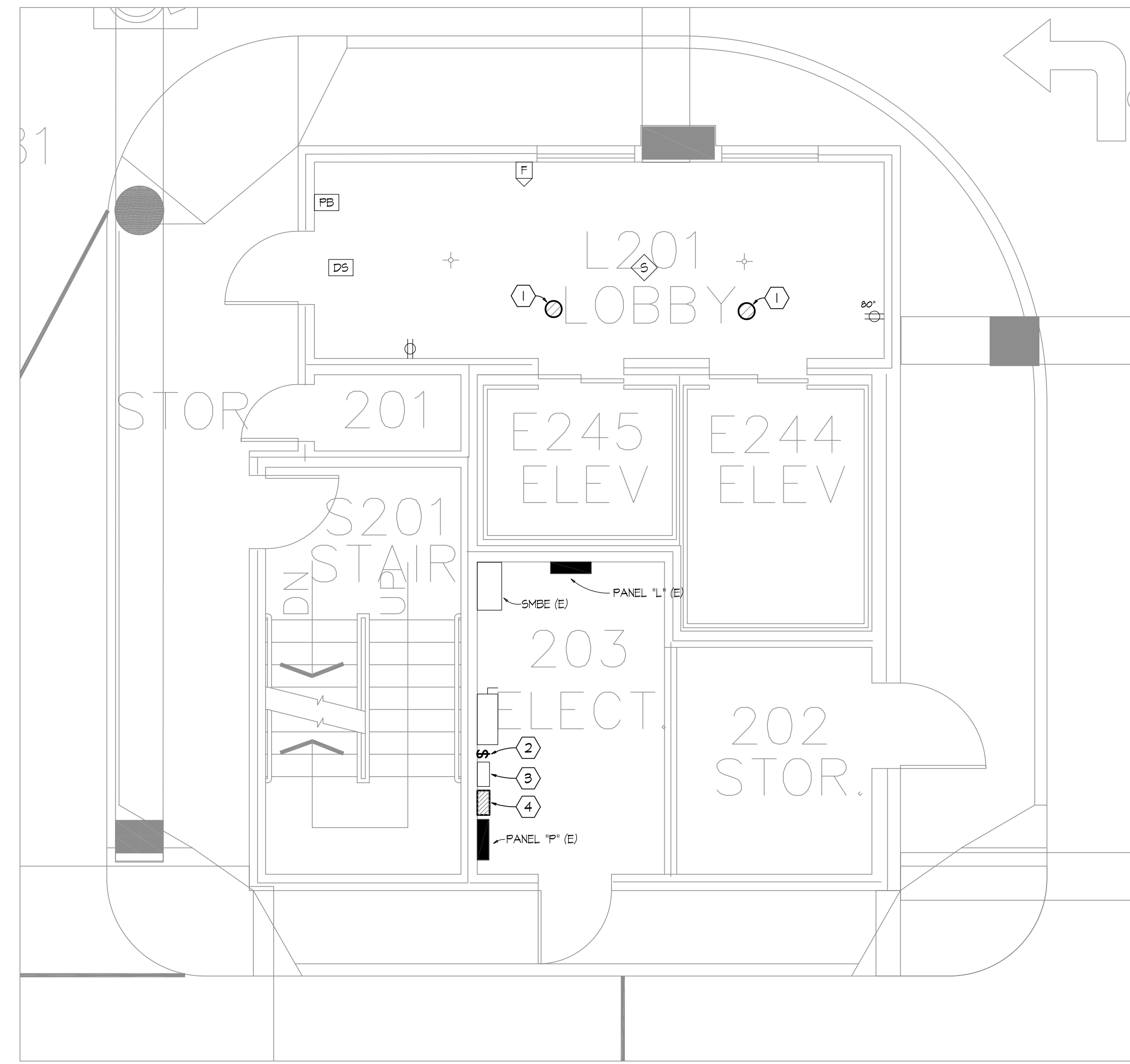


E7.1a

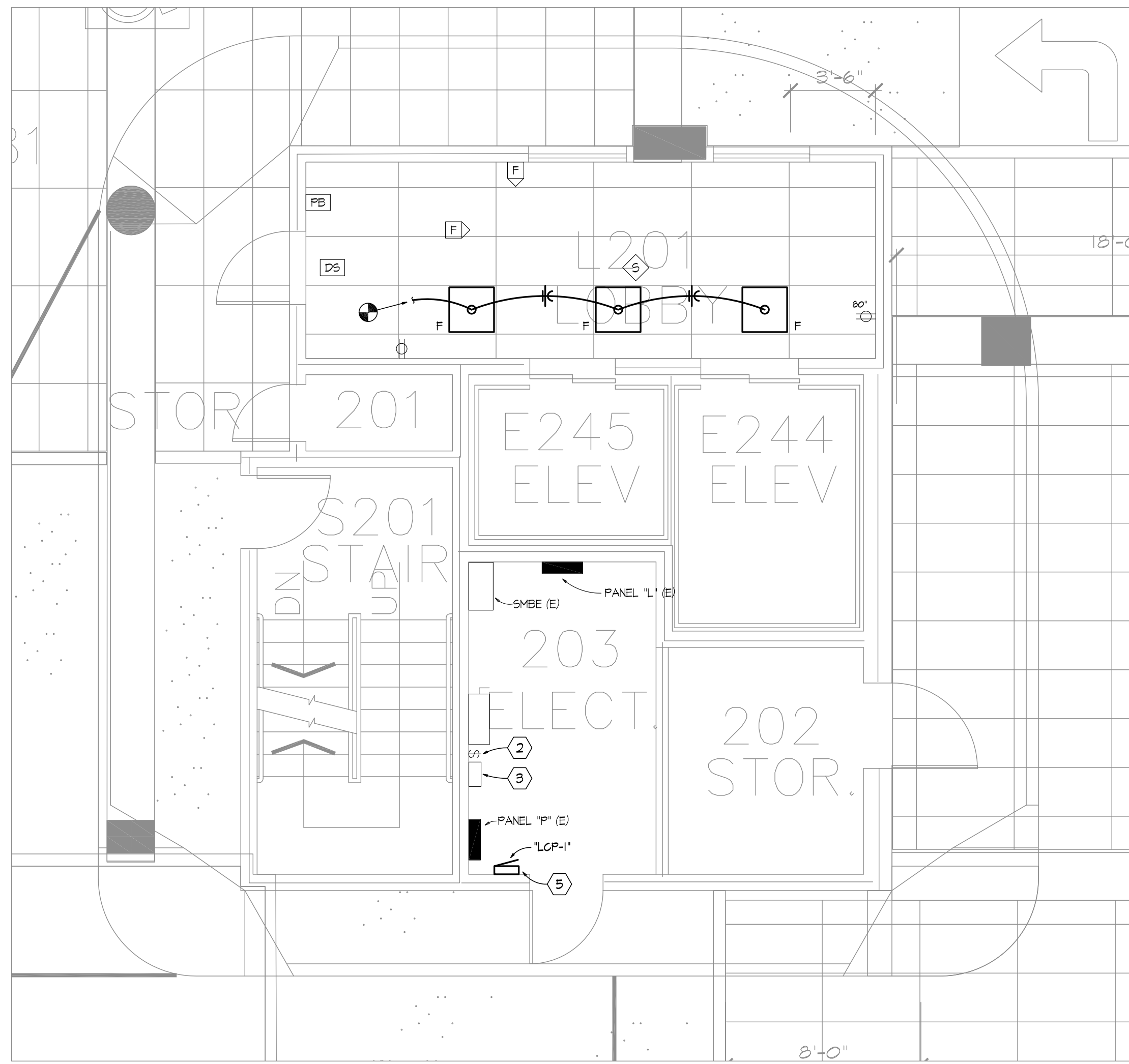
PLAN NOTES:

- 1) REMOVE EXISTING LUMINAIRE. MAINTAIN EXISTING CIRCUITRY FOR NEW WORK.
- 2) EXISTING PHOTOCELL OVERRIDE SWITCH TO BE REMOVED.
- 3) EXISTING HEATING CONTACTOR.
- 4) REMOVE EXISTING PARKING LIGHTING CONTACTOR INCLUDING ALL ASSOCIATED CONDUIT, WIRE, SUPPORTS, ETC. BACK TO SOURCE OR NEAREST DEVICE TO REMAIN. PAINT AND PATCH WALL TO MATCH EXISTING.
- 5) PROVIDE AND INSTALL NEW LIGHTING CONTROL RELAY PANEL "LCP-1" FOR CONTROL OF PARKING AREA LIGHTING. RELAY PANEL SHALL BE DOUGLAS LIGHTING CONTROLS LITEPAK MODEL#WPAK-335105. PANEL SHALL BE SURFACE MOUNTED ON WALL. PROVIDE WITH WRS-2224 RELAY SCANNER, NTP-4408 TIME/PHOTO CONTROLLER, AND (8) WR-6161 2-WIRE, SINGLE POLE HID RELAYS RATED FOR 20A BRANCH CIRCUITS. REF: 2E31 FOR LIGHTING CONTROL RISER DIAGRAM.

- GENERAL NOTES:**
- 1) EXISTING DEVICES TO REMAIN WITHIN THE CEILING SHALL BE TEMPORARILY REMOVED AND REINSTALLED FOR NEW CEILING GRIDS. THIS INCLUDES SMOKE DETECTORS, OCCUPANCY SENSORS, ETC.
 - 2) EXISTING FIRE ALARM DEVICES SHOWN ON THIS DRAWING SHALL REMAIN AND SHALL BE CONNECTED TO THE NEW FIRE ALARM PANEL.
 - 3) NOT ALL FIRE ALARM DEVICES / POWER SUPPLIES (MCS) MAY BE SHOWN ON THIS DRAWING. CONTRACTOR TO FIELD VERIFY ALL DEVICES ON ALL FLOORS.



**1 2ND FLOOR - LOBBY PLAN
 ELECTRICAL DEMOLITION**
 1/4" = 1' - 0"



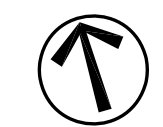
**2 2ND FLOOR - LOBBY PLAN
 ELECTRICAL NEW WORK**
 1/4" = 1' - 0"



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

**2ND FLOOR - LOBBY PLAN
 ELECTRICAL DEMO & NEW WORK**

Revisions :	Date : 4/17/2012
Drawn : DAB	
Checked : CCW	

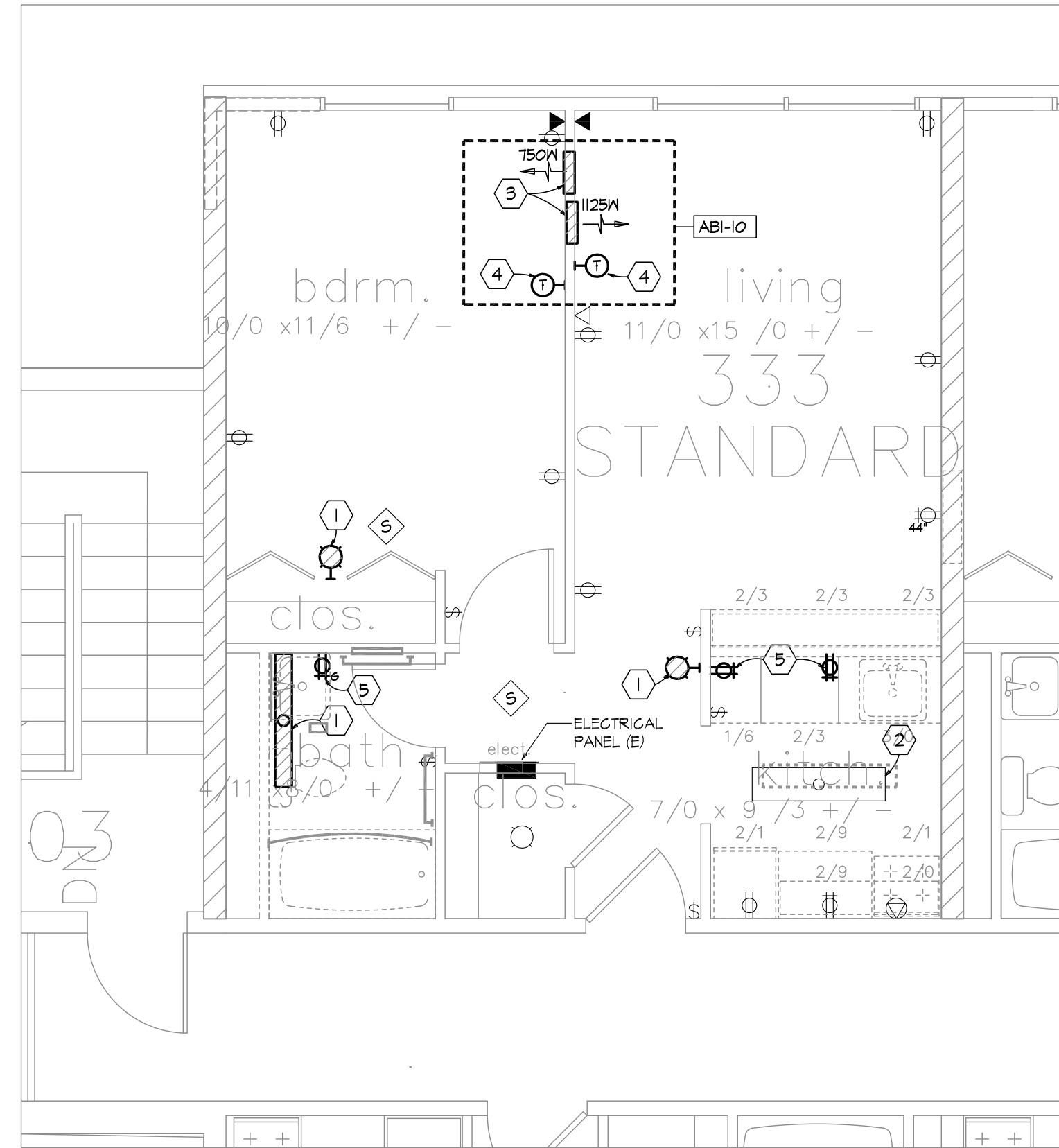


E7.2

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

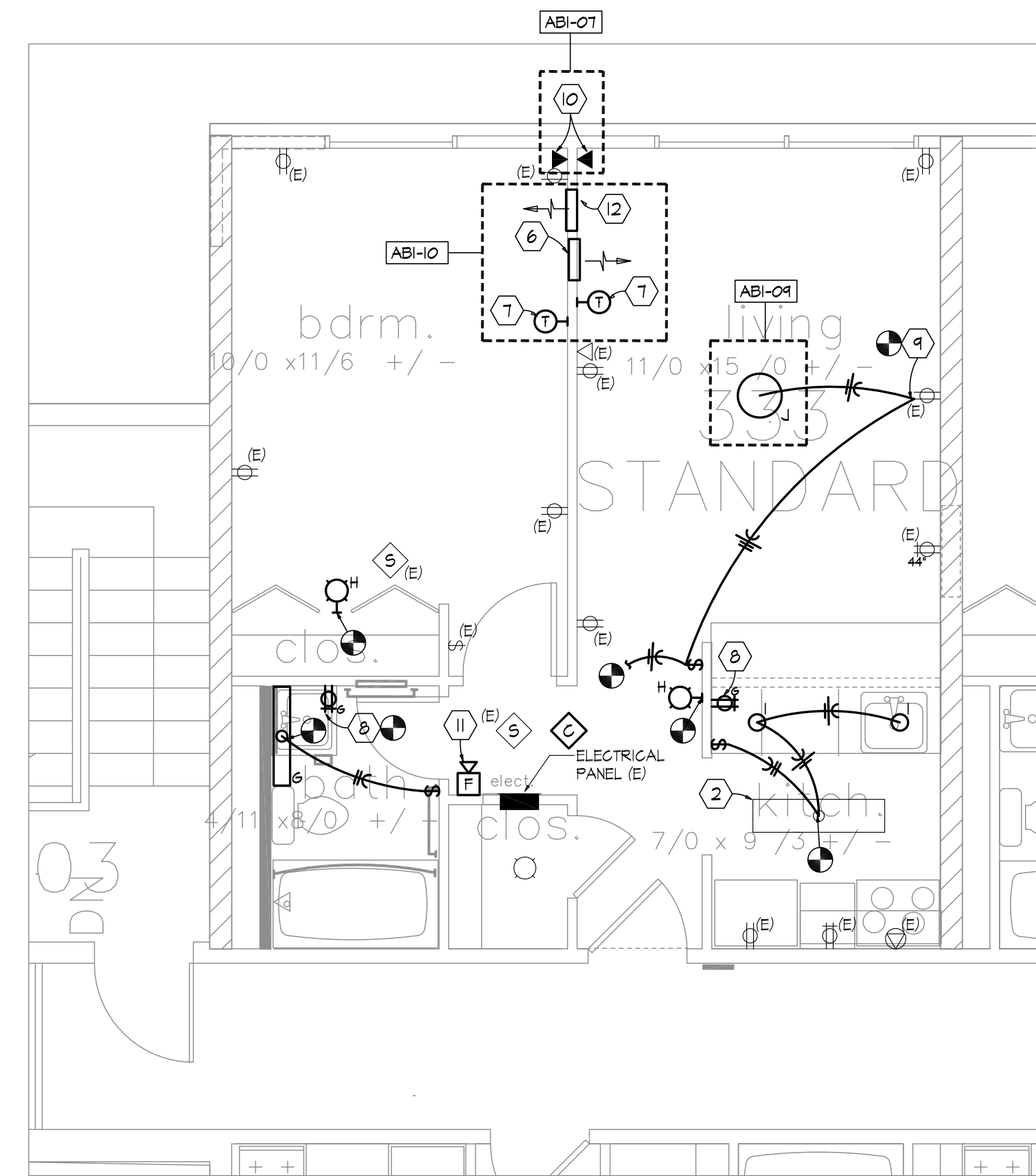
PLAN NOTES:

- 1 REMOVE EXISTING LIGHTING FIXTURE. MAINTAIN WIRING FOR NEW CONNECTION.
- 2 EXISTING 1X4 FLUORESCENT LIGHTING FIXTURE TO REMAIN. REPLACE EXISTING ACRYLIC LENS WITH NEW. RE: SHEET EB-4 FOR KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE. FOR UNITS WITH KITCHEN LAMPS AND BALLAST TO BE REPLACED. REPLACE EXISTING BALLAST WITH NEW ELECTRONIC TYPE TO OPERATE (2) 32 WATT T-8 LAMPS.
- 3 REMOVE EXISTING WALL MOUNTED HEATER. PAINT AND PATCH WALL AS REQUIRED.
- 4 REMOVE EXISTING LINE-VOLTAGE THERMOSTAT.
- 5 REMOVE EXISTING RECEPTACLE.
- 6 PROVIDE AND INSTALL NEW IN-WALL ELECTRIC HEATER FOR LIVING AREA. PROVIDE KING ELECTRICAL MODEL NUMBER PAVQ422. PROVIDE 1125 WATT HEATER FOR FLOORS 3RD THRU 8TH. PROVIDE 1800 WATT HEATER FOR 4TH FLOOR. RE-CONNECT CIRCUITRY.
- 7 PROVIDE AND INSTALL NEW LINE VOLTAGE THERMOSTAT. PROVIDE ROBERTSHAM 802, 120/240V. RE-CONNECT CIRCUITRY.
- 8 PROVIDE AND INSTALL NEW GFCI RECEPTACLE. CONNECT TO EXISTING 120VAC CIRCUIT.
- 9 CONNECT TO EXISTING SWITCHED RECEPTACLE. FIELD VERIFY. ROUTE WIREMOLD ON THE CEILING FROM THE NEW LIGHTING FIXTURE TO WALL.
- 10 RELOCATE EXISTING TELCO OUTLETS AWAY FROM WALL HEATERS. COORDINATE WITH PSU FOR NEW LOCATIONS.
- 11 PROVIDE AND INSTALL NEW FIRE ALARM SPEAKER.
- 12 PROVIDE AND INSTALL NEW IN-WALL ELECTRIC HEATER FOR BEDROOM. PROVIDE KING ELECTRICAL MODEL NUMBER PAVQ422. PROVIDE 750 WATT HEATER FOR FLOORS 3RD THRU 8TH. PROVIDE 1125 WATT HEATER FOR 4TH FLOOR. RE-CONNECT CIRCUITRY.



1 TYPICAL STANDARD UNIT PLAN
 ELECTRICAL DEMOLITION

1/4" = 1' - 0"



2 TYPICAL STANDARD UNIT PLAN
 ELECTRICAL NEW WORK

1/4" = 1' - 0"



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

TYPICAL STANDARD UNIT PLAN
 ELECTRICAL DEMO & NEW WORK

Revisions : _____ Date : 4/17/2012

Drawn : DAB

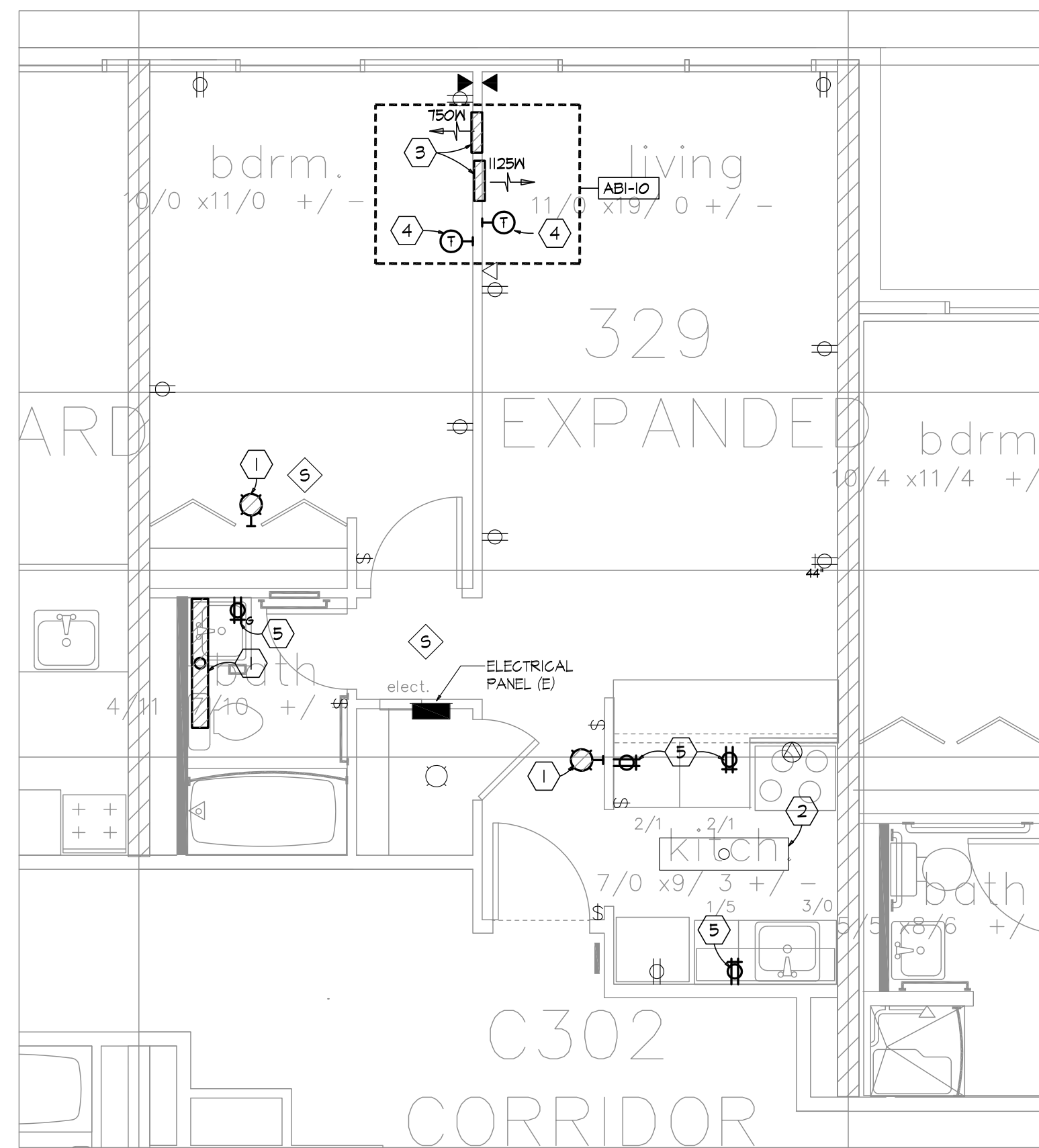
Checked : CCW



E7.6

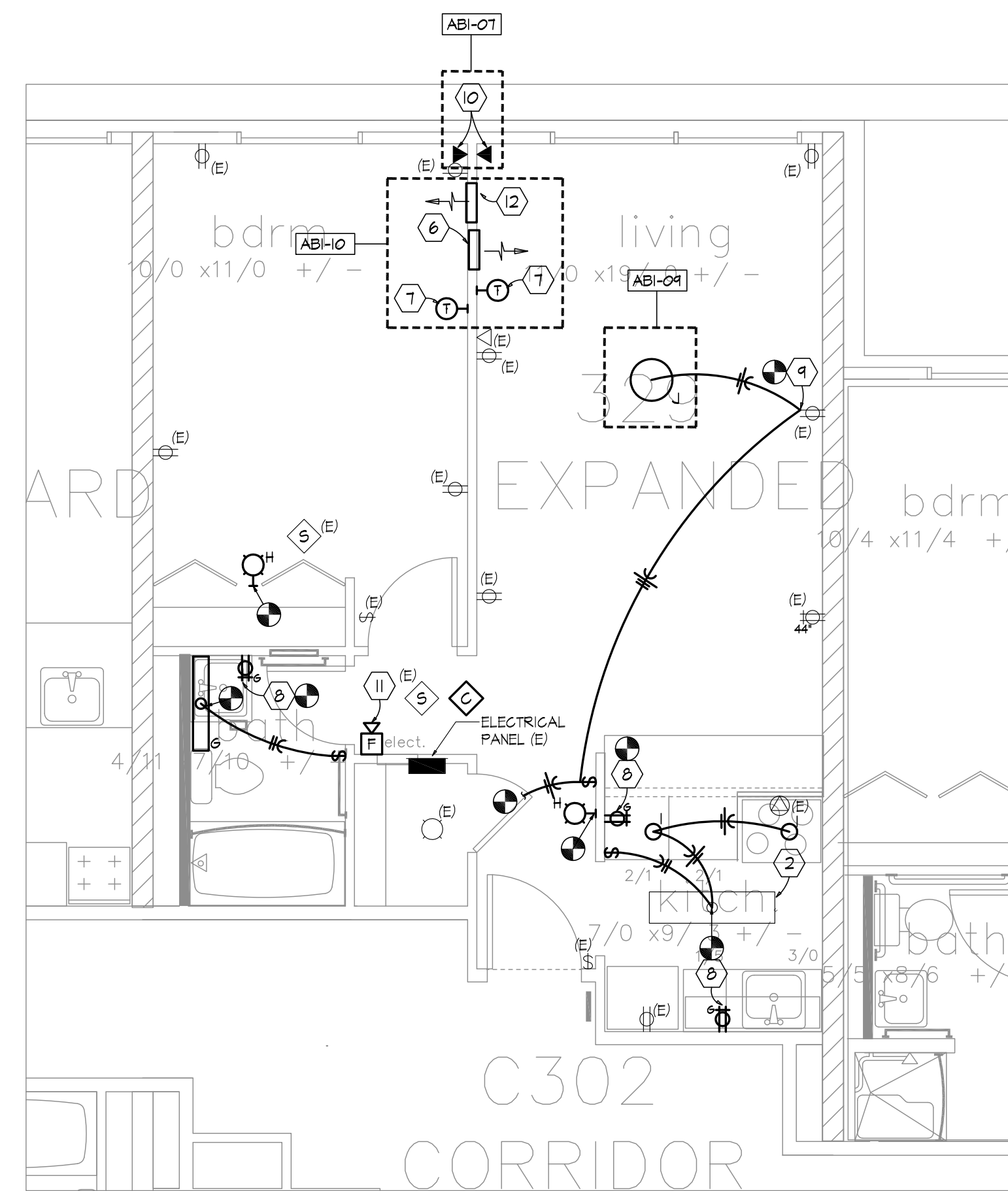
PLAN NOTES:

