

**PROPOSED SELF-STORAGE FACILITY
EXISTING COMMERCIAL BUILDING AND STORAGE LOTS
1538 STILLWELL AVENUE AND
1540 BASSETT AVENUE
BRONX, NEW YORK**

Remedial Action Work Plan

OER Project No.: 15CVCP086X

Prepared for:

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REMEDIAL ACTION WORK PLAN

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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
AS/SVE	Air Sparging/Soil Vapor Extraction
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
C/D	Construction/Demolition
COC	Certificate of Completion
CQAP	Construction Quality Assurance Plan
CSOP	Contractors Site Operation Plan
DCR	Declaration of Covenants and Restrictions
ECs/ICs	Engineering and Institutional Controls
HASP	Health and Safety Plan
IRM	Interim Remedial Measure
BCA	Brownfield Cleanup Agreement
MNA	Monitored Natural Attenuation
NOC	Notice of Completion
NYC BCP	New York City Brownfield Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene
NYCRR	New York Codes Rules and Regulations
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
NYS DEC DER	New York State Department of Environmental Conservation Division of Environmental Remediation
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
ORC	Oxygen-Release Compound
OSHA	United States Occupational Health and Safety Administration
PE	Professional Engineer

PID	Photo Ionization Detector
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan or Plan
RCA	Recycled Concrete Aggregate
RD	Remedial Design
RI	Remedial Investigation
RMZ	Residual Management Zone
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOC	Semi-Volatile Organic Compound
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound

CERTIFICATION

I, Keith T. D'Ambrosio, am a Professional Engineer licensed in the State of New York. I have primary direct responsibility for implementation of the remedial action for the Proposed Self-Storage Facility Site known as OER Project No. 15CVCP086X.

I, Christopher Seib, am a Qualified Environmental Professional as defined in §43-140. I have primary direct responsibility for implementation of the remedial action for the Proposed Self-Storage Facility Site known as OER Project No. 15CVCP086X.

I certify that this Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

Keith T. D'Ambrosio, P.E.

Name

076095

NYS PE License Number

Keith T. D.

Signature

3/6/15

Date



Christopher Seib

QEP Name

QEP Signature

3/11/15

Date

EXECUTIVE SUMMARY

Stillwell Self Storage, LLC has enrolled in the New York City Voluntary Brownfield Cleanup Program (NYC VCP) to investigate and remediate a 44,149-square foot site located at 1538 Stillwell Avenue and 1540 Bassett Avenue in Bronx, New York. A remedial investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP). The remedial action described in this document provides for the protection of public health and the environment consistent with the intended property use, complies with applicable environmental standards, criteria and guidance, and conforms with applicable laws and regulations.

Site Location and Current Usage

The Site is located at 1538 Stillwell Avenue and 1540 Bassett Avenue in Bronx, New York and is identified as Block 4219, Lot 16 and Block 4226, Lot 290 on the New York City Tax Map. Figure 1 shows the Site location. The Site is 44,149-square feet in total, which is comprised of 22,295-square feet on Lot 16 and 21,854-square feet on Lot 290, and is bounded by Bay Powder Coating Corp., Sacco, and residential buildings to the north, New Plumbing and Heating Corp., a vacant building, a lot with junk cars, and Frank & Son Autobody to the south, an Acela High Speed Transit Train line to the east, and F&J Transmission, Temple of Joy, Italy A&P Auto Repair, and Carib Prints, Ltd. beyond Stillwell Avenue to the west. Lot 16 (which is considered proposed Building A) is located to the west of Bassett Avenue and Lot 290 (which is considered proposed Building B) is located to the east of Bassett Avenue. A map of the site boundary is shown in Figure 2. Currently, Lot 16 of the subject property is situated between Stillwell Avenue and Bassett Avenue and currently houses a vacant, one- and two-story commercial structure that covers the entire lot. The ground floor/basement area of the site building on Lot 16 is divided into four open sections formerly used for paint storage and mixing (per Sanborn Maps) with restrooms in the central portion and a loading dock area in the western portion. The second floor of the site building consists of open space with offices in the northwestern and northeastern portions. Lot 290 of the subject property is situated to the east of Bassett Avenue and houses several fenced storage yards formerly used for the storage of construction equipment and materials and automobiles.

