

Capability Replacement Laboratory Physical Sciences Facility – Horn Rapids Triangle Design Development Review Report

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Contents

1.0	Executive Summary	4
2.0	Introduction.....	4
3.0	Scope.....	5
4.0	Review Methodology.....	6
5.0	Major Findings.....	7
	Attachment A: Proposed Changes/Reduction in PSF-HRT Scope.....	8
	Attachment B: PSF HRT Drawing Index	13
	Attachment C: PSF-HRT Design Review Members	40
	Attachment D: PSF-HRT Document Review Records.....	42

Figure

1.	Physical Sciences Facility - Horn Rapids Triangle.....	5
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1.0 Executive Summary

Pacific Northwest National Laboratories' (PNNL) Physical Sciences Facility (PSF) Project Office has completed a review of the preliminary design development documentation. The reviewed design development documents outline the design requirements for the new PSF to be located in the Horn Rapids Triangle. This report outlines the scope, methodology and findings of this review.

A design review team consisting of experienced PNNL engineering, environmental, safety, quality assurance, operations and scientists conducted a two-part review of the PSF design development documentation containing preliminary architectural-engineering (A/E) drawings and construction specifications. PNNL staff members have provided approximately 400 comments on the design development documentation. These improvements include typographical, ALARA, programming, quality and technical issues to be resolved as the design progresses.

Budgetary challenges required additional changes to the design development documentation, which reduced the proposed design square footage from approximately 217,000 to 200,000. This required redesign of the Ultra Low Background Detection Laboratory, reduction/elimination of types and quantity of finishes, fixtures, landscaping, etc. These changes will be reflected in the next drawing review submittal.

PNNL has completed the review and concluded the design development documentation consisting of A/E drawings and construction specifications provides sufficient information to verify the technical viability of the proposed design to meet mission requirements and to establish CD-2 project baselines.

2.0 Introduction

Pacific Northwest National Laboratories' (PNNL's) new federally funded 300 area replacement facilities, collectively known as the Physical Sciences Facility (PSF), will be constructed on the Horn Rapids Triangle, a 100-acre parcel of land north of the main PNNL campus in Richland, Washington (see Figure 1). The PSF consists of approximately 200,000 gross square feet of laboratory, office and support facilities and is scheduled to be completed in late 2010.

PNNL contracted the project team of Flad & Associates, Inc. to perform the architectural-engineering (A/E) design of the PSF and to support the preparation of the documentation for the Critical Decision (CD) process. On December 8, 2006, the Flad & Associates project team provided design development documentation supporting CD-2a/3a for review.

PNNL has completed the review of the design development documentation (~ 30% complete), consisting of A/E drawings and construction specifications for the proposed PSF design. This review was conducted to verify the technical viability of the proposed design to meet mission requirements and to establish CD-2 project baselines.

This report documents the scope, methodology and findings of this review.

3.0 Scope

The scope of this review included design development A/E preliminary design documentation for the new PSF facilities. The design development documentation and drawings are segregated into the following areas:

- Building 3400: Civil/Site
- Building 3410: Materials Sciences & Technology and PSF Conference Center
- Building 3420: Radiation Detection
- Building 3425: Ultra Low Background Detection Laboratory (Deep Lab)
- Building 3430: Ultra-Trace
- Building 3440: Large Detector Laboratory
- Construction Specifications



Figure 1. Physical Sciences Facility - Horn Rapids Triangle

4.0 Review Methodology

A design review team consisting of experienced PNNL engineering, environmental, safety, quality assurance, operations and scientists conducted a two-part review of the PSF design development documentation.

Part one of this review was an informal review of “in-process” drawings presented to PNNL on November 27, 2006, consisting of approximately 800 A/E drawings outlining proposed systems, structures, and components (SSCs) for the PSF. This in-process review was conducted to provide continued familiarization of PNNL personnel with PSF design, and to identify any potentially gross technical errors that could have potential adverse effects on project schedule, scope and budget that required immediate identification. Any errors or omissions requiring immediate correction were communicated and were to be incorporated and resubmitted in the December 8, 2006 design development package.

Part 2 of the review was formal review performed in accordance with PNNL procedures ADM-CM-058 and CRL-PROC-NQA1-301 on the design development documentation submitted on December 8, 2006. Review team members are presented in Appendix C. The December 8, 2006, PSF design development submittal consisted of:

- ~980 A/E Design Drawings
- Construction Specifications
- Sustainability Report
- Hazards Analysis
- Budgetary Cost Estimate
- Preliminary Fire Hazards Analysis
- Preliminary Geotechnical Report

Similar to the in-process review, any errors or omissions requiring immediate correction were communicated, incorporated and resubmitted to PNNL.

Applicable formal review comments are recorded on the Document Review Records (DRR) in Attachment D. Comments identified on the DRRs will be addressed prior to the 70% design review phase.

Reviews of the Preliminary Fire Hazards Analysis, Hazards Analysis Report (HAR), were conducted outside the scope of this design document review.

PNNL PSF project personnel also performed a detailed review of the design development construction cost estimate. Ensuring minimum capability mission needs, this review resulted in comments requiring adjustments in the PSF project design and required a reduction of facility gross square feet, redesign of the Ultra Low Background Detection Laboratory, reduction/elimination of types and quantity of finishes, fixtures, landscaping, etc.

The preliminary list of potential changes to meet construction cost targets is contained in Attachment A.

5.0 Major Findings

The detailed review of both the “in-process” and final design development submittals did not identify any gross technical errors that could adversely affect PSF-HRT project schedule, scope and budget. Items identified by PNNL and required regeneration of documentation are attributed to scope and budget creep.

Budgetary challenges required additional changes to the design development documentation, which reduced the proposed design square footage from approximately 217,000 to 200,000. This required redesign of the Ultra Low Background Detection Laboratory, reduction/elimination of types and quantity finishes, fixtures, landscaping, etc.

Attachment A Proposed Changes/ Reduction in PSF-HRT Scope

No.	Item Changed	Basis
Building 3410		
1	Building Size	Resized to meet sizing requirement
2	CUP Screen Wall	
3	- 30" x 12" Concrete Columns	No longer required to support CUP Screen Wall
4	- Reinforcing Bars @ Columns	No longer required to support CUP Screen Wall
5	- Aluminum Entry Dbl	Doors recounted & optimized and reduced
6	- Double Hollow Metal Door & Frame	Doors recounted & optimized and increased by 3
7	- Vertical Sun Shade	Sun Shading Eliminated
8	- Screen Wall at CUP Mechanical Yard	Screen Wall Eliminated
9	- Carpet Tile, including base (Lobby)	Eliminated the Terrazzo Flooring and installed Carpet Tile in the Lobby
10	- 2 x 2 Ceiling tile	Eliminated specialty ceiling treatments and increased the ceiling tile
11	- Gypsum board ceiling	Reduced the amount of Gypsum Board in entry
12	- Power Shade Light Shelf	Eliminated sun screening
13	- Sun Shade / Blackout	Eliminated sun screening
14	- Specialty ceiling finishes - allowance	Eliminated finish allowance
15	- Hall Bumper/Chair Rail (WP2/3)	Eliminated chair rails/bumpers
16	- Millwork/Cabinetry	Missed in estimate and inserted for MS&T
17	- Loading Dock Equip (Bumpers, Levelers, & Seals)	Eliminated the need for levelers and seals leaving bumpers
18	- Projection Screens	Estimate had 800 SF for one projection screen
19	- Signage	Missed in estimate and inserted for MS&T
20	- EM Shielding (Room 1401 - 1405)	Eliminated based on present capability mission usage
21	- Passenger Elevator - 2 stop	Reduced to \$60k based on recent Flad research
22	- Ornamental Lobby Stair	Reduced to \$30k based on work already accounted for in estimate
23	- AHU 42,000 CFM	Reduced to \$5 per CFM based on recent AEI project experience
24	- HEPA Filter Enclosures	Increased per unit cost per AEI recent project experience
25	- Exhaust Ductwork SS Welded	Per unit cost lowered based on AEI recent project experience
26	- Test and Balance	Reduced 50%
27	- Construction Acceptance Testing	Reduced 50%
28	- Test and Balance	Reduced 50%
29	- Misc. (Material Handling, Equipment Rental, Permit)	Already accounted for in the subcontractor G&C's
30	- TVSS System (Switchgear Only) - Normal & Standby	TVSS is not necessary to support LV distribution systems
31	- First Floor Trench/Duct System	Eliminated because it is not required
Building 3420		
1	GFA - sf	Building GSF reduced 1200 gsf from corridors & 2500 from conference room
2	- Aluminum Entry Double	Doors recounted & optimized and reduced
3	- Double Hollow Metal Door & Frame	Doors recounted & optimized and increased by 3
4	- Vertical Sun Shade	Sun Shading Eliminated
5	- Horizontal Sun Shade	Sun Shading Eliminated
6	- Structural expansion Joint	expansion joint is only for building 3410

7	Reduction of Conferencing Room	Conferencing room reduced 2500 GSF
8	- Carpet Tile, incl. base (Lobby)	Eliminated the Terrazzo Flooring and installed Carpet Tile in the Lobby
9	- 2 x 2 Ceiling tile	Eliminated specialty ceiling treatments and increased the ceiling tile
10	- Gypsum board ceiling - lab areas	Reduced the amount of Gypsum Board in entry
11	- Specialty ceiling finishes - allowance	Eliminated finish allowance
12	- Power Shade Light Shelf	Eliminated sun screening
13	- Millwork/Cabinetry	Missed in estimate and inserted for MS&T
14	- Hall Bumper/Chair Rail (WP2/3)	Eliminated chair rails/bumpers
15	- Hall Bumper/Chair rail to corridors and bumper guards (WP1)	Eliminated chair rails/bumpers
16	- Passenger Elevator - 2 stop	Reduced to \$60k based on recent Flad research
17	- Ornamental Lobby Stair	Reduced to \$30k based on work already accounted for in estimate
18	- Rad Lab AHU 44,700 CFM	Reduced to \$5 per CFM based on recent AEI project experience
19	- HEPA Filter Enclosures	Increased per unit cost per AEI recent project experience
20	- Exhaust Ductwork SS Welded	Per unit cost lowered based on AEI recent project experience
21	- Test and Balance	Reduced 50%
22	- Construction Acceptance Testing	Reduced 50%
23	- HVAC Controls	Reduced based on building GSF reduction
24	- Misc. (Material Handling, Equipment Rental, Permit)	Already accounted for in the subcontractor G&C's
25	- TVSS System (Switchgear Only)	TVSS is not necessary to support LV distribution systems
26	- First Floor Trench/Duct System	Eliminated since it is not required

Building 3425

1	GFA - sf	Building GSF reduced to 8900 by deletion of service corridor & redesign
2	- Vault Excavation (with 1:1.5 layback)	Increased per calculations by PNNL Staff
3	- Backfill & Tamp	I Increased per calculations by PNNL Staff
4	- 4'-0" thick mat slab @ Vault	30% reduction based on Flad estimates
5	- Reinforcing Bars @ mat slab	20% reduction based on Flad estimates
6	- 36" Vault & Shaft Walls	Reduced based on Flad Estimates
7	- Concrete 4'-0" Vault Ceiling	30% reduction based on Flad estimates
8	- Reinforcing Bars @ ceiling slab	20% reduction based on Flad estimates
9	- Epoxy Terrazzo Flooring	Specialty flooring reduced
10	- Hall Bumper/Chair Rail (WP2/3)	Eliminated chair rails/bumpers
11	- Hall Bumper/Chair rail to corridors and bumper guards (WP1)	Eliminated chair rails/bumpers
12	- Soap Disp...	Deletion of 1 bathroom facilitates elimination
13	- Mirror	Deletion of 1 bathroom facilitates elimination
14	- Paper Towel Dispenser	Deletion of 1 bathroom facilitates elimination
15	- Toilet Tissue Dispenser	Deletion of 1 bathroom facilitates elimination
16	- Seat Cover	Deletion of 1 bathroom facilitates elimination
17	- Electric Water Cooler	Changed to 1 water cooler from 4
18	- Passenger Elevator - 2 stop	Reduced to \$120k based on recent Flad research
19	- Rad Lab AHU 23,600 CFM	Reduced to \$5 per CFM based on recent AEI project experience
20	- HEPA Filter Enclosures	Increased per unit cost per AEI recent project experience

21	- HVAC Controls	Reduced based on building GSF reduction
22	- 18 Mega Ohm RO DI System	System deleted - user end point system to be used
23	- RAD Sanitary Waste & Vent	Not required for this facility
24	- Rad Waste Collection Tank	Not required for this facility
25	- Sump Assembly	Not required for this facility
26	- Rain Water Drainage	Eliminated for this subsurface facility
27	- Misc. (Material. Handling, Equip. Rental, Permit)	Already accounted for in the subcontractor G&C's
28	- TVSS System (Switchgear Only)	TVSS is not necessary to support LV distribution systems
29	- First Floor Trench/Duct System	Eliminated since it is not required
30	'- Berm	increased based on construction estimates

Building 3430

1	GFA - sf	Building GSF reduced 1200 gsf from corridors & 2500 from conference room
2	- Hollow Metal Door & Frame	Optimized &/or reduced doors
3	- Double Hollow Metal Door & Frame	Optimized &/or reduced doors
4	- Door hardware sets, double	Optimized &/or reduced doors
5	- Aluminum Entry Dbl	Optimized &/or reduced doors
6	- Vertical Sun Shade	Eliminated sun screening
7	- Horizontal Sun Shade	Eliminated sun screening
8	- 8" Masonry walls - Emergency Gen./Electrical Rooms	Eliminated as generator is not programmed for this building
9	- Structural expansion Joint	expansion joint is only for building 3410
10	- Specialty ceiling finishes - allowance	Eliminated finish allowance
11	- Power Shade Light Shelf	Eliminated sun screening
12	- Hall Bumper/Chair Rail (WP1)	Eliminated chair rails/bumpers
13	- Hall Bumper/Chair Rail (WP2/3)	Eliminated chair rails/bumpers
14	- Millwork/Cabinetry	Missed in estimate and inserted for MS&T
15	- Loading Dock Equip (Bumpers, Levelors, & Seals)	Eliminated the need for levelors and seals leaving bumpers
16	- EM Shielding (Room 1305 - 1401 - 1500 A/B/D/E)	Eliminated due to present mission usage
17	- Passenger Elevator - 2 stop	Reduced to \$60k based on recent Flad research
18	- Ornamental Lobby Stair	Reduced to \$30k based on work already accounted for in estimate
19	- Rad Lab AHU 51,500 CFM	Reduced to \$5 per CFM based on recent AEI project experience
20	- HEPA Filter Enclosures	Increased per unit cost per AEI recent project experience
21	- Exhaust Ductwork SS Welded	Per unit cost lowered based on AEI recent project experience
22	- Test and Balance	Reduced 50%
23	- Construction Acceptance Testing	Reduced 50%
24	- HVAC Controls	Reduced based on building GSF reduction
25	- Misc. (Matl. Handling, Equip. Rental, Permit)	Already accounted for in the subcontractor G&C's
26	- TVSS System (Switchgear Only)	TVSS is not necessary to support LV distribution systems
27	- First Floor Trench/Duct System	Eliminated since it is not required

Building 3440

1	GFA - sf	GSF reduced 3k gsf with the elimination of a mechanical floor
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2	- Millwork/Cabinetry	reduced to 10K
3	- Loading Dock Equipment (Bumpers, Levelers, & Seals)	Loading Dock not programmed for this facility
4	- HEPA Filter Enclosures	Increased per unit cost per AEI recent project experience
5	- Exhaust Ductwork SS Welded	Per unit cost lowered based on AEI recent project experience
6	- Rad Sanitary Waste & Vent	Not required for this facility
7	- Miscellaneous (Material Handling, Equip. Rental, Permit)	Already accounted for in the subcontractor G&C's
8	- First Floor Trench/Duct System	Eliminated since it is not required
Central Utility Plant		
1	GFA - sf	Error in estimate. Increased to 10.4 k GSF
2	- Air Distribution Ductwork	Reduced to 10k based on Flad experience
3	- HVAC Controls	Changed based on building resizing
4	- Retention Tank System	Not required for this facility
5	Feeder Allowance	Reduced \$10k as a budgetary challenge
6	800kw Generator w/ day tank	Generator listed as bid alternate
7	- TVSS System (Switchgear Only)	TVSS is not necessary to support LV distribution systems
Site work		
1	Site Camera Electronics (MUX, Transceivers,)	Error in estimate. Allowance of \$20k for camera electronics
2	XH2 Pole Light, single head	Reduced the number of lighting fixtures from 27 to 20
3	XH1 Pole light, deco.	Reduced number of light fixtures by 50%
4	- Fuel Oil Tank (15,000 gallon)	Eliminated due to generator placement on Bid Alternates list
5	- Fuel Distribution	Eliminated due to generator placement on Bid Alternates list
6	- Valves and Fittings	Eliminated due to generator placement on Bid Alternates list
7	- Direct Buried Piping	Inserted in lieu of utilidor
8	- Light Duty Bituminous Paving w/Gravel Base	Increased 5k to accommodate reduction in more costly paving
9	- Heavy Duty Bituminous Paving w/Gravel Base	Reduced 5k sf and allocated above
10	- Concrete Walk w/Broom Finish, No Base	Reduced from 40.4k LF to 25k LF due to elimination of walkways
11	- Concrete Paving at Service Apron w/Gravel Base	Reduced 5k sf
12	- Brick Pavers (Colored Concrete)	Per unit cost lowered based on Flad recent experience
13	- Covered Walkway, including Canopy	Eliminated
14	- Table and Chairs	Reduced
15	- Light Bollards	Reduced
16	- Sun Shades	Eliminated from programming
17	- Metal Plant Edge	Edging used in lieu of concrete curbing
18	- Topsoil and Planting Beds	Reduced
19	- Fine Grading	Reduced
20	- Hydroseeding w/Mulch and Fertilizer	Error in estimate. Reduced due to calculated SF
21	- Trees	Reduced
22	- Irrigation System	Reduced 50k sf
23	- Erosion Control	Reduced \$100k

Attachment B

PSF HRT Drawing Index

Flad & Associates



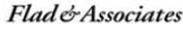
Battelle - Physical Sciences Facility - PNNL

Project Name
Richland, Washington

Project Location
Design Development Drawing List

06109-03
Flad Project Number
December 7, 2006
Date

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD/2/3A Design Development/CA November 27, 2006	CD/2/3A Design Development-PNNL Review December 8, 2006	CD/3A Structural Steel Package 12/22/2006	CD/3A Design Development DOE Submittal 12/22/2006
311752	H3	0	A	700			FLAD	ARCHITECTURAL - PASSENGER ELEVATOR - PLANS AND SECTIONS	3/8					
311753	H3	0	A	701			FLAD	ARCHITECTURAL - SERVICE LIFT - PLANS AND SECTIONS	1 1/2					
311754	H3	0	A	702			FLAD	ARCHITECTURAL - ELEVATOR AND LIFT DETAILS	1 1/2					
311755	H3	0	A	703			FLAD	ARCHITECTURAL - ELEVATOR AND LIFT DETAILS	1 1/2					
311756	H3	0	A	704				NOT USED						
311757	H3	0	A	705				NOT USED						
311758	H3	0	A	710			FLAD	ARCHITECTURAL - STAIR NO. 001 - PLANS AND SECTIONS	3/8			X		
311759	H3	0	A	711			FLAD	ARCHITECTURAL - STAIR NO. 010 - PLANS AND SECTIONS	3/8					
311760	H3	0	A	712			FLAD	ARCHITECTURAL - STAIR NO. 001 - DETAILS	1 1/2					
311761	H3	0	A	713			FLAD	ARCHITECTURAL - STAIR NO. 010 - DETAILS	1 1/2					
311762	H3	0	A	714				NOT USED						
311763	H3	0	A	715				NOT USED						
311764	H3	0	A	800			FLAD	ARCHITECTURAL - ENTRY / LOBBY - ENLARGED PLANS	3/8					
311765	H3	0	A	801			FLAD	ARCHITECTURAL - TOILET ROOM - ENLARGED PLANS	3/8					
311766	H3	0	A	802			FLAD	ARCHITECTURAL - CONFERENCE CENTER - ENLARGED PLANS	3/8					
311767	H3	0	A	803			FLAD	ARCHITECTURAL - CONFERENCE CENTER - ENLARGED PLANS	3/8					
311768	H3	0	A	804				NOT USED						
311769	H3	0	A	805				NOT USED						
311770	H3	0	A	810			FLAD	ARCHITECTURAL - ENTRY / LOBBY - INTERIOR ELEVATIONS	3/8					
311771	H3	0	A	811			FLAD	ARCHITECTURAL - TOILET ROOM & OFFICE - INTERIOR ELEVATIONS	1/4			X		
311772	H3	0	A	812			FLAD	ARCHITECTURAL - CONFERENCE ROOM - INTERIOR ELEVATIONS	1/4			X		
311773	H3	0	A	813			FLAD	ARCHITECTURAL - CONFERENCE CENTER - INTERIOR ELEVATIONS	3/8					
311774	H3	0	A	814				NOT USED						
311775	H3	0	A	815				NOT USED						
311776	H3	0	A	900				ARCHITECTURAL - PARTITION TYPES	V					
311777	H3	0	A	901			FLAD	ARCHITECTURAL - PARTITION TYPES AND DETAILS	V					
311778	H3	0	A	902			FLAD	ARCHITECTURAL - PARTITION TYPES AND DETAILS	V					
311779	H3	0	A	903				NOT USED						
311780	H3	0	A	910			FLAD	DOOR AND OPENING TYPICAL DETAILS	V					
311781	H3	0	A	911			FLAD	DOOR AND OPENING TYPICAL DETAILS	V					
311782	H3	0	A	912				NOT USED						
311783	H3	0	A	913				NOT USED						
311784	H3	0	A	920			FLAD	ARCHITECTURAL MILLWORK SECTIONS	V					
311785	H3	0	A	921			FLAD	ARCHITECTURAL MILLWORK SECTIONS	V					
311786	H3	0	A	930			FLAD	ARCHITECTURAL INTERIOR DETAILS - SIGNAGE	V			X		
311787	H3	0	A	931			FLAD	ARCHITECTURAL INTERIOR DETAILS - SIGNAGE	V			X		
311788	H3	0	A	932			FLAD	ARCHITECTURAL INTERIOR DETAILS - SIGNAGE	V			X		
311789	H3	0	A	933				NOT USED						
311790	H3	0	A	934				NOT USED						
311791	H3	0	A	940			FLAD	ARCHITECTURAL INTERIOR CEILING DETAILS	V					
311792	H3	0	A	941			FLAD	ARCHITECTURAL INTERIOR CEILING DETAILS	V					
311793	H3	0	A	942				NOT USED						
311794	H3	0	A	943				NOT USED						
								LABORATORY						
311795	H3	0	Q	001			FLAD	ARCHITECTURAL LABORATORY - SYMBOLS AND ABBREVIATIONS	NTS		X	X		
311796	H3	0	Q	002			FLAD	ARCHITECTURAL LABORATORY - SYMBOLS AND ABBREVIATIONS	NTS		X	X		
311797	H3	0	Q	220			FLAD	ARCHITECTURAL LABORATORY ELEVATIONS	1/4					
311798	H3	0	Q	221			FLAD	ARCHITECTURAL LABORATORY ELEVATIONS	1/4					
311799	H3	0	Q	222			FLAD	ARCHITECTURAL LABORATORY ELEVATIONS	1/4					
311800	H3	0	Q	223			FLAD	ARCHITECTURAL LABORATORY ELEVATIONS	1/4					
311801	H3	0	Q	230			FLAD	ARCHITECTURAL LABORATORY DETAILS	V		X	X		
311802	H3	0	Q	231			FLAD	ARCHITECTURAL LABORATORY DETAILS	V		X	X		
311803	H3	0	Q	232			FLAD	ARCHITECTURAL LABORATORY DETAILS	V		X	X		
311804	H3	0	Q	233			FLAD	ARCHITECTURAL LABORATORY DETAILS	V					
311805	H3	0	Q	234			FLAD	ARCHITECTURAL LABORATORY DETAILS	V					
311806	H3	0	Q	235			FLAD	ARCHITECTURAL LABORATORY DETAILS	V					
311807	H3	0	Q	236			FLAD	ARCHITECTURAL LABORATORY DETAILS	V					
311808	H3	0	Q	237			FLAD	ARCHITECTURAL LABORATORY DETAILS	V					
								MECHANICAL						
311809	H3	0	M	000			AEI	MECHANICAL - SYMBOLS AND ABBREVIATIONS	NTS	X		X		
311810	H3	0	M	001			AEI	MECHANICAL - SYMBOLS AND ABBREVIATIONS	NTS	X		X		
311811	H3	0	M	002			AEI	NOT USED	NTS					
311812	H3	0	M	003			AEI	NOT USED	NTS					
311813	H3	0	M	004			AEI	NOT USED	NTS					
311814	H3	0	M	005			AEI	NOT USED	NTS					
311815	H3	0	M	006			AEI	NOT USED	NTS					
311816	H3	0	M	010			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS	X		X		
311817	H3	0	M	011			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS	X		X		
311818	H3	0	M	012			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS	X		X		
311819	H3	0	M	013			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS	X		X		
311820	H3	0	M	014			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS			X		
311821	H3	0	M	015			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS			X		
311822	H3	0	M	016			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS			X		
311823	H3	0	M	017			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS			X		
311824	H3	0	M	018			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS			X		



Battelle - Physical Sciences Facility - PNNL
Project Name

Richland, Washington
Project Location

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06109-03
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311825	H3	0	M	019			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS			X			
311826	H3	0	M	020			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS			X			
311827	H3	0	M	021			AEI	MECHANICAL - SCHEDULES - PLANT EQUIPMENT	NTS			X			
311828	H3	0	M	022			AEI	NOT USED	NTS						
311829	H3	0	M	023			AEI	NOT USED	NTS						
311830	H3	0	M	024			AEI	NOT USED	NTS						
311831	H3	0	M	025			AEI	NOT USED	NTS						
311832	H3	0	M	030			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - GENERAL	NTS			X			
311833	H3	0	M	031			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - MS&T	NTS						
311834	H3	0	M	032			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - MS&T	NTS						
311835	H3	0	M	033			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - MS&T	NTS						
311836	H3	0	M	034			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - CONF CNTR	NTS						
311837	H3	0	M	035			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - CUP	NTS						
311838	H3	0	M	036			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - RAD DET	NTS						
311839	H3	0	M	037			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - RAD DET	NTS						
311840	H3	0	M	038			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - RAD DET	NTS						
311841	H3	0	M	039			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - RAD DET ULB	NTS						
311842	H3	0	M	040			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - ULTRA TRACE	NTS						
311843	H3	0	M	041			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - ULTRA TRACE	NTS						
311844	H3	0	M	042			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - ULTRA TRACE	NTS						
311845	H3	0	M	043			AEI	MECHANICAL - AIR TERMINAL SCHEDULES - LDB	NTS						
311846	H3	0	M	044			AEI	NOT USED	NTS						
311847	H3	0	M	045			AEI	NOT USED	NTS						
311848	H3	0	M	046			AEI	NOT USED	NTS						
311849	H3	0	M	047			AEI	NOT USED	NTS						
311850	H3	0	M	048			AEI	NOT USED	NTS						
311851	H3	0	M	100			AEI	MECHANICAL - SITE PLAN - PIPING	40'-1"	X		X	X		
311852	H3	0	M	101			AEI	NOT USED							
311853	H3	0	M	102			AEI	NOT USED							
311854	H3	0	M	103			AEI	NOT USED							
311855	H3	0	M	104			AEI	NOT USED							
311856	H3	0	M	400			AEI	MECHANICAL - MEP SECTIONS	1/4"			X			
311857	H3	0	M	401			AEI	MECHANICAL - MEP SECTIONS	1/4"			X			
311858	H3	0	M	402			AEI	MECHANICAL - MEP SECTIONS	1/4"			X			
311859	H3	0	M	403			AEI	MECHANICAL - MEP SECTIONS	1/4"			X			
311860	H3	0	M	404			AEI	MECHANICAL - MEP SECTIONS	1/4"			X			
311861	H3	0	M	405			AEI	NOT USED	1/4"						
311862	H3	0	M	406			AEI	NOT USED	1/4"						
311863	H3	0	M	407			AEI	NOT USED	1/4"						
311864	H3	0	M	408			AEI	NOT USED	1/4"						
311865	H3	0	M	600			AEI	MECHANICAL - AIR HANDLING UNITS	1/4"			X			
311866	H3	0	M	601			AEI	MECHANICAL - AIR HANDLING UNITS	1/4"			X			
311867	H3	0	M	602			AEI	MECHANICAL - AIR HANDLING UNITS	1/4"			X			
311868	H3	0	M	603			AEI	MECHANICAL - AIR HANDLING UNITS	1/4"			X			
311869	H3	0	M	604			AEI	MECHANICAL - AIR HANDLING UNITS	1/4"			X			
311870	H3	0	M	605			AEI	NOT USED	1/4"						
311871	H3	0	M	606			AEI	NOT USED	1/4"						
311872	H3	0	M	607			AEI	NOT USED	1/4"						
311873	H3	0	M	608			AEI	NOT USED	1/4"						
311874	H3	0	M	609			AEI	NOT USED	1/4"						
311875	H3	0	M	700			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311876	H3	0	M	701			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311877	H3	0	M	702			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311878	H3	0	M	703			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311879	H3	0	M	704			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311880	H3	0	M	705			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311881	H3	0	M	706			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311882	H3	0	M	707			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311883	H3	0	M	708			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311884	H3	0	M	709			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS	X		X			
311885	H3	0	M	710			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS			X			
311886	H3	0	M	711			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS			X			
311887	H3	0	M	712			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS			X			
311888	H3	0	M	713			AEI	MECHANICAL - SYSTEM DIAGRAMS	NTS			X			
311889	H3	0	M	714			AEI	NOT USED	NTS						
311890	H3	0	M	715			AEI	NOT USED	NTS						
311891	H3	0	M	716			AEI	NOT USED	NTS						
311892	H3	0	M	717			AEI	NOT USED	NTS						
311893	H3	0	M	718			AEI	NOT USED	NTS						
311894	H3	0	M	719			AEI	NOT USED	NTS						
311895	H3	0	M	720			AEI	NOT USED	NTS						
311896	H3	0	M	900			AEI	MECHANICAL - DETAILS	NTS			X			
311897	H3	0	M	901			AEI	MECHANICAL - DETAILS	NTS			X			
311898	H3	0	M	902			AEI	MECHANICAL - DETAILS	NTS			X			
311899	H3	0	M	903			AEI	MECHANICAL - DETAILS	NTS			X			
311900	H3	0	M	904			AEI	MECHANICAL - DETAILS	NTS			X			
311901	H3	0	M	905			AEI	MECHANICAL - DETAILS	NTS			X			
311902	H3	0	M	906			AEI	MECHANICAL - DETAILS	NTS			X			
311903	H3	0	M	907			AEI	MECHANICAL - DETAILS	NTS			X			
311904	H3	0	M	908			AEI	MECHANICAL - DETAILS	NTS			X			
311905	H3	0	M	909			AEI	NOT USED	NTS						
311906	H3	0	M	910			AEI	NOT USED	NTS						
311907	H3	0	M	911			AEI	NOT USED	NTS						
311908	H3	0	M	912			AEI	NOT USED	NTS						
311909	H3	0	M	913			AEI	NOT USED	NTS						

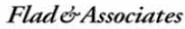


Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location

06109-03
Final Project Number
December 7, 2006
Date

Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD02/3A Design Development OA November 27, 2006	CD02/3A Design development/PNNL Review December 6, 2006	CD0A Sitework and Foundations Package xx/xx/xxxx	CD0A Structural Steel Package xx/xx/xxxx	CD02-3A Design Development DOE Submittal 12/22/2006
311910		H3	0	M	914		AEI	NOT USED	NTS						
311911		H3	0	M	915		AEI	NOT USED	NTS						
311912		H3	0	M	916		AEI	NOT USED	NTS						
								ELECTRICAL							
311913		H3	0	E	000		AEI	ELECTRICAL SYMBOLS AND ABBREVIATIONS	NTS	X		X			
311914		H3	0	E	001		AEI	COMMUNICATIONS AND SYSTEMS SYMBOLS AND ABBREVIATIONS	NTS	X		X			
311915		H3	0	E	002		AEI	NOT USED	NTS						
311916		H3	0	E	003		AEI	NOT USED	NTS						
311917		H3	0	E	004		AEI	NOT USED	NTS						
311918		H3	0	E	010		AEI	ELECTRICAL SCHEDULES	NTS			X			
311919		H3	0	E	011		AEI	NOT USED	NTS						
311920		H3	0	E	012		AEI	NOT USED	NTS						
311921		H3	0	E	013		AEI	NOT USED	NTS						
311922		H3	0	E	014		AEI	NOT USED	NTS						
311923		H3	0	E	015		AEI	NOT USED	NTS						
311924		H3	0	E	016		AEI	NOT USED	NTS						
311925		H3	0	E	100		AEI	ELECTRICAL - SITE POWER & SYSTEMS PLAN	60"x1"	X		X	X		
311926		H3	0	E	101		AEI	ELECTRICAL - SITE LIGHTING PLAN	60"x1"	X		X	X		
311927		H3	0	E	700		AEI	ELECTRICAL - BUILDING GROUNDING	NTS			X			
311928		H3	0	E	701		AEI	ELECTRICAL - POWER MONITORING SYSTEM	NTS			X			
311929		H3	0	E	702		AEI	NOT USED	NTS						
311930		H3	0	E	703		AEI	NOT USED	NTS						
311931		H3	0	E	704		AEI	NOT USED	NTS						
311932		H3	0	E	705		AEI	NOT USED	NTS						
311933		H3	0	E	706		AEI	NOT USED	NTS						
311934		H3	0	E	707		AEI	NOT USED	NTS						
311935		H3	0	E	708		AEI	NOT USED	NTS						
311936		H3	0	E	709		AEI	NOT USED	NTS						
311937		H3	0	E	710		AEI	NOT USED	NTS						
311938		H3	0	E	720		AEI	NOT USED	NTS						
311939		H3	0	E	730		AEI	NOT USED	NTS						
311940		H3	0	E	731		AEI	ELECTRICAL - COMMUNICATION PATHWAY RISER DIAGRAM	NTS			X			
311941		H3	0	E	732		AEI	ELECTRICAL - FIBER OPTIC RISER DIAGRAMS	NTS			X			
311942		H3	0	E	733		AEI	ELECTRICAL - COPPER RISER DIAGRAMS	NTS			X			
311943		H3	0	E	734		AEI	ELECTRICAL - CCTV	NTS						
311944		H3	0	E	735		AEI	ELECTRICAL - ACCESS CONTROL	NTS						
311945		H3	0	E	736		AEI	NOT USED	NTS						
311946		H3	0	E	737		AEI	NOT USED	NTS						
311947		H3	0	E	738		AEI	NOT USED	NTS						
311948		H3	0	E	739		AEI	NOT USED	NTS						
311949		H3	0	E	740		AEI	NOT USED	NTS						
311950		H3	0	E	741		AEI	NOT USED	NTS						
311951		H3	0	E	600		AEI	NOT USED	14"						
311952		H3	0	E	601		AEI	NOT USED	14"						
311953		H3	0	E	602		AEI	NOT USED	14"						
311954		H3	0	E	603		AEI	NOT USED	14"						
311955		H3	0	E	604		AEI	NOT USED	14"						
311956		H3	0	E	605		AEI	NOT USED	14"						
311957		H3	0	E	900		AEI	NOT USED	NTS						
311958		H3	0	E	901		AEI	NOT USED	NTS						
311959		H3	0	E	902		AEI	NOT USED	NTS						
311960		H3	0	E	903		AEI	NOT USED	NTS						
311961		H3	0	E	904		AEI	NOT USED	NTS						
311962		H3	0	E	905		AEI	NOT USED	NTS						
311963		H3	0	E	906		AEI	NOT USED	NTS						
311964		H3	0	E	907		AEI	NOT USED	NTS						
311965		H3	0	E	908		AEI	NOT USED	NTS						
311966		H3	0	E	909		AEI	NOT USED	NTS						
311967		H3	0	E	910		AEI	NOT USED	NTS						
311968		H3	0	E	911		AEI	NOT USED	NTS						
311969		H3	0	E	912		AEI	NOT USED	NTS						
311970		H3	0	E	913		AEI	NOT USED	NTS						
311971		H3	0	E	914		AEI	NOT USED	NTS						
311972		H3	0	E	915		AEI	NOT USED	NTS						
								PLUMBING & FIRE PROTECTION							
311973		H3	0	P	000		AEI	PLUMBING - SYMBOLS AND ABBREVIATIONS	NTS	X		X			
311974		H3	0	P	001		AEI	NOT USED	NTS	X					
311975		H3	0	P	010		AEI	PLUMBING - EQUIPMENT SCHEDULES	NTS	X		X			
311976		H3	0	P	011		AEI	NOT USED	NTS	X					
311977		H3	0	P	012		AEI	NOT USED	NTS						
311978		H3	0	P	100		AEI	PLUMBING - SITE UTILITY PLAN	40"x1"	X		X	X		
311979		H3	0	P	700		AEI	PLUMBING - WATER SYSTEMS DIAGRAM	NTS	X		X			
311980		H3	0	P	701		AEI	PLUMBING - HIGH PURITY WATER DIAGRAM	NTS	X		X			
311981		H3	0	P	702		AEI	PLUMBING - COMPRESSED AIR DIAGRAM	NTS	X		X			
311982		H3	0	P	703		AEI	PLUMBING - VACUUM AIR SAMPLING DIAGRAM	NTS	X		X			
311983		H3	0	P	704		AEI	PLUMBING - NATURAL GAS DIAGRAM	NTS	X		X			
311984		H3	0	P	705		AEI	PLUMBING - RADIOACTIVE LIQUID WASTE DIAGRAM	NTS	X		X			
311985		H3	0	P	706		AEI	NOT USED	NTS						
311986		H3	0	P	707		AEI	NOT USED	NTS						