- 1 REMOVE EXISTING LIGHTING FIXTURE. MAINTAIN WIRING FOR NEW CONNECTION.
- 2 EXISTING 1X4 FLUORESCENT LIGHTING FIXTURE TO REMAIN. REPLACE EXISTING ACRYLIC LENS WITH NEW. RE: SHEET E3.4 FOR KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE. FOR UNITS WITH KITCHEN LAMPS AND BALLAST TO BE REPLACED. REPLACE EXISTING BALLAST WITH NEW ELECTRONIC TYPE TO OPERATE (2) 32 WATT T-8 LAMPS.
- 3 REMOVE EXISTING WALL MOUNTED HEATER. PAINT AND PATCH WALL AS REQUIRED.
- 4 REMOVE EXISTING LINE-VOLTAGE THERMOSTAT.
- 5 REMOVE EXISTING RECEPTACLE.
- 6 PROVIDE AND INSTALL NEW IN-WALL ELECTRIC HEATER FOR LIVING AREA. PROVIDE KING ELECTRICAL MODEL NUMBER PAVQ422. PROVIDE 1125 WATT HEATER FOR FLOORS 3RD THRU 8TH. PROVIDE 1800 WATT HEATER FOR 4TH FLOOR. RE-CONNECT CIRCUITRY.
- 7 PROVIDE AND INSTALL NEW LINE VOLTAGE THERMOSTAT. PROVIDE ROBERTSHAW 802, 120/240V. RE-CONNECT CIRCUITRY.
- 8 PROVIDE AND INSTALL NEW GFCI RECEPTACLE. CONNECT TO EXISTING 120VAC CIRCUIT. RE-CONNECT CIRCUITRY.
- 9 CONNECT TO EXISTING SWITCHED RECEPTACLE. FIELD VERIFY. ROUTE WIREMOLD ON THE CEILING FROM THE NEW LIGHTING FIXTURE TO WALL.
- 10 RELOCATE EXISTING TELCO OUTLETS AWAY FROM WALL HEATERS. COORDINATE WITH PSU FOR NEW LOCATIONS.
- 11 PROVIDE AND INSTALL NEW FIRE ALARM SPEAKER.
- 12 PROVIDE AND INSTALL NEW IN-WALL ELECTRIC HEATER FOR BEDROOM. PROVIDE KING ELECTRICAL MODEL NUMBER PAVQ422. PROVIDE 750 WATT HEATER FOR FLOORS 3RD THRU 8TH. PROVIDE 1125 WATT HEATER FOR 9TH FLOOR. RE-CONNECT CIRCUITRY.



1 TYPICAL EXPANDED UNIT PLAN
 ELECTRICAL DEMOLITION

1/4" = 1' - 0"



2 TYPICAL EXPANDED UNIT PLAN
 ELECTRICAL NEW WORK

1/4" = 1' - 0"



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

TYPICAL EXPANDED UNIT PLAN
 ELECTRICAL DEMO & NEW WORK

Revisions : _____ Date : 4/17/2012

Drawn : DAB

Checked : CCW

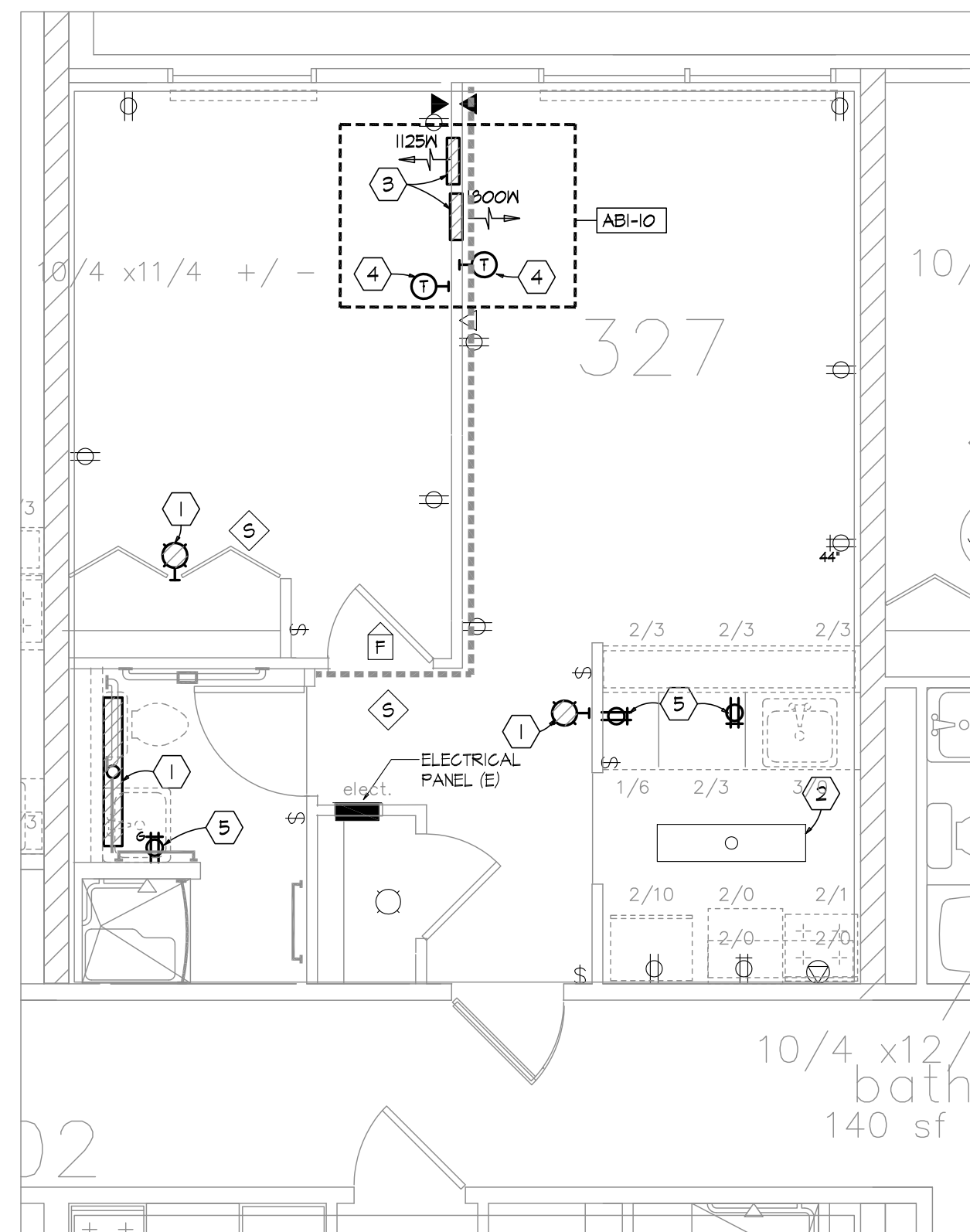


E7.7

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

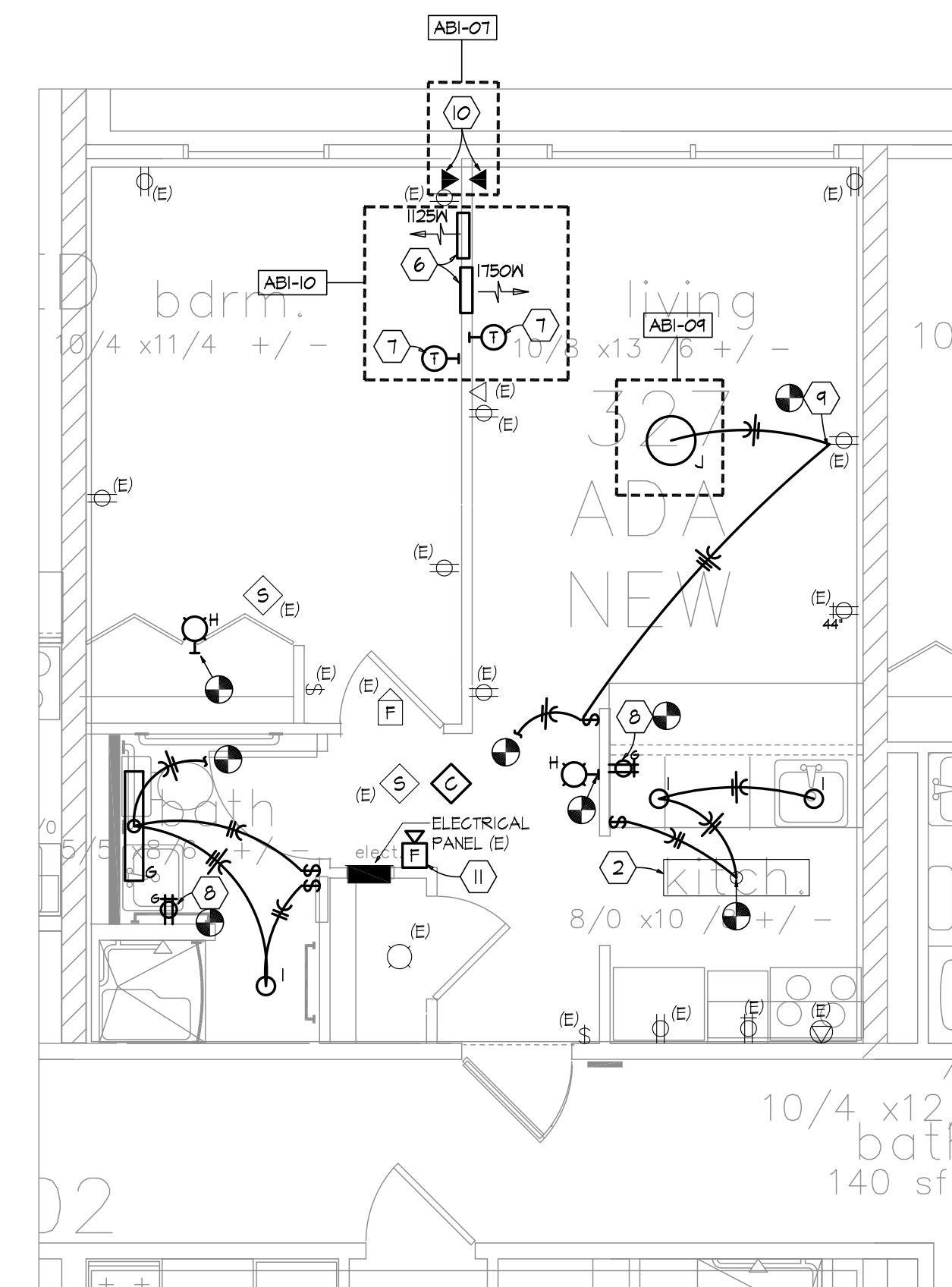
PLAN NOTES:

- 1 REMOVE EXISTING LIGHTING FIXTURE. MAINTAIN WIRING FOR NEW CONNECTION.
- 2 EXISTING 1X4 FLUORESCENT LIGHTING FIXTURE TO REMAIN. REPLACE EXISTING ACRYLIC LENS WITH NEW. RE: SHEET EB-4 FOR KITCHEN LAMP & BALLAST REPLACEMENT SCHEDULE. FOR UNITS WITH KITCHEN LAMPS AND BALLAST TO BE REPLACED. REPLACE EXISTING BALLAST WITH NEW ELECTRONIC TYPE TO OPERATE (2) 32 WATT T-8 LAMPS.
- 3 REMOVE EXISTING WALL MOUNTED HEATER. PAINT AND PATCH WALL AS REQUIRED.
- 4 REMOVE EXISTING LINE-VOLTAGE THERMOSTAT.
- 5 REMOVE EXISTING RECEPTACLE.
- 6 PROVIDE AND INSTALL NEW IN-WALL ELECTRIC HEATER. PROVIDE KING ELECTRICAL MODEL NUMBER PAK2422. PROVIDE HEATER WATTAGE AS INDICATED ON THE DRAWINGS. RE-CONNECT CIRCUITRY.
- 7 PROVIDE AND INSTALL NEW LINE VOLTAGE THERMOSTAT. PROVIDE ROBERTSHAM 802, 120/240V. RE-CONNECT CIRCUITRY.
- 8 PROVIDE AND INSTALL NEW GFCI RECEPTACLE. CONNECT TO EXISTING 120VAC CIRCUIT.
- 9 CONNECT TO EXISTING SWITCHED RECEPTACLE. FIELD VERIFY. ROUTE WIREMOLD ON THE CEILING FROM THE NEW LIGHTING FIXTURE TO WALL.
- 10 RELOCATE EXISTING TELCO OUTLETS AWAY FROM WALL HEATERS. COORDINATE WITH PSU FOR NEW LOCATIONS.
- 11 PROVIDE AND INSTALL NEW FIRE ALARM SPEAKER.



1 TYPICAL EXISTING ADA UNIT PLAN
 ELECTRICAL DEMOLITION

1/4" = 1' - 0"



2 TYPICAL EXISTING ADA UNIT PLAN
 ELECTRICAL NEW WORK

1/4" = 1' - 0"

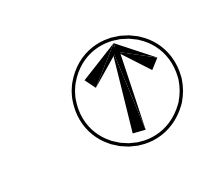


InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

TYPICAL EXISTING ADA UNIT PLAN
 ELECTRICAL DEMO & NEW WORK

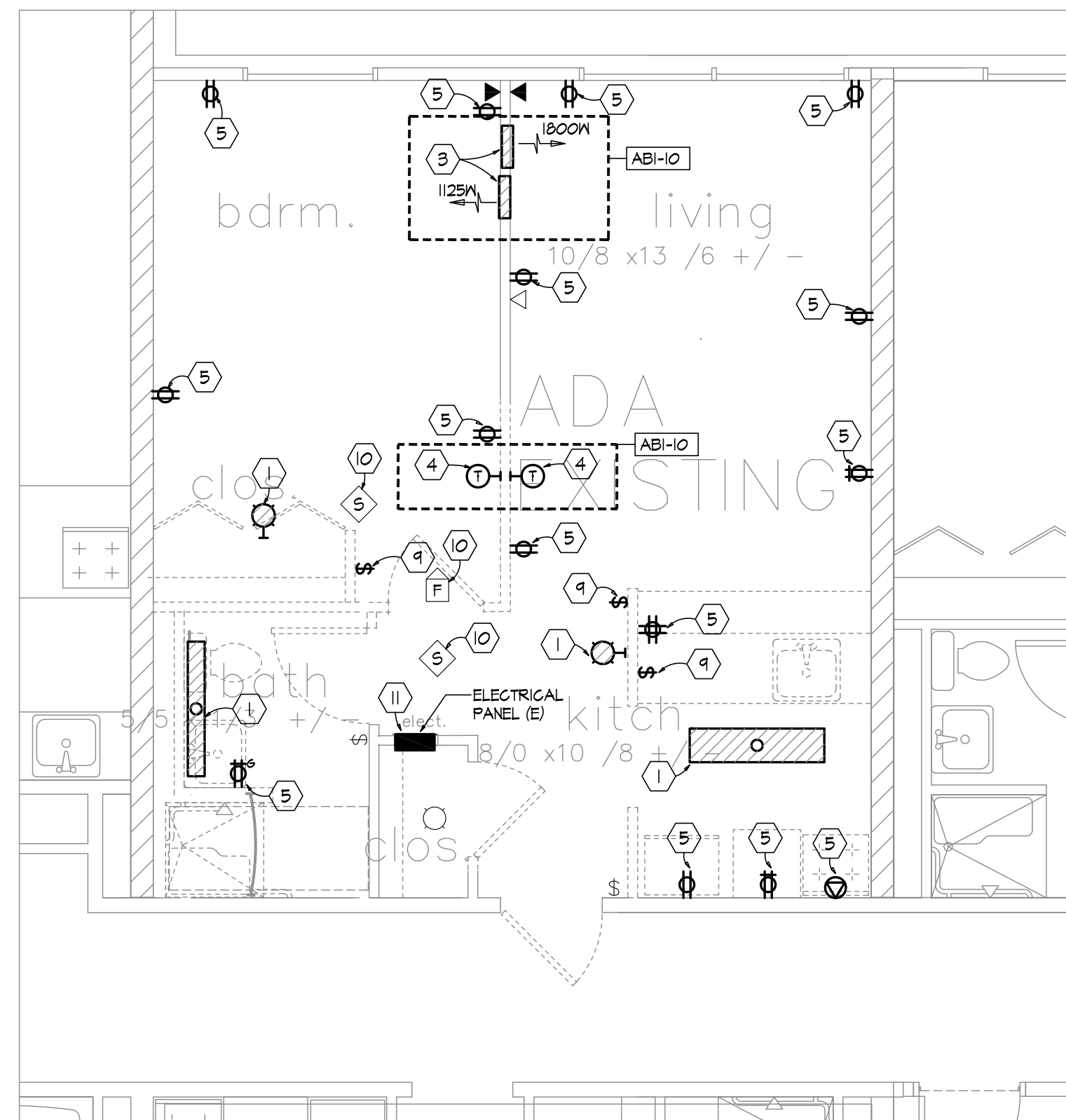
Revisions :	Date : 4/17/2012
-------------	---------------------

Drawn : DAB
Checked : CCW



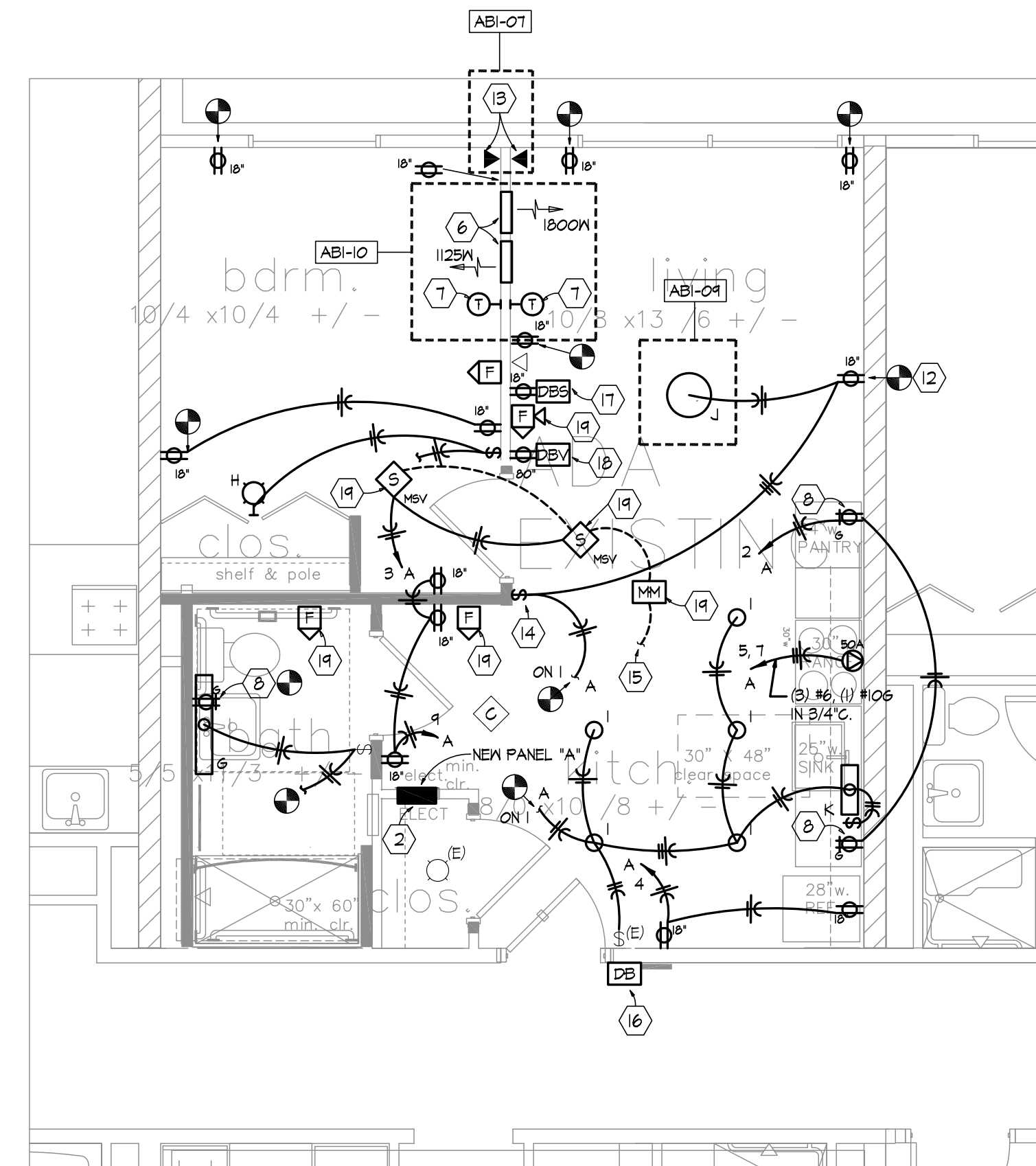
E7.8

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



1 **TYPICAL NEW ADA UNIT PLAN ELECTRICAL DEMOLITION**

1/4" = 1' - 0"



2 **TYPICAL NEW ADA UNIT PLAN ELECTRICAL NEW WORK**

1/4" = 1' - 0"

GENERAL NOTES:

1) ALL LIGHT SWITCHES, RECEPTACLES, AND PANELS SHALL MEET 2010 ADA MOUNTING HEIGHT REQUIREMENTS FOR ACCESSIBILITY. ADD CONDUIT AND WIRING AS REQUIRED.

