



**U.S. Army Corps  
of Engineers**  
Engineering and Support  
Center, Huntsville

## **FIRE STATION # 5**

**Building 2620  
Fort Riley, KS**



**POTR – Phase 1  
Project No 17322**

**DATE: 20 March 2012**

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## CHAPTER 1 - GENERAL

### 1-1 Purpose

The intent of this document is to present the findings of the Phase I Post Occupancy Technical Review (POTR) performed on Building 2620 (FIRE STATION # 5) at Fort Riley, Kansas. The POTR was performed by the HNC team on 20 March 2012.

### 1-2 Facility Description

Building 2620 is a Non-Standard, One-Company, Satellite Fire Station that was occupied in October 2011. Hours of operations for the facility are 24 hours. Janitorial services are performed by the staff.

The facility was a Non-Standard that was "custom designed" by a private A/E firm due to the unapproved Army Standard was still in draft status at the time of planning and design. Therefore, many of the findings and comments are not applicable to the current standard.

The users are overall pleased and extremely satisfied with the facility.

### 1-3 POTR Team Members

The following is a list of HNC's team members that participated in the POTR:

- Juan Pace – Architectural

### 1-4 Meeting Contacts

The roster is attached in Appendix A

- Scott DeLay, Fire Chief
- Shawn Sullivan, Asst. Fire Chief

### 1-5 Contract Modifications

The design-build contractor for this project was McKinzie Construction, Inc. The following is a list of the major contract modifications issued during construction. There were a total of seven (7) modifications.

### 1-6 Construction Issues

The major construction modifications list is attached in Appendix B.

The punch list dated, 28 September 2010, is attached in Appendix C.

## **Post Occupancy Technical Review**

March 20, 2012

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The construction issues/on-going maintenance list s attached in Appendix D. The following are issues received from the staff as ongoing:

- HVAC- 24 hour fan operation determined to be a programming issue
- Replacement of carpet tiles
- Adjustments had to be made to the overhead doors in the Apparatus Bay
- Cracked/peeling countertops in the Day/Training/Kitchen area.
- Hood vent issues during a windy day.

### **1-7 Overall Satisfaction**

- Overall, everyone is extremely satisfied with the facility.

## CHAPTER 2 - ARCHITECTURAL

### 2-1 General Discussion

- Countertops- Countertops are cracked and peeling. This is a result of a commercial activities environment in the kitchen area. Suggestions included use of counter tops with material all the way through and/or a more durable finish.
- Discussion also included the need for more commercial grade appliance due to the heavy use created by current the Fire Station Staff.
- We also discuss the need for more individual storage space in the Dayroom/Training/Kitchen for the fire staff.
- The Dorm Room seemed smaller than the Army Standard requirement. There is only one bed per Dorm Room.
- Hose storage and drying are located at the Headquarters Fire Station.
- Apparatus Bay is drive thru and can support approximately one emergency vehicle only. Heating is by radiant heating. Four floor drains support the Apparatus Bay drainage of water/etc.

### 2-2 Feedback/Lessons Learned/Standard Design Impacts

- None

## CHAPTER 3 - MECHANICAL

### 3-1 General Discussion

#### HVAC

- Vehicle Exhaust System/Air Cleaning System- Fire Station 5 uses a hose system for exhaust removal. We discussed my concern that the hose system only provides removal when the hose is attached. There is a need for some type of back-up system to achieve the 100% contaminate removal of the Army Standard and also provide off-gas removal of the PPE which are also stored in the Apparatus Bay.
- The hood vent in the kitchen over the stove allows outside air to infiltrate through during periods of high winds. The current remedy is to turn on the hood during high wind days.
- All HVAC related issues are handled as follows: A call is placed to the DPW Service Order desk. The Service Order desk notifies the DPW, O&M to conduct a service call.

- Climate control of the facility is handled through DPW.

## PLUMBING

- Natural gas is supplied is installed and supplies the grill located on the Patio.
- The contract was amended to install of utilities for a Government Furnished/Government Installed (GFGI) ice machine. Utilities included an electrical outlet and a water connection.

## FIRE PROTECTION

- None

### **3-2 Lessons Learned/ Standard Design Impacts**

- None

## **CHAPTER 4 - ELECTRICAL**

### **4-1 General Discussion**

- Training space. I discussed the requirement for a retractable overhead screen and overhead projector mount in the Satellite stations. Currently training is conducted offsite for the fire station staff.
- Currently Fire Station 5 only has an audible alert system as opposed to the Army Standard requirement of simultaneous light and audible control inside and outside to alert on duty staff of emergencies.

### **4-2 Lessons Learned/ Standard Design Impacts**

- None

## **CHAPTER 5 - MISCELLANEOUS**

### **5-1 CIVIL/SITE**

- There were no visual control measures at the service drive off of the parking lot to the rear of the Apparatus Bay. It was discuss and it is not an installation requirement.

### **5-2 STRUCTURAL**

- None

### **5-3 OTHER**

- None.

**APPENDIX A - ROSTER**

**APPENDIX B - CONSTRUCTION MODIFICATIONS**

**APPENDIX C – PUNCH LIST**

**APPENDIX D – ON-GOING ISSUES**

**APPENDIX E – MAINTENANCE ISSUES**

## APPENDIX A

## Post Occupancy Technical Review (POTR) - Roster

Name: William SCHAAD (Bill)	Organization: COE
Phone: (785) 307-4893	Email: william.schaad@usace.army.mil
Professional Responsibility: QA WARRANTY	
Name: Tim Cowan	Organization: PW OFM
Phone: (785) 239-0582	Email: timothy.g.cowan.civ
Professional Responsibility: QCM	
Name: Marcus SEARLES	Organization: HNC COE
Phone: (256) 895-1672	Email: MARCUS.J.SEARLES@USACE.ARMY.MIL
Professional Responsibility: COS	
Name: Juan R. Pace	Organization: USACE HNC
Phone: (256) 895-1675	Email: juan.r.pace@usace.army.mil
Professional Responsibility:	
Name: John R. Bess	Organization: DPTMS TSC
Phone: (785) 239-5381	Email: john.r.bess.civ@mail.mil
Professional Responsibility: Supervisory Supply Technician	
Name: Troy RUSSELL	Organization: DPTMS, TSC
Phone: (785) 239-4735	Email: Troy.I.RUSSELL.CIV@mail.mil
Professional Responsibility: CHIEF of TRAINING SUPPORT CENTER	
Name: KRIS UPSON	Organization: USACE
Phone: (816) 389-3046	Email: kristofer.k.upsan@usace.army.mil
Professional Responsibility: Resident Engineer	

## Post Occupancy Technical Review (POTR) - Roster

Name: <i>Shawn Sullivan</i>	Organization: <i>DES/FIRE</i>
Phone: <i>(785) 240-2038</i>	Email: <i>shawn.sullivan5@us.army.mil</i>
Professional Responsibility: <i>Fire/Life Safety</i>	

Name: <i>Mark Schuler</i>	Organization: <i>USACE</i>
Phone: <i>(816) 389-3050</i>	Email: <i>mark.g.schuler@usace.army.mil</i>
Professional Responsibility: <i>Area Engineer/ACO</i>	

Name: <i>Tony Cady</i>	Organization: <i>COE</i>
Phone: <i>(816) 389-3477</i>	Email: <i>anthony.e.cady@usace.army.mil</i>
Professional Responsibility: <i>Program Manager - Forward</i>	

Name: <i>Alan C. Ingwersen</i>	Organization: <i>Ft. Riley Public Works</i>
Phone: <i>(785) 239-6903</i>	Email: <i>alan.ingwersen@us.army.mil</i>
Professional Responsibility: <i>Assistant Master Planner / Project Manager.</i>	

Name:	Organization:
Phone: (    )	Email:
Professional Responsibility:	

Name:	Organization:
Phone: (    )	Email:
Professional Responsibility:	

Name:	Organization:
Phone: (    )	Email:
Professional Responsibility:	

## APPENDIX B

Modification Reference No	SPS Modification Release No	Title
R00001	P00001	Add & Delete Clauses.
R00002	P00005	Revise Site Plan
R00003	P00003	Time Extension, Nov. - Dec 31 Weather.
R00004	P00004	Delete Government Field Office.
R00005	P00002	Change Per Diem to Field Office D.H.
R00006	P00006	Ice Maker Utilities.
R00007	P00007	Vehicle Exhaust System In Apparatus Bay
R00008	P00008	Signal Lights

# APPENDIX C

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Punch List from Final Inspection

Inspection Date: September 28, 2010

- Replace damaged heater shield on infrared heater in Apparatus Bay
- Replace cracked light lens in Room 131
- Install light in shower in Men's Restroom
- Replace damaged hose reel in Apparatus Bay
- Spray for weeds in grass
- Monitor landscape establishment, grass, trees, plants etc.
- Fill in around curb, several depressions in dirt around curb
- Light poles for signals
- Raise com-box at north east corner of the building
- Add dirt around inlet on west side of project
- Clean paint off sprinkler head by south east door in Apparatus Bay door
- Provide 3 additional keys for the hose bibs
- Provide 4 keys per lock instead of 2
- Railing around equipment platform