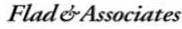


Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location
Design Development Drawing List

Pacific Northwest National Laboratory
Advancing breakthrough science and technology

06109-03
Flad Project Number
December 7, 2006
Date

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD23A Design Development CA November 27, 2006	CD23A Design Development-PNNL Review December 8, 2006	CD3A Steelwork and Foundations Package xx/xx/xxxx	CD3A Structural Steel Package xx/xx/xxxx	CD2-3A Design Development DOE Submittal 12/22/2006
311987	H3	0	P		708		AEI	NOT USED	NTS						
311988	H3	0	P		709		AEI	NOT USED	NTS						
311989	H3	0	P		710		AEI	NOT USED	NTS						
311990	H3	0	P		711		AEI	NOT USED	NTS						
311991	H3	0	P		712		AEI	NOT USED	NTS						
311992	H3	0	P		713		AEI	NOT USED	NTS						
311993	H3	0	P		600		AEI	PLUMBING - ENLARGED PLAN	1/4"						
311994	H3	0	P		601		AEI	PLUMBING - ENLARGED PLAN	1/4"						
311995	H3	0	P		602		AEI	NOT USED	1/4"						
311996	H3	0	P		603		AEI	NOT USED	1/4"						
311997	H3	0	P		900		AEI	PLUMBING - DETAILS	NTS				X		
311998	H3	0	P		901		AEI	PLUMBING - DETAILS	NTS						
311999	H3	0	P		902		AEI	NOT USED	NTS						
312000	H3	0	P		903		AEI	NOT USED	NTS						
312001	H3	0	P		904		AEI	NOT USED	NTS						
312002	H3	0	FP		000		AEI	FIRE PROTECTION - SYMBOLS AND ABBREVIATIONS	NTS						
312003	H3	0	FP		001		AEI	NOT USED	NTS						
312004	H3	0	FP		010		AEI	FIRE PROTECTION - EQUIPMENT SCHEDULES	NTS						
312005	H3	0	FP		011		AEI	NOT USED	NTS						
312006	H3	0	FP		700		AEI	FIRE PROTECTION - SYSTEM DIAGRAMS	NTS						
312007	H3	0	FP		701		AEI	NOT USED	NTS						
312008	H3	0	FP		702		AEI	NOT USED	NTS						
312009	H3	0	FP		703		AEI	NOT USED	NTS						
312010	H3	0	FP		704		AEI	NOT USED	NTS						
312011	H3	0	FP		900		AEI	FIRE PROTECTION - DETAILS	NTS						
312012	H3	0	FP		901		AEI	NOT USED	NTS						
312013	H3	0	FP		902		AEI	NOT USED	NTS						



Battelle - Physical Sciences Facility - PNNL

06109-03

Project Name
Richland, Washington

Flat Project Name
December 7, 2006

Project Location

Size

Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD2/3A Design Development QA November 27, 2006	CD2/3A Design development-PNNL Review December 8, 2006	CD3A Slewwork and Foundations Package xx/xx/xxxx	CD4A Structural Steel Package xx/xx/xxxx	CD2-3A Design Development DOE Submittal 12/22/2006
BUILDING NO. 3410 - MATERIAL SCIENCE AND TECHNOLOGY															
ARCHITECTURAL															
312014		H3 3410 A 00					FLAD	PNNL-PSF TITLE SHEET - BUILDING 3410	NTS	X	X	X			
312015		H3 3410 A 001					FLAD	PNNL-PSF TITLE SHEET - BUILDING 3410	NTS	X	X	X			
312016		H3 3410 A 001						NOT USED							
312017		H3 3410 A 001						NOT USED							
312018		H3 3410 A 001						NOT USED							
312019		H3 3410 A 021				1	FLAD	ARCHITECTURAL - LEVEL 1 - LIFE SAFETY PLAN	3/64	X	X	X			
312020		H3 3410 A 022				2/3	FLAD	ARCHITECTURAL - LEVEL 2 & 3 - LIFE SAFETY PLAN	3/64	X	X	X			
312021		H3 3410 A 023				2/3	FLAD	ARCHITECTURAL - LEVEL 2 & 3 - LIFE SAFETY PLAN	3/64	X					
312022		H3 3410 A 210				1	FLAD	ARCHITECTURAL - LEVEL 1 OVERALL - FLOOR PLAN	3/64	X	X	X			
312023		H3 3410 A 211				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FLOOR PLAN	1/8	X	X	X			
312024		H3 3410 A 212				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FLOOR PLAN	1/8	X	X	X			
312025		H3 3410 A 213				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FLOOR PLAN	1/8	X	X	X			
312026		H3 3410 A 220				2	FLAD	ARCHITECTURAL - LEVEL 2 OVERALL - FLOOR PLAN	3/64	X	X	X			
312027		H3 3410 A 221				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 FLOOR PLAN	1/8	X	X	X			
312028		H3 3410 A 222				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FLOOR PLAN	1/8	X	X	X			
312029		H3 3410 A 223				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FLOOR PLAN	1/8	X	X	X			
312030		H3 3410 A 230				R	FLAD	ARCHITECTURAL - ROOF LEVEL OVERALL - PLAN	3/64	X	X	X			
312031		H3 3410 A 231				R	FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 1 - PLAN	1/8	X	X	X			
312032		H3 3410 A 232				R	FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 2 - PLAN	1/8	X	X	X			
312033		H3 3410 A 233				R	FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 3 - PLAN	1/8	X	X	X			
312034		H3 3410 A 261				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FINISH PLAN	1/8		X	X			
312035		H3 3410 A 262				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FINISH PLAN	1/8		X	X			
312036		H3 3410 A 263				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FINISH PLAN	1/8		X	X			
312037		H3 3410 A 264				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - FINISH PLAN	1/8		X	X			
312038		H3 3410 A 265				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FINISH PLAN	1/8		X	X			
312039		H3 3410 A 266				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FINISH PLAN	1/8		X	X			
312040		H3 3410 A 271				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - SIGNAGE PLAN	1/8						
312041		H3 3410 A 272				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - SIGNAGE PLAN	1/8						
312042		H3 3410 A 273				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - SIGNAGE PLAN	1/8						
312043		H3 3410 A 274				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - SIGNAGE PLAN	1/8						
312044		H3 3410 A 275				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - SIGNAGE PLAN	1/8						
312045		H3 3410 A 276				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - SIGNAGE PLAN	1/8						
312046		H3 3410 A 281				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FURNITURE PLAN	1/8		X	X			
312047		H3 3410 A 282				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FURNITURE PLAN	1/8		X	X			
312048		H3 3410 A 283				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FURNITURE PLAN	1/8		X	X			
312049		H3 3410 A 284				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - FURNITURE PLAN	1/8		X	X			
312050		H3 3410 A 285				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FURNITURE PLAN	1/8		X	X			
312051		H3 3410 A 286				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FURNITURE PLAN	1/8		X	X			
312052		H3 3410 A 310				1	FLAD	ARCHITECTURAL - LEVEL 1 OVERALL - REFLECTED CEILING PLAN	3/64		X	X			
312053		H3 3410 A 311				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - REFLECTED CEILING PLAN	1/8	X	X	X			
312054		H3 3410 A 312				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - REFLECTED CEILING PLAN	1/8	X	X	X			
312055		H3 3410 A 313				1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - REFLECTED CEILING PLAN	1/8	X	X	X			
312056		H3 3410 A 320				2	FLAD	ARCHITECTURAL - LEVEL 2 OVERALL - REFLECTED CEILING PLAN	3/64		X	X			
312057		H3 3410 A 321				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - REFLECTED CEILING PLAN	1/8		X	X			
312058		H3 3410 A 322				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - REFLECTED CEILING PLAN	1/8		X	X			
312059		H3 3410 A 323				2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - REFLECTED CEILING PLAN	1/8		X	X			
312060		H3 3410 A 400					FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16	X	X	X			
312061		H3 3410 A 401					FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16		X	X			
312062		H3 3410 A 402					FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16		X	X			
312063		H3 3410 A 403					FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16		X	X			
312064		H3 3410 A 404						NOT USED							
312065		H3 3410 A 410					FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8	X	X	X			
312066		H3 3410 A 411					FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8		X	X			
312067		H3 3410 A 412					FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8		X	X			
312068		H3 3410 A 413						NOT USED							
312069		H3 3410 A 500					FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
312070		H3 3410 A 501					FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
312071		H3 3410 A 502					FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
312072		H3 3410 A 503						NOT USED							
312073		H3 3410 A 504						NOT USED							
312074		H3 3410 A 600					FLAD	ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1 1/2		X	X			
312075		H3 3410 A 601					FLAD	ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1 1/2						
312076		H3 3410 A 603						NOT USED							
312077		H3 3410 A 604						NOT USED							
312078		H3 3410 A 610					FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1 1/2		X	X			
312079		H3 3410 A 611					FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1 1/2						
312080		H3 3410 A 614						NOT USED							
312081		H3 3410 A 615						NOT USED							

Battelle - Physical Sciences Facility - PNNL

Project Name
Richland, Washington

Project Location
Design Development Drawing List

06109-03

Flad Project Number
December 7, 2006

Date

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET NOS	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD023A Design Development QA November 27, 2006	CD023A Design Development-PNNL Review December 6, 2006	CD0A Sitework and Foundations Package xx/xx/xxxx	CD0A Structural Steel Package xx/xx/xxxx	CD0-3A Design Development DOE Submittal 12/22/2006
312082	H3	3410	A	701			FLAD	ARCHITECTURAL - STAIR 0020 - PLANS AND SECTIONS	1/12						
312083	H3	3410	A	704			FLAD	ARCHITECTURAL - STAIR 0020 - DETAILS	1/12						
312084	H3	3410	A	701				NOT USED							
312085	H3	3410	A	800			FLAD	ARCHITECTURAL - ENLARGED PLANS	3/8						
312086	H3	3410	A	801				NOT USED							
312087	H3	3410	A	810			FLAD	ARCHITECTURAL - INTERIOR ELEVATIONS	3/8						
312088	H3	3410	A	811				NOT USED							
312089	H3	3410	A	910			FLAD	ARCHITECTURAL - DOOR AND OPENING - SCHEDULE	V						
312090	H3	3410	A	911				NOT USED							
312091	H3	3410	A	930			FLAD	ARCHITECTURAL INTERIOR DETAILS	V						
312092	H3	3410	A	931			FLAD	ARCHITECTURAL INTERIOR DETAILS	V						
312093	H3	3410	A	932				NOT USED							
312094	H3	3410	A	935				NOT USED							
312095	H3	3410	A	936				NOT USED							
312096	H3	3410	A	937				NOT USED							
312097	H3	3410	A	938				NOT USED							
								LABORATORY							
312098	H3	3410	Q	211-1				NOT USED							
312099	H3	3410	Q	211-2				NOT USED		X	X				
312100	H3	3410	Q	211-3	1	FLAD		ARCHITECTURAL LEVEL 1 - AREA 1 - PART 3 - LABORATORY PLAN	1/4						
312101	H3	3410	Q	211-4	1	FLAD		ARCHITECTURAL LEVEL 1 - AREA 1 - PART 4 - LABORATORY PLAN	1/4						
312102	H3	3410	Q	212-1	1	FLAD		ARCHITECTURAL LEVEL 1 - AREA 2 - PART 1 - LABORATORY PLAN	1/4		X	X			
312103	H3	3410	Q	212-2	1	FLAD		ARCHITECTURAL LEVEL 1 - AREA 2 - PART 2 - LABORATORY PLAN	1/4		X	X			
312104	H3	3410	Q	212-3				NOT USED							
312105	H3	3410	Q	212-4				NOT USED							
312106	H3	3410	Q	213-1	1	FLAD		ARCHITECTURAL LEVEL 1 - AREA 3 - PART 1 - LABORATORY PLAN	1/4		X	X			
312107	H3	3410	Q	213-2				NOT USED							
312108	H3	3410	Q	213-3				NOT USED							
312109	H3	3410	Q	810			FLAD	ARCHITECTURAL LABORATORY ELEVATIONS	1/4						
312110	H3	3410	Q	811				NOT USED							
312111	H3	3410	Q	930			FLAD	ARCHITECTURAL LABORATORY DETAILS	1/4						
312112	H3	3410	Q	931				NOT USED							
312113	H3	3410	Q	935				NOT USED	V						
312114	H3	3410	Q	936				NOT USED	V						
312115	H3	3410	Q	937				NOT USED	V						
312116	H3	3410	Q	938				NOT USED	V						
								STRUCTURAL							
312117	H3	3410	S	101			FLAD	STRUCTURAL GENERAL NOTES, ABBREVIATIONS & SYMBOLS			X	X	X	X	
312118	H3	3410	S	210	1	FLAD		STRUCTURAL LEVEL 1 - FOUNDATION PLAN	3/64	X	X	X	X		
312119	H3	3410	S	211	1	FLAD		STRUCTURAL LEVEL 1 - AREA 1 - FOUNDATION PLAN	1/8	X	X	X	X		
312120	H3	3410	S	212	1	FLAD		STRUCTURAL LEVEL 1 - AREA 2 - FOUNDATION PLAN	1/8	X	X	X	X		
312121	H3	3410	S	213	1	FLAD		STRUCTURAL LEVEL 1 - AREA 3 - FOUNDATION PLAN	1/8	X	X	X	X		
312122	H3	3410	S	220	2	FLAD		STRUCTURAL LEVEL 2 - FRAMING PLAN	3/64	X	X	X		X	
312123	H3	3410	S	221	2	FLAD		STRUCTURAL LEVEL 2 - AREA 1 - FRAMING PLAN	1/8	X	X	X	X		
312124	H3	3410	S	222	2	FLAD		STRUCTURAL LEVEL 2 - AREA 2 - FRAMING PLAN	1/8	X	X	X	X		
312125	H3	3410	S	223	2	FLAD		STRUCTURAL LEVEL 2 - AREA 3 - FRAMING PLAN	1/8	X	X	X	X		
312126	H3	3410	S	230	3	FLAD		STRUCTURAL LEVEL 3 - FRAMING PLAN	3/64	X	X	X		X	
312127	H3	3410	S	231	3	FLAD		STRUCTURAL LEVEL 3 - AREA 1 - FRAMING PLAN	1/8	X	X	X	X		
312128	H3	3410	S	232	3	FLAD		STRUCTURAL LEVEL 3 - AREA 2 - FRAMING PLAN	1/8	X	X	X	X		
312129	H3	3410	S	233	3	FLAD		STRUCTURAL LEVEL 3 - AREA 3 - FRAMING PLAN	1/8	X	X	X	X		
312130	H3	3410	S	240	4	FLAD		STRUCTURAL LEVEL 4 OVERALL AREAS 1-3 - FRAMING PLAN	3/64	X	X	X		X	
312131	H3	3410	S	241	4	FLAD		STRUCTURAL LEVEL 4 - AREA 1 - FRAMING PLAN	1/8	X	X	X		X	
312132	H3	3410	S	242	4	FLAD		STRUCTURAL LEVEL 4 - AREA 2 - FRAMING PLAN	1/8	X	X	X		X	
312133	H3	3410	S	401			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS	V		X	X		X	
312134	H3	3410	S	402			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS	V		X	X		X	
312135	H3	3410	S	403			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS & DETAILS	V		X	X		X	
312136	H3	3410	S	404			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
312137	H3	3410	S	405			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
312138	H3	3410	S	406			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
312139	H3	3410	S	407			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
312140	H3	3410	S	408			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
312141	H3	3410	S	409			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
312142	H3	3410	S	501			FLAD	STRUCTURAL CONCRETE DETAILS	V		X	X	X		
312143	H3	3410	S	502			FLAD	STRUCTURAL CONCRETE DETAILS	V		X	X	X		
312144	H3	3410	S	503			FLAD	STRUCTURAL CONCRETE DETAILS	V			X	X		
312145	H3	3410	S	504			FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
312146	H3	3410	S	505			FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
312147	H3	3410	S	506			FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
312148	H3	3410	S	507			FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
312149	H3	3410	S	508			FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
312150	H3	3410	S	509			FLAD	STRUCTURAL CONCRETE DETAILS	V				X		

Flad & Associates



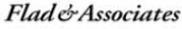
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Design Development Drawing List

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Flad Project Number
December 7, 2006
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312151	H3	3410	S	510	FLAD			STRUCTURAL CONCRETE DETAILS	V						
312152	H3	3410	S	511	FLAD			STRUCTURAL CONCRETE DETAILS	V						
312153	H3	3410	S	512	FLAD			STRUCTURAL CONCRETE DETAILS	V						
312154	H3	3410	S	541	FLAD			STRUCTURAL STEEL DETAILS	V		X	X			
312155	H3	3410	S	542	FLAD			STRUCTURAL STEEL DETAILS	V		X	X			
312156	H3	3410	S	543	FLAD			STRUCTURAL STEEL DETAILS	V		X	X			
312157	H3	3410	S	544	FLAD			STRUCTURAL STEEL DETAILS	V						
312158	H3	3410	S	545	FLAD			STRUCTURAL STEEL DETAILS	V						
312159	H3	3410	S	546	FLAD			STRUCTURAL STEEL DETAILS	V						
312160	H3	3410	S	547	FLAD			STRUCTURAL STEEL DETAILS	V						
312161	H3	3410	S	548	FLAD			STRUCTURAL STEEL DETAILS	V						
312162	H3	3410	S	549	FLAD			STRUCTURAL STEEL DETAILS	V						
312163	H3	3410	S	550	FLAD			STRUCTURAL STEEL DETAILS	V						
312164	H3	3410	S	551	FLAD			STRUCTURAL STEEL DETAILS	V						
312165	H3	3410	S	552	FLAD			STRUCTURAL STEEL DETAILS	V						
312166	H3	3410	S	553	FLAD			STRUCTURAL STEEL DETAILS	V						
312167	H3	3410	S	601	FLAD			STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V		X	X			
312168	H3	3410	S	602	FLAD			STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V						
312169	H3	3410	S	603	FLAD			STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V						
312170	H3	3410	S	604	FLAD			STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V						
								MECHANICAL							
312171	H3	3410	M	210	1	AEI		MECHANICAL - LEVEL 1 OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/84"			X			
312172	H3	3410	M	211-1	1	AEI		MECHANICAL - LEVEL 1 AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312173	H3	3410	M	211-2	1	AEI		MECHANICAL - LEVEL 1 AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312174	H3	3410	M	211-3	1	AEI		MECHANICAL - LEVEL 1 AREA 1 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312175	H3	3410	M	211-4	1	AEI		MECHANICAL - LEVEL 1 AREA 1 PART 4 - DUCT & PIPING PLAN	1/4"		X				
312176	H3	3410	M	211-5	1	AEI		MECHANICAL - LEVEL 1 AREA 1 PART 5 - DUCT & PIPING PLAN	1/4"		X				
312177	H3	3410	M	212-1	1	AEI		MECHANICAL - LEVEL 1 AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312178	H3	3410	M	212-2	1	AEI		MECHANICAL - LEVEL 1 AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312179	H3	3410	M	212-3	1	AEI		MECHANICAL - LEVEL 1 AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312180	H3	3410	M	212-4	1	AEI		MECHANICAL - LEVEL 1 AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"		X				
312181	H3	3410	M	213-1	1	AEI		MECHANICAL - LEVEL 1 AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312182	H3	3410	M	213-2	1	AEI		MECHANICAL - LEVEL 1 AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312183	H3	3410	M	213-3	1	AEI		MECHANICAL - LEVEL 1 AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312184	H3	3410	M	220	2	AEI		MECHANICAL - LEVEL 2 OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/84"	X		X			
312185	H3	3410	M	221-1	2	AEI		MECHANICAL - LEVEL 2 AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312186	H3	3410	M	221-2	2	AEI		MECHANICAL - LEVEL 2 AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312187	H3	3410	M	221-3	2	AEI		MECHANICAL - LEVEL 2 AREA 1 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312188	H3	3410	M	221-4	2	AEI		MECHANICAL - LEVEL 2 AREA 1 PART 4 - DUCT & PIPING PLAN	1/4"		X				
312189	H3	3410	M	221-5	2	AEI		MECHANICAL - LEVEL 2 AREA 1 PART 5 - DUCT & PIPING PLAN	1/4"		X				
312190	H3	3410	M	222-1	2	AEI		MECHANICAL - LEVEL 2 AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312191	H3	3410	M	222-2	2	AEI		MECHANICAL - LEVEL 2 AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312192	H3	3410	M	222-3	2	AEI		MECHANICAL - LEVEL 2 AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312193	H3	3410	M	222-4	2	AEI		MECHANICAL - LEVEL 2 AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"		X				
312194	H3	3410	M	223-1	2	AEI		MECHANICAL - LEVEL 2 AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312195	H3	3410	M	223-2	2	AEI		MECHANICAL - LEVEL 2 AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312196	H3	3410	M	223-3	2	AEI		MECHANICAL - LEVEL 2 AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312197	H3	3410	M	230	R	AEI		MECHANICAL - ROOF OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/84"	X		X			
312198	H3	3410	M	231-1	R	AEI		MECHANICAL - ROOF AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312199	H3	3410	M	231-2	R	AEI		MECHANICAL - ROOF AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312200	H3	3410	M	231-3	R	AEI		MECHANICAL - ROOF AREA 1 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312201	H3	3410	M	231-4	R	AEI		MECHANICAL - ROOF AREA 1 PART 4 - DUCT & PIPING PLAN	1/4"		X				
312202	H3	3410	M	231-5	R	AEI		MECHANICAL - ROOF AREA 1 PART 5 - DUCT & PIPING PLAN	1/4"		X				
312203	H3	3410	M	232-1	R	AEI		MECHANICAL - ROOF AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312204	H3	3410	M	232-2	R	AEI		MECHANICAL - ROOF AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312205	H3	3410	M	232-3	R	AEI		MECHANICAL - ROOF AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312206	H3	3410	M	232-4	R	AEI		MECHANICAL - ROOF AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"		X				
312207	H3	3410	M	233-1	R	AEI		MECHANICAL - ROOF AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X					
312208	H3	3410	M	233-2	R	AEI		MECHANICAL - ROOF AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"		X				
312209	H3	3410	M	233-3	R	AEI		MECHANICAL - ROOF AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"		X				
312210	H3	3410	M	511	1	AEI		MECHANICAL - LEVEL 1 AREA 1 - PRESSURE PLAN	1/8"			X			
312211	H3	3410	M	512	1	AEI		MECHANICAL - LEVEL 1 AREA 2 - PRESSURE PLAN	1/8"			X			
312212	H3	3410	M	513	1	AEI		MECHANICAL - LEVEL 1 AREA 3 - PRESSURE PLAN	1/8"			X			
312213	H3	3410	M	521	1	AEI		MECHANICAL - LEVEL 2 AREA 1 - PRESSURE PLAN	1/8"			X			
312214	H3	3410	M	522	1	AEI		MECHANICAL - LEVEL 2 AREA 2 - PRESSURE PLAN	1/8"			X			
312215	H3	3410	M	523	1	AEI		MECHANICAL - LEVEL 2 AREA 3 - PRESSURE PLAN	1/8"			X			
								ELECTRICAL							
312216	H3	3410	E	010		AEI		ELECTRICAL SCHEDULES	NTS		X				
312217	H3	3410	E	011		AEI		ELECTRICAL SCHEDULES	NTS		X				
312218	H3	3410	E	012		AEI		NOT USED	NTS						
312219	H3	3410	E	400		AEI		COMM ROOM ELEVATIONS	NTS						
312220	H3	3410	E	401		AEI		NOT USED	NTS						
312221	H3	3410	E	600		AEI		NOT USED	NTS						
312222	H3	3410	E	710-1		AEI		ELECTRICAL - NORMAL POWER RISER DIAGRAM	NTS		X				
312223	H3	3410	E	710-2		AEI		ELECTRICAL - NORMAL POWER RISER DIAGRAM (CUP)	NTS		X				
312224	H3	3410	E	720		AEI		ELECTRICAL - STANDBY POWER RISER DIAGRAM	NTS		X				
312225	H3	3410	E	730		AEI		ELECTRICAL - FIRE ALARM RISER	NTS		X				
312226	H3	3410	E	731		AEI		NOT USED	NTS						
312227	H3	3410	E	732		AEI		NOT USED	NTS						
312228	H3	3410	E	733		AEI		NOT USED	NTS						
312229	H3	3410	E	734		AEI		NOT USED	NTS						

Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD20A Design Development QA November 27, 2006	CD20A Design development PNNL Review December 8, 2006	CD0A Skewer and Foundations Package xx/xx/xxxx	CD0A Structural Steel Package xx/xx/xxxx	CD2-3A Design Development DOE Submittal 1/22/2006
312230		H3	3410	E	735		AEI	NOT USED							
312231		H3	3410	EP	210	1	AEI	ELECTRICAL - LEVEL 1 OVERALL AREAS 1-3 - POWER PLAN	3/64"		X				
312232		H3	3410	EP	211-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 1 - POWER PLAN	1/4"		X				
312233		H3	3410	EP	211-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 2 - POWER PLAN	1/4"		X				
312234		H3	3410	EP	211-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 3 - POWER PLAN	1/4"		X				
312235		H3	3410	EP	211-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 4 - POWER PLAN	1/4"		X				
312236		H3	3410	EP	211-5	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 5 - POWER PLAN	1/4"		X				
312237		H3	3410	EP	212-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 1 - POWER PLAN	1/4"		X				
312238		H3	3410	EP	212-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 2 - POWER PLAN	1/4"		X				
312239		H3	3410	EP	212-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 3 - POWER PLAN	1/4"		X				
312240		H3	3410	EP	212-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 4 - POWER PLAN	1/4"		X				
312241		H3	3410	EP	213-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 1 - POWER PLAN	1/4"		X				
312242		H3	3410	EP	213-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 2 - POWER PLAN	1/4"		X				
312243		H3	3410	EP	213-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 3 - POWER PLAN	1/4"		X				
312244		H3	3410	EP	220	2	AEI	ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - POWER PLAN	3/64"		X				
312245		H3	3410	EP	221-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 1 - POWER PLAN	1/4"		X				
312246		H3	3410	EP	221-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 2 - POWER PLAN	1/4"		X				
312247		H3	3410	EP	221-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 3 - POWER PLAN	1/4"		X				
312248		H3	3410	EP	221-4	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 4 - POWER PLAN	1/4"		X				
312249		H3	3410	EP	221-5	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 5 - POWER PLAN	1/4"		X				
312250		H3	3410	EP	222-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 1 - POWER PLAN	1/4"		X				
312251		H3	3410	EP	222-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 2 - POWER PLAN	1/4"		X				
312252		H3	3410	EP	222-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 3 - POWER PLAN	1/4"		X				
312253		H3	3410	EP	222-4	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 4 - POWER PLAN	1/4"		X				
312254		H3	3410	EP	223-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 1 - POWER PLAN	1/4"		X				
312255		H3	3410	EP	223-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 2 - POWER PLAN	1/4"		X				
312256		H3	3410	EP	223-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 3 - POWER PLAN	1/4"		X				
312257		H3	3410	EP	230	R	AEI	ELECTRICAL - ROOF OVERALL AREAS 1-3 - POWER PLAN	3/64"						
312258		H3	3410	EP	231-1	R	AEI	ELECTRICAL - ROOF AREA 1 PART 1 - POWER PLAN	1/4"		X				
312259		H3	3410	EP	231-2	R	AEI	ELECTRICAL - ROOF AREA 1 PART 2 - POWER PLAN	1/4"		X				
312260		H3	3410	EP	231-3	R	AEI	ELECTRICAL - ROOF AREA 1 PART 3 - POWER PLAN	1/4"		X				
312261		H3	3410	EP	231-4	R	AEI	ELECTRICAL - ROOF AREA 1 PART 4 - POWER PLAN	1/4"		X				
312262		H3	3410	EP	231-5	R	AEI	ELECTRICAL - ROOF AREA 1 PART 5 - POWER PLAN	1/4"		X				
312263		H3	3410	EP	232-1	R	AEI	ELECTRICAL - ROOF AREA 2 PART 1 - POWER PLAN	1/4"		X				
312264		H3	3410	EP	232-2	R	AEI	ELECTRICAL - ROOF AREA 2 PART 2 - POWER PLAN	1/4"		X				
312265		H3	3410	EP	232-3	R	AEI	ELECTRICAL - ROOF AREA 2 PART 3 - POWER PLAN	1/4"		X				
312266		H3	3410	EP	232-4	R	AEI	ELECTRICAL - ROOF AREA 2 PART 4 - POWER PLAN	1/4"		X				
312267		H3	3410	EP	233-1	R	AEI	ELECTRICAL - ROOF AREA 3 PART 1 - POWER PLAN	1/4"		X				
312268		H3	3410	EP	233-2	R	AEI	ELECTRICAL - ROOF AREA 3 PART 2 - POWER PLAN	1/4"		X				
312269		H3	3410	EP	233-3	R	AEI	ELECTRICAL - ROOF AREA 3 PART 3 - POWER PLAN	1/4"		X				
312270		H3	3410	EL	210	1	AEI	ELECTRICAL - LEVEL 1 OVERALL AREAS 1-3 - LIGHTING PLAN	3/64"		X				
312271		H3	3410	EL	211-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 1 - LIGHTING PLAN	1/4"		X				
312272		H3	3410	EL	211-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 2 - LIGHTING PLAN	1/4"		X				
312273		H3	3410	EL	211-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 3 - LIGHTING PLAN	1/4"		X				
312274		H3	3410	EL	211-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 4 - LIGHTING PLAN	1/4"		X				
312275		H3	3410	EL	211-5	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 5 - LIGHTING PLAN	1/4"		X				
312276		H3	3410	EL	212-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 1 - LIGHTING PLAN	1/4"		X				
312277		H3	3410	EL	212-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 2 - LIGHTING PLAN	1/4"		X				
312278		H3	3410	EL	212-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 3 - LIGHTING PLAN	1/4"		X				
312279		H3	3410	EL	212-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 4 - LIGHTING PLAN	1/4"		X				
312280		H3	3410	EL	213-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 1 - LIGHTING PLAN	1/4"		X				
312281		H3	3410	EL	213-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 2 - LIGHTING PLAN	1/4"		X				
312282		H3	3410	EL	213-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 3 - LIGHTING PLAN	1/4"		X				
312283		H3	3410	EL	220	2	AEI	ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - LIGHTING PLAN	3/64"		X				
312284		H3	3410	EL	221-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 1 - LIGHTING PLAN	1/4"		X				
312285		H3	3410	EL	221-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 2 - LIGHTING PLAN	1/4"		X				
312286		H3	3410	EL	221-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 3 - LIGHTING PLAN	1/4"		X				
312287		H3	3410	EL	221-4	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 4 - LIGHTING PLAN	1/4"		X				
312288		H3	3410	EL	221-5	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 5 - LIGHTING PLAN	1/4"		X				
312289		H3	3410	EL	222-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 1 - LIGHTING PLAN	1/4"		X				
312290		H3	3410	EL	222-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 2 - LIGHTING PLAN	1/4"		X				
312291		H3	3410	EL	222-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 3 - LIGHTING PLAN	1/4"		X				
312292		H3	3410	EL	222-4	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 4 - LIGHTING PLAN	1/4"		X				
312293		H3	3410	EL	223-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 1 - LIGHTING PLAN	1/4"		X				
312294		H3	3410	EL	223-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 2 - LIGHTING PLAN	1/4"		X				
312295		H3	3410	EL	223-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 3 - LIGHTING PLAN	1/4"		X				
312296		H3	3410	EL	230	R	AEI	ELECTRICAL - ROOF OVERALL AREAS 1-3 - LIGHTING PLAN	3/64"						
312297		H3	3410	EL	231-1	R	AEI	ELECTRICAL - ROOF AREA 1 PART 1 - LIGHTING PLAN	1/4"						
312298		H3	3410	EL	231-2	R	AEI	ELECTRICAL - ROOF AREA 1 PART 2 - LIGHTING PLAN	1/4"						
312299		H3	3410	EL	231-3	R	AEI	ELECTRICAL - ROOF AREA 1 PART 3 - LIGHTING PLAN	1/4"						
312300		H3	3410	EL	231-4	R	AEI	ELECTRICAL - ROOF AREA 1 PART 4 - LIGHTING PLAN	1/4"						
312301		H3	3410	EL	231-5	R	AEI	ELECTRICAL - ROOF AREA 1 PART 5 - LIGHTING PLAN	1/4"						
312302		H3	3410	EL	232-1	R	AEI	ELECTRICAL - ROOF AREA 2 PART 1 - LIGHTING PLAN	1/4"						
312303		H3	3410	EL	232-2	R	AEI	ELECTRICAL - ROOF AREA 2 PART 2 - LIGHTING PLAN	1/4"						
312304		H3	3410	EL	232-3	R	AEI	ELECTRICAL - ROOF AREA 2 PART 3 - LIGHTING PLAN	1/4"						
312305		H3	3410	EL	232-4	R	AEI	ELECTRICAL - ROOF AREA 2 PART 4 - LIGHTING PLAN	1/4"						
312306		H3	3410	EL	233-1	R	AEI	ELECTRICAL - ROOF AREA 3 PART 1 - LIGHTING PLAN	1/4"						
312307		H3	3410	EL	233-2	R	AEI	ELECTRICAL - ROOF AREA 3 PART 2 - LIGHTING PLAN	1/4"						
312308		H3	3410	EL	233-3	R	AEI	ELECTRICAL - ROOF AREA 3 PART 3 - LIGHTING PLAN	1/4"						
312309		H3	3410	ES	210	1	AEI	ELECTRICAL - LEVEL 1 OVERALL AREAS 1-3 - SYSTEMS PLAN	3/64"		X				
312310		H3	3410	ES	211-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 1 - SYSTEMS PLAN	1/4"		X				
312311		H3	3410	ES	211-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 2 - SYSTEMS PLAN	1/4"		X				
312312		H3	3410	ES	211-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 3 - SYSTEMS PLAN	1/4"		X				
312313		H3	3410	ES	211-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 4 - SYSTEMS PLAN	1/4"		X				