PLAN NOTES:

- 1 REMOVE EXISTING LIGHTING FIXTURE. MAINTAIN WIRING FOR NEW CONNECTION.
- 2 PROVIDE AND INSTALL NEW 120/208V, SINGLE-PHASE, 3W, 100A MAINS, (6) CIRCUIT LOAD CENTER. PROVIDE WITH (1) 50A, 2-POLE BREAKER (OVEN), (2) 20A, 2-POLE BREAKERS (HEATERS) AND (7) 20A, 1-POLE BREAKERS. MOUNT PANEL SO THAT THE HIGHEST BREAKER IS NO HIGHER THAN 48" AFF. EXTEND ALL CONDUIT AND CIRCUITRY TO NEW LOCATION.
- 3 REMOVE EXISTING WALL MOUNTED HEATER. PAINT AND PATCH WALL AS REQUIRED.
- 4 REMOVE EXISTING LINE-VOLTAGE THERMOSTAT.
- 5 REMOVE EXISTING RECEPTACLE. REMOVE ALL CONDUIT AND AND CIRCUITRY NOT RE-USED UNDER NEW WORK.
- 6 PROVIDE AND INSTALL NEW IN-WALL ELECTRIC HEATER. PROVIDE KING ELECTRICAL MODEL NUMBER PAK2422. PROVIDE HEATER MATTAGE AS INDICATED ON THE DRAWINGS. RE-CONNECT CIRCUITRY.
- 7 PROVIDE AND INSTALL NEW LINE VOLTAGE THERMOSTAT. PROVIDE ROBERTSHAM 802, 120/240V. RE-CONNECT CIRCUITRY.
- 8 PROVIDE AND INSTALL NEW GFCI RECEPTACLE.
- 9 REMOVE EXISTING WALL SWITCH.
- 10 REMOVE EXISTING FIRE ALARM DEVICE.
- 11 REMOVE EXISTING ELECTRICAL PANEL. MAINTAIN IN-COMING FEEDERS AND BRANCH CIRCUITS.
- 12 CONNECT TO EXISTING SWITCHED RECEPTACLE. FIELD VERIFY. ROUTE WIREMOLD ON THE CEILING FROM THE NEW LIGHTING FIXTURE TO WALL. REPLACE EXISTING RECEPTACLE WITH NEW.
- 13 RELOCATE EXISTING TELCO OUTLETS AWAY FROM WALL HEATERS. COORDINATE WITH PSU FOR NEW LOCATIONS.
- 14 PROVIDE AND INSTALL NEW WALL SWITCH. SWITCH SHALL SWITCH RECEPTACLES IN THE LIVING AREA AND NEW TYPE "J" LIGHTING FIXTURE. INTERFACE EXISTING CIRCUITRY MAINTAINED DURING DEMOLITION.
- 15 RE. E32 FOR FIRE ALARM RISER AND SEQUENCE OF OPERATION.
- 16 PROVIDE AND INSTALL NEW HARD-WIRED ELECTRIC DOORBELL. CONNECT TO DOORBELL SIGNALER.
- 17 PROVIDE AND INSTALL NEW NON-SWITCHED RECEPTACLE WITH DOORBELL SIGNALER. PROVIDE SONIC ALERT DS800 OR APPROVED EQUAL. CONNECT RECEPTACLE TO NEAREST 120VAC RECEPTACLE CIRCUIT.
- 18 PROVIDE AND INSTALL NEW NON-SWITCHED RECEPTACLE WITH DOORBELL VISIBLE SIGNAL STROBE. PROVIDE SONIC ALERT BL300 OR APPROVED EQUAL. CONNECT RECEPTACLE TO NEAREST 120VAC RECEPTACLE CIRCUIT.
- 19 PROVIDE AND INSTALL NEW FIRE ALARM DEVICE.



EXPIRES: 03/03/12

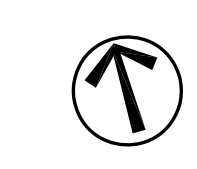
InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave., Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

TYPICAL NEW ADA UNIT PLAN ELECTRICAL DEMO & NEW WORK

Revisions : _____ Date : 4/17/2012

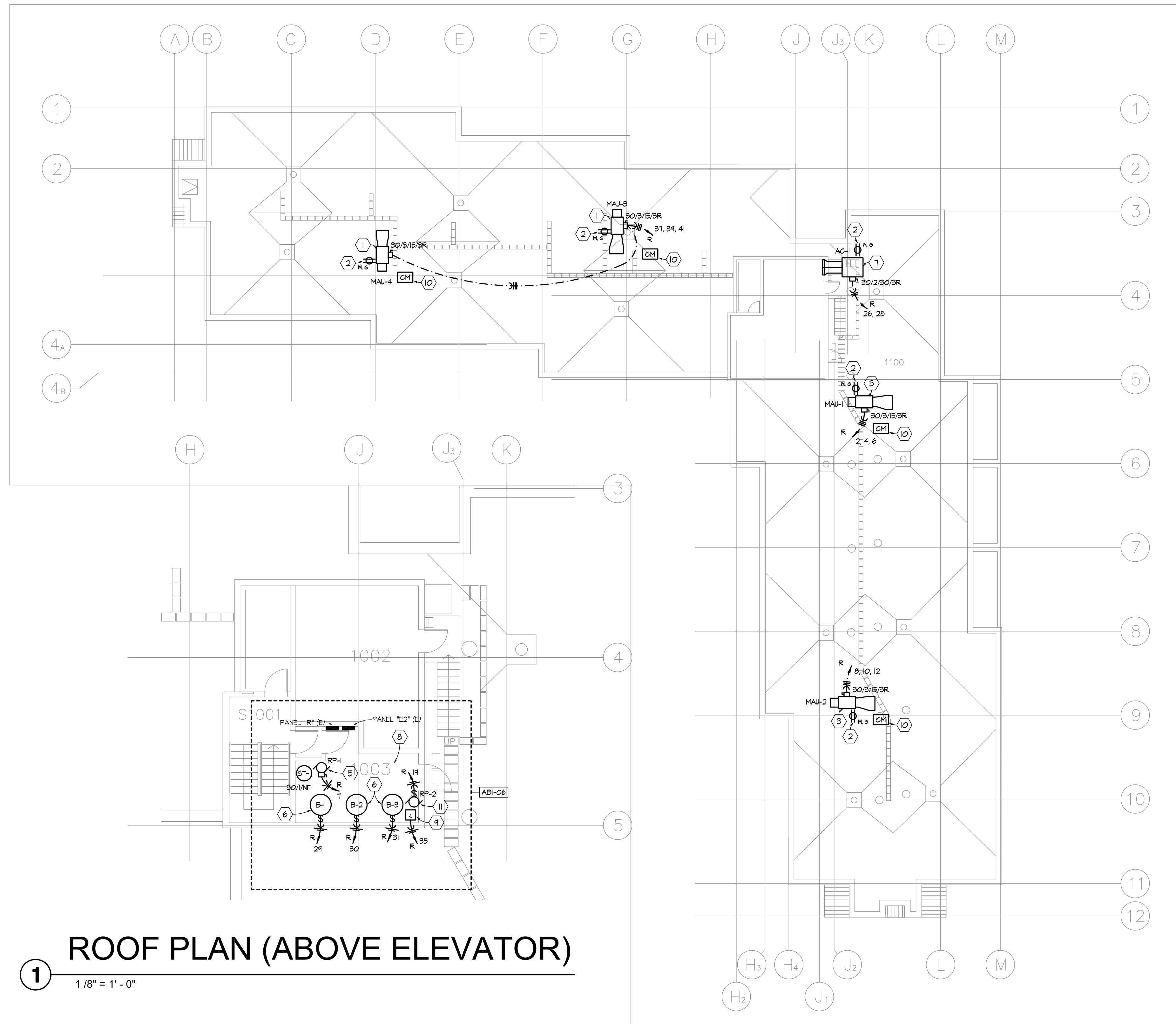
Drawn : DAB

Checked : CCW



E7.9

PSU Facilities and Planning
Joseph C. Blumel Hall
Residence Hall
RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



1 ROOF PLAN (ABOVE ELEVATOR)

1/8" = 1' - 0"

PLAN NOTES:

- 1) DISCONNECT EXISTING ELECTRICAL POWER TO EXISTING MAKE-UP AIR UNIT. RECONNECT POWER TO NEW MAKE-UP AIR UNIT.
- 2) REMOVE EXISTING RECEPTACLE AND REPLACE WITH NEW WEATHER-PROOF 6FCI RECEPTACLE. REUSE EXISTING CIRCUITRY.
- 3) DISCONNECT EXISTING ELECTRICAL POWER TO EXISTING MAKE-UP AIR UNIT. RECONNECT POWER TO NEW MAKE-UP AIR UNIT. REPLACE EXISTING CIRCUIT BREAKER SERVING UNIT WITH 15 AMP, 3 POLE CIRCUIT BREAKER.
- 4) DISCONNECT EXISTING ELECTRICAL POWER TO EXISTING AC UNIT. RECONNECT POWER TO NEW AC UNIT.
- 5) PROVIDE POWER FOR NEW HOT WATER RECIRCULATION PUMP. COORDINATE WITH MECHANICAL FOR EXACT LOCATION OF NEW PUMP. ROUTE HOMERUN THROUGH AQUASTAT START CONTACTS. RE: MECHANICAL DRAWINGS. PROVIDE NEW 40A, 1P CIRCUIT BREAKER IN PANEL "R". ROUTE (2) #10, (1) #106 IN 1/2" CONDUIT.
- 6) PROVIDE POWER FOR NEW BOILERS. COORDINATE WITH MECHANICAL FOR EXACT LOCATION OF NEW BOILERS. PROVIDE NEW 20A, 1P CIRCUIT BREAKER IN PANEL "R" FOR EACH BOILER.
- 7) PROVIDE NEW WEATHER-PROOF 6FCI RECEPTACLE. CONNECT TO THE SAME CIRCUIT AS THE OTHER EXISTING RECEPTACLES ON THE ROOF.
- 8) DISCONNECT POWER TO THE THREE EXISTING HOT WATER RECIRCULATION PUMPS, THE TWO EXISTING WATER HEATERS, AND THE TWO HOT WATER TANK TEMPERATURE SENSORS IN THIS ROOM. REMOVE ALL ASSOCIATED CONDUIT, WIRE, SUPPORTS, ETC. BACK TO SOURCE OR NEAREST DEVICE TO REMAIN.
- 9) PROVIDE 120 VAC POWER TO NEW HEAT TRACE. COORDINATE WITH MECHANICAL CONTRACTOR. CONNECT TO EXISTING HEAT TRACE CIRCUIT.
- 10) PROVIDE AND INSTALL FIRE ALARM CONTROL MODULE FOR MAKE-UP AIR UNIT SHUTDOWN. INTERFACE WITH MAKE-UP AIR UNIT START CIRCUIT. RE: ES.2 FOR FIRE ALARM RISER AND FIRE ALARM SEQUENCE OF OPERATION.
- 11) PROVIDE POWER FOR NEW HOT WATER RECIRCULATION PUMP. COORDINATE WITH MECHANICAL FOR EXACT LOCATION OF NEW PUMP. PROVIDE NEW 15A, 1P CIRCUIT BREAKER IN PANEL "R". ROUTE (2) #12, (1) #126 IN 1/2" CONDUIT.

GENERAL NOTES:

- 1) CONTRACTOR TO FIELD VERIFY THAT CIRCUITS LISTED ON THIS DRAWING ARE AVAILABLE FOR USE. IF CIRCUITS LISTED PROVIDE POWER FOR EXISTING EQUIPMENT TO REMAIN, CONTACT ENGINEER FOR FURTHER DIRECTION.
- 2) ALL ELECTRICAL DISCONNECTS SHOWN SHALL BE NEW UNLESS NOTED OTHERWISE.



InSite Group, Inc.
 Consulting Engineers
 310 SW 4th Ave, Suite 1120 Phone: (503) 222-2044
 Portland, OR 97204 Fax: (503) 222-5924

**ROOF PLAN ELECTRICAL POWER
 DEMOLITION & NEW WORK**

Revisions :	Date : 4/17/2012
Drawn : DAB	
Checked : CCW	



ROOF PLAN - ELECTRICAL POWER DEMOLITION & NEW WORK

1/16" = 1' - 0"

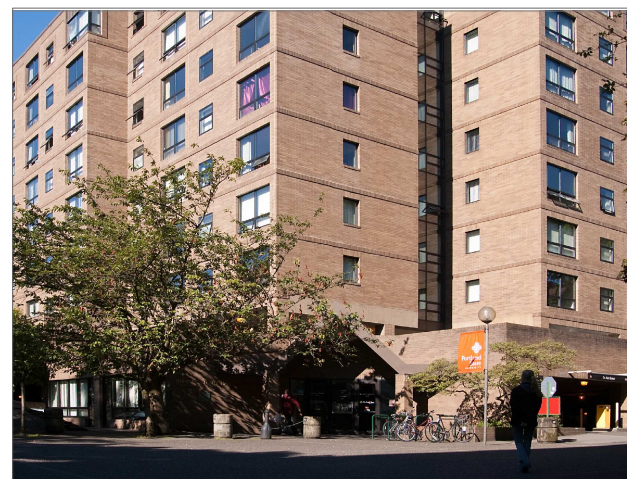
E12.1

Blumel Hall

Roof Replacement

PORTLAND STATE UNIVERSITY

NE Entry



Existing Roof View



Project Information

Project Description

Provide new insulation and weatherproof the main roof deck, and mechanical penthouse with SBS roofing. Remove the existing 3-ply asphalt built-up roof system with a granule surfaced cap sheet, and rooftop equipment, including mechanical equipment to be re-installed or specified for replacement. New metal coping and scuppers. Raise height of existing guardrail, remove and reinstall metal siding on mechanical penthouse as required for proper roofing installation, modify support at existing rooftop metal stair.

Building Area
Gross Bldg. Area 199,600 S.F.
Roof Areas 19,488 S.F.

Applicable Code
2010 Oregon Structural Specialty Code
Fire/Windstorm Classification: Class 1A-90

Project Team

Facilities and Planning
Architectural Services &
Mech/Plumbing Engineering
617 SW Montgomery St., #202
(503)725-3738

Roofing Consultant
Professional Roof Consultants
1108 SE Grand Ave., Ste. 300
Portland, OR 97214
(503)280-8759

Steven McBride
Owen Davis

Structural Engineering
ABHT Structural Engineers
1640 NW Johnson St.
Portland, OR 97209
(503)243-6682

Clinton Ambrose, P.E., S.E.
Justin Lyons, P.E.

Sheet Index

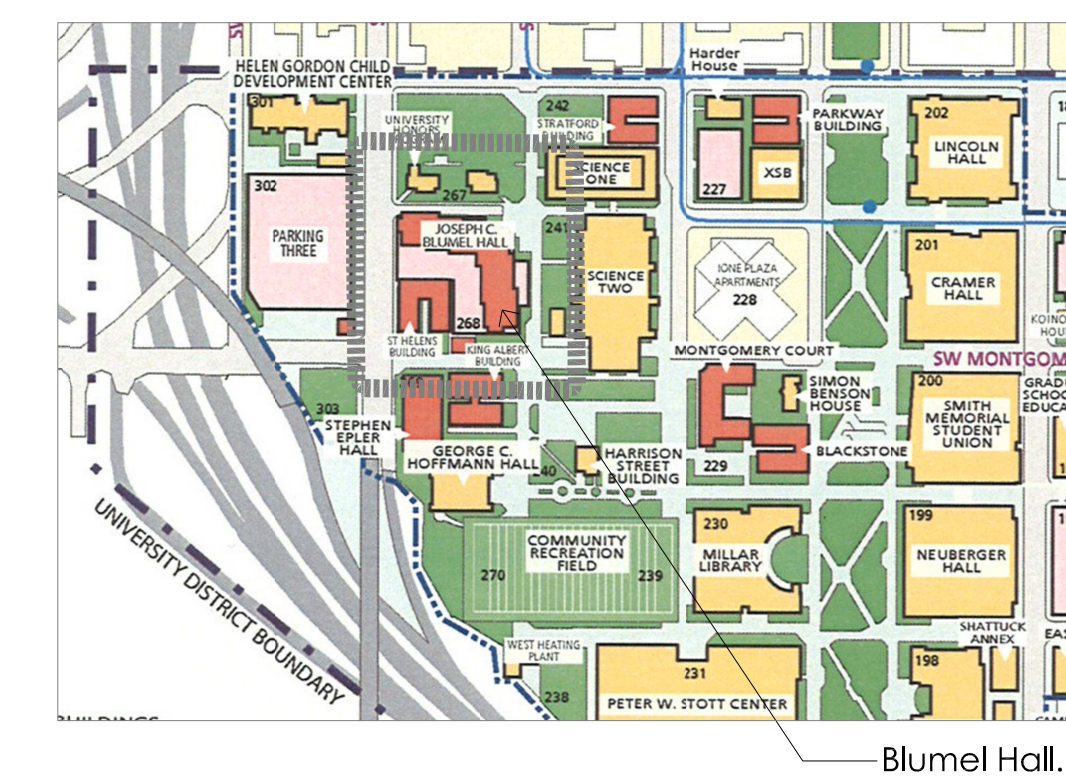
ARCHITECTURAL
A12.1 Cover Sheet
A12.2 Roof Plan
A12.3 Roof Details
A12.4 Roof Details

STRUCTURAL
S0.1 Structural Notes
S1.1 Roof Plan
S2.1 Details

FOR REFERENCE
RA101 Rooftop anchor
plan and details

Vicinity Map

No Scale



3/9/12
issued for bid
4/17/12
for reference only.



Cover Sheet

Revisions :	Date :
	3/9/12

Drawn : TP

Checked : TA

A12.1

PSU Facilities and Planning
Joseph C. Blumel Hall

Residence Hall
RE-PIPE REMODEL

(Block 268)
1705 SW 11th Ave.
Portland, Oregon 97201

3/9/12
issued for bid
4/17/12
for reference only.



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

Roof Plan

Revisions : 1 ADDENDUM #1, 3/26/12

Date :

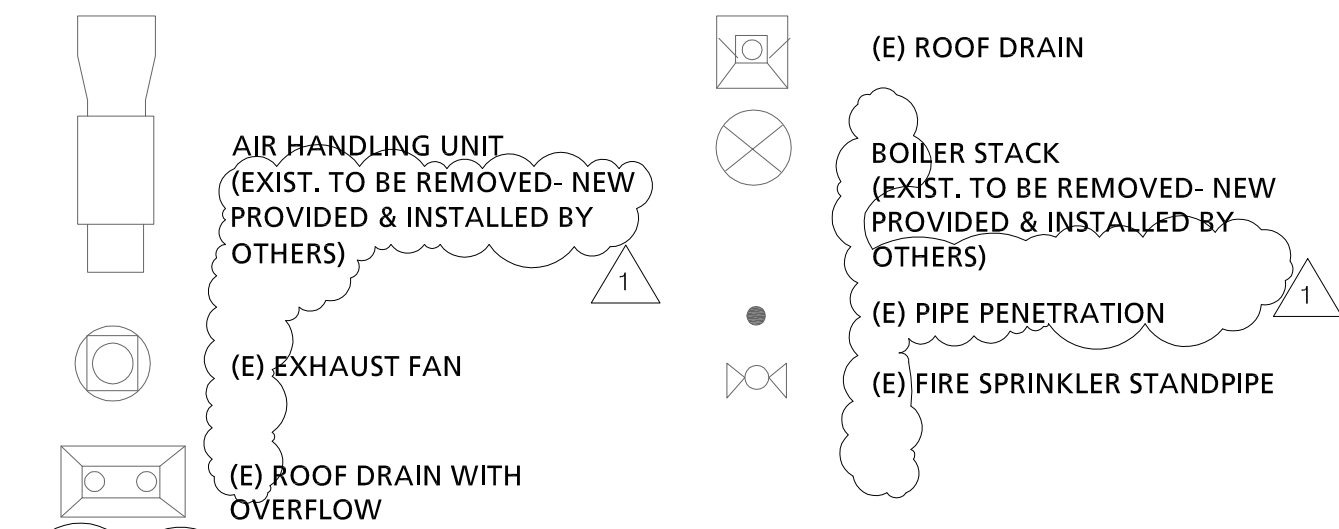
3/9/12

Drawn : TP

Checked : TA

A12.2

symbols



energy code compliance

Roof: R-20ci at lowest point of insulation

general notes

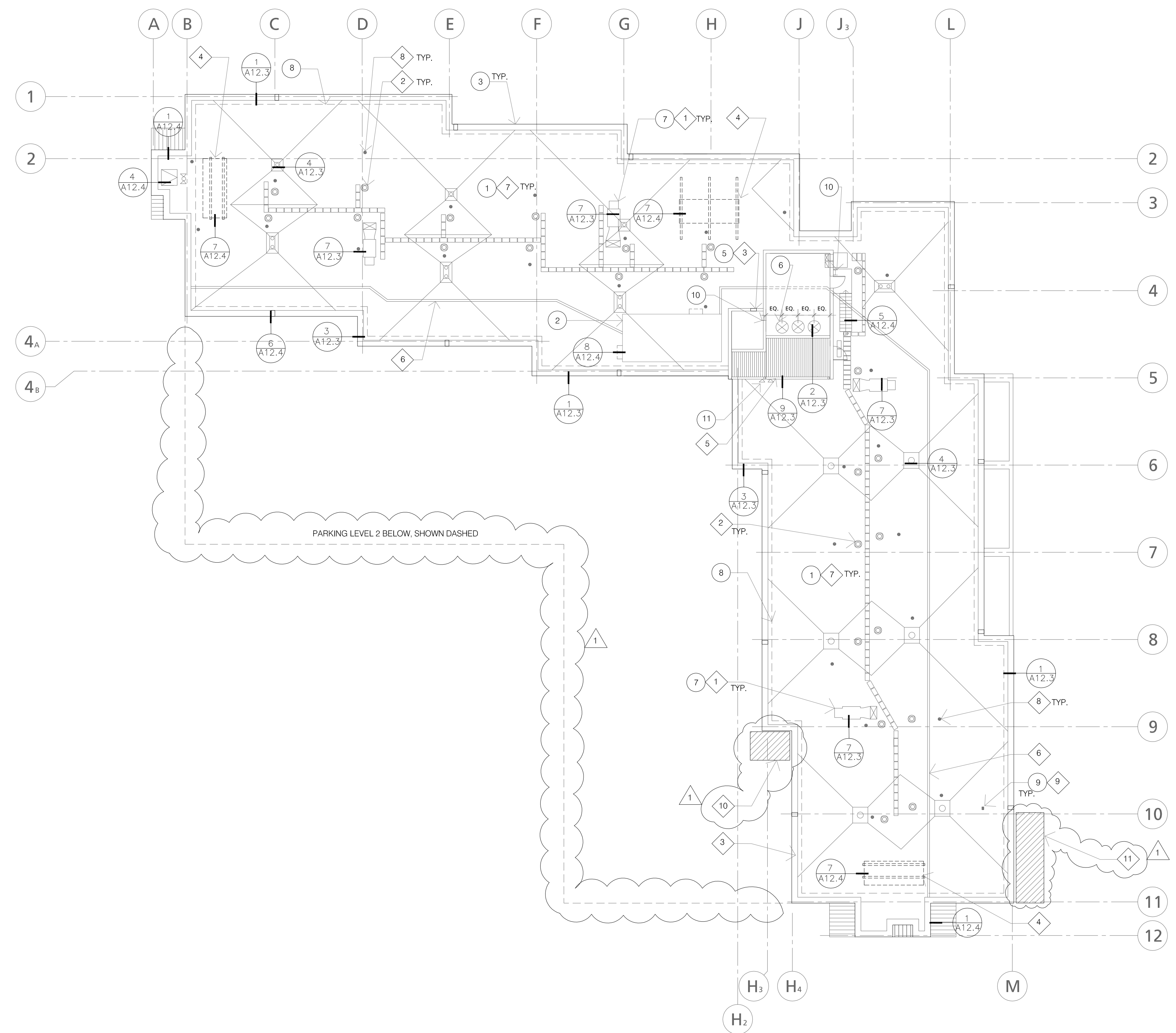
- Existing materials or construction are noted on the drawings as (E) or "exist." or "existing". All other notations indicate new materials, products or construction unless otherwise stated or indicated.
- Contractor to independently verify type, location and condition of all rooftop equipment, penetrations and structures.
- All existing equipment and accessories to remain unless otherwise noted. Coordinate disconnect/safe-off and reconnection with Owner.
- Contractor to coordinate work with and around AT&T equipment with AT&T contractor/team.

demo notes

- Remove existing roof system and related flashings down to the concrete and metal roof decks.
- Remove and reinstall siding materials at existing AT&T structure as required to provide new vertical substrate for roofing/flashings. Remove the two-piece sheet metal counter flashing around the base flashing.
- Remove and discard designated existing sheet metal coping cap and surface mounted sheet metal flashings.
- Remove all abandoned equipment and through-roof penetrations, coordinate with Owner. Provide infill at abandoned openings.
- Remove through-wall scupper and leader heads. Infill brick at abandoned penetrations.
- Coordinate removal of existing boiler room hot stack.
- Remove existing HVAC equipment, support curbs and related abandoned penetrations. Include elec./mech. disconnect.
- Remove guardrail supports and sections, modify baseplate and post, see struc'l. dwgs.
- Remove all window washing support anchors, typical.
- Remove and reuse/reinstall the fixed access ladders.
- Remove and reinstall siding materials at existing penthouse as required to install proper flashings/roofing. Coordinate removal and reinstallation for fire sprinkler check valve with fire department and Owner.