Rec Start	Fund/Loc	Order	Description	TotCostAct	Entered by	System Status	Mn/wk/str
<input checked="" type="checkbox"/> 12/15/2010	2 20605.2620	400000010294	BLDG 2620 NEED TO CHECK EXTERIOR LOCKS	87.12	1184453769	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 01/10/2011	3 20605.2620	400000011025	02620 DOOR CLOSER INOP	75.80	1275662565	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 01/19/2011	2 20605.2620	400000011263	BLDG 2620 NEW FIRE STATION #5	81.56	1285507282	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 01/25/2011	3 20605.2620	400000011019	REF#40118 02620 HOOK UP ICE MACHINE	387.42	1275662565	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 02/08/2011	2 20605.2620	400000011989	BLDG 2620 WATER LEAKING THROUGH HEATER	163.12	1042064862	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 03/03/2011	2 20605.2620	400000012854	BLDG. 2620 KITCHEN RANGE HOOD FAN INOP	86.20	1273745919	REL PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 03/03/2011	2 20605.2620	400000012855	BLDG. 2620 ROOL UP DOOR WILL NOT ROLL U	329.89	1273745919	CLSD PCNF GMPS MANC PRC SETC	1006
<input checked="" type="checkbox"/> 03/08/2011	2 20605.2620	100000315293	BLDG 2620 DRAIN GUTTER HAVE LEAKS	20.47	1042064862	REL PCNF NMAT PRC SETC	1005
<input checked="" type="checkbox"/> 03/15/2011	2 20605.2620	200000018398	2620 SCHEDULED MAINTENANCE	1,213.23	1251370857	CLSD PCNF GMPS PRC SETC	1004
<input checked="" type="checkbox"/> 03/23/2011	2 20605.2620	100000338757	BLDG 2620 DOOR LEAKING WATER	605.96	1285507282	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 04/25/2011	1 20605.2620	100000389759	bld.g 2620 garage door, truck bay over	187.38	1273745919	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 05/03/2011	2 20605.2620	100000402609	bldg. 2620 system trouble on mass noti	32.42	1273745919	CLSD PCNF NMAT PRC SETC	1005
<input checked="" type="checkbox"/> 05/05/2011	2 20605.2620	100000407131	BLDG 2620 CHECK THE SYSTEM	39.10	1285507282	CLSD PCNF NMAT PRC SETC	1005
<input checked="" type="checkbox"/> 06/01/2011	2 20605.2620	100000447452	TROOP SELF HELP BLDG 2620	8.10	1041866930	REL GMPS MANC PRC SETC	1004
<input checked="" type="checkbox"/> 06/01/2011	2 20605.2620	100000448605	BLDG 2620 ROOF LEAK ABOVE DISPATCH OFFIC	0.00	1042064862	REL NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 06/03/2011	2 20605.2620	100000451475	BLDG 2620 FIRE STATION NUMBER 5 DOOR KNO	21.79	1103801083	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 07/15/2011	2 20605.2620	100000529991	BLDG 2620 / RM 107 /DOOR CLOSURE	78.67	1285507282	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 07/15/2011	2 20605.2620	100000529993	BLDG 2620 / FORSYTH FIRE STATION	43.56	1285507282	REL PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 07/18/2011	1 20605.2620	100000532203	lbd.g 2620 fire station over head d	78.26	1273745919	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 07/26/2011	2 20605.2620	100000547698	BLDG 2620 TROOP SELF HELP	132.36	1287868665	REL GMPS MANC PRC SETC	1004
<input checked="" type="checkbox"/> 09/01/2011	2 20605.2620	100000617873	BLDG 2620 WATER FOUNTAIN INOP	56.23	1285507282	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 09/28/2011	2 20605.2620	100000659249	BLDG 2620 THE AC IN ROOM 120 COOLS BUT	0.00	1231382476	REL MANC NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 10/03/2011	2 20605.2620	100000663268	REF# 20104 / BLDG 2620 - OVERHEAD DOOR	163.12	1285507282	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 10/25/2011	2 20605.2620	100000706303	BLDG: 2620 FIRE SUPERVISORY ALARM	32.42	1285507282	CLSD PCNF NMAT PRC SETC	1005
<input checked="" type="checkbox"/> 11/01/2011	2 20605.2620	100000719325	BLDG 2620 RM 130 IN TRUCK BAY SENSOR SWI	121.29	1042064862	CLSD PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 11/29/2011	2 20605.2620	100000766127	BLDG 02620 TROOP SELF HELP	59.15	1287868665	REL GMPS MANC PRC SETC	1004
<input checked="" type="checkbox"/> 11/30/2011	2 20605.2620	100000768845	BLDG 2620 KITCHEN SINK LEAKS	270.96	1184453769	CLSD PCNF GMPS MANC PRC SETC	1006
<input checked="" type="checkbox"/> 01/23/2012	2 20605.2620	200000085656	2620 SCHEDULED MAINTENANCE	1,295.01	1251370857	REL PCNF GMPS PRC SETC	1004
<input checked="" type="checkbox"/> 02/02/2012	3 20605.2620	100000881685	BLDG 2620, REPAIR MONACO	0.00	1285507282	REL NMAT PRC SETC	1005
<input checked="" type="checkbox"/> 02/21/2012	2 20605.2620	100000915425	BLDG 2620 COUNTER TOP IS BROKEN	42.92	1184453769	REL PCNF NMAT PRC SETC	1006
<input checked="" type="checkbox"/> 02/21/2012	2 20605.2620	100000916305	BLDG 02620 TROOP SELF HELP	10.38	1287868665	REL GMPS MANC PRC SETC	1004

APPENDIX D

Building 2620 Fire Station # 5

Maintenace schedule

pm_idno	assetno	lpm_date	next_create	next_due	
7229	BF-2620-01-03-FLOW	12/14/2011	12/1/2012	12/11/2012	Annual testing of the back flow preventer
7230	BF-2620-01-03-FLOW	12/14/2010	11/25/2015	12/13/2015	5 year backflow rebuild
7189	FIRE-2620	2/2/2012	5/1/2012	5/10/2012	Quarterly test and maintenace of fire alarm system.
7190	FIRE-2620	11/17/2011	11/6/2012	11/16/2012	Annual test and maintenace of fire alarm system
7219	GENERATOR SET-2620	11/29/2011	5/15/2012	5/24/2012	Semi annual generator maintenace
7220	GENERATOR SET-2620	11/29/2011	5/14/2012	5/24/2012	Semi annual generator transfer switch maintenace
7221	GENERATOR SET-2620	11/29/2011	11/28/2012	12/8/2012	Annual generator maintenace
7222	GENERATOR SET-2620	12/9/2010	11/2/2015	12/8/2015	Annual generator transfer switch maintenace
7223	HV-2620-01-02-COND	5/17/2011	5/9/2012	5/19/2012	Annual maintenace on condensing unit.
7224	HV-2620-01-02-PU	2/28/2012	5/19/2012	5/28/2012	Quarterly maintenace on packaged split systems
7228	HV-2620-01-08-PHCU	2/28/2012	5/19/2012	5/28/2012	Quarterly maintenace on Package heating and cooling units
7225	HV-2620-01-AHU	3/1/2012	5/21/2012	5/30/2012	Quarterly maintenace on air handling uint
7227	HV-2620-01-AIRC	12/20/2011	5/27/2012	6/6/2012	Semi annual air compressor maintenace
7226	HV-2620-02-AHU/ERV	2/28/2012	5/19/2012	5/28/2012	Quarterly AHU/ERV maintenace

APPENDIX E



**U.S. Army Corps  
of Engineers**  
Engineering and Support  
Center, Huntsville

## **FBNA- EMERGENCY SERVICES CENTER**

**Building 5010  
Fort Belvoir, VA**



**POTR – Phase 1  
Project No 64076**

**DATE: 3 April 2012**

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## CHAPTER 1 - GENERAL

### 1-1 Purpose

The intent of this document is to present the findings of the Phase I Post Occupancy Technical Review (POTR) performed on Building 5010 (FBNA- Emergency Support Center) at Fort Belvoir, VA. The POTR was performed by the HNC team on 3 April 2012.

### 1-2 Facility Description

Building 5010 is a Non-Standard, Two Company, Satellite Emergency Services Center (ESC) located on North Fort Belvoir. The Fire Station was occupied November 2010. Hours of operations for the facility are 24 hours. The facility supports approximately 22 staff members a day with a shift change number of 44 personnel every 72 hours. The approximate number of visitors per day is 1.

The users are overall satisfied with the facility.

### 1-3 POTR Team Members

The following is a list of HNC's team members that participated in the POTR:

- Juan Pace – Architectural
- Robert Jackson- Mechanical

### 1-4 Meeting Contacts

The roster is attached in Appendix A

- Patrick Reid- Fire Chief/ Richard M. Monroe- Assistant Fire Chief

### 1-5 Contract Modifications

The design-build contractor for this project was Grunley/Goel, JV, LLC. The following is a list of the major contract modifications issued during construction. There were a total of twelve (12) modifications.

### 1-6 Construction Issues

The major construction modifications list is attached in Appendix B. The following are construction modifications received from the staff during questioning:

- Apparatus Bay. The floor was initially constructed with a slope of 1" per foot which too much of a slope. The floor was later removed and sloped to 1/8" per foot.
- Laundry Room. Vents were added for the dryers and proper outlet connections were installed to support

stackable washer/dryer units.



- Guardrails were installed at the vehicle apron to prevent vehicular rollover into the easements.

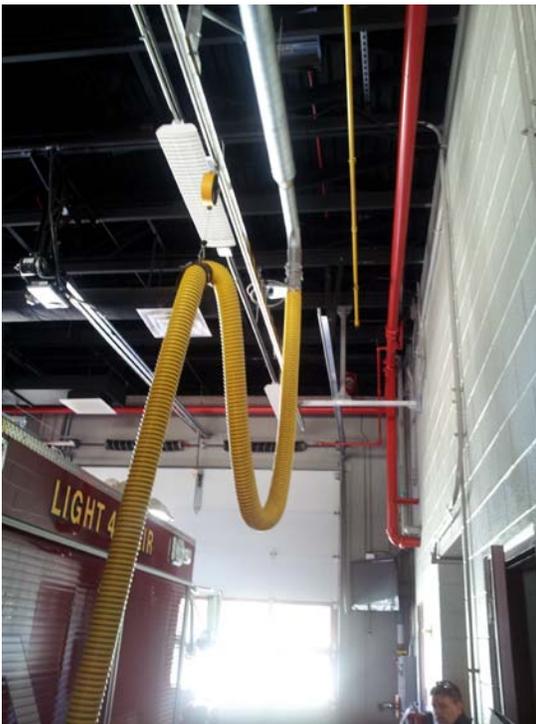




The punch list was not provided- Appendix C.

The construction issues/on-going maintenance list is attached in Appendix D and Appendix E. The following are issues received from the staff as ongoing:

- Apparatus Bay. Standard bay roll up doors (non-drum) were installed. Split bi-fold door systems were to have been provided.



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- Kitchen. Residential grade appliances were provided and counter/cabinet spaces were provided to support a residential request. Commercial grade appliances and commercial counter/cabinet spacing was needed to support a Fire Station/ Emergency Services work environment.
- Dorm Rooms. Vision panels were provided on the Dorm Room doors. This should not have happened. The vision panels had to be tinted to provide privacy.
- HVAC System. On-going balancing issues throughout the facility. Heating units had to be installed to compensate for overcooling.
- There are continued roof leaks at roof curbs.



- Roof gutters and downspouts are undersized to support the rain discharge of the roof. Overflow at gutters causes landscape damage.





- Rest Rooms. Severe drainage issues. Floors are not sloping to drains, therefore causing flooding, wall damage, tile staining, and rusting at the foot of door jambs.







- Rest Rooms. Exhaust for moisture was not installed. A grill was placed in the restroom to conceal the fact.



- Rest Rooms. Waterless urinals installed.



- Kitchen. The supply and return in the kitchen are located above the Refrigerator and Freezer. The amount of clear space is not adequate to allow beneficial circulation off conditioned air. Damage to the refrigerator and freezer occurs.
- All the finishes of the Offices along the exterior were painted CMU. To produce the R- value needed for a properly insulated space, the finishes should have been furred out stud wall with painted gypsum board.

**1-7 Overall Satisfaction**

- Overall, everyone is satisfied with the facility.

## CHAPTER 2 - ARCHITECTURAL

### 2-1 General Discussion

- Reception/Service Window. A Reception /Service Window was not needed due to the very number of visitors per day which is 1 and the location of the facility.
- PPE Gear Storage. This room is separate of the Apparatus Bay due to User request. The removal off off-gassing is accomplished by negative pressure and the user states the separation from the Apparatus bay allow the gear to remain dry when vehicles are being washed.

### 2-2 Feedback/Lessons Learned/Standard Design Impacts

- Because of Corps employees transitioning to different jobs, key player were not able to see the project through from planning to construction completion.
- Storage. Can never have enough storage.
- Space was not allocated for EMS in the facility.
- The built-in closet with additional doors to the corridor worked out well. The closet could be deeper to better support larger size clothing.

## CHAPTER 3 - MECHANICAL

### 3-1 General Discussion

The user is happy with the HVAC system installed in the dorm rooms only. The particularly like the Mitsubishi equipment being used. The user said they couldn't get the air properly balanced in the areas outside of the dorm rooms which operate in connection with a VAV system. They feel the air isn't properly heated or cooled in the areas outside of the dorm rooms and that those VAV units seem to not meet their design temperature intent. Thermostats are working properly. Primavent is the exhaust system being used in the Apparatus Bay. It is a hose system. The user feels the Primavent system is does an adequate job of removing 100% of the vehicle exhaust emissions of the vehicles that connect to it. They think the PPE Gear Storage Room is being properly exhausted. The maintenance schedule of the HVAC system are said to be properly followed to the best of their knowledge and there is adequate space to access, maintain and inspect HVAC equipment.

The user is happy with the plumbing system installed. All plumbing fixtures are stated to be functioning properly throughout the facility including the kitchen. They do like the automatic toilet with the manual flush option on it. Waterless urinals are installed in this facility. They also like having the instantaneous hot water heaters.

The user does not have any issues with the wet pipe sprinkler system. There have been no issues with performing inspection, testing and maintenance of the fire protection system.