Battelle - Physical Sciences Facility - PNNL
 Project Name
 Richland, Washington
 Project Location

06109-03
 Flad Project Number
 December 7, 2006
 Date

Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CCD2/A Design Development QA November 27, 2006	CCD2/A Design Development/PNNL Review December 8, 2006	CCDA Structural Steel Package xx/xx/xxxx	CCDA Structural Steel Package xx/xx/xxxx	CCD2-3A Design Development DOE Submittal 12/22/2006
312314	H3	3410	ES	211-5	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 5 - SYSTEMS PLAN	1/4"		X				
312315	H3	3410	ES	212-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 1 - SYSTEMS PLAN	1/4"		X				
312316	H3	3410	ES	212-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 2 - SYSTEMS PLAN	1/4"		X				
312317	H3	3410	ES	212-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 3 - SYSTEMS PLAN	1/4"		X				
312318	H3	3410	ES	212-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 4 - SYSTEMS PLAN	1/4"		X				
312319	H3	3410	ES	213-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 1 - SYSTEMS PLAN	1/4"		X				
312320	H3	3410	ES	213-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 2 - SYSTEMS PLAN	1/4"		X				
312321	H3	3410	ES	213-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 3 - SYSTEMS PLAN	1/4"		X				
312322	H3	3410	ES	220	2	AEI		ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - SYSTEMS PLAN	3/64"		X				
312323	H3	3410	ES	221-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 1 - SYSTEMS PLAN	1/4"		X				
312324	H3	3410	ES	221-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 2 - SYSTEMS PLAN	1/4"		X				
312325	H3	3410	ES	221-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 3 - SYSTEMS PLAN	1/4"		X				
312326	H3	3410	ES	221-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 4 - SYSTEMS PLAN	1/4"		X				
312327	H3	3410	ES	221-5	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 5 - SYSTEMS PLAN	1/4"		X				
312328	H3	3410	ES	222-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 1 - SYSTEMS PLAN	1/4"		X				
312329	H3	3410	ES	222-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 2 - SYSTEMS PLAN	1/4"		X				
312330	H3	3410	ES	222-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 3 - SYSTEMS PLAN	1/4"		X				
312331	H3	3410	ES	222-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 4 - SYSTEMS PLAN	1/4"		X				
312332	H3	3410	ES	223-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 1 - SYSTEMS PLAN	1/4"		X				
312333	H3	3410	ES	223-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 2 - SYSTEMS PLAN	1/4"		X				
312334	H3	3410	ES	223-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 3 - SYSTEMS PLAN	1/4"		X				
312335	H3	3410	ES	230	R	AEI		ELECTRICAL - ROOF OVERALL AREAS 1-3 - SYSTEMS PLAN	3/64"						
312336	H3	3410	ES	231-1	R	AEI		ELECTRICAL - ROOF AREA 1 PART 1 - SYSTEMS PLAN	1/4"						
312337	H3	3410	ES	231-2	R	AEI		ELECTRICAL - ROOF AREA 1 PART 2 - SYSTEMS PLAN	1/4"						
312338	H3	3410	ES	231-3	R	AEI		ELECTRICAL - ROOF AREA 1 PART 3 - SYSTEMS PLAN	1/4"						
312339	H3	3410	ES	231-4	R	AEI		ELECTRICAL - ROOF AREA 1 PART 4 - SYSTEMS PLAN	1/4"						
312340	H3	3410	ES	231-5	R	AEI		ELECTRICAL - ROOF AREA 1 PART 5 - SYSTEMS PLAN	1/4"						
312341	H3	3410	ES	232-1	R	AEI		ELECTRICAL - ROOF AREA 2 PART 1 - SYSTEMS PLAN	1/4"						
312342	H3	3410	ES	232-2	R	AEI		ELECTRICAL - ROOF AREA 2 PART 2 - SYSTEMS PLAN	1/4"						
312343	H3	3410	ES	232-3	R	AEI		ELECTRICAL - ROOF AREA 2 PART 3 - SYSTEMS PLAN	1/4"						
312344	H3	3410	ES	232-4	R	AEI		ELECTRICAL - ROOF AREA 2 PART 4 - SYSTEMS PLAN	1/4"						
312345	H3	3410	ES	233-1	R	AEI		ELECTRICAL - ROOF AREA 3 PART 1 - SYSTEMS PLAN	1/4"						
312346	H3	3410	ES	233-2	R	AEI		ELECTRICAL - ROOF AREA 3 PART 2 - SYSTEMS PLAN	1/4"						
312347	H3	3410	ES	233-3	R	AEI		ELECTRICAL - ROOF AREA 3 PART 3 - SYSTEMS PLAN	1/4"						
								PLUMBING AND FIRE PROTECTION							
312348	H3	3410	P	210F	F	AEI		PLUMBING - FOUNDATION OVERALL AREAS 1-3 - PLAN	3/64"	X		X			
312349	H3	3410	P	211F-1	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 1 - PLAN - PLAN	1/4"	X		X			
312350	H3	3410	P	211F-2	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 2 - PLAN	1/4"			X			
312351	H3	3410	P	211F-3	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 3 - PLAN	1/4"			X			
312352	H3	3410	P	211F-4	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 4 - PLAN	1/4"			X			
312353	H3	3410	P	211F-5	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 5 - PLAN	1/4"			X			
312354	H3	3410	P	212F-1	F	AEI		PLUMBING - FOUNDATION AREA 2 PART 1 - PLAN	1/4"	X		X			
312355	H3	3410	P	212F-2	F	AEI		PLUMBING - FOUNDATION AREA 2 PART 2 - PLAN	1/4"			X			
312356	H3	3410	P	212F-3	F	AEI		PLUMBING - FOUNDATION AREA 2 PART 3 - PLAN	1/4"			X			
312357	H3	3410	P	212F-4	F	AEI		PLUMBING - FOUNDATION AREA 2 PART 4 - PLAN	1/4"			X			
312358	H3	3410	P	213F-1	F	AEI		PLUMBING - FOUNDATION AREA 3 PART 1 - PLAN	1/4"	X		X			
312359	H3	3410	P	213F-2	F	AEI		PLUMBING - FOUNDATION AREA 3 PART 2 - PLAN	1/4"			X			
312360	H3	3410	P	213F-3	F	AEI		PLUMBING - FOUNDATION AREA 3 PART 3 - PLAN	1/4"			X			
312361	H3	3410	P	210	1	AEI		PLUMBING - LEVEL 1 OVERALL AREAS 1-3 - PLAN	3/64"	X		X			
312362	H3	3410	P	211-1	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 1 - PLAN	1/4"	X		X			
312363	H3	3410	P	211-2	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 2 - PLAN	1/4"			X			
312364	H3	3410	P	211-3	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 3 - PLAN	1/4"			X			
312365	H3	3410	P	211-4	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 4 - PLAN	1/4"			X			
312366	H3	3410	P	211-5	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 5 - PLAN	1/4"			X			
312367	H3	3410	P	212-1	1	AEI		PLUMBING - LEVEL 1 AREA 2 PART 1 - PLAN	1/4"	X		X			
312368	H3	3410	P	212-2	1	AEI		PLUMBING - LEVEL 1 AREA 2 PART 2 - PLAN	1/4"			X			
312369	H3	3410	P	212-3	1	AEI		PLUMBING - LEVEL 1 AREA 2 PART 3 - PLAN	1/4"			X			
312370	H3	3410	P	212-4	1	AEI		PLUMBING - LEVEL 1 AREA 2 PART 4 - PLAN	1/4"			X			
312371	H3	3410	P	213-1	1	AEI		PLUMBING - LEVEL 1 AREA 3 PART 1 - PLAN	1/4"	X		X			
312372	H3	3410	P	213-2	1	AEI		PLUMBING - LEVEL 1 AREA 3 PART 2 - PLAN	1/4"			X			
312373	H3	3410	P	213-3	1	AEI		PLUMBING - LEVEL 1 AREA 3 PART 3 - PLAN	1/4"			X			
312374	H3	3410	P	220	2	AEI		PLUMBING - LEVEL 2 OVERALL AREAS 1-3 - PLAN	3/64"	X		X			
312375	H3	3410	P	221-1	2	AEI		PLUMBING - LEVEL 2 AREA 1 PART 1 - PLAN	1/4"	X		X			
312376	H3	3410	P	221-2	2	AEI		PLUMBING - LEVEL 2 AREA 1 PART 2 - PLAN	1/4"			X			
312377	H3	3410	P	221-3	2	AEI		PLUMBING - LEVEL 2 AREA 1 PART 3 - PLAN	1/4"			X			
312378	H3	3410	P	221-4	2	AEI		PLUMBING - LEVEL 2 AREA 1 PART 4 - PLAN	1/4"			X			
312379	H3	3410	P	221-5	2	AEI		PLUMBING - LEVEL 2 AREA 1 PART 5 - PLAN	1/4"			X			
312380	H3	3410	P	222-1	2	AEI		PLUMBING - LEVEL 2 AREA 2 PART 1 - PLAN	1/4"	X		X			
312381	H3	3410	P	222-2	2	AEI		PLUMBING - LEVEL 2 AREA 2 PART 2 - PLAN	1/4"			X			
312382	H3	3410	P	222-3	2	AEI		PLUMBING - LEVEL 2 AREA 2 PART 3 - PLAN	1/4"			X			
312383	H3	3410	P	222-4	2	AEI		PLUMBING - LEVEL 2 AREA 2 PART 4 - PLAN	1/4"			X			
312384	H3	3410	P	223-1	2	AEI		PLUMBING - LEVEL 2 AREA 3 PART 1 - PLAN	1/4"	X		X			
312385	H3	3410	P	223-2	2	AEI		PLUMBING - LEVEL 2 AREA 3 PART 2 - PLAN	1/4"			X			
312386	H3	3410	P	223-3	2	AEI		PLUMBING - LEVEL 2 AREA 3 PART 3 - PLAN	1/4"			X			
312387	H3	3410	P	230	R	AEI		PLUMBING - ROOF OVERALL AREAS 1-3 - PLAN	3/64"	X		X			
312388	H3	3410	P	231-1	R	AEI		PLUMBING - ROOF AREA 1 PART 1 - PLAN	1/4"	X		X			
312389	H3	3410	P	231-2	R	AEI		PLUMBING - ROOF AREA 1 PART 2 - PLAN	1/4"			X			
312390	H3	3410	P	231-3	R	AEI		PLUMBING - ROOF AREA 1 PART 3 - PLAN	1/4"			X			
312391	H3	3410	P	231-4	R	AEI		PLUMBING - ROOF AREA 1 PART 4 - PLAN	1/4"			X			
312392	H3	3410	P	231-5	R	AEI		PLUMBING - ROOF AREA 1 PART 5 - PLAN	1/4"			X			
312393	H3	3410	P	232-1	R	AEI		PLUMBING - ROOF AREA 2 PART 1 - PLAN	1/4"	X		X			
312394	H3	3410	P	232-2	R	AEI		PLUMBING - ROOF AREA 2 PART 2 - PLAN	1/4"			X			
312395	H3	3410	P	232-3	R	AEI		PLUMBING - ROOF AREA 2 PART 3 - PLAN	1/4"			X			
312396	H3	3410	P	232-4	R	AEI		PLUMBING - ROOF AREA 2 PART 4 - PLAN	1/4"			X			

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Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location

06109-03
Flad Project Number
December 7, 2006
Date

Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD02/A Design Development QA November 27, 2006	CD02/A Design development PNNL Review December 6, 2006	CD0/A Siftework and Foundations Package xxx/xxx/xxxx	CD0/A Structural Steel Package xxx/xxx/xxxx	CD0-3/A Design Development DOE Submittal 12/22/2006
312397	H3	3410	P	P	233-1	R	AEI	PLUMBING - ROOF AREA 3 PART 1 - PLAN	1/4"	X		X			
312398	H3	3410	P	P	233-2	R	AEI	PLUMBING - ROOF AREA 3 PART 2 - PLAN	1/4"			X			
312399	H3	3410	P	P	233-3	R	AEI	PLUMBING - ROOF AREA 3 PART 3 - PLAN	1/4"			X			
312400	H3	3410	FP	FP	210	1	AEI	FIRE PROTECTION - LEVEL 1 OVERALL AREAS 1-3 - PLAN	3/84"	X		X			
312401	H3	3410	FP	FP	211	1	AEI	FIRE PROTECTION - LEVEL 1 AREA 1 - PLAN	1/8"	X		X			
312402	H3	3410	FP	FP	212	1	AEI	FIRE PROTECTION - LEVEL 1 AREA 2 - PLAN	1/8"	X		X			
312403	H3	3410	FP	FP	213	1	AEI	FIRE PROTECTION - LEVEL 1 AREA 3 - PLAN	1/8"	X		X			
312404															
312405	H3	3410	FP	FP	220	2	AEI	FIRE PROTECTION - LEVEL 2 OVERALL AREAS 1-3 - PLAN	3/84"	X		X			
312406	H3	3410	FP	FP	221	2	AEI	FIRE PROTECTION - LEVEL 2 AREA 1 - PLAN	1/8"	X		X			
312407	H3	3410	FP	FP	222	2	AEI	FIRE PROTECTION - LEVEL 2 AREA 2 - PLAN	1/8"	X		X			
312408	H3	3410	FP	FP	223	2	AEI	FIRE PROTECTION - LEVEL 2 AREA 3 - PLAN	1/8"	X		X			

Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD02/0A Design Development CA November 27, 2006	CD02/0A Design development-PNNL Review December 6, 2006	CD0A Steelwork and Foundations Package xx/xx/xxxx	CD0A Structural Steel Package xx/xx/xxxx	CD02-3A Design Development DOE Submittal 12/22/2006
BUILDING NO. 3420 - RAD DETECTION															
ARCHITECTURAL															
312409		H3	3420	A	000		FLAD	PNNL-PSF TITLE SHEET - BUILDING 3420	NTS	X		X	X		
312410		H3	3420	A	001		FLAD	PNNL-PSF TITLE SHEET - BUILDING 3420	NTS	X		X	X		
312411		H3	3420	A	001			NOT USED	NTS	X					
312412		H3	3420	A	001			NOT USED	NTS	X					
312413		H3	3420	A	001			NOT USED	NTS	X					
312414		H3	3420	A	021	1	FLAD	ARCHITECTURAL - LEVEL 1 - LIFE SAFETY PLAN	3/64	X	X	X			
312415		H3	3420	A	022	2	FLAD	ARCHITECTURAL - LEVEL 2 & 3 - LIFE SAFETY PLAN	3/64	X	X	X			
312416		H3	3420	A	210	1	FLAD	ARCHITECTURAL - LEVEL 1 OVERALL - FLOOR PLAN	3/64	X	X	X			
312417		H2	3420	A	211	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FLOOR PLAN	1/8	X	X	X			
312418		H3	3420	A	212	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FLOOR PLAN	1/8	X	X	X			
312419		H3	3420	A	213	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FLOOR PLAN	1/8	X	X	X			
312420		H3	3420	A	220	2	FLAD	ARCHITECTURAL - LEVEL 2 OVERALL - FLOOR PLAN	3/64	X	X	X			
312421		H3	3420	A	221	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - FLOOR PLAN	1/8	X	X	X			
312422		H3	3420	A	222	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FLOOR PLAN	1/8	X	X	X			
312423		H3	3420	A	223	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FLOOR PLAN	1/8	X	X	X			
312424		H3	3420	A	230	R	FLAD	ARCHITECTURAL - ROOF LEVEL OVERALL - PLAN	3/64		X	X			
312425		H3	3420	A	231	R	FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 1 - PLAN	1/8		X	X			
312426		H3	3420	A	232	R	FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 2 - PLAN	1/8		X	X			
312427		H3	3420	A	233	R	FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 3 - PLAN	1/8		X	X			
312428		H3	3420	A	261	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FINISH PLAN	1/8		X	X			
312429		H3	3420	A	262	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FINISH PLAN	1/8		X	X			
312430		H3	3420	A	263	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FINISH PLAN	1/8		X	X			
312431		H3	3420	A	264	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - FINISH PLAN	1/8		X	X			
312432		H3	3420	A	265	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FINISH PLAN	1/8		X	X			
312433		H3	3420	A	266	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FINISH PLAN	1/8		X	X			
312434		H3	3420	A	281	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FURNITURE PLAN	1/8		X	X			
312435		H3	3420	A	282	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FURNITURE PLAN	1/8		X	X			
312436		H3	3420	A	283	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FURNITURE PLAN	1/8		X	X			
312437		H3	3420	A	284	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - FURNITURE PLAN	1/8		X	X			
312438		H3	3420	A	285	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FURNITURE PLAN	1/8		X	X			
312439		H3	3420	A	286	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FURNITURE PLAN	1/8		X	X			
312440		H3	3420	A	310	1	FLAD	ARCHITECTURAL - LEVEL 1 OVERALL - REFLECTED CEILING PLAN	1/8		X	X			
312441		H3	3420	A	311	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - REFLECTED CEILING PLAN	1/8		X	X			
312442		H3	3420	A	312	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - REFLECTED CEILING PLAN	1/8		X	X			
312443		H3	3420	A	313	1	FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - REFLECTED CEILING PLAN	1/8		X	X			
312444		H3	3420	A	320	2	FLAD	ARCHITECTURAL - LEVEL 2 OVERALL - REFLECTED CEILING PLAN	1/8		X	X			
312445		H3	3420	A	321	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - REFLECTED CEILING PLAN	1/8		X	X			
312446		H3	3420	A	322	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - REFLECTED CEILING PLAN	1/8		X	X			
312447		H3	3420	A	323	2	FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - REFLECTED CEILING PLAN	1/8		X	X			
312448		H3	3420	A	400		FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16	X	X	X			
312449		H3	3420	A	401		FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16		X	X			
312450		H3	3420	A	410		FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8	X	X	X			
312451		H3	3420	A	411		FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8		X	X			
312452		H3	3420	A	500		FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
312453		H3	3420	A	501		FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
312454		H3	3420	A	502		FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
312455		H3	3420	A	503			NOT USED							
312456		H3	3420	A	504			NOT USED							
312457		H3	3420	A	600		FLAD	ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1 1/2						
312458		H3	3420	A	601		FLAD	ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1 1/2						
312459		H3	3420	A	602			NOT USED							
312460		H3	3420	A	603			NOT USED							
312461		H3	3420	A	610		FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1 1/2						
312462		H3	3420	A	611		FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1 1/2						
312463		H3	3420	A	614			NOT USED							
312464		H3	3420	A	615			NOT USED							
312465		H3	3420	A	701		FLAD	ARCHITECTURAL - STAIR 0020 - PLANS AND SECTIONS	1 1/2						
312466		H3	3420	A	704		FLAD	ARCHITECTURAL - STAIR 0020 - DETAILS	1 1/2						
312467		H3	3420	A	701			NOT USED	1 1/2						
312468		H3	3420	A	800		FLAD	ARCHITECTURAL - ENLARGED PLANS	3/8						
312469		H3	3420	A	801			NOT USED							
312470		H3	3420	A	810		FLAD	ARCHITECTURAL - INTERIOR ELEVATIONS	3/8						
312471		H3	3420	A	811			NOT USED	3/8						
312472		H3	3420	A	910		FLAD	ARCHITECTURAL - DOOR AND OPENING - SCHEDULE	V						
312473		H3	3420	A	911			NOT USED							
312474		H3	3420	A	930		FLAD	ARCHITECTURAL - INTERIOR DETAILS	V						

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Pacific Northwest National Laboratory
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Battelle - Physical Sciences Facility - PNNL

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Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD020A Design Development QA November 27, 2006	CD020A Design Development-PNNL Review December 6, 2006	CD0A Sitework and Foundations Package xx/xx/xxxx	CD0A Structural Steel Package xx/xx/xxxx	CD0-3A Design Development DOE Submittal 12/22/2006
312475	H3	3420	A	931			FLAD	ARCHITECTURAL - INTERIOR DETAILS	V						
312476	H3	3420	A	932				NOT USED	V						
312477	H3	3420	A	935				NOT USED	V						
312478	H3	3420	A	936				NOT USED	V						
312479	H3	3420	A	937				NOT USED	V						
312480	H3	3420	A	938				NOT USED	V						
								LABORATORY							
312481	H3	3420	Q	211-1	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 1 - PART 1 - LABORATORY PLAN	1/4		X	X			
312482	H3	3420	Q	211-2	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 1 - PART 2 - LABORATORY PLAN	1/4		X	X			
312483	H3	3420	Q	211-3	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 1 - PART 3 - LABORATORY PLAN	1/4		X	X			
312484	H3	3420	Q	211-4	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 1 - PART 4 - LABORATORY PLAN	1/4		X	X			
312485	H3	3420	Q	211-5	1			NOT USED							
312486	H3	3420	Q	211-6	1			NOT USED							
312487	H3	3420	Q	212-1	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 2 - PART 1 - LABORATORY PLAN	1/4		X	X			
312488	H3	3420	Q	212-2	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 2 - PART 2 - LABORATORY PLAN	1/4		X	X			
312489	H3	3420	Q	212-3	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 2 - PART 3 - LABORATORY PLAN	1/4		X	X			
312490	H3	3420	Q	212-4	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 2 - PART 4 - LABORATORY PLAN	1/4		X	X			
312491	H3	3420	Q	212-5	1			NOT USED							
312492	H3	3420	Q	212-6	1			NOT USED							
312493	H3	3420	Q	213-1	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 3 - PART 1 - LABORATORY PLAN	1/4		X	X			
312494	H3	3420	Q	213-2	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 3 - PART 2 - LABORATORY PLAN	1/4		X	X			
312495	H3	3420	Q	213-3	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 3 - PART 3 - LABORATORY PLAN	1/4		X	X			
312496	H3	3420	Q	213-4	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 3 - PART 4 - LABORATORY PLAN	1/4		X	X			
312497	H3	3420	Q	213-5	1			NOT USED							
312498	H3	3420	Q	222			FLAD	ARCHITECTURAL LABORATORY ELEVATIONS	1/4						
312499	H3	3420	Q	223				NOT USED							
312500	H3	3420	Q	230			FLAD	ARCHITECTURAL LABORATORY DETAILS	1/4						
312501	H3	3420	Q	231				NOT USED							
312502	H3	3420	Q	235				NOT USED							
312503	H3	3420	Q	236				NOT USED							
312504	H3	3420	Q	237				NOT USED							
312505	H3	3420	Q	238				NOT USED							
								STRUCTURAL							
312506	H3	3420	S	101				STRUCTURAL GENERAL NOTES, ABBREVIATIONS & SYMBOLS	NTS		X	X	X	X	
312507	H3	3420	S	210	1		FLAD	STRUCTURAL LEVEL 1 - FOUNDATION PLAN	3/64	X	X	X	X	X	
312508	H3	3420	S	211	1		FLAD	STRUCTURAL LEVEL 1 - AREA 1 - FOUNDATION PLAN	1/8	X	X	X	X	X	
312509	H3	3420	S	212	1		FLAD	STRUCTURAL LEVEL 1 - AREA 2 - FOUNDATION PLAN	1/8	X	X	X	X	X	
312510	H3	3420	S	213	1		FLAD	STRUCTURAL LEVEL 1 - AREA 3 - FOUNDATION PLAN	1/8	X	X	X	X	X	
312511	H3	3420	S	220	2		FLAD	STRUCTURAL LEVEL 2 - FRAMING PLAN	3/64	X	X	X			X
312512	H3	3420	S	221	2		FLAD	STRUCTURAL LEVEL 2 - AREA 1 - FRAMING PLAN	1/8	X	X	X			X
312513	H3	3420	S	222	2		FLAD	STRUCTURAL LEVEL 2 - AREA 2 - FRAMING PLAN	1/8	X	X	X			X
312514	H3	3420	S	223	2		FLAD	STRUCTURAL LEVEL 2 - AREA 3 - FRAMING PLAN	1/8	X	X	X			X
312515	H3	3420	S	230	3		FLAD	STRUCTURAL LEVEL 3 - FRAMING PLAN	3/64	X	X	X			X
312516	H3	3420	S	231	3		FLAD	STRUCTURAL LEVEL 3 - AREA 1 - FRAMING PLAN	1/8	X	X	X			X
312517	H3	3420	S	232	3		FLAD	STRUCTURAL LEVEL 3 - AREA 2 - FRAMING PLAN	1/8	X	X	X			X
312518	H3	3420	S	233	3		FLAD	STRUCTURAL LEVEL 3 - AREA 3 - FRAMING PLAN	1/8	X	X	X			X
312519	H3	3420	S	240	4		FLAD	STRUCTURAL LEVEL 4 OVERALL AREAS 1-3 - FRAMING PLAN	3/64	X	X	X			X
312520	H3	3420	S	241	4		FLAD	STRUCTURAL LEVEL 4 - AREA 1 - FRAMING PLAN	1/8	X	X	X			X
312521	H3	3420	S	242	4		FLAD	STRUCTURAL LEVEL 4 - AREA 2 - FRAMING PLAN	1/8	X	X	X			X
312522	H3	3420	S	243	4		FLAD	STRUCTURAL LEVEL 4 - AREA 3 - FRAMING PLAN	1/8	X	X	X			X
312523	H3	3420	S	401			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS	V		X	X			X
312524	H3	3420	S	402			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS	V		X	X			X
312525	H3	3420	S	403			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS & DETAILS	V						X
312526	H3	3420	S	404			FLAD	STRUCTURAL BRACED FRAME DETAILS	V						X
312527	H3	3420	S	405			FLAD	STRUCTURAL BRACED FRAME DETAILS	V						X
312528	H3	3420	S	406			FLAD	STRUCTURAL BRACED FRAME DETAILS	V						X
312529	H3	3420	S	407			FLAD	STRUCTURAL BRACED FRAME DETAILS	V						X
312530	H3	3420	S	408			FLAD	STRUCTURAL BRACED FRAME DETAILS	V						X
312531	H3	3420	S	409			FLAD	STRUCTURAL BRACED FRAME DETAILS	V						X
312532	H3	3420	S	501			FLAD	STRUCTURAL CONCRETE DETAILS	V		X	X			X
312533	H3	3420	S	502			FLAD	STRUCTURAL CONCRETE DETAILS	V		X	X			X
312534	H3	3420	S	503			FLAD	STRUCTURAL CONCRETE DETAILS	V						X
312535	H3	3420	S	504			FLAD	STRUCTURAL CONCRETE DETAILS	V						X
312536	H3	3420	S	505			FLAD	STRUCTURAL CONCRETE DETAILS	V						X
312537	H3	3420	S	506			FLAD	STRUCTURAL CONCRETE DETAILS	V						X
312538	H3	3420	S	507			FLAD	STRUCTURAL CONCRETE DETAILS	V						X
312539	H3	3420	S	508			FLAD	STRUCTURAL CONCRETE DETAILS	V						X
312540	H3	3420	S	509			FLAD	STRUCTURAL CONCRETE DETAILS	V						X
312541	H3	3420	S	541			FLAD	STRUCTURAL STEEL DETAILS	V		X	X			X
312542	H3	3420	S	542			FLAD	STRUCTURAL STEEL DETAILS	V		X	X			X
312543	H3	3420	S	543			FLAD	STRUCTURAL STEEL DETAILS	V		X	X			X
312544	H3	3420	S	544			FLAD	STRUCTURAL STEEL DETAILS	V						X
312545	H3	3420	S	545			FLAD	STRUCTURAL STEEL DETAILS	V						X

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312546		H3 3420	S 546				FLAD	STRUCTURAL STEEL DETAILS	V						
312547		H3 3420	S 547				FLAD	STRUCTURAL STEEL DETAILS	V						
312548		H3 3420	S 548				FLAD	STRUCTURAL STEEL DETAILS	V						
312549		H3 3420	S 549				FLAD	STRUCTURAL STEEL DETAILS	V						
312550		H3 3420	S 550				FLAD	STRUCTURAL STEEL DETAILS	V						
312551		H3 3420	S 551				FLAD	STRUCTURAL STEEL DETAILS	V						
312552		H3 3420	S 552				FLAD	STRUCTURAL STEEL DETAILS	V						
312553		H3 3420	S 553				FLAD	STRUCTURAL STEEL DETAILS	V						
312554		H3 3420	S 601				FLAD	STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V		X	X			
312555		H3 3420	S 602				FLAD	STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V					X	
312556		H3 3420	S 603				FLAD	STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V					X	
								MECHANICAL							
312557	H3 3420	M 210	1	AEI				MECHANICAL - LEVEL 1 OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/64"	X		X			
312558	H3 3420	M 211-1	1	AEI				MECHANICAL - LEVEL 1 AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312559	H3 3420	M 211-2	1	AEI				MECHANICAL - LEVEL 1 AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312560	H3 3420	M 211-3	1	AEI				MECHANICAL - LEVEL 1 AREA 1 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312561	H3 3420	M 211-4	1	AEI				MECHANICAL - LEVEL 1 AREA 1 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312562	H3 3420	M 211-5	1	AEI				MECHANICAL - LEVEL 1 AREA 1 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312563	H3 3420	M 211-6	1	AEI				MECHANICAL - LEVEL 1 AREA 1 PART 6 - DUCT & PIPING PLAN	1/4"			X			
312564	H3 3420	M 212-1	1	AEI				MECHANICAL - LEVEL 1 AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312565	H3 3420	M 212-2	1	AEI				MECHANICAL - LEVEL 1 AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312566	H3 3420	M 212-3	1	AEI				MECHANICAL - LEVEL 1 AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312567	H3 3420	M 212-4	1	AEI				MECHANICAL - LEVEL 1 AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312568	H3 3420	M 212-5	1	AEI				MECHANICAL - LEVEL 1 AREA 2 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312569	H3 3420	M 212-6	1	AEI				MECHANICAL - LEVEL 1 AREA 2 PART 6 - DUCT & PIPING PLAN	1/4"			X			
312570	H3 3420	M 213-1	1	AEI				MECHANICAL - LEVEL 1 AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312571	H3 3420	M 213-2	1	AEI				MECHANICAL - LEVEL 1 AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312572	H3 3420	M 213-3	1	AEI				MECHANICAL - LEVEL 1 AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312573	H3 3420	M 213-4	1	AEI				MECHANICAL - LEVEL 1 AREA 3 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312574	H3 3420	M 213-5	1	AEI				MECHANICAL - LEVEL 1 AREA 3 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312575	H3 3420	M 220	2	AEI				MECHANICAL - LEVEL 2 OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/64"	X		X			
312576	H3 3420	M 221-1	2	AEI				MECHANICAL - LEVEL 2 AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312577	H3 3420	M 221-2	2	AEI				MECHANICAL - LEVEL 2 AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312578	H3 3420	M 221-3	2	AEI				MECHANICAL - LEVEL 2 AREA 1 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312579	H3 3420	M 221-4	2	AEI				MECHANICAL - LEVEL 2 AREA 1 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312580	H3 3420	M 221-5	2	AEI				MECHANICAL - LEVEL 2 AREA 1 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312581	H3 3420	M 221-6	2	AEI				MECHANICAL - LEVEL 2 AREA 1 PART 6 - DUCT & PIPING PLAN	1/4"			X			
312582	H3 3420	M 222-1	2	AEI				MECHANICAL - LEVEL 2 AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312583	H3 3420	M 222-2	2	AEI				MECHANICAL - LEVEL 2 AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312584	H3 3420	M 222-3	2	AEI				MECHANICAL - LEVEL 2 AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312585	H3 3420	M 222-4	2	AEI				MECHANICAL - LEVEL 2 AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312586	H3 3420	M 222-5	2	AEI				MECHANICAL - LEVEL 2 AREA 2 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312587	H3 3420	M 222-6	2	AEI				MECHANICAL - LEVEL 2 AREA 2 PART 6 - DUCT & PIPING PLAN	1/4"			X			
312588	H3 3420	M 223-1	2	AEI				MECHANICAL - LEVEL 2 AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312589	H3 3420	M 223-2	2	AEI				MECHANICAL - LEVEL 2 AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312590	H3 3420	M 223-3	2	AEI				MECHANICAL - LEVEL 2 AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312591	H3 3420	M 223-4	2	AEI				MECHANICAL - LEVEL 2 AREA 3 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312592	H3 3420	M 223-5	2	AEI				MECHANICAL - LEVEL 2 AREA 3 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312593	H3 3420	M 230	R	AEI				MECHANICAL - ROOF OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/64"	X		X			
312594	H3 3420	M 231-1	R	AEI				MECHANICAL - ROOF AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312595	H3 3420	M 231-2	R	AEI				MECHANICAL - ROOF AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312596	H3 3420	M 231-3	R	AEI				MECHANICAL - ROOF AREA 1 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312597	H3 3420	M 231-4	R	AEI				MECHANICAL - ROOF AREA 1 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312598	H3 3420	M 231-5	R	AEI				MECHANICAL - ROOF AREA 1 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312599	H3 3420	M 231-6	R	AEI				MECHANICAL - ROOF AREA 1 PART 6 - DUCT & PIPING PLAN	1/4"			X			
312600	H3 3420	M 232-1	R	AEI				MECHANICAL - ROOF AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312601	H3 3420	M 232-2	R	AEI				MECHANICAL - ROOF AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312602	H3 3420	M 232-3	R	AEI				MECHANICAL - ROOF AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312603	H3 3420	M 232-4	R	AEI				MECHANICAL - ROOF AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312604	H3 3420	M 232-5	R	AEI				MECHANICAL - ROOF AREA 2 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312605	H3 3420	M 232-6	R	AEI				MECHANICAL - ROOF AREA 2 PART 6 - DUCT & PIPING PLAN	1/4"			X			
312606	H3 3420	M 233-1	R	AEI				MECHANICAL - ROOF AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X		X			
312607	H3 3420	M 233-2	R	AEI				MECHANICAL - ROOF AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312608	H3 3420	M 233-3	R	AEI				MECHANICAL - ROOF AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"			X			
312609	H3 3420	M 233-4	R	AEI				MECHANICAL - ROOF AREA 3 PART 4 - DUCT & PIPING PLAN	1/4"			X			
312610	H3 3420	M 233-5	R	AEI				MECHANICAL - ROOF AREA 3 PART 5 - DUCT & PIPING PLAN	1/4"			X			
312611	H3 3420	M 511	1	AEI				MECHANICAL - LEVEL 1 AREA 1 - PRESSURE PLAN	1/8"			X			
312612	H3 3420	M 512	1	AEI				MECHANICAL - LEVEL 1 AREA 2 - PRESSURE PLAN	1/8"			X			
312613	H3 3420	M 513	1	AEI				MECHANICAL - LEVEL 1 AREA 3 - PRESSURE PLAN	1/8"			X			
312614	H3 3420	M 521	1	AEI				MECHANICAL - LEVEL 2 AREA 1 - PRESSURE PLAN	1/8"			X			
312615	H3 3420	M 522	1	AEI				MECHANICAL - LEVEL 2 AREA 2 - PRESSURE PLAN	1/8"			X			
312616	H3 3420	M 523	1	AEI				MECHANICAL - LEVEL 2 AREA 3 - PRESSURE PLAN	1/8"			X			
								ELECTRICAL							
312617	H3 3420	E 010		AEI				ELECTRICAL SCHEDULES	NTS			X			
312618	H3 3420	E 011		AEI				ELECTRICAL SCHEDULES	NTS			X			
312619	H3 3420	E 012		AEI				NOT USED	NTS						
312620	H3 3420	E 400		AEI				COMM ROOM ELEVATIONS	NTS						
312621	H3 3420	E 401		AEI				NOT USED	NTS						
312622	H3 3420	E 600		AEI				NOT USED	NTS						
312623	H3 3420	E 710		AEI				ELECTRICAL - NORMAL POWER RISER DIAGRAM	NTS			X			
312624	H3 3420	E 720		AEI				ELECTRICAL - STANDBY POWER RISER DIAGRAM	NTS			X			
312625	H3 3420	E 730		AEI				ELECTRICAL - FIRE ALARM RISER	NTS			X			
312626	H3 3420	E 731		AEI				NOT USED	NTS						

