Moorhead Federal Building Security Improvements
Conceptual/Final Review

Project Location:
1000 Liberty Ave
Neighborhood: Central Business District

Applicant(s):
Gordon US LLC
GSA
Onyx Group

Project Duration: Permanent
Has this project come before Art Commission before? Yes
If yes, when? Feb 2022
RCO District: Yes
Development Activities Meeting: Yes, the DAM has been held
March 8, 2022
Re: Moorhead Blast Film and Bollard Project – Design Background

Members of the City of Pittsburgn Art Commission,

During the February project review of the Moorhead Blast Film and Bollard Project there were several questions about the basis of design for the bollard sizes, and I erroneously thought we would be able to provide our study and basis of design documentation. I was not aware at the time that there is not a venue to share this information with the Art Commission outside of a public forum or in a way that there is no risk of public review, and there is information within these documents that would pose a security risk for the Federal building if they were made public.

While our team does believe our study documents would help the Art Commission more fully understand the requirements for the size of the bollards and other force protection items that ultimately made it into the design package, these documents also identify the most vulnerable areas of the building site. What we can share with your team is that the building security requirements were determined by the building risk level, the traffic run-up analysis, and the Facility Security Committee (FSC) for the William S. Moorhead Federal Building. These building security requirements dictated the force protection system rating, while the size of the devices (bollards and post and beams in our case) and their foundations were then determined by the rating requirement in combination with the site constraints, such as soil quality. As part of our study, the design team performed soil testing at several locations around the building to determine which force protection devices and systems would be feasible for the site and then confirmed through manufacturer interview that the systems would be feasible and certifiable at the rating required for this site.

For the next Arts Commission review, our team intends to give an overview of the design process that we hope will inspire confidence that we have done our due diligence in the design process to select the least obtrusive force protection system for the site.

Sincerely,

Gabrielle Trout, P.E.
Sr. Project Engineer and Project Manager
GSA Design and Construction Division (3PCN)
100 S Independence Mall West
Philadelphia, PA 19106
e-mail: gabrielle.trout@gsa.gov
Phone: 267-634-5730
December 08, 2021
Re: Moorhead Blast Film and Bollard Project

Members of the City of Pittsburgh Art Commission,

The United States General Services Administration (GSA) is proposing security improvements to the Moorhead Federal Building at 1000 Liberty Avenue in compliance with Federal Regulations. Due to site limitations many of the physical barriers are required to be placed within the public right-of-way requiring approval by the Department of Mobility and Infrastructure (DOMI) for an Encroachment Plan and approval by the City of Pittsburgh Art Commission. We ask you consider the need for the security improvements detailed below and request your approval for this project.

Following the aftermath of the Oklahoma City Federal Building bombing in 1995, the Department of Justice was directed to assess the vulnerability of federal facilities. Titled “Vulnerability Assessment of Federal Facilities,” this report gave specific reference to perimeter security, including physical barriers. Since the executive action in 1995, the following has been established for the Moorhead Federal Building:

1) Application of Interagency Security Committee (ISC) security standards that were developed for federal facilities after the Oklahoma City Federal Building bombing in 1995.

2) A building-specific security assessment that was performed by the DHS Federal Protective Service at the Moorhead Building in 2015 and again in 2017.

3) Detailed discussion and consultation within the Moorhead Federal Building’s Facility Security Committee (FSC), which includes representatives from each federal agency that occupies the building. This discussion was followed by a formal vote from the FSC which had the effect of authorizing and directing GSA to pursue these security mitigations.

In 2017, GSA commissioned ONYX to evaluate the site and develop a basis of design for the Moorhead Building based upon an explicit and formally structured process for managing federal facility security risks. With these criteria informing our basis of design, we have been working to find the best solution for our site.

GSA proposes vehicle barriers to protect the Moorhead Federal Building within the right-of-way of Grant Street, Liberty Avenue and William Penn Place. The improvements within the Grant Street right-of-way include the four (4) feet tall shallow mount bollards meeting anti-ram requirements while matching the aesthetic appearance of the previously installed three (3) feet tall bollard barriers with a decorative cover. The shallow mount passive bollard foundations and all new sidewalks will be topped with rustic terrazzo topping to match existing adjacent sidewalks. All sidewalks will be constructed in accordance with DOMI specifications. Bollards will be spaced to allow ADA accessibility.