### HVAC

- When asked about the commissioning process and what issues were discovered and resolved, they expressed to the POTR team that the air flows were off and the contractor still submitted the TAB report which the project engineer did not like that they did that. They went through three separate TAB submittals. The user and the project engineer stated that they were not confident the design meets the required 68 degree F set point.
- The user suggested to not having the exhaust fan on a switch in the PPE Gear Storage Room.
- There is no radiant heating in the Apparatus Bay due to a roll up door issue.
- There is no exhaust fan in the men's shower room. There is an exhaust diffuser there, but there is no duct work nor a motor attached. There is a dry wall sitting above the exhaust diffuser and no duct work to exhaust the air to the outside.
- Three commercial refrigerators and three freezers are lined up next to each other. The user has been told that there is heat buildup between the appliance and the 8 ft. ceiling. They were told that the thermal coupling on the compressor is tripping because the trapped heat is causing the overheating and that they need to exhaust that additional heat buildup above the appliances.
- The POC for HVAC related issues the user encounters is the general base maintenance contractor.

### PLUMBING

- They prefer to not have waterless urinals.
- The POC for plumbing related issues the user encounters is the general base maintenance contractor.

### FIRE PROTECTION

- The user has experienced false alarms/trips previously. Rainwater runoff dripped into some strobes and caused the fire alarm to go off.

### **3-2 Lessons Learned/ Standard Design Impacts**

- Take into consideration the ceiling height and proper equipment clearances when selecting equipment and appliances such as commercial refrigerator and freezers.

- Consider any issues within the Apparatus Bay in regards to the location of radiant heaters and the type of doors required to be installed.

## CHAPTER 4 - ELECTRICAL

### 4-1 General Discussion

- Operational controls for the Apparatus Bay doors were relocated to the corridors and at the Apparatus Bay doors. The typical locations are located in the Station Officer's/ Watch (Satellite) Desk, Dispatch Suite (Headquarters), and the Apparatus Bay doors.
- The Firefighter Alert System only controls audible alert in the Dorm Rooms, corridors from the Dorm Rooms to the Apparatus bay, and the Apparatus Bay. Dedicated alert lighting should also be controlled.

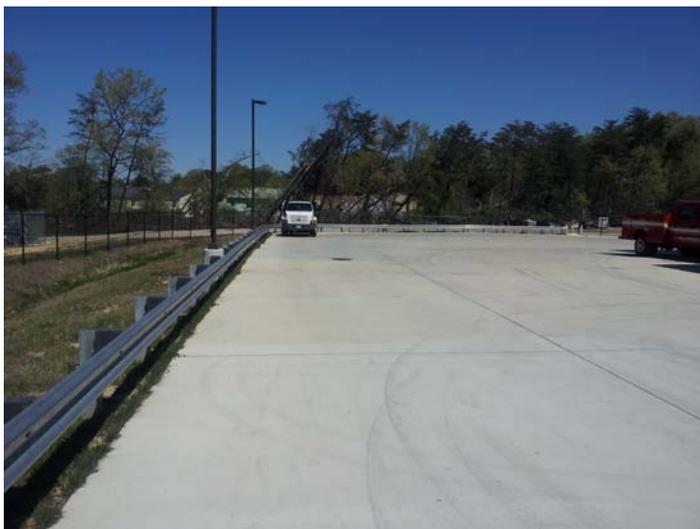
### 4-2 Lessons Learned/ Standard Design Impacts

- None.

## CHAPTER 5 - MISCELLANEOUS

### 5-1 CIVIL/SITE

- The large emergency vehicle apron is used for hose drying and training.





- The type system used to halt traffic is a 4- way stop.

**5-2 STRUCTURAL**

- None

**5-3 FURNISHINGS**

- The user/customers felt they had a great working relationship with HNC with the furnishing contract.

**5-4 Lessons Learned/ Standard Design Impacts**

- None.

**APPENDIX A - ROSTER**

**APPENDIX B - CONSTRUCTION MODIFICATIONS**

**APPENDIX C – PUNCH LIST (NOT USED)**

**APPENDIX D – ON-GOING ISSUES**

**APPENDIX E – CONSTRUCTION NOTES (NOT USED)**

**APPENDIX F – 6-MONTH WARRANTY LOG**

**APPENDIX G – DD FORM 2626 PERFORMANCE EVALUATION**

# Post Occupancy Technical Review (POTR) - Roster

Name: Juan R. Pace		Organization: USACE - HNC
Phone: (256) 895-1675	Email: juan.r.pace@usace.army.mil	
Professional Responsibility: Technical Lead - Fire Station / COS		
Name: Robert E. Jackson, II		Organization: USACE - HNC
Phone: (256) 895-1704	Email: Robert.E.Jackson@usace.army.mil	
Professional Responsibility: Mechanical Engineer		
Name: Richard M. Monroe		Organization: FBDES - FES
Phone: (703) 806 1911	Email: richard.M.Monroe.civ@MAIL.MIL	
Professional Responsibility: Assistant Fire Chief		
Name: Stephen A. McDoniel		Organization: FBDES - FES
Phone: (703) 806-7095	Email: stephan.A.McDoniel.civ@MAIL.MIL	
Professional Responsibility: Customer		
Name: WES WRIGHT		Organization: USACE - NCA IPO
Phone: (571) 1643-9884	Email: wesley.a.wright@us.army.mil	
Professional Responsibility:		
Name: AL AUFFORTH		Organization: USACE
Phone: (202)	Email: ALLEN, R. AUFFORTH.USARMY.MIL	
Professional Responsibility:		
Name: CHUCK SPANGLER		Organization: USACE
Phone: (703) 806-5908	Email: OTTO.M.SPANGLER@USACE.ARMY.MIL	
Professional Responsibility: P.M.		

# APPENDIX B



US Army Corps  
of Engineers

## Change Request Register

02 Apr 2012

NGA RESIDENT OFFICE

Change Request No.	Change Request Title	Mod Type	Org Agency	Reason	Trans Code	Inception Date	Government Estimate		Negotiated	Ref No	Contractor Signature	Stage / Status / Remarks	Mod Due Date	Mod Age Days
						RFP Date	Contractor Proposal			Mod No	Government Signature		Action By	
						Proposal Date	Change Amount / Time			Mod No	Government Signature		Action By	
<b>Contract No. W912DR-09-C-0022</b>		<b>ESC, NGA, EPG, FT.BELVOIR, VA.</b>										<b>GGJV</b>		
AA-1	Excavate and Backfill Footprint	B	C	7	6	06/17/2009	\$53,000.00	0 days	N/A	P00001	Not Required	K - Mod completed, mod package needs to be sent to district	07/17/2009	22
						06/17/2009	\$207,677.00	60 days		P00001	07/09/2009		DWP	
						06/24/2009	\$53,000.00	0 days						
AA-2	Excavate and Backfill Footprint	B	C	7	6	06/17/2009	\$117,755.68	0 days	Yes	P00002	01/07/2010	K - Mod completed, mod package needs to be sent to district	08/01/2009	204
							\$328,220.00	0 days		P00002	12/08/2009		DWP	
						09/08/2009	\$212,000.00	91 days						
AB	Casement Windows	B	C	7	4	07/17/2009	\$0.00	0 days	N/A			M - Cancelled on 11/20/2009	07/17/2009	0
							\$0.00	0 days					Shannon	
AC	2 Additional Exit Doors & Sidewalk	B	C	4	4	07/17/2009	\$8,444.00	0 days	No			M - Cancelled on 11/10/2009	08/16/2009	0
						07/17/2009	\$0.00	0 days						
						11/10/2009	\$0.00	0 days						
AD	Unsolicited Claim - Apparatus Bay Doors	B	C	6	4		\$237,973.00	0 days	No			M - Cancelled on 03/15/2010		0
						11/04/2009	\$0.00	0 days						
ADMIN 1	Weather Time Extension Apr 09 - Nov 09	U	C	E	6	09/09/2010	\$0.00	4 days	N/A	P00005	Not Required	K - Mod completed, mod package needs to be sent to district		-136
							Not Required	Not Required		P00004	04/26/2010		Shannon	
							Not Required	Not Required						
ADMIN 2	Weather Time Extension Dec 09 - Feb 10	B	C	E	6	09/09/2010	\$0.00	21 days	Yes	P00006	04/30/2010	K - Mod completed, mod package needs to be sent to district		-128
							Not Required	Not Required		P00005	05/04/2010		Shannon	
							Not Required	Not Required						
AF	Unsolicited - Airfield Matting Disposal	B	C	7	6	10/20/2009	\$4,450.00	0 days	N/A	P00003	03/03/2010	K - Mod completed, mod package needs to be sent to district	11/19/2009	134
							\$4,450.00	0 days		P00003	03/03/2010		DPW	
						10/20/2009	\$4,450.00	0 days						
AF	Masonry Remobilization for TMG	B	C	6	6	04/12/2010	\$3,254.00	0 days	N/A	P00004	06/30/2010	L - Mod completed, mod package sent to district	04/12/2010	88
							\$3,254.00	0 days		P00006	07/09/2010		Shannon	
						04/12/2010	\$3,254.00	0 days						
AG	UGE Conduit	B	C	6	6	05/25/2010	\$0.00	0 days	N/A	P00007	08/11/2010	L - Mod completed, mod package sent to district	05/25/2010	84
							\$6,869.00	0 days		P00007	08/17/2010		Shannon	
						05/25/2010	\$6,869.00	0 days						
AH	Exercise Option Line Items 3, 4, 5	U	C	5	4	Not Required	Not Required	0 days	N/A			M - Cancelled on 10/17/2011		0
						Not Required	Not Required	0 days					Shannon	
AI	Settlement	B	C	V	4	01/14/2011	\$150,000.00	0 days	Yes			D - Change request negotiated on 10/28/2011 Change Request needs to be assigned to a Modification	01/14/2011	444
							\$109,759.00	0 days					WAW	
<b>12 Contract Changes</b>							<b>\$389,332.00</b>	<b>116 days</b>	<b>Contract Required Completion Date 07/19/2010</b>					
Sort - Change Request No														