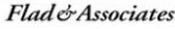


Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location

06109-03
Final Project Number
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Date

Design Development Drawing List

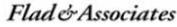
DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD20A Design Development OA November 27, 2006	CD20A Design development/PNNL Review December 8, 2006	CD3A Structural Steel Package xxxx/xxxx	CD3A Structural Steel Package xxxx/xxxx	CD3A Design Development DOE Submittal 12/22/2006
312627		H3 3420	E	F	732	1	AEI	NOT USED	NTS						
312628		H3 3420	E	F	733	1	AEI	NOT USED	NTS						
312629		H3 3420	E	F	734	1	AEI	NOT USED	NTS						
312630		H3 3420	E	F	735	1	AEI	NOT USED	NTS						
312631		H3 3420	EP		210	1	AEI	ELECTRICAL - LEVEL 1 OVERALL AREAS 1-4 - POWER PLAN	3/64"			X			
312632		H3 3420	EP		211-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 1 - POWER PLAN	1/4"			X			
312633		H3 3420	EP		211-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 2 - POWER PLAN	1/4"			X			
312634		H3 3420	EP		211-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 3 - POWER PLAN	1/4"			X			
312635		H3 3420	EP		211-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 4 - POWER PLAN	1/4"			X			
312636		H3 3420	EP		211-5	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 5 - POWER PLAN	1/4"			X			
312637		H3 3420	EP		211-6	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 6 - POWER PLAN	1/4"			X			
312638		H3 3420	EP		212-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 1 - POWER PLAN	1/4"			X			
312639		H3 3420	EP		212-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 2 - POWER PLAN	1/4"			X			
312640		H3 3420	EP		212-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 3 - POWER PLAN	1/4"			X			
312641		H3 3420	EP		212-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 4 - POWER PLAN	1/4"			X			
312642		H3 3420	EP		212-5	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 5 - POWER PLAN	1/4"			X			
312643		H3 3420	EP		212-6	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 6 - POWER PLAN	1/4"			X			
312644		H3 3420	EP		213-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 1 - POWER PLAN	1/4"			X			
312645		H3 3420	EP		213-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 2 - POWER PLAN	1/4"			X			
312646		H3 3420	EP		213-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 3 - POWER PLAN	1/4"			X			
312647		H3 3420	EP		213-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 4 - POWER PLAN	1/4"			X			
312648		H3 3420	EP		213-5	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 5 - POWER PLAN	1/4"			X			
312649		H3 3420	EP		220	2	AEI	ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - POWER PLAN	3/64"			X			
312650		H3 3420	EP		221-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 1 - POWER PLAN	1/4"			X			
312651		H3 3420	EP		221-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 2 - POWER PLAN	1/4"			X			
312652		H3 3420	EP		221-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 3 - POWER PLAN	1/4"			X			
312653		H3 3420	EP		221-4	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 4 - POWER PLAN	1/4"			X			
312654		H3 3420	EP		221-5	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 5 - POWER PLAN	1/4"			X			
312655		H3 3420	EP		221-6	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 6 - POWER PLAN	1/4"			X			
312656		H3 3420	EP		222-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 1 - POWER PLAN	1/4"			X			
312657		H3 3420	EP		222-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 2 - POWER PLAN	1/4"			X			
312658		H3 3420	EP		222-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 3 - POWER PLAN	1/4"			X			
312659		H3 3420	EP		222-4	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 4 - POWER PLAN	1/4"			X			
312660		H3 3420	EP		222-5	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 5 - POWER PLAN	1/4"			X			
312661		H3 3420	EP		222-6	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 6 - POWER PLAN	1/4"			X			
312662		H3 3420	EP		223-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 1 - POWER PLAN	1/4"			X			
312663		H3 3420	EP		223-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 2 - POWER PLAN	1/4"			X			
312664		H3 3420	EP		223-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 3 - POWER PLAN	1/4"			X			
312665		H3 3420	EP		223-4	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 4 - POWER PLAN	1/4"			X			
312666		H3 3420	EP		223-5	2	AEI	ELECTRICAL - LEVEL 2 AREA 3 PART 5 - POWER PLAN	1/4"			X			
312667		H3 3420	EP		230	R	AEI	ELECTRICAL - ROOF OVERALL AREAS 1-3 - POWER PLAN	3/64"			X			
312668		H3 3420	EP		231-1	R	AEI	ELECTRICAL - ROOF AREA 1 PART 1 - POWER PLAN	1/4"			X			
312669		H3 3420	EP		231-2	R	AEI	ELECTRICAL - ROOF AREA 1 PART 2 - POWER PLAN	1/4"			X			
312670		H3 3420	EP		231-3	R	AEI	ELECTRICAL - ROOF AREA 1 PART 3 - POWER PLAN	1/4"			X			
312671		H3 3420	EP		231-4	R	AEI	ELECTRICAL - ROOF AREA 1 PART 4 - POWER PLAN	1/4"			X			
312672		H3 3420	EP		231-5	R	AEI	ELECTRICAL - ROOF AREA 1 PART 5 - POWER PLAN	1/4"			X			
312673		H3 3420	EP		231-6	R	AEI	ELECTRICAL - ROOF AREA 1 PART 6 - POWER PLAN	1/4"			X			
312674		H3 3420	EP		232-1	R	AEI	ELECTRICAL - ROOF AREA 2 PART 1 - POWER PLAN	1/4"			X			
312675		H3 3420	EP		232-2	R	AEI	ELECTRICAL - ROOF AREA 2 PART 2 - POWER PLAN	1/4"			X			
312676		H3 3420	EP		232-3	R	AEI	ELECTRICAL - ROOF AREA 2 PART 3 - POWER PLAN	1/4"			X			
312677		H3 3420	EP		232-4	R	AEI	ELECTRICAL - ROOF AREA 2 PART 4 - POWER PLAN	1/4"			X			
312678		H3 3420	EP		232-5	R	AEI	ELECTRICAL - ROOF AREA 2 PART 5 - POWER PLAN	1/4"			X			
312679		H3 3420	EP		232-6	R	AEI	ELECTRICAL - ROOF AREA 2 PART 6 - POWER PLAN	1/4"			X			
312680		H3 3420	EP		233-1	R	AEI	ELECTRICAL - ROOF AREA 3 PART 1 - POWER PLAN	1/4"			X			
312681		H3 3420	EP		233-2	R	AEI	ELECTRICAL - ROOF AREA 3 PART 2 - POWER PLAN	1/4"			X			
312682		H3 3420	EP		233-3	R	AEI	ELECTRICAL - ROOF AREA 3 PART 3 - POWER PLAN	1/4"			X			
312683		H3 3420	EP		233-4	R	AEI	ELECTRICAL - ROOF AREA 3 PART 4 - POWER PLAN	1/4"			X			
312684		H3 3420	EP		233-5	R	AEI	ELECTRICAL - ROOF AREA 3 PART 5 - POWER PLAN	1/4"			X			
312685		H3 3420	EL		210	1	AEI	ELECTRICAL - LEVEL 1 OVERALL AREAS 1-4 - LIGHTING PLAN	3/64"			X			
312686		H3 3420	EL		211-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 1 - LIGHTING PLAN	1/4"			X			
312687		H3 3420	EL		211-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 2 - LIGHTING PLAN	1/4"			X			
312688		H3 3420	EL		211-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 3 - LIGHTING PLAN	1/4"			X			
312689		H3 3420	EL		211-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 4 - LIGHTING PLAN	1/4"			X			
312690		H3 3420	EL		211-5	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 5 - LIGHTING PLAN	1/4"			X			
312691		H3 3420	EL		211-6	1	AEI	ELECTRICAL - LEVEL 1 AREA 1 PART 6 - LIGHTING PLAN	1/4"			X			
312692		H3 3420	EL		212-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 1 - LIGHTING PLAN	1/4"			X			
312693		H3 3420	EL		212-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 2 - LIGHTING PLAN	1/4"			X			
312694		H3 3420	EL		212-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 3 - LIGHTING PLAN	1/4"			X			
312695		H3 3420	EL		212-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 4 - LIGHTING PLAN	1/4"			X			
312696		H3 3420	EL		212-5	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 5 - LIGHTING PLAN	1/4"			X			
312697		H3 3420	EL		212-6	1	AEI	ELECTRICAL - LEVEL 1 AREA 2 PART 6 - LIGHTING PLAN	1/4"			X			
312698		H3 3420	EL		213-1	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 1 - LIGHTING PLAN	1/4"			X			
312699		H3 3420	EL		213-2	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 2 - LIGHTING PLAN	1/4"			X			
312700		H3 3420	EL		213-3	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 3 - LIGHTING PLAN	1/4"			X			
312701		H3 3420	EL		213-4	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 4 - LIGHTING PLAN	1/4"			X			
312702		H3 3420	EL		213-5	1	AEI	ELECTRICAL - LEVEL 1 AREA 3 PART 5 - LIGHTING PLAN	1/4"			X			
312703		H3 3420	EL		220	2	AEI	ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - LIGHTING PLAN	3/64"			X			
312704		H3 3420	EL		221-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 1 - LIGHTING PLAN	1/4"			X			
312705		H3 3420	EL		221-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 2 - LIGHTING PLAN	1/4"			X			
312706		H3 3420	EL		221-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 3 - LIGHTING PLAN	1/4"			X			
312707		H3 3420	EL		221-4	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 4 - LIGHTING PLAN	1/4"			X			
312708		H3 3420	EL		221-5	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 5 - LIGHTING PLAN	1/4"			X			
312709		H3 3420	EL		221-6	2	AEI	ELECTRICAL - LEVEL 2 AREA 1 PART 6 - LIGHTING PLAN	1/4"			X			
312710		H3 3420	EL		222-1	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 1 - LIGHTING PLAN	1/4"			X			
312711		H3 3420	EL		222-2	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 2 - LIGHTING PLAN	1/4"			X			
312712		H3 3420	EL		222-3	2	AEI	ELECTRICAL - LEVEL 2 AREA 2 PART 3 - LIGHTING PLAN	1/4"			X			



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Date

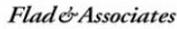
DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD2/3A Design Development CA November 27, 2006	CD2/3A Design Development-PNNL Review December 8, 2006	CCDA Steelwork and Foundations Package xx/xx/xxxx	CCDA Structural Steel Package xx/xx/xxxx	CD2-3A Design Development DOE Submittal 12/22/2006	Design Development DOE Submittal 12/22/2006
312713	H3	3420	EL	222-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 4 - LIGHTING PLAN	1/4"			X				
312714	H3	3420	EL	222-5	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 5 - LIGHTING PLAN	1/4"			X				
312715	H3	3420	EL	222-6	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 6 - LIGHTING PLAN	1/4"			X				
312716	H3	3420	EL	223-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 1 - LIGHTING PLAN	1/4"			X				
312717	H3	3420	EL	223-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 2 - LIGHTING PLAN	1/4"			X				
312718	H3	3420	EL	223-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 3 - LIGHTING PLAN	1/4"			X				
312719	H3	3420	EL	223-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 4 - LIGHTING PLAN	1/4"			X				
312720	H3	3420	EL	223-5	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 5 - LIGHTING PLAN	1/4"			X				
312721	H3	3420	EL	230	R	AEI		ELECTRICAL - ROOF OVERALL AREAS 1-3 - LIGHTING PLAN	3/64"			X				
312722	H3	3420	EL	231-1	R	AEI		ELECTRICAL - ROOF AREA 1 PART 1 - LIGHTING PLAN	1/4"			X				
312723	H3	3420	EL	231-2	R	AEI		ELECTRICAL - ROOF AREA 1 PART 2 - LIGHTING PLAN	1/4"			X				
312724	H3	3420	EL	231-3	R	AEI		ELECTRICAL - ROOF AREA 1 PART 3 - LIGHTING PLAN	1/4"			X				
312725	H3	3420	EL	231-4	R	AEI		ELECTRICAL - ROOF AREA 1 PART 4 - LIGHTING PLAN	1/4"			X				
312726	H3	3420	EL	231-5	R	AEI		ELECTRICAL - ROOF AREA 1 PART 5 - LIGHTING PLAN	1/4"			X				
312727	H3	3420	EL	231-6	R	AEI		ELECTRICAL - ROOF AREA 1 PART 6 - LIGHTING PLAN	1/4"			X				
312728	H3	3420	EL	232-1	R	AEI		ELECTRICAL - ROOF AREA 2 PART 1 - LIGHTING PLAN	1/4"			X				
312729	H3	3420	EL	232-2	R	AEI		ELECTRICAL - ROOF AREA 2 PART 2 - LIGHTING PLAN	1/4"			X				
312730	H3	3420	EL	232-3	R	AEI		ELECTRICAL - ROOF AREA 2 PART 3 - LIGHTING PLAN	1/4"			X				
312731	H3	3420	EL	232-4	R	AEI		ELECTRICAL - ROOF AREA 2 PART 4 - LIGHTING PLAN	1/4"			X				
312732	H3	3420	EL	232-5	R	AEI		ELECTRICAL - ROOF AREA 2 PART 5 - LIGHTING PLAN	1/4"			X				
312733	H3	3420	EL	232-6	R	AEI		ELECTRICAL - ROOF AREA 2 PART 6 - LIGHTING PLAN	1/4"			X				
312734	H3	3420	EL	233-1	R	AEI		ELECTRICAL - ROOF AREA 3 PART 1 - LIGHTING PLAN	1/4"			X				
312735	H3	3420	EL	233-2	R	AEI		ELECTRICAL - ROOF AREA 3 PART 2 - LIGHTING PLAN	1/4"			X				
312736	H3	3420	EL	233-3	R	AEI		ELECTRICAL - ROOF AREA 3 PART 3 - LIGHTING PLAN	1/4"			X				
312737	H3	3420	EL	233-4	R	AEI		ELECTRICAL - ROOF AREA 3 PART 4 - LIGHTING PLAN	1/4"			X				
312738	H3	3420	EL	233-5	R	AEI		ELECTRICAL - ROOF AREA 3 PART 5 - LIGHTING PLAN	1/4"			X				
312739	H3	3420	ES	210	1	AEI		ELECTRICAL - LEVEL 1 OVERALL AREAS 1-4 - SYSTEMS PLAN	3/64"			X				
312740	H3	3420	ES	211-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 1 - SYSTEMS PLAN	1/4"			X				
312741	H3	3420	ES	211-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 2 - SYSTEMS PLAN	1/4"			X				
312742	H3	3420	ES	211-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 3 - SYSTEMS PLAN	1/4"			X				
312743	H3	3420	ES	211-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 4 - SYSTEMS PLAN	1/4"			X				
312744	H3	3420	ES	211-5	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 5 - SYSTEMS PLAN	1/4"			X				
312745	H3	3420	ES	211-6	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 6 - SYSTEMS PLAN	1/4"			X				
312746	H3	3420	ES	212-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 1 - SYSTEMS PLAN	1/4"			X				
312747	H3	3420	ES	212-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 2 - SYSTEMS PLAN	1/4"			X				
312748	H3	3420	ES	212-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 3 - SYSTEMS PLAN	1/4"			X				
312749	H3	3420	ES	212-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 4 - SYSTEMS PLAN	1/4"			X				
312750	H3	3420	ES	212-5	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 5 - SYSTEMS PLAN	1/4"			X				
312751	H3	3420	ES	212-6	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 6 - SYSTEMS PLAN	1/4"			X				
312752	H3	3420	ES	213-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 1 - SYSTEMS PLAN	1/4"			X				
312753	H3	3420	ES	213-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 2 - SYSTEMS PLAN	1/4"			X				
312754	H3	3420	ES	213-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 3 - SYSTEMS PLAN	1/4"			X				
312755	H3	3420	ES	213-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 4 - SYSTEMS PLAN	1/4"			X				
312756	H3	3420	ES	213-5	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 5 - SYSTEMS PLAN	1/4"			X				
312757	H3	3420	ES	220	2	AEI		ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - SYSTEMS PLAN	3/64"			X				
312758	H3	3420	ES	221-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 1 - SYSTEMS PLAN	1/4"			X				
312759	H3	3420	ES	221-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 2 - SYSTEMS PLAN	1/4"			X				
312760	H3	3420	ES	221-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 3 - SYSTEMS PLAN	1/4"			X				
312761	H3	3420	ES	221-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 4 - SYSTEMS PLAN	1/4"			X				
312762	H3	3420	ES	221-5	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 5 - SYSTEMS PLAN	1/4"			X				
312763	H3	3420	ES	221-6	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 6 - SYSTEMS PLAN	1/4"			X				
312764	H3	3420	ES	222-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 1 - SYSTEMS PLAN	1/4"			X				
312765	H3	3420	ES	222-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 2 - SYSTEMS PLAN	1/4"			X				
312766	H3	3420	ES	222-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 3 - SYSTEMS PLAN	1/4"			X				
312767	H3	3420	ES	222-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 4 - SYSTEMS PLAN	1/4"			X				
312768	H3	3420	ES	222-5	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 5 - SYSTEMS PLAN	1/4"			X				
312769	H3	3420	ES	222-6	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 6 - SYSTEMS PLAN	1/4"			X				
312770	H3	3420	ES	223-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 1 - SYSTEMS PLAN	1/4"			X				
312771	H3	3420	ES	223-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 2 - SYSTEMS PLAN	1/4"			X				
312772	H3	3420	ES	223-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 3 - SYSTEMS PLAN	1/4"			X				
312773	H3	3420	ES	223-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 4 - SYSTEMS PLAN	1/4"			X				
312774	H3	3420	ES	223-5	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 5 - SYSTEMS PLAN	1/4"			X				
312775	H3	3420	ES	230	R	AEI		ELECTRICAL - ROOF OVERALL AREAS 1-3 - SYSTEMS PLAN	3/64"			X				
312776	H3	3420	ES	231-1	R	AEI		ELECTRICAL - ROOF AREA 1 PART 1 - SYSTEMS PLAN	1/4"			X				
312777	H3	3420	ES	231-2	R	AEI		ELECTRICAL - ROOF AREA 1 PART 2 - SYSTEMS PLAN	1/4"			X				
312778	H3	3420	ES	231-3	R	AEI		ELECTRICAL - ROOF AREA 1 PART 3 - SYSTEMS PLAN	1/4"			X				
312779	H3	3420	ES	231-4	R	AEI		ELECTRICAL - ROOF AREA 1 PART 4 - SYSTEMS PLAN	1/4"			X				
312780	H3	3420	ES	231-5	R	AEI		ELECTRICAL - ROOF AREA 1 PART 5 - SYSTEMS PLAN	1/4"			X				
312781	H3	3420	ES	231-6	R	AEI		ELECTRICAL - ROOF AREA 1 PART 6 - SYSTEMS PLAN	1/4"			X				
312782	H3	3420	ES	232-1	R	AEI		ELECTRICAL - ROOF AREA 2 PART 1 - SYSTEMS PLAN	1/4"			X				
312783	H3	3420	ES	232-2	R	AEI		ELECTRICAL - ROOF AREA 2 PART 2 - SYSTEMS PLAN	1/4"			X				
312784	H3	3420	ES	232-3	R	AEI		ELECTRICAL - ROOF AREA 2 PART 3 - SYSTEMS PLAN	1/4"			X				
312785	H3	3420	ES	232-4	R	AEI		ELECTRICAL - ROOF AREA 2 PART 4 - SYSTEMS PLAN	1/4"			X				
312786	H3	3420	ES	232-5	R	AEI		ELECTRICAL - ROOF AREA 2 PART 5 - SYSTEMS PLAN	1/4"			X				
312787	H3	3420	ES	232-6	R	AEI		ELECTRICAL - ROOF AREA 2 PART 6 - SYSTEMS PLAN	1/4"			X				
312788	H3	3420	ES	233-1	R	AEI		ELECTRICAL - ROOF AREA 3 PART 1 - SYSTEMS PLAN	1/4"			X				
312789	H3	3420	ES	233-2	R	AEI		ELECTRICAL - ROOF AREA 3 PART 2 - SYSTEMS PLAN	1/4"			X				
312790	H3	3420	ES	233-3	R	AEI		ELECTRICAL - ROOF AREA 3 PART 3 - SYSTEMS PLAN	1/4"			X				
312791	H3	3420	ES	233-4	R	AEI		ELECTRICAL - ROOF AREA 3 PART 4 - SYSTEMS PLAN	1/4"			X				
312792	H3	3420	ES	233-5	R	AEI		ELECTRICAL - ROOF AREA 3 PART 5 - SYSTEMS PLAN	1/4"			X				
								PLUMBING & FIRE PROTECTION								
312793	H3	3420	P	210F	F	AEI		PLUMBING - FOUNDATION OVERALL AREAS 1-4 - PLAN	3/64"	X		X				
312794	H3	3420	P	211F-1	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 1 - PLAN	1/4"	X		X				
312795	H3	3420	P	211F-2	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 2 - PLAN	1/4"			X				
312796	H3	3420	P	211F-3	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 3 - PLAN	1/4"			X				



Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location
Design Development Drawing List

06109-03
Flad Project Number
December 7, 2006
Date

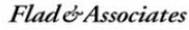
DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD020A Design Development QA November 27, 2006	CD020A Design Development-PNNL Review December 6, 2006	CD0A Skeleton and Foundations Package xx/xx/xxxx	CD0A Structural Steel Package xx/xx/xxxx	CD020A Design Development DOE Submittal 12/22/2006
BUILDING NO. 3425 - ULTRA-LOW LABORATORY															
ARCHITECTURAL															
312873	H3	3425	A	000		FLAD		PNNL-PSF TITLE SHEET - BUILDING 3425	NTS	X		X	X		
312874	H3	3425	A	001		FLAD		PNNL-PSF TITLE SHEET - BUILDING 3425	NTS	X		X	X		
312875	H3	3425	A	001				NOT USED	NTS	X				X	
312876	H3	3425	A	001				NOT USED	NTS	X					
312877	H3	3425	A	001				NOT USED	NTS	X					
312878	H3	3425	A	021	B / 1	FLAD		ARCHITECTURAL - LEVEL B & 1 - LIFE SAFETY PLAN	3/64	X	X	X			
312879	H3	3425	A	200	B	FLAD		ARCHITECTURAL - BASEMENT OVERALL - FLOOR PLAN	1/8	X	X	X			
312880	H3	3425	A	201	B	FLAD		ARCHITECTURAL - BASEMENT AREA 1 - FLOOR PLAN	1/4	X					
312881	H3	3425	A	202	B	FLAD		ARCHITECTURAL - BASEMENT AREA 2 - FLOOR PLAN	1/4	X					
312882	H3	3425	A	210	1	FLAD		ARCHITECTURAL - LEVEL 1 OVERALL - FLOOR PLAN	1/8	X	X	X			
312883	H3	3425	A	211	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 1 - FLOOR PLAN	1/4	X					
312884	H3	3425	A	212	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 2 - FLOOR PLAN	1/4	X					
312885	H3	3425	A	220	R	FLAD		ARCHITECTURAL - ROOF - PLAN	1/8	X	X	X			
312886	H3	3425	A	261	B	FLAD		ARCHITECTURAL - BASEMENT OVERALL - FINISH PLAN	1/8	X	X	X			
312887	H3	3425	A	262	B	FLAD		ARCHITECTURAL - LEVEL 1 - FINISH PLAN	1/8	X	X	X			
312888	H3	3425	A	263	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 1 - FINISH PLAN	1/4	X					
312889	H3	3425	A	264	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 2 - FINISH PLAN	1/4	X					
312890	H3	3425	A	271	B	FLAD		ARCHITECTURAL - BASEMENT AREA 1 - SIGNAGE PLAN	1/4	X					
312891	H3	3425	A	272	B	FLAD		ARCHITECTURAL - BASEMENT AREA 2 - SIGNAGE PLAN	1/4	X					
312892															
312893	H3	3425	A	273	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 1 - SIGNAGE PLAN	1/4	X					
312894	H3	3425	A	274	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 2 - SIGNAGE PLAN	1/4	X					
312895	H3	3425	A	281	B	FLAD		ARCHITECTURAL - BASEMENT OVERALL - FURNITURE PLAN	1/8	X	X	X			
312896	H3	3425	A	281-1	B	FLAD		ARCHITECTURAL - BASEMENT AREA 1 - FURNITURE PLAN	1/4	X					
312897	H3	3425	A	281-1	B	FLAD		ARCHITECTURAL - BASEMENT AREA 2 - FURNITURE PLAN	1/4	X					
312898	H3	3425	A	300	B	FLAD		ARCHITECTURAL - BASEMENT OVERALL - REFLECTED CEILING PLAN	1/8	X	X	X			
312899	H3	3425	A	301	B	FLAD		ARCHITECTURAL - BASEMENT AREA 1 - REFLECTED CEILING PLAN	1/4	X					
312900	H3	3425	A	302	B	FLAD		ARCHITECTURAL - BASEMENT AREA 2 - REFLECTED CEILING PLAN	1/4	X					
312901	H3	3425	A	310	1	FLAD		ARCHITECTURAL - LEVEL 1 OVERALL - REFLECTED CEILING PLAN	3/64	X	X	X			
312902	H3	3425	A	311	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 1 - REFLECTED CEILING PLAN	1/4	X					
312903	H3	3425	A	312	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 2 - REFLECTED CEILING PLAN	1/4	X					
312904	H3	3425	A	400		FLAD		ARCHITECTURAL - EXTERIOR ELEVATIONS	1/8	X					
312905	H3	3425	A	410		FLAD		ARCHITECTURAL - BUILDING SECTIONS	1/8	X	X	X			
312906	H3	3425	A	501		FLAD		ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
312907	H3	3425	A	502				NOT USED	3/8						
312908	H3	3425	A	503				NOT USED							
312909	H3	3425	A	601		FLAD		ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1 1/2						
312910	H3	3425	A	602		FLAD		ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1 1/2						
312911	H3	3425	A	604				NOT USED							
312912	H3	3425	A	605				NOT USED							
312913	H3	3425	A	611		FLAD		ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1 1/2						
312914	H3	3425	A	613		FLAD		ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1 1/2						
312915	H3	3425	A	614				NOT USED							
312916	H3	3425	A	615				NOT USED							
312917	H3	3425	A	700		FLAD		ARCHITECTURAL - ELEVATOR 001- PLANS AND SECTIONS	3/8						
312918	H3	3425	A	701		FLAD		ARCHITECTURAL - STAIR 0010 - PLANS AND SECTIONS	1 1/2						
312919	H3	3425	A	702		FLAD		ARCHITECTURAL - STAIR 0020 - PLANS AND SECTIONS	1 1/2						
312920	H3	3425	A	703		FLAD		ARCHITECTURAL - STAIR AND ELEVATOR DETAILS	1 1/2						
312921	H3	3425	A	704				NOT USED							
312922	H3	3425	A	810		FLAD		ARCHITECTURAL - INTERIOR ELEVATIONS	3/8						
312923	H3	3425	A	811				NOT USED							
312924	H3	3425	A	910		FLAD		ARCHITECTURAL - DOOR AND OPENING - SCHEDULE	V						
312925	H3	3425	A	930		FLAD		ARCHITECTURAL INTERIOR DETAILS	V						
312926	H3	3425	A	931		FLAD		ARCHITECTURAL INTERIOR DETAILS	V						
312927	H3	3425	A	932				NOT USED							
312928	H3	3425	A	935				NOT USED							
312929	H3	3425	A	936				NOT USED							
312930	H3	3425	A	937				NOT USED							
LABORATORY															
312931	H3	3425	Q	201	B	FLAD		ARCHITECTURAL - BASEMENT AREA 1 - LABORATORY PLAN	1/4	X	X	X			
312932	H3	3425	Q	202	B	FLAD		ARCHITECTURAL - BASEMENT AREA 2 - LABORATORY PLAN	1/4	X	X	X			
312933	H3	3425	Q	211	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 1 - LABORATORY PLAN	1/4	X					
312934	H3	3425	Q	212	1	FLAD		ARCHITECTURAL - LEVEL 1 AREA 2 - LABORATORY PLAN	1/4	X					



Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location
Design Development Drawing List

06109-03
Final Report Number
December 7, 2006
Date

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CCD2/3A Design Development QA November 27, 2006	CCD2/3A Design development PNNL Review December 8, 2006	CCDA SiteWork and Foundations Package xx/xx/xxxx	CCDA Structural Steel Package xx/xx/xxxx	CCD2-3A Design Development DOE Submittal 12/22/2006
312935		H3 3425	Q	810		FLAD		ARCHITECTURAL LABORATORY ELEVATIONS	1/4						
312936		H3 3425	Q	811		FLAD		ARCHITECTURAL LABORATORY ELEVATIONS	1/4						
312937		H3 3425	Q	890		FLAD		ARCHITECTURAL LABORATORY DETAILS	1/4						
312938		H3 3425	Q	891		FLAD		ARCHITECTURAL LABORATORY DETAILS	1/4						
312939		H3 3425	Q	935				NOT USED	V						
312940		H3 3425	Q	936				NOT USED	V						
312941		H3 3425	Q	937				NOT USED	V						
312942		H3 3425	Q	938				NOT USED	V						
								STRUCTURAL							
312943		H3 3425	S	101				STRUCTURAL GENERAL NOTES, ABBREVIATIONS & SYMBOLS			X		X	X	
312944		H3 3425	S	200	B	FLAD		STRUCTURAL - LOWER LEVEL - FOUNDATION PLAN	3/64	X	X	X	X		
312945		H3 3425	S	210	1	FLAD		STRUCTURAL - LOWER LEVEL - ROOF PLAN	1/8	X	X	X	X		
312946		H3 3425	S	220	2	FLAD		STRUCTURAL - UPPER LEVEL - FOUNDATION PLAN	3/64	X	X	X	X		
312947		H3 3425	S	230	R	FLAD		STRUCTURAL - UPPER LEVEL - ROOF PLAN	3/64	X		X	X		
312948		H3 3425	S	501		FLAD		STRUCTURAL CONCRETE DETAILS	V		X	X	X		
312949		H3 3425	S	502		FLAD		STRUCTURAL CONCRETE DETAILS	V		X	X	X		
312950		H3 3425	S	503		FLAD		STRUCTURAL CONCRETE DETAILS	V				X		
312951		H3 3425	S	504		FLAD		STRUCTURAL CONCRETE DETAILS	V				X		
312952		H3 3425	S	505		FLAD		STRUCTURAL CONCRETE DETAILS	V				X		
312953		H3 3425	S	506		FLAD		STRUCTURAL CONCRETE DETAILS	V				X		
312954		H3 3425	S	507				NOT USED	V						
312955		H3 3425	S	508				NOT USED	V						
312956		H3 3425	S	509				NOT USED	V						
312957		H3 3425	S	510				NOT USED	V						
312958		H3 3425	S	541		FLAD		STRUCTURAL STEEL DETAILS	V					X	
312959		H3 3425	S	542		FLAD		STRUCTURAL STEEL DETAILS	V					X	
312960		H3 3425	S	543		FLAD		STRUCTURAL STEEL DETAILS	V					X	
312961		H3 3425	S	543				NOT USED	V					X	
312962		H3 3425	S	543				NOT USED	V					X	
								MECHANICAL							
312963		H3 3425	M	200	0	AEI		MECHANICAL - BASEMENT OVERALL AREA 1 - DUCT & PIPING PLAN	3/64"			X			
312964		H3 3425	M	201-1	0	AEI		MECHANICAL - BASEMENT AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"			X			
312965		H3 3425	M	201-2	0	AEI		MECHANICAL - BASEMENT AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312966		H3 3425	M	210	1	AEI		MECHANICAL - LEVEL 1 OVERALL AREA 1 - DUCT & PIPING PLAN	3/64"			X			
312967		H3 3425	M	211-1	1	AEI		MECHANICAL - LEVEL 1 AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"			X			
312968		H3 3425	M	211-2	1	AEI		MECHANICAL - LEVEL 1 AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312969		H3 3425	M	220	R	AEI		MECHANICAL - ROOF OVERALL AREA 1 - DUCT & PIPING PLAN	3/64"			X			
312970		H3 3425	M	221-1	R	AEI		MECHANICAL - ROOF AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"			X			
312971		H3 3425	M	221-2	R	AEI		MECHANICAL - ROOF AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"			X			
312972		H3 3425	M	501	0	AEI		MECHANICAL - BASEMENT AREA 1 - PRESSURE PLAN	1/8"			X			
312973		H3 3425	M	511	0	AEI		MECHANICAL - LEVEL 1 AREA 1 - PRESSURE PLAN	1/8"			X			
								ELECTRICAL							
312974		H3 3425	E	010		AEI		ELECTRICAL SCHEDULES	NTS			X			
312975		H3 3425	E	011		AEI		ELECTRICAL SCHEDULES	NTS			X			
312976		H3 3425	E			AEI		NOT USED	NTS						
312977		H3 3425	E	400		AEI		COMM ROOM ELEVATIONS	NTS						
312978		H3 3425	E			AEI		NOT USED	NTS						
312979		H3 3425	E	600		AEI		NOT USED	NTS						
312980		H3 3425	E	710		AEI		ELECTRICAL - NORMAL POWER RISER DIAGRAM	NTS			X			
312981		H3 3425	E	720		AEI		ELECTRICAL - STANDBY POWER RISER DIAGRAM	NTS			X			
312982		H3 3425	E	730		AEI		ELECTRICAL - FIRE ALARM RISER	NTS			X			
312983		H3 3425	E	731		AEI		NOT USED	NTS						
312984		H3 3425	E	732		AEI		NOT USED	NTS						
312985		H3 3425	E	733		AEI		NOT USED	NTS						
312986		H3 3425	E	734		AEI		NOT USED	NTS						
312987		H3 3425	E	735		AEI		NOT USED	NTS						
312988		H3 3425	EP	200	0	AEI		ELECTRICAL - BASEMENT OVERALL AREA 1 - POWER PLAN	1/8"			X			
312989		H3 3425	EP	201-1	0	AEI		ELECTRICAL - BASEMENT AREA 1 PART 1 - POWER PLAN	1/4"			X			
312990		H3 3425	EP	201-2	0	AEI		ELECTRICAL - BASEMENT AREA 1 PART 2 - POWER PLAN	1/4"			X			
312991		H3 3425	EP	210	1	AEI		ELECTRICAL - LEVEL 1 OVERALL AREA 1 - POWER PLAN	1/8"			X			
312992		H3 3425	EP	211-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 1 - POWER PLAN	1/4"			X			
312993		H3 3425	EP	211-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 2 - POWER PLAN	1/4"			X			
312994		H3 3425	EL	200	0	AEI		ELECTRICAL - BASEMENT OVERALL AREA 1 - LIGHTING PLAN	1/8"			X			
312995		H3 3425	EL	201-1	0	AEI		ELECTRICAL - BASEMENT AREA 1 PART 1 - LIGHTING PLAN	1/4"			X			
312996		H3 3425	EL	201-2	0	AEI		ELECTRICAL - BASEMENT AREA 1 PART 2 - LIGHTING PLAN	1/4"			X			
312997		H3 3425	EL	210	1	AEI		ELECTRICAL - LEVEL 1 OVERALL AREA 1 - LIGHTING PLAN	1/8"			X			
312998		H3 3425	EL	211-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 1 - LIGHTING PLAN	1/4"			X			
312999		H3 3425	EL	211-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 2 - LIGHTING PLAN	1/4"			X			



