

**U.S. General Services Administration
Heating Operations Transmission District (HOTD)**

**Temporary Boiler Exhaust Stack Location Briefing
For Rental Boilers at the
Central Heating and Refrigeration Plant (CHRP)**

August 3, 2011

Prepared by:



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2. Executive Summary

Background

The General Services Administration (GSA) operates two heating plants as part of the HOTD. These plants are the Central Heating and Refrigeration Plant (CHRP) located at 13th and C Streets SW and the West Heating Plant (WHP) located in Georgetown at 1051 29th Street, NW. These plants were placed in service in 1934 and 1948, respectively. The WHP was decommissioned in the late 1990s and is inoperable as a source of steam production.

The Central Heating and Refrigeration Plant (CHRP), which is operated by the General Services Administration (GSA), Heating Operation Transmission District (HOTD) provides steam and chilled water to over 100 government office buildings and 20 quasi-government buildings for comfort climate control (HVAC) and domestic hot water. This also includes supplying steam to the White House complex. This plant also serves as a co-generation facility to produce chilled water for some of the buildings' central cooling systems (HVAC).

Justification

Since the shutdown and decommissioning of the West Heating Plant (WHP) located in Georgetown at 1051 29th Street, NW in the late 1990s, it has been inoperable as a source of steam production. HOTD has no back-up system in case a boiler at Central Heating Plant fails or falls short of supplying steam at full load, which is about 800 thousand pounds per hour. In this event, because of the age of the plant and the lack of installed redundancy of the equipment, the entire steam generation side of the plant will require a complete shutdown to make certain repairs. HOTD is required to supply steam to its customers even in the event the plant equipment needs to be shut down for repairs. Usually HOTD rents boilers and installs them at building sites during the short shutdown in summer months. However, installing boilers during the winter months at the various site locations are prohibitive because of boiler size and the lack of back up utilities at the sites.

The Central Heating and Refrigeration Plant currently operates six (6) boilers. These boilers, while still in service, have reached the end of their service life cycle. If any pair of consecutive boilers fails, HOTD will be unable to serve its customers in a reliable and efficient manner. The failure of any one of these boilers would have a crippling effect on over 100 key Federal Buildings, including the White House. Consistent, reliable production and distribution of steam by the Central Heating and Refrigeration Plant (CHRP) is of critical importance to ensure that the day to day operations of the various government agencies that rely on the CHRP can continue without interruption.

In the event of a failure at CHRP, the entire steam generation side of the plant could be required to be shut down to make repairs. A complete shutdown would be needed because of the age of the plant and the lack of installed redundancy of the equipment (split system).

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HOTD is required to supply steam to its customers even in the event that plant equipment needs to be shut down for repairs.

Conclusion

Considering the age of the boilers, customer demands, and failure of any associated equipment related to steam production, HOTD wants to have rental boilers ready to supplement steam production at CHRP in the event that there is a failure of its own boilers and for any emergency shutdown for repairs.

Rental boilers will greatly improve the reliability of service to the surrounding buildings, which house many federal agencies, by averting any potential catastrophic failure of steam production caused by the unreliable and outdated boilers currently in use at CHRP.

The GSA has reviewed various options for the installation of the Temporary Boiler Exhaust Stack locations. After extensive review of the GSA's Office of Planning Design Quality (OPDQ) Team, it has selected the following design installation (Option 2), from the available options. This option it was selected to minimize any modifications required to the exterior of the building to install these stacks. The stacks and boiler breeching will be installed only for the times while the temporary boilers on site, for just five months per year (December through February) to supplement lost steam capacity for three months in the winter and during the months of July and August for steam supply and for making boiler repairs to the CHRP system .

See the following pages for the location of the temporary stack locations for the selected Option. Three stack pipes, connected to the existing bag house inside the plant will be connected to the existing inside stack during the above months stay for five (5) years. These pipes will be connected to a single 4' X 6' exhaust stack from the bag house through the roof. This single stack passing through the roof will be within the high screen wall, and will not be noticeable from the street because of the other existing stacks and vents.

The existing roof is a built up type roof. A single stack common to all rental boilers on site will penetrate through the roof with flashing and appropriate sealants. The top of the steel stack elevation will be passing a minimum of three feet above the existing roof line. The stack will be fitted with a cover to close it off when not in use.

The affected windows at the fifth floor level will be properly removed and stored at the HOTD premises for the period of five years, the duration of this project. Two rows of window panes will be removed at this level. Detailed information on the mechanical operation as well as the preservation of the windows will be implemented. During the period that the stack breeching enters the building, the contractor will provide coverage of the remaining window area openings. During the periods that the boilers and stack breeching will not be on site, the window openings will be covered by treated plywood boards painted gray to match the existing window frames and existing screens. HOTD had confirmed that in the event of

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accidental damage to the removed windows, the HOTD will supply with an exact match of the window material and hardware.

Concurrently, HOTD/GSA has been actively pursuing the permit application processes with other agencies. The Air Quality Permit to Operate Fuel Burning Equipment was submitted to the DDOE, the local EPA Agencies AQD for review. The GSA has received verbal confirmation that permits will be approved, thus no problems are anticipated from the DDOE.