# APPENDIX D

#	Item	Title	Description	1/26/11 Update	2/3/11 Update
1	011211.01	Apparatus Bay Door Remotes	Currently when programming a remote for open and close function, you have to disable the timer setting to allow this. We need their assistance in getting all functions programmed.	The subcontractor visited the site on 1/20/11 but no corrective action was taken.	Different company (overhead door) was at the site yesterday. Identified issue as a controls issue. They needed a limit switch. They will also address the remote control issue. To be resolved by 2/16/11.
2	121310.01	Apparatus Bay Floor	Would you please let us know when Criterion intends to come back on the floor. We're expecting them to propose a solution to the unevenness in the overall finish and to re-apply the striping.	Agreed to have a telephone conference at 11 a.m. on 1/27/11.	Jim Peterson provided a quote to correct. USACE to consider cost share with GGJV.
3	121310.02	Door Issues	Numerous interior passage doors with issues: ex. not shutting correctly, door knobs loose, broken hardware, hanging up on bumpers, etc.	List provided under USACE cover letter 1/25. Corrective action requested not later than 2/3/11. Mike Vaughn represented that Ernie Rotenberry would be at the site on 1/27 to investigate.	All but one or two doors were signed off as being corrected by the user. Lobby bathroom door hardware needs to be replaced. Stephen noted that the dining room door to the courtyard threshold was raised but now can see daylight on the sides and top of the door.
4	121310.03	Apparatus Bay Roof	Water continues to leak in the apparatus bays while raining.	Still need a date when corrective measures will be taken.	Welch and Rush's sub KMG the sheetmetal subcontractor has been assigned responsibility. GGJV believes that the snorkel doesn't bend over far enough but they will also check the flashing. To be resolved by 2/9/11.
6	122110.01	Plymovent	Will you have the appropriate individuals contact plymo-vent, to have them check the release functions on their system? All of the front bays have been slow to release and today the front outer bay hose did not release and came close to pulling it out of the door. I have cc'd Tom Fegan with Air Cleaning Technology to give him a heads up.	GGJV has not heard back from Plymovent on this issue. Solution clearly appears to be larger collars but issue is who pays for it. Apparatus for this station was made available to the contractor to assure that the equipment provided would be compatible. Government does not believe it is responsible for this cost.	Tom Fegan was at the site on Monday, 1/31. The solution appears to be to replace the boot on the vent in the center bay with an 8-inch boot and test to make sure that it functions properly. Cost is approximately \$500. Is there any evidence in the contract record that the boot size was verified on the vehicle?
7	011911.01	Apparatus Gate	DES reports that if you get your vehicle close enough to the gate on the outside, the gate will open.	Mike Vaughn reported that the subcontractor (Mid Atlantic) was on-site 1/26. Not clear whether corrective action had been taken. USACE to confirm.	Mid Atlantic reports that they corrected the problem. Stephen to confirm.
8	011911.02	Visitor's Gate Intercom	The intercom on the visitor's gate is not functioning properly. Visitors can't be heard in the watch room.	GGJV reports that the subcontractor (Rush Enterprises) is not responsive. GGJV to find another subcontractor.	Still looking to find someone else. Mid Atlantic (Long Fence) may be able to address. They will also address the Opticon issue. To be corrected not later than 2/9/11.
10	011911.03	HVAC - 2	Mechanical system cannot maintain 68 degrees in the SCBA and PPE Gear Storage rooms.	GGJV reports that the control subcontractor will investigate when they are onsite 1/27/11.	GGJV believes that this issue can be attributed to the vent for the SCBA compressor which they contend was not in the contract. USACE needs the final TAB report to confirm that the HVAC for these two rooms is functioning as designed.
11	121310.05	HVAC - 1	HVAC - Still having problems with the system in the front of the station not working with the thermostats. I know they were here last week, however, I would still like for them to have someone here this Thursday possible to go over the operation with me to ensure it is not an operator error condition.	(1/24 e-mail from Mike Vaughn) AHU-1 serving this area was reprogrammed on Friday and the supply air temperature problem should be resolved. Our meeting on site last week with Rob Purvis (USACE) shed some light on the situation and we have a path to correcting the problems. GGJV also reported that the controls subcontractor would be on site 1/27/11.	GGJV reports that the issue is resolved. Customer report that the system's "stand by" mode blows cold air that is not comfortable. USACE needs the final TAB report to confirm that the system function as required/designed.
12	012311.01	HVAC - 3	(e-mail on 1/23/11) John, The temperature in the men's bathroom/shower has been 63 degrees since Friday night. Thermostat set at 77. Richard M. Monroe	GGJV reports that problem appears to be that the system operates on outside air only. AJ Engineering is designing a corrective measure.	GGJV still working on a recommendation. Committed to having a recommendation not later than 2/9/11.
13	012611.01	Fire Alarm	Zone 7 reports a trouble alarm (tamper switch)	GGJV to investigate.	Circuits Unlimited to correct by 2/9.
14	012611.02	Men's Bathroom	Water doesn't get to the floor drain.	GGJV to investigate.	JK Tile to come out and take a look.

# APPENDIX D

#	Item	Title	Description	1/26/11 Update	2/3/11 Update
15	20311.01	Generator	System is supposed to cycle on for 30 minutes each week but has not been observed.	N/A	Fidelity has been contacted. They had not signed in as of today.
16	20311.02	Temporary Gutter Attachments	Knocked over by snow. Need snow guards.	N/A	Alpine Snow guard to provide a design within one week. Target for correction 2/24.



# APPENDIX D

Thursday March 31-2011

8:30 Al stopped by and looked at the mixing valve, He advised he was going to bring a plumber back to look at it also. ~~AL~~

1507 Al and contractor working on Hot Water  
1 shower = Cold

All showers = Hot Water

everybody take shower at the same time

Friday March 4/1/2011

0930 Al came in sta Look Hot Water BH

0800 crew in sta work on Bldg Snow Stop on Roof

0845 call work order Mike Enright Phones chief room 11040009 BH

Phones not working at all / and Phones None All Phones

1155 Phones in chief room up working BH

JAT April 2nd 2011

0900 Roofers in station installing Snow Guards.

28 Oct 2011 Place call over Head Dean Middle Bay Door OOS -

## APPENDIX D

April 6 2011 Wed.

1. phone in sta working on them
2. Disp All Fire Truck
3. WASH All Fire Truck Bay floor / House floor
4. Check All Fire Extinguisher
5. Res 2 OOS
6. E-464 Back in service

41

41

April 7 2011 Thurs

1. elec working in sta put ground in room phone room

4

07

April 8 2011 Fri

John J. Koh. JIC Tile. Construction

4/20/11

- OVERHEAD DOOR ARRIVE @ 12:00PM

4/20/11

- CORNWLEY - MILLS VAUGHN @ 12:00PM

1904 Notified Ele. Contractor about GFI short in outside wall plug.

4-11-11 Contractor installing optical fiber & ssk  
\* unable to complete due to power & circuit issue  
will return

# APPENDIX D

RH

4/12/2011 Tue 920 Circuits unlimited to work on GFI well plug

4/15/2011 1 AS came work on E-464 Opticom All Good Go  
2 Phone come in on menday at 1100 STA 464  
- X Name is John Rush Work on Phones 843-814-0437

4/17/2011

0700: 1<sup>st</sup> day Assigned to station 464

ADVISED By Lt. Harper that the DAVID clerks  
are inop.

• Truck checks station duties,

• washed AC Buggie & Engine.

# APPENDIX D

5-17-11

Alarm was going off in Dorm E. Panel was showing normal. Call AL. He came by and we switched the Head from Dorm 7 to Dorm E it worked. The Head out of Dorm E was bad. AL contacted Grunely. Grunely in station at 8:15 to look at Dorm 7 and alarm. TY Burch

5-18-11

Roof people in station to fix leaking roof  
AL in sta look Roof Worker

Call Phone work out room 11050069

5-23-11 9:00 AM

Dwayne Smith TMG  
Brow Shadelford Accumank  
Randy RAKowski Accumank

Contractor working in Rear of station

5-31-11

Contractor installing Heater in gear room

6/24/11 Place work order on Air filter A/C units C2320900

6/24/11 Call All on A/C in Bay Weh Rushe 301-730-6000

APPENDIX D

Oct 3-2011

Center Rear bay door having issues closing starts to go down and then stops.

W/O # 2457107

12/1

W/O

Oct 4-2011

Light S/W in Eng bay in op Sec Rear way

W/O # 2457117

12/2

Mob

Oct 4-2011

Install switch for gate in bay to open gate on front ramp.

W/O # 2457149

Instation 12/1/11

1/3/2

W/O

11/21

11-14-11

Need a back flow preventer on Ice maker

W/O # 2476959

TY Burch

11/121

1-17

11-14-11

Toilet leaks when you flush, the Bath Room by cop shop

W/O # 2476958

TY Burch

1-2

on

1-31

and

0 sec

11-21-11

Shores creating Door b/w Turn Down DPW Torn Down

# 2490960

# 2509988

No Heat Police Side of Day Box

Tom Burgess

2-2

APPENDIX D

~~12/28 TV mounts in <sup>Bed</sup> Jack Room <sup>Harper</sup> or TY  
w/o 2511447 4 to 5 off wall~~

12/28 # w/o 2511473 Shower men Bathroom leak and  
Molding Hall way at the shower Chris MORROZ

~~1/3/2012 # 2512017 Shower #4 main bathroom - Repair  
broken Shower head. S Wood~~

~~gate 11/12/12 # 2513241 Bay small Door lack Harpers  
and closer <sup>to</sup> Hard New at top~~

11/12/12 # 2513257 Vent over Freeze <sup>for</sup> Heat out <sup>Harper</sup>

~~1-13-12 # 2513294 Shower # 2 Head and base need replacing~~

1-21-2012 The ~~urinal~~ Filter was changed  
on the Right ~~urinal~~. TY Burch

~~1-31-2012 # 2531300 Place work order Door SCBA new loc  
and Door closer on Door come in Hall Park 1st side  
D side~~

~~2-2-2012  
Install a RG Cable from~~



APPENDIX D

-11

was going of in Dorm E. Pannel was  
ing normal. Call AC. He came by and  
switched the Head from Dorm 7 to Dorm E  
ked. the Head out of Dorm E was bad.  
ntacted Grunely. Grunely in station at 8:15  
s at Dorm 7 and alarm. TY Burch

AC  
w/o 24  
Contact

Aug 2  
~~w/o~~  
~~w/o~~

ple in station to fix leaking roof  
sta look Roof worker

Sept 1  
w/o

ne work out room 11050069  
9:00AM

Smith TMG  
hacketford Accumark  
-Kowski Accumark

~~Sept~~  
Front  
w/c  
Place

job working in Rear of station

Actor installing Heater in gear room

Sept  
Power

ace work order on Air filter A/C units C2380900

to

# APPENDIX F



Grunley/Goel JV E, LLC Project 09.188  
Contract: W912DR-09-C-0022  
Ft. Belvoir Emergency Services Center

## 6-Month Warranty Log

Item	Location	Room Description	Warranty Item	Dwg	Picture	Contractor	Completed	Comments
1	All	Door Hardware	Door hardware loose	All		Corbin		
2	Exterior	Left of App Bay Door 107H	Hole in caulk at bottom of wall	1	288	Tri-Star		
3	Exterior	Ext Gutter (multiple locations)	Water running over gutter and corners leaking	4	1 to 4	Best Int'l		
4	107	Apparatus Bay	Roof vent leaking	1	235	Best Int'l		
5	Door 116A	Women's Dorm	Missing door silencers	2B	5	Corbin		
6	Door 116B	Women's Dorm	Door rubs on frame	2B		Corbin		
7	Door 120D	Women's Dorm	Door rubs on frame	2B		Corbin		
8	Door 125D	Men's Dorm	Door rubs on frame	2B		Corbin		
9	Door 128C	Men's Dorm	Door rubs on frame	2B		Corbin		
10	101	Entrance Lobby	Floor cracking north side of floor	3B	48	JK Tile		
11	Door 101A	Entrance Lobby	Gap between exterior doors	3B	49	Corbin		
12	101	Entrance Lobby	Need code to F/A panel to set time & date	3B	50	Circuits		
13	101	Entrance Lobby	Light diffuser is bent	3B	51	Circuits		
14	101	Entrance Lobby	Ceiling grid alignment around diffuser	3B	52	Corbin		
15	102	Unisex Toilet	Door rubs on frame	3B	54	Corbin		
16	102	Unisex Toilet	Gaps in grout around door frame	3B	53	Corbin		
17	102	Unisex Toilet	Gaps in grout in corner	3B	56	JK Tile		
18	104	Office	Gap in caulk between drywall and CMU	3B	61-62	Corbin		
19	105	Office	Gap in caulk between drywall and CMU	3B	63	Corbin		
20	106	Office	Gap in caulk between drywall and CMU	3B	64	Corbin		
21	106	Office	Crack in caulk between window frame and CMU	3B	65	Corbin		
22	Door 137	Corridor door to Dorm Area	Door rubs on frame	2B		Corbin		
23	117	Women's Dorm	Crack in block joint (grout/caulk/paint)	2B	66	PAM Masonry		
24	117	Women's Dorm	Wall finish around door frame	2B	70-71	Corbin		
25	117	Women's Dorm	Bent light diffuser	2B	72-73	Circuits		
26	117	Women's Dorm	Gap in caulk between drywall and CMU	2B	68	Corbin		
27	118	Women's Dorm	Gap in caulk between drywall and CMU	2B	76-78	Corbin		
28	118	Women's Dorm	Bent light diffuser	2B	79	Circuits		
29	119	Women's Dorm	Gap in caulk between drywall and CMU	2B	84-85	Corbin		
30	Door 119	Women's Dorm	Door rubs on frame	2B		Corbin		
31	120	Women's Dorm	Gap in caulk between drywall and CMU	2B	86-87	Corbin		
32	120	Women's Dorm	Crack in ceiling drywall	2B	88-89	Corbin		
33	121	Men's Dorm	Gap in caulk between drywall and CMU	2B	93-94-95	Corbin		
34	122	Men's Dorm	Gap in caulk between drywall and CMU	2B	96	Corbin		
35	123	Men's Dorm	Gap in caulk between drywall and CMU	2B	97-100	Corbin		
36	124	Men's Dorm	Gap in caulk between drywall and CMU	2B	103-104-105	Corbin		
37	125	Men's Dorm	Gap in caulk between drywall and CMU	2B	106-108-110	Corbin		
38	126	Men's Dorm	Gap in caulk between drywall and CMU	2B	112-113	Corbin		
39	126	Men's Dorm	Wall finish around door frame	2B	114	Corbin		
40	127	Men's Dorm	Gap in caulk between drywall and CMU	2B	115-116-117	Corbin		
41	127	Men's Dorm	Wall finish around door frame	2B	118	Corbin		
42	128	Men's Dorm	Gap in caulk between drywall and CMU	2B	121	Corbin		
43	129	Men's Dorm	Gap in caulk between drywall and CMU	2B	123	Corbin		
44	116	Women's Dorm	Gap in caulk between drywall and CMU	2B	126	Corbin		
45	164	Mech./Elec. Room	Floor paint peeling	3B	127	Corbin		
46	164	Mech./Elec. Room	All lights are illuminated (Can't test lights)	3B	128	Circuits		

