



V. Design Program – Space Program, Room Data Sheets, Drawings and Diagrams

1.0 INTRODUCTION AND OVERVIEW

A. Introduction

The proposed project provides a modern regional training center that meets the multi-level training and operational requirements for the assigned Army National Guard units. It will be an efficient, technology-driven training facility that offers highly standardized and cost-effective training for the State Military Department. As a secondary function, the Pierce County Readiness Center will be available for community use on a rental basis, and function as an emergency response center and shelter.

B. Methods & Process

During the predesign process the programming team met with the State Military Department Facilities Management Office and representatives of the assigned National Guard units. The focus of these meetings was to develop an understanding and definition of the functional and space needs of each assigned unit and to determine how the training and administrative space authorized by the Federal National Guard Bureau (NGB) could best be distributed, organized, and planned to facilitate efficient use and maximize efficiency.

The proposed Pierce County Readiness Center will house the main administrative, operational, and classroom functions of the 96th Troop Command (including its Headquarters and Headquarters Detachment), the 741st Ordnance Battalion Headquarters (including its Headquarters and Headquarters Detachment), the 319th Explosive Ordnance Disposal Company, A Company Detachment of the 341st Military Intelligence Battalion, and the 951st Maintenance Company. The size of the building and the program functions housed were developed based on National Guard Bureau facilities allowances (ref. NG PAM 415-12) which call for 97,513 gross square foot total building development including an 80,701 gsf primary facility.

C. Planning Assumptions

Throughout the programming and planning process, the following assumptions have been made that directly impact the project development function, form, schedule, and costs:

1. The role of the National Guard in the military force structure has changed over the past decade with the Guard playing a more active role in the national defense mission. This is particularly true with the wars in Iraq and Afghanistan, where National Guard and Reserve units have made up nearly 28 percent of all deployed troops. Indeed, the recruiting slogan “one weekend a month, two weeks a year” was dropped during the Iraq War as it no longer described service expectations. More and more the National Guard will be relied upon as the Army enters a period of scaling back its full-time personnel. This reliance may include increasing annual training exercises from two weeks to up to seven weeks.
2. The building will be designed to comply with National Guard Bureau standards.



3. The facility will be achieved through Design/Build delivery. Performance criteria of varying degrees of specificity will be provided potential teams via bridging documents. Bridging documents will include schematic-level floor plans and building sections, but no building elevations. Bidders will be encouraged to add their creativity to the ultimate design solution.
4. The general layout of the facility will assume future construction of an attached Joint Force Headquarters facility of 140,000 gross square feet. The combined Pierce County Readiness Center and Joint Force Headquarters facility will share common functions (lobby, assembly hall, kitchen) constructed as part of the Pierce County Readiness Center project.
5. The building will have internal security zones to facilitate public use both as a rental facility and an emergency shelter.
6. The facility will be constructed to meet essential facility standards and will comply with AT/FP setback requirements for facilities located within controlled perimeters.
7. The facility will be designed and constructed to achieve LEED Silver certification. (See Section IV., 4.0 SUSTAINABILITY & LEED NARRATIVE for complete project LEED summary.)
8. The layout of administrative suites will be generic in nature, not tailored to unique preferences of assigned units, to assure future flexibility.
9. Authorized administrative space will be apportioned to the units and subordinate organizations based upon a count of assigned personnel having primary command/administrative functions.
10. Administrative space allocation will be based upon defined need and/or the Washington State Space Standards published by the Department of Enterprise Services.
11. To the maximum extent possible, open-plan workstations will be used for administrative space. Private offices will be limited to command positions or staff/support positions requiring acoustic privacy for personnel or security reasons.
12. To the greatest extent possible, private offices shall be arranged as internal spaces, getting natural light through re-lites, while open/cubicle space shall be arranged at the plan perimeter, getting direct natural light from exterior window openings.
13. To the maximum extent possible, the facility will make flexible provisions for the use of current and future technology.
14. The site will have access to adequate utilities, including potable water capable of supporting both domestic and fire suppression use, a sanitary sewer system sufficient to support full occupancy, natural gas for space heating and kitchen equipment, three-phase power, and telecommunications service including fiber optic cable. All storm water will be infiltrated on Camp Murray.



15. The facility will include an emergency power generator with capacity adequate to support 100 percent of facility functions.

2.0 GENERAL SITE & SITE SECURITY

A. Site Planning Requirements

The National Guard Design Guide for Readiness Centers (DG 415-1) establishes minimum site components that must be provided in any new facility. These include:

1. POV (privately-owned vehicles) parking based on 80% of authorized strength of the housed units, which in the case of the PCRC equates to 302 spaces.
2. Adequate space for expansion of the readiness center (up to 50% of Schedule II space). For purposes of this project the future Joint Force Headquarters satisfies this requirement.
3. Military vehicle parking (with up to 50% expansion). Again, the future JFHQ satisfies this requirement.
4. Vehicle support including wash platform & fuel storage/dispensing. For the PCRC, fuel will be stored in Guard-owned trucks. Wash platform and fuel dispensing functions will require containment.