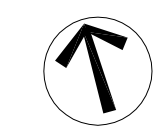
key notes

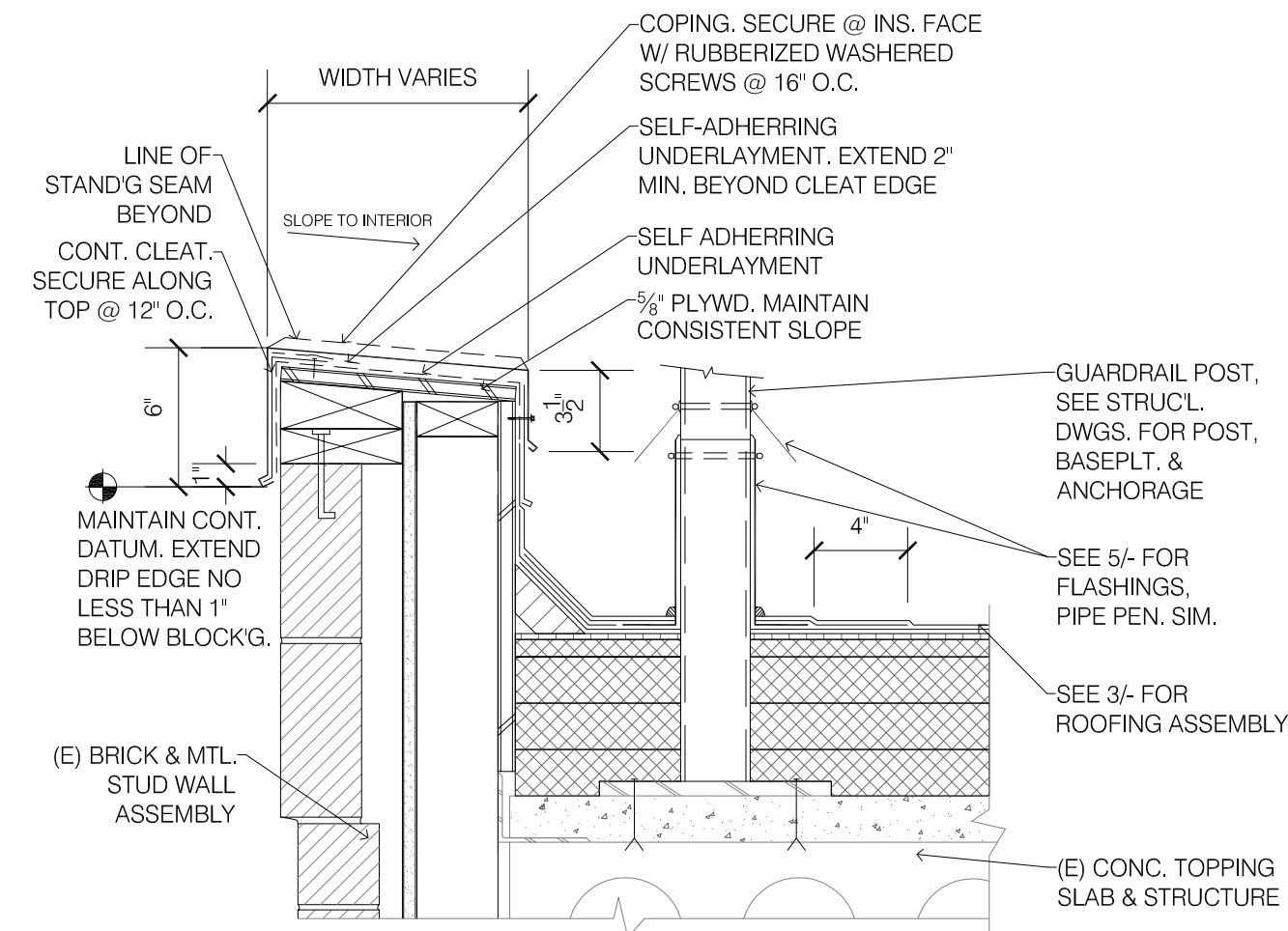
- New mechanical equipment (by others) at existing location. Provide new treated wood curbs.
- Existing exhaust fan unit- disconnect, remove & re-install during roof replacement. Provide new treated wood curbs as req'd. for min. curb height.
- Install new scupper. Locate new through-wall scupper and leaderhead 12" min. away from wall.
- New AT&T structure (by others). Coordinate complete installation of sleeper supports with AT&T contractor prior to roof replacement. See 7/A12.4 for insulation/roofing assembly.
- New continuous 24 GA. pre-painted gutter to match existing steel gutter and downspouts. Provide undergutter brackets and spacers for heavy duty securement..
- Existing AT&T conduit busway. Coordinate with AT&T contractor to temporarily elevate conduit during demolition and new roofing. Support and modification by others.
- Install new roof system, including tapered insulation and overlay board. Install new walk pads.
- Replace all penetration flashings and provide new flashings at all active penetrations.
- Provide new window washing anchors, see 9/A12.4 and dwg. RA101 (for reference only)
- Owner approved location for roof access stair tower at Parking Level 2.
- Owner approved location for staging/trash chute/scaffold tower.



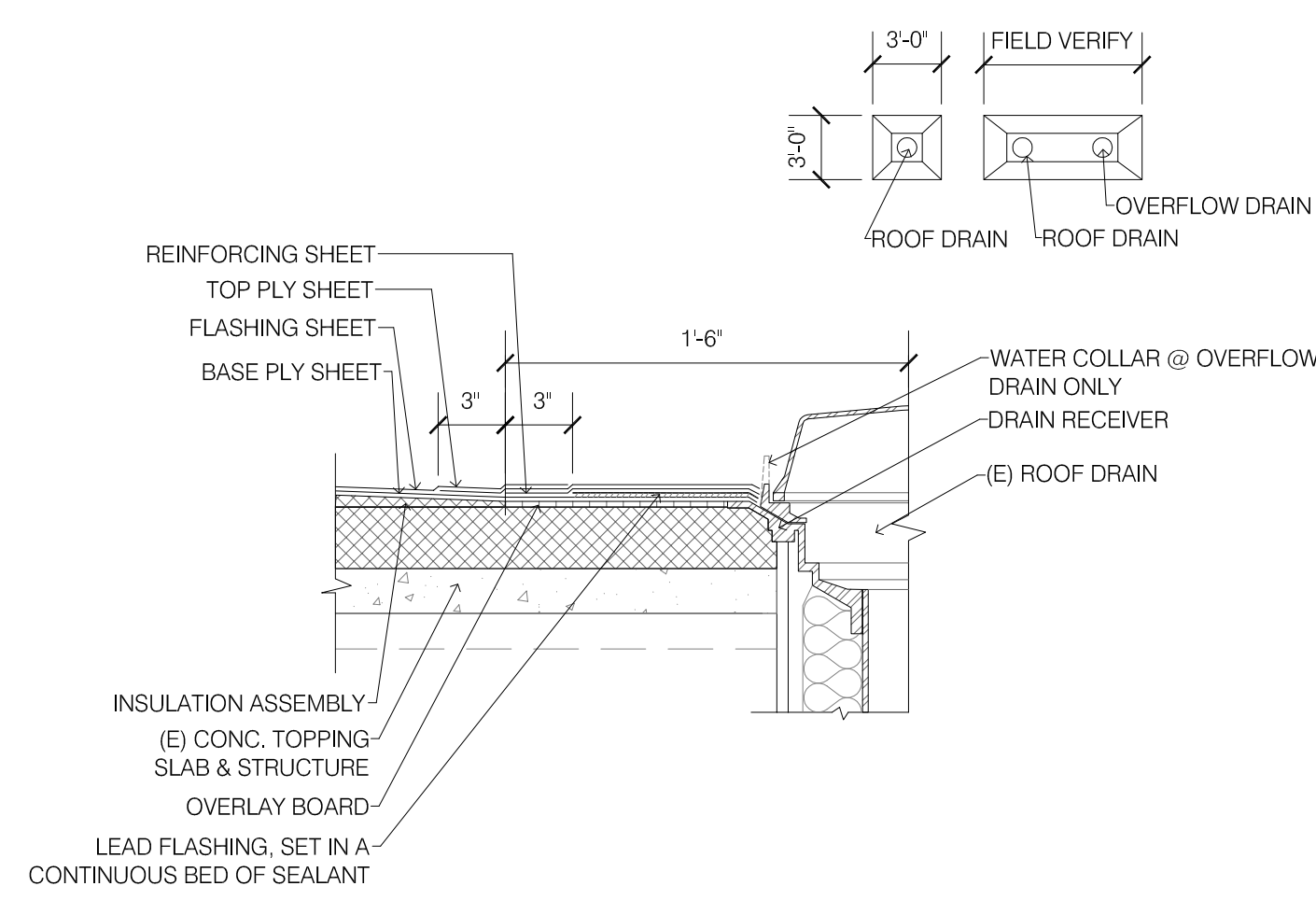
1 roof plan

1/16" = 1' - 0"

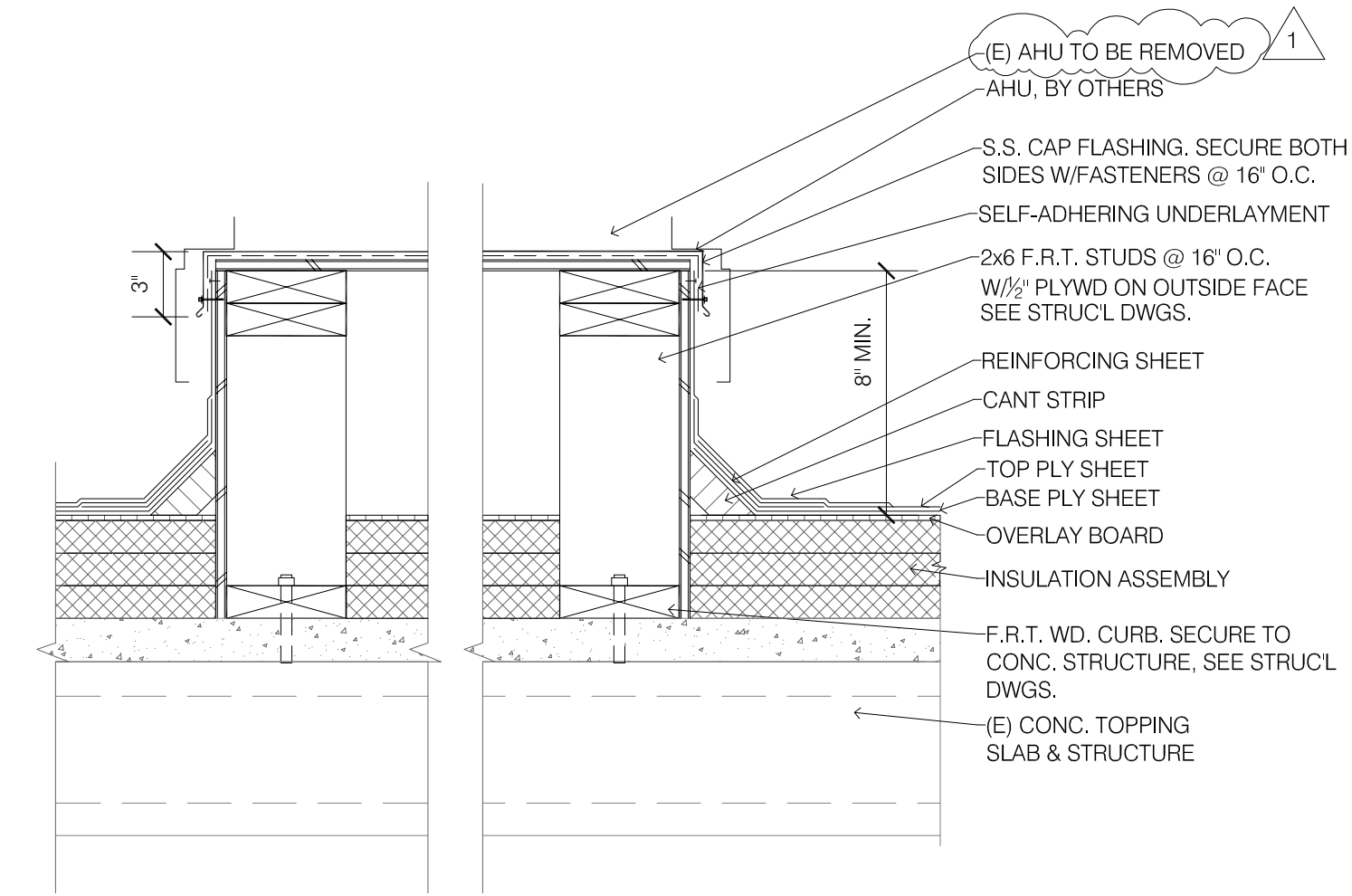




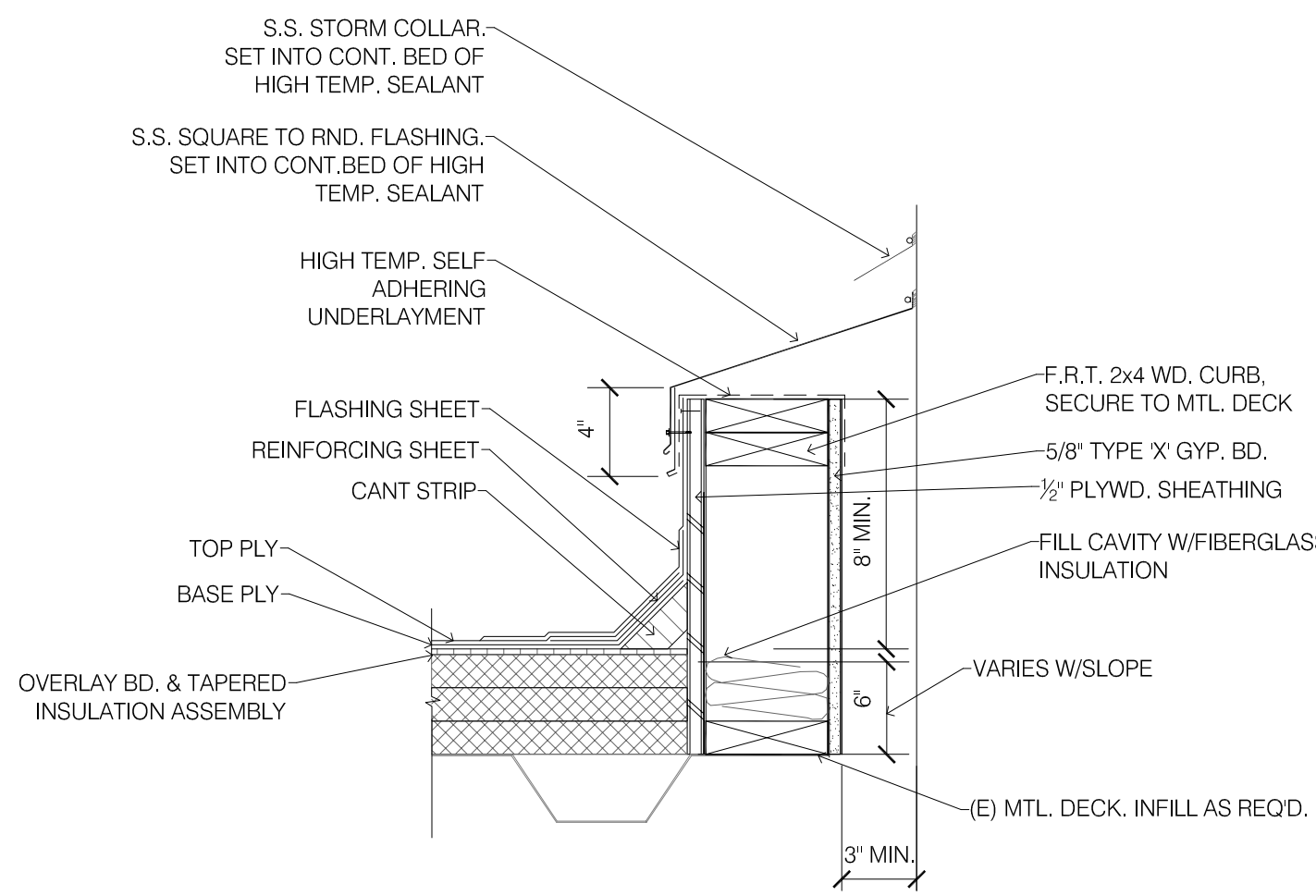
1 typ. parapet/guardrail
- 1 1/2" = 1' - 0"



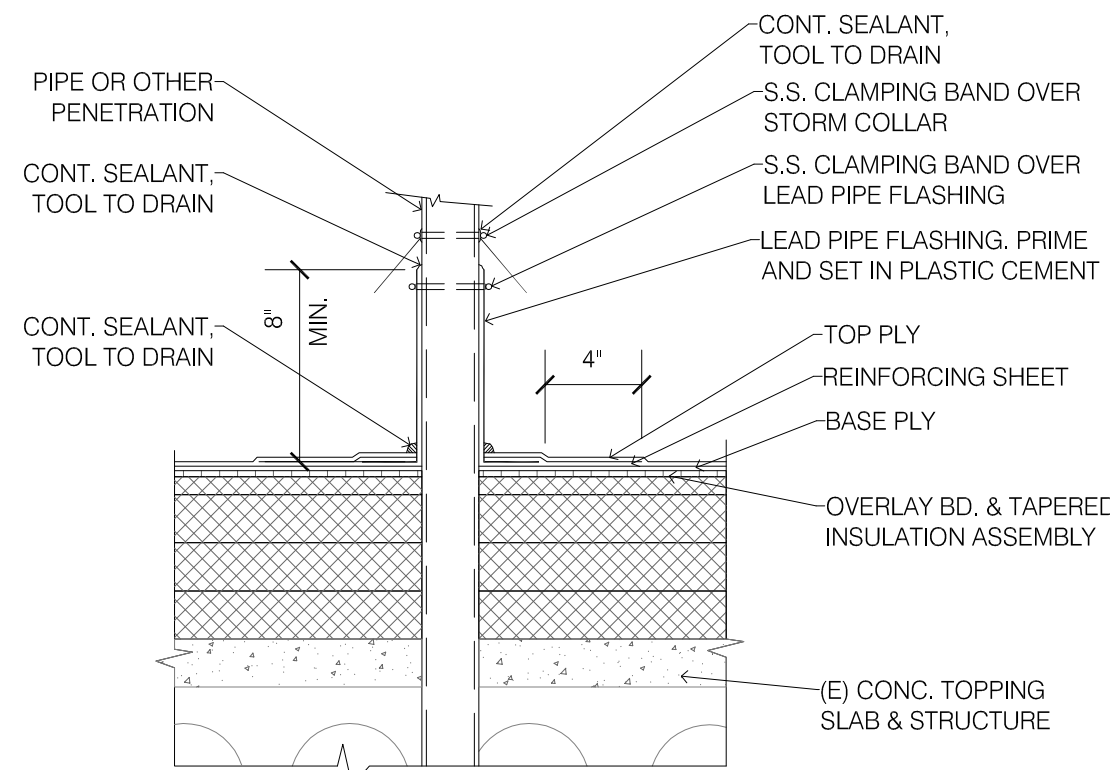
4 roof drain
- 1 1/2" = 1' - 0"



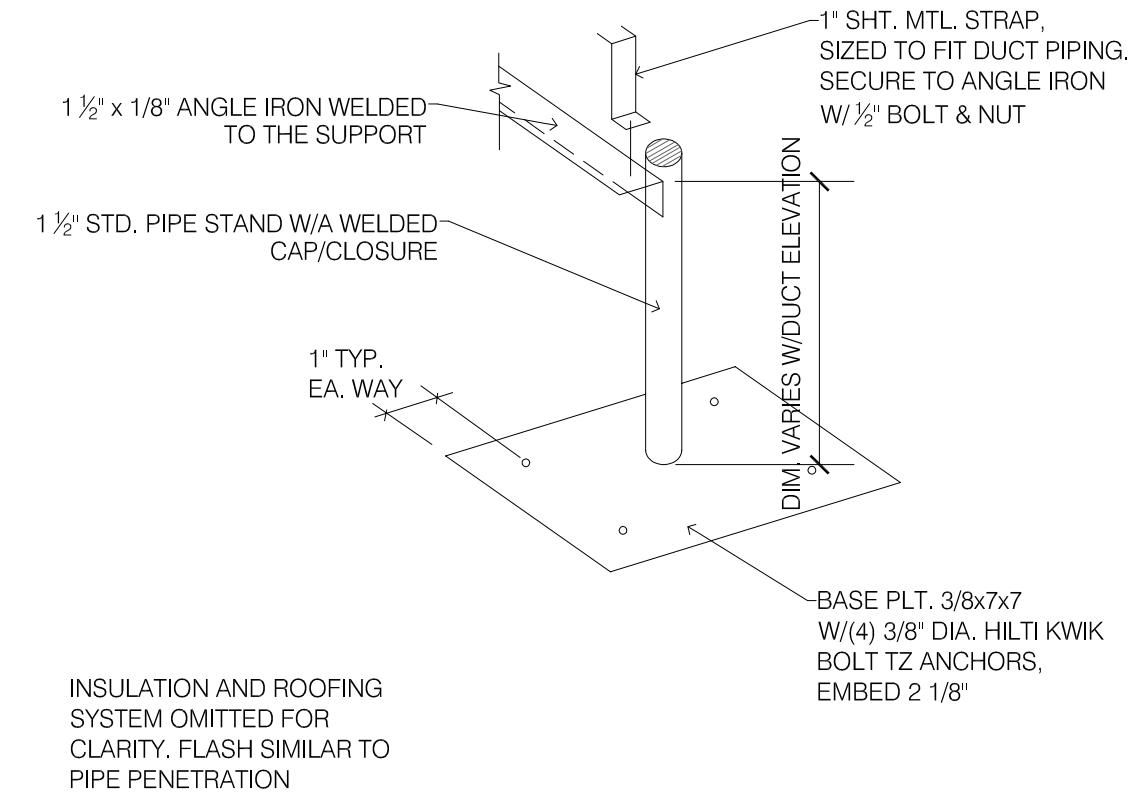
7 air handling unit curb
- 1 1/2" = 1' - 0"