Battelle - Physical Sciences Facility - PNNL

Project Name

Richland, Washington

Project Location

Design Development Drawing List

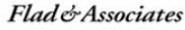
06109-03

Final Project Number

December 7, 2006

Date

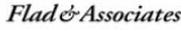
DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD203A Design Development QA November 27, 2006	CD223A Design development PNNL Review December 6, 2006	CD3A Sitework and Foundations Package xx/xx/xxxx	CD3A Structural Steel Package xx/xx/xxxx	CD3-3A Design Development DOE Submittal 12/22/2006
313000	H3	3425	EL	220	R	AEI		ELECTRICAL - ROOF OVERALL AREA 1 - LIGHTING PLAN	1/8"						
313001	H3	3425	EL	221-1	R	AEI		ELECTRICAL - ROOF AREA 1 PART 1 - LIGHTING PLAN	1/4"						
313002	H3	3425	EL	221-2	R	AEI		ELECTRICAL - ROOF AREA 1 PART 2 - LIGHTING PLAN	1/4"						
313003	H3	3425	ES	200	0	AEI		ELECTRICAL - BASEMENT OVERALL AREA 1 - SYSTEMS PLAN	1/8"			X			
313004	H3	3425	ES	201-1	0	AEI		ELECTRICAL - BASEMENT AREA 1 PART 1 - SYSTEMS PLAN	1/4"			X			
313005	H3	3425	ES	201-2	0	AEI		ELECTRICAL - BASEMENT AREA 1 PART 2 - SYSTEMS PLAN	1/4"			X			
313006	H3	3425	ES	210	1	AEI		ELECTRICAL - LEVEL 1 OVERALL AREA 1 - SYSTEMS PLAN	1/8"			X			
313007	H3	3425	ES	211-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 1 - SYSTEMS PLAN	1/4"			X			
313008	H3	3425	ES	211-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 2 - SYSTEMS PLAN	1/4"			X			
313009	H3	3425	ES	220	R	AEI		ELECTRICAL - ROOF OVERALL AREA 1 - SYSTEMS PLAN	1/8"						
313010	H3	3425	ES	221-1	R	AEI		ELECTRICAL - ROOF AREA 1 PART 1 - SYSTEMS PLAN	1/4"						
313011	H3	3425	ES	221-2	R	AEI		ELECTRICAL - ROOF AREA 1 PART 2 - SYSTEMS PLAN	1/4"						
								PLUMBING AND FIRE PROTECTION							
313012	H3	3425	P	200F	F	AEI		PLUMBING - FOUNDATION OVERALL AREA 1 - PLAN	1/8"			X			
313013	H3	3425	P	201F-1	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 1 - PLAN	1/4"			X			
313014	H3	3425	P	201F-2	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 2 - PLAN	1/4"			X			
313015	H3	3425	P	200	0	AEI		PLUMBING - BASEMENT OVERALL AREA 1 - PLAN	1/8"			X			
313016	H3	3425	P	201-1	0	AEI		PLUMBING - BASEMENT AREA 1 PART 1 - PLAN	1/4"			X			
313017	H3	3425	P	201-2	0	AEI		PLUMBING - BASEMENT AREA 1 PART 2 - PLAN	1/4"			X			
313018	H3	3425	P	210	1	AEI		PLUMBING - LEVEL 1 OVERALL AREA 1 - PLAN	1/8"			X			
313019	H3	3425	P	211-1	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 1 - PLAN	1/4"			X			
313020	H3	3425	P	211-2	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 2 - PLAN	1/4"			X			
313021	H3	3425	P	220	R	AEI		PLUMBING - ROOF OVERALL AREA 1 - PLAN	1/8"			X			
313022	H3	3425	P	221-1	R	AEI		PLUMBING - ROOF AREA 1 PART 1 - PLAN	1/4"			X			
313023	H3	3425	P	221-2	R	AEI		PLUMBING - ROOF AREA 1 PART 2 - PLAN	1/4"			X			
313024	H3	3425	FP	201	0	AEI		FIRE PROTECTION - BASEMENT - PLAN	1/8"						
313025	H3	3425	FP	211	1	AEI		FIRE PROTECTION - LEVEL 1 - PLAN	1/8"						



Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location
Design Development Drawing List

06109-03
Flad Project Number
December 7, 2006
Date

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD02/0A Design Development QA November 27, 2006	CD02/0A Design Development-PNNL Review December 8, 2006	CD03A Sitework and Foundations Package xx/xx/xxxx	CD03A Structural Steel Package xx/xx/xxxx	CD02-3A Design Development DOE Submittal 12/22/2006
BUILDING NO. 3430 - ULTRATRACE															
ARCHITECTURAL															
313026		H3 3430 A 000					FLAD	PNNL-PSF TITLE SHEET - BUILDING 3430	NTS	X		X	X	X	
313027		H3 3430 A 001					FLAD	PNNL-PSF TITLE SHEET - BUILDING 3430	NTS	X		X	X	X	
313028		H3 3430 A 001						NOT USED	NTS	X					
313029		H3 3430 A 001						NOT USED	NTS	X					
313030		H3 3430 A 001						NOT USED	NTS	X					
313031		H3 3430 A 021			1		FLAD	ARCHITECTURAL - LEVEL 1 - LIFE SAFETY PLAN	3/64	X	X	X			
313032		H3 3430 A 022			3-Feb		FLAD	ARCHITECTURAL - LEVEL 2 & 3 - LIFE SAFETY PLAN	3/64	X	X	X			
313033		H3 3430 A 210			1		FLAD	ARCHITECTURAL - LEVEL 1 OVERALL - FLOOR PLAN	3/64	X	X	X			
313034		H3 3430 A 211			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FLOOR PLAN	1/8	X	X	X			
313035		H3 3430 A 212			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FLOOR PLAN	1/8	X	X	X			
313036		H3 3430 A 213			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FLOOR PLAN	1/8	X	X	X			
313037		H3 3430 A 220			2		FLAD	ARCHITECTURAL - LEVEL 2 OVERALL - FLOOR PLAN	3/64	X	X	X			
313038		H3 3430 A 221			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - FLOOR PLAN	1/8	X	X	X			
313039		H3 3430 A 222			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FLOOR PLAN	1/8	X	X	X			
313040		H3 3430 A 223			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FLOOR PLAN	1/8	X	X	X			
313041		H3 3430 A 230			3		FLAD	ARCHITECTURAL - LEVEL 3 OVERALL - FLOOR PLAN	3/64	X	X	X			
313042		H3 3430 A 231			3		FLAD	ARCHITECTURAL - LEVEL 3 - AREA 1 - FLOOR PLAN	1/8	X	X	X			
313043		H3 3430 A 232			3		FLAD	ARCHITECTURAL - LEVEL 3 - AREA 2 - FLOOR PLAN	1/8	X	X	X			
313044		H3 3430 A 233			3		FLAD	ARCHITECTURAL - LEVEL 3 - AREA 3 - FLOOR PLAN	1/8	X	X	X			
313045		H3 3430 A 240			R		FLAD	ARCHITECTURAL - ROOF LEVEL OVERALL - PLAN	3/64	X	X	X			
313046		H3 3430 A 241			R		FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 1 - PLAN	1/8	X	X	X			
313047		H3 3430 A 242			R		FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 2 - PLAN	1/8	X	X	X			
313048		H3 3430 A 243			R		FLAD	ARCHITECTURAL - ROOF LEVEL - AREA 3 - PLAN	1/8	X	X	X			
313049		H3 3430 A 261			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FINISH PLAN	1/8	X	X	X			
313050		H3 3430 A 262			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FINISH PLAN	1/8	X	X	X			
313051		H3 3430 A 263			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FINISH PLAN	1/8	X	X	X			
313052		H3 3430 A 264			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - FINISH PLAN	1/8	X	X	X			
313053		H3 3430 A 265			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FINISH PLAN	1/8	X	X	X			
313054		H3 3430 A 266			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FINISH PLAN	1/8	X	X	X			
313055		H3 3430 A 267			3		FLAD	ARCHITECTURAL - LEVEL 3 - AREA 1 - FINISH PLAN	1/8	X	X	X			
313056		H3 3430 A 268			3		FLAD	ARCHITECTURAL - LEVEL 3 - AREA 2 - FINISH PLAN	1/8	X	X	X			
313057		H3 3430 A 269			3		FLAD	ARCHITECTURAL - LEVEL 3 - AREA 3 - FINISH PLAN	1/8	X	X	X			
313058		H3 3430 A 273			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - SIGNAGE PLAN	1/8						
313059		H3 3430 A 274			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - SIGNAGE PLAN	1/8						
313060		H3 3430 A 275			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - SIGNAGE PLAN	1/8						
313061		H3 3430 A 276			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - SIGNAGE PLAN	1/8						
313062		H3 3430 A 281			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - FURNITURE PLAN	1/8		X	X			
313063		H3 3430 A 282			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - FURNITURE PLAN	1/8		X	X			
313064		H3 3430 A 283			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - FURNITURE PLAN	1/8		X	X			
313065		H3 3430 A 284			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - FURNITURE PLAN	1/8		X	X			
313066		H3 3430 A 285			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - FURNITURE PLAN	1/8		X	X			
313067		H3 3430 A 286			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - FURNITURE PLAN	1/8		X	X			
313068		H3 3430 A 310			1		FLAD	ARCHITECTURAL - LEVEL 1 OVERALL - REFLECTED CEILING PLAN	3/64		X	X			
313069		H3 3430 A 311			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 1 - REFLECTED CEILING PLAN	1/8		X	X			
313070		H3 3430 A 312			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 2 - REFLECTED CEILING PLAN	1/8		X	X			
313071		H3 3430 A 313			1		FLAD	ARCHITECTURAL - LEVEL 1 - AREA 3 - REFLECTED CEILING PLAN	1/8		X	X			
313072		H3 3430 A 320			2		FLAD	ARCHITECTURAL - LEVEL 2 OVERALL - REFLECTED CEILING PLAN	3/64		X	X			
313073		H3 3430 A 321			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 1 - REFLECTED CEILING PLAN	1/8		X	X			
313074		H3 3430 A 322			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 2 - REFLECTED CEILING PLAN	1/8		X	X			
313075		H3 3430 A 323			2		FLAD	ARCHITECTURAL - LEVEL 2 - AREA 3 - REFLECTED CEILING PLAN	1/8		X	X			
313076		H3 3430 A 400					FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16	X	X	X			
313077		H3 3430 A 401					FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16		X	X			
313078		H3 3430 A 402					FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/16						
313079		H3 3430 A 403						NOT USED							
313080		H3 3430 A 410					FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8	X	X	X			
313081		H3 3430 A 411					FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8						
313082		H3 3430 A 412					FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8						
313083		H3 3430 A 413						NOT USED							
313084		H3 3430 A 500					FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
313085		H3 3430 A 501					FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
313086		H3 3430 A 502					FLAD	ARCHITECTURAL - ENLARGED ELEVATIONS, PLANS & WALL SECTIONS	3/8						
313087		H3 3430 A 503						NOT USED							
313088		H3 3430 A 504						NOT USED							
313089		H3 3430 A 600					FLAD	ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1/12						
313090		H3 3430 A 601					FLAD	ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1/12						
313091		H3 3430 A 602					FLAD	ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1/12						
313092		H3 3430 A 604						NOT USED							
313093		H3 3430 A 605						NOT USED							



Battelle - Physical Sciences Facility - PNNL

Project Name
Richland, Washington

Project Location
Design Development Drawing List

06109-03
Flad Project Number
December 7, 2006
Date

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD2/2A Design Development QA November 27, 2006	CD2/2A Design Development-PNNL Review December 8, 2006	CCDA Sitework and Foundations Package xx/xx/xxxx	CCDA Structural Steel Package xx/xx/xxxx	CD2-3A Design Development DOE Submittal 12/22/2006
313094	H3	3430	A	610			FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1/12						
313095	H3	3430	A	611			FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1/12						
313096	H3	3430	A	613			FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1/12						
313097	H3	3430	A	614				NOT USED							
313098	H3	3430	A	615				NOT USED							
313099	H3	3430	A	701			FLAD	ARCHITECTURAL - STAIR 0020 - PLANS AND SECTIONS	1/12						
313100	H3	3430	A	704			FLAD	ARCHITECTURAL - STAIR 0020 - DETAILS	1/12						
313101	H3	3430	A	701				NOT USED							
313102	H3	3430	A	800			FLAD	ARCHITECTURAL - ENLARGED PLANS	3/8						
313103	H3	3430	A	801				NOT USED							
313104	H3	3430	A	810			FLAD	ARCHITECTURAL - INTERIOR ELEVATIONS	3/8						
313105	H3	3430	A	811				NOT USED	3/8						
313106	H3	3430	A	910			FLAD	ARCHITECTURAL - DOOR AND OPENING - SCHEDULE	V						
313107	H3	3430	A	911				NOT USED							
313108	H3	3430	A	930			FLAD	ARCHITECTURAL INTERIOR DETAILS	V						
313109	H3	3430	A	931			FLAD	ARCHITECTURAL INTERIOR DETAILS	V						
313110	H3	3430	A	932				NOT USED							
313111	H3	3430	A	935				NOT USED	V						
313112	H3	3430	A	936				NOT USED	V						
313113	H3	3430	A	937				NOT USED	V						
313114	H3	3430	A	938				NOT USED	V						
								LABORATORY							
313115	H3	3430	Q	211-1	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 1 - PART 1 - LABORATORY PLAN	1/4		X	X			
313116	H3	3430	Q	211-2				NOT USED							
313117	H3	3430	Q	212-1	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 2 - PART 1 - LABORATORY PLAN	1/4		X	X			
313118	H3	3430	Q	212-2	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 2 - PART 2 - LABORATORY PLAN	1/4		X	X			
313119	H3	3430	Q	212-3				NOT USED							
313120	H3	3430	Q	212-4				NOT USED							
313121	H3	3430	Q	213-1	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 3 - PART 1 - LABORATORY PLAN	1/4		X	X			
313122	H3	3430	Q	213-2	1		FLAD	ARCHITECTURAL LEVEL 1 - AREA 3 - PART 2 - LABORATORY PLAN	1/4		X	X			
313123	H3	3430	Q	213-3				NOT USED							
313124	H3	3430	Q	213-4				NOT USED							
313125	H3	3430	Q	810			FLAD	ARCHITECTURAL LABORATORY ELEVATIONS	1/4						
313126	H3	3430	Q	811				NOT USED							
313127	H3	3430	Q	930			FLAD	ARCHITECTURAL LABORATORY DETAILS	1/4						
313128	H3	3430	Q	931				NOT USED							
313129	H3	3430	Q	935				NOT USED	V						
313130	H3	3430	Q	936				NOT USED	V						
313131	H3	3430	Q	937				NOT USED	V						
313132	H3	3430	Q	938				NOT USED	V						
								STRUCTURAL							
313133	H3	3430	S	101			FLAD	STRUCTURAL GENERAL NOTES, ABBREVIATIONS & SYMBOLS			X	X	X	X	
313134	H3	3430	S	210	1		FLAD	STRUCTURAL LEVEL 1 - FOUNDATION PLAN	3/64	X	X	X	X	X	
313135	H3	3430	S	211	1		FLAD	STRUCTURAL LEVEL 1 - AREA 1 - FOUNDATION PLAN	1/8	X	X	X	X	X	
313136	H3	3430	S	212	1		FLAD	STRUCTURAL LEVEL 1 - AREA 2 - FOUNDATION PLAN	1/8	X	X	X	X	X	
313137	H3	3430	S	213	1		FLAD	STRUCTURAL LEVEL 1 - AREA 3 - FOUNDATION PLAN	1/8	X	X	X	X	X	
313138															
313139	H3	3430	S	220	2		FLAD	STRUCTURAL LEVEL 2 - FRAMING PLAN	3/64	X	X	X		X	
313140	H3	3430	S	221	2		FLAD	STRUCTURAL LEVEL 2 - AREA 1 - FRAMING PLAN	1/8	X	X	X		X	
313141	H3	3430	S	222	2		FLAD	STRUCTURAL LEVEL 2 - AREA 2 - FRAMING PLAN	1/8	X	X	X		X	
313142	H3	3430	S	223	2		FLAD	STRUCTURAL LEVEL 2 - AREA 3 - FRAMING PLAN	1/8	X	X	X		X	
313143	H3	3430	S	230	3		FLAD	STRUCTURAL LEVEL 3 - FRAMING PLAN	3/64	X	X	X		X	
313144	H3	3430	S	231	3		FLAD	STRUCTURAL LEVEL 3 - AREA 1 - FRAMING PLAN	1/8	X	X	X		X	
313145	H3	3430	S	232	3		FLAD	STRUCTURAL LEVEL 3 - AREA 2 - FRAMING PLAN	1/8	X	X	X		X	
313146	H3	3430	S	233	3		FLAD	STRUCTURAL LEVEL 3 - AREA 3 - FRAMING PLAN	1/8	X	X	X		X	
313147	H3	3430	S	240	4		FLAD	STRUCTURAL LEVEL 4 - FRAMING PLAN	3/64	X	X	X		X	
313148	H3	3430	S	241	4		FLAD	STRUCTURAL LEVEL 4 - AREA 1 - FRAMING PLAN	1/8	X	X	X		X	
313149	H3	3430	S	242	4		FLAD	STRUCTURAL LEVEL 4 - AREA 2 - FRAMING PLAN	1/8	X	X	X		X	
313150	H3	3430	S	243	4		FLAD	STRUCTURAL LEVEL 4 - AREA 3 - FRAMING PLAN	1/8	X	X	X		X	
313151	H3	3430	S	401			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS	V		X	X		X	
313152	H3	3430	S	402			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS	V		X	X		X	
313153	H3	3430	S	403			FLAD	STRUCTURAL BRACED FRAME ELEVATIONS	V		X	X		X	
313154	H3	3430	S	404			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
313155	H3	3430	S	405			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
313156	H3	3430	S	406			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
313157	H3	3430	S	407			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
313158	H3	3430	S	408			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
313159	H3	3430	S	409			FLAD	STRUCTURAL BRACED FRAME DETAILS	V					X	
313160	H3	3430	S	501			FLAD	STRUCTURAL CONCRETE DETAILS	V		X	X	X		
313161	H3	3430	S	502			FLAD	STRUCTURAL CONCRETE DETAILS	V		X	X	X		

Flad & Associates

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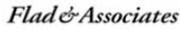
Project Name
Richland, Washington

Flad Project Number
December 7, 2006

Project Location
Design Development Drawing List

Drawn

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD22A Design Development QA November 27, 2006	CD23A Design development-PNNL Review December 8, 2006	CD0A Sitework and Foundations Package xxxx/xxxx	CD0A Structural Steel Package xxxx/xxxx	CD2-3A Design Development DOE Submittal 12/22/2006
313162		H3	3430	S	503		FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313163		H3	3430	S	504		FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313164		H3	3430	S	505		FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313165		H3	3430	S	506		FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313166		H3	3430	S	507		FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313167		H3	3430	S	508		FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313168		H3	3430	S	541		FLAD	STRUCTURAL STEEL DETAILS	V		X				
313169		H3	3430	S	542		FLAD	STRUCTURAL STEEL DETAILS	V		X				
313170		H3	3430	S	543		FLAD	STRUCTURAL STEEL DETAILS	V		X				
313171		H3	3430	S	544		FLAD	STRUCTURAL STEEL DETAILS	V			X			
313172		H3	3430	S	545		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313173		H3	3430	S	546		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313174		H3	3430	S	547		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313175		H3	3430	S	548		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313176		H3	3430	S	549		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313177		H3	3430	S	550		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313178		H3	3430	S	551		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313179		H3	3430	S	552		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313180		H3	3430	S	553		FLAD	STRUCTURAL STEEL DETAILS	V				X		
313181		H3	3430	S	601		FLAD	STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V		X				X
313182		H3	3430	S	602		FLAD	STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V			X			X
313183		H3	3430	S	603		FLAD	STRUCTURAL STEEL COLUMN SCHEDULE & DETAILS	V				X		X
								MECHANICAL							
313184		H3	3430	M	210	1	AEI	MECHANICAL - LEVEL 1 OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/64"	X			X		
313185		H3	3430	M	211-1	1	AEI	MECHANICAL - LEVEL 1 AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313186		H3	3430	M	211-2	1	AEI	MECHANICAL - LEVEL 1 AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313187		H3	3430	M	212-1	1	AEI	MECHANICAL - LEVEL 1 AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313188		H3	3430	M	212-2	1	AEI	MECHANICAL - LEVEL 1 AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313189		H3	3430	M	212-3	1	AEI	MECHANICAL - LEVEL 1 AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"				X		
313190		H3	3430	M	212-4	1	AEI	MECHANICAL - LEVEL 1 AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"				X		
313191		H3	3430	M	213-1	1	AEI	MECHANICAL - LEVEL 1 AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313192		H3	3430	M	213-2	1	AEI	MECHANICAL - LEVEL 1 AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313193		H3	3430	M	213-3	1	AEI	MECHANICAL - LEVEL 1 AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"				X		
313194		H3	3430	M	213-4	1	AEI	MECHANICAL - LEVEL 1 AREA 3 PART 4 - DUCT & PIPING PLAN	1/4"				X		
313195		H3	3430	M	220	2	AEI	MECHANICAL - LEVEL 2 OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/64"	X			X		
313196		H3	3430	M	221-1	2	AEI	MECHANICAL - LEVEL 2 AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313197		H3	3430	M	221-2	2	AEI	MECHANICAL - LEVEL 2 AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313198		H3	3430	M	222-1	2	AEI	MECHANICAL - LEVEL 2 AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313199		H3	3430	M	222-2	2	AEI	MECHANICAL - LEVEL 2 AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313200		H3	3430	M	222-3	2	AEI	MECHANICAL - LEVEL 2 AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"				X		
313201		H3	3430	M	222-4	2	AEI	MECHANICAL - LEVEL 2 AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"				X		
313202		H3	3430	M	223-1	2	AEI	MECHANICAL - LEVEL 2 AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313203		H3	3430	M	223-2	2	AEI	MECHANICAL - LEVEL 2 AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313204		H3	3430	M	223-3	2	AEI	MECHANICAL - LEVEL 2 AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"				X		
313205		H3	3430	M	223-4	2	AEI	MECHANICAL - LEVEL 2 AREA 3 PART 4 - DUCT & PIPING PLAN	1/4"				X		
313206		H3	3430	M	230	R	AEI	MECHANICAL - ROOF OVERALL AREA 1-3 - DUCT & PIPING PLAN	3/64"	X			X		
313207		H3	3430	M	231-1	R	AEI	MECHANICAL - ROOF AREA 1 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313208		H3	3430	M	231-2	R	AEI	MECHANICAL - ROOF AREA 1 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313209		H3	3430	M	232-1	R	AEI	MECHANICAL - ROOF AREA 2 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313210		H3	3430	M	232-2	R	AEI	MECHANICAL - ROOF AREA 2 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313211		H3	3430	M	232-3	R	AEI	MECHANICAL - ROOF AREA 2 PART 3 - DUCT & PIPING PLAN	1/4"				X		
313212		H3	3430	M	232-4	R	AEI	MECHANICAL - ROOF AREA 2 PART 4 - DUCT & PIPING PLAN	1/4"				X		
313213		H3	3430	M	233-1	R	AEI	MECHANICAL - ROOF AREA 3 PART 1 - DUCT & PIPING PLAN	1/4"	X			X		
313214		H3	3430	M	233-2	R	AEI	MECHANICAL - ROOF AREA 3 PART 2 - DUCT & PIPING PLAN	1/4"				X		
313215		H3	3430	M	233-3	R	AEI	MECHANICAL - ROOF AREA 3 PART 3 - DUCT & PIPING PLAN	1/4"				X		
313216		H3	3430	M	233-4	R	AEI	MECHANICAL - ROOF AREA 3 PART 4 - DUCT & PIPING PLAN	1/4"				X		
313217		H3	3430	M	511	1	AEI	MECHANICAL - LEVEL 1 AREA 1 - PRESSURE PLAN	1/8"				X		
313218		H3	3430	M	512	1	AEI	MECHANICAL - LEVEL 1 AREA 2 - PRESSURE PLAN	1/8"				X		
313219		H3	3430	M	513	1	AEI	MECHANICAL - LEVEL 1 AREA 3 - PRESSURE PLAN	1/8"				X		
313220		H3	3430	M	521	1	AEI	MECHANICAL - LEVEL 2 AREA 1 - PRESSURE PLAN	1/8"				X		
313221		H3	3430	M	522	1	AEI	MECHANICAL - LEVEL 2 AREA 2 - PRESSURE PLAN	1/8"				X		
313222		H3	3430	M	523	1	AEI	MECHANICAL - LEVEL 2 AREA 3 - PRESSURE PLAN	1/8"				X		
								ELECTRICAL							
313223		H3	3430	E	010		AEI	ELECTRICAL SCHEDULES	NTS				X		
313224		H3	3430	E	011		AEI	ELECTRICAL SCHEDULES	NTS				X		
313225		H3	3430	E			AEI	NOT USED	NTS						
313226		H3	3430	E	400		AEI	COMM ROOM ELEVATIONS	NTS						
313227		H3	3430	E			AEI	NOT USED	NTS						
313228		H3	3430	E	600		AEI	NOT USED	NTS						
313229		H3	3430	E			AEI	NOT USED	NTS						
313230		H3	3430	E	710		AEI	ELECTRICAL - NORMAL POWER RISER DIAGRAM	NTS				X		
313231		H3	3430	E	720		AEI	NOT USED	NTS						
313232		H3	3430	E	730		AEI	ELECTRICAL - FIRE ALARM RISER	NTS				X		
313233		H3	3430	E	731		AEI	NOT USED	NTS						
313234		H3	3430	E	732		AEI	NOT USED	NTS						
313235		H3	3430	E	733		AEI	NOT USED	NTS						
313236		H3	3430	E	734		AEI	NOT USED	NTS						
313237		H3	3430	E	735		AEI	NOT USED	NTS						



Battelle - Physical Sciences Facility - PNNL

06109-03

Project Name

Flad Project Number

Richland, Washington

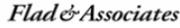
December 7, 2006

Project Location

Date

Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD23A Design Development OA November 27, 2006	CD23A Design development-PNNL Review December 8, 2006	CD3A Sitework and Foundations Package xx/xx/xxxx	CD3A Structural Steel Package xx/xx/xxxx	CD2-3A Design Development DOE Submittal 12/22/2006
313238	H3	3430	EP	210	1	AEI		ELECTRICAL - LEVEL 1 OVERALL AREAS 1-3 - POWER PLAN	3/64"			X			
313239	H3	3430	EP	211-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 1 - POWER PLAN	1/4"			X			
313240	H3	3430	EP	211-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 2 - POWER PLAN	1/4"			X			
313241	H3	3430	EP	212-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 1 - POWER PLAN	1/4"			X			
313242	H3	3430	EP	212-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 2 - POWER PLAN	1/4"			X			
313243	H3	3430	EP	212-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 3 - POWER PLAN	1/4"			X			
313244	H3	3430	EP	212-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 4 - POWER PLAN	1/4"			X			
313245	H3	3430	EP	213-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 1 - POWER PLAN	1/4"			X			
313246	H3	3430	EP	213-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 2 - POWER PLAN	1/4"			X			
313247	H3	3430	EP	213-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 3 - POWER PLAN	1/4"			X			
313248	H3	3430	EP	213-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 4 - POWER PLAN	1/4"			X			
313249	H3	3430	EP	220	2	AEI		ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - POWER PLAN	3/64"			X			
313250	H3	3430	EP	221-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 1 - POWER PLAN	1/4"			X			
313251	H3	3430	EP	221-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 2 - POWER PLAN	1/4"			X			
313252	H3	3430	EP	221-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 3 - POWER PLAN	1/4"			X			
313253	H3	3430	EP	222-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 2 - POWER PLAN	1/4"			X			
313254	H3	3430	EP	222-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 3 - POWER PLAN	1/4"			X			
313255	H3	3430	EP	222-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 4 - POWER PLAN	1/4"			X			
313256	H3	3430	EP	223-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 1 - POWER PLAN	1/4"			X			
313257	H3	3430	EP	223-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 2 - POWER PLAN	1/4"			X			
313258	H3	3430	EP	223-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 3 - POWER PLAN	1/4"			X			
313259	H3	3430	EP	223-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 4 - POWER PLAN	1/4"			X			
313260															
313261	H3	3430	EP	230	R	AEI		ELECTRICAL - ROOF OVERALL AREAS 1-3 - POWER PLAN	3/64"			X			
313262	H3	3430	EP	231-1	R	AEI		ELECTRICAL - ROOF AREA 1 PART 1 - POWER PLAN	1/4"			X			
313263	H3	3430	EP	231-2	R	AEI		ELECTRICAL - ROOF AREA 1 PART 2 - POWER PLAN	1/4"			X			
313264	H3	3430	EP	232-1	R	AEI		ELECTRICAL - ROOF AREA 2 PART 1 - POWER PLAN	1/4"			X			
313265	H3	3430	EP	232-2	R	AEI		ELECTRICAL - ROOF AREA 2 PART 2 - POWER PLAN	1/4"			X			
313266	H3	3430	EP	232-3	R	AEI		ELECTRICAL - ROOF AREA 2 PART 3 - POWER PLAN	1/4"			X			
313267	H3	3430	EP	232-4	R	AEI		ELECTRICAL - ROOF AREA 2 PART 4 - POWER PLAN	1/4"			X			
313268	H3	3430	EP	233-1	R	AEI		ELECTRICAL - ROOF AREA 3 PART 1 - POWER PLAN	1/4"			X			
313269	H3	3430	EP	233-2	R	AEI		ELECTRICAL - ROOF AREA 3 PART 2 - POWER PLAN	1/4"			X			
313270	H3	3430	EP	233-3	R	AEI		ELECTRICAL - ROOF AREA 3 PART 3 - POWER PLAN	1/4"			X			
313271	H3	3430	EP	233-4	R	AEI		ELECTRICAL - ROOF AREA 3 PART 4 - POWER PLAN	1/4"			X			
313272	H3	3430	EL	210	1	AEI		ELECTRICAL - LEVEL 1 OVERALL AREAS 1-3 - LIGHTING PLAN	3/64"			X			
313273	H3	3430	EL	211-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 1 - LIGHTING PLAN	1/4"			X			
313274	H3	3430	EL	211-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 2 - LIGHTING PLAN	1/4"			X			
313275	H3	3430	EL	212-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 1 - LIGHTING PLAN	1/4"			X			
313276	H3	3430	EL	212-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 2 - LIGHTING PLAN	1/4"			X			
313277	H3	3430	EL	212-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 3 - LIGHTING PLAN	1/4"			X			
313278	H3	3430	EL	212-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 4 - LIGHTING PLAN	1/4"			X			
313279	H3	3430	EL	213-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 1 - LIGHTING PLAN	1/4"			X			
313280	H3	3430	EL	213-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 2 - LIGHTING PLAN	1/4"			X			
313281	H3	3430	EL	213-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 3 - LIGHTING PLAN	1/4"			X			
313282	H3	3430	EL	213-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 4 - LIGHTING PLAN	1/4"			X			
313283															
313284	H3	3430	EL	220	2	AEI		ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - LIGHTING PLAN	3/64"			X			
313285	H3	3430	EL	221-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 1 - LIGHTING PLAN	1/4"			X			
313286	H3	3430	EL	221-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 2 - LIGHTING PLAN	1/4"			X			
313287	H3	3430	EL	222-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 1 - LIGHTING PLAN	1/4"			X			
313288	H3	3430	EL	222-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 2 - LIGHTING PLAN	1/4"			X			
313289	H3	3430	EL	222-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 3 - LIGHTING PLAN	1/4"			X			
313290	H3	3430	EL	222-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 4 - LIGHTING PLAN	1/4"			X			
313291	H3	3430	EL	223-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 1 - LIGHTING PLAN	1/4"			X			
313292	H3	3430	EL	223-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 2 - LIGHTING PLAN	1/4"			X			
313293	H3	3430	EL	223-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 3 - LIGHTING PLAN	1/4"			X			
313294	H3	3430	EL	223-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 4 - LIGHTING PLAN	1/4"			X			
313295															
313296	H3	3430	EL	230	R	AEI		ELECTRICAL - ROOF OVERALL AREAS 1-3 - LIGHTING PLAN	3/64"			X			
313297	H3	3430	EL	231-1	R	AEI		ELECTRICAL - ROOF AREA 1 PART 1 - LIGHTING PLAN	1/4"			X			
313298	H3	3430	EL	231-2	R	AEI		ELECTRICAL - ROOF AREA 1 PART 2 - LIGHTING PLAN	1/4"			X			
313299	H3	3430	EL	232-1	R	AEI		ELECTRICAL - ROOF AREA 2 PART 1 - LIGHTING PLAN	1/4"			X			
313300	H3	3430	EL	232-2	R	AEI		ELECTRICAL - ROOF AREA 2 PART 2 - LIGHTING PLAN	1/4"			X			
313301	H3	3430	EL	232-3	R	AEI		ELECTRICAL - ROOF AREA 2 PART 3 - LIGHTING PLAN	1/4"			X			
313302	H3	3430	EL	232-4	R	AEI		ELECTRICAL - ROOF AREA 2 PART 4 - LIGHTING PLAN	1/4"			X			
313303	H3	3430	EL	233-1	R	AEI		ELECTRICAL - ROOF AREA 3 PART 1 - LIGHTING PLAN	1/4"			X			
313304	H3	3430	EL	233-2	R	AEI		ELECTRICAL - ROOF AREA 3 PART 2 - LIGHTING PLAN	1/4"			X			
313305	H3	3430	EL	233-3	R	AEI		ELECTRICAL - ROOF AREA 3 PART 3 - LIGHTING PLAN	1/4"			X			
313306	H3	3430	EL	233-4	R	AEI		ELECTRICAL - ROOF AREA 3 PART 4 - LIGHTING PLAN	1/4"			X			
313307															
313308	H3	3430	ES	210	1	AEI		ELECTRICAL - LEVEL 1 OVERALL AREAS 1-3 - SYSTEMS PLAN	3/64"			X			
313309	H3	3430	ES	211-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 1 - SYSTEMS PLAN	1/4"			X			
313310	H3	3430	ES	211-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 1 PART 2 - SYSTEMS PLAN	1/4"			X			
313311	H3	3430	ES	212-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 1 - SYSTEMS PLAN	1/4"			X			
313312	H3	3430	ES	212-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 2 - SYSTEMS PLAN	1/4"			X			
313313	H3	3430	ES	212-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 3 - SYSTEMS PLAN	1/4"			X			
313314	H3	3430	ES	212-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 2 PART 4 - SYSTEMS PLAN	1/4"			X			
313315	H3	3430	ES	213-1	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 1 - SYSTEMS PLAN	1/4"			X			
313316	H3	3430	ES	213-2	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 2 - SYSTEMS PLAN	1/4"			X			
313317	H3	3430	ES	213-3	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 3 - SYSTEMS PLAN	1/4"			X			
313318	H3	3430	ES	213-4	1	AEI		ELECTRICAL - LEVEL 1 AREA 3 PART 4 - SYSTEMS PLAN	1/4"			X			
313319	H3	3430	ES	220	2	AEI		ELECTRICAL - LEVEL 2 OVERALL AREAS 1-3 - SYSTEMS PLAN	3/64"			X			
313320	H3	3430	ES	221-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 1 - SYSTEMS PLAN	1/4"			X			
313321	H3	3430	ES	221-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 1 PART 2 - SYSTEMS PLAN	1/4"			X			
313322	H3	3430	ES	222-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 1 - SYSTEMS PLAN	1/4"			X			
313323	H3	3430	ES	222-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 2 PART 2 - SYSTEMS PLAN	1/4"			X			