Summary of Proposed Redevelopment Plan

Site A: The proposed future use of the Site will consist of the demolition of the above-grade portions of the existing structure and construction of a 45,000-square feet (gross), three-story with cellar self-storage structure on Lot 16. The approximately 22,295-square feet (footprint) cellar level will consist of storage units, sprinkler room, gas meter room, electrical room, and elevator machine room. Access to the cellar is via stairs/elevator from above or from Bassett Avenue. The 9,652-square feet first floor will consist of storage units, an office, break room, retail and restroom area in the southwestern portion, a three-bay loading area in the northwestern portion, and a janitor's closet. The 6,858-square feet second and third floors will consist of storage units. The first floor of the structure is accessed via Stillwell Avenue. An elevator will be located in the western portion of the structure. Excavation will be required to achieve the required cellar height. No open/green spaces will be present on Lot 16. The structure will be serviced by new electric, water, sewer, and natural gas lines.

Site B: An approximately 9,271-square feet, one-story storage structure without a cellar is proposed on Lot 290. The slab-on-grade structure will consist of storage units, a sprinkler room, and an electrical room. The structure does not have occupiable spaces. The structure will be located along the western portion of the parcel with asphalt driveway areas to the south, east, and north. A belowground stormwater management system will be located to the north of the structure. This structure will be serviced by new electrical (overhead) and water lines. No open/green space will be located on Lot 290. Excavation will occur to install the stormwater system, otherwise, the site generally is proposed to be constructed at existing grades. Layout of the proposed site development is presented in Figure 4. The current zoning designation is M1-1 Manufacturing District. M1-1 districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities. The proposed use is consistent with existing zoning for the property.

Summary of Environmental Findings

1. Elevation of the property ranges from 16.5 feet to 24.0 feet above mean sea level (msl) on the Building B parcel to the east of Bassett Avenue and 20 feet to 27 feet msl on the Building A parcel to the west of Bassett Avenue.

2. Depth to groundwater ranges from 7.0 fbgs to 13.5 fbgs at the Site. Groundwater was only detected in overburden soils above bedrock in three of the 25 borings advanced at the site. These conditions are not indicative of true groundwater and are representative of perched water conditions in these areas. True groundwater was encountered within bedrock.
3. Groundwater flow is generally from west to east beneath the Site.
4. Depth to bedrock ranges from 4.5 fbgs to 18.0 fbgs at the Site.
5. The stratigraphy of the site, from the surface down, consists of up to 0.5 feet of concrete, up to 0.4 feet of asphalt, or up to 0.4 feet of gravel at the surface underlain by up to 13.0 feet of fill material consisting of sand with variable amounts of silt, gravel, and debris or silt with variable amounts of sand, gravel, and debris in select borings. The fill materials are underlain in select borings by sandy silt or silty sand with variable amounts of mica, rock fragments, and gravel down to bedrock.
6. Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) and Commercial SCOs as presented in 6NYCRR Part 375-6.8 and CP51. Data collected during the RI showed VOCs including 1,2,4-Trimethylbenzene (at 6.1 mg/kg), acetone (max. of 0.14 mg/kg), isopropylbenzene (max. of 4.7 mg/kg), n-butylbenzene (max. of 25 mg/kg), n-propylbenzene (max. of 13 mg/kg), sec-butylbenzene (max. of 16 mg/kg) and xylenes (max. of 0.554 mg/kg) were detected in one or more samples at concentrations exceeding Unrestricted Use SCOs. Six SVOCs, 2-methylnaphthalene (max. of 9.2 mg/kg), benzo(b)fluoranthene (max. of 1.6 mg/kg), chrysene (max. of 1.3 mg/kg), dibenz(a,h)anthracene (max. of 0.39 mg/kg), di-n-butylphthalate (max. of 0.035 mg/kg), and indeno(1,2,3-cd)pyrene (max. of 0.93 mg/kg) were detected above Unrestricted Use SCOs in one or more soil samples. All VOC and SVOC concentrations were below their Restricted Commercial SCOs. PCBs were not detected in any soil samples and p,p,-DDD (max. of 0.0050 mg/kg) was detected in three samples exceeding Unrestricted Use SCOs. Metals including arsenic (max. of 50 mg/kg), barium (max. of 610 mg/kg), cadmium (max. of 3.7 mg/kg), chromium (max. of 470 mg/kg), copper (max. of 190 mg/kg), mercury (max. of 1.7 mg/kg), nickel (max. of 34 mg/kg), lead (max. of 4,200 mg/kg), and zinc (max. of 480 mg/kg) exceeded Unrestricted

Use SCOs in several soil samples. And of these metals, arsenic (one location), lead (one location), and barium (two locations) also exceeded their Track 2 Restricted Commercial SCOs in sample location B-1, indicating a hot-spot area. The PAH and metals concentrations are indicative of regional fill materials previously placed at and in the vicinity of the subject property.