Readiness centers also require adherence with the following Basic Site Components illustration found in DG-415-1. Note that this illustration is diagrammatic and is not intended to convey a design solution:

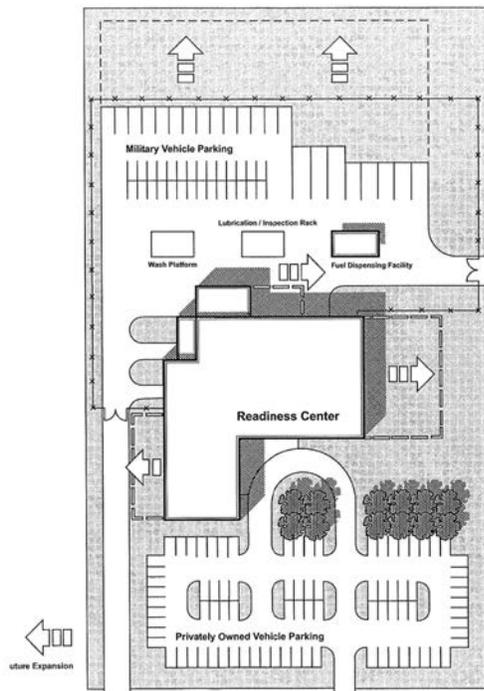


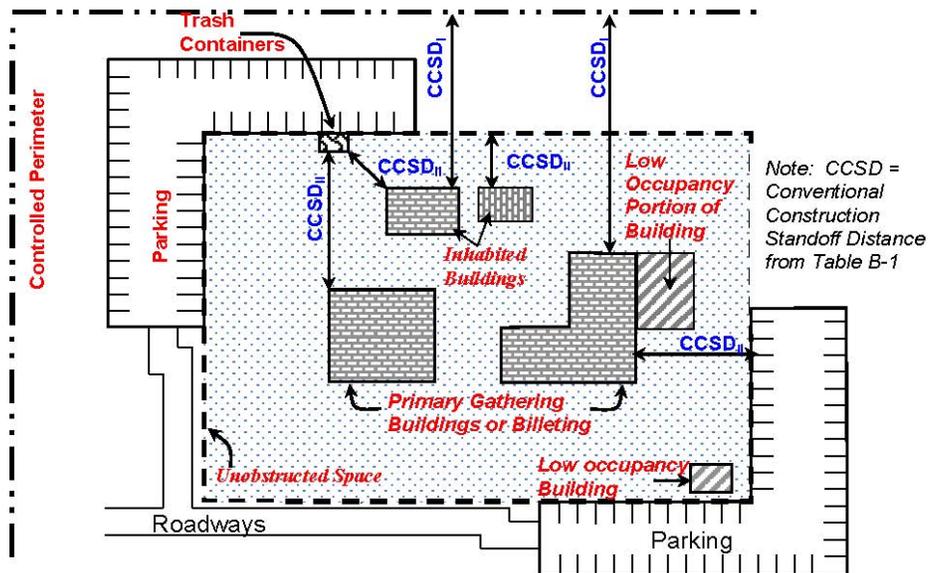
Figure 1. Basic Site Components

B. General Site Security Requirements

In large part due to terrorist actions against the Murrah Federal Building in Oklahoma City in 1995, and later the Pentagon and World Trade Center in 2001, the Department of Defense through UFC 4-010-01 established minimum anti-terrorism protection standards for its facilities. UFC 4-010-01 states that the most cost-effective solution for mitigating explosive effects on buildings is to keep explosives as far away as possible. Accordingly, the UFC establishes minimum Conventional Construction Standoff Distances (CCSDs) which –coupled with building hardening – provide physical security for housed personnel. CCSDs are also influenced by whether the readiness center is located within a controlled perimeter (i.e. within security fences and with vehicular entrances protected by gates and security personnel) or located without such protection. As the PCRC is located on Camp Murray, it is for purposes of AT/FP (antiterrorism/force protection) considered located within a controlled perimeter.

The following diagram is taken from the current version of UFC 4-010-0 to explain the impact of standoff distance on perimeter structure:

Figure B-1 Standoff Distances – With Controlled Perimeter



Due to the PCRC's irregularly-shaped site, and due to the anticipated future development of a JFHQ on the east portions of the site, the WMD desires that standoff distances for the PCRC be minimized. This decision has a direct impact not just on site planning, but – as will be addressed under Architectural Narrative below – on the structural systems that can be employed at the perimeter of the primary readiness center facility.



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C. Physical Security

Continuing from the site security narrative included in the prior section, the WMD desires that standoff distances (CCSDs) be minimized. This decision has a direct impact on the structural and envelope systems that can be employed at the perimeter of the primary readiness center facility. The following table included in Appendix B of UFC 4-010-01 defines the applicable CCSDs in terms of exterior wall type:

Table B-2 Conventional Construction Standoff Distances

Wall Type ^{(1) (1, 9) (1)}	Column Letter							
	Without Controlled Perimeter Applicable Explosive Weight I ⁽⁵⁾				Within Controlled Perimeter Applicable Explosive Weight II ^{(1) (5) (1)}			
	Load Bearing Walls		Non-Load Bearing Walls		Load Bearing Walls		Non-Load Bearing Walls	
	A PG & BIL LLOP	B INHAB VLLLOP	C PG & BIL LLOP	D INHAB VLLLOP	E PG & BIL LLOP	F INHAB VLLLOP	G PG & BIL LLOP	H INHAB VLLLOP
Wood Studs – Brick Veneer	105 ft (32 m)	105 ft (32 m)	79 ft (24 m)	66 ft (20 m)	36 ft (11 m)	36 ft (11 m)	23 ft (7 m)	16 ft (5 m)
Wood Studs – EIFS	207 ft (63 m)	207 ft (63 m)	164 ft (50 m)	141 ft (43 m)	86 ft (26 m)	86 ft (26 m)	66 ft (20 m)	56 ft (17 m)
Metal Studs – Brick Veneer	187 ft (57 m)	187 ft (57 m)	207 ft ⁽³⁾ (63 m)	187 ft ⁽³⁾ (57 m)	75 ft (23 m)	75 ft (23 m)	82 ft ⁽³⁾ (25 m)	75 ft ⁽³⁾ (23 m)
Metal Studs – EIFS	361 ft (110 m)	361 ft (110 m)	420 ft ⁽³⁾ (128 m)	361 ft ⁽³⁾ (110 m)	151 ft (46 m)	151 ft (46 m)	167 ft ⁽³⁾ (51 m)	151 ft ⁽³⁾ (46 m)
Metal Panels	n/a ⁽²⁾	n/a ⁽²⁾	151 ft (46 m)	108 ft (33 m)	n/a ⁽²⁾	n/a ⁽²⁾	56 ft (17 m)	39 ft (12 m)
Girts	n/a ⁽²⁾	n/a ⁽²⁾	115 ft (35 m)	59 ft (18 m)	n/a ⁽²⁾	n/a ⁽²⁾	23 ft (7 m)	16 ft (5 m)
Reinforced Concrete	66 ft (20 m)	66 ft (20 m)	26 ft (8 m)	20 ft (6 m)	16 ft (5 m)	16 ft (5 m)	13 ft (4 m)	13 ft (4 m)
Unreinforced Masonry ⁽⁴⁾	262 ft (80 m)	262 ft (80 m)	125 ft (38 m)	33 ft (10 m)	80 ft (24 m)	80 ft (24 m)	26 ft (8 m)	16 ft (5 m)
Reinforced Masonry	86 ft (26 m)	86 ft (26 m)	30 ft (9 m)	20 ft (6 m)	30 ft (9 m)	30 ft (9 m)	13 ft (4 m)	13 ft (4 m)
European Block	164 ft (50 m)	164 ft (50 m)	59 ft (18 m)	30 ft (9 m)	39 ft (12 m)	39 ft (12 m)	23 ft (7 m)	16 ft (5 m)
\1\ Roof Construction in Table 2-3 /1/	20 ft (6 m)				13 ft (4 m)			



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1. Refer to Table 2-3 for details on the analysis assumptions and material properties for these wall types. \1\ Note that window and door construction will need to be heavier and more expensive when standoff distances are less than 82 feet (25 meters) for Explosive Weight I and 33 feet (10 meters) for Explosive Weight II.
Where wall types include multiple cladding systems such as brick half way up the wall and EIFS above that, use the greater of the two applicable standoff distances /1/
2. Metal panels and girts are not considered primary structural members. \1\ Where they are used in the same wall, use the applicable standoff that is the greatest of the two components /1/.
3. Non-load bearing steel studs are assumed to have slip-track connections. Closer distances may be obtained through non-standard detailing and analysis.
4. Only used for analysis of existing structures. Not allowed for new construction.
5. \1\ Note that standoff distances less than 43 feet (13 meters) for Explosive Weight I and 23 feet (7 meters) for Explosive Weight II will require dynamic analysis for windows because lesser distances are outside the range of ASTM F2248 /1/.
6. \1\ Note that all of the construction included in this table must also be checked for loading conditions specified by other applicable structural criteria/1/.

To fit within the available site as depicted in the site diagram found in Part V, the primary PCRC building (which for purposes of the UFC is considered a Primary Gathering Building) it is the opinion of the WMD that at minimum reinforced masonry will be required for the perimeter structure. Wood studs with brick veneer, which support similar minimum CCSDs, are not considered appropriate for this project.



3.0 SPACE REQUIREMENTS AND ASSUMPTIONS

A. Summary of Requirements

The primary function of any readiness center is to provide an environment in which the assigned units can be administered, train for their assigned missions, and store the immediate equipment that they will require upon mobilization.

The following space allowances are set by National Guard Bureau in Chapter 2 of the NG PAM 415-12 (see Appendix G). The provisions of federal funding require that readiness centers contain the program functions designed within the area allowances contained therein.

Planned areas were based on the assigned strength of the housed units at a total of 302 personnel and the allowances of NGB PAM 415-12. This document categorizes the housed functions into two groupings. Schedule I spaces include functions that are common to every readiness center. Schedule II spaces include functions that vary depending on the type and size of unit supported.

For the PCRC, with 339 total authorized personnel per the MTOE, the authorized space per NG PAM 415-12 is:

FUNCTION	Area Required (SF)
Schedule I	
Assembly Hall	6,300
Classrooms	4,890
Library/Classroom	300
Learning Center	300
Training Aid Storage	140
Training Device - Simulation	1,840
Kitchen	1,300
Family Readiness Center	250
Break Area	856
Vending Area	100
Toilets & Showers	2,460
Recruiting Office	250
Audio Visual Storage	150
Table & Chair Storage	550
Physical Fitness Area	800
Subtotal Schedule I	20,486
Schedule II	
Administrative Offices	13,000
Unit Storage (heated)	9,000
Locker Room	6,302
Secure IT Room	2,400
Vehicle Training Workbays	3,168
Maintenance Supervisors Office	210
Supply	200
Tools	200
Battery	200
Subtotal Schedule II	34,680



Facilities Maintenance/Storage	1,655
Mechanical/Electrical/Telecom	3,311
Circulation @ 22%	13,230
Walls @ 10%	7,337

TOTAL BUILDING GROSS 80,699

Note that in other authorization documents the total area is identified as 80,701 gsf. In addition, the DD Form 1391 authorizes 362 gsf for an unheated storage building, 300 gsf for a controlled waste facility, 150 gsf for detached flammable material storage and 16,000 gsf for an unheated vehicle storage building (**Alternate No. 1**).