HOTD has coordinated with the District Department of Transportation for the Maintenance of Traffic on C Street SW, (see Figure 18, Page 23). This Maintenance of Traffic Drawing on Page 20 shows that the placement and installation of these temporary boilers will only affect one parking lane eastbound, and all pedestrian traffic on the sidewalk on the north side of the plant.

The HOTD is responsible for applying and obtaining the Street Occupancy Space Permit to accommodate the installation of temporary boilers. HOTD is also coordinating with the District Department of Transportation on the closure of C Street SW for the preparation, staging and installation of these boilers.

An additional concern was posed concerning the noise level while the boilers are fired up and on line. To this extent, the Boiler Vendor will be responsible to provide all means necessary to adhere to sound attenuation control and complying with the District of Columbia zoning Regulations, as well as regulations governed by other government agencies. (The Boiler Vendor will use screen walls/sound barriers to abate excessive noise levels if necessary.) The sound attenuation barrier/shed will be a prefabricated modular Butler metal building. The actual size and configuration of the building will vary, depending on the number of boilers with the installation of the boiler configuration in the winter and summer months. Of course, in the summer months, the size of the shed will be significantly smaller. A three foot clearance will be maintained for access to service the boilers. A lock-in type Jersey barrier will be maintained at this distance from the boilers on the street side. The installation of the temporary boilers will occupy the park lane and will only be affected during their installation on site.

A final concern was posed that there would be damage to the building due to the placement of brackets to support the breeching stacks. This concern will be addressed by having the breeching stacks supported and braced to a beam located inside the moat (below ground level). It will also be supported by bracing against the temporary shed.

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3. Vicinity Map



Figure 1- Vicinity Map

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5. Boiler Temporary Layout Plan

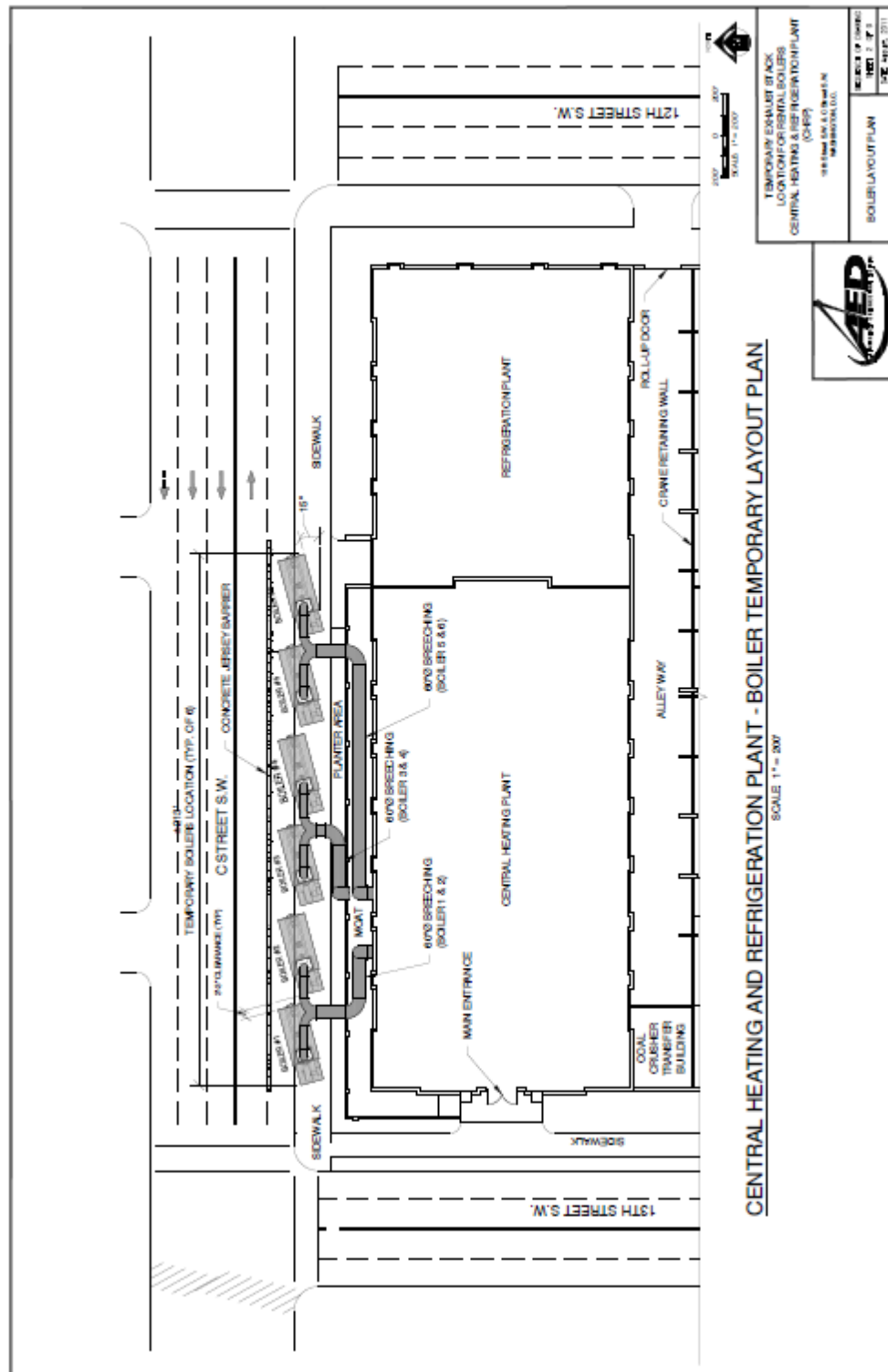


Figure 3 - Boiler Temporary Layout Plan

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8. North Elevation With Metal Sound Barrier Shed