7. Groundwater sample results were compared to New York State 6NYCRR Part 703.5 Class GA Groundwater Quality Standards (GQS). Groundwater samples collected during the RI showed that PCBs and pesticides were not detected in any groundwater samples. SVOCs including 2,4-dimethylphenol, benzo(a)anthracene, benzo(a)pyrene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected above GQS within the groundwater samples. VOCs including 1,2,4-trimethylbenzene (27 µg/L, one location), 1,3,5-trimethylbenzene (24 µg/L, one location), 4-isopropyltoluene (5.3 µg/L, one location), chloroethane (12 µg/L, one location), cis-1,2-dichloroethene (110 µg/L, three locations), sec-butylbenzene (19 µg/L, one location), tetrachloroethene (PCE, 110 µg/L, four locations), trichloroethene (TCE, ranging from 8.0 µg/L to 290 µg/L, six locations), and vinyl chloride (12 µg/L, one location) were detected in select locations at concentrations exceeding their respective GQSs. Several metals were identified but only dissolved iron, manganese, and magnesium were detected at concentrations exceeding their respective GQSs. These detections are indicative of naturally-occurring metal concentrations.
8. Soil vapor results collected during the RI were compared to the compounds listed in the Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Data collected during the RI indicated petroleum-related VOCs were present at low concentrations. For Site B, chlorinated VOCs were detected at elevated concentrations. Tetrachloroethene (PCE) was detected in three of four soil gas samples ranging in concentration from 2,560 µg/m³ to 6,710 µg/m³ (SV-6). Trichloroethene (TCE) was detected in all four soil vapor samples at a maximum concentration of 15,500 µg/m³ (SV-6). Carbon tetrachloride was detected at a maximum concentration of 13.9 µg/m³ and 1,1,1-trichloroethane (TCA) was detected at a maximum concentration of 4,690 µg/m³. The PCE, TCE, and TCA

concentrations are above the mitigation level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion and require mitigation. For Site A, PCE was detected in one of four soil gas samples at a concentration of 110 $\mu\text{g}/\text{m}^3$. TCE was detected in three of four soil vapor samples at a maximum concentration of 35 $\mu\text{g}/\text{m}^3$. Carbon tetrachloride was not detected and TCA was detected at a maximum concentration of 30 $\mu\text{g}/\text{m}^3$. The PCE, TCE, and TCA concentrations are below the mitigation level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion, however, and require monitoring.

Summary of the Remedy

The proposed remedial action achieves protection of public health and the environment for the intended use of the property. The proposed remedial action achieves all of the remedial action objectives established for the project and addresses applicable standards, criterion, and guidance; is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants; is cost effective and implementable; and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Perform a Community Air Monitoring Program (CAMP) for particulates and volatile organic carbon compounds (VOCs).
3. Establish Site-Specific (Track 4) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs, and marking & staking excavation areas.
5. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by the selected disposal facility(s) acceptance criteria. Waste characterization results will be provided to OER prior to construction start.

6. Excavation and removal of soil/fill exceeding SCOs. For development purposes, Site A will be excavated to depths of 6 feet across the majority of the Site for the new cellar level. Building B is slab-on-grade and will be excavated minimally for footings and a stormwater management system. Additionally, a hot-spot for metals (B-1) will be excavated to a depth of 5.0 fbg and a second hot-spot for VOCs in soil gas (SV-6/6A) will be excavated to a depth of 7.0 fbg. Approximately, 6,255 tons of soils will be excavated and removed from this Site.
7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
8. Management of excavated materials including temporarily stockpiling and segregating to prevent co-mingling of contaminated material and non-contaminated materials.
9. Removal of underground storage tanks (USTs) (as encountered) including the suspected 1,000-gallon heating oil UST in the sidewalk area to the east of Site A and closure of petroleum spills (if evidence of a spill/leak is encountered during Site excavation) in compliance with applicable local, State, and Federal laws and regulations.
10. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on Site.
11. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
12. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
13. Installation of a passive sub-slab venting system.
14. Installation of a vapor membrane system beneath the building slabs and to outside foundation sidewalls below grade. Application of a vapor coating on existing interior below grade foundation walls in Building A.