For most functions, NGB will allow the actual space to vary +/-15 percent from the amount authorized provided the total gross building area stays within the authorized gross area. For the assembly hall, the actual space may only be reduced by up to 15 percent. Some functional spaces have proscribed dimensions, such as training workbays, which practically allow no variance.

B. Administrative Space

While National Guard regulations specify overall quantity of space allocated, they do not provide a guide for distributing the administrative spaces that relate directly to how the housed units function. Accordingly, when planning a new readiness center, administrative space allowance must be further distributed to support the subordinate entities within the structure of the assigned units. While it should be noted, the assigned units scheduled to occupy a readiness center are often re-assigned or relocated, sometimes even during the design process. With that in mind, Administration space of a readiness center is not to be customized for a particular unit, but rather well designed as generic office space. For the PCRC, this evaluation identified seven groupings of administrative space as follows:

1. 96th TC
2. HHD 96th TC
3. 741st BN HQ
4. HHD 741st HQ
5. DET A-341 MI BN
6. 951st MC
7. 319th EOD

As command personnel frequently counsel soldiers one-on-one, enclosed offices are needed for the commanders, primary staff officers, executive officers, and senior non-commissioned officers. Security of material and financial documentation also require private offices for unit supply and maintenance personnel adjacent to their areas of control. In keeping with the goal of assuring maximum future flexibility, the balance of administrative space will be open-office configuration.

To discipline the allocation of administrative office space, reference was made to the Washington State Space Standards published by the Department of Enterprise Services. The



following distribution of administrative office space identified the administrative position from the line item off the Unit MTOE:

96th TC		
Function	Space type	Net Area (sf)
CO CMDR	Private Office	180
COM SGT MAJ	Private Office	180
XO	Private Office	160
Aviation Officer	Private Office	160
JAG	Private Office	160
Oper. SGT MAJ	Private Office	160
S-1	Private Office	160
S-2	Private Office	120
S-3	Private Office	160
S-4	Private Office	160
S-6	Private Office	160
Chaplain	Private Office	160
Property Book Officer	Private Office	160
Conference/Briefing	Enclosed	340
Open Office for approx. 26 Occupants	Cubicle	3214
Total		5474

HHD 96th TC		
Function	Space type	Net Area (sf)
CO CMDR	Private Office	120
1 st SGT	Private Office	120
RNCO	Private Office	120
Total		360

741st BN HQ		
Function	Space type	Net Area (sf)
CO CMDR	Private Office	160
COM SGT MAJ	Private Office	160
XO	Private Office	160
Oper. SGT MAJ	Private Office	160
S-1	Private Office	160
S-3	Private Office	160
S-4	Private Office	160
Chaplain	Private Office	160
Conference/Briefing	Enclosed	240



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Open Office for approx. 17 occupants	Cubicle	2206
	Total	3726



HHD 741st HQ

Function	Space type	Net Area (sf)
CO CMDR	Private Office	120
1 st SGT	Private Office	120
RNCO	Private Office	120
STORAGE	open	100
Total		460

DET A-341 MI BN

Function	Space type	Net Area (sf)
CO CMDR	Private Office	120
1 st SGT	Private Office	120
RNCO	Private Office	120
Open Office for approx. 6 occupants	Cubicle	692
Total		1052

951st MC

Function	Space type	Net Area (sf)
CO CMDR	Private Office	120
1 st SGT	Private Office	120
RNCO	Private Office	120
Training NCO	Private Office	120
Open Office for approx. 6 occupants	Cubicle	692
Total		1172

319th EOD

Function	Space type	Net Area (sf)
CO CMDR	Private Office	120
1 st SGT	Private Office	120
RNCO	Private Office	120
Open Office for approx. 3 occupants	Cubicle	396
Total		756



4.0 FUNCTIONAL INTER-RELATIONSHIPS

DG 415-1, the National Guard Design Guide for Readiness Centers, provides the following criteria for functional planning of readiness center functions/spaces. Note that the indoor firing range is not authorized for the PCRC.