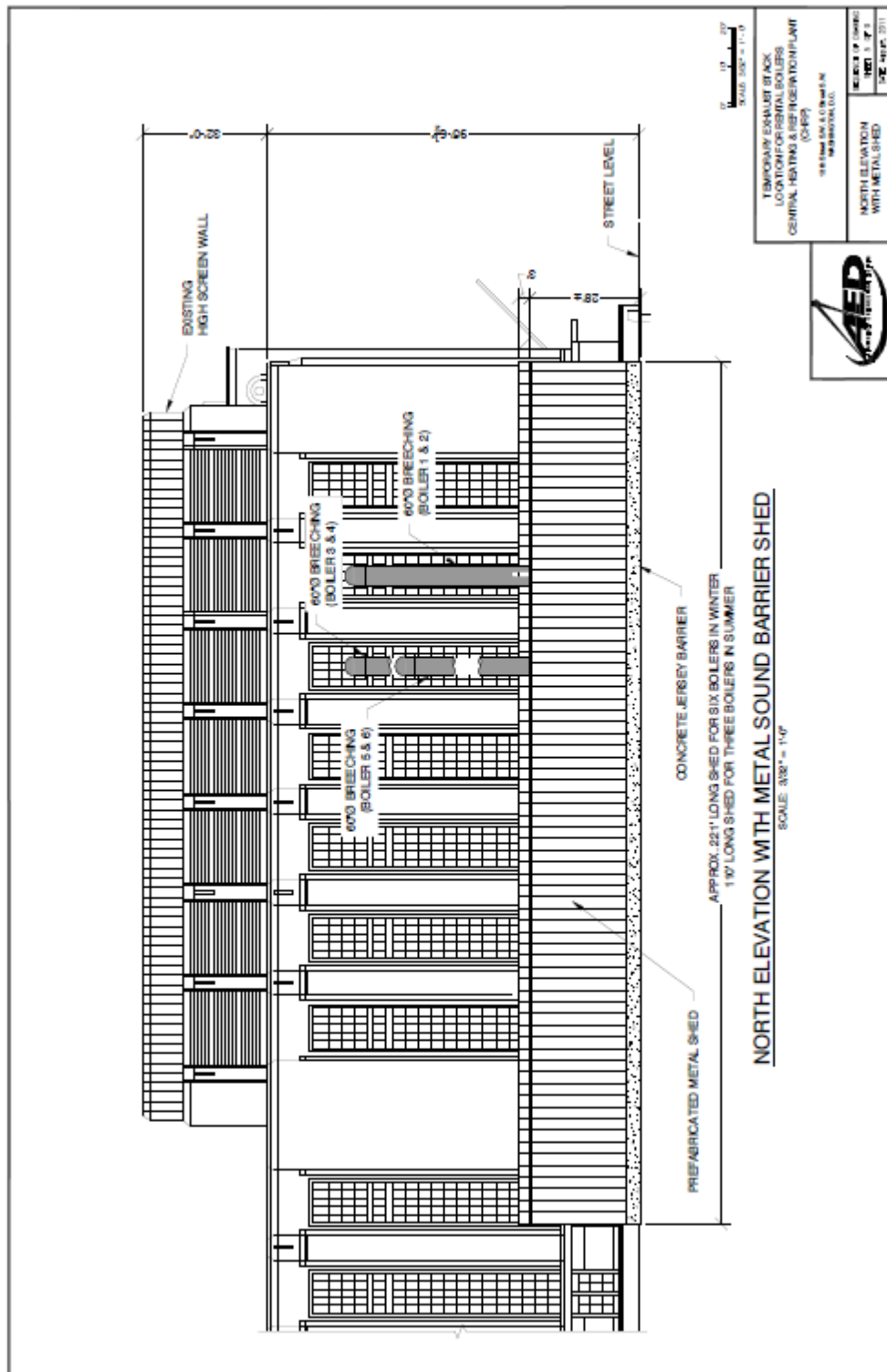


Figure 6 - North Elevation With Metal Sound Barrier Shed

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9. North Elevation Photo Looking West



Figure 7 North Elevation Photo Looking West

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10. North Elevation Photo Looking South



Figure 8 - North Elevation Photo Looking South

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11. North Elevation Photo Showing Stack Locations