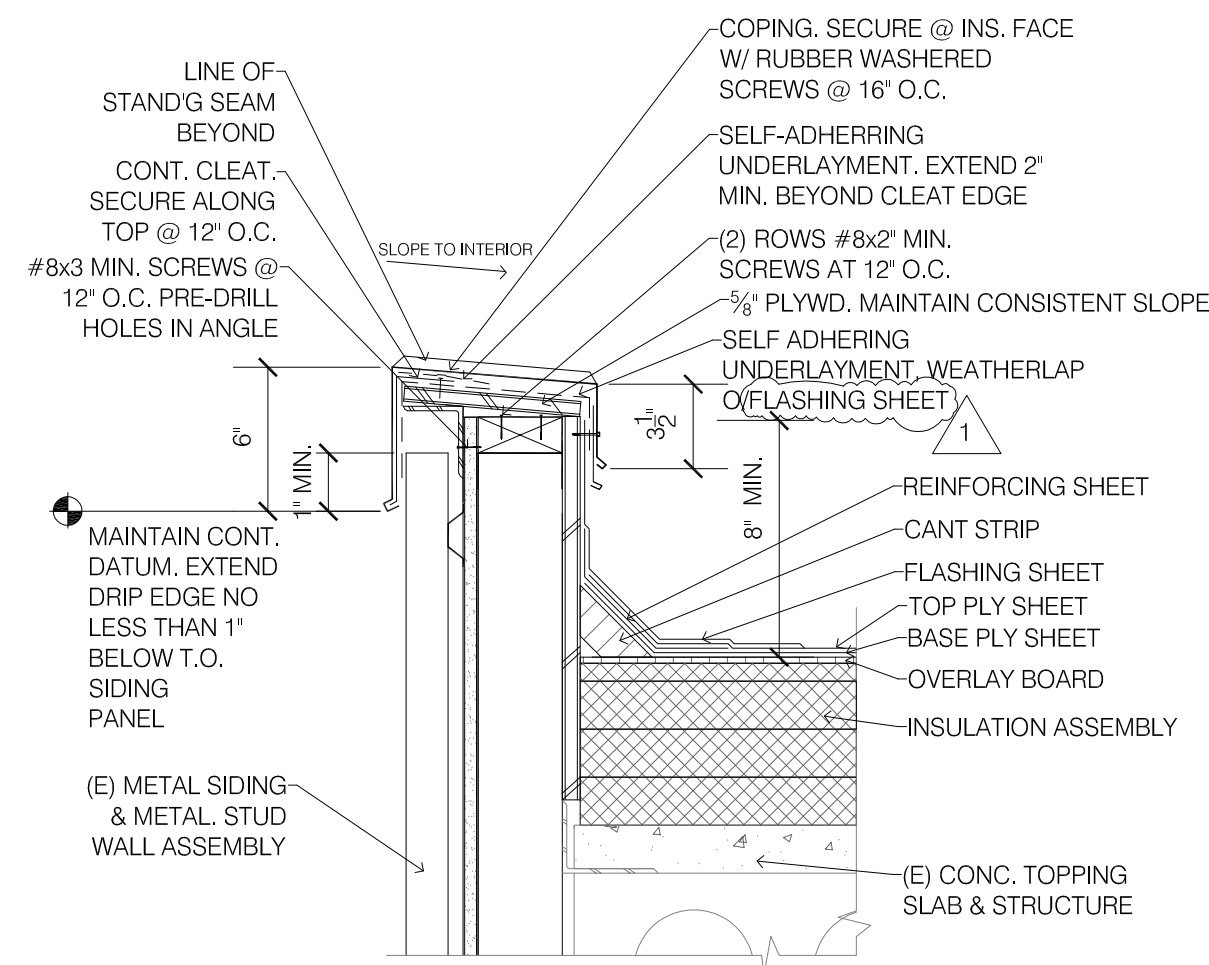
2 boiler stack flashing
- 1 1/2" = 1' - 0"



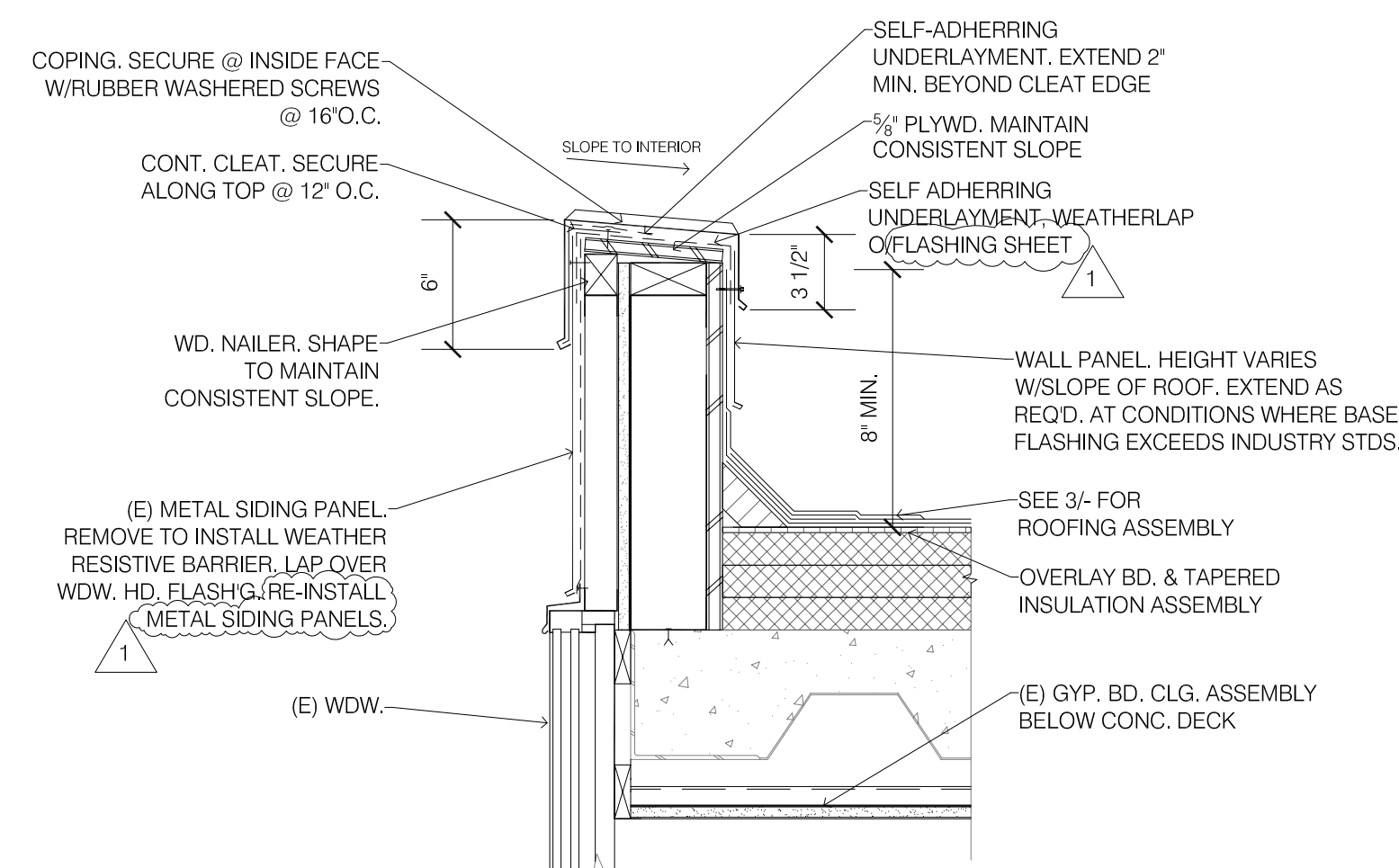
5 pipe penetration
- 1 1/2" = 1' - 0"



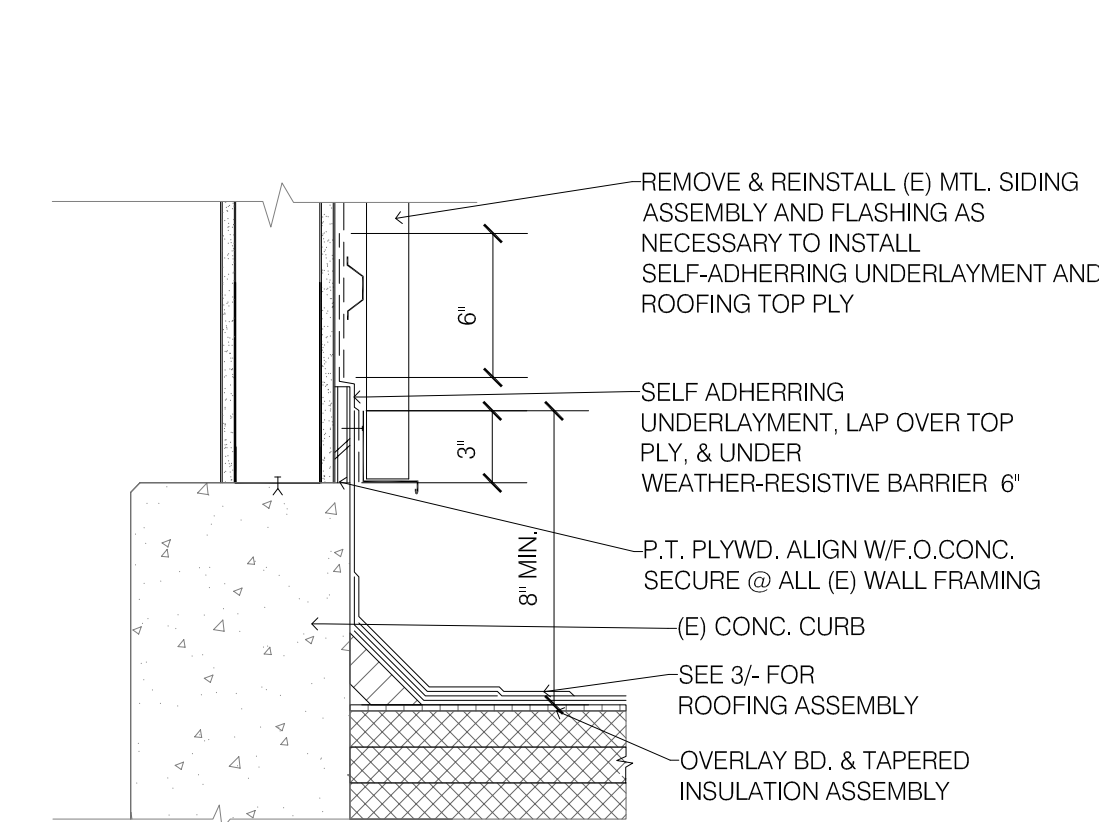
8 duct support
- NO SCALE



3 parapet at metal siding
- 1 1/2" = 1' - 0"



6 parapet at window
- 1 1/2" = 1' - 0"



9 roof to wall at elev. penthouse
- 1 1/2" = 1' - 0"

3/9/12 issued for bid
4/17/12 for reference only.



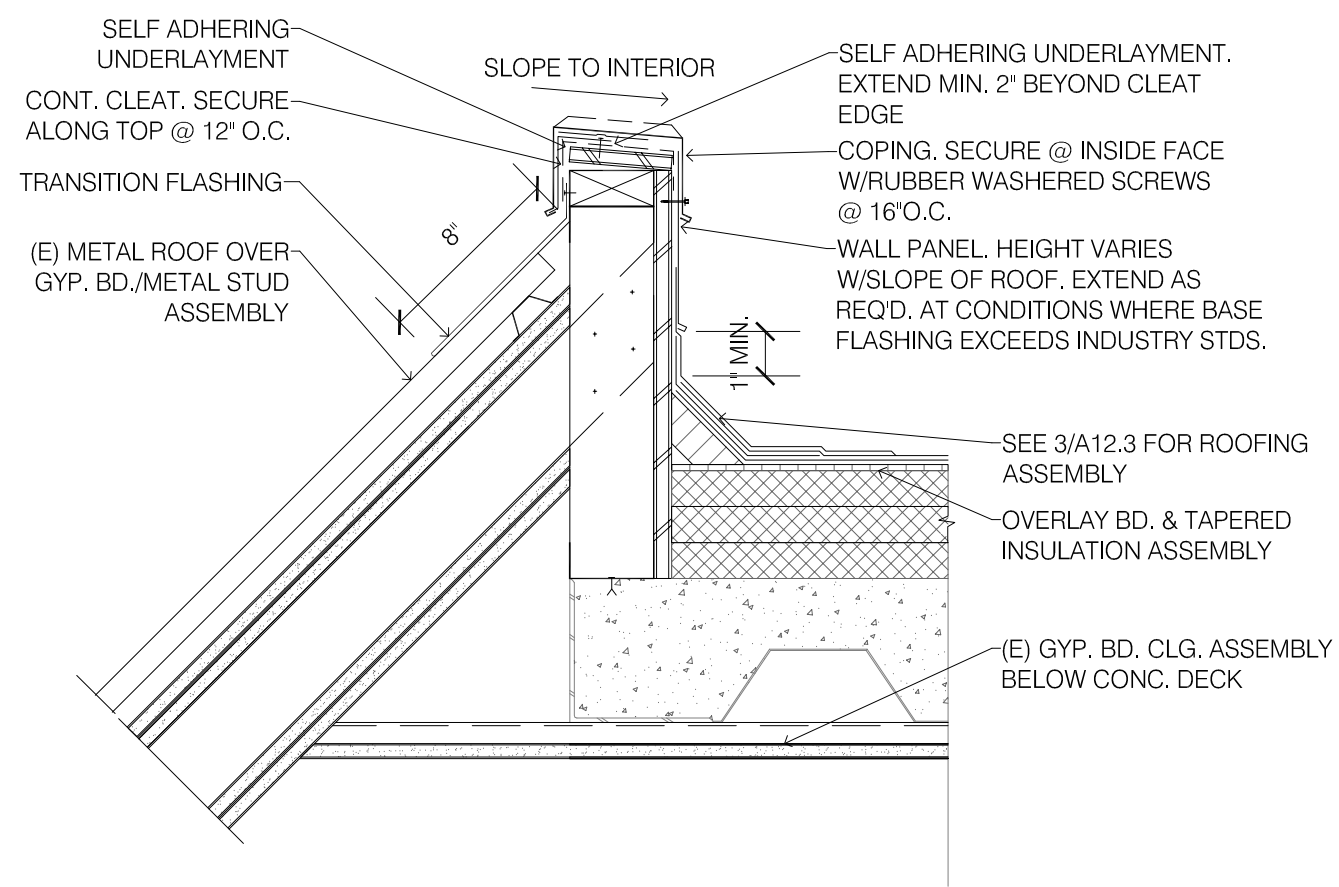
FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

Roof Details

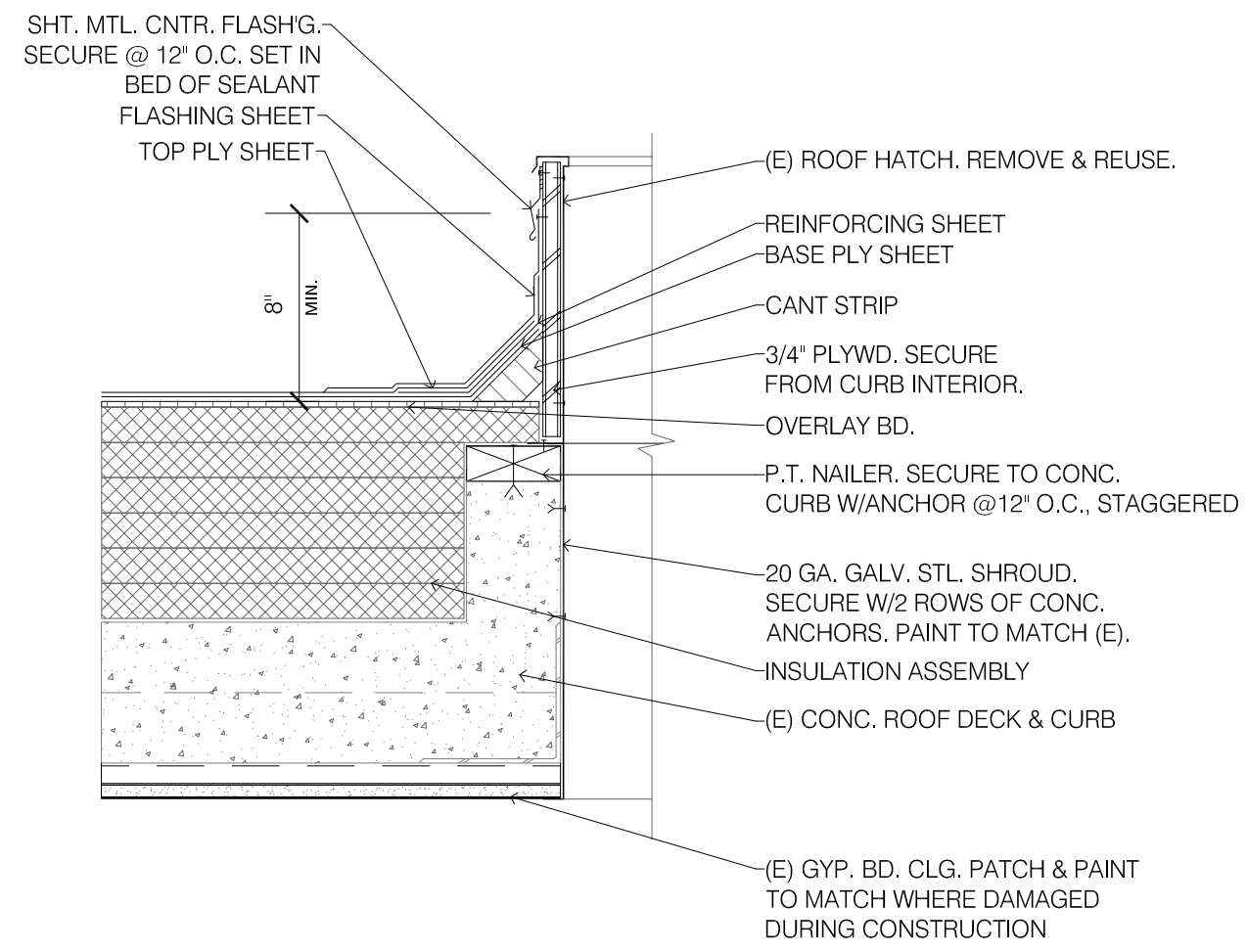
Revisions : ¹ ADDENDUM #1, 3/26/12 Date : 3/9/12

Drawn : TP

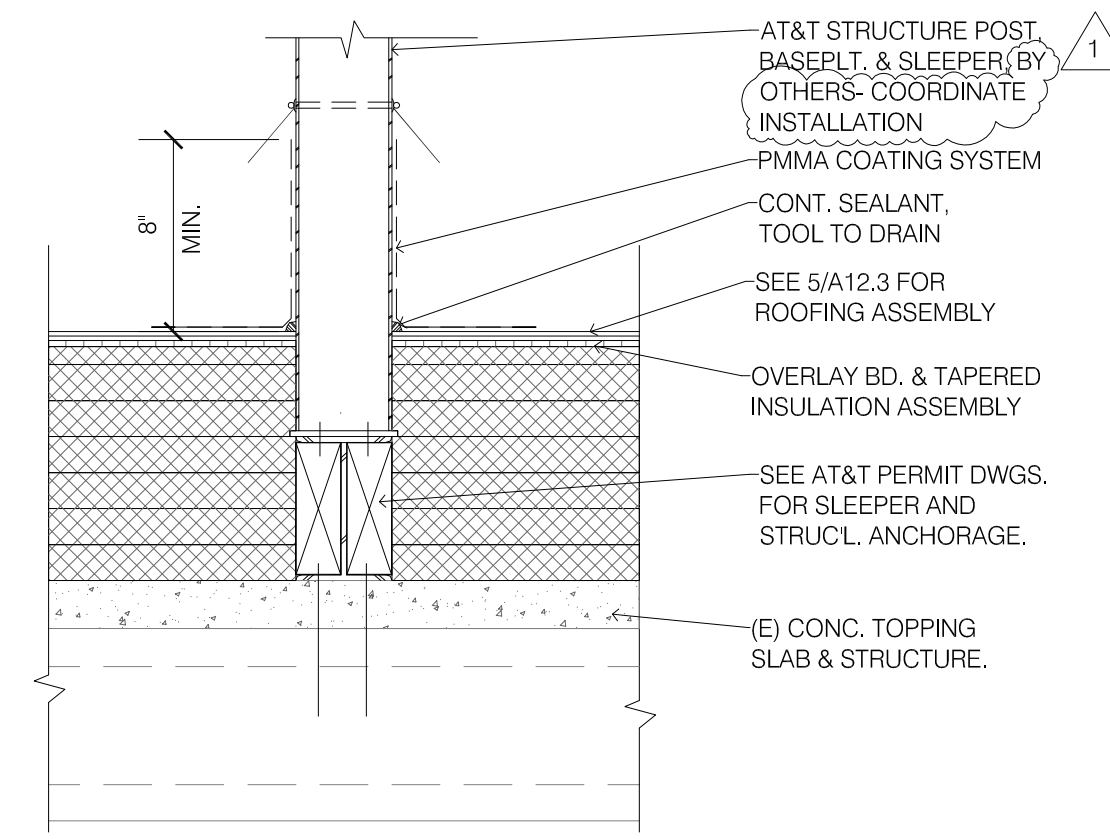
Checked : TA



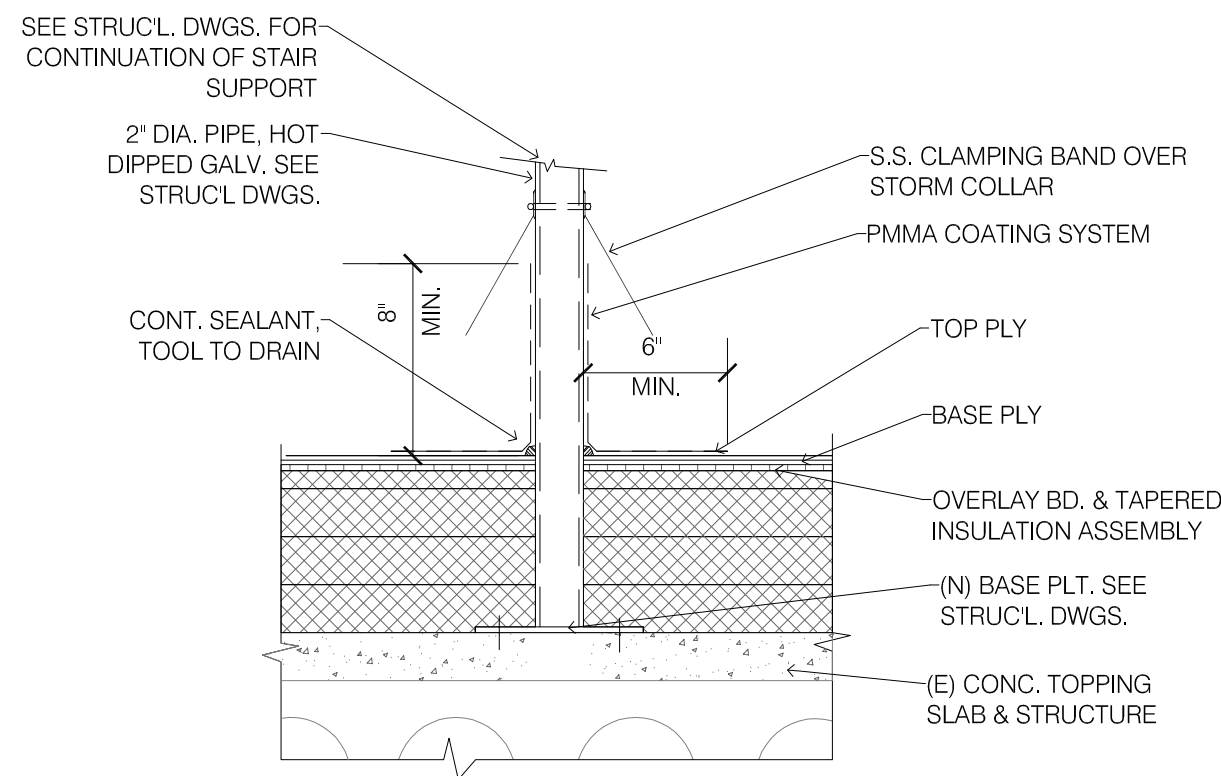
1 parapet at metal roof
1 1/2" = 1'-0"



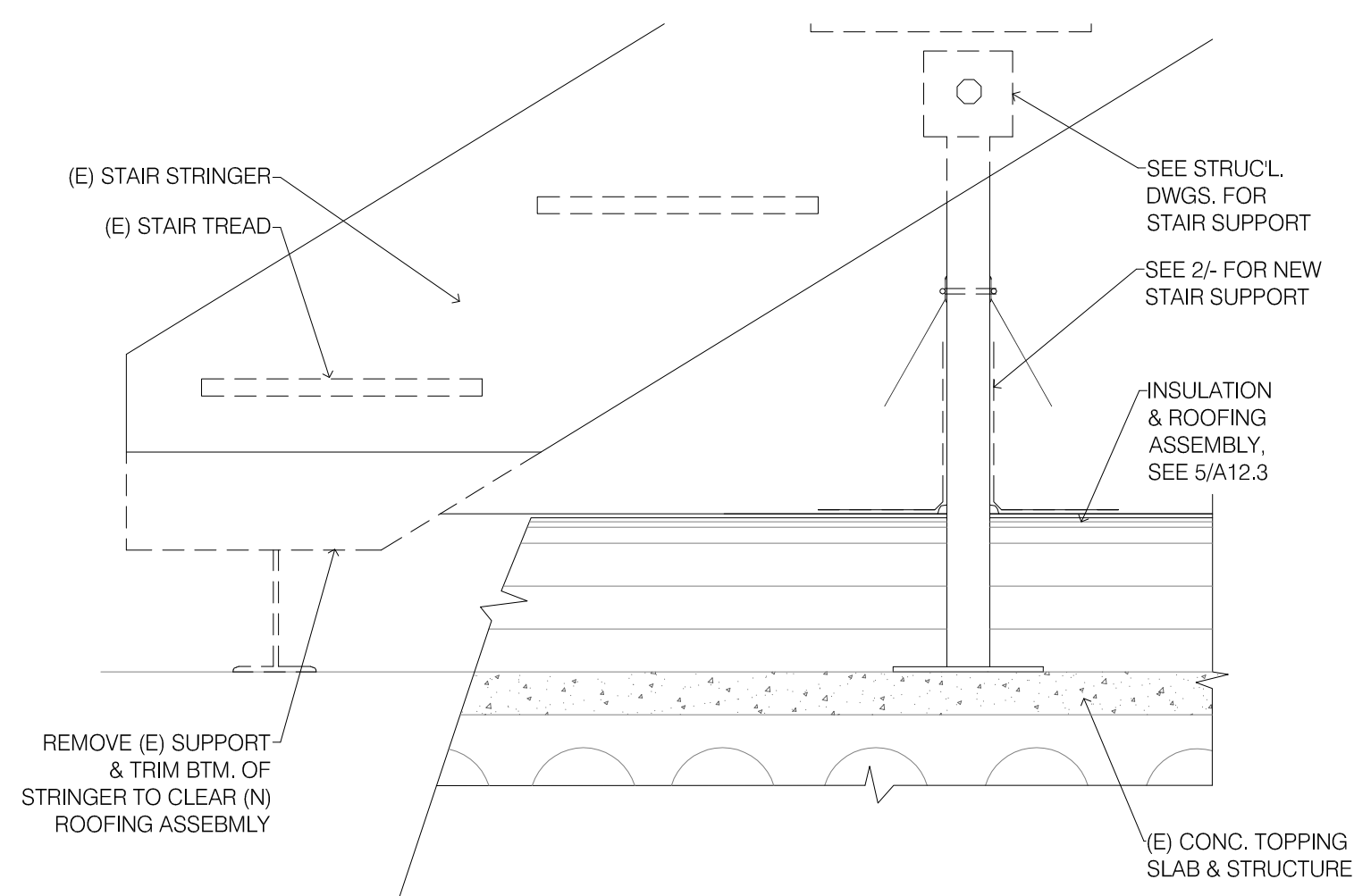
4 (e) roof hatch
1 1/2" = 1'-0"