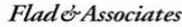


Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location

06109-03
Flad Project Number
December 7, 2006
Date

Design Development Drawing List

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD2/3A Design Development QA November 27, 2006	CD2/3A Design development/PNNL Review December 8, 2006	CD3A Structural Steel Package xx/xx/xxxx	CD2-3A Design Development DOE Submittal 12/22/2006
313323	H3	3430	ES	223-1	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 1 - SYSTEMS PLAN	1/4"			X		
313324	H3	3430	ES	223-2	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 2 - SYSTEMS PLAN	1/4"			X		
313325	H3	3430	ES	223-3	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 3 - SYSTEMS PLAN	1/4"			X		
313326	H3	3430	ES	223-4	2	AEI		ELECTRICAL - LEVEL 2 AREA 3 PART 4 - SYSTEMS PLAN	1/4"			X		
313327	H3	3430	ES	230	R	AEI		ELECTRICAL - ROOF OVERALL AREAS 1-3 - SYSTEMS PLAN	3/64"			X		
313328	H3	3430	ES	231-1	R	AEI		ELECTRICAL - ROOF AREA 1 PART 1 - SYSTEMS PLAN	1/4"			X		
313329	H3	3430	ES	231-2	R	AEI		ELECTRICAL - ROOF AREA 1 PART 2 - SYSTEMS PLAN	1/4"			X		
313330	H3	3430	ES	232-1	R	AEI		ELECTRICAL - ROOF AREA 2 PART 1 - SYSTEMS PLAN	1/4"			X		
313331	H3	3430	ES	232-2	R	AEI		ELECTRICAL - ROOF AREA 2 PART 2 - SYSTEMS PLAN	1/4"			X		
313332	H3	3430	ES	232-3	R	AEI		ELECTRICAL - ROOF AREA 2 PART 3 - SYSTEMS PLAN	1/4"			X		
313333	H3	3430	ES	232-4	R	AEI		ELECTRICAL - ROOF AREA 2 PART 4 - SYSTEMS PLAN	1/4"			X		
313334	H3	3430	ES	233-1	R	AEI		ELECTRICAL - ROOF AREA 3 PART 1 - SYSTEMS PLAN	1/4"			X		
313335	H3	3430	ES	233-2	R	AEI		ELECTRICAL - ROOF AREA 3 PART 2 - SYSTEMS PLAN	1/4"			X		
313336	H3	3430	ES	233-3	R	AEI		ELECTRICAL - ROOF AREA 3 PART 3 - SYSTEMS PLAN	1/4"			X		
313337	H3	3430	ES	233-4	R	AEI		ELECTRICAL - ROOF AREA 3 PART 4 - SYSTEMS PLAN	1/4"			X		
								PLUMBING AND FIRE PROTECTION						
313338	H3	3430	P	210F	F	AEI		PLUMBING - FOUNDATION OVERALL AREAS 1-3 - PLAN	3/64"	X		X		
313339	H3	3430	P	211F-1	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 1 - PLAN	1/4"	X		X		
313340	H3	3430	P	211F-2	F	AEI		PLUMBING - FOUNDATION AREA 1 PART 2 - PLAN	1/4"	X		X		
313341	H3	3430	P	212F-1	F	AEI		PLUMBING - FOUNDATION AREA 2 PART 1 - PLAN	1/4"	X		X		
313342	H3	3430	P	212F-2	F	AEI		PLUMBING - FOUNDATION AREA 2 PART 2 - PLAN	1/4"	X		X		
313343	H3	3430	P	212F-3	F	AEI		PLUMBING - FOUNDATION AREA 2 PART 3 - PLAN	1/4"	X		X		
313344	H3	3430	P	212F-4	F	AEI		PLUMBING - FOUNDATION AREA 2 PART 4 - PLAN	1/4"	X		X		
313345	H3	3430	P	213F-1	F	AEI		PLUMBING - FOUNDATION AREA 3 PART 1 - PLAN	1/4"	X		X		
313346	H3	3430	P	213F-2	F	AEI		PLUMBING - FOUNDATION AREA 3 PART 2 - PLAN	1/4"	X		X		
313347	H3	3430	P	213F-3	F	AEI		PLUMBING - FOUNDATION AREA 3 PART 3 - PLAN	1/4"	X		X		
313348	H3	3430	P	213F-4	F	AEI		PLUMBING - FOUNDATION AREA 3 PART 4 - PLAN	1/4"	X		X		
313349	H3	3430	P	210	1	AEI		PLUMBING - LEVEL 1 OVERALL AREAS 1-3 - PLAN	3/64"	X		X		
313350	H3	3430	P	211-1	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 1 - PLAN	1/4"	X		X		
313351	H3	3430	P	211-2	1	AEI		PLUMBING - LEVEL 1 AREA 1 PART 2 - PLAN	1/4"	X		X		
313352	H3	3430	P	212-1	1	AEI		PLUMBING - LEVEL 1 AREA 2 PART 1 - PLAN	1/4"	X		X		
313353	H3	3430	P	212-2	1	AEI		PLUMBING - LEVEL 1 AREA 2 PART 2 - PLAN	1/4"	X		X		
313354	H3	3430	P	212-3	1	AEI		PLUMBING - LEVEL 1 AREA 2 PART 3 - PLAN	1/4"	X		X		
313355	H3	3430	P	212-4	1	AEI		PLUMBING - LEVEL 1 AREA 2 PART 4 - PLAN	1/4"	X		X		
313356	H3	3430	P	213-1	1	AEI		PLUMBING - LEVEL 1 AREA 3 PART 1 - PLAN	1/4"	X		X		
313357	H3	3430	P	213-2	1	AEI		PLUMBING - LEVEL 1 AREA 3 PART 2 - PLAN	1/4"	X		X		
313358	H3	3430	P	213-3	1	AEI		PLUMBING - LEVEL 1 AREA 3 PART 3 - PLAN	1/4"	X		X		
313359	H3	3430	P	213-4	1	AEI		PLUMBING - LEVEL 1 AREA 3 PART 4 - PLAN	1/4"	X		X		
313360	H3	3430	P	220	2	AEI		PLUMBING - LEVEL 2 OVERALL AREAS 1-3 - PLAN	3/64"	X		X		
313361	H3	3430	P	221-1	2	AEI		PLUMBING - LEVEL 2 AREA 1 PART 1 - PLAN	1/4"	X		X		
313362	H3	3430	P	221-2	2	AEI		PLUMBING - LEVEL 2 AREA 1 PART 2 - PLAN	1/4"	X		X		
313363	H3	3430	P	222-1	2	AEI		PLUMBING - LEVEL 2 AREA 2 PART 1 - PLAN	1/4"	X		X		
313364	H3	3430	P	222-2	2	AEI		PLUMBING - LEVEL 2 AREA 2 PART 2 - PLAN	1/4"	X		X		
313365	H3	3430	P	222-3	2	AEI		PLUMBING - LEVEL 2 AREA 2 PART 3 - PLAN	1/4"	X		X		
313366	H3	3430	P	222-4	2	AEI		PLUMBING - LEVEL 2 AREA 2 PART 4 - PLAN	1/4"	X		X		
313367	H3	3430	P	223-1	2	AEI		PLUMBING - LEVEL 2 AREA 3 PART 1 - PLAN	1/4"	X		X		
313368	H3	3430	P	223-2	2	AEI		PLUMBING - LEVEL 2 AREA 3 PART 2 - PLAN	1/4"	X		X		
313369	H3	3430	P	223-3	2	AEI		PLUMBING - LEVEL 2 AREA 3 PART 3 - PLAN	1/4"	X		X		
313370	H3	3430	P	223-4	2	AEI		PLUMBING - LEVEL 2 AREA 3 PART 4 - PLAN	1/4"	X		X		
313371	H3	3430	P	230	R	AEI		PLUMBING - ROOF OVERALL AREAS 1-3 - PLAN	3/64"	X		X		
313372	H3	3430	P	231-1	R	AEI		PLUMBING - ROOF AREA 1 PART 1 - PLAN	1/4"	X		X		
313373	H3	3430	P	231-2	R	AEI		PLUMBING - ROOF AREA 1 PART 2 - PLAN	1/4"	X		X		
313374	H3	3430	P	232-1	R	AEI		PLUMBING - ROOF AREA 2 PART 1 - PLAN	1/4"	X		X		
313375	H3	3430	P	232-2	R	AEI		PLUMBING - ROOF AREA 2 PART 2 - PLAN	1/4"	X		X		
313376	H3	3430	P	232-3	R	AEI		PLUMBING - ROOF AREA 2 PART 3 - PLAN	1/4"	X		X		
313377	H3	3430	P	232-4	R	AEI		PLUMBING - ROOF AREA 2 PART 4 - PLAN	1/4"	X		X		
313378	H3	3430	P	233-1	R	AEI		PLUMBING - ROOF AREA 3 PART 1 - PLAN	1/4"	X		X		
313379	H3	3430	P	233-2	R	AEI		PLUMBING - ROOF AREA 3 PART 2 - PLAN	1/4"	X		X		
313380	H3	3430	P	233-3	R	AEI		PLUMBING - ROOF AREA 3 PART 3 - PLAN	1/4"	X		X		
313381	H3	3430	P	233-4	R	AEI		PLUMBING - ROOF AREA 3 PART 4 - PLAN	1/4"	X		X		
313382	H3	3430	FP	210	1	AEI		FIRE PROTECTION - LEVEL 1 OVERALL AREAS 1-3 - PLAN	3/64"	X		X		
313383	H3	3430	FP	211	1	AEI		FIRE PROTECTION - LEVEL 1 AREA 1 - PLAN	1/8"	X		X		
313384	H3	3430	FP	212	1	AEI		FIRE PROTECTION - LEVEL 1 AREA 2 - PLAN	1/8"	X		X		
313385	H3	3430	FP	213	1	AEI		FIRE PROTECTION - LEVEL 1 AREA 3 - PLAN	1/8"	X		X		
313386	H3	3430	FP	220	2	AEI		FIRE PROTECTION - LEVEL 2 OVERALL AREAS 1-3 - PLAN	3/64"	X		X		
313387	H3	3430	FP	221	2	AEI		FIRE PROTECTION - LEVEL 2 AREA 1 - PLAN	1/8"	X		X		
313388	H3	3430	FP	222	2	AEI		FIRE PROTECTION - LEVEL 2 AREA 2 - PLAN	1/8"	X		X		
313389	H3	3430	FP	223	2	AEI		FIRE PROTECTION - LEVEL 2 AREA 3 - PLAN	1/8"	X		X		



Battelle - Physical Sciences Facility - PNNL
Project Name
Richland, Washington
Project Location
Design Development Drawing List

06109-03
Final Project Number
December 7, 2006
Date

DOE SHEET NUMBERS	INDEX NOS	DOE DESIGNATION	BUILDING NOS	DISCIPLINE	SHEET	FLOOR	RESPONSIBILITY	TITLE	SCALE	SD-001 Schematic Design September 14, 2006	CD203A Design Development OA November 27, 2006	CD203A Design Development PNNL Review December 8, 2006	CD0A Slewwork and Foundations Package xx/xx/xxxx	CD0A Structural Steel Package xx/xx/xxxx	CD2-3A Design Development DOE Submittal 12/22/2006
BUILDING 3440 - LARGE DETECTOR BUILDING															
ARCHITECTURE															
313390		H3 3440	A 000				FLAD	PNNL-PSF TITLE SHEET - BUILDING 3440	NTS	X		X			
313391		H3 3440	A 001				FLAD	PNNL-PSF TITLE SHEET - BUILDING 3440	NTS	X		X			
313392		H3 3440	A 001					NOT USED	NTS	X					
313393		H3 3440	A 001					NOT USED	NTS	X					
313394		H3 3440	A 001					NOT USED	NTS	X					
313395		H3 3440	A 021			1/2	FLAD	ARCHITECTURAL LIFE SAFETY PLAN - LEVEL 1 & 2	1/8	X	X	X			
313396		H3 3440	A 210			1/2/3	FLAD	ARCHITECTURAL - LEVEL 1, 2 AND 3 - FLOOR PLANS	1/8	X	X	X			
313397		H3 3440	A 261			1/2	FLAD	ARCHITECTURAL - LEVEL 1 & 2 FINISH PLANS - LEVEL 1, 2	1/8		X	X			
313398		H3 3440	A 271			1/2	FLAD	ARCHITECTURAL - LEVEL 1 & 2 SIGNAGE PLANS - LEVEL 1, 2	1/8						
313399		H3 3440	A 281			1/2	FLAD	ARCHITECTURAL - LEVEL 1 & 2 - FURNITURE PLAN	1/8		X				
313400		H3 3440	A 310			1	FLAD	ARCHITECTURAL - REFLECTED CEILING - LEVEL 1	1/8		X	X			
313401		H3 3440	A 400				FLAD	ARCHITECTURAL - EXTERIOR ELEVATIONS	1/8	X	X	X			
313402		H3 3440	A 410				FLAD	ARCHITECTURAL - BUILDING SECTIONS	1/8	X	X	X			
313403		H3 3440	A 600				FLAD	ARCHITECTURAL - EXTERIOR - PLAN DETAILS	1 1/2						
313404		H3 3440	A 602					NOT USED	1 1/2						
313405		H3 3440	A 610				FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1 1/2		X	X			
313406		H3 3440	A 611				FLAD	ARCHITECTURAL - EXTERIOR - SECTION DETAILS	1 1/2		X	X			
313407		H3 3440	A 614					NOT USED							
313408		H3 3440	A 701				FLAD	ARCHITECTURAL - STAIR 0010 - PLANS AND SECTIONS	1 1/2						
313409		H3 3440	A 702				FLAD	ARCHITECTURAL - STAIR 0010 - DETAILS	1 1/2						
313410		H3 3440	A 703					NOT USED							
313411		H3 3440	A 810				FLAD	ARCHITECTURAL - INTERIOR ELEVATIONS	3/8						
313412		H3 3440	A 811					NOT USED							
313413		H3 3440	A 910				FLAD	ARCHITECTURAL - DOOR AND OPENING - SCHEDULE	V						
313414		H3 3440	A 911					NOT USED							
313415		H3 3440	A 930				FLAD	ARCHITECTURAL INTERIOR DETAILS	V						
313416		H3 3440	A 931				FLAD	ARCHITECTURAL INTERIOR DETAILS	V						
313417		H3 3440	A 932					NOT USED							
313418		H3 3440	A 935				FLAD	NOT USED	V						
313419		H3 3440	A 936				FLAD	NOT USED	V						
313420		H3 3440	A 937				FLAD	NOT USED	V						
LABORATORY															
313421		H3 3440	Q 210			1	FLAD	ARCHITECTURAL - LEVEL 1 - LABORATORY PLAN	1/4	X	X	X			
313422		H3 3440	Q 810				FLAD	ARCHITECTURAL LABORATORY ELEVATIONS	1/4						
313423		H3 3440	Q 930				FLAD	ARCHITECTURAL LABORATORY DETAILS	V						
313424		H3 3440	Q 935					NOT USED	V						
313425		H3 3440	Q 936					NOT USED	V						
313426		H3 3440	Q 937					NOT USED	V						
STRUCTURAL															
313427		H3 3440	S 101				FLAD	STRUCTURAL GENERAL NOTES, ABBREVIATIONS & SYMBOLS			X	X	X	X	
313428		H3 3440	S 210			1	FLAD	STRUCTURAL LEVEL 1 - FOUNDATION PLAN	3/64	X	X	X	X		
313429		H3 3440	S 220			2	FLAD	STRUCTURAL LEVEL 2 - FRAMING PLAN	3/64	X	X	X		X	
313430		H3 3440	S 230			3	FLAD	STRUCTURAL LEVEL 3 - FRAMING PLAN	3/64	X	X	X		X	
313431		H3 3440	S 240			4	FLAD	STRUCTURAL LEVEL 4 - FRAMING PLAN	3/64	X	X	X		X	
313432		H3 3440	S 401				FLAD	STRUCTURAL BRACED FRAME ELEVATIONS	V		X	X			X
313433		H3 3440	S 402				FLAD	STRUCTURAL BRACED FRAME DETAILS	V						X
313434		H3 3440	S 403				FLAD	STRUCTURAL BRACED FRAME DETAILS	V						X
313435		H3 3440	S 501				FLAD	STRUCTURAL CONCRETE DETAILS	V			X	X		
313436		H3 3440	S 502				FLAD	STRUCTURAL CONCRETE DETAILS	V			X	X		
313437		H3 3440	S 503				FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313438		H3 3440	S 504				FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313439		H3 3440	S 505				FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313440		H3 3440	S 506				FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313441		H3 3440	S 507				FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313442		H3 3440	S 508				FLAD	STRUCTURAL CONCRETE DETAILS	V				X		
313443		H3 3440	S 541				FLAD	STRUCTURAL STEEL DETAILS	V			X		X	

Attachment C

PSF-HRT Design Review Members

Name	Position/Title
Jeff Pittman	PSF HRT Project Manager
Dale Flowers	HRT Project Manager
Robert Steele	PSF Lead Project Engineer
George Stewart	Construction Manager
Gary Kelmel	Facilities Senior Engineer
Dan Edwards	ES&H Lead
Doug Larson	Lead Electrical Engineer
David Brown	Lead Mechanical Engineer
Dave Koontz	Lead Civil Engineer
Jason Pope	Electrical Engineer
Stuart Saslow	Civil Engineer
Marc Berman	PNNL Facility Energy Manager
Dale Schielke	Principle Building Engineer
Larry McClellan	Capability Liaison
Loni Peurrung	Director, Materials Division
Larry Casazza	Manager, Advanced Radioanalytical Chemistry Group
J. Mathew Barnett	Environmental Specialist
Vinh T Nguyen	Quality Assurance
Don Kelly	Worker Safety
Andrew Minister	Fire Protection
Cheryl Duchsherer	Environmental

Attachment D

PSF-HRT Document Review Records

DOCUMENT REVIEW RECORD

Document No. FX-108	Document Title Comments to Flad PSF Design Development Package Dated 12-08-06	Page 1 of 15
The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call _Robert Steele (376-1489) or Dale Schielke (376-1539). Comments Due: 01 /08/2007 .		
Organization/Department PNNL F&O Engineering (Construction Management)	Designated Reviewer Gary J. Kelmel	Reviewer Signature (Upon completion of review)
		Date

Comment		Comments and Recommendations	Resolution
Number	Type*		
001	M	<p>Comments against All Buildings-General/Typical Information Drawing Package: Civil/Landscaping/Architectural/Mechanical/Electrical</p> <p>Drwg C002 Civil Site Survey: Revise drawing to include as-built locations of test pits and boreholes, and location of existing waterlines, and buried fiber optic cables, as verified by Permit Survey on December 18, 2006.</p> <p>Also Signature on canal to be saved is "Ed Jones," not "Ed Johnson."</p>	
002	M	<p>Drawing C101 Civil Site Grading/Stormwater:</p> <p>Revise stormwater management Narrative to address wind erosion and wind-bourne sediments. Add silt fence minimum requirements to the east side of the site also, as predominant wind is from the southwest.</p> <p>Also Sheet Notes #1: The Ed Jones, (not Ed Johnson) section of the canal is not to be relocated to finish grade; It is to be salvaged and relocated to a site in Richland within 5 miles as noted in Foundation Package Division 1 section Summary of Work, Section 01 1100 -5</p>	

***Comment Type:**

- E** = **Editorial** – Addresses word processing errors that do not adversely impact the integrity of the document.
O = **Optional** – Comment resolution provides clarification, but does not impact the integrity of the document.
M = **Mandatory** – Comment shall be resolved, reviewer identifies impact on the integrity of the document.

Comment		Comments and Recommendations	Resolution
Number	Type*		
		Provide interim site-grading plan for site work/Foundation contractor to grade to for the first package. The landscaping and paving contractor will grade to the final grades currently shown on this drawing.	
003	M	<p>Drawing C102 Civil Site Utility Plan</p> <p>Sheet Notes 3, 4: The city of Richland will perform the Cut and Cap and reconnection activities on the 16-inch waterline at the north and south interface points.</p> <p>Also revise location of the existing waterlines to reflect as-built locations from the December 18, 2006, Permit Survey.</p>	
004	M	<p>Drawing C507 Civil Site Details</p> <p>Zone E/F, 1,2,3: Pipe Thrust Block Table and Notes:</p> <p>Clarify the units in the table for the various fitting bends; are these square foot of bearing areas or cubic feet of concrete for thrust blocks?</p> <p>Also: delete reference to Class 5 concrete and use concrete specification designations for 2500 psi, or 3000 psi concrete.</p>	
005	M	<p>Drawing C508 Civil Site Details</p> <p>Detail 6 Brick paving on Concrete Subslab: Provide size and spacing of dowel bars.</p> <p>Identify depth of topsoil to be placed and correlate to finish grades shown on grading plans.</p>	
006	M	<p>Drawings 3410 A500 thru A503, A610, 611, 612 - Architectural Exterior Wall and Slab Details</p> <p>Coordinate architectural concrete details</p>	

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		<p>for brick shelves, chamfered corner edges, slab boxouts, stemwall projections, perimeter concrete wall and slab rigid insulation with the structural concrete details shown on each building structural package.</p> <p>Example: Bldg 3410 perimeter stem wall concrete details on 3410 S501, S502 do not refer to architectural details or show these features.</p>	
007	M	<p>Drawing M900 Mechanical Details:</p> <p>Detail 1 for anchoring pipe supports to steel joist and to concrete slabs are not applicable to the major PSF buildings. Suggest a designed structural steel common support system be incorporated for the main corridor piping runs for the hydronic and utility systems instead of individual pipe supports.</p>	
008	M	<p>Drawing E720: Electrical building Grounding</p> <p>Address requirements for ground rods, ground grid, connections to structural steel and reinforcing steel.</p> <p>The grounding riser diagram denotes grounding the incoming water service entrance, and depicts ground symbols off the service ground Reference Bus, but does not indicate ground grid requirements.</p>	
009	M	<p>Building 3410 MS&T: Arch/Struct/lab Package:</p> <p>Drwg A211 Room 1711: Coordinate Rad and Process Waste collection and loadout configurations with the structural and plumbing drawings S211 and P211F-1, (above-grade or below-grade tanks, grating, sumps?) See Flad Trip Grant Email to PNNL dated December 12, 2006 Re PNNL PSF – Cost Estimate Clarifications, for Rad Waste Details.</p>	

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010	M	<p>Drwg 3410 A220, A221, A222</p> <p>Coordinate phantom outline locations of 2nd level AHU's with Mechanical Drwgs; The north AHU unit is shown on the arch drawings as straddling Column line P which according to the Structural drawings (S211) has columns at this level.</p> <p>Verify at other buildings.</p>	
011	M	<p>General Comment: All Buildings</p> <p>Verify that the double doors, and orientation of the double doors relative to the Equipment Lifts (Elevator) will allow movement of 2nd floor-level and roof-level large-sized mechanical equipment, replacement motors, coil sections, etc.</p> <p>Example: Bldg 3410: A211, A221,A231: first floor has access to the equipment lift from the east; second level has access to the lift from the west; roof level has double doors on the south side of the lift. Will this interfere with the lift guides/side rails ????? Verify with type of lift specified.</p>	
012	M	<p>Drawing 3410 A212: Exposed AEES Steel at interior of curtain wall at main building entrance; (columns W/Y, and AB/AD along 6 line;) clarify 1-inch diameter expose rod cross bracing (S212, S401 Dtl 2) interface with interior features, interior sunshades, light shelf, etc.</p>	
013	M	<p>Furniture Plans Drawing 3410 A283: Notes refer to a "Project Manual" furniture and workstation requirements should be addressed in the FLAD PSF project specification.</p> <p>Also applies to other architectural drawings.</p>	

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014	M	<p>General Comment:</p> <p>Roof drain and overflow piping is routed within finished areas. Architectural drawings do not depict this piping being boxed in with drywall or concealed. This piping is usually insulated to prevent condensation.</p> <p>Also address piping penetrations through curtainwall.</p> <p>Verify this is the design intent.</p> <p>Example 3410 Drawing A212, A213: Curtainwall along col line 5, at Col Q, W, AF and plumbing drawings 3410 P212-3, P212-4, P213-2</p>	
015	M	<p>General Architectural/Structural Comment:</p> <p>For final design/construction media, provide Cumulative dimensioning of buildings to depict overall size of buildings.</p> <p>Individual column spacing dimensions without a cumulative dimension will lead to construction errors.</p>	
016	M	<p>Drawing 3410 S101: Structural General Notes: Material Strengths; Note 6:</p> <p>The Flad/Shannon and Wilson Geotech Report should designate an allowable bearing pressure. This should not be a contractor requirement.</p>	
017	M	<p>General Comment:</p> <p>With the current requirement for separate standalone construction documents to support the construction contracting strategy (Sitework/Foundation Package, Structural Steel Package, Arch/MEP Balance of Plant Package, Paving and Landscaping Package), a method for depicting work specific to a particular package needs to be finalized when overlapping scope is shown on the same drawing; (i.e. Notes on each drawing, ballooning/clouding, phantom lines,</p>	

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		<p>etc.?????)</p> <p>Example: Structural drawings: Concrete footings and foundation walls are part of the Sitework/Foundation Package, whereas concrete slab-on-grade installation will be in the Arch/MEP Balance of Plant Contract.</p> <p><u>Request a breakout session between PNNL Project/CM and Flad management to implement the required coordination for proper scope definition.</u></p>	
016	M	<p>General Comment: All Buildings</p> <p>Structural Drawings: Require dimensioning and details for thickened slabs, elevator pits, and Rad/PW sumps and pits to include embeds, etc., and structural steel column and anchor bolt schedule.</p>	
017	M	<p>General Comment:</p> <p><u>Constructability Issue with Installation of AHU units in 2nd level of all lab buildings.</u></p> <p>It has become apparent that a scheduling/coordination issue arose with the placement of all the HVAC air-handler units (factory pre-assembled and tested sized up to approx 40' long by 16' wide by 9' high and weighing up to 49,000 lbs) within the mezzanine level of each building, rather than in rooftop penthouses, as originally planned. Our current contracting scheme and schedule has all the structural steel being completed and floor and roof decks placed before the ARCH/MEP contractor can procure and set the air-handler units (two separate construction contracts).</p> <p>Recommendation: Have the Structural Steel contractor procure all roof structural steel and roof decking and temporarily install it at the bays in which the HVAC AHUs will later be installed. The ARCH/MEP contractor will procure the</p>	

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		<p>AHUs, remove the temporarily installed decking and roof purlins and beams, set the AHUs, and permanently reinstall the structural steel and roof decking, and pour back the lightweight roof concrete.</p> <p>This will require the A/E design media to designate the appropriate roof level structural steel and metal decking to be temporarily installed and removed, along with bulkhead details for the lightweight roof concrete, and temporary roof deck attachments.</p> <p><u>Request a breakout session between PNNL CM and Flad structural designers to implement the required coordination.</u></p>	
018	M	<p>Plumbing Drawing 3410 P232-1</p> <p>Roof drains/overflow drains on column line 15 are currently located right under the rooftop metal panel screen wall, right on the transition between a 6-1/2" composite roof deck at TOS 426'-11" and standard 1-1/2" roof deck at TOS of 425'-10 1/2". (1 foot elev difference.)</p> <p>Confirm location and operability of drain location.</p>	
019	M	<p>General Electrical Comment:</p> <p>Clarify electrical ductbank requirements for building power and communications feeders.</p> <p>Example: Elec Site Power Plan Drwg E100: Notes refer to conduit run in ductbank from City provided transformers to various PSF buildings, but do not provide conduit sizes, number, or type, and do not address ductbank requirements.</p> <p>Electrical Normal Power Riser Diagram 3410 E710-1, Note 1 sizes the feeder conduits to building 3410 (8 -4" conduits) but does not indicate type of conduit and whether it is a concrete encased ductbank or PVC-coated, rigid conduit that is direct</p>	

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		buried.	
020	M	<p>General Electrical Comment:</p> <p>Coordinate electrical equipment layout with provided architectural room layout, noting door locations.</p> <p>Example: 3410 EP-221-1, EP222-2 Electrical Switchgear Room 2501: Equipment was located in front of doors shown on the architectural background, and the doors were relocated. Double door previously shown on the west wall of Room 2501 was relocated to the south wall and now opens into the interstitial space instead of the HVAC/mechanical space.</p>	
021	M	<p>Ultra Low Background Lab:</p> <p>Drawing 3425 S200: Depict any slab depressions/pits/sumps to accommodate the elevator, sanitary sewer, Process waste, and stormwater collection systems.</p> <p>Also need wall openings/sleeves and embeds for mechanical/electrical/ and piping utilities identified.</p>	
023	M	<p>Drawing 3425 S220:</p> <p>Constructability issue:</p> <p>Provide designed construction access openings in the south wall of the “at grade” Mechanical Room 1102 to accommodate installation of the large HVAC AHU units. Units range in size up to 10’ wide by 38’-6” long by 7’-6” high and will not fit through the louver opening, and will not be delivered until after the cast in place structure is built.</p>	
24	M	<p>General Comment against Draft Specifications: Volume 2, 3 of Design Development Design Report:</p>	

PSF-005 (04-2006)

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		<p>It is intended that the construction contractor will have the responsibility to perform, or hire a certified testing agency to perform, all “first line” construction inspection required for earthwork compaction testing, concrete masonry quality control testing, welding inspection associated with structural steel/mechanical piping and ductwork systems, mechanical systems pressure and leak integrity testing, electrical testing, etc..</p> <p>Electrical work will be overviewed for code compliance by an authorized NEC Inspector provided by the project.</p> <p>Spec Section 03 3000 Cast in place Concrete correctly portrays this approach.</p> <p>Spec Section 04 2000 Masonry incorrectly has the owner hiring the test agency. (p16)</p> <p>Spec Section 05 1200 Structural Steel incorrectly has the owner hiring the test agency. (p7)</p> <p>Spec Section 05 1250 AESS incorrectly has the owner hiring the test agency. (p10)</p> <p>Spec Section 20 2573 Firestopping incorrectly has the owner hiring the test agency. (p3)</p> <p>Review balance of Spec sections to ensure consistency with construction contractor having the responsibility to perform/hire independent testing agency.</p> <p>The inspection philosophy needs to be further addressed in upcoming breakout meetings.</p>	

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25	M	<p>Concrete Spec 03 3000:</p> <p>Delete high-density concrete requirements; currently they are not in scope.</p> <p>Include requirements for concrete composite slabs over metal decks.</p> <p>Reconcile concrete strengths with the notes on Structural General Notes Drawing S-101 for all buildings: 4000 psi concrete for footings or 3500 psi ???</p>	
26	M	<p>Architectural Drawings: All Buildings:</p> <p>Provide double doors at access to all Equipment Lifts at all levels.</p>	
27	M	<p>Architectural Drawings/Structural Drawings: Provide <u>cumulative, overall</u> dimensioning on all buildings, not just column spacing dimensions.</p>	
28	M	<p>Include a Scale Bar graphic as well as scale on all civil and architectural drawings.</p>	
29	M	<p>Civil Drawing C102: Clarify Notes 3 and 4 : The city of Richland will cut and cap, and reconnect the existing 16" waterline at the north and south ends of the PSF Site.</p>	
30	M	<p>Address Rad Waste Loadout areas at the 3 major buildings: area for tanker truck connection with concrete slab, curbs and epoxy paint???? Not depicted on Architectural or Civil drawings.</p>	
31	M	<p>Architectural Sunshade Details: Drawing A613: Address Exterior and Interior sun shades for compatibility and warranty of curtain wall system. Also address use with wind conditions experienced at PNNL lab site, and weigh against operations and maintenance costs.</p>	
32	M	<p>Consider tower concept for Deep Laboratory stairs, and include in foundation package.</p>	

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33	M	Address brick anchorage and cavity drainage/weepholes at exterior building wall elevations/details (Drawing A610).	
34	M	Civil Drawing C 001: Coordinate the orientation and sizing of the Note 8 Construction Laydown and field office/parking areas with the PSF Construction Site Plan, Draft 12/11/06, developed by PNNL.	
		The following are Comments from Stuart Saslow on behalf of Dave Koontz:	
35		<p>Drawing C 001</p> <p>Drawing identifies the HRT but not the adjacent PNNL Site Expansion parcel. If this is to be our site drawing, shouldn't it reflect our additional parcel to the east?</p> <p>Is there a path leading to LSB, or will all foot traffic from LSB and the Sigmas be routed along HRR to get to the campus? (It looks like a short walk path could easily be added to the parking lot in the SE corner of the HRT going east connecting it with GWAY extension.)</p> <p>The pavement at the main entry turnaround has lines across it that are not identified.</p> <p>This drawing is called H3 0 C sheet 001. Since all drawings appear to be single drawings, and none have multiple SHEETS, consider changing the title of this box to say "Drawing" and not "Sheet" and don't introduce the word Sheet.</p>	
36		<p>Drawing C 002</p> <p>The survey references an August 2006 survey by Permit Surveying Inc. Was that survey recorded? And is it the last survey of this property?</p> <p>There is a 2004 survey that PNNL contracted Rogers survey to perform and to record for the HRT site. That survey is not referenced here at all. Is it consistent</p>	

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		<p>with the Permit Surveying Inc. and shouldn't it be noted especially because it was recorded? Has everything in Rogers 2004 survey been incorporated into Permit Survey's August 2006 survey?</p> <p>The drawing makes no mention of the additional 2006 survey Rogers performed for PNNL and recorded to identify the PNNL Expansion project.</p> <p>This survey should also be annotated on the drawing. This survey was intended to abut the previous HRT survey so that all PNNL's land was contiguous. Additionally, in performing that survey Rogers noted some adjustments that had to be made to the west boundary of the 2004 HRT survey—are changes incorporated here?</p> <p>Survey notes above and below the drawing legend may need to be revised.</p>	
37		<p>Drawing C 103</p> <p>The trees lining the ellipse walkway appear to be on the east and not the west—are trees and walks laid out to maximize shade? That should be very important.</p>	
37		<p>Drawing C 104</p> <p>This says site lighting plan but isn't it just a fixture plan? Is there a lighting plan showing the lit areas?</p>	
39		<p>Drawing C 500</p> <p>Walkways appear to end abruptly, I don't get it. All surface symbols are not identified and defined.</p>	
40		<p>Dwg C 503 and C 504</p> <p>It is not clear what is being shown—just SE of the ellipse at the center of the Courtyard, is it some sort of ramp?</p>	

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41		Dwg C 507 Detail 2: What is the rebar depth? Detail 3: What is the dept of the saucer-shaped planting hole? It says it varies– within what range does it vary and where do we find the actual depth?		
42		Drawing S 501 Depths to rebar are not consistently shown. H3 3410 S 101 In general note 1: Do we need to reference any WACs or RMCs? Drawings have no column schedules.		
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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DOCUMENT REVIEW RECORD

Document No. DD-001	Document Title Flad PSF HRT CD-2 Design Submittal	Page 1 of 8
<p>The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call – Robert Steele (376-1489) or Dale Schielke (376-1539). Comments Due: 01 /08 /2007 .</p>		
Organization/Department PNNL Construction Management	Designated Reviewer G. W. (Bill) Steward	Reviewer Signature (Upon completion of review)
		Date 12/28/06

Comment		Comments and Recommendations	Resolution
Number	Type*		
001	M	Division 1 General Requirement, Section 01 7419, Construction Waste Management, Equipment Schedule title appears to be from the U.S. Army Medical Research Institute of Chemical Defense. Change to PSF project.	
002	M	Division 1 General Requirements, Section 01 8113, LEED Requirements, 1.1.A, change LEED Silver certification should be changed to "LEED certification," and change any requirements in all the specifications to match the certification level. The form at the back of the section for LEED Project checklist appears to be for Johnson & Johnson RC1 Lab Project; change to PSF project.	
003	M	Specification, Division 5, Metals, Section 05 1200, Structural Steel, 1.3.A. Sentence referring to NQA-1 does not make sense.	
004	M	Specification, Division 5, Metals, Section 05 3100, Steel Deck, 1.3.A. Sentence referring to NQA-1 does not make sense.	
005	O	Specifications, General Comment: some divisions/sections contained within the specification have QA sections while others do not. For consistency, they should all be the same even if the QA sections in some	

PSF-005 (04-2006)

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		divisions/sections would be "N/A "or "Not Required or Not Used".	
006	M	Specification, Division 20, Mechanical, Section 20 0549, Seismic Anchorage and Restraints, 1.4.A. What is meant by "Authorities shall include Owner's insurance company"? Battelle's insurance company for PSF is DOE.	
	M	General comment: This specification implies that the Contractor is responsible for seismic anchor design; is this correct?	
007	M	Sustainability Report, Section 7.1.1., Sustainability Goal 2.2, page 7-2, "Loading dock areas that are below grade will collect stormwater in catch basins and pipe it to underground injection wells." Is this correct or is the water being drained to infiltration trenches?	
008	M	Sustainability Report, Section 7.1.1., Sustainability Goal 2.7, pages 7-4 and 7-18, "Minimize waste generated from the construction, renovation and demolition of campus buildings." Renovation and demolition of campus buildings is not in scope for PSF constructed on the HRT.	
009	M	General Requirement, Section 01 5713, 1.2.A, Construction Stormwater Pollution Prevention, Clarify that SWPPP also requires a drawing as mentioned in 3.2.C.1.	
010	M	General Requirement, Section 01 5713, Construction Stormwater Pollution Prevention, 3.2.F.1., indicate what BMP stands for.	
011	M	General Requirement, Section 01 7419, Construction Waste Management, 1.5.B. and 1.6.B.5, delete words "to comply with requirements in Division 1 Section Project Management and Coordination." There is no such section.	