# APPENDIX F

47	164	Mech./Elec. Room	Mass notification system not working	3B		Circuits		
48	Door 165	Mech./Elec. Room	Gap between exterior doors (Need longer astragal)	2B	131	Corbin		
49	164	Mech./Elec. Room	Missing insulation on pipes at mixing valve	2B	132	Welch & Rushe		
50	163	Unisex Toilet	Crack in tile floor	3B	138	JK Tile		
51	163	Unisex Toilet	Gaps in grout around door frame	3B	140	JK Tile		
52	166	Living/Reception	Missing Outlet Cover	2B	141	Circuits		
53	166	Living/Reception	Replace TV outlet cover for cable	2B	142	Circuits		
54	166	Living/Reception	Ceiling sagging	2B	143	Corbin		
55	166	Living/Reception	Gap in caulk between drywall and CMU	2B	145	Corbin		
56	166	Living/Reception	HVAC register bent	2B	146	Welch & Rushe		
57	158	Investigation Office	Replace TV outlet cover for cable	3B	147	Circuits		
58	160	CI office	Gap in caulk between drywall and CMU	3B	148	Corbin		
59	161	CI office	Gap in caulk between drywall and CMU	3B	149	Corbin		
60	151	Patrolman Station	Intercome will not open motorized gate	3B		Rush Ent.		
61	150	Supervisors Office	Gap in caulk between drywall and CMU	3B	150	Corbin		
62	152	Weapons Storage	Floor paint peeling	3B	151	Corbin		
63	149	Inspectors Office	Gap in caulk between drywall and CMU	3B	152	Corbin		
64	148	Watch Office	Mass notification system not working	3B		Circuits		
65	Door 144	Dining	Door not closing properly (Adjust weather stripping)	3B	154	Corbin		
66	143	Kitchen	Provide vented ceiling tiles freezers & refrigerators	3B		N/A		Original FFE package had only (3) units
67	142	Courtyard	Replace burnt receptical cover	3B	155	Circuits		
68	142	Courtyard	Grout lintels above windows	2A	156-157	PAM Masonry		
69	107	Apparatus Bay	Leaking water valve at 3" line	1		Welch & Rushe		
70	Door 144A	Dining	Gaps in grout at bottom of door frame	3A	158	JK Tile		
71	Door 144A	Dining	Crack in drywall around door frame	3A	163	Corbin		
72	Door 147A	Apparatus Bay	Gaps in grout at bottom of door frame	3A	164	JK Tile		
73	Door 147A	Apparatus Bay	Crack in drywall between doors 106 & 147A	3A	165	Corbin		
74	147	Corridor	Crack in floor grout in front of door 147B	2A	167	JK Tile		
75	147	Corridor	Broken floor tile next to storefront	2A	168	JK Tile		
76	Door 137	Corridor	Cracked drywall around door frame	2A	169	Corbin		
77	147	Corridor	Cracked drwall at above storefront	2B	170	Corbin		
78	147	Corridor	Cracked drwall at door 147A	3B	175	Corbin		
79	137	Corridor	Need code to F/A panel to set time & date	2B		Circuits		
80	137	Corridor	Gap in caulk between drywall and CMU	2B	176	Corbin		
81	137	Corridor	Cracked drwall outside room 131	2B	177	Corbin		
82	137	Corridor	Sag in ceiling outside room 120	2B	178	Corbin		
83	136	Corridor	Water stain on ceiling tile near room 125	2B	179	Corbin		
84	137	Corridor	Broken floor tile at room 128	2B	180	Corbin		
85	137	Corridor	Cracked wall outside room 128	2A	182	Corbin		
86	Door 132	Corridor	Cracked drywall above door	2A	185	Corbin		
87	137	Corridor	Cracked drywall near room 135	2B	186	Corbin		
88	137	Corridor	Cracked drywall near fitness/locker area	2B	187	Corbin		
89	137	Corridor	Base tiles loose near fitness/locker area	2B	189	JK Tile		
90	137	Corridor	Cracked drywall near door 134	2B	191	Corbin		
91	Door 134	Men's Shower	Gaps in grout around door 134	2B	193-194	JK Tile		
92	Door 134	Men's Shower	Cracked drywall around door 134	2B	195	Corbin		
93	133	Men's Shower	Cracked drywall in ceiling around access panel	2B	197	Corbin		
94	133	Men's Shower	Water not draining from floor at Shower #4	2B	198	JK Tile		
95	133	Men's Shower	Broken soap dish in Shower #4	2B	199	N/A		Broken by occupants
96	133	Men's Shower	Broken soap dish in Shower #3	2B	200	N/A		Broken by occupants
97	133	Men's Shower	Water not draining from floor at Shower #3	2B	201	GGJV		
98	133	Men's Shower	Broken soap dish in Shower #2	2B	202	N/A		
99	133	Men's Shower	Water not draining from floor at Shower #2	2B	203	GGJV		
100	133	Men's Shower	Water not draining from floor at Shower #1	2B	204	GGJV		

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101	133	Men's Shower	Broken soap dish in Shower #1	2B	205	N/A		
102	133	Men's Shower	Cracked grout in corner of Shopper #1	2B	208	JK Tile		
103	141	Fitness Room	Wall scuffed at ceiling access	2B	209	Corbin		
104	107	Apparatus Bay	Electrical cover not in place	1	214	Circuits		
105	Door 113	Vehicle/Equip Storage	Missing door silencers	2B	215	Corbin		
106	107	Apparatus Bay	Missing white stripes on floor	1	216	Criterion		
107	107	Apparatus Bay	Missing electrical cover plate behind TV	1	220	Circuits		
108	107	Apparatus Bay	Missing wire bushing at junction box	1	221	Circuits		
109	107	Apparatus Bay	Hole in wall behind insulated pipe	1	222	Corbin		
110	Door 107G	Apparatus Bay	Loose door strike	1	223	Corbin		
111	107	Apparatus Bay	3 inch PVC pipe not secured to wall	1	224	Welch & Rushe		
112	107	Apparatus Bay	Conduit and connectors broken from radiant heat	1	225	Circuits		
113	107	Apparatus Bay	Missing electrical cover	1	226	Circuits		
114	107	Apparatus Bay	Missing wire bushing at junction box	1	227	Circuits		
115	107	Apparatus Bay	Missing knock out plugs at junction boxes	1		Circuits		
116	107	Apparatus Bay	Insulation falling off ductwork	1	228	Welch & Rushe		
117	107	apparatus bay	Duct tape peeling	1	231	Welch & Rushe		
118	107	apparatus bay	Holes in insulation from testing equipment	1	232	Welch & Rushe		
119	Door 107A-F	Apparatus Bay	Apparatus bay door track buckling	1		Door Systems		
120	107	Apparatus Bay	Missing electrical cover above center speakers	1	233	Circuits		
121	107	Apparatus Bay	Missing paint on ductwork	1	234	Corbin		
122	110	PPE Gear Storage	Light panel loose	1	236	Circuits		
123	108	SCBA Room	Compressed air quick disconnect leaking at bench	1	237	Welch & Rushe		
124	108	SCBA Room	Missing junction box cover behind fill station	1	238	Circuits		
125	108	SCBA Room	Missing junction box cover	1	239	Circuits		
126	108	SCBA Room	Holes in wall bedding conduit at work bench	1	241	Circuits		
127	113	Vehicle/Equip Storage	Missing junction box cover	2B	243	Circuits		
128	Door 112	Radio Shop Room	Missing door silencers	1	245	Corbin		
129	Door 139	Storage room	Missing screws at hinge	2B	246	Corbin		
130	140	Showers/Lockers	Cracked grout in shower #2	2B	247	JK Tile		
131	131	Women's Shower	Broken soap dish	2B	248	N/A		
132	131	Women's Shower	Cracked grout around inside door	2B	250	JK Tile		
133		Corridor	Missing caulk in storefront		252	Corbin		Fire Dept. please clarify
134		Corridor	Stained ceiling tile		253	Corbin		Fire Dept. please clarify
135	162	Corridor	Floor mat trip hazard	2B	254	GGJV		
136	Door 166A	corridor	Cracked drywall around door frame	3A	255	Corbin		
137		corridor	Cracked drywall on wall		256	Corbin		Fire Dept. please clarify
138		corridor	grout		261	JK Tile		Fire Dept. please clarify
139		corridor	crack in wall		262	Corbin		Fire Dept. please clarify
140	Exterior	Roof	Gap in roofing	N/A	263	N/A		Not an issue
141	Exterior	Landscaping	Inadequate grass growth	N/A	264	Greenbrier		
142	Exterior	Roof	Gutter not effective in heavy rain		266	Best Int'l		
143	Door 153	Patrol Office	Loose door stop	3B	267	Corbin		
144	Door 153	Patrol Office	Crack in drywall around door frame	3B	268	Corbin		
145	Door 149	Inspectors Office	screws rusting		269			
147		ext. side entrance	mortar/caulk cracking		271			Fire Dept. please clarify
148		ext. side entrance	rusty screws		272			Fire Dept. please clarify
149	Door 166	Living/Reception	Paint chipping on exterior side of door frame	2B	273	Corbin		Fire Dept. please clarify
150	Exterior	Living/Reception	Rusty plate and screws next to door	2B	274	Circuits		
151	Door 165	Exterior Mechanical Room Door	Missing caulk at top of door	2B	275	Corbin		
152	Door 162	Corridor	Missing door stop	3B	276	Corbin		
153	Exterior	Exterior	Rusty standoff at gas line (needs to be replaced)	3B	277	Welch & Rushe		
154	Exterior	North Apparatus Bay	Crack in curb	4	278 & 279	Aggregate		
155	Exterior	North Apparatus Bay Apron	Crack in concrete between rear bay doors	1	280	Aggregate		

# APPENDIX F

156	Exterior	Exterior	Cracks in mortar joints	1	281 & 282	PAM Masonry		
157	Exterior	South Apparatus Bay	Broken gutter clamp	1	283	Best		
158	Exterior	South Apparatus Bay	Rusty Screws	1	284	Circuits		
160	Door 107H	Apparatus Bay	Crack in mortar joint and lintel	1	285	PAM Masonry		
163	Exterior	North Side Men's Dorms	Possible blocked gutter	2A		Best Int'l		
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# APPENDIX G