Table 1. Proximity Requirements for Typical a Readiness Center

	Assembly Hall	Classrooms	Library / Classroom	Learning Center	Distance Learning Center	Indoor Firing Range	Training Device / Simulation Ctr.	Training Aid Storage	Kitchen	Break Room	Vending Area	Toilets / Shower	Flammable Materials Storage	Family Readiness Office	RADIDS Office	Recruiting / Retention Office	Audio / Visual Storage	Table / Chair Storage	Physical Fitness	Controlled Waste Handling	Unit Administration	Unit Storage (Heated)	Locker Rooms	Maintenance/Training Workbay	Supervisor's Office	Inspection and Library	Tool Room	Supply Room	Vault	SIPRNET Room
Assembly Hall	2	2	2	2	3	2	1	1	2	2	1	3	N	N	N	1	1	N	3	N	1	2	3	3	3	3	3	2	3	
Classrooms	2	1	1	1	3	1	1	N	2	2	2	3	N	N	N	1	2	3	3	N	3	3	3	3	3	3	3	3	3	
Library / Classroom	2	1	1	1	3	1	1	N	2	2	2	3	N	N	N	1	2	3	3	N	3	3	3	3	3	3	3	3	N	
Learning Center	2	1	1	1	3	2	1	N	2	2	3	3	N	N	N	2	N	3	3	N	3	3	3	3	3	3	3	3	N	
Distance Learning Ctr.	2	1	1	2	3	2	1	N	2	2	2	3	N	N	N	1	2	3	3	N	3	3	3	3	3	3	3	3	N	
Indoor Firing Range	3	3	3	3	3	3	3	N	2	2	1	3	3	3	3	3	3	3	3	3	2	3	N	3	3	3	3	N	3	
Train. Device/Simul.Ctr.	N	2	2	2	3	2	N	2	2	N	3	N	N	N	2	N	3	3	N	3	3	3	3	N	N	N	N	N	N	
Training Aid Storage	2	1	1	1	N	2	N	N	N	N	3	N	N	N	2	2	N	3	N	N	N	N	3	N	N	N	N	N	N	
Kitchen	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	3	
Break Room	2	2	2	2	2	2	N	N	1	N	N	2	2	2	N	N	N	N	2	N	N	N	N	N	N	N	N	N	3	
Vending Area	2	2	2	2	2	2	N	N	1	N	N	2	2	2	N	N	N	2	N	N	2	N	N	N	N	N	N	N	3	
Toilets / Shower	2	2	2	3	2	1	2	N	N	N	N	N	2	2	2	N	2	1	N	2	N	1	2	2	2	2	N	N	3	
Flammable Mtls. Stor.	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	
Family Readiness Office	N	N	N	N	N	N	N	N	N	N	2	3	2	2	2	N	N	N	3	2	N	N	3	3	3	3	3	N	N	
RADIDS Office	N	N	N	N	N	N	N	N	N	N	2	3	2	2	2	N	N	N	3	2	N	N	3	3	3	3	3	N	N	
Recruiting / Retent. Off.	N	N	N	N	N	N	N	N	N	N	2	3	2	2	2	N	N	N	3	2	N	N	3	3	3	3	3	N	N	
Audio/Visual Storage	1	1	1	2	1	N	2	1	N	N	N	3	N	N	N	N	N	N	3	N	N	N	N	N	N	N	N	N	N	
Table / Chair Storage	1	N	N	N	N	N	N	N	N	N	N	3	N	N	N	N	N	N	3	N	N	N	N	N	N	N	N	N	N	
Physical Fitness	N	3	3	N	3	N	3	N	N	N	1	3	3	3	3	N	N	N	3	3	N	1	N	N	N	N	N	N	3	
Controlled Waste Hand.	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	3	3	3	3	3	3	
Unit Administration	N	N	N	N	N	N	N	N	N	N	2	3	2	2	2	N	N	N	3	N	N	N	3	3	3	3	3	N	1	
Unit Storage (Heated)	1	N	N	N	N	N	N	N	N	N	N	3	N	N	N	N	N	N	3	N	N	N	N	N	N	N	N	N	1	
Locker Rooms	2	3	3	3	N	N	N	N	N	N	1	3	3	3	3	N	1	3	3	N	N	N	N	N	N	N	N	N	3	
Maint./Train. Workbay	3	3	3	3	N	N	N	N	N	N	2	3	3	3	N	N	1	3	N	N	N	N	1	1	1	1	1	N	3	
Supervisor's Office	N	N	N	N	3	N	N	N	N	N	3	N	N	N	N	N	N	3	N	N	N	N	1	1	1	1	1	N	3	
Inspection and Library	N	N	N	N	3	N	N	N	N	N	3	3	3	3	N	N	N	3	3	N	N	1	1	1	1	1	1	N	3	
Tool Room	N	N	N	N	N	N	N	N	N	N	3	3	3	3	N	N	N	3	3	N	3	3	1	1	1	1	1	N	3	
Supply Room	N	N	N	N	N	N	N	N	N	N	3	3	3	3	N	N	N	3	3	N	3	3	1	1	1	1	1	N	3	
Vault	N	N	N	N	N	N	N	N	N	N	3	N	N	N	N	N	N	3	N	N	3	1	N	N	N	N	N	N	N	
SIPRNET Room	3	3	N	N	3	N	N	3	3	3	3	3	3	N	N	N	3	3	1	N	3	3	3	3	3	3	3	N	N	

Functional Relationship Requirements 1 Immediate 2 Close 3 Isolated N Neutral

All designated areas are from NG PAM 415-12, Table 3-4

The table does not include building maintenance and support spaces.



5.0 FUNCTIONAL PLANNING

A. Training

Unit training is conducted on an individual and small group basis. Dedicated training spaces include classrooms, library/learning center, physical fitness room, a weapons simulation room, and vehicle training workbays. The primary large group training area is the assembly hall, a large high-ceiling multipurpose space.

B. Storage

Storage for both unit and individual equipment is required. Individual soldiers have lockers for their personal equipment storage while non-sensitive unit equipment is stored in an open area subdivided by wire mesh partitions. The secure material for each unit such as weapons and classified data is stored in a vault. For equipment that is not temperature sensitive, a separate storage building, provided with minimal heat is authorized and planned.