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012	M	General Requirement, Section 01 7419, Construction Waste Management, 1.6.B. Clarify submittal of the Construction Waste Management Plan. Refers to submitting the plan to the Waste Management Coordinator. Who is the Waste Management Coordinator and which company does he work for?	
013	O	General Requirement, Section 01 8113-3, LEED Requirement, 1.4.A. Is the intent of this paragraph for the contractor to hire a LEED accredited professional? Isn't Flad the LEED professional?	
014	M	General Requirement, Section 01 8119, Indoor Air Quality Management Plan, 1.3.A.2, change to read, "...Submit the proposed indoor air quality management plan 10 days before HVAC components are installed and/or the building is enclosed for approval...".	
015	M	Specification, Section 03 3000, Cast-in-place concrete, 3.17.C, Concrete Tests, Specify on what concrete placements require testing. Not all concrete should require testing, e.g., sidewalks. 3.17.C.1., Testing Frequency, testing frequency and the number of test cylinders seems excessive. The way this section is written 8 cylinders would be required for concrete placement each day for greater than 5 cy but less than 25 cy and then 8 more cylinders if over 25 cy. This will generate an extremely large number of cylinders and the costs associated with them.	
016	M	Specification, Section 03 3000, Cast-in-place concrete, 3.17.3, Shrinkage Testing, is shrinkage testing a necessary requirement? Suggest deleting this requirement.	
017	M	Specification, Section 03 3000, Cast-in-place concrete, Curing Materials 2.10.E., add to paragraph "...or use a	

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		curing compound the manufacturer certifies will not interfere with bonding of floor coverings and submit curing compound for approval before using on floor slabs.”	
018	M	Specification, Section 03 3000, Cast-in-place concrete, 1.5.B., Concrete Formwork. Define “containment areas.”	
19	M	Specification, Section 03 3000, Cast-in-place concrete, 3.17.C.11., Field Quality Control. Change wording to read “Test results shall be submitted to” instead of “reported.”	
20	M	Specification, Section 03 3913, Water Concrete Curing. This spec section appears to be covered in spec section 03 3000. If it is, suggest deleting it.	
21	M	Specification, Section 03 3923, Membrane Concrete Curing. This spec section appears to be covered in spec section 03 3000. If it is, suggest deleting it.	
22	M	Specification, Section 05 1200, Structural Steel, 1.2. Submittals. Is there any requirement or limitation on how many shop drawings can be submitted at one time?	
23	M	Specification, Section 05 1200, Structural Steel, 2.1.A., Recycled Content of Structural Steel Materials. Clarify the requirement in this paragraph.	
24	M	Specification, Section 05 1250, Architecturally Exposed Structural Steel (AESS). 1.1.C.3-5, Summary. Need to be more precise on what type of coatings and paintings are required for steel members. Identify steel members with coating and painting types.	
25	M	Specification, Section 05 1250, Architecturally Exposed Structural Steel (AESS). 1.3.F. Quality Assurance. Delete “to comply with requirements in Division 1 Section Project Management and Coordination.” There is no such	

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		section.	
26	M	Specification, Section 05 3100, 1.3.D., Quality Assurance. I don't believe there is any "Cellular Deck Floor Systems with Electrical Distribution" in this Project. Verify if cellular decking is going to be used. If not, then delete.	
27	M	Specification, Section 05 3100, Steel Deck. 3.5.A., Quality Assurance. Incorrectly identifies the owner as being responsible for hiring the test agency. The construction contractor should be providing the testing agency.	
28	M	Specification, Section 05 3100, Steel Deck. 3.5.D., Quality Assurance. Change wording to..."Test agency will submit test results..."	
29	M	Specification, Section 05 4000, Cold Formed Metal Framing, 1.5.F. Quality Assurance. Delete words "to comply with requirements in Division 1 Section Project Meetings." There is no such section.	
30	M	Specification, Section 05 4000, Cold Formed Metal Framing, 3.5.A., Quality Assurance. Incorrectly identifies the owner as being responsible for hiring the test agency. The construction contractor should be providing the testing agency.	
31	M	Specification, Section 05 5000, Metal Fabrications, 1.4 Quality Assurance. Add to this section a description of what the Professional Engineer Qualifications should be. Note: submittal of professional engineer qualifications is indicated in the submittal part of this spec section. Is it required?	
32	M	Specification, Section 05 5120, Ornamental Metal Stairs, 1.5.G., Quality Assurance. Is the "South Coast Air Quality Management District Rule #1168" the correct reference for this project?	

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33	M	Specification, Section 07 1326, Sheet Waterproofing, 1.4.C., Quality Assurance. Delete words...“to comply with requirements in Division 1 Section Project Management and Coordination.” There is no such section.	
34	M	Specification, Section 07 1700, Bentonite Waterproofing: There does not appear to be any bentonite waterproofing shown on the drawings. Sheet waterproofing is shown on the drawings. If benotnite is not going to be used, then delete this specification.	
35	M	Specification, Section 07 1113, Bituminous Dampproofing. There does not appear to be any bituminous damp proofing shown on the drawings. Sheet waterproofing is shown on the drawings. If bituminous is not going to be used, then delete this specification.	
36	M	Geotechnical Report, 6.2, Earthwork: First paragraph, The report recommends screening out material larger than 3 inches from fill material. Is it necessary? If so, is it necessary for fill over the deep laboratory? Fourth paragraph, refers to using a 2-inch minus fill, which seems to be contrary to the first paragraph.	
37	M	Specification, Section 31 0501, Common Earthwork Requirements, 3.1.A.4. Change wording to “...notify Battelle Construction Management Delete the word “Architect.” 3.4.A. Field Quality Control. Change wording to...”Notify Battelle 48 hours... Delete the word “Architect.”	
38	M	Specification, Section 31 1100, Clearing and Grubbing, 3.1.A., Performance. Address sagebrush – flail, cut, chop, bush hog, whatever and compost vegetation with (under) topsoil spoil pile.	

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Comment		Comments and Recommendations	Resolution
Number	Type*		
		3.2.A, Cleaning. Not necessary to remove vegetation from site. Compost vegetation with topsoil.	
39	M	Specification, Section 31 1413, Topsoil and Stockpiling, 3.1 Performance. Revise to keep vegetation and compost it with topsoil spoil pile. 3.1.B. Coordinate topsoil removal (depth) with recommendations from Geotechnical Report.	
40	M O O	Specification, Section 31 2323, Fill, 2.1.B, Materials. Need to coordinate fill material with recommendations from the Geotechnical Report. 2.1.D. Need to complete? 3.1A.2, Should the requirement be 95% instead of 90%?	
41	M	Specification, Section, 32 1216, Asphalt Paving, 3.4.B.1, Field Quality Control. Change words to... "Contractor will pay for laboratory services,".Not Owner.	
42	M	Specification, Section, 33 3313, Sanitary Utility Sewerage, 3.4. Should add some testing requirements.	
43		General Comment on Mechanical and Electrical Drawings/Systems. Mechanical/Electrical system designs need to support a phased approach to Factory Test Procedures (FTPs) and Commissioning by each building as indicated in the construction schedule, and to support an early startup of the Ultra-Trace Capability. This would mean the CUP would startup before Ultra-Trace but would not be fully commissioned until the last building is ready to be tested/commissioned. This may require specific design features such as supply/return loops at the CUP hydronic and other systems to facilitate major CUP Plant	

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Comment		Comments and Recommendations	Resolution	
Number	Type*			
		equipment startup and testing, prior to Ultra-Trace and the other buildings. Additional system valving and fill/expansion/balance points may be required at each building. A separate breakout session is required with PNNL, FLAD/AEI, and the AEI commissioning agent to address this issue.		
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date
G. W. Steward		1/08/07		

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DOCUMENT REVIEW RECORD

Document No.	Document Title CD-2/3A Design Development Package (Cover Sheet, 3410, 3420, 3425, 3430, and 3440)	Page 1 of 2
<p>The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call _____ at _____.</p> <p>Comments Due: / / .</p>		
Organization/Department ES&H	Designated Reviewer DL Edwards	Reviewer Signature (Upon completion of review) Date 1/04/07

Comment		Comments and Recommendations	Resolution
Number	Type*		
1	E	H3-0-M-713: Heat recovery air handling unit – differentiate that one side is for rad one is for non-rad systems.	
2	M	H3-0-P-703: Eliminate drain from vacuum receiver, per 12/13 discussion this will be manually drained and incorporated in PMs. Also need to HEPA filter the discharge on the vacuum receiver or plumb it back upstream of the HEPA filters in the main exhaust.	
3	M	H3-0-P-705: 1) hose connect out of the tanks should read “Hose connect for pumping effluent to transport vessel”.	
4	M	General comments on architectural drawings for 3410, 3420, and 3430: <ol style="list-style-type: none"> 1) Rad Waste storage areas identified in the individual rooms need to be moved away from personnel work stations to reduce potential dose concerns (ALARA). 2) Some access points are labeled “Emergency Exit Only.” Noticed in RBA labs there are doors on both the “clean” corridor and the RBA corridors. Review to make sure that doors to the clean corridor are labeled also. 3) RLWS tank system is identified in 3410 (CUP); however, do not see a defined space for this in 3420 and 3430. Drawing H3-0-P-705 shows it being indoors for all three buildings. 	
5	M	H3-3410-A-211: Labs 1605, 1607, 1609, 1611, and 1613 need to be re-aligned to reduce radiological shine to the counting lab (1605) – per previous RadCon programming discussions with A/E team.	
6	M	H3-3410-A-261: Flooring for Labs 1600 and 1610 should be rubber sheet-heat welded; these are chemical storage and waste storage areas with	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 2 of 2
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Comment		Comments and Recommendations	Resolution	
Number	Type*			
		potentials for spills.		
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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DOCUMENT REVIEW RECORD

Document No.	Document Title PSF Drawings	Page 1 of 106
<p>The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call _____ Robert Steele 376-1489_____.</p> <p>Comments Due: / / .</p>		
Organization/Department PNNL F&O Engineering	Designated Reviewer Doug Larson	Reviewer Signature (Upon completion of review)
		Date 12/14/2006

Comment		Comments and Recommendations	Resolution
Number	Type*		
1	T	<p>All buildings:</p> <ol style="list-style-type: none"> 1) Distribution and branch circuit panelboards should employ a main circuit breaker. 2) Card reader locations should take traffic flow into account. When entering a building readers should generally be on the right hand side. Readers at entries with a vestibule should be inside the vestibule on a post. 3) Install prox readers at IDF doors. 4) Install door contacts at all LAI perimeter doors and building perimeter doors. 5) Access control doors with prox readers to use mortise locks with 24VDC electric release and built in request to exit switch. 6) Outdoor CCTV camera power should be derived at the pole base from dedicated 120V, 208V or 277V circuits pulled for that purpose. 	

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DOCUMENT REVIEW RECORD

Document No.

Document Title

Page 2 of 3

Comment		Comments and Recommendations	Resolution
Number	Type*		
		Provide rooftop receptacles to service HVAC equipment.	
2	T	<p>Building 3410</p> <ol style="list-style-type: none"> 1) Electric Shop room 1701 is too small. I scaled this room at approx 10' x 18.5'. Recommend eliminating wall between 1701 and 1704 to double size of electric shop. Storage room would be eliminated. Consider same for rooms 1703 and 1702. 2) Insufficient number of receptacles in lab 1400. 3) Electrical switchgear room 2501 shows distribution panelboards in the doorway. 4) Room 2204, Women's restroom is incorrectly labeled as Men's restroom. 	
3	T	<p>Building 3420</p> <ol style="list-style-type: none"> 1) Electrical switchgear room 2229 shows distribution panelboards in the doorway. 	
4		<p>Building 3425</p> <ol style="list-style-type: none"> 1) Sheet 720 shows 3425-S-SWBD-1 being fed from N-SWBD. N-SWBD one line on sheet 710 does not show this load. 	
5		<p>Building 3440</p> <ol style="list-style-type: none"> 1) Server closet 1301A should have 2 circuits minimum. 	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 3 of 3
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Comment		Comments and Recommendations	Resolution	
Number	Type*			
		2) Provide receptacle in Water Entry room 1300.		
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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DOCUMENT REVIEW RECORD

Document No. CD-2/CD-3A	Document Title Bldg 3410 Volume I	Page 1 of 2
<p>The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call _____ Robert Steele 376-1489/551-7503 _____ at _____ . Comments Due: / / .</p>		
Organization/Department MS&T	Designated Reviewer Larry McClellan/Loni Peurrung	Reviewer Signature (Upon completion of review)
		Date

Comment		Comments and Recommendations	Resolution
Number	Type*		
LP-1	T	Sheet A-212. Ensure that the ceiling above Labs 1500 and 1407 are closed ceilings to support an LAI.	
LP-2	E	Sheet A-212. Sheet notes do not show coil door (note 8.2) at entrance to lab 1500.	
LP-3	E	Sheet Q-212-2. Glove box shown in lab 1403 should be CFCI equipment, not owner-furnished.	
LP-4	T	Sheet Q-212-2. Labs 1401 and 1405 should have electromagnetic interference shielding surrounding the room. Note specifications for instruments provided earlier. Ensure overhead facility equipment and mechanical systems (such as elevators) do not result in vibrations to these rooms.	
LP-5	T	Sheet A-262. Ensure that the composition of flooring in labs 1401, 1403, 1405, 1302, 1302A are not the "3-color floor pattern" due to the nature of the microscopic materials handled in these areas.	
LP-6	T	Sheet A-402. There was discussion regarding windows on the south side of the highbay via a request that natural lighting be available.	
LP-7	E	Sheet M-222-2. Ensure airflow does not impede delicate instruments in labs 1401, 1405, 1302A. Recommend diffusers for supply and re-route to ensure no direct supply on	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 2 of 2
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Comment		Comments and Recommendations	Resolution	
Number	Type*			
		instruments.		
LP-8	T	Sheet EL-212-2. Lab 1304, ensure bank of lights is above the 15' frame due to size of Mini-Cell installed.		
LM-1	T	Sheet Q-212-1. Lab 1501 has 3 owner-furnished glove boxes, Lab 1407 has 1 owner-furnished glove box. Need to validate these 4 glove boxes as owner-furnished.		
LM-2	T	Sheet A-312. Various labs designated as radiological labs should have vinyl ceilings, not an ACT ceiling. This is to support any potential radiological upset conditions that may occur.		
LM-3	T	Sheet A-312. Labs designated as LAI should have GWB ceilings in the corridors that run adjacent to these labs.		
LM-4	T	Sheet C-100. Walkway from 72 space parking lot to building 3420 should be eliminated to avoid suggestion that building 3420 staff can park in this area.		
LM-5	T	Sheet C-100. The total number of parking spaces (72 + 199) do not support the number of staff in these areas. Current count of 247 staff will nearly fill total slots. This does not account for visitors, especially visitors that may access the conferencing in building 3410.		
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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DOCUMENT REVIEW RECORD

Document No. CD-2 Submittal	Document Title PSF HRT Detailed Design Review Kick Off Meeting	Page 1 of 1	
<p>The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call _____ Robert Steele 376-1489 _____ at _____.</p> <p>Comments Due:</p>			
Organization/Department ESH&Q/EM/Rad Air Task	Designated Reviewer JM Barnett	Reviewer Signature (Upon completion of review) /s/ JM Barnett	
		Date 12/14/06	
Comment		Comments and Recommendations	Resolution
Number	Type*		
1	E	For the radioactive air exhaust systems (3410, 3420, and 3430 building stacks), please revise the drawings to reflect a 'probe' versus a "rake." This will allow for either a shrouded probe or a rake-style sampling manifold to be installed at the sampling point.	
2	M	For the radioactive air exhaust systems (3410, 3420, and 3430 building stacks), the sample line should come straight out of the stack duct and there should be no bends in the installed sample line until downstream of the sampling media.	
3	M	For the radioactive air exhaust systems (3410, 3420, and 3430 building stacks), please include test ports in the duct work for ANSI N13.1 verification testing.	
Concur with Comment Resolution, Review Complete		Comments Resolved By	
Reviewer Signature		Date	Document Author Signature
			Date

*Comment Type:

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DOCUMENT REVIEW RECORD

Document No. Project No. 06109	Document Title PNNL Physical Sciences Facility – Preliminary Design Development Documentation and Schematic Design Submittal – 30% Complete	Page 1 of 3
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The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call _____ at _____.

Comments Due: / / .

Organization/Department ESH&Q	Designated Reviewer Cheryl Duchsherer	Reviewer Signature (Upon completion of review)	Date 10/30/06
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Comment		Comments and Recommendations	Resolution
Number	Type*		
1	M	Section A. <i>System Description</i> in Section 3.3.2.4 <i>Process Sewer System</i> in the Schematic Design Report – Volume I (page 3-17) still says retention tanks will be used for drain lines from non-rad laboratories and non-rad support spaces.	
3410 Building			
2		H3 3410 P 211F-1, Term RLWS: Recommend change to Retention Process Sewer. RLWS implies a system to receive radioactive waste. No radioactive wastes are allowed for disposal to sewer systems. Comment is global. Replace RLWS with RPS in all drawings.	
3		H3 3410 P 212F-1, Name of the laboratory space (1500) is tritium lab. Drawing shows either cleanouts or connections to the process sewer. No connections/cleanouts to the process sewer will be allowed in rad spaces.	
4		H3-3410 P 213F-1, Unclear if these are rad laboratory spaces. If they are not rad laboratory spaces, connections to the process sewer is ok.	
5		For the 3410 Building, no retention tanks were shown. Retention tank configuration shown on "Cover Sheet" H3 0 P 705. In this drawing the RLWS was connected to the tanks. The tanks are shown to drain to the	

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DOCUMENT REVIEW RECORD

Document No.

Document Title

Page 2 of 3

Comment		Comments and Recommendations	Resolution
Number	Type*		
		Process sewer. Tanks should drain to the RLWS (RPS). Tanks did not appear to have a sample point for sampling. Samples are needed to verify compliance with either permit limits or acceptance criteria for a receiving facility.	
3425 Building			
6		H3 3425 P 200F, This drawing shows a subsoil drainage sump. Is this for stormwater that will drain internally to the building? None of the other buildings showed a similar sump. Will stormwater be managed in a similar manner in the other facilities?	
7		H3 3425 P 201-2F, laboratory spaces show connections to the process sewer. As there is no RPS in this facility, presume no rad, therefore connections to process sewer are ok.	
8		For the 3425 Building, no retention tanks were shown. Retention tank configuration shown on "Cover Sheet" H3 0 P 705. In this drawing the RLWS was connected to the tanks. The tanks are shown to drain to the RLWS (RPS). Tanks should drain to the process sewer. Tanks did not appear to have a sample point for sampling. Samples are needed to verify compliance with either permit limits or acceptance criteria for a receiving facility	
3430 Building			
9		H3 3430 P 211F-1, Drawing shows both RLWS (RPS) and process sewer lines in the laboratory spaces. Cannot have connections to process sewer in rad laboratory spaces.	
10		Drawings H3 3430 P 212F-1, H3 3430 P 212F-2, H3 3430 P 212F-3, H3 3430 P 213F-1, and H3 3430 P 213 F-2 all show connections to the process	

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DOCUMENT REVIEW RECORD

Document No.

Document Title

Page 3 of 3

Comment		Comments and Recommendations	Resolution
Number	Type*		
		sewer. As there is no RLWS (RPS) in these lab spaces, presumably these are non-rad laboratory spaces.	
11		H3 3430 P 230, Stormwater drainage shown to be on the North and West sides of the building. Will this be sheetflow or will the stormwater be managed via an underground injection control system. No engineered structures were shown on the drawing or in other drawings.	
12		For the 3430 Building, no retention tanks were shown. Retention tank configuration shown on "Cover Sheet" H3 0 P 705. In this drawing the RLWS was connected to the tanks. The tanks are shown to drain to the process sewer. Tanks should drain to the RLWS (RPS). Tanks did not appear to have a sample point for sampling. Samples are needed to verify compliance with either permit limits or acceptance criteria for a receiving facility.	
3440 Building			
13		H3 3440 P 211F, In the laboratory space, connections are shown to the process sewer. Presumed no rad in this laboratory.	
14		For the 3440 Building, no retention tanks were shown. Retention tank configuration shown on "Cover Sheet" H3 0 P 705. In this drawing the RLWS was connected to the tanks. The tanks are shown to drain to the process sewer. Tanks should drain to the RLWS (RPS). Tanks did not appear to have a sample point for sampling. Samples are needed to verify compliance with either permit limits or acceptance criteria for a receiving facility.	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 4 of 3
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Comment		Comments and Recommendations	Resolution	
Number	Type*			
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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DOCUMENT REVIEW RECORD

Document No.	Document Title PSF – CD2/3A Design Development Package – PNNL Review 12/8/06	Page 1 of 1
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The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call _____ at _____.
Comments Due: / / .

Organization/Department E&CS	Designated Reviewer Dale Schielke	Reviewer Signature (Upon completion of review)	Date 1/2/07
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Comment		Comments and Recommendations	Resolution
Number	Type*		
DRS-1		Spec 22-1118 Proper system description is Sanitary Water.	
DRS-2		Spec 22-1118 Provide specification for ProPress fittings on copper.	
DRS-3		Spec 22-1118 Provide copper for pipe 3" and smaller.	
DRS-4		Spec 22-4000 Specify water cooler with integral filter and prefer monitor /alarm on filter. See Elkay ZMABFTL8LC.	
DRS-5		General equipment identification – Refer to PNNL procedure ADM-CM-064 for equipment numbering guidance. Consult with PNNL on missing acronyms.	
DRS-6		Spec 22-6214 Sample vacuum pumps not liquid seal. Design system around regenerative blowers.	
DRS-7		22-6653 Part of specification refers to glass but no specifications for glass.	
DRS-8		23-2514 Include current PNNL water treatment vendors in list. Add note that all proposed water treatment chemicals SHALL be approved by PNNL and city of Richland for disposal to sewer system in use concentrations.	
DRS-9		H3-0-C-104: Security cameras and duress stations not shown. Is separate drawing, for security system needed instead?	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 2 of 4
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Comment		Comments and Recommendations	Resolution	
Number	Type*			
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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DOCUMENT REVIEW RECORD

Document No. Flad Document FCX-108	Document Title: Design Development Submittal, Volumes 2 & 3, Rev A; and Drawings	Page 1 of 3
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Note: These comments are for Preliminary review and 30% Design review

Organization/Department D6722	Designated Reviewer Vinh T Nguyen	Reviewer Signature (Upon completion of review)	Date
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Comment		Comments and Recommendations	Resolution
Number	Type*		
1	E	Division 1, all sections: Are these applied to all works in these specifications & Drawings or only the "site work and Foundation"? All Sections in this Division, 2 nd line from the top page indicate that these sections are only for "site work and foundation."	
2	T	Section 014000, 1.4.A.1: Recommend to rewrite as: "The contractor shall maintain and implement a quality assurance program (QAP) in accordance with 10 CFR Part 830, Subpart A and DOE O 414.1C that demonstrates adequate quality processes are in place, as applicable, to control design field changes, drawings, materials, traceability as required by codes or specifications, identification of materials, welding, nondestructive examination, inspection, testing, calibration, storage, handling, status identification, nonconformances, and collection and review documentation, etc."	
3	T	Section 014000, 1.5.C.1a, 1 st Paragraph, Last sentence: Recommended changes: "Qualification of inspection and test personnel performing inspections or tests shall be qualified in accordance with applicable codes and standards."	
4	T	Specifications: "PNNL 10 CFR Part 835 Radiation Protection Program" was not called in the specification as	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 2 of 4
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Comment		Comments and Recommendations	Resolution
Number	Type*		
		required by the design requirements. (Reference: Facility Program and Design Requirements Document, Rev 0, Dated MONTH? 20, 2006, Section 4.2.7.A).	
5	T	Specifications: WAC 246-247 was not called in this specification as required by the design requirements. (Reference: Facility Program and Design Requirements Document, Rev 0, Dated MONTH? 20, 2006, Section 4.2.8.B).	
6	T	Specifications: Missing "Construction Safety Plan" submitted by contractor as required by 10 CFR Part 835. This was required by the design requirements. (Reference: Facility Program and Design Requirements Document, Rev 0, Dated MONTH? 20, 2006, Section 4.2.12.1, Construction Phase, first Paragraph).	
7	T	Specifications: The year of the standards/codes called out in the specifications shall be included to be consistent with the ones identified in the design requirements.	
8	T	No traceability between the drawings and the specification.	
9	E	Specifications: Where is Division 15? Numerous sections refer to this Division (e.g., Section 263213, C6, C7; Section 331116, 3.6J; Section 078413, 1.1B4...).	
10	T	Sections 233144, 1.6 and 260548: Identify any welding inspections.	
11	T	Sections 20 0553 and 260553: Identifications shall be consistent with PNNL labeling requirements.	
12	T	Section 11620, 2.11C; 116210, 2.9C; and 260800, 3.2.C: An evaluation will be performed on testing firm's QA Program/system to determine their capabilities. This requirement shall be included in the specifications.	
13	E	Following Sections are not listed in the 0 Table of Contents: Sections 42000;	

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DOCUMENT REVIEW RECORD

Document No.

Document Title

Page 3 of 4

Comment		Comments and Recommendations	Resolution
Number	Type*		
		082110; and 092910.	
14	E	Section 055120, 1.4B1 and Section 055120, 1.5H1: Incorrect section # & title identified. Should it be "Section 05730 – Ornamental Handrails"?	
15	T	Section 014000, 1.5B, Bullet #2: Are these 100% inspection? These need to be more specific.	
16	T	Section 099100, 1.1A2: The painting should not be performed before the welding inspections. Should this be included in the specifications to make sure it will not happen?	
17	E	Section 000010: Numerous Section titles are incorrect (e.g., 233614, 237214...) or sections are missing (e.g., 260913, 265100...).	
18	T	Sections 142800 and 146050: It is important to emphasize the Suspect/Counterfeit (S/C) bolts inspections in this equipment. Suspect/Counterfeit bolts are often found in this equipment, and the load-bearing bolts are considered critical application.	
19	T	Section 226214: ANSI N13.1-1999 is not identified as required by the design requirement. (Reference: Facility Program and Design Requirements Document, Rev 0, Dated MONTH? 20, 2006, Section 6.3.1(i))	
20	T	Section 262816, 3.5A: Should also refer to the Suspect/Counterfeit Items requirements identified in Section 014000, 1.5C6a.	
21	T	Specifications No evidence of Flad review and approval of these specifications.	
22	T	Drawings: No evidence of Flad	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 4 of 4
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Comment		Comments and Recommendations	Resolution	
Number	Type*			
		approvealof these drawings.		
23	E	Section 087100, 1.2A, Division 1, Section "Allowances": Where are this section?		
24	E	Section 102800, 1.1B1: Division 08 Section "Mirrored Glass": Where is this section?		
25	T	Section 051200, 2.2 & 2.3: It appears that some of the ASTM standards identified in this section are not consistent with the design requirements. (Reference: Facility Program and Design Requirements Document, Rev 0, Dated MONTH? 20, 2006).		
26	E	Section 051200, 2.3: ASTM standards for bolts shall be identified and consistent with the design requirements. (Reference: Facility Program and Design Requirements Document, Rev 0, Dated MONTH?20, 2006).		
27	T	Section 055213, 2.3B, ASTM A53, Grade A: It should be Grade B (higher strength) as required by the design requirements. (Reference: Facility Program and Design Requirements Document, Rev 0, Dated MONTH? 20, 2006, Section 5.5.3).		
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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DOCUMENT REVIEW RECORD

Document No.	Document Title PSF Drawings	Page 1 of 1	
<p>The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call _____ at _____.</p> <p>Comments Due: / / .</p>			
Organization/Department Worker Safety and Health	Designated Reviewer Don Kelly	Reviewer Signature (Upon completion of review)	Date 12/14/2006
Comment		Comments and Recommendations	Resolution
Number	Type*		
1	T	No emergency showers/eyewash stations are showing on any of the drawings. These units are required in areas where hazardous materials are used.	
2	T	No personal sanitations showers are present on any drawings. My understanding of OSHA regulations is that change rooms and shower facilities are required in areas where protective clothing is worn because of the possibility of contamination with toxic materials and for workers working in TSDs. Isn't there a TSD planned in the Materials Sciences & Technology building?	
3	T	In the Rad Detection Lab (3420), many of the electrical panels appear to be located within the swing radius of lab room doors. This could cause interference with lab access during maintenance activities involving these panels. This is not a non-compliance issue, but it could impact work flow in the facility.	
Concur with Comment Resolution, Review Complete		Comments Resolved By	
Reviewer Signature		Date	Document Author Signature
			Date

*Comment Type:

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DOCUMENT REVIEW RECORD

Document No. Flad Doc. Number DRR	Document Title Physical Sciences Facility Horn Rapids Triangle Preliminary Drawings	Page 1 of 4
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The referenced document is submitted for your review. Please return the completed form to the ES&H.
Comments Due: noon 12/08/2006 .

Organization/Department Radiological Controls / ES&H	Designated Reviewer Lindsay Nelsen	Reviewer Signature (Upon completion of review)	Date
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Comment		Comments and Recommendations	Resolution
Number	Type*		
1	M	General comment: The definition of RBA vs Non-RBA labs does not seem complete. Many of the labs that are non-RBA have titles/equipment that would lead the reviewer to believe that they have been misclassified (i.e., 3410 tritium lab). Without clear guidance of the labs intended use it is not possible to complete a thorough review.	
2	M	The room finish schedule shows a patchwork quilt of labs that are rolled vinyl, tile or painted concrete. It seems that a consistent finish would aid in construction costs and would allow for flexibility in the future.	
3	M	In the reflected ceiling plans for RBA areas we need to have a consistent finish throughout the facilities. In some ACT is called out and in others GWB is called out; there needs to be consist application for all of the labs. In this case I would propose that GWB is used to aid in future decon evolutions if it becomes necessary.	
4	M	Drawing O-M-001 shows in the list that there is HRA HEPA Return Air. If air is exhausted from RBA it cannot be used as return air.	
5	O	Drawing O-M-017 3430-HVAC-FLT-004C lists office AHU as being HEPA filtered; this seems unnecessary.	

PSF-005 (04-2006)

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DOCUMENT REVIEW RECORD

Document No.