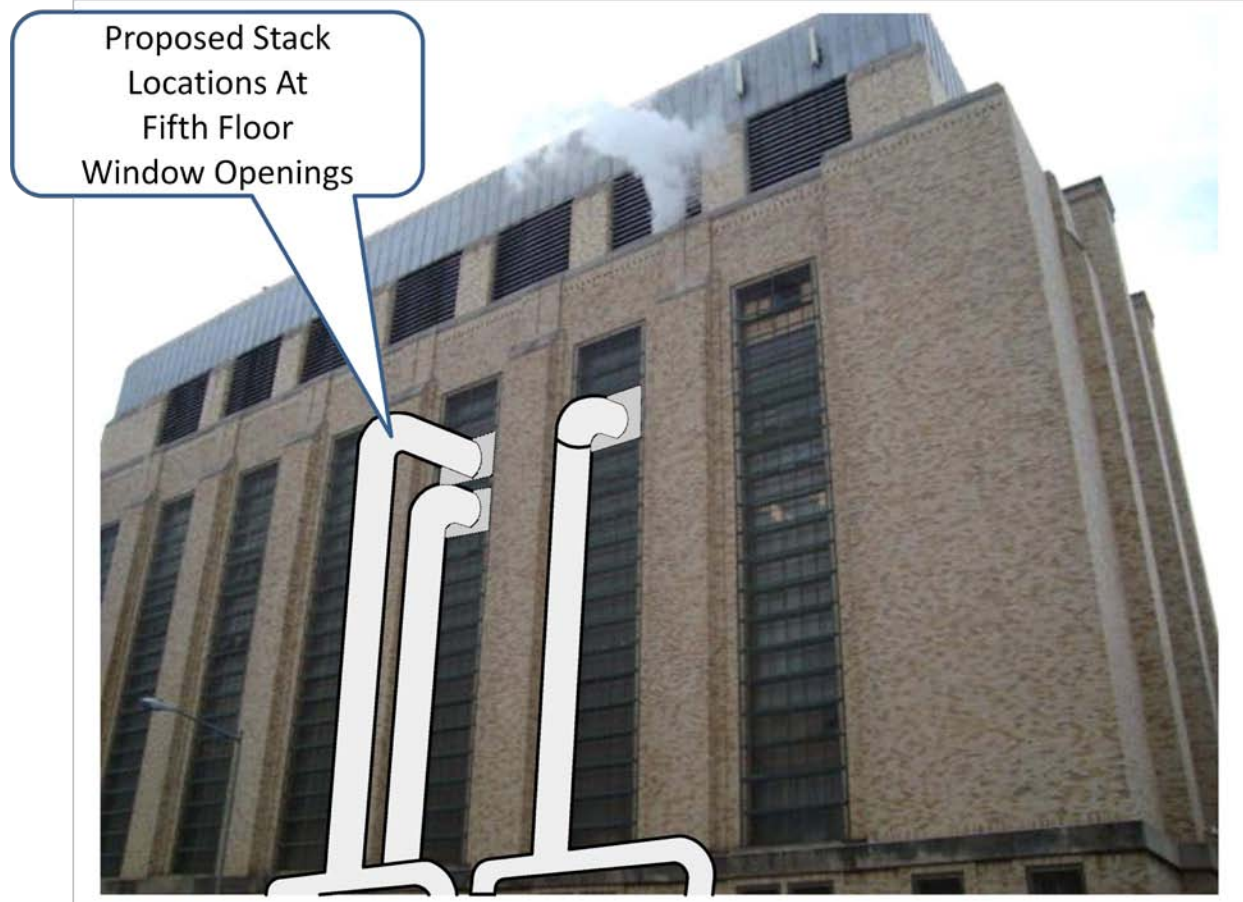


Figure 9 - North Elevation Photo Showing Proposed Stack Locations

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12. North Elevation Photo Looking East