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101 and 3.104

<b>PERFORMANCE EVALUATION (CONSTRUCTION)</b>		1. CONTRACT NUMBER W912DR09C0022	
INCOMPLETE-RATED		2. CEC NUMBER 602630514	
IMPORTANT: Be sure to complete Part III - Evaluation of Performance Elements on reverse.			
<b>PART I - GENERAL CONTRACT DATA</b>			
3. TYPE OF EVALUATION ( <i>X one</i> )		4. TERMINATED FOR DEFAULT	
<input type="checkbox"/> INTERIM ( <i>List percentage 99 %</i> )	<input type="checkbox"/> FINAL	<input checked="" type="checkbox"/> AMENDED	<input type="checkbox"/>
5. CONTRACTOR ( <i>Name, Address, and ZIP Code</i> ) GRUNLEY/GOEL LLC. 15020 SHADY GROVE ROAD, SUITE 500 ROCKVILLE MD 20850 USA NAICS Code: 000000		6.a. PROCUREMENT METHOD ( <i>X one</i> )	
		<input checked="" type="checkbox"/> SEALED BID	<input type="checkbox"/> NEGOTIATED
		b. TYPE OF CONTRACT ( <i>X one</i> )	
		<input checked="" type="checkbox"/> FIRM FIXED PRICE	<input type="checkbox"/> COST REIMBURSEMENT
<input type="checkbox"/> OTHER ( <i>Specify</i> )			
7. DESCRIPTION AND LOCATION OF WORK EPG Emergency Service Center Construct a 14,700 sf emergency services center consisting of a remote military police station and modified, standard two-company, satellite fire station to support emergency response on the Engineer Proving Grounds of Fort Belvoir, Virginia			
8. TYPE AND PERCENT OF SUBCONTRACTING 14% Mechanical 12% Electrical 8% Concrete 4% Earthwork 4% Masonry			
<i>(continued...)</i>			
9. FISCAL DATA	a. AMOUNT OF BASIC CONTRACT \$6,438,000	b. TOTAL AMOUNT OF MODIFICATIONS \$279,573	c. LIQUIDATED DAMAGES ASSESSED
			d. NET AMOUNT PAID CONTRACTOR \$6,683,775
10. SIGNIFICANT DATES	a. DATE OF AWARD 03/09/2009	b. ORIGINAL CONTRACT COMPLETION DATE 03/25/2010	c. REVISED CONTRACT COMPLETION DATE 07/19/2010
			d. DATE WORK ACCEPTED 12/15/2010
<b>PART II - PERFORMANCE EVALUATION OF CONTRACTOR</b>			
11. OVERALL RATING ( <i>X appropriate block</i> )			
<input type="checkbox"/> OUTSTANDING	<input type="checkbox"/> ABOVE AVERAGE	<input type="checkbox"/> SATISFACTORY	<input checked="" type="checkbox"/> MARGINAL
<input type="checkbox"/> UNSATISFACTORY ( <i>Explain in Item 20 on reverse</i> )			
12. EVALUATED BY			
a. ORGANIZATION ( <i>Name and Address (Include ZIP Code)</i> ) U.S. ARMY CORPS OF ENGINEERS		b. TELEPHONE NUMBER ( <i>Include Area Code</i> ) (571) 643-9884	
c. NAME AND TITLE WESLEY WRIGHT CIVIL ENGINEER		d. SIGNATURE //Electronically Signed//	e. DATE 04/02/2012
13. EVALUATION REVIEWED BY			
a. ORGANIZATION ( <i>Name and Address (Include ZIP Code)</i> )		b. TELEPHONE NUMBER ( <i>Include Area Code</i> )	
c. NAME AND TITLE		d. SIGNATURE	e. DATE
14. AGENCY USE ( <i>Distribution, etc.</i> )			

# APPENDIX G

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101 and 3.104

## PART III - EVALUATION OF PERFORMANCE ELEMENTS

**N/A = NOT APPLICABLE   O = OUTSTANDING   A = ABOVE AVERAGE   S = SATISFACTORY   M = MARGINAL   U = UNSATISFACTORY**

15. QUALITY CONTROL	N/A	O	A	S	M	U	16. EFFECTIVENESS OF MANAGEMENT	N/A	O	A	S	M	U
a. QUALITY OF WORKMANSHIP				X			a. COOPERATION AND RESPONSIVENESS					X	
b. ADEQUACY OF THE CQC PLAN			X				b. MANAGEMENT OF RESOURCES/ PERSONNEL				X		
c. IMPLEMENTATION OF THE CQC PLAN					X		c. COORDINATION AND CONTROL OF SUBCONTRACTOR(S)						X
d. QUALITY OF QC DOCUMENTATION				X			d. ADEQUACY OF SITE CLEAN-UP				X		
e. STORAGE OF MATERIALS				X			e. EFFECTIVENESS OF JOB-SITE SUPERVISION					X	
f. ADEQUACY OF MATERIALS			X				f. COMPLIANCE WITH LAWS AND REGULATIONS				X		
g. ADEQUACY OF SUBMITTALS				X			g. PROFESSIONAL CONDUCT				X		
h. ADEQUACY OF QC TESTING				X			h. REVIEW/RESOLUTION OF SUBCONTRACTOR'S ISSUES				X		
i. ADEQUACY OF AS-BUILTS				X			i. IMPLEMENTATION OF SUBCONTRACTING PLAN	X					
j. USE OF SPECIFIED MATERIALS			X				<b>18. COMPLIANCE WITH LABOR STANDARDS</b>						
k. IDENTIFICATION/CORRECTION OF DEFICIENT WORK IN A TIMELY MANNER					X								
<b>17. TIMELY PERFORMANCE</b>							<b>18. COMPLIANCE WITH LABOR STANDARDS</b>						
a. ADEQUACY OF INITIAL PROGRESS SCHEDULE				X			a. CORRECTION OF NOTED DEFICIENCIES	X					
b. ADHERENCE TO APPROVED SCHEDULE						X	b. PAYROLLS PROPERLY COMPLETED AND SUBMITTED			X			
c. RESOLUTION OF DELAYS						X	c. COMPLIANCE WITH LABOR LAWS AND REGULATIONS WITH SPECIFIC ATTENTION TO THE DAVIS-BACON ACT AND EEO REQUIREMENTS			X			
d. SUBMISSION OF REQUIRED DOCUMENTATION				X			<b>19. COMPLIANCE WITH SAFETY STANDARDS</b>						
e. COMPLETION OF PUNCHLIST ITEMS					X		a. ADEQUACY OF SAFETY PLAN				X		
f. SUBMISSION OF UPDATED AND REVISED PROGRESS SCHEDULES						X	b. IMPLEMENTATION OF SAFETY PLAN						X
g. WARRANTY RESPONSE						X	c. CORRECTION OF NOTED DEFICIENCIES						X

**20. REMARKS** (Explanation of unsatisfactory evaluation is required. Other comments are optional. Provide facts concerning specific events or actions to justify the evaluation. These data must be in sufficient detail to assist contracting officers in determining the contractor's responsibility. Continue on separate sheet(s), if needed.)

**Small Business Utilization**  
 Does this contract include a subcontracting plan? No  
 Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): N/A  
**EVALUATOR REMARKS:** Background: The USACE Contracting Officer and the Senior Construction Manager met with the leadership of GGJV on May 4, 2010 in order to discuss the ongoing issues affecting the completion of this project. The Grunley/Goel, Joint Venture (GGJV) leadership provided assurances that efforts would be increased in order to meet the contract completion date of July 19, 2010. The Contracting Officer agreed to hold off on further administrative action for a representative period of time in order to allow GGJV to show improvements in their production. While efforts were increased near the end of the project, these efforts were not enough to recover all unexcused delays in the schedule.

**Timely Performance:** GGJV did not provide a recovery schedule as directed in order to meet their contract completion date of July 19, 2010 nor provided adequate justification for a time extension as detailed by Section 01 32 01.00 10 Paragraph 3.7 of the contract documents. The following unexcused delays have affected the critical path of the project. All referenced start and end dates are based on the approved re-baseline schedule submitted with the November, 2009 update report unless otherwise stated.

1. Difficulty in providing Steel Erection Plan as required by FAR 52.236-13(c) and EM 385-1-1. It took GGJV four submissions before the erection plan reached an acceptable maturity level to allow for start of operations. Despite the USACE safety team meetings with the GGJV SSO (Vernon Merson) on three occasions to ensure the Government's expectations were understood, each interim submission continually failed to address

# APPENDIX G

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## 8. TYPE AND PERCENT OF SUBCONTRACTING (...continued)

- 4% Drywall/Gypsum Board
- 4% Roofing
- 3% Steel Joists/Decks
- 2% Structural Steel
- 2% Windows/Glazing
- 1% Asphalt Paving
- 1% Flooring/Tile
- 1% Fire Protection-Piping
- 1% Landscaping/Irrigation

## 20. REMARKS (...continued)

critical comments provided in the original returned submittal. This delayed the start of work from the scheduled start date of December 31, 2009 to February 25, 2010.

2. The roofing subcontractor did not show up for a scheduled Preparatory Meeting on April 13, 2010 and was terminated by GGJV. A new subcontractor was not brought on board until May 7, 2010 with work not completing until May 28, 2010 or 84 days after the milestone dry-in date (Activity 1256) of March 5, 2010 of which, 63 days were unexcused.

3. Apparatus Bay Slab correction: Letter C-0014 was issued on November 14, 2009 stating that the placed concrete slab was deficient due to excessive slopes to the trench drains. A remediation solution was provided by GGJV to the USACE on December 17, 2009 and jointly reviewed on December 23, 2009. GGJV did not address the USACE's concerns and therefore Letter C-0015 was issued on January 8, 2010 by the Contracting Officer directing the slab be removed and replaced. A demolition plan was not provided to the USACE until March 4, 2010, which was returned approved on March 5, 2010. Demolition started on March 9, 2010 with follow on bedding and rebar work not starting until 9 April and 13 April 2010 respectively. The slab was completed on April 18, 2010 or 90 days after direction was given and over 30 days since the slab was removed.

4. It was brought to the attention of the Government on May 4, 2010 that GGJV failed to procure the two main air handling units for the occupied area in a timely fashion resulting in a need to defer interior work to allow for the installation of these units until late June, 2010.

5. The Steel Erector (Genesis) has not completed the truss system over the apparatus bay. This work was originally separated from the truss erection over the occupied area, which began on February 25, 2010 due to deficiencies in their erection safety plan; however, an adequate resubmission of this erection plan was not provided until May 19, 2010 (approved on May 24). Work began on June 22, 2010, 59 days after approval of the erection plan was given.

6. The Government actually occupied the building on December 15, 2010. The building occupants immediately reported that the HVAC was unable to maintain minimum temperature in the building and this continues to be an ongoing deficiency/warranty issue.

Safety/ Coordination/Control of Subcontractors: The following list of safety related incident demonstrates a lack of adequate safety oversight on the project and lack of control of operations on site. Each of these incidents are in violation of both the EM385-1-1 (2008) and the GGJV Accident Prevention Plan (APP):

1. Steel erection plan took two months and four submissions before reaching an acceptable state. See details in section above.

2. On February 18, 2010 work commenced on steel erections without an approved Steel Erection Plan as required by EM 385-1-1. Despite verbal notification of the violation by the USACE safety staff, work was not stood down; thereby requiring a stop work order (Letter C-0019) signed by the Contracting Officer.

3. Interior plumbing installation work commenced prior to April 20, 2010 without USACE

(continued...)

# APPENDIX G

FOR OFFICIAL USE ONLY / SOURCE SELECTION INFORMATION - SEE FAR 2.101 and 3.104

20. REMARKS (...continued)

acceptance of the Activity Hazards Analysis (AHA), required by EM 385-1-1.

4. Rough in electrical work commenced prior to April 20, 2010 without USACE acceptance of the AHA for this feature of work required by EM 385-1-1.