The improvements proposed for the Liberty Avenue right-of-way include four (4) feet tall shallow mount bollards meeting anti-ram requirements. The bollards will be made of steel tubing protected with a two-step powder coating process to prevent long term corrosion and match the building appearance. In addition, a shallow mount post and rail passive barrier will be installed to span existing underground utility vaults. The posts and rails will match the passive bollards in appearance. The foundations for both types of barriers will be installed such that the composition
of the existing sidewalk will be replaced. Foundations and new sidewalk will be composed of exposed aggregate in accordance with DOMI requirements or the existing brick paver surface will be restored. The bollards will be spaced to maintain ADA accessibility along the sidewalk path of travel. The ADA ramp at the intersection of Liberty Avenue and William Penn Place will be reconstructed to meet ADA requirements.

The improvements proposed for William Penn Place include a continuation of the shallow mount passive bollards from Liberty Avenue. An existing fire hydrant will be rotated 45 degrees to allow access to the individual nozzles while maintaining the distance between barriers to provide anti-ram protection for the building. A shallow mount swing gate is proposed to allow maintenance vehicles within the anti-ram perimeter of the facility.

Final improvements for the William Penn Place right-of-way include brick pavers to match the existing sidewalk. The sidewalk improvements are in accordance with DOMI requirements. The concrete sidewalk will include an exposed aggregate surface. Where necessary, the existing cobblestones will be removed, salvaged and reinstalled.

This is a high priority project for our team, and we ask for your help in driving this project forward. The DOMI team has previously reviewed the proposed design up through the 95% Submission and has accepted the design. The final construction documents are currently under review by DOMI.

If you or your team would like any additional information from the GSA team or our design team, please let me know.

Sincerely,

Gabrielle Trout, P.E.
Sr. Project Engineer and Project Manager
GSA Design and Construction Division (3PCN)
100 S Independence Mall West
Philadelphia, PA 19106
e-mail: gabrielle.trout@gsa.gov
Phone: 267-634-5730
William S. Moorhead Federal Building
General Services Administration
Security Improvements
1000 Liberty Avenue
Agenda

1) Why Security Improvements are Necessary
2) Methodology for Determining Security Requirements
3) Existing Conditions
4) Security Barrier Analysis
5) Review of Selected Barriers and Options for Consideration
Why Security Improvements are Necessary

- Meet Federal Requirements
- Anti-Terrorism Force Protection
- Thwart vehicle bomb threats
- Federal Interagency Security Committee (ISC) Standards perimeter barriers for all federal facilities
- Department of Homeland Security applies the Standards
- Criteria & Improvements confirmed by the Moorhead Facility Security Committee & GSA
- Improvements approved by SHPO
Methodology For Determination of Security Requirements

- Site Specific Security Analysis by GSA
- Controlled Information (not for public view)
- Considerations:
  - Value of the Asset
  - Likelihood of attack
  - Methods of attack
  - Paths of approach
- Facility Security Committee (FSC) for the William S. Moorhead Federal Building
Methodology For Determination of Security Requirements - Results

- High value asset

- Crash protection to meet M50, P1 rating per ASTM F2656.

- Certification by vendor is required.


  - Last updated 04/21/2020

  - 2018 (2 ver.), 2015, 2007

- Highest level of protection
**Existing Features Grant Street**

- Black Bollards with Architectural Shroud are crash rated
- Missing bollards southern corner on Grant Street
- Sidewalk Includes Rustic Terrazzo Topping
Existing Features Liberty Ave

- Planters and bollards are not crash rated
- Sidewalk includes exposed aggregate and brick
Existing Features William Penn Place

- Barriers are not Crash Rated
- No Maintenance Access
Site Constraints Liberty Ave

- Underground Vaults
- Tree Boxes
- Existing Utilities
Security Barrier Design Analysis

- M50 P1
  - Certified by Vendor
- Site Constraints
  - Poor Soils
  - Existing Utilities
- Previous Experience
  - Grant Street Bollards (K4) 2014
    - Doubled Construction Cost
    - Unforeseen Utilities
    - Micropile foundations
- Lessons learned
  - Shallow Foundations
  - Geotechnical Analysis
Security Barrier Design Analysis

Achieving M50/P-1 rating is a trade-off of bollard density vs height: wider, shorter, closer spaced bollards vs narrower, taller, wider spaced bollards

Lessons Learned
- Minimize visual impact
- Prioritize Maximum Spacing
- Minimize density
- Smaller Diameter Bollards