Document Title

Page 2 of 4

Comment		Comments and Recommendations	Resolution
Number	Type*		
6	M	Drawing O-M-705 shows that RE (rad Exhaust) is being removed from RBAs without going through a HEPA filter. This is a significant design issue; all RBA exhaust needs to be HEPA filtered–this needs to be corrected throughout all of the drawings if it has been used as a standard design.	
7	M	Drawing O-M-711 shows a Rad/Non Rad heat recovery unit. It is not appropriate to have Rad air recirculated.	
8	M	Drawing O-P-703, the design for the vacuum air system. If this is to be used in RBA hoods or Labs as a lab vacuum system it will need to drain any liquids to the RLWS and will need HEPA filtration on the discharge.	
9	O	Drawing O-P-705 shows the tank design for the PS; is there a similar design drawing for the RLWS? If not, and this is the intended drawing, it will need to show the separation of the PS from the RLWS and will need to include a sampling system for the RLWS.	
10	O	Drawing 3410-P-212F-1. The two labs shown, 1500 and 1501, seem to be RBA work areas but are connected to the PS. This goes throughout the building as a general question of RBA vs non-RBA. If it is RBA it will need to be connected to RLWS.	
11	M	Drawing 3410-A-211. In the design meetings it was specifically noted that room 1609 could not be placed next to room 1605, it was agreed that room 1611 would be moved to separate the two rooms. Additionally, room 1611 shows no sink or shower facilities that are required for the Decon room.	
12	M	Drawing 3410-A-212, corridors 1230C and 1230B, shows no PCMs or HFMs at the exits, Additionally, labs 1400 and 1500 are listed as non-RBA and	

PSF-005 (04-2006)

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 3 of 4
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Comment		Comments and Recommendations	Resolution
Number	Type*		
		exit to what looks like RBA corridors. This would be a poor design and would require additional surveys. As a general comment emergency exits are not listed and this may address this comment?	
13	M	Drawing 3410-Q-212-2, lists a Perchloric hood in room 1402 (RBA); this will present a unmonitored/unfiltered effluent point and is not acceptable, and as a general comment, a number of perchloric hoods are found throughout the buildings that are located in RBAs; this needs to be addressed throughout the drawings. In room 1404 there is a Mini-cell listed. What is this and what will be the source term for this? Will shielding be required? If it is, this presents an issue with the hazards analysis. Room 1402 lists weights for rad storage; how is the shielding size/thickness being determined? This will present an ALARA issue that will need to be resolved.	
14	M	Drawing 3420-A-211 does not show any HFM or PCMs at the exits from the RBAs; additionally, RBAs exit to multiple corridors, which will create difficulties monitoring personnel.	
15	O	Drawing 3420-A-232 shows no rad exhaust plenums both are listed as NRE.	
16	M	Drawing 3420-Q-211-1 shows the Rad waste next to the personnel work station in room 1707. This is a general comment throughout the drawing; having the rad waste in this location is a poor ALARA practice and will need to be addressed—either the rad waste will need to be moved (preferred) or the waste drum shielded (discouraged).	
17	O	As a general comment the drawings show lead being used throughout the	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 4 of 4
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Comment		Comments and Recommendations	Resolution	
Number	Type*			
		building, the project needs to have a consistent approach to how lead will be controlled, i.e., painted or possibly skinned, or an alternative method used.		
18	M	Drawing 3430-A-211, no HFMs or PCMs are shown at the exits to the RBAs, nor is the corridor 1230A shown as an RBA. As a general note throughout building 3430 the RBA's do not seem to be identified correctly and this makes it impossible to adequately review drawings.		
19	O	Drawing 3430-P-211F-2 shows the RLWS drain system going under the conference room, this is a poor ALARA practice to have potential drain lines going out of the RBA areas.		
20	M	Drawing 3430-P-213F-1 shows PS connections in various rooms that are RBAs, these need to be connected to the RLWS. This is a general comment that all liquid effluents from RBAs need to go to RLWS, additionally the use of PS and no HEPA filtration from the standard labs will limit flexibility in the future.		
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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DOCUMENT REVIEW RECORD

Document No.

Document Title

Page 5 of 4

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DOCUMENT REVIEW RECORD

Document No. Project 06109	Document Title Flad PSF HRT CD-2 Design Submittal	Page 1 of 20
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The referenced document is submitted for your review. Please return the completed form to the Project Quality Officer. If you have any questions, please call – Robert Steele (376-1489) or Dale Schielke (376-1539).
Comments Due: 01 /08 /2007

Organization/Department PSF HRT Project Management	Designated Reviewer Robert Steele	Reviewer Signature (Upon completion of review)	Date 1/8/07
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Comment		Comments and Recommendations	Resolution
Number	Type*		
Building 3400			
1		Drawing 0-M-001 Zone C-13: Please define or remove HRA, HEPA return air. This may be a radiological non-starter.	
2		Drawing 0-M-001 Zone G-8: Delete the following system references as they do not apply. APW, DHW, FO, FW, HPS, ICW, SW. SWF, RPS, RVO, HV. Spelling error in Acetylen"e". PCWHS/R should be PCWS/R.	
3		Programmatic Question: With the installation of an Argon Gas Distribution system is there a detection/alarm system planned?	
3		Drawing 0-M-001 Zone G-8: (1) Clarify ICW - Domestic cold water system as "I"CW? (2) PD- Should this be "Process"?	
4		Drawing 0-M-010 General: Recommended Boilers not in agreement with previous PNNL preferences of Boiler Types. Please re-evaluate. Note 1) implies 30 PPM nox shouldn't this be 9PPM nox?	
5		Drawing 0-M-012 General: Correct Spelling Errors (e.g., "Cabinet").	
6		Drawing 0-M-012 General: Correct Spelling Errors (e.g., "Cabinet").	
7		Drawing 0-M-012 Zone B-10: GPM in HX table do not match the PCHW pumps on sheet 0-M-011. Please evaluate and revise accordingly.	

PSF-005 (04-2006)

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 2 of 20
--------------	----------------	--------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
8		Drawing 0-M-012 Zone C-2 through 7: Separate Tables.	
9		Drawing 0-M-013, Zone E-4: WT for 3430-HVS-AHU-001, -002, & -003 seem excessive. Please evaluate and revise accordingly.	
10		Drawing 0-M-014 & 015 General: It appears Fans (driven by VFDs) will be belt drives. This is a non-standard recommendation. Please verify.	
11		Drawing 0-M-014 Zone A-12: 3420-SM-AFM-001 has Office AHU listed under system s.b. Lab RE Stack.	
12		Drawing 0-M-016 General: Data in tables are illegible (reference zones E & B-10).	
13		Drawing 0-M-017 General: Data in tables are illegible (reference zones C & D-10).	
14		Drawing 0-M-018 Zone C-11: 3430-HVS-FLT-004C is listed as having a HEPA filter for UT MECH office AHU. Please verify requirement and communicate the need for HEPA filtration.	
15		Drawing 0-M-020, Zone E-8: Titus is recommended mfg for CD-5/5A/6/6A.	
16		Drawing 0-M-707, Zone D-11: Perchloric Wash down system should use PCW not ICW.	
17		Drawing 0-M-404, Zone F3 & D3: System designation NRE is not listed on page -000. Please evaluated and revise accordingly.	
18		Drawing 0-M-700, Zone B/C-11 & E/F-11: System Labeling need to be consistent with those identified on page M-001.	
19		Drawing 0-M-700, Zone B6: Table should reference BLDG 3430 and AHUs -001 thru -003.	
20		Drawing 0-M-703, Zone 9-D, 6-D: Return air systems in RBA labs, hoods, and corridors require HEPA filtration (previously identified and not corrected).	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 3 of 20
--------------	----------------	--------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
21		Drawing 0-M-701, Zone B9 & F9: System labeling needs to be consistent with those identified on page M-001.	
22		Drawing 0-M-701, Zone A8: ULB (or Deep Lab) should be listed as Bldg 3425 and inserted into the table in Zone B5.	
23		Drawing 0-M-702: LDB s.b. "LDL" for Large Detector Lab. Additionally, the table in Zone C7 needs to include building a reference to BLDG 3425. Do you mean the 325 Building? The new building number is 3245 (RJS)	
24		Drawing 0-M-703, Zone E11,"Constant Volume": Shouldn't this be listed as VAV? (this also applies to zones C9, D7, C7).	
25		Drawing 0-M-703, Zone F9: Shouldn't there be a "by-pass" shown on this drawing? Please evaluate and revise accordingly.	
26		Drawing 0-M-703, Zones D/E-2/3: A VE item was to show air recirculation from the office to the labs - what drawing indicates this?	
27		Drawing 0-M-704, Zone D12 & B5: HVE s.b. HVR.	
28		Drawing 0-M-707, Zone D12: ICW s.b. PCW.	
29		Drawing 0-M-707, Zone 10: Delete "(Perchloric Exhaust Only)", "FRP(ACID)" and "(Perchloric)" and in Detail 2 delete the reference to "& ACID DIGESTION."	
30		Drawing 0-M-707, Zone E6: Is this a VAV or CAV system? Evaluate and revise accordingly.	
31		Drawing 0-M-707, General: Diagram does not really jive with drawing. Evaluate and revise accordingly.	
32		Drawing 0-M-708, Zone F10: Spelling - "FLOW."	
33		Drawing 0-M-708, Zone C9: HVR s.b. HVE.	
34		Drawing 0-M-708, General: Why not simply delete the air terminal and	

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Document No.	Document Title	Page 4 of 20
--------------	----------------	--------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
		install a door louver?	
35		Drawing 0-M-709, Zone C12: "RW" s.b. "PCW."	
36		Drawing 0-M-709, Zone D11: CWS/CWR labeling do not jive with the "PCHW" listing.	
37		Drawing 0-M-711, Zone D11: "RW" s.b. "PCW."	
38		Drawing 0-M-712, Zone B-11 Question: Will there be nipples available for a propane backup source of the boilers?	
39		Drawing 0-M-712, Zone F7: Delete reference to "primary."	
40		Drawing 0-M-713, Zone E-10: Heat Recovery Water systems cannot recover from rad systems or RBAs by definition. Please evaluate and revise accordingly.	
41		Drawing 0-M-900, E4 thru E9: Question, Why are these details shown since the cooling coils are coming with the AHUs?	
42		Drawing 0-M-900, Zone D3: HWS/HWR s.b. HHWS & HHWR.	
43		Drawing 0-M-900, Zone 33: Detail label s.b. "Heating" Hot Water Coil Piping.	
44		Drawing 0-M-903, Zone G: CHS & CHR s.b. CHW(S) and CHW(R). Additionally, Zones G3 & C3 GWR/GWS s.b. HRW(R) and HRW(S).	
45		Drawing 0-M-904, Zones D10 G6: HWR/HWS s.b. HHRW and HHWS.	
46		Drawing 0-M-904, Zones A10: Detail Label s.b. "Heating " Hot Reheat Coil piping.	
47		Drawing 0-M-905, Zone E6: The airflow diagram on page M-707 indicates the same thing. Evaluate and revise accordingly.	
48		Drawing 0-M-906 Zone A6: Delete detail for Processor Exhaust because it is not part of PSF HRT.	

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Document No.	Document Title	Page 5 of 20
--------------	----------------	--------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
49		Drawing 0-M-906 Zone B3: Delete detail for Duct Mounted Electric Humidifier because it is not part of PSF HRT.	
50		Drawing 0-M-907, general: Details do not indicate how the VAV hood controllers are to be constructed.	
51		Drawing 0-P-000, General: System labels do not agree with abbreviations (i.e., PCW - Lab Cold Water is listed as LCW in abbreviations).	
52		Drawing 0-P-000, Zone F-9: System labels do not agree with abbreviations (i.e., PCW - Lab Cold Water is listed as LCW in abbreviations.)	
53		Drawing 0-P-000, Zone F-9: Lab cold/hot water should be "process" cold/hot water to agree with abbreviations.	
54		Drawing 0-P-000, Zone F-7 & D-5: SD should be "storm drain" to agree with PNNL nomenclature.	
55		Drawing 0-P-000, Zone F-7: Delete the following abbreviations CWW, IW, CRW, CWV, CRV as they are not part of PSF HRT.	
56		Drawing 0-P-000, Zones 3 through 5: Delete the following abbreviations BT, CWW, , FOF, FOC, FOR, FOS, FOT, FOV, IW, CWV, CRV, LCW, LHW, LHWR as they are not part of PSF HRT.	
57		Drawing 0-P-010, Zone F-1: Air sampling table should be titled "Vacuum Air Sampling" to agree with system abbreviations.	
58		Drawing 0-P-700, Zone F-1: Question, isn't "pure water" supposed to be de-ionized water? If so, please change all applicable drawings (e.g., P-701).	
59		Drawing 0-P-701, Zone F-3: Delete reference of filtered water to animals - there are no animals in the PSF HRT scope.	
60		Drawing 0-P-703, Zone G-10: If the VAS system remains in RBAs the	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 6 of 20
--------------	----------------	--------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
		exhaust system will have to be HEPA filtered. Likewise, the drain system will have to be routed to the rad process waste system. Please verify and change accordingly.	
61		Drawing 0-P-703, Zone D-10: Change NOTE. Sample filtration will be provided by this project.	
62		Drawing 0-P-704, Zone D-6 thru 8: Reference to 9k MBH boilers should be 2k MBH per specifications and BOM.	
63		Drawing 0-P-705, General: Sampling station is required. Please evaluate and address accordingly.	
64		Drawing 0E 001 General: Communications and Systems Symbol and abbreviations: Correct fiber symbol from 12 –strand fiber with SC couplings to 48mm/48sm fiber with LC couplings. Correct D symbol to read as: 1 double gang box with(4) Cat 5E cables and jacks,(1) 4-strand Laser Optimized MM and 4-strand SM composite fiber with duplex LC connectors. Delete S symbol and replace with SB (secure area Black Network) and SR (secure area Red Network). SB symbol to read as: 2 double gang boxes; 1 equipped with (6) Cat 5E cables and jacks and 1 equipped with (6) Laser Optimized MM fibers with Duplex LC connectors. SR symbol to read as: 2 double gang boxes; 1 equipped with (6) Cat 5E cables and jacks and red faceplate, 1 equipped with (6) Laser Optimized MM fibers with duplex LC connectors and red faceplate. Remove L symbol (1) Cat 5E cable terminated on 4 jacks. What is the purpose of this outlet? Remove WAP symbols (2) Cat 5E cables. Add Consolidation point symbol for open office space areas.	
65		Drawings 0-E 731: Communications Pathway Riser Diagram. Move 1 of 2 duct	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 7 of 20
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Comment		Comments and Recommendations	Resolution
Number	Type*		
		banks from 3410 Building to 3430 Building. Why covered cable tray between buildings? Why not curried conduit to house 300 pair and fiber?	
66		Drawing O-E-732 Fiber Optic Riser Diagram Show fiber Routing to OSP vaults. One East route to ISB II on Q Ave and one West route to MATH Building on Battelle Blvd. Change note from “sizing to be determined” to 48mm/48sm fiber. Change Note 2 from computer and telephone buildings to computer building only. Add Note 3 to add telephone building.	
67		Drawing O-E-733, copper riser diagram: Move Note 2 from 3410 building to 3430 building. Add 50 copper requirement to ISB II and to Math Building.	
68		Drawing O-Q-002, Zone B7, P-4 & P-6: Perchloric Hoods shall not be VAV.	
Building 3410			
1		Drawing P-211F-1, Zone 8: Routing of RLWS and PS is not recommended. Additionally, RLWS should be listed as petention process sewer (RPS).	
2		Drawing P-212F-2, Zone D8: Corridor needs to be listed as an RBA.	
3		Drawing P-231-2, Zone D5: Delete question marks.	
4		Drawing A-021, general: Please ensure all notes are building-specific (i.e., 3410 does not have a basement).	
5		Drawing A-211, Zone F8: Ensure officing walls have appropriate sound dampening due to its proximity to CUP equipment.	
6		Drawing A-211, Zone F6: Ensure/identify fire rating of walls separating the CUP and MS&T Labs.	
7		Drawing A-211, Zone C9, previously identified: Counting Lab CANNOT be located next to (or in proximity of) the rad waste storage room.	

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Document No.	Document Title	Page 8 of 20
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Comment		Comments and Recommendations	Resolution
Number	Type*		
8		Drawing A-211, Zone C7: Radcon decon room requires plumbing (sink/Shower) for decon of personnel/equipment.	
9		Drawing A-212, Zone B9: Exit out of room H-13 (which is an RBA) into corridor 1230A (assumed non-RBA) is not permissible without making the corridor an RBA and placing doors at line 12 (Zone B9) and routing appropriate HVAC. Please evaluate and change accordingly.	
10		Drawing A-212, Zone D9/Corridor 1230B: Hand and foot counters are required for exit survey of an RBA.	
11		Drawing A-213, Zone F2: Verify/identify the fire rating of the walls of the hydraulic pump room.	
12		Drawing A-213, Zone E6: Move door to eliminate the dead end.	
13		Drawing A221, Zone B7: Equipment interference with egress and elevator. Verify and change accordingly.	
14		Drawing A-222, Zone D10, Room 2204: S.b. women's bathroom.	
15		Drawing A-311, General: ACTs in RBA's is not recommended due to contamination control.	
16		Drawing A-312, General: ACTs in RBAs is not recommended due to contamination control.	
17		Drawing A-600, General: Consistent use of "not used" details - details 4 thru 12 are not used and should be listed as such.	
18		Drawing A-600, General: The drawing for Detail 3 is halfway between detail 3 & 4. Consider moving.	
19		Drawing Q-211-2, Zone E5: Bottles (P10) located in closet 124 OD need to be placed in rated enclosure or moved outside.	
20		Drawing Q-212-1, Zone E5: Bottles located in closet 1240B need to be placed in rated enclosure or moved outside.	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 9 of 20
--------------	----------------	--------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
21		Drawing Q-212-1, Zone F8: Questions surrounding the use of glove boxes; what are these GBs for?	
22		Drawing Q-212-2, Zone E5: Bottles located in closet 1240A need to be placed in rated enclosure or moved outside.	
23		Drawing Q-212-2, Zone C9: Perchloric Hood located in an RBA - perc hoods have an unfiltered release to atmosphere, which could induce an uncontrolled release. Please verify and change accordingly.	
24		Drawing H3 3410 S 210 and 212: What is the linetype showing? Grade beam? Braced frame? Where is the linetype identified?	
25		Drawing 3410 S, 211: Can't tell what the symbol is on lower right on column line N and the numbers run over each other.	
26		Drawing 3410 S 220: What is being depicted by all the arrows in the lower left between column 2 and 3?	
27		Drawing M 231-2 Zone, D5: Eliminate the question marks.	
28		Drawing ES 211-1: Generic comment, Please move all card readers inside of the vestibules and where applicable, move the card readers inside and mounted to glass, and typically mount card readers on the RHS of entry doors.	
29		Drawing ES 221-1, Zone G2: Move drawing down to avoid overwriting.	
Building 3420			
1		Drawing A 022, General: Notes are repeat from drawing A 021. Delete.	
2		Drawing A 022, General: Enlarge details 1 & 2 showing emergency egress routes.	
3		Drawing A 211, Zone 2: Please include only building-specific notes.	
4		Drawing A 211, Zone F6: Egress from room 1607 (RBA) into a non-RBA corridor (1230E) is prohibited without	

PSF-005 (04-2006)

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 10 of 20
--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
		surveying. Additionally, if corridor 1230E is a RBA corridor an additional door & HVAC controls are required.	
5		Drawing A-211, Zone E9 and D8: Perc Hoods in RBA labs (rooms 1707 & 1700)? Perc Hoods have an unfiltered release to the environment. Please evaluate and change accordingly.	
6		Drawing A-211, Zone F9 & D9: Hand and foot counters (survey points) are required to exit an RBA.	
7		Drawing A 212, Zone C7: Make entrance to Janitorial Closet from corridor 1210 and not from the men's room.	
8		Drawing A 212, General: Where are the microwave, refrigerator, and break areas located in this building?	
9		Drawing A213, Zone F7: Elevator doors need to be sized so large equipment may be transported. Please evaluate and change accordingly.	
10		Drawing A213, Zone E7: Water Entry is located in a poor location and may promote freezing. Please consider relocation.	
11		Drawing A 222, Zone 6: There is a wall shown around the mechanical room with one entry. Additional egress means required.	
12		Drawing A 223, Zone F7: Elevator doors need to be sized so large equipment may be transported. Please evaluate and change accordingly.	
13		Drawing A231, General: Will fall protection tie-offs be shown on the 70% design package?	
14		Drawing A 232, Zone F: Label rad/non-rad Exhaust Stacks.	
15		Drawing A 261, Zone F2: Reference to Project Manual - Where is the project manual? This note is on numerous drawings through HRT.	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 11 of 20
--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
16		Drawing A 261, Zone F5: Overlapping of finishes in legend. Please separate.	
17		Drawing A261, Zone C6: Ensure standardized flooring for all HRT rad Labs.	
18		Drawing A311, General: Drawing shows ACT in RBAs- This could be a contamination control issue. Please evaluate and change accordingly.	
19		Drawing A223: Zone A1: Drawing number should be A323.	
20		Drawing A281, Zone 6: RBA rooms 1607, 1603, 1601 egress into the non-RBA corridor 1230E. Additionally, if corridor 1230E is a RBA corridor an additional door & survey stations, & HVAC controls are required.	
21		Drawing Q211-1, Zone C7, room 1707: Rad waste storage area is shown next to a PC workstation. This is a ALARA issue and needs to be reprogrammed.	
22		Drawing Q211-1, Zone C8, room 1707: Perc Hood shown in RBA - ALARA concern as there could be an uncontrolled release. Evaluate and change accordingly.	
23		Drawing Q211-1 & -2, zone C5: Exit from room 1607 into corridor 1230E indicates an exit from RBA into a non-RBA corridor. This is a ALARA concern and requires re-evaluation.	
24		Drawing Q211-2, zone C7, room 1704: Perc Hood shown in RBA - ALARA concern as there could be an uncontrolled release. Evaluate and change accordingly.	
25		Drawing Q211-2, Zone E9, rooms 1240I and 1240H: Gasses need to be depicted in rated enclosures or moved outside.	
26		Drawing Q212-1, Zone F5, room 1240F: Gasses need to be depicted in rated enclosures or moved outside.	
27		Drawing Q211-3 Zone F7: Rad waste storage area is shown next to a PC	

PSF-005 (04-2006)

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 12 of 20
--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
		workstation. This is an ALARA issue and needs to be reprogrammed.	
28		Drawing Q211-3, Zone D7: RBA Label is misleading. Please revise to indicate proper RBA listing.	
29		Drawing Q211-3, Zone D4: RBA Label is misleading. Please revise to indicate proper RBA listing.	
30		Drawing Q211-3, Zone F4: RBA label is misleading. Please revise to indicate proper RBA listing.	
31		Drawing Q212-2, Zone E5, room 1240D: Gasses need to be depicted in rated enclosures or moved outside.	
32		Drawing Q212-2, Zone E8, room 1240E: Drawing indicates a UPS installed. The cost estimate does not contain UPS for the PSF HRT. Please evaluate and revise accordingly.	
33		Drawing Q213-1, Zone E5, Room 1240B: Gasses need to be depicted in rated enclosures or moved outside.	
34		Drawing Q213-2, Zone E5: Elevator doors need to be sized so large equipment may be transported. Please evaluate and change accordingly.	
35		Drawing S101, Zone C13, Note 1: Concrete psi is inconsistent with specifications. Evaluate and revise accordingly.	
36		Drawing S211, Zones G10 and D8: Concrete dimensions need to be identified. Please also consider indicating overall dimensions for constructability.	
37		Drawing S222, Zone A1: Verify Spelling in Title Block.	
38		Drawing S401, Zone A1: Verify Spelling in Title Block.	
39		Drawing S601, Details 1 & 2: Review allowance of tack welding nuts & washers to threaded anchor bolts.	
40		Drawing M211-1, Zone B11: Perc Hood shown in RBA - ALARA concern as there could be an uncontrolled	

PSF-005 (04-2006)

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 13 of 20
--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
		release. Evaluate and change accordingly.	
41		Drawing M211-4, Zone E10: Perc Hood shown in RBA - ALARA concern as there could be an uncontrolled release. Evaluate and change accordingly.	
42		Drawing M211 series: General Comment: It would be helpful to indicate which ducting/piping is potentially rad and non rad.	
43		Drawing 500 Series, General: By definition RBA air pressures are to be progressively negative. Evaluate and revise accordingly.	
44		Electrical Drawings: Please provide electrical symbols list.	
45		Drawing EP Series: As much as possible, please include receptacles in the floor (under tables) in conferencing areas to avoid tripping hazards.	
46		Drawing EP Series: There does not appear to be corridor receptacle to facilitate facility maintenance. Please include corridor receptacles.	
47		Drawing EP Series: There does not appear to be ceiling receptacles for projection or for screens. Please evaluate and revise accordingly.	
48		Drawing EP Series: As the design matures, will there be a cable & conduit schedule delineating conduit & wiring numbers, routes, locations, terminations?	
49		Drawing EL 213-4, Zone D11, Rooms 1300 & 1302: Are there no lights in these rooms?	
50		Drawing EL 221-6, Zone F11, Rooms 2234 & 2233: Are there no lights in these rooms?	
51		Drawing EL 223-2, Zone D8, Room 2203: No lights depicted in 3420-STRS-020.	
52		Drawing EL 222-5, Zone F7, Room 2203: Are there no lights in this room?	

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 14 of 20
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Comment		Comments and Recommendations	Resolution
Number	Type*		
53		Drawing ES Series: General: Move all card readers inside vestibules and place on right-hand side of entry doors.	
54		Drawing ES 211-5, Zone F9: Wiring cannot be routed through stairwells with exposed cover per NFPA 101, section 7.1.2.3.(6)(6).	
55		Drawing P 200 Series, General: Change all RLWS labels to RPS for "Retention Process Sewer."	
56		Drawing P Series, General: Include all room numbers and RBA/non-RBA area designation for ease of reading.	
57		Drawing P 211-1: Zone 9: Some piping labeling schemes do not agree with those depicted on Drawing 3400-0-M-001 (TW, PCW, PHW, DIS). Evaluate and revise all applicable drawings accordingly.	
58		Drawing P 211-2: Zone C6: Piping labeling schemes do not agree with those depicted on Drawing 3400-0-M-001 (LN2, OSD). Evaluate and revise all applicable drawings accordingly.	
59		Drawing P211-5, Zone F9: Routing of piping not permitted per NFPA 101.	
60		Drawing P 212-1: zone D7: Piping labeling schemes do not agree with those depicted on Drawing 3400-0-M-001 (DIR). Evaluate and revise all applicable drawings accordingly.	
61		Drawing P213-5, Zone F11: Size/Number of toilets not adequate for mission need. Evaluate and revise accordingly.	
62		Drawing P Series, General: There is no indication of the location of the RPS retention tanks. Please identify.	
63		Drawing FP210: General: Loop and Grid FP System.	
64		Drawing FP210, Zone C4, water entry: This is not a good location for FP entry because it will freeze.	

Building 3425 Ultra Low Detection Laboratory

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DOCUMENT REVIEW RECORD

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--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
1		Drawing A200 and others, General Notes: Please include ONLY building-specific sheet notes.	
2		Drawing A262, Zone C2: Is there a janitor closet in this lab?	
3		Drawing A281, Zone E1: Is this lab to be ADA accessible?	
4		Drawing A310, Zone F2: Delete reference to Sun shading.	
5		Drawing Q201, Zone D8: Gasses need to be depicted in rated enclosures or moved outside.	
6		Drawing M201-2, Zones C4 & F7/8: Overwriting, please clean.	
7		Drawing P 200: Some piping labeling schemes do not agree with those depicted on Drawing 3400-0-M-001 (TW, PCW, PHW, DIS). Evaluate and revise all applicable drawings accordingly.	
Building 3430 Ultra Trace			
1		Drawing A022, Zone G2: Note A is out of date and should be revised/deleted accordingly.	
2		Drawing A021, Zone G2: Note A is out of date and should be revised/deleted accordingly.	
3		Drawing A210, General: Sheet Notes need to be building-specific.	
4		Drawing A211, Zone F8, Rm 1304: Room needs second means of egress per NFPA 45.	
5		Drawing A211, Zone E7: Corridor and rooms are a RBA and need survey points, an additional door, and corresponding HVAC controls.	
6		Drawing A212, Zone D11, room 1407: Room is listed as a RBA making corridor 1230B, also, an RBA. Need survey points, an additional door, and corresponding HVAC controls.	
7		Drawing A213, Zone F10, rooms 1503, 1505, and 1507: Rooms are listed as a RBA making corridors 1230C and 1230D, also, RBAs. Need survey points, an additional door, and	

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--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
		corresponding HVAC controls.	
8		Drawing A213 et al. Please identify all emergency exits as depicted on other HRT facility drawings.	
9		Drawing A213, Zone D9: The door between corridor 1230D and 1230F creates a dead end greater than 50 feet. Relocate this door to eliminate this hazard.	
10		Drawing A213, Zone C11, Room 1606: Second means of egress required per NFPA 45.	
11		Drawing A220, Zones D11 & E10: The doors in corridors create a dead end greater than 50 feet. Relocate this door to eliminate this hazard.	
12		Drawing A222, Column 7: Hazards Analysis lists this fire barrier as a 2-hr fire barrier. Evaluate and revise accordingly.	
13		Drawing A222, Column 9: Door swing from corridors 2210 and 2220 into 2nd floor entry (also labeled as 2220); need to be reversed.	
14		Drawing A223, Column 3: Recommend the installation of a aisle.	
15		Drawing A223, Zone E7: Access aisle 2230E creates a 118-foot dead end. Evaluate and revise accordingly.	
16		Drawing A223, Zone D8: Where are the perc hood exhausts depicted?	
17		Drawing A261, Finish Note 16, has a spelling error.	
18		Drawing A262-286, General: PNNL/Flad to verify minimum officing requirements satisfied.	
19		Drawing A311 - A313: RBA corridor ceiling should be GWB with Mylar facing to facilitate decontamination.	
20		Drawing Q211-1, Zone E8: Piping labeling schemes do not agree with those depicted on Drawing 3400-0-M-001 (CVS). Evaluate and revise all applicable drawings accordingly.	
21		Drawing Q211-1, Zone E8, Rooms 1310 & 1304: Rooms are listed as	

PSF-005 (04-2006)

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--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
		RBA with central vac. ALARA prevents the uncontrolled release/takeup of RBA air. Evaluate and revise accordingly.	
22		Drawing Q211-1, Zone C12: Please to not install propane in closets.	
23		Drawing Q211-1, Zone D12: Gasses need to be listed in rated enclosures or moved outside.	
24		Drawing Q211-1, Zone E4, Room 1300: Verify sink drains to RPS system.	
		Drawing Q211-1, Zone C8, Room 1310: Relocate Rad Waste away from desk ALARA concern.	
25		Drawing Q212-1, Zone G: Corridor 1230A s.b. listed as RBA.	
26		Drawing Q212-2, Zone D11, Rooms 1240D & 1240E: Gasses need to be listed in rated enclosures or moved outside.	
27		Drawing Q212-1, Zone E9: Corridor 1230B s.b. listed as RBA.	
28		Drawing Q213-1, Zone E8, Room 1509A & B: Rooms are listed as RBA with central vac. ALARA prevents the uncontrolled release/take-up of RBA air. Evaluate and revise accordingly.	
29		Drawing Q213-1, Zone F10, Room 1240F: Gasses need to be listed in rated enclosures or moved outside.	
30		Drawing Q213-2, Zone F11, Room 1242: Move cabinets away from door.	
31		Drawing S212: Vibrations for EM Labs - These drawings do not show an isolation pad for the electron microscopes. One may be needed to meet instrument vibration specs.	
32		Drawing M211-2, Zone E11: Include reference to applicable drawing or delete.	
33		Drawing M221-1 General: Perc Hood Exhaust needs to be depicted and rad non-rad systems identified.	
34		Drawing M223-1, Zone C9: Perc Hood Exhaust need to be identified.	

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DOCUMENT REVIEW RECORD

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--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution
Number	Type*		
35		Drawings M511 thru M513: Air flow is a critical issue in this building and will not work as shown in the drawings. In general, pressures must be highest in the clean zone and drop subsequently to the microscopy labs, then other labs then corridors and finally rad labs on the north end of the building. Overall building must be negative pressure.	
36		Drawing EP General: UT Capability requires the ability to reconfigure labs as experiments require, cable trays need to be depicted to facilitate ease of reconfiguration	
37		Drawing EP Series, General: Power located above Electron Microscopy Lab - We have a concern that the power panels and equipment above the microscopy labs could cause problems with the instruments due to electric fields being produced. This needs to be evaluated and could limit the mechanical equipment above those labs.	
38		Drawing EL 211-1, Zone F: Rooms 1232 thru 1236 do not appear to have lighting fixtures programmed.	
39		Drawing EL 221-1, Zone D11: Stairway and lift are listed as being part of building 3420. Revise on all applicable drawings (there are many).	
40		Drawing EL 221-1, Zone D11: Stairway does not contain lighting. Revise.	
41		Drawing EL 212-4, 222-4, Zone E10: Delete special note in elevator on all applicable drawings.	
42		Drawing ES Series: General: Move all card readers inside vestibules and place on right-hand side of entry doors.	
43		Drawing P211-F-2, Zone D11: Re-label RWLS to RPS. Additionally, the routing of a potentially RAD system through a non-rad area needs to be revisited. Lastly, where does this	

PSF-005 (04-2006)

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 19 of 20
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Comment		Comments and Recommendations	Resolution
Number	Type*		
		system go?	
44		Drawing P213F-1, Zone E: PS cannot be in an RBA unless it is capped off for future use.	
45		Drawing P213F-1, Zone D: PS drains in corridors (potentially RBA) cannot happen. Evaluate and revise accordingly.	
46		Drawings P 212-1 thru 213-4: Piping labeling schemes do not agree with those depicted on Drawing 3400-0-M-001. Evaluate and revise all applicable drawings accordingly.	
47		Drawing FP 211, Zone F9: Change note to state "vertical double check valves."	
48		Drawing FP212, Zone D7: Elevator is listed as 3410-Elev-001. This is mislabeled; this building is 3430. Change all applicable drawings.	
49		Drawing FP212, Zone D7: Verify & Identify the office area is 0.15 gpm/1500 sf.	
50		Drawing FP221, Zone E10: Note is mislabeled as 3410. Revise to applicable building for all applicable drawings.	
51		Drawing FP221, Zone E10: Note is mislabeled as 3410. Revise to applicable building for all applicable drawings.	
52		Drawing FP222, Zone E10: Note is mislabeled as 3410. Revise to applicable building for all applicable drawings.	
53		Drawing FP223, Zone F10: Note is mislabeled as 3410. Revise to applicable building for all applicable drawings.	
54		All 3430 Drawings: Please scrub drawings to eliminate any reference to any other building starting with drawing FP223, Zone E8, for the stairs.	
Building 3440 Large Detector Laboratory			

PSF-005 (04-2006)

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DOCUMENT REVIEW RECORD

Document No.	Document Title	Page 20 of 20
--------------	----------------	---------------

Comment		Comments and Recommendations	Resolution	
Number	Type*			
1		Drawing A021, Zone G2: Note A is out of date and should be revised/deleted accordingly.		
2		Drawing A021: Ensure notes are building-specific.		
3		Drawing A021, Zone F10: the drive-through area of this building should be listed as a S2 special occupancy and notes changed accordingly.		
4		Drawing A210, Zone D12: Door swing needs to be reversed.		
5		Drawing A210: Details 2 & 3 need to be changed to reflect the correct building (3440).		
6		Drawing A210: Sheet notes need to be changed to reflect building-specific components.		
7		Drawing A261, Detail 2 needs to be changed to reflect the correct building (3440).		
8		Drawing A261, Zone F12: Stair labeling needs to be changed to reflect the correct building (3440).		
9		Drawing A611, Detail 1 is listed as not used - there is a detail right next to it. Revise.		
10		Drawing Q211, Zone G1: Please eliminate the clutter/overwriting.		
11		Drawing S101, Zone C13, Note 1: Concrete psi is inconsistent with specifications and drawing needs to be building specific. Evaluate and revise accordingly		
12		Drawing FP 211, Zone B9: Change note to state "vertical double check valves."		
Concur with Comment Resolution, Review Complete			Comments Resolved By	
Reviewer Signature		Date	Document Author Signature	Date

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