5. A deficiency notice, dated July 14, 2010, was written and transmitted for lack of on-site supervision by SSHO in accordance with contract requirements.

6. Workers from Frederick Fabricators Inc were three times found by USACE safety to be in violation of the fall protection standards set forth in the GGJV APP and the EM 385-1-1 resulting in the debarment of a worker from the site.

Other: Contractor's response to warranty service requirements fails to satisfy Section 01 78 02.0010, paragraph 1.4.5 in that work is not initiated within the time required or worked continuously to completion or relief.

The Contractor failed to provide notification to the Government of the need to relocate the infrared heating panels, required by the request for proposal, and intended to provide heat for the apparatus bay. The Contractor instead relocated the panels from the approved design locations in the center of the bay to the walls of the apparatus bay and in doing so, created a fire hazard in the opinion of the Authority Having Jurisdiction. The Contractor was unable to demonstrate to the satisfaction of the Fire Marshall that location of the infrared heating panels did not represent a fire hazard and was ultimately directed by USACE to remove the heating panels in order to secure a certificate of occupancy for the facility.

Conclusion: This contractor has failed to exercise a necessary level of professional standard of care required to ensure successful completion of the project. The Government considered issuing Unsatisfactory Interim and Final evaluations. However, the marginal increase in effort toward the end of the project as well as successful negotiations with regard to a final settlement of disputed issues helped the Government to reconsider and issue an overall Marginal evaluation.

CONTRACTOR REMARKS:



**U.S. Army Corps  
of Engineers**  
Engineering and Support  
Center, Huntsville

## **FIRE STATION #2**

**Building 1585  
Fort Drum, NY**



**POTR – Phase 1  
Project No 057711**

**DATE: 24 May 2012**

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**Post Occupancy Technical Review**

May 24, 2012

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## CHAPTER 1 - GENERAL

### 1-1 Purpose

The intent of this document is to present the findings of the Phase I Post Occupancy Technical Review (POTR) performed on Building 1585 (Fire Station #2) at Fort Drum, NY. The POTR was performed by the HNC team on 24 May 2012.

### 1-2 Facility Description

Building 1585 is a Non-Standard, Two Company, Headquarters Fire Station located on South Fort Drum. The Fire Station was occupied June 2011. Hours of operations for the facility are 24 hours. The facility supports approximately 22 staff members a day with a shift change number of 44 personnel every 72 hours. The approximate number of visitors per day is 8- 10.

The users are overall satisfied with the facility.

### 1-3 POTR Team Members

The following is a list of HNC's team members that participated in the POTR:

- Juan Pace – Architectural

### 1-4 Meeting Contacts

The roster is attached in Appendix A

- Donald N. Striejewski- Fire Chief

### 1-5 Contract Modifications

The design-build contractor for this project was Black Horse Group. The following is a list of the major contract modifications issued during construction. There were a total of nine (9) modifications.

### 1-6 Construction Issues

The major construction modifications list is attached in Appendix B. The following are construction modifications received from the staff during questioning:

- Apparatus Bay. Because of the configuration of the hose system vehicle exhaust removal system the Apparatus Bay could not be constructed as a drive-thru Apparatus Bay.
- An asphalt based emergency vehicles apron was used instead of a concrete based application because of budgetary constraints.





- The SCBA Compressor and Maintenance Rooms. These rooms were reconfigured to support the space requirements of the SCBA Compressor.
- Alternate 911 Center. The dispatch suite was converted into this room. A separate Telecommunications Room was required for the room and reconfiguring of the Dispatch Suite was performed.





**1-7 Overall Satisfaction**

- Overall, everyone is satisfied with the facility.

## CHAPTER 2 - ARCHITECTURAL

### 2-1 General Discussion

The user is happy with the layout of the building. The facility was designed during the period when the Army Standard and Standard Designs for Fire Stations were in draft mode so some elements of both documents were present in the layout of the facility. The Fire Chief did express his concerns about meeting the response time based on distance mainly from the Dorm Rooms.

- Even though LEED Silver is the standard for Army facilities, the customers/users were ecstatic about the contractor who designed and constructed a facility which meets LEED Gold.
- PPE Gear Storage. This room is separate of the Apparatus Bay due to User request. The removal of off-gassing is accomplished by negative pressure exhaust. The user believes the separate room promotes a cleaner Apparatus Bay and keeps the gear in one location.
- Several rooms were re-purposed upon completion to fit the facility's mission. The rooms included the SCBA Maintenance Room which is now the EMS Equipment Storage, Fire Extinguisher Inspection Room which is now fire Fighters offices and the Dispatch Suite with is now the Alternate 911 Center.
- Telecommunications Room. This room had to be reconfigured to support I3A and NEC's clearance requirements.
- Additional Toilet/Shower. On the inspection of this space, I suggested the Acoustical Tile Ceiling (ACT) be removed and replaced with a gypsum Board ceiling painted because of modesty issues.
- Cold Storage. A large cold storage facility was included in the project.



## 2-2 Feedback/Lessons Learned/Standard Design Impacts

- CoS needs to verify that standard SCBA compressors will be able to be supported in the SCBA Compressor Room.
- The customer suggested CoS and Ft. Dettrick/NEC formally meet to discuss and rectify conflicts in the minimum dimensions of a Telecommunications Room.
- The Cold Storage facility offers valuable space for user storage of equipment and vehicles.

## CHAPTER 3 - MECHANICAL

### 3-1 General Discussion

The user is happy with the HVAC system installed. The Fire Station staff did not receive training on the system from the contractor. The HVAC system is still in the balancing phase, so the user mentioned that the Administration areas seems to be at a different temperature than the rest of the facility. The Users complained of odors throughout the facility that could possibly be from PPE Gear off-gassing of the Mechanical Room. DPW-OPM controls the HVAC system and only allows the thermostat to adjust 5 degrees up or down to achieved thermal comfort levels for the Fire Fighter staff. Thermostats are working properly. Nederman is the exhaust system being used in the Apparatus Bay. It is a hose system. The user feels the Nederman system does an inadequate job of removing 100% of the vehicle exhaust emissions of the vehicles that connect to it. They think the PPE Gear Storage Room is being properly exhausted. The maintenance schedule of the HVAC system are said to be properly followed to the best of their knowledge and there is adequate space to access, maintain and inspect HVAC equipment.

The user is happy with the plumbing system installed. All plumbing fixtures are stated to be functioning properly throughout the facility including the kitchen. Waterless urinals are installed in this facility.

The user does not have any issues with the wet pipe sprinkler system. There have been no issues with performing inspection, testing and maintenance of the fire protection system.

### HVAC

- High efficiency mechanical equipment, such as, a chiller, boiler, and whole energy recovery unit are installed as part of the HVAC system.
- PPE Gear Storage Room. The user wants an automatic exhaust fan. A manual switch was in stall?
- Radiant flooring was installed in the Apparatus Bay and Dorm Rooms.

- In the Laundry Room, relays had to be attached to the dryer vents to assist in lint removal since the Laundry Room is expected to be located on an exterior wall.



- The POC for HVAC related issues the user encounters is the DPW-OPNs.

### PLUMBING

- The user wants separate hot water heater supplying the washing trucks and another for personnel showering.
- Low flow showers and lavatories are used.
- The POC for plumbing related issues the user encounters is the DPW-OPNs.

### FIRE PROTECTION

- The user expressed the concerns for not having a Knox Box on the Fire Station facility. During a call there is no presence at the Fire Station and the possibility of a fire could happen. There would be no keyed access to the facility if this happened.

### **3-2 Lessons Learned/ Standard Design Impacts**

- Research the need of Knox Boxes on Fire Station facilities.

## **CHAPTER 4 - ELECTRICAL**

### **4-1 General Discussion**

- The emergency generator does not provide 100% backup power. It only provides back-up to

approximately 40% of the facility. It does not meet the 72 hours on-site fuel storage due it being hooked to natural gas.

- Dimming controls were not provided in the Day/Training Room.

## 4-2 Lessons Learned/ Standard Design Impacts

- None.

## CHAPTER 5 - MISCELLANEOUS

### 5-1 CIVIL/SITE

- The large emergency vehicle apron is used for hose drying and training.





- There is no system used to halt traffic.



**5-2 STRUCTURAL**

- None

**5-3 FURNISHINGS**

- None.

**5-4 Lessons Learned/ Standard Design Impacts**

- None.

**APPENDIX A - ROSTER**

**APPENDIX B - CONSTRUCTION MODIFICATIONS**

**APPENDIX C – PUNCH LIST (NOT USED)**

**APPENDIX D – ON-GOING ISSUES (NOT USED)**

**APPENDIX E – CONSTRUCTION NOTES (NOT USED)**

**APPENDIX F – WARRANTY ITEM LISTING**



# Change Request / Modification Funding

31 May 2012

Fire Station II, 57711  
W912DS-09-D-0004 0002

Fort Drum, NY

## APPENDIX B

TITLE AND LOCATION: Fire Station II, 57711 Fort Drum, NY									
CONTRACTOR: Black Horse Group LLC				ORIGINAL COMP DATE: 04/02/2011		ORIGINAL CONTRACT AMOUNT: \$6,665,500.00			
CONTINGENCY: \$70,398.95				CURRENT COMP DATE: 04/16/2011		CURRENT CONTRACT AMOUNT: \$6,708,066.00			
CHANGE REQUEST NO.	REFERENCE NO.	MOD NO.	DESCRIPTION	GOVT SIGNED	AGENCY /REASON /TYPE	TIME	STATUS	INCREASE/ DECREASE	CONTINGENCY AMOUNT
WORK ITEM: 1K63KH C0120-Contract [320552] FUNDING ACCOUNT: E3130292 \$28,079.95									
WD001	R00001	A00001	Delete Storm Drainage	01/11/2010	C/6/B		6L	-\$64,116.00	\$92,195.95
WD005	R00002	A00002	RFA-2, Ground Water Monitoring Wells	06/15/2010	C/7/B		6L	\$4,463.00	\$87,732.95
WD002	R00003	A00003	RFA-1, Improperly Located Gas Main	06/18/2010	C/1/B		6L	\$792.00	\$86,940.95
WD004	R00004	A00004	Misc. Electrical/Communication Changes	10/20/2010	C/6/B		6L	\$536.00	\$86,404.95
WD007	R00005	A00005	Dispatch Area Changes	11/22/2010	C/6/B		6L	\$2,421.00	\$83,983.95
WD003	R00006	A00006	Misc. Architectural Changes	12/15/2010	C/6/B		6L	\$3,376.00	\$80,607.95
WD008	R00009	A00007	Nederman System and Tank Removal	03/04/2011	C/6/B	14 days	6L	\$8,087.00	\$72,520.95
WD010	R00010	A00008	AFCI Protection	06/16/2011	C/N/B		6L	\$2,122.00	\$70,398.95
WORK ITEM: 5D12BH C0122-OSwego Road Infrastructure - DPW Funded Cont [320552] FUNDING ACCOUNT: E3133030 \$84,885.00									
WD006	R00007	01	Outside Plant Commo Changes	01/24/2011	C/4/B		6L	\$84,885.00	\$0.00