Gibraltar has smallest diameter bollard with the widest spacing and will certify this installation for M50/P-1 rating.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>M50</th>
<th>P1</th>
<th>Foundation</th>
<th>Height</th>
<th>Clear</th>
<th>Diameter</th>
<th>Certified</th>
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<tbody>
<tr>
<td>Calpipe</td>
<td>Yes</td>
<td>P2</td>
<td>12&quot;</td>
<td>36&quot;</td>
<td>49.25&quot;</td>
<td>10.75&quot;</td>
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<tr>
<td>Delta</td>
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<td>P1</td>
<td>24&quot;</td>
<td>36&quot;</td>
<td>23.25&quot;</td>
<td>12.75&quot;</td>
<td>X</td>
</tr>
<tr>
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<td>P1</td>
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<td>44&quot;</td>
<td>39.25&quot;</td>
<td>12.75&quot;</td>
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<tr>
<td>Ameristar</td>
<td>Yes</td>
<td>P1</td>
<td>14&quot;</td>
<td>48&quot;</td>
<td>43&quot;</td>
<td>16&quot;</td>
<td>?</td>
</tr>
<tr>
<td>Gibraltar</td>
<td>Yes</td>
<td>P1</td>
<td>12&quot;</td>
<td>48&quot;</td>
<td>54&quot;</td>
<td>10.75&quot;</td>
<td>YES</td>
</tr>
</tbody>
</table>

Shorter higher density bollards (36” tall, 23.25” clear spacing) for comparison to the taller wider spaced Gibraltar bollards 48” tall, 54” spacing
Security Barrier Design Analysis

Gibraltar M50 P1 Bollards (48” tall, 54” clear spacing) are widely used throughout the country to meet today’s higher security requirements.
Security Barrier Analysis

Gibraltar M50 P1 Bollards (48” tall, 54” clear spacing) are widely used throughout the country to meet today’s higher security requirements.

Approvals Received
- GSA Security
- SHPO
- DOMI
- Utility Owners
- Zoning
**Selected Security Barriers**

Liberty Ave / Wm Penn Pl.

Gibraltar Bollards
- Least intrusive
- Least mass and density
  - 48” high
  - Clear spacing 54”
- Post & beam matches
- Color Options
- Option to remove stripes
- Angled or flat top

Recommended Design
- Gray blends in with building
- Angled top prevents trash
- Stripe helps motorists
Selected Security Barriers

Liberty Ave / Wm Penn Pl.

Swing gate that CFA objected to has been removed from the design. Wide spacing at 54” clear between the bollards will allow for maintenance and snow removal equipment to access the sidewalk area.

- Maintenance Access
- Snow Clearing
- Lift Platform
- Coordinated with DOMI
Selected Security Barriers

Liberty Ave / Wm Penn Pl.

Swing gate that CFA objected to has been removed from the design. Wide spacing at 54” clear between the bollards will allow for maintenance and snow removal equipment to access the sidewalk area.

- Maintenance Access
  - Snow Clearing
  - Lift Platform
  - Coordinated with DOMI
**Selected Security Barriers**

Liberty Ave

- Post and crash beam design at utility and tree boxes.

- New trees provided in this project
**Selected Security Barriers**

Grant Street
- Existing K4 bollards 32” tall
- Provide
  - M50-P1 bollards 48” tall
- Options
  - Black Bollards
  - Gray Bollards
  - Black Shroud to match existing bollards

**Future project**
- Upgrade existing bollards to M50-P1 (48” tall)

**Recommended Design**
- Since required to be 48” tall, use non-similar design to existing bollards
- Existing K-4 bollards to be replaced in future project – all will match
Security Improvements

- Questions and Discussion for CFA Approval
February 1, 2022

Members of the City of Pittsburgh Art Commission

Re: Moorhead Blast Film and Bollard Project

Dear Commissioners:

I am the Director of the U.S. Equal Employment Commission’s Pittsburgh Area Office, which is located in the William S. Moorhead Federal Building. I am also a member of the building’s Facility Security Committee. I am writing in support of the plan proposed by the General Services Agency to enhance security around the building.

I understand that GSA is proposing to install vehicle barriers to protect the Moorhead Federal Building within the right-of-way of Grant Street, Liberty Avenue and William Penn Place. These improvements would include installation of four feet tall bollards on the Grant Street side of the building, which would meet anti-ram requirements, and which are similar to the bollards previously installed. The plan would also include installing new sidewalks, which would be topped with rustic terrazzo topping to match existing adjacent sidewalks. All sidewalks would be constructed in accordance with DOMI specifications, and the bollards will be spaced to allow ADA accessibility.

Similarly, on the Liberty Avenue side the plan proposes to install bollards as well as a shallow mount post and rail passive barrier to span existing underground utility vaults, which will match the appearance of the bollards. The proposal will also reconstruct the ADA ramp at the intersection of Liberty Avenue and William Penn Place to meet ADA requirements, as well as sidewalk reconstruction. Finally, on the William Penn Place side, bollards will be extended, with a shallow mount swing gate to allow maintenance vehicles within the anti-ram perimeters of the facility.