C. Common Use Space

Common use spaces include the building lobby and circulation, toilets, facilities maintenance, and mechanical/electrical rooms. The readiness center space allowance also includes a commercial-grade kitchen. Toilet spaces will be sized as necessary to meet the IBC plumbing fixture requirements and accessibility codes. As Guard training requires bulky personnel equipment and rapid movement of material and gear, common corridors will be sized to permit unimpeded two-way traffic. This establishes a minimum of 7'-0" clear in major corridors and 5'-0" for minor hallways.

Mechanical and electrical areas will be sized to contain the planned equipment with sufficient area for maintenance and servicing. Adequate clearances to permit removal of large components will also be provided.

The kitchen is intended to exactly meet the NGB "Small Kitchen" standard both in terms of layout and equipment. The standard plan published by NGB includes space for a serving corridor, food preparation, food storage, scullery, office, a unisex toilet, and a small janitor closet.



6.0 FUNCTIONAL ARRANGEMENT

The conceptual plans presented in this report were developed in direct response to both the internal functional requirements of the spaces contained in the building and as a response to the AT/FP (anti-terrorism/force-protection) conditions of the site. Initial planning included scaled “bubble diagrams” of all the functional areas. These diagrams were reviewed for operational function by the core planning team and representatives of the assigned units. Based on review of the diagrams, a number of plan options addressing functional interrelationships were developed and discussed, with the preferred option being presented herein.

A. Functional Considerations

Some of the functional considerations necessary to arrive at the optimum functional configuration are:

1. Orientation of the main public entry should be towards the adjacent public access in order to maximize the visual presence of the building for recruiting and community awareness. At this location AT/FP features must be effective yet visually subtle.
2. The plan organization shall reinforce AT/FP standards.
3. All areas of potential expansion should be located along the perimeter of the building to permit ease of expansion. In the case of the PCRC this is particularly critical due to the sheer size (140,000 gsf) of the planned Joint Force Headquarters co-location (i.e. expansion) project.
4. As the primary public use space is the assembly hall, it should be centrally located and the circulation from the main entrance lobby must be clear and obvious. Note that in this case centrality is defined as the PCRC with JFHQ build-out.
5. Visual observation of the entrance lobby from a gatekeeper office is considered a fundamental reception and security. This gatekeeper must be directly adjacent to both the main entrance vestibule and the lobby. In the case of the PCRC the authorized recruiting office will serve the gatekeeper function.
6. The administrative space areas within the readiness center should maximize unit integrity and control with dedicated spaces.
7. “Industrial” spaces such as the vehicle training workbays, unit storage, and assembly hall should be grouped together to permit easy access from military and service vehicles.
8. Service areas such as toilets, mechanical, electrical, and telecom rooms should be stacked to maximize efficiency and minimize cost.
9. Mechanical rooms should be located to permit effective zoning of like spaces.
10. Rectilinear shapes have been used for the functional spaces within the building and from the building form itself to keep the building as compact as possible.
11. To reduce energy use, the building should maximize the use of daylight. The depth of the building should be optimized for daylight at the interior and opportunities for clerestory lighting of high volume spaces should be explored. Daylighting should be filtered at the south elevations.



7.0 PROJECT SPECIFIC ROOM CRITERIA

In addition to the general design guidelines given for each type of space in the NG 415-1, the following are project specific design criteria formulated during the pre-design process and in consultation with representatives from the assigned units and shall be incorporated. Additional space specific requirements can be found in Section V. 10 Room Data Sheets.

A. Kitchen

The Pierce County Readiness Center will have a standard "Small" kitchen. The Kitchen Equipment Schedule and reference plan, found on pg.15-16 of NG 415-1 is incorrect; however the plan diagram on DG 415-1 pg. 15 illustrates the standard "Large" kitchen. A corrected and current Kitchen Equipment Schedule, reference plan and equipment catalog cuts are included in Appendix 2 H.

B. Assembly Hall

Contrary to the diagrams and descriptions in the DG 415-1, the Assembly Hall at the PCRC will have no operable partitions and no built-in AV equipment.

C. SIPRNET

The SIPRNET room may be located on an upper floor, exterior wall and may have exterior windows. All partitions and ceiling structure will have stainless steel mesh and have no openings larger than 96 sq.in.

D. Classrooms

Large format classrooms shall include a folding partition that is tested and verified to meet a NIC rating of 40 as verified by field testing.

E. Locker Rooms

The space referred to as Lockers or Personal Equipment Storage is not used for dressing and will include the specific lockers noted in Section IV .5.B.8.n. (Lyon 2 Tier 1100TA50 or equal)

F. Unit Storage

Wire mesh partitions shall be 9 gage and require gaps between partition & adjacent structure no larger than 4"

G. Training Simulator

The Training Simulation room will have a 3" nominal, low profile raised floor system to allow easy concealment of compressed air equipment. A separate room within the Simulation Rm area will be provided to house the required air compressor.

A lowered floor area will be provided within the Simulation Room to re-create a "foxhole" position.

Provide solid core, wood, acoustic isolation doors.



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8.0 INFORMATION TECHNOLOGY & TELECOMMUNICATIONS

A prime readiness center function is training and instruction. This project seeks to improve the effectiveness of technology as an instructional tool. Information technology signal distribution will include accessible data pathways throughout the facility terminating at stacked secure data closets on each floor. Security of information systems and telecommunications will comply with military communications standards.