# APPENDIX F

<b>Warranty Item Listing</b>		Page 1 of 4
CONTRACT NO.: W912DS-09-D-0004 0002	CONTRACT TITLE: Fire Station II, 57711	
CONTRACTOR: Black Horse Group LLC	LOCATION: Fort Drum, NY	
Warranty Items		
Item	Description/Remarks	Status
WI-00001	<p>DESCRIPTION: Asphalt soft spots</p> <p>GOVERNMENT REMARKS: The asphalt pavement has shown areas of softness. Tires will leave marks while turning; small tools will pull asphalt. TJ Clement cored pavement for testing 4 Aug.</p> <p>CONTRACTOR REMARKS: BHG has received test reports. Design engineer is now looking over the mix design. QPK has requested that BHG has ATL obtain 8 additional cores throughout all pavement areas to verify thicknesses.</p>	Contractor Notified: 06/07/2011
WI-00002	<p>DESCRIPTION: Toilet room leak</p> <p>GOVERNMENT REMARKS: Admin toilet room east - there is a leak in the ceiling in the northeast corner.</p> <p>CONTRACTOR REMARKS: BHG has repaired the leak above ceiling in rest room across from Rm. 107. BHG replaced ceiling tile in the toilet room across from Rm. 107. The residue came from the spray foam, which has now dried. - 8/29</p>	Corrected on Date: 08/29/2011
WI-00003	<p>DESCRIPTION: Grass turf</p> <p>GOVERNMENT REMARKS: The grass turn has not been established as per specs. BHG has reseeded the area once. The area south of the building, between walkway and driveway, had not been reseeded and was discussed during the warranty walk-through inspection. BHG did not respond as to why this area was missed.</p> <p>Most of grass was reseeded - area behind building was missed.</p> <p>CONTRACTOR REMARKS: Currently waiting for the NOT. Dave Harding will be supplied with the permit number and will sign off on the NOT. NOT was submitted to USACE on 8/30/11 for sign off. - 8/30. NOT approved 10/4/11. Item is complete</p>	Corrected on Date: 10/04/2011
WI-00004	<p>DESCRIPTION: AHU Supply Fan</p> <p>GOVERNMENT REMARKS: Supply fan has bad bearings and needs to be corrected. Pasco was on site 7/25 for inspection and confirms corrections to be made. BHG stated part was ordered on 8/10.</p> <p>CONTRACTOR REMARKS: Pasco was on site on 8/25 and replaced the bad bearings in the AHU. Pasco then found that there were worn belts, which have been ordered and will be installed on 8/29 or 8/30. Pasco installed new belts on 8/29. Warranty item has been completed. - 8/29</p>	Corrected on Date: 08/29/2011
WI-00005	<p>DESCRIPTION: Toilet room vanity sink</p> <p>GOVERNMENT REMARKS: Vanity sink has been loosened from the wall.</p> <p>CONTRACTOR REMARKS: Armani Plumbing replaced fasteners with lags and the sink was recaulked to the wall. - 8/15</p>	Corrected on Date: 08/15/2011
WI-00006	<p>DESCRIPTION: Hot Water</p> <p>GOVERNMENT REMARKS: The station hot water is not keeping up at peak hours of 0500-0900.</p> <p>CONTRACTOR REMARKS: At this point BHG does not feel that this is a warranty issue. We have designed the hot water system to recover 400 gallons/hour for the Administration side of the building. The hot water system will not be able to supply the Administration as well as the Apparatus Bay with the large volume of hot water being used. -8/19</p>	Corrected on Date: 09/01/2011

# APPENDIX F

<b>Warranty Item Listing</b>		Page 2 of 4
CONTRACT NO.: W912DS-09-D-0004 0002		CONTRACT TITLE: Fire Station II, 57711
CONTRACTOR: Black Horse Group LLC		LOCATION: Fort Drum, NY
	After further investigation, there may be an issue with the mixing valve. BHG has scheduled Armani to be on site to look at this issue 9-1-11. Armani readjusted the mixing valve on 9/1/11. USACE and BHG will keep under observation. Armani, USACE, and BHG verified the water temperature to be satisfactory.	
WI-00007	<p>DESCRIPTION: Fan #4</p> <p>GOVERNMENT REMARKS: Fan #4 is making belt noise.</p> <p>CONTRACTOR REMARKS: Pasco was on site and found that the belt from the motor to fan has worn out. BHG and USACE representative agreed that this is not a warranty issue, but a maintenance issue that will be repaired by Fort Drum Public Works. -8/25</p>	Corrected on Date: 08/25/2011
WI-00009	<p>DESCRIPTION: Light Switch</p> <p>GOVERNMENT REMARKS: Light switch was stuck on. BHG reported that repair was complete on 8/23.</p> <p>CONTRACTOR REMARKS: Blackstone Electric loosened light switch cover in Rm. 139. Light switch now works correctly. -8/23</p>	Corrected on Date: 08/23/2011
WI-00010	<p>DESCRIPTION: Overhead Door 3 malfunction</p> <p>CONTRACTOR REMARKS: Reinstalled the cable and oiled. This is not a warranty issue, this is a repeat maintenance issue. These doors are required to be recoiled every 3 months per manufacturers o&amp;m manual.</p>	Corrected on Date: 08/31/2011
WI-00011	<p>DESCRIPTION: Emergency shower malfunction</p> <p>CONTRACTOR REMARKS: Armani ordered part for the alarm on 9/1/11. The flow switch was stuck in the on position. It was adjusted and works properly.</p>	Corrected on Date: 09/16/2011
WI-00012	<p>DESCRIPTION: Door needs adjustment - room 124</p> <p>GOVERNMENT REMARKS: Discussed at warranty inspection - repair scheduled for 9/1/11.</p> <p>CONTRACTOR REMARKS: Door was adjusted 9/1/11</p>	Corrected on Date: 09/01/2011
WI-00013	<p>DESCRIPTION: Door needs adjustment - room 119</p> <p>GOVERNMENT REMARKS: Discussed at warranty inspection - repair scheduled for 9/1/11.</p> <p>CONTRACTOR REMARKS: Door was adjusted 9/1/11</p>	Corrected on Date: 09/01/2011
WI-00014	<p>DESCRIPTION: Door needs adjustment - south entrance</p> <p>GOVERNMENT REMARKS: South entrance - outer frp door requires adjustment.</p> <p>CONTRACTOR REMARKS: This is a Hollow Metal Door and the door was adjusted 9/1/11</p>	Corrected on Date: 09/01/2011
WI-00015	<p>DESCRIPTION: Kitchen HVAC Controls</p> <p>GOVERNMENT REMARKS: Contractor responded to this item on 12 October 2011 stating that they were balanced per design.</p> <p>CONTRACTOR REMARKS: The kitchen is balance per design.</p>	Corrected on Date: 09/01/2011
WI-00016	<p>DESCRIPTION: Room 134 HVAC Controls</p> <p>GOVERNMENT REMARKS: Contractor responded to this item on 12 October 2011 stating this is balanced per design.</p>	Corrected on Date: 09/01/2011

# APPENDIX F

<b>Warranty Item Listing</b>		Page 3 of 4
CONTRACT NO.:	CONTRACT TITLE:	
W912DS-09-D-0004 0002	Fire Station II, 57711	
CONTRACTOR:	LOCATION:	
Black Horse Group LLC	Fort Drum, NY	
	CONTRACTOR REMARKS: Room 134 is balanced per design.	
WI-00017	DESCRIPTION: Electric Panel Schedule	Corrected on Date: 09/16/2011
	CONTRACTOR REMARKS: BHG reinstalled the electric panel diagram.	
WI-00019	DESCRIPTION: transfer switch	Corrected on Date: 10/03/2011
	GOVERNMENT REMARKS: Power outage on post - transfer switch did not work properly.	
	CONTRACTOR REMARKS: Pete went to the Fire Station this morning after you contacted us about an issue with the generator and transfer switch not kicking on during the "brown out" this past weekend. It appears they are in working condition at this time. We have contacted Cummins Northeast to make them aware of the situation and asked to have a technician come up to ensure the units are working properly. We will contact you as soon as we are notified when the tech will be onsite. You can then notify any other individuals that you feel may want to be present.(email from Carol, Blackstone Electric, 10/3/11)	
	On October 17th, Cummins Northeast, Inc. dispatched a technician to the FSII facility to determine why the generator failed to start during a recent brown-out. I accompanied him to fully understand what he tested and the results. He found two problems. First, subsequent to the generator commissioning, someone turned off the battery charger switch. This left the battery too weak to start the unit. This, in turn, sent a low crank/speed fault. Secondly, and more importantly, the staff at the facility will simply silence the annunciator and make no effort to inform anyone that a problem may exist. In fact, this happened while we were there. I suggest that a written placard is placed near the annunciator to inform the staff on proper procedure. Presently, the generator and transfer switch seem to be in perfect working order. The technician also mentioned another possible item that may become a future problem. He suggested that an extension be added to the muffler so that ice and snow can't build up from around the top of the generator. (email sent from John O'Conner, Blackstone Electric)	
WI-00020	DESCRIPTION: Heat in room 111A	Corrected on Date: 10/31/2011
	GOVERNMENT REMARKS: Report received from PW shops - heat not working in room 111A - room sensor not communicating with the system.	
	CONTRACTOR REMARKS: Siemens adjusted the settings on the control and sensor. This item is complete.	
WI-00022	DESCRIPTION: AHU and HRU	Corrected on Date: 01/27/2012
	GOVERNMENT REMARKS: PW shops investigated warranty call on 20Jan12. They replaced contactor for HRU with a temporary in order to make unit run. AHU not running; shows supply air temp alarm.	
	CONTRACTOR REMARKS: Chris Widrick from BHG was onsite Jan 25th to look at the issues reported. BHG contacted TAG mechanical to schedule them to look at the HRU and AHU. Rodney from TAG was onsite on Jan 26th to look at the issues. TAG contacted Siemens and they will be onsite Friday Jan 27th. Siemens was onsite Friday 1/27/12. They reset the VFD for the AHU Supply fan and checked its operations. Everything was working correctly.	
WI-00027	DESCRIPTION: Room 122 Door Adjustment	Corrected on Date: 02/03/2012
	GOVERNMENT REMARKS: Door does not shut properly.	
	CONTRACTOR REMARKS: Hinges were adjusted. Door closes property.	
WI-00028	DESCRIPTION: Training Room - Lights flickering	Corrected on Date: 03/16/2012
	CONTRACTOR REMARKS: Blackstone replaced the lamps in the two lights of the Training Room.	

# APPENDIX F

<b>Warranty Item Listing</b>		Page 4 of 4	
CONTRACT NO.: W912DS-09-D-0004 0002		CONTRACT TITLE: Fire Station II, 57711	
CONTRACTOR: Black Horse Group LLC		LOCATION: Fort Drum, NY	
WI-00029	DESCRIPTION: Cracks in CMU walls	Corrected	on Date: 03/16/2012
	<p>GOVERNMENT REMARKS: Walked through apparatus bay with contractor on 24 Feb 2012; inspected cracks identified by fire department. Contractor will identify if cracks in paint or CMU and caulk/touch up where necessary.</p> <p>28 Feb 2012 - BHG, Loomis Masonry, and structural engineer investigated cracks in CMU. Waiting on engineer response.</p> <p>15 March 2012 - Engineer responded indicating cosmetic damage only and recommended repair of cleaning, sealing, and painting cracks. See attachment to daily report.</p> <p>CONTRACTOR REMARKS: BHG, Loomis Masonry and Structural Engineer will be onsite Feb 28th at 2:00 to look at these cracks. Cracks were corrected per the Structural Engineers site report and recommendations. Control Joints were cleaned and new sealant was installed.</p>		
WI-00030	DESCRIPTION: Occupancy Sensor - Lighting Controls	Corrected	on Date: 04/05/2012
	<p>GOVERNMENT REMARKS: Occupancy sensors not working properly in various locatoins. User noted womens bathroom (now labeled mens), kitchen, day room, training room.</p> <p>CONTRACTOR REMARKS: Blackstone was on site and repaired 4 occupancy sensors 4/5/12. The problem on two of them was customer tampering and the other two seemed to have a stuck relay . Everything was repaired without the need for any new products.</p>		
WI-00031	DESCRIPTION: HVAC	Contractor Notified:	04/04/2012
	<p>GOVERNMENT REMARKS: HVAC issues - smell from gear laundry room is sensed throughout the building. Kitchen smells throughout building. User would like to discuss during follow on commissioning scheduled for week of 9 April.</p>		