I am sure that GSA has provided you with complete information about the project, and I only summarize some of the details here. As a representative of an agency that enforces federal civil rights laws, I support this project because of its attention to accessibility for those with disabilities. As a federal employee who is aware of the history of terrorist attacks on federal facilities, I am also keenly aware of the potential danger to those of us who work in the building, and therefore I support these enhancements to ensure the security of not just employees, but members of the public who visit the facility.

Please let me know if I can be of any further assistance.

Sincerely,

Deborah A. Kane
Area Director
General Services Administration (GSA). Moorhead Blast Film and Bollard Project

Dear Members of the City of Pittsburgh Art Commission,

I am the current building manager for the William S. Moorhead Federal Building at 1000 Liberty Avenue, Pittsburgh, PA. GSA is proposing security improvements to the Moorhead Federal Building to be in compliance with Federal Regulations. I fully support this measure and I would ask that you consider the need for the security improvements detailed below and I request your approval for this project.

GSA proposes vehicle barriers to protect the Moorhead Federal Building within the right-of-way of Grant Street, Liberty Avenue and William Penn Place. The improvements within the Grant Street right-of-way include the four (4) feet tall shallow mount bollards meeting anti-ram requirements while matching the aesthetic appearance of the previously installed three (3) feet tall bollard barriers with a decorative cover. The shallow mount passive bollard foundations and all new sidewalks will be topped with rustic terrazzo topping to match existing adjacent sidewalks. All sidewalks will be constructed in accordance with DOMI specifications. Bollards will be spaced to allow ADA accessibility.

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Jody Horner
General Services Administration
Building Manager
William S. Moorhead Federal Building
1000 Liberty Avenue Rm 715
Pittsburgh, PA 15222
Cell: 412-225-1376
jody.horner@gsa.gov
**Development Activities Meeting Report (Version: 12/20/2019)**

*This report created by the Neighborhood Planner and included with staff reports to City Boards and/or Commissions.*

<table>
<thead>
<tr>
<th>Logistics</th>
<th>Stakeholders</th>
</tr>
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<tbody>
<tr>
<td><strong>Project Name/Address:</strong> 1000 Liberty Ave Security Improvements to Moorhead Federal Building</td>
<td>Groups Represented (e.g., specific organizations, residents, employees, etc. where this is evident):</td>
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<tr>
<td><strong>Parcel Number(s):</strong> 9-P-150</td>
<td>Applicant teams, RCO staff, residents, developers, media, etc.</td>
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<td><strong>ZDR Application Number:</strong> DCP-ZDR-2021-03537</td>
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<td><strong>Meeting Location:</strong> Virtual (Zoom)</td>
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<tr>
<td><strong>Date:</strong> 1/13/2022</td>
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<td><strong>Meeting Start Time:</strong> 5:15 p.m.</td>
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<tr>
<td><strong>Applicant:</strong> GSA</td>
<td><strong>Approx. Number of Attendees:</strong> 22</td>
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<tr>
<td><strong>Boards and/or Commissions Request(s):</strong> Art Commission</td>
<td></td>
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</tbody>
</table>

**How did the meeting inform the community about the development project?**

*Ex: Community engagement to-date, location and history of the site, demolition needs, building footprint and overall square footage, uses and activities (particularly on the ground floor), transportation needs and parking proposed, building materials, design, and other aesthetic elements of the project, community uses, amenities and programs.*

Project is to install vehicle ram barriers in the public right-of-way, will need permit from DOMI and Art Commission. This is a federal facility that houses various departments. Federal standards require protection from vehicle threats that are necessitating the work and outside the building (also part of the requirement). Improvements have also been presented and approved to the State Historic Preservation Office (SHPO). Barriers were installed a few years ago, but couldn’t be installed all around the building leaving a few deficiencies. Note that they will replace sidewalk materials with like materials as there currently. Concrete bollards and planters at the corner of Liberty Ave need to be replaced because they don’t meet the standards. Also noted additional barriers and bollards at vehicle entrances. Showed post-and-beam style barriers that are used around tree pits. They will replace trees in tree pits that have been missing. Chose bollards after consulting with DOMI over larger planters that would take up more sidewalk space. Images shown throughout the site, reference photos of the kinds of barriers, and then renderings that represent the proposed materials over existing photos.

**Input and Responses**

<table>
<thead>
<tr>
<th>Questions and Comments from Attendees</th>
<th>Responses from Applicants</th>
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<td>No questions asked.</td>
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**Other Notes**

N/A

**Planner completing report:** Derek Dauphin and Phil Wu