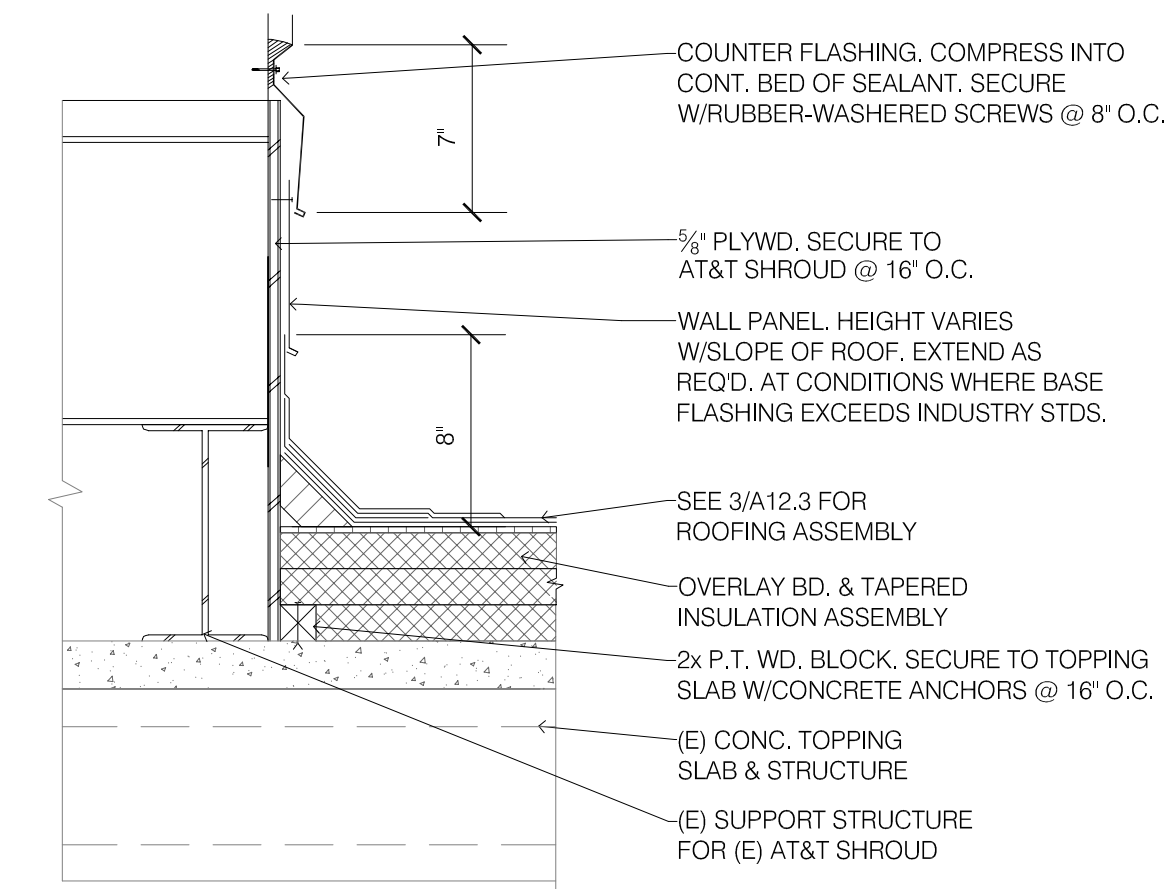
7 flash'g at (n) at&t structure support
1 1/2" = 1'-0"



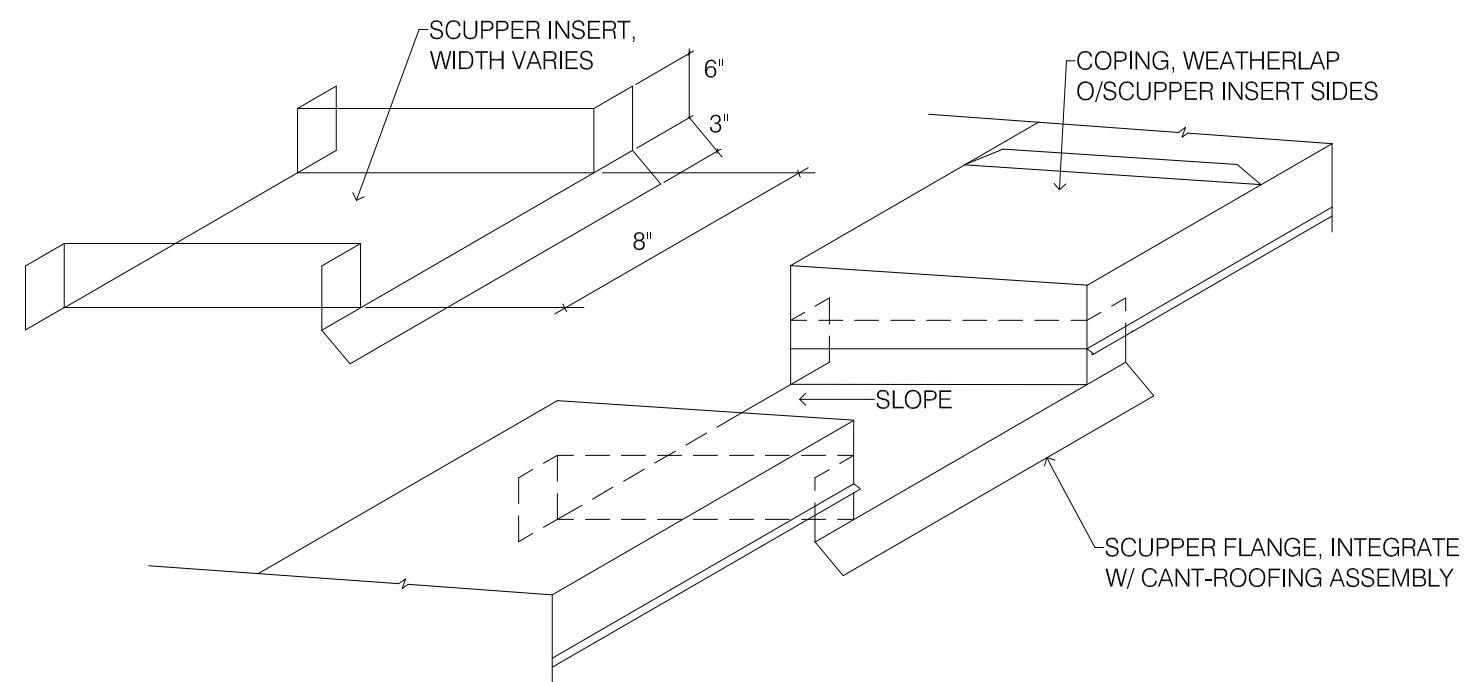
2 stair support
1 1/2" = 1'-0"



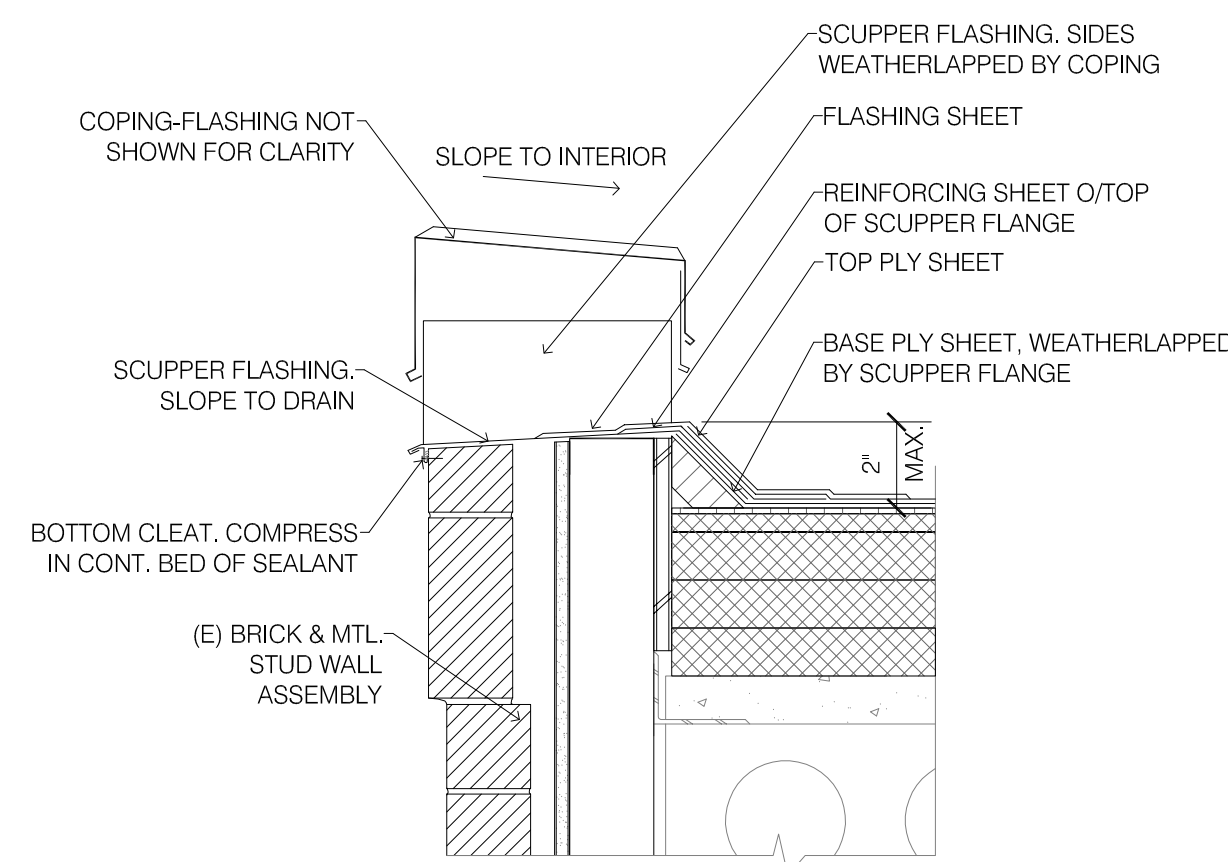
5 (e) stair with modified support
1 1/2" = 1'-0"



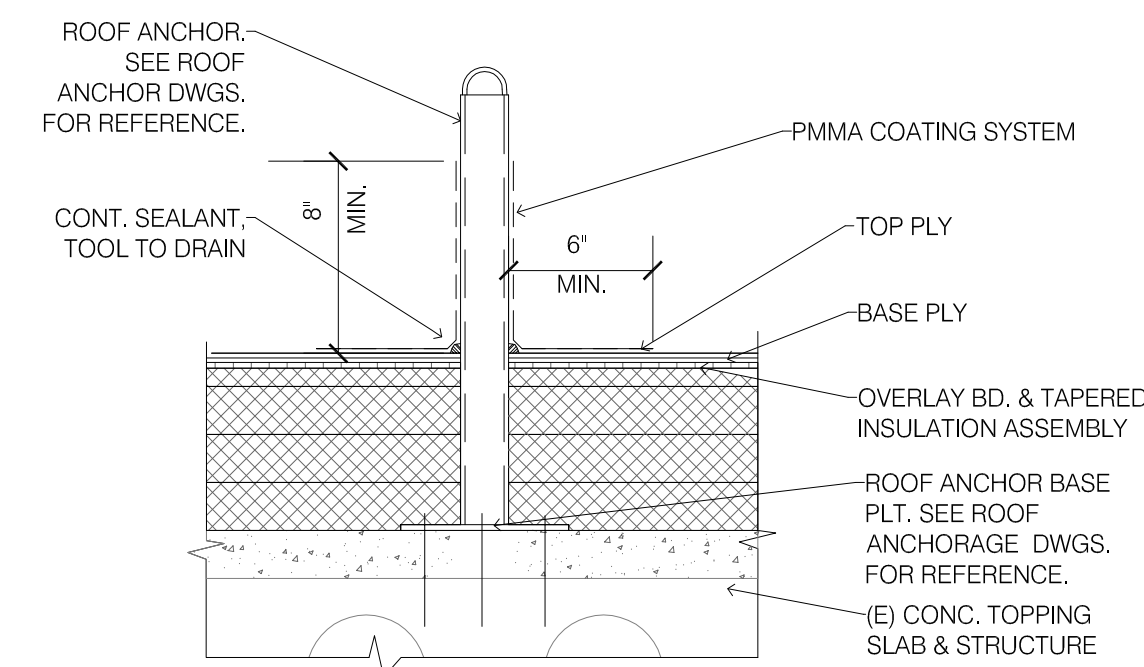
8 roof to wall at (e) at&t structure
1 1/2" = 1'-0"



3 scupper flashing insert
NO SCALE



6 scupper flashing
1 1/2" = 1'-0"



9 rooftop anchor
1 1/2" = 1'-0"

3/9/12
issued for bid
4/17/12
for reference only.



FOR ALL STRUCTURAL, MECHANICAL, ELECTRICAL, TELCO, AV, AND FIRE SPRINKLER / ALARM INFORMATION SEE ENGINEER'S DRAWINGS AND SPECIFICATIONS.

Roof Details

Revisions : **1** ADDENDUM #1, 3/26/12 Date : 3/9/12

Drawn : TP

Checked : TA

GENERAL STRUCTURAL NOTES

GENERAL NOTES:

- ALL CONSTRUCTION AND DESIGN SHALL CONFORM TO THE 2009 INTERNATIONAL BUILDING CODE AS AMENDED BY THE STATE OF OREGON.
- THE STRUCTURAL DRAWINGS SHALL BE UTILIZED IN CONJUNCTION WITH OTHER DESIGN CONSULTANT'S DRAWINGS (ARCHITECTURAL, MECHANICAL, ETC.). IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REQUIREMENTS OF THE DRAWINGS INTO THEIR SHOP DRAWINGS AND CONSTRUCTION.
- THE GENERAL STRUCTURAL NOTES ARE INTENDED FOR USE IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS. IN THE EVENT OF A CONFLICT BETWEEN THE TWO, THE GENERAL STRUCTURAL NOTES SHALL SUPERSEDE THE PROJECT SPECIFICATIONS. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER.
- CONSTRUCTION SEQUENCE AND METHODS:
 - THE STRUCTURAL DRAWINGS ARE INTENDED FOR THE STRUCTURE TO ACT AS A WHOLE ONCE CONSTRUCTION IS COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE SAFETY AND STABILITY (I.E. TEMPORARY BRACING IF REQUIRED) DURING CONSTRUCTION AS A RESULT OF CONSTRUCTION METHODS AND SEQUENCES.
 - THE CONTRACTOR SHALL TAKE INTO ACCOUNT COLD WEATHER CONSTRUCTION AND THE EFFECTS OF THERMAL MOVEMENT DURING THE CONSTRUCTION SCHEDULE.
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS. THE ARCHITECT AND/OR ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY BETWEEN THE EXISTING CONDITIONS AND CONSTRUCTION DOCUMENTS.

SUBMITTALS:

- SHOP DRAWINGS FOR ALL STRUCTURAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION AND CONSTRUCTION. SUCH ITEMS INCLUDE:
 - STRUCTURAL STEEL (INCLUDING MILL TEST REPORTS)

SHOP DRAWINGS OR CONTRACTOR ENGINEERED DETAILS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED STRUCTURAL ENGINEER IN THE STATE OF OREGON IF IT DIFFERS FROM THE DESIGN OF THE STRUCTURAL DRAWINGS. ANY REVISION FROM THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND IS SUBJECT TO THE REVIEW AND ACCEPTANCE BY THE ENGINEER.

- CALCULATIONS, DESIGN DRAWINGS, AND SHOP DRAWINGS FOR THE DESIGN, FABRICATION, AND CONSTRUCTION OF BIDDER DESIGN ITEMS SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED STRUCTURAL ENGINEER IN THE STATE OF OREGON AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION. BIDDER DESIGN ITEMS FOR THIS PROJECT INCLUDE:
 - FALL PROTECTION SYSTEMS.

CALCULATIONS AND BIDDER DESIGN DRAWINGS SHALL INCLUDE THE DESIGN, CONNECTION TO THE STRUCTURE, AND ACCOUNTING OF ANY LOCALIZED EFFECTS THE CONNECTIONS OR SYSTEMS MAY INDUCE ON THE STRUCTURE. ALL SUCH BIDDER DESIGNED ITEMS SHALL BE BASED ON THE DESIGN REQUIREMENTS AS SPECIFIED IN THE GENERAL STRUCTURAL NOTES.

- SEISMIC BRACING AND RESTRAINT TO THE STRUCTURE OF ANY MEP EQUIPMENT, MACHINERY, AND ASSOCIATED PIPING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONNECTIONS NOT IN COMPLIANCE WITH SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION) OR THE MEP DESIGN DRAWINGS, SHALL BEAR THE SEAL OF REGISTERED ENGINEER IN THE STATE OF OREGON AND SHALL BE SUBMITTED ALONG WITH CALCULATIONS TO THE ARCHITECT FOR APPROVAL PRIOR TO FABRICATION.

DESIGN CRITERIA:

- CODE: 2009 INTERNATIONAL BUILDING CODE AS AMENDED BY THE STATE OF OREGON (2010 OSSC).
- LOADS AND DESIGN CRITERIA: THE FOLLOWING LIVE LOADS AND CRITERIA WERE USED IN ADDITION TO THE DEAD LOAD OF THE STRUCTURE.
 - LIVE LOADS:
 - GUARDRAILS 50 PLF OR 200# APPLIED ANY DIRECTION
 - FALL PROTECTION SYSTEM 5000# ULTIMATE IN ANY DIRECTION
 - LATERAL CRITERIA:
 - WIND 95 MPH, EXPOSURE B lw = 1.0 (COMPONENTS) le = 1.0 (COMPONENTS) Ss = 0.986g S1 = 0.347g
 - SITE CLASS D (PER IBC 1815.1.1 DEFAULT) Sds = 0.727g Sd1 = 0.395g
 - SEISMIC DESIGN CATEGORY D

STRUCTURAL STEEL:

- STEEL DESIGN, FABRICATION, AND ERECTION SHALL CONFORM WITH "AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
- THE GRADE AND SPECIFICATION OF THE STEEL MEMBERS SHALL BE AS FOLLOWS:

PLATES AND ANGLES (U.N.O.)	ASTM A36
HOLLOW STRUCTURAL SECTIONS (PIPES)	ASTM A53 GRADE B (Fy=35 KSI)
- BOLTS SHALL CONFORM TO ASTM SPECIFICATIONS FOR A307 BOLTS UNLESS NOTED OTHERWISE. BOLTS SHALL BE INSTALLED TO SNUG-TIGHT CONDITIONS UNLESS NOTED OTHERWISE.
- WELDING SHALL CONFORM TO THE AWS CODES FOR BUILDING CONSTRUCTION. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH A WELDING PROCEDURE SPECIFICATION (WPS) AS REQUIRED IN AWS D1.1 AND APPROVED BY THE ENGINEER OF RECORD. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER-METAL MANUFACTURER.
- WELDS SHALL UTILIZE E70XX ELECTRODES AND SHALL BE A MINIMUM OF 3/16" IN SIZE UNLESS NOTED OTHERWISE.

SAWN LUMBER:

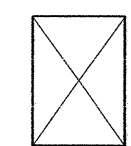
- ALL WOOD FRAMING MEMBERS INCLUDING BUT NOT LIMITED TO WALL STUDS AND JOISTS, ARE INTENDED TO ACT AS A SYSTEM AS DETAILED IN THE STRUCTURAL DRAWINGS AND ONCE CONSTRUCTION IS COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE SAFETY AND STABILITY OF WOOD FRAMING SYSTEMS (I.E. TEMPORARY BRACING IF REQUIRED) DURING CONSTRUCTION AS A RESULT OF CONSTRUCTION METHODS AND SEQUENCES.
- ALL SAWN LUMBER SHALL CONFORM TO THE WESTERN WOOD PRODUCTS ASSOCIATION OR THE WEST COAST LUMBER INSPECTION BUREAU GRADING RULES. LUMBER SHALL BE OF THE SPECIES AND GRADE SHOWN BELOW:

MEMBER	GRADE
2x AND 4x FRAMING	DOUGLAS FIR-LARCH NO. 2
5x AND GREATER BEAMS	DOUGLAS FIR-LARCH NO. 1
POSTS/ COLUMNS	DOUGLAS FIR-LARCH NO. 1
- STORAGE OF ALL LUMBER AND TIMBER ON SITE SHALL BE KEPT OFF GROUND, UNDER COVER AND PROTECTED FROM DAMAGE.
- ALL DIMENSIONAL LUMBER SHALL BE CERTIFIED BY THE SUPPLIER IN WRITING TO BE KILN DRIED.
- ALL TIMBER SHALL BE CERTIFIED BY THE SUPPLIER IN WRITING TO BE LESS THAN 19% MOISTURE CONTENT.
- ALL LUMBER IN CONTACT WITH THE GROUND, CONCRETE OR CMU SHALL BE PRESSURE TREATED.

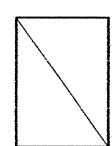
SAWN LUMBER (CONT.):

- FASTENERS FOR PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE, OR COPPER. FASTENINGS FOR WOOD FOUNDATIONS SHALL BE AS REQUIRED IN AF&PA TECHNICAL REPORT NO. 7.
- ALL PLATES AND LEDGERS SHALL BE FASTENED WITH A MINIMUM (3) ANCHORS PER PIECE.
- ALL METAL HARDWARE AND FRAMING ACCESSORIES SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE COMPANY. ALL NAIL HOLES SHALL BE FILLED WITH THE RECOMMENDED FASTENER UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- ALL WALLS SHALL HAVE DOUBLE TOP PLATES AND SHALL BE SPLICED PER THE TYPICAL TOP PLATE SPLICE DETAIL, UNLESS NOTED OTHERWISE. TOP PLATES AT WALL INTERSECTIONS SHALL BE LAPPED AND NAILED WITH (3) 16d NAILS.
- HOLES FOR BOLTS SHALL BE DRILLED WITH A BIT OF THE SAME NOMINAL DIAMETER AS THE BOLT + 1/16". LEAD HOLES FOR LAG SCREWS SHALL BE BORED PER NDS 11.1.3
- ALL BOLTS, CARRIAGE BOLTS, LAG SCREWS, EXPANSION BOLTS AND EPOXY BOLTS SHALL BE INSTALLED WITH STANDARD CUT WASHERS UNDER THE BOLT HEADS AND NUTS THAT BEAR DIRECTLY ON THE WOOD. ALL NUTS SHALL BE TIGHTENED AT THE TIME OF INSTALLATION AND RE-TIGHTENED IF NECESSARY, DUE TO WOOD SHRINKAGE, PRIOR TO CLOSE-IN OR AT THE COMPLETION OF THE PROJECT. BOLTS AND LAG SCREWS SHALL CONFORM TO ANSI/ASME STANDARD B18.2.1-1996.
- CUTTING AND NOTCHING OF STUDS SHALL BE IN CONFORMANCE WITH BOTH THE 2010 OSSC SECTIONS 2308.8.2, 2308.9.10, 2308.9.11, AND 2308.10.4.2 AND IN CONFORMANCE WITH THE FOLLOWING CRITERIA:
 - WALL STUDS
 - STUDS ARE PERMITTED TO BE CUT OR NOTCHED TO A MAXIMUM DEPTH NOT EXCEEDING 25% OF ITS WIDTH. A HOLE NOT GREATER THAN 40% OF THE STUD WITH IS PERMITTED TO BE BORED IN ANY WOOD STUD. IN NO CASE SHALL THE EDGE OF THE BORED HOLE BE NEARER THAN 5/8 INCH TO THE EDGE OF THE STUD. BORED HOLES SHALL NOT BE LOCATED AT THE SAME SECTION AS A CUT OR NOTCH.