Figure 10 - North Elevation Photo Looking East

13. North Elevation Photo Showing Boiler Location



Figure 11 - North Elevation Photo Showing Proposed Boiler Location

14. North Elevation Zoomed Out Photo Showing Proposed Boiler Location

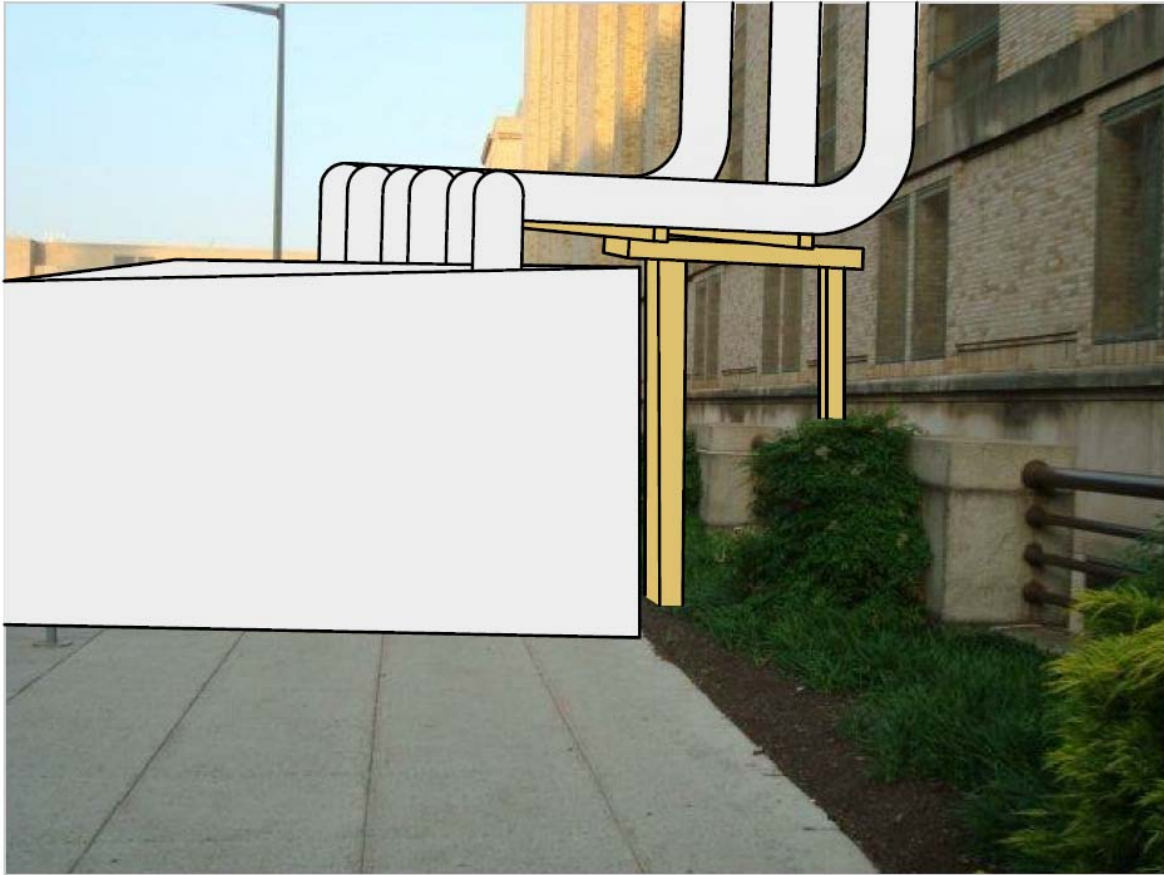


Figure 12 - North Elevation Zoomed Out Photo Showing Proposed Boiler Location

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15. East Elevation Drawing

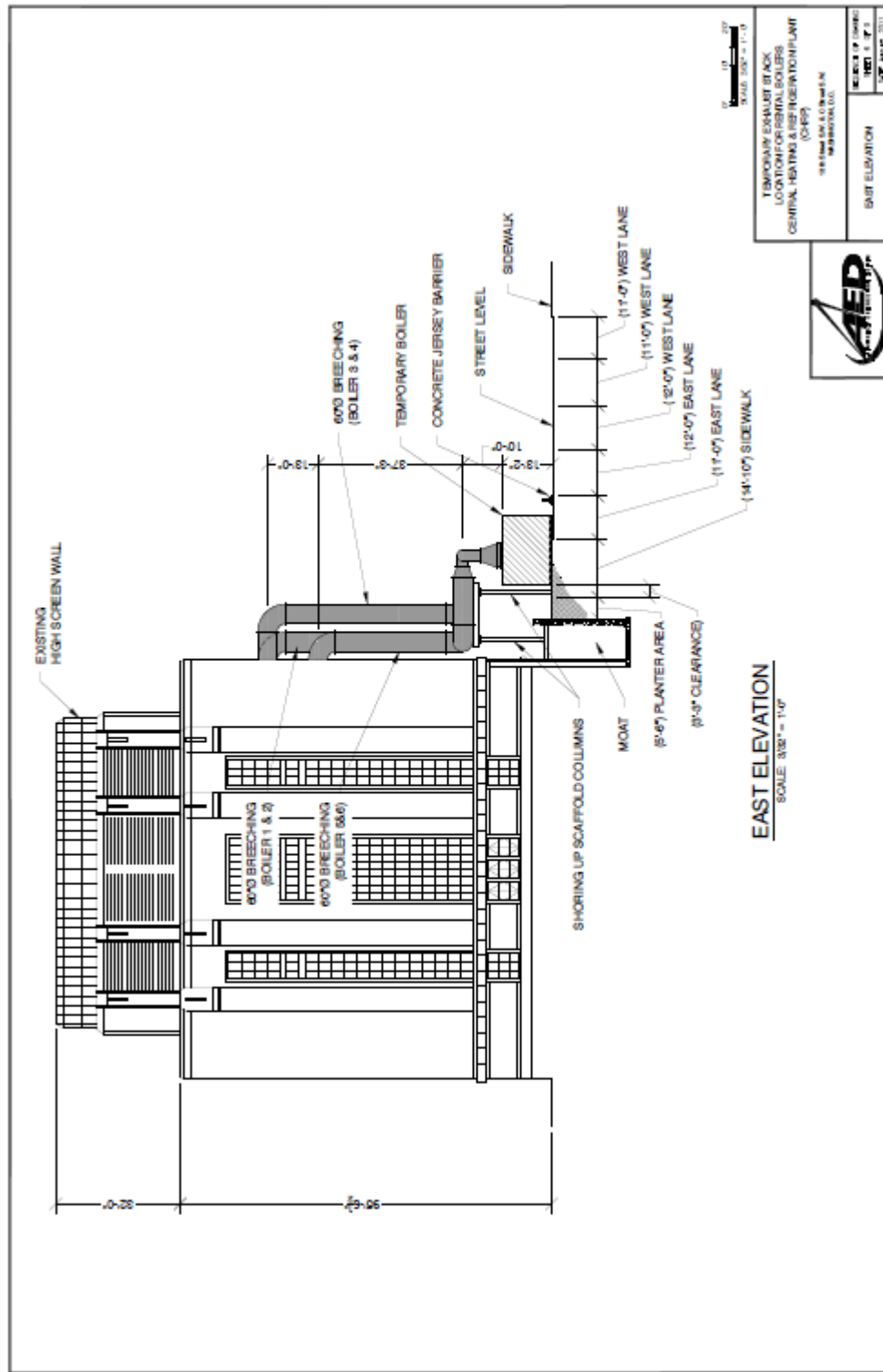


Figure 13- East Elevation

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17. West Elevation Drawing

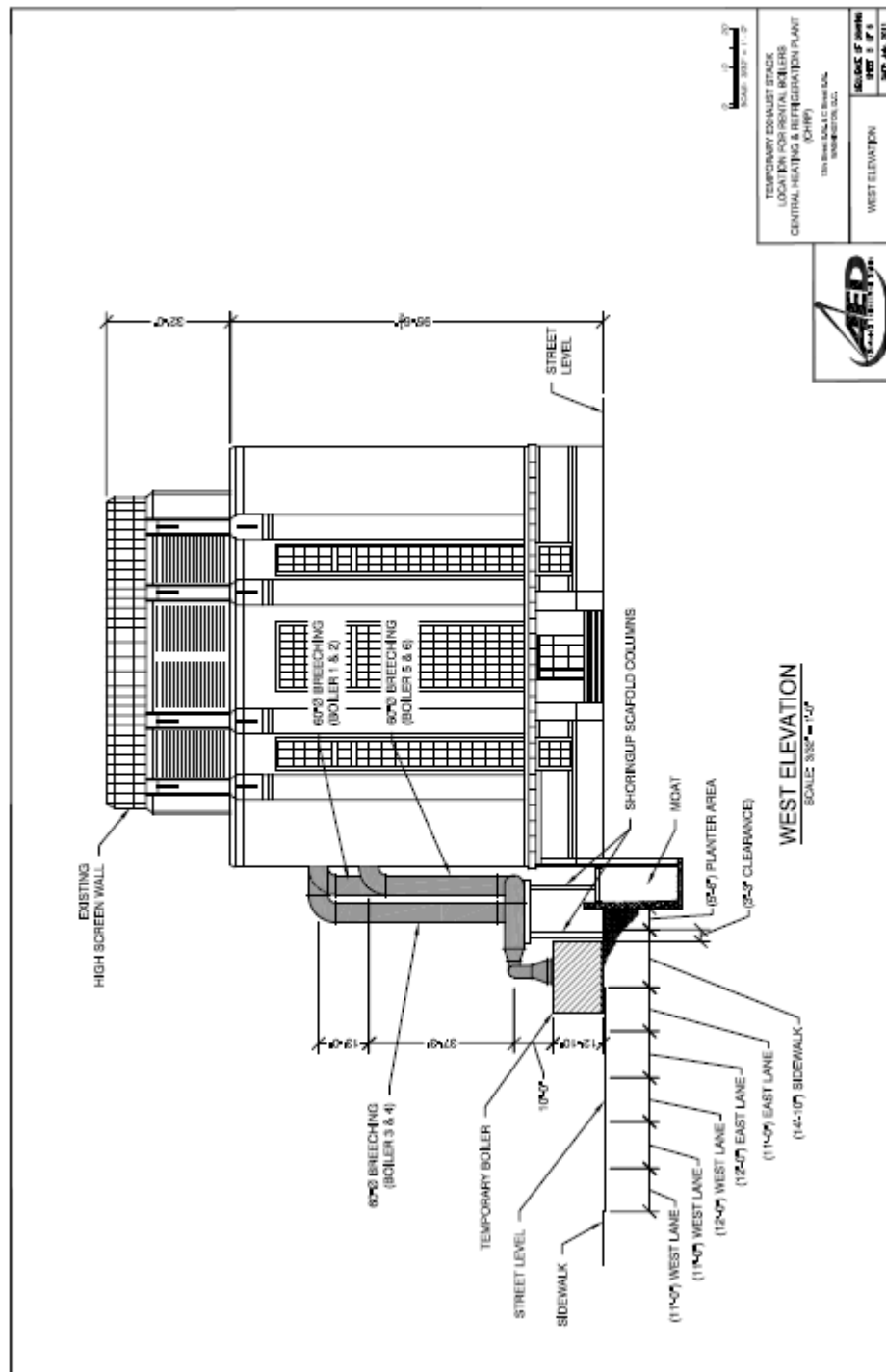


Figure 15- West Elevation

19. Aerial Photo of Proposed Stack Location

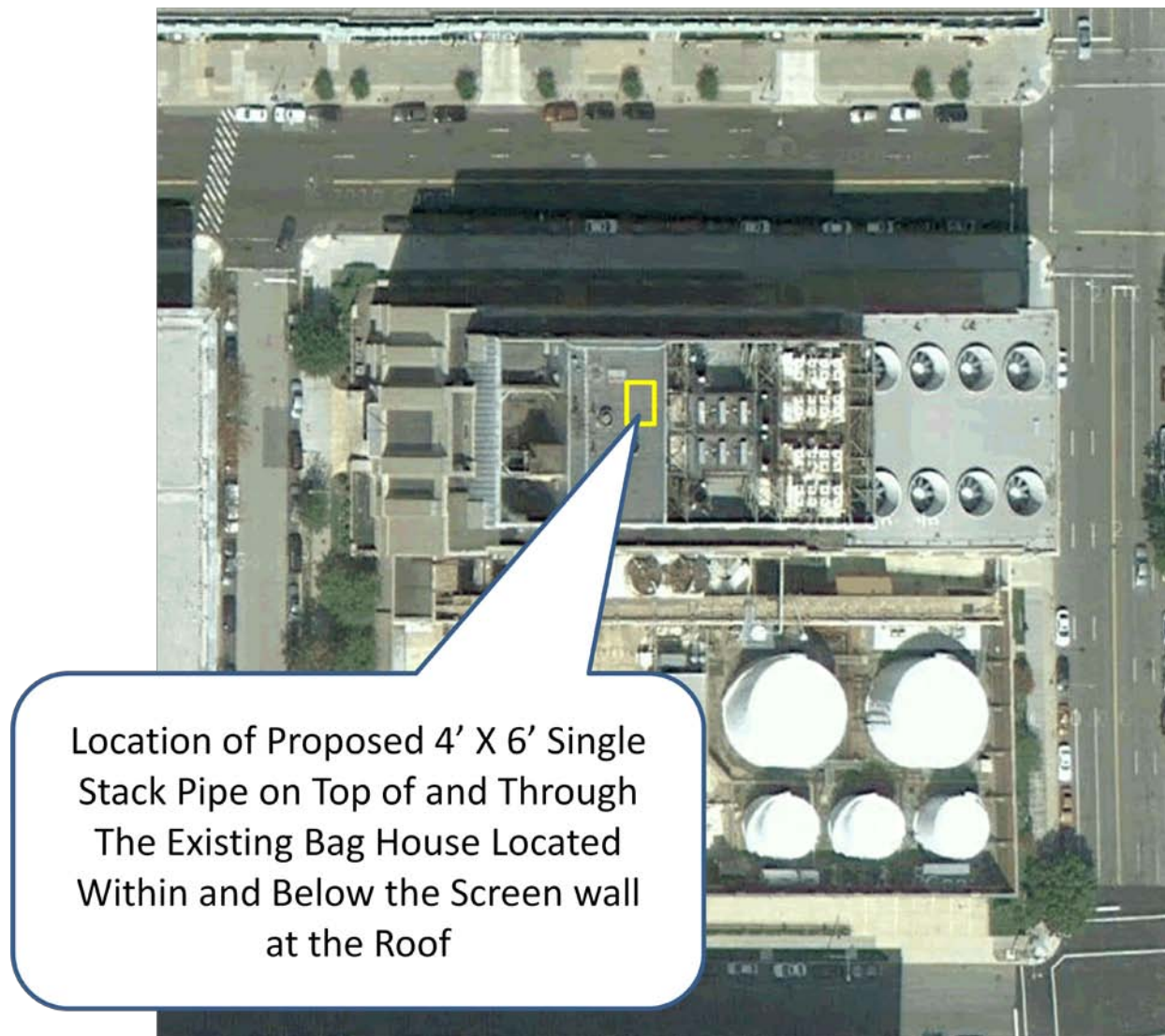


Figure 17- Aerial Photo of Proposed Stack Location