9.0 FUTURE REQUIREMENTS

As the type and composition of units in the National Guard are subject to change, the readiness center must be designed to accommodate both the change in function of the units housed as well as accommodating expansion of up to 50 percent. Future growth needs are historically faced in unit storage, personal equipment storage, administrative office, and classroom functions. Growth is typically not accommodated in the general services spaces such as the assembly hall and the general purpose training workbays.

Expansion potential is especially critical at the Pierce County Readiness Center due to the very real likelihood of construction of a Joint Force Headquarters.



10.0 CODES AND REGULATIONS

A. Building Codes

The following building codes and regulations apply to this project. The code analysis and summary that are presented in this section are based on the latest adopted versions of these codes at the time of publication. Actual code compliance is based on versions of these codes in effect when building permits are obtained, so some modifications will likely be required.

1. 2012 International Building Code as adopted by 17C.20.010 of Pierce County Code
2. 2012 International Fire Code as adopted by 17C.60 of Pierce County Code
3. 2012 International Mechanical Code as adopted by 17C.40 of Pierce County Code
4. 2012 Uniform Plumbing Code as adopted by 17C.50 of Pierce County Code
5. 2012 National Electrical Code
6. 2012 International Fuel Gas Code
7. ANSI A17.1 - Safety Code for Elevators and Escalators
8. ICC/ANSI A117.1-2009 Accessible and Usable Buildings and Facilities
9. 2009 Washington State Energy Code (WSEC)
10. Washington State Ventilation and Indoor Air Quality Code

In addition, National Guard Bureau requires adherence to the following Unified Facilities Criteria:

1. UFC 4-010-01 – United Facilities Criteria, Design: DoD Minimum Antiterrorism Standards for Buildings, 9 Feb 2012
2. UFC 4-010-10 – United Facilities Criteria, Design: DoD Minimum Standoff Distances for Buildings
3. UFC 4-010-02 – DoD Minimum Antiterrorism Standoff Distances for Buildings
4. UFC 4-011-01 – DoD Security Engineering Planning Manual, (Draft)
5. UFC 4-011-02 – DoD Security Engineering Design Manual, (Draft)
6. and Department of the Army Technical Instructions:
7. TI 809-01: Load Assumptions for Buildings
8. TI 809-02: Structural Design Criteria for Buildings
9. TI 809-04: Seismic Design for Buildings
10. TI 809-29: Structural Considerations for Metal Buildings

B. Building Code Analysis

A full and complete code analysis will be required in the design phase of the project however, an initial code evaluation is critical in pre-design to determine if there are any significant regulatory impediments to the proposed project:

1. Governing Code
International Building Code, 2012 Edition



2. Occupancy Type (Chapter 3)

The Readiness Center primary building will be a mixed occupancy (508) with the primary use being Business Group B (304.1). The assembly hall and adjacent kitchen will be classified Assembly Group A-2 (303.3) due to its food service component. Personal equipment storage will be classified Assembly Group A-3 (303.4). Unit storage will be classified as Moderate-Hazard Storage Group S-1 occupancy, as will the vehicle training workbays (311.2). Differing occupancies must be separated from adjacent uses per 508.4.4 (see Table 508.4) which requires a 1-hour separation between A-2 or A-3 and B or S-1 occupancies.

The unheated storage building will be Moderate-Hazard Storage Group S-1 occupancy (311.2).

3. Special Use (Chapter 4)

As the general purpose training bays are used for light maintenance and repair they will be subject to the requirements for Repair Garages (406.8).

Building Construction Type (Chapter 6)

The readiness center will be constructed of non-combustible materials and will be classified as Type-II B construction (602.2). There are no specific fire-resistance rating requirements for building elements in this type of construction per Table 601.

The unheated storage building will be classified as Type V-B. There are no specific fire-resistance rating requirements for building elements in this type of construction per Table 601.

4. Allowable Building Height & Area (Table 503)

Type-II-B construction for the Group B occupancy allows up to 3 stories in height and, 23,000 sf per floor. Assembly A-2 and A-3 occupancies allow up to 2 stories in height and, 9,500 sf per floor. Storage S-1 occupancy allows up to 2 stories in height and 17,500 sf per floor. The occupancies are considered separated (508.4).

Equipping the building with an approved automatic sprinkler system allows for 1 additional story as well as an increase in maximum building height from 55 to 75 feet (504.2). A sprinkler system also allows increasing the building area 200 percent for buildings higher than one story and 300 percent for one story buildings (506.3).

With the allowed area well higher than requested and the proposed PCRC height at 3 stories and the upper 2 floors solely classified as Group B occupancy, the structure satisfies table 503 limitations.

C. Zoning Code Analysis

The proposed site is subject to Pierce County regulations, but the following excerpt is taken from Title 18A, removing the project from standard zoning requirements.



18A.10.110 Military Lands

Purpose. To recognize Urban Military Lands (UML) as portions of the Federal and State Military Installations within unincorporated Pierce County Urban Growth Area and to recognize Rural Military Lands (RML) as portions of these Installations within unincorporated Pierce County outside the Urban Growth Area. The autonomy associated with the federal ownership in combination with the unique character of the military operations and support structures is not typical of civilian land uses. Urban Military Lands and Rural Military Lands are designated on Title 18A – Development Regulations – Zoning 18A. 18A.10.1 the Comprehensive Plan Land Use Designations Map but are not represented in the Use Classification Tables because Pierce County does not govern land uses within these designations. The classifications are a mechanism to recognize the presence of urban and rural areas within the military installations. (Ord. 2012-2s § 5 (part), 2012) 10 – 14.