WOOD SYMBOLS:



CONTINUOUS



BLOCKING

- ALL NAILS FOR STRUCTURAL WORK SHALL BE COMMON WIRE NAILS UNLESS NOTED OR DETAILED OTHERWISE. HOLES SHALL BE PRE-DRILLED WHERE NECESSARY TO PREVENT SPLITTING. NAILING NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE PER THE NAILING SCHEDULE BELOW:

NAIL TYPE	SHANK DIAMETER - INCHES	MINIMUM PENETRATION - INCHES
6d	0.113	1.13
8d	0.131	1.31
10d	0.148	1.48
12d	0.148	1.48
16d	0.162	1.63
20d	0.192	1.92

NAILING SCHEDULE

- | | |
|---------------------------------------------------|--------------------------------------------------|
| A. JOIST SITTING ON SILL OR GIRDER | (3) 8d TOENAILS, EA. SIDE |
| B. BLOCKING BETWEEN JOISTS/RAFTERS | (2) 10d TOENAILS, EA. SIDE, EA. END |
| C. RIM BLOCKING BETWEEN JOISTS/RAFTERS | (3) 10d TOENAILS EA. END |
| D. TOP PLATE TO STUD | (2) 16d END NAILS |
| E. STUD TO SILL PLATE | (2) 16d END NAILS OR (4) 8d TOENAILS |
| F. DOUBLE STUDS | 16d AT 24" o.c. |
| G. DOUBLE TOP PLATES - BETWEEN SPLICE NAILING | 16d AT 16" o.c. FACE NAILS |
| H. DOUBLE TOP PLATES - EACH SIDE OF SPLICED PLATE | (8) 16d |
| I. BLOCKING TO TOP PLATE | (2) 10d TOENAILS EACH SIDE |
| J. BLOCKING TO FLOOR/ROOF SHEATHING | (4) 10d NAILS |
| K. RIM JOIST TO TOP PLATE OR SILL PLATE | 8d TOENAILS AT 6" o.c. |
| L. CONTINUOUS (2) AND (3) PIECE HEADERS | 16d AT 16" o.c. ALONG EACH EDGE |
| M. CEILING JOIST LAPS OVER PARTITIONS | (3) 16d FACE NAILS, MINIMUM |
| N. RAFTER TO TOP PLATE OR SILL PLATE | (3) 8d TOENAILS EACH SIDE |
| O. BUILT-UP CORNER STUDS | 16d AT 24" o.c. |
| P. TONGUE AND GROOVE DECKING | (2) 16d AT EACH BEARING |
| Q. CROSS BRIDGING | (2) 10d EACH END |
| R. HORIZONTAL BLOCKING BETWEEN WALL STUDS | (2) 10d TOENAILS EACH END |
| S. I-JOIST SITTING ON TOP PLATE OR BEAM | (2) 10d NAILS THROUGH JOIST FLANGE, (1) EA. SIDE |

NAILING SCHEDULE NOTES:

- ALL OTHER NAILING REQUIREMENTS NOT SHOWN ON DRAWINGS OR IN SCHEDULE ABOVE SHALL BE IN ACCORDANCE WITH 2009 INTERNATIONAL BUILDING CODE.
- POWER DRIVEN OR PNEUMATIC NAILS OTHER THAN COMMON NAILS MAY BE USED IF DATA IS SUBMITTED TO THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO USE.
- MINIMUM NAIL LENGTHS SHALL BE SUFFICIENT TO ACHIEVE MINIMUM PENETRATION INTO MAIN MEMBER AS NOTED IN SCHEDULE.

WOOD STRUCTURAL PANELS:

- STRUCTURAL WOOD PANELS SHALL CONFORM TO THE REQUIREMENTS OF ONE OF THE FOLLOWING STANDARDS AND PUBLICATIONS:
 - U.S. PRODUCT STANDARD PS1-95 FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD.
 - U.S. PRODUCT STANDARD PS2-92 PERFORMANCE STANDARD FOR WOOD BASED STRUCTURAL USE PANELS
 - APA PRP-108 PERFORMANCE STANDARDS
 - ANY CODE-APPROVED STANDARD OR PUBLICATION. APPROVAL MUST BE OBTAINED FROM ABHT STRUCTURAL ENGINEERS.
- ROOF AND WALL PANELS SHALL BE APA RATED, EXPOSURE 1, 1/2", 5 PLY PLYWOOD WITH A 32/16 SPAN RATING UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- ALL ROOF AND FLOOR SHEATHING SHALL BE INSTALLED WITH THE FACE GRAIN PERPENDICULAR TO THE SUPPORTS AND A 1/8" GAP AT ALL PANEL EDGES UNLESS RECOMMENDED OTHERWISE BY THE PANEL MANUFACTURER.
- ALL NAILS SHALL BE COMMON NAILS EXCEPT AT ROOF SHEATHING WHERE RING SHANK NAILS SHALL BE USED. GALVANIZED NAILS SHALL BE USED AT PERMANENTLY EXPOSED EXTERIOR AREAS. GALVANIZED NAILS SHALL BE HOT DIPPED OR TUMBLED ONLY.

DRAWING INDEX

- S0.1 GENERAL STRUCTURAL NOTES, DRAWING INDEX, AND SPECIAL INSPECTION PROGRAM
- S1.1 ROOF PLANS
- S2.1 DETAILS

SPECIAL INSPECTION PROGRAM

TABLE 2					
REQUIRED STRUCTURAL SPECIAL INSPECTIONS					
SYSTEM or MATERIAL	IBC CODE REFERENCE	INSPECTION		REMARKS	
		CODE or STANDARD REFERENCE	FREQUENCY		
			Continuous	Periodic	
FABRICATORS					
FABRICATORS	1704.2			X	SPECIAL INSPECTIONS APPLY TO VERIFICATION OF DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES INCLUDING REVIEW FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE CODE REQUIREMENTS
STEEL					
FABRICATION OF STRUCTURAL ELEMENTS	1704.2			X	REFER TO INSPECTION OF FABRICATOR REQUIREMENTS
MATERIAL VERIFICATION OF STRUCTURAL STEEL	1704.3 2203.1	ASTM A6 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS AISC 360 A3.1 AISC 360 M5.5		X	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF ANCHOR BOLTS AND THREADED RODS	1704.3	AISC 360 A3.4 ASTM STANDARDS SPECIFIED IN CONSTRUCTION DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS	1704.3.1	AISC 360 A3.5 APPLICABLE AWS A5 DOCUMENTS		X	MANUFACTURER'S CERTIFIED TEST REPORTS
VERIFYING USE OF PROPER WPS'S				X	COPY OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS				X	COPY OF QUALIFICATION CARDS
COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	1704.3.1	AWS D1.1 SECTION 6		X	
SINGLE PASS FILLET WELDS LESS THAN OR EQUAL TO 5/16"	1704.3.1 TABLE 1704.4	AWS D1.1, SECTION 6		X	ALL WELDS VISUALLY INSPECTED PER AWS D1.1 6.9
POST INSTALLED CONCRETE ANCHORS					
INSPECTION OF ANCHORS INSTALLED IN HARDENED CONCRETE	1912.1	ICC EVALUATION REPORT ACI 318: 3.8.6, 8.1.3, 21.1.8		X	SPECIAL INSPECTIONS APPLY TO ANCHOR PRODUCT NAME, TYPE, AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, ADHESIVE EXPIRATION DATE, ANCHOR/ADHESIVE INSTALLATION, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE

SPECIAL INSPECTION FOOTNOTES

SPECIAL INSPECTIONS SHALL CONFORM TO CHAPTER 17 OF THE 2009 "INTERNATIONAL BUILDING CODE" AND OREGON AMENDMENTS. REFER TO THE TABLE 2 FOR SPECIAL INSPECTION AND TESTING REQUIREMENTS.

SPECIAL INSPECTIONS AND ASSOCIATED TESTING SHALL BE PERFORMED BY AN APPROVED ACCREDITED INDEPENDENT AGENCY MEETING THE REQUIREMENTS OF ASTM E329 (MATERIALS), ASTM D3740 (SOILS), ASTM C1077 (CONCRETE), ASTM A880 (STEEL), AND ASTM E543 (NON-DESTRUCTIVE). THE INSPECTION AND TESTING AGENCY SHALL FURNISH TO THE STRUCTURAL ENGINEER A COPY OF THEIR SCOPE OF ACCREDITATION. SPECIAL INSPECTORS SHALL BE CERTIFIED BY THE BUILDING OFFICIAL. WELDING INSPECTORS SHALL BE QUALIFIED PER SECTION 6.1.4.1.1 OF AWS D1.1. THE OWNER SHALL SECURE AND PAY FOR SERVICES OF THE INSPECTION AND TESTING AGENCY TO PERFORM ALL SPECIAL INSPECTIONS AND TESTS.

THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, NOTED IN THE INSPECTION REPORTS, AND IF NOT CORRECTED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER AND THE BUILDING OFFICIAL.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL, STRUCTURAL ENGINEER, CONTRACTOR, AND OWNER. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT INDICATING THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED AND IS IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THAT ALL DISCREPANCIES NOTED IN THE INSPECTION REPORTS HAVE BEEN CORRECTED.

STRUCTURAL OBSERVATION: THE STRUCTURAL ENGINEER OF RECORD WILL PERFORM STRUCTURAL OBSERVATION BASED ON THE REQUIREMENTS OF THE 2010 OREGON STRUCTURAL SPECIALTY CODE (OSSC) AND THE FOLLOWING CRITICAL STAGES OF CONSTRUCTION. UPON COMPLETION OF ALL STRUCTURAL WORK, BUT PRIOR TO ROOF INSULATION PLACEMENT. COPIES OF SITE OBSERVATION REPORTS AND FINAL OBSERVATION REPORT WILL BE SUBMITTED TO THE BUILDING OFFICIAL, ARCHITECT, CONTRACTOR AND OWNER.



PSU Facilities and Planning
Joseph C. Blumel
Hall
Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201



1640 NW JOHNSON STREET
 PORTLAND, OR 97209
 Tel 503.243.6682
 Fax 503.243.6622
 www.abht-structural.com



*3/9 / 12
 issue for bid
 4/17 / 12
 for reference only*

GENERAL STRUCTURAL NOTES, DRAWING INDEX, AND SPECIAL INSPECTION PROGRAM

Revisions : _____ Date : _____
 4/17/2012

Drawn : ALBR

Checked : CJA

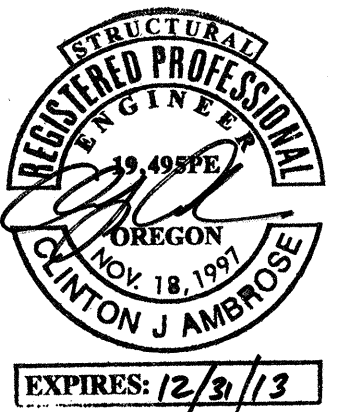
S0.1

PSU Facilities and Planning
Joseph C. Blumel Hall

Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

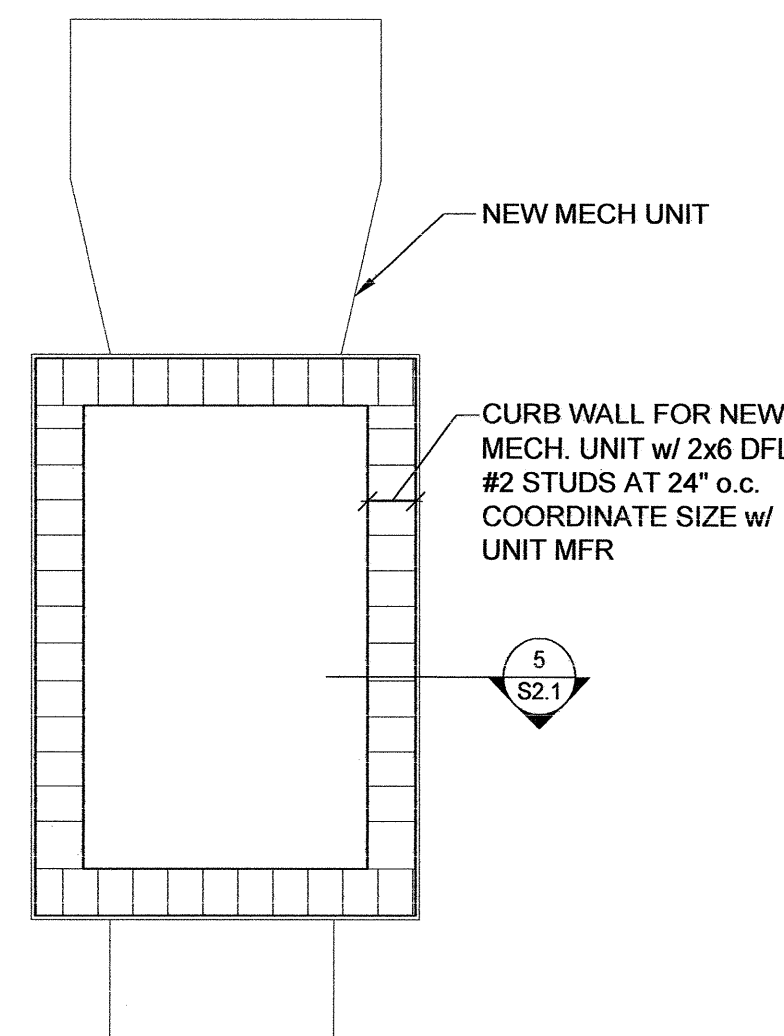
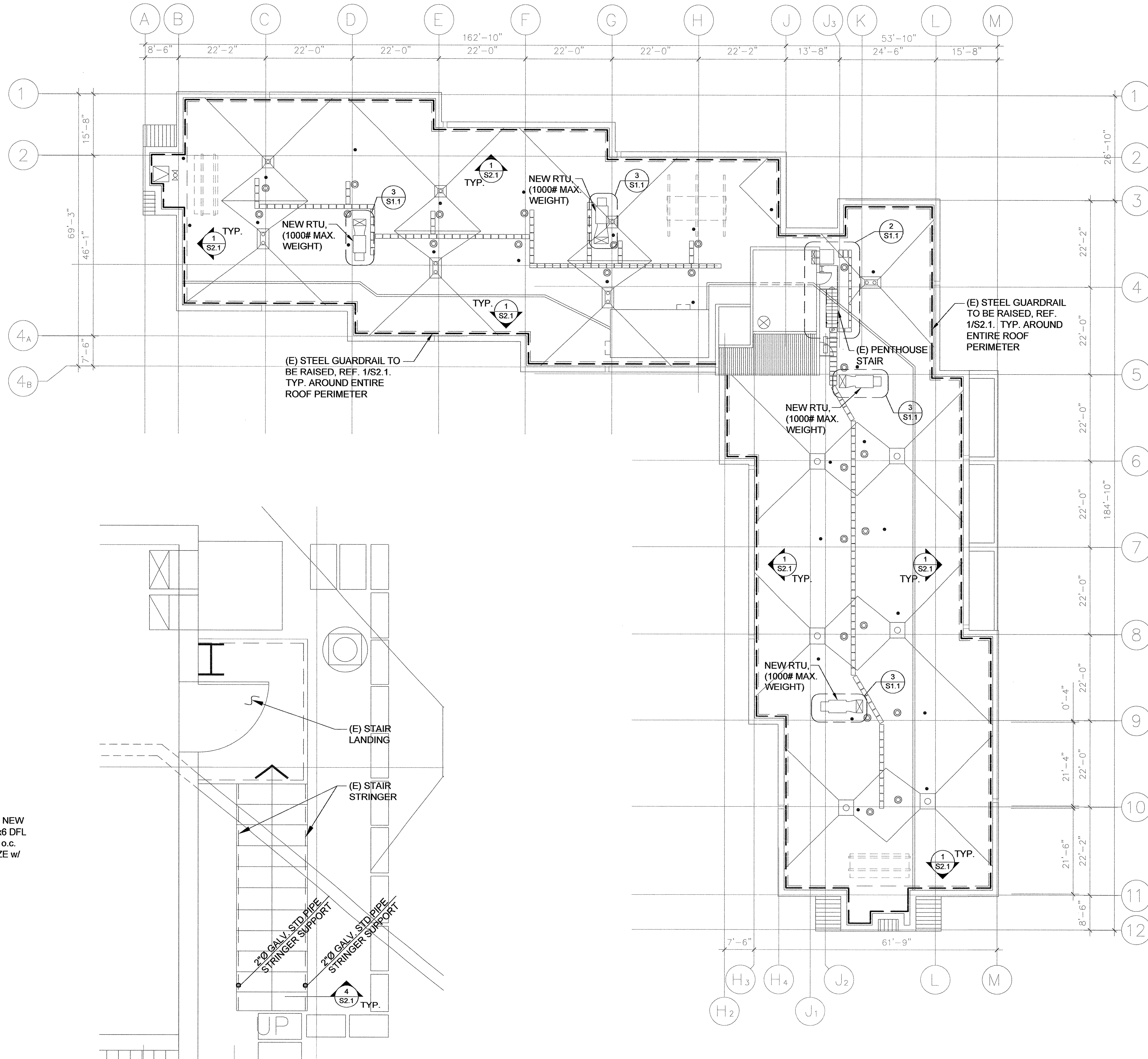
ABHT
 STRUCTURAL ENGINEERS

1640 NW JOHNSON STREET
 PORTLAND, OR 97209
 Tel 503.243.6682
 Fax 503.243.6622
 www.abht-structural.com

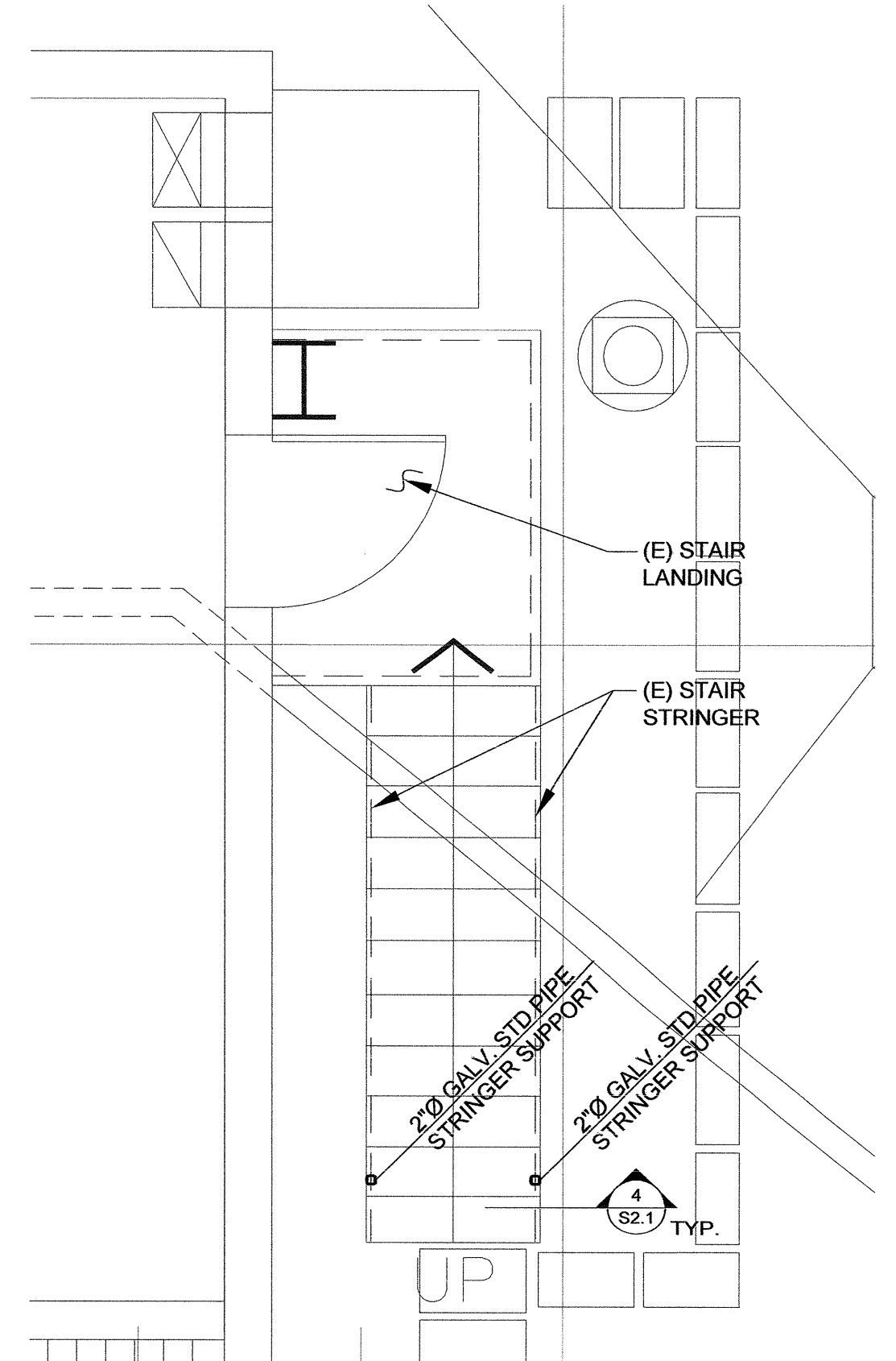


SHEET NOTES:

1. VERIFY ALL DIMENSIONS, OPENINGS, DRAINS, STEPS AND LOCATIONS OF ALL EXISTING ROOF TOP EQUIPMENT (RTU) WITH ARCHITECTURAL DRAWINGS.
2. VERIFY ALL ROOF SLOPES, CRICKETS, AND DOWNSPOUTS WITH ARCHITECTURAL DRAWINGS.
3. (E) INDICATES EXISTING.