20. Traffic Control Plan While Boilers on Site

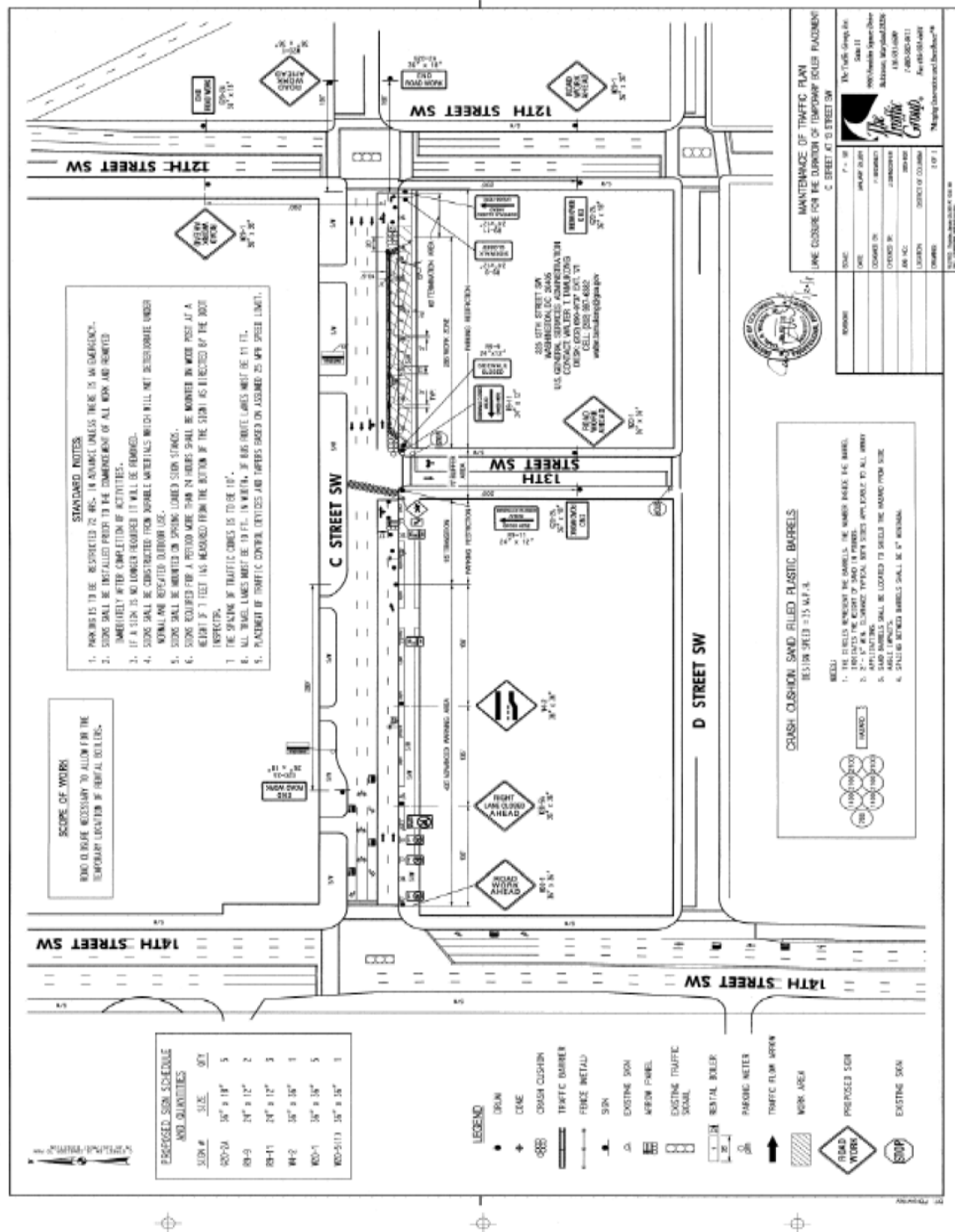


Figure 18- Traffic Control Plan While Boilers on Site

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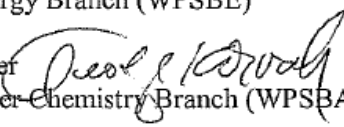
21. APPENDIX "A": COPY OF PERMIT STATUS REPORT



Heating, Operations & Transmission District

United States of America
General Services Administration
National Capital Region

To: Mr. Gurdarshan Bhatti, Manager
Plant Engineering & Energy Branch (WPSBE)

From: George Korvah, Manager 
Environmental and Water Chemistry Branch (WPSBA)

Subject: DDOT and DDOE Permitting Update For Temporary Boilers

Date: July 25, 2011

This is a follow-up to update you on where we are with regard to issuance of permits to operate temporary boilers in public space.