11.0 ROOM DATA SHEETS

The attached data sheets summarize physical requirements for each room identified in Appendix H.1.d. MTOE, H.1.e. DD1390/1391, Section V. 3.0 SPACE REQUIREMENTS AND ASSUMPTIONS, Section V. 13.0 PRE-DESIGN SITE PLAN DIAGRAM & Section V. 14.0 PRE-DESIGN FLOOR PLAN DIAGRAMS of this document.

<see attached file at the end of this Section V.>



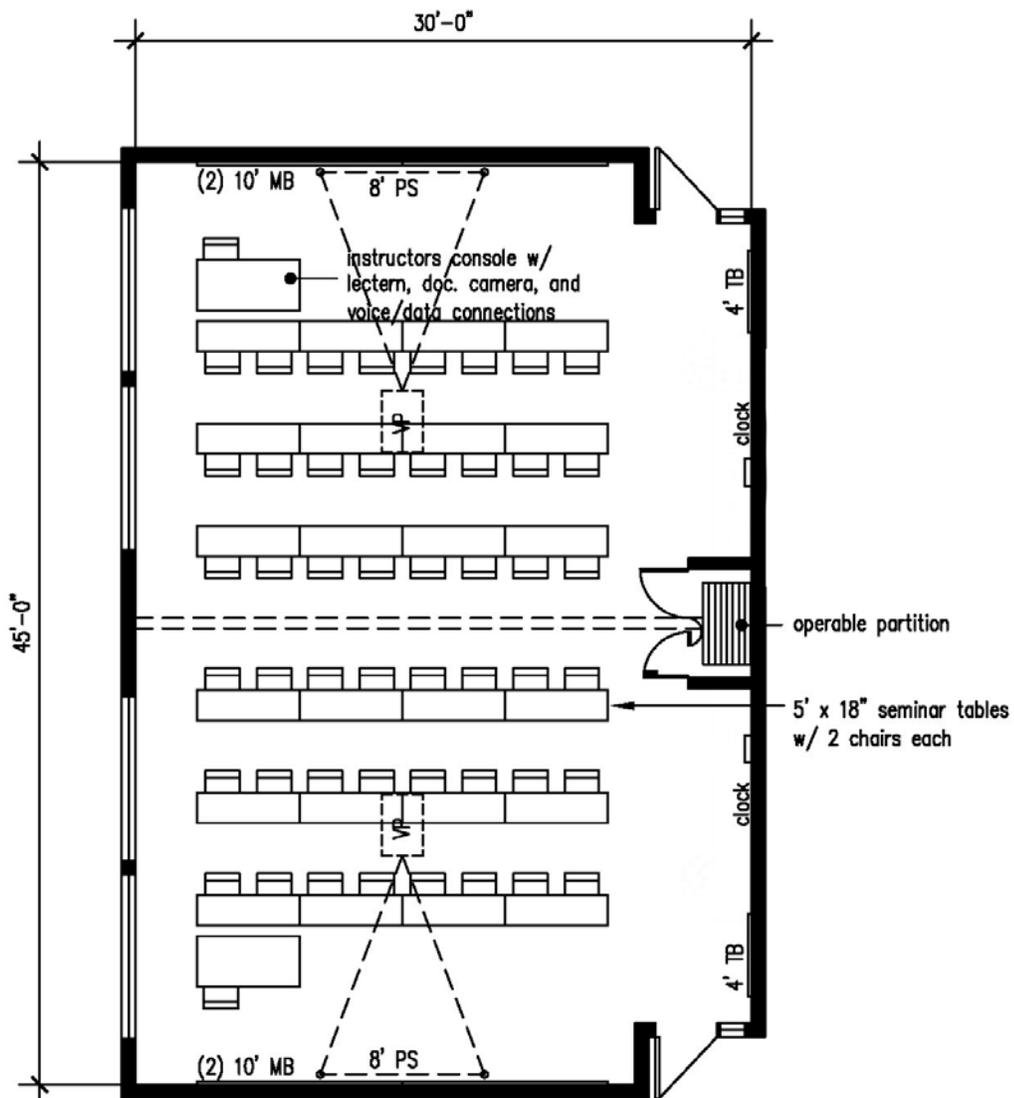
12.0 ROOM LAYOUT SKETCHES

The following diagrams were used to work with users to clarify meeting and office needs. They represent the concepts behind space requirements – specific dimensions and details may vary depending on design solutions and further input from users.

A. Classroom w/ divider partition – 900-1400 sf (15/48 people)

DIVISIBLE LECTURE CLASSROOM - 48 STUDENT

1,350 NSF





13.0 PRE-DESIGN SITE PLAN DIAGRAM

The following site diagram was developed with input from WMD, NGB and housed unit representatives. These plans are simply a diagrammatic solution and are to be referenced only as such.

<see attached Site Plan at the end of this Section V.>



14.0 PRE-DESIGN FLOOR PLAN DIAGRAMS

The following floor plan diagrams were developed with input from WMD, NGB and housed unit representatives. These plans are simply a diagrammatic solution and are to be referenced only as such.

<see attached Floor Plans at the end of this Section V.>