3 MECHANICAL CURB WALL PLAN
 1/2"=1'-0"



2 PARTIAL PLAN AT STAIR
 3/8"=1'-0"

1 ROOF PLAN
 1/16"=1'-0"

*3/9 / 12
 issue for bid
 4/17 / 12
 for reference only*

ROOF PLANS

Revisions :	Date :
	4/17/2012

Drawn : ALBR

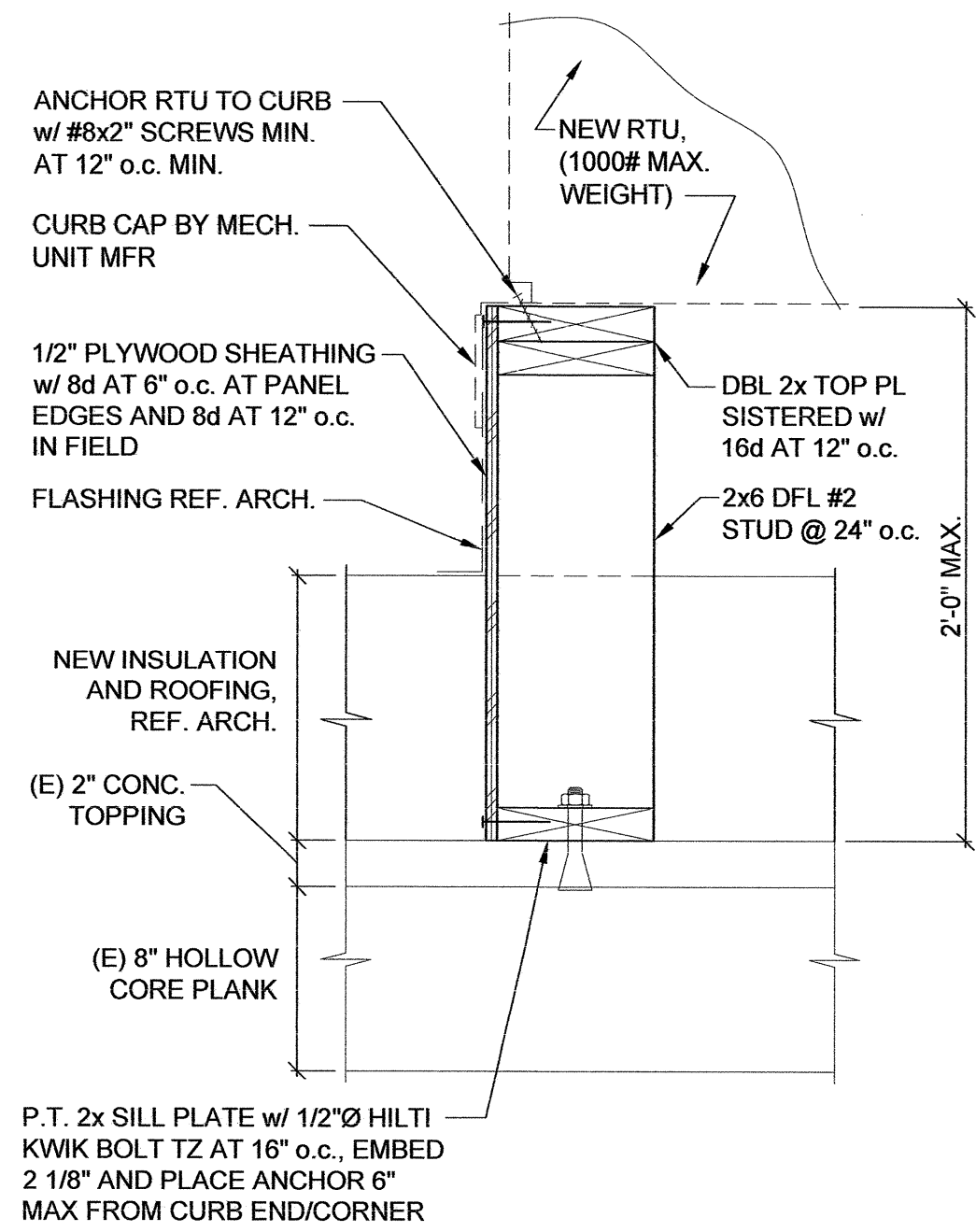
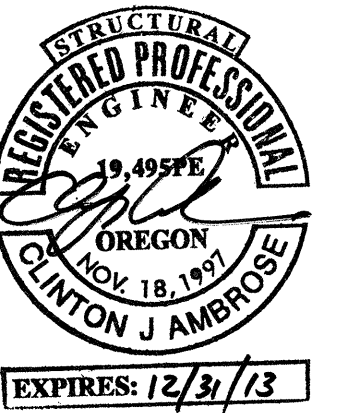
Checked : CJA

S1.1

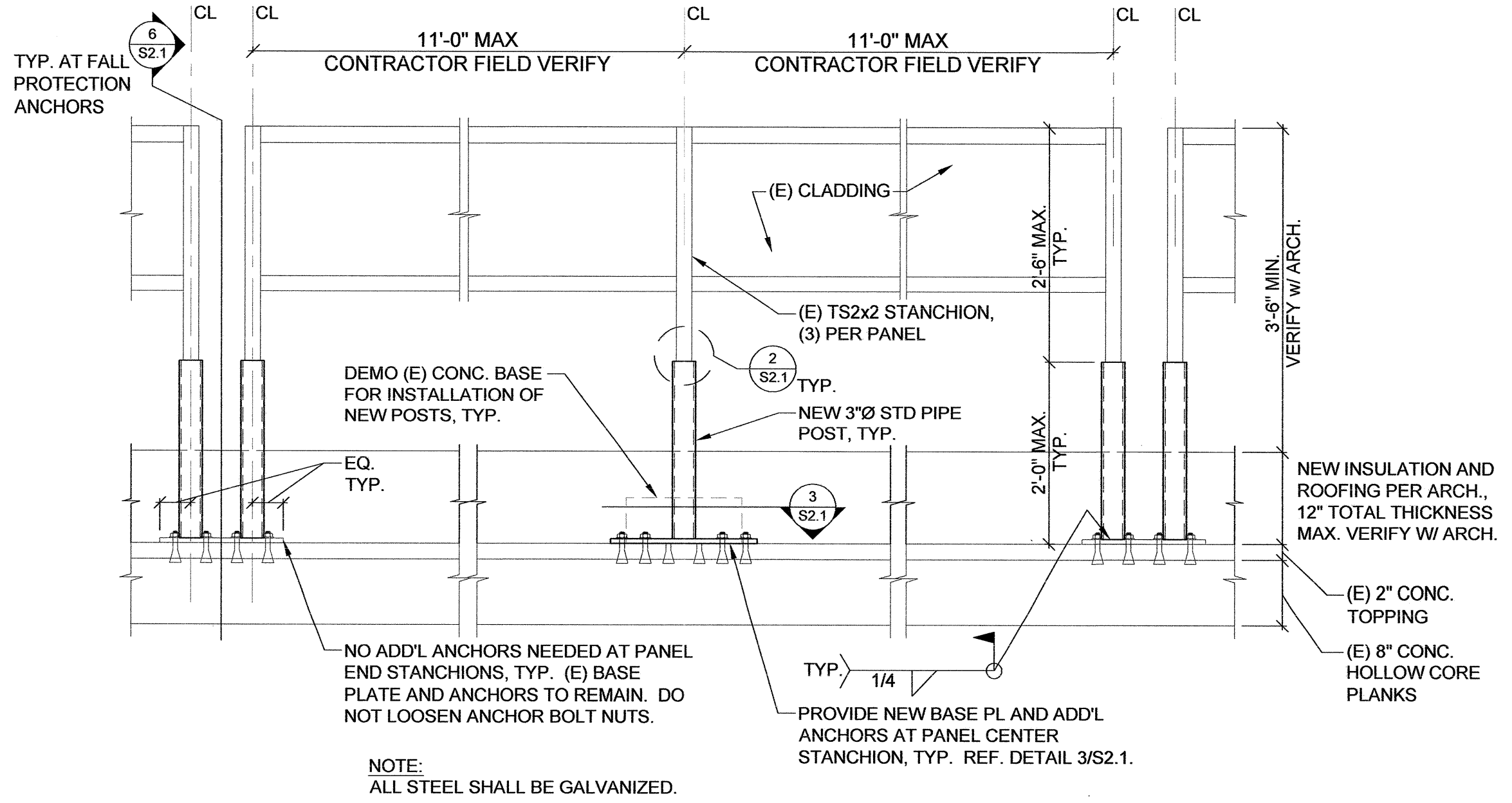
PSU Facilities and Planning
Joseph C. Blumel Hall
 Residence Hall
 RE-PIPE REMODEL
 (Block 268)
 1705 SW 11th Ave.
 Portland, Oregon 97201

ABHT
 STRUCTURAL ENGINEERS

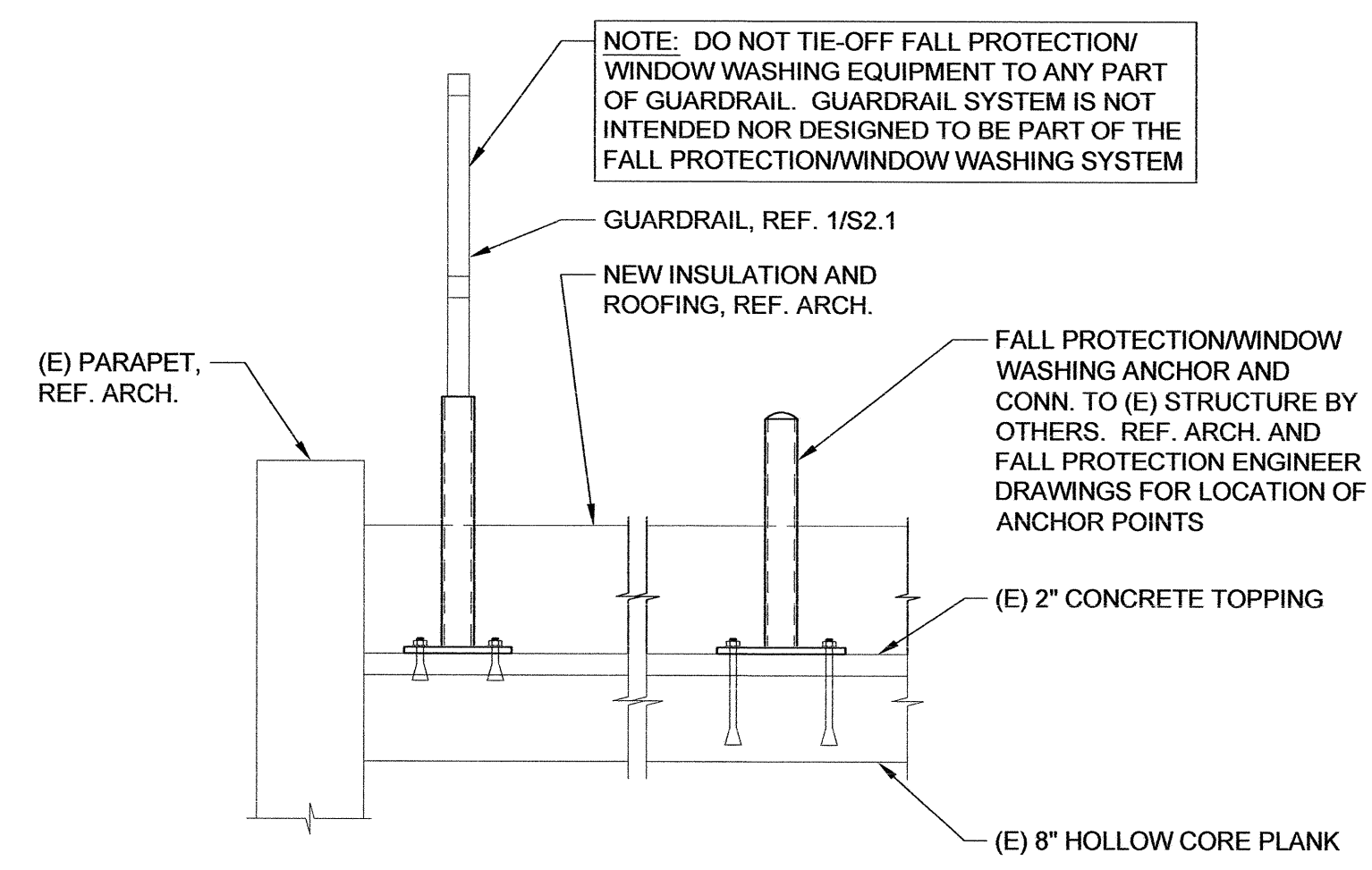
1640 NW JOHNSON STREET
 PORTLAND, OR 97209
 Tel 503.243.6682
 Fax 503.243.6622
 www.abht-structural.com



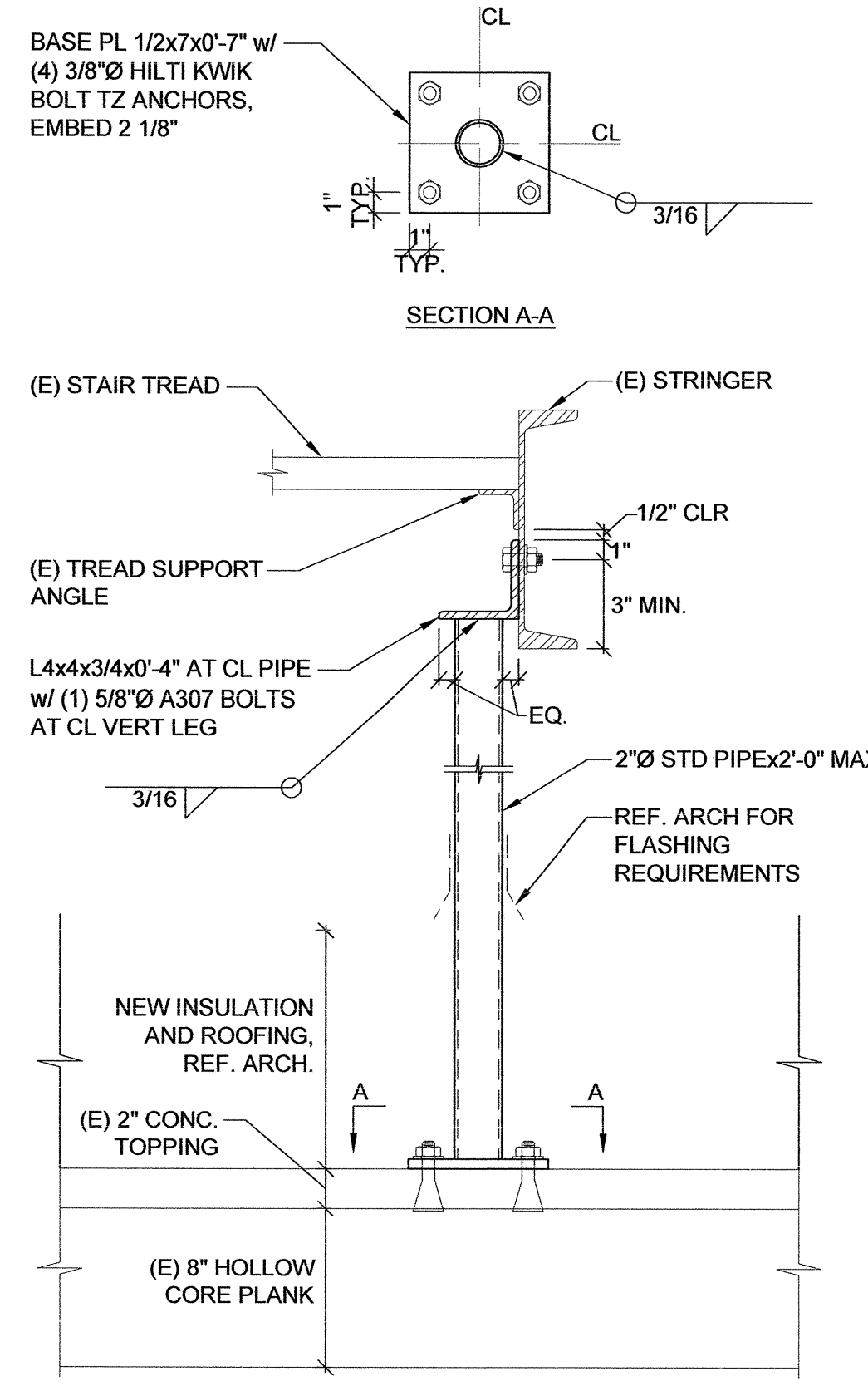
5 TYP. MECHANICAL UNIT CURB
 1 1/2"=1'-0"



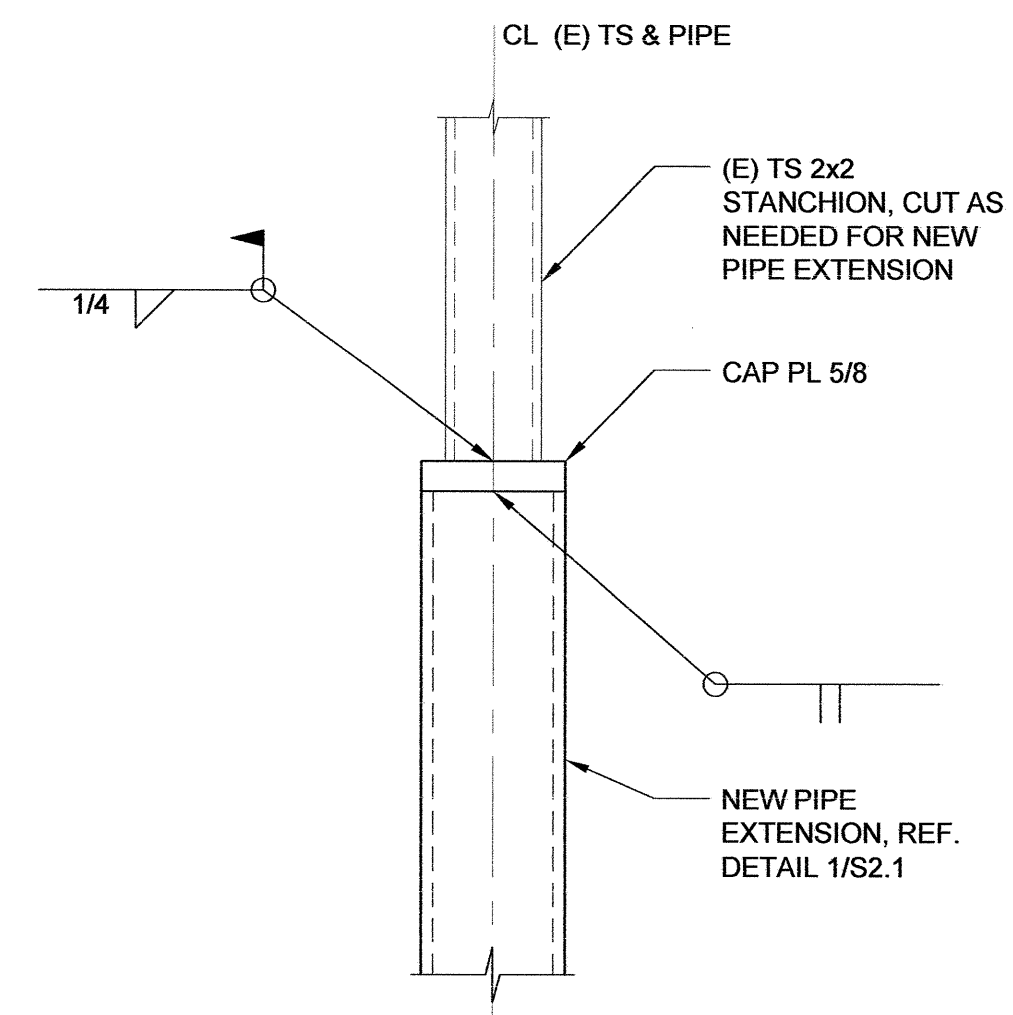
1 TYPICAL GUARDRAIL PANEL ELEVATION
 3/4"=1'-0"



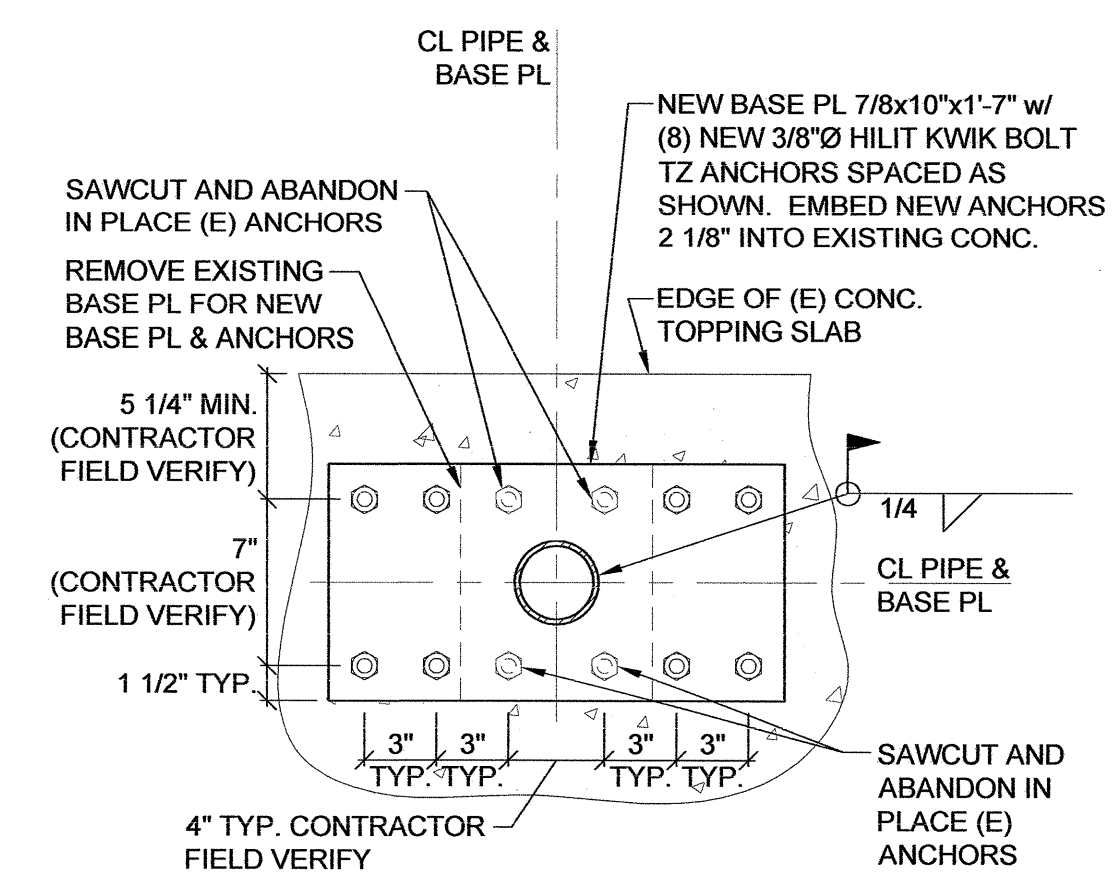
6 FALL PROTECTION REFERENCE DETAIL
 3/4"=1'-0"



4 TYP. PENTHOUSE STAIR STRINGER BASE SUPPORT
 1 1/2"=1'-0"



2 (E) STANCHION TO POST CONN.
 3"=1'-0"



3 CENTER STANCHION NEW BASEPLATE ANCHORAGE
 1 1/2"=1'-0"

3/9/12 issue for bid
4/17/12 for reference only

DETAILS

Revisions :	Date :
	4/17/2012
Drawn : ALBR	
Checked : CJA	

S2.1

ARCH, STRUCT, ELECT, ADDENDUM #1 ITEMS --- 5/4/12

1. A1.1: Add Structural sheets S1 and S2. Omit sheet A9.3
2. A2.1: Relocate (3) New ADA Units with roll-in showers to rm.506, 722, & 927.
3. A3.2: Revise medicine cabinet note to include "ADA approved mounting ht. 40" max. to bottom of mirror.
4. A4.1: Revise detail bubble 3/A4.3 to read 2/A4.3 and revise detectable warnings to match revised detail 2/A4.3 Revise ADA Restroom walls.
5. A4.2: Revise 1st floor ADA Restroom walls.
6. A4.3: Revise details # 2 and # 5.
7. A5.1: Revise detectable warnings at ramp area. See revised det 5/A4.3.
8. A6.1: Revise location room numbers of (3) new ADA Units. Add note A.11.1 penetrations. Revise note to see room list for "All Units".
9. A6.2: Add gridlines to drawing. Revise other notes per sheet A6.1.
10. A7.1: Revise 1st floor ADA Restroom walls.
11. A7.2.1: Revise 1st floor ADA Restroom walls. Revise location of dispenser.
12. A7.6: Existing ADA Unit -- Provide and install new recessed medicine cabinet at bathroom wall adjacent to closet
13. A7.7: New ADA Unit -- Provide and install new recessed medicine cabinet at bathroom wall adjacent to closet. Note demo plan on 3 rd floor is an Existing ADA Unit and is similar Standard Unit plan on the upper floors.
14. A8.2: New recessed medicine cabinet on Interior elevations det 1 and 2.
15. A9.1: At detail 1, section at typ. Dorm rooms, add note A.11.1 penetrations.
16. A9.3: Omit sheet
17. A10.1: Add notes D.5 and D.6 to typ. South elevation. Add ABI #8 designation for window notes.
18. A11.2: Add notes D.5 and D.6 to typ. window elevation.
19. S1: New Structural Notes Sheet. (Not a part of Roof drawings)
20. S2: New Structural Detail Sheet. (Not a part of Roof drawings)
21. E3.3: Revise Fixture Schedule for ABIs.
22. E4.0: Revise 1st Floor Electrical Demolition Plan for ABIs.
23. E4.1: Revise 1st Floor Lighting New Work Plan for ABIs.
24. E5.0: Revise 2nd Floor Electrical Demolition Plan for ABIs.
25. E5.1: Revise 2nd Floor Lighting New Work Plan for ABIs.
26. See Mechanical Revisions list below.

MECH, ADDENDUM #1 ITEMS --- 5/4/12

Please include the following to the addenda documentation:

A. Sheet MP0.2

1. Changed mechanical specification VII, Hangers and Supports.

B. Sheet MP1

1. Added plan note 1.7. Demo slab and existing water closet.

C. Sheet MP7

1. Added plan note 1.8. Relocated water closet and corresponding domestic cold water line.
2. Revised new lobby ADA bathroom on floor plan.

D. Sheet MP12

1. Added general structural note.
2. Revised plan note 8. New floor drain. Provide new vent piping, core drill, connect to existing.
3. Plan note 5.2. Changed room numbers of new ADA units.
4. Plan note 5.1. Changed standard bath tub/shower model.

E. Sheet MP13

1. Added general structural note.
2. Showed new lavatory in new ADA unit floor plan.

F. Sheet MP15

1. Added structural verbiage to details 3/15 and 9/15.
2. Added general structural note.
3. Added general unistrut note.

G. Sheet MP16

1. Changed standard bath/shower on fixture schedule.

End of Addendum #1