The DDOT (Transportation) has informed us that the requested permit is ready for pick-up. It was confirmed that the GSA HOTD would have to pay a total of \$ 11,169.00 to cover street parking meter fees that the District will not generate due to the presence and operation of temporary boilers in those spaces for the duration of the permit. It was also confirmed that public convenience deposits totaling over \$100,000.00, will be waived through a Memorandum of Understanding (MOU), to be drafted between the GSA and the District Government. This MOU is currently being processed by the legal teams from both the GSA and DDOT. We were assured by the Permitting Manager, that the MOU process will not delay the issuance of the permit as long as GSA pays the \$11,169.

We also received similar and positive news from the DDOE (Air Permit) that the permit has been drafted and is currently undergoing Public Notice review. It was confirmed by the Chief of the Air Quality Division that the permit will be issued as soon as the Public Notice review process is completed; this may take about a month.

21. APPENDIX “B”: DRAWING HANDOUTS (11” X 17”)

Drawings Handouts (11” X 17”)

- 1. GENERAL SITE PLAN**
- 2. BOILER TEMPORARY LAYOUT PLAN**
- 3. METAL SOUND BARRIER SHED LAYOUT PLAN**
- 4. NORTH ELEVATION DRAWING**
- 5. NORTH ELEVATION WITH METAL SOUND BARRIER SHED**
- 6. EAST ELEVATION DRAWING**
- 7. EAST ELEVATION WITH METAL SOUND BARRIER SHED**
- 8. WEST ELEVATION DRAWING**
- 9. ROOF PLAN**
- 10. TRAFFIC CONTROL PLAN (MOT)**