15. Construction and maintenance of an engineered composite cover consisting of a minimum of four [4] inches of concrete and asphalt pavements, concrete building slabs, and associated subbase to prevent human exposure to residual soil/fill remaining under the Site;
16. Demarcation of residual soil/fill.
17. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
18. Submission of a RAR that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, lists any changes from this RAWP, and describes all EC/ICs to be implemented at the Site.
19. Submission of an approved SMP in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of EC/ICs and reporting at a specified frequency.
20. Recording of a Declaration of Covenants and Restrictions that includes a listing of EC/ICs and a requirement that management of these controls must be in compliance with an approved SMP. ICs will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER approval.

COMMUNITY PROTECTION STATEMENT

The Office of Environmental Remediation created the New York City Voluntary Cleanup Program (NYC VCP) to provide governmental oversight for the cleanup of contaminated property in NYC. This Remedial Action Work Plan (“cleanup plan”) describes the findings of prior environmental studies that show the location of contamination at the site, and describes the plans to clean up the site to protect public health and the environment.

This cleanup plan provides a very high level of protection for neighboring communities and also includes many other elements that address common community concerns, such as community air monitoring, odor, dust and noise controls, hours of operation, good housekeeping and cleanliness, truck management and routing, and opportunities for community participation. The purpose of this Community Protection Statement is to explain these community protection measures in non-technical language to simplify community review.

Remedial Investigation and Cleanup Plan. Under the NYC VCP, a thorough cleanup study of this property (called a remedial investigation) has been performed to identify past property usage, to sample and test soils, groundwater and soil vapor, and identify contaminant sources present on the property. The cleanup plan has been designed to address all contaminant sources that have been identified during the study of this property.

Identification of Sensitive Land Uses. Prior to selecting a cleanup, the neighborhood was evaluated to identify sensitive land uses nearby, such as schools, day care facilities, hospitals and residential areas. The cleanup program was then tailored to address the special conditions of this community.

Qualitative Human Health Exposure Assessment. An important part of the cleanup planning for the Site is the performance of a study to find all of the ways that people might come in contact with contaminants at the Site now or in the future. This study is called a Qualitative Human Health Exposure Assessment (QHHEA). A QHHEA was performed for this project. This assessment has considered all known contamination at the Site and evaluated the potential for people to come in contact with this contamination. All identified public exposures will be addressed under this cleanup plan.

Health and Safety Plan. This cleanup plan includes a Construction Health and Safety Plan (CHASP) that is designed to protect community residents and on-Site workers. The elements of this plan are in compliance with safety requirements of the United States Occupational Safety and Health Administration (OSHA). This plan includes many protective elements including those discussed below.

Site Safety Coordinator. This project has a designated Site safety coordinator to implement the Health and Safety Plan. The safety coordinator maintains an emergency contact sheet and protocol for management of emergencies. The Site safety coordinator is Michael Marsicano of Whitestone Associates, Inc. and can be reached at 908-668-7777.

Worker Training. Workers participating in cleanup of contaminated material on this project are required to be trained in a 40-hour hazardous waste operators training course and to take annual refresher training. This pertains to workers performing specific tasks including removing contaminated material and installing cleanup systems in contaminated areas.

Community Air Monitoring Plan. Community air monitoring will be performed during this cleanup project to ensure that the community is properly protected from contaminants, dust and odors. Air samples will be tested in accordance with a detailed plan called the Community Air Monitoring Plan or CAMP. Results will be regularly reported to the NYC Office of Environmental Remediation. This cleanup plan also has a plan to address any unforeseen problems that might occur during the cleanup (called a ‘Contingency Plan’).

Odor, Dust and Noise Control. This cleanup plan includes actions for odor and dust control. These actions are designed to prevent off-Site odor and dust nuisances and includes steps to be taken if nuisances are detected. Generally, dust is managed by application of physical covers and by water sprays. Odors are controlled by limiting the area of open excavations, physical covers, spray foams and by a series of other actions (called operational measures). The project is also required to comply with NYC noise control standards. If you observe problems in these areas, please contact the on-site Project Manager Christopher Seib of Whitestone Associates, Inc. at 908-668-7777 or NYC Office of Environmental Remediation Project Manager Eric Ilijevich at 212-341-2034.

Quality Assurance. This cleanup plan requires that evidence be provided to illustrate that all cleanup work required under the plan has been completed properly. This evidence will be summarized in the final report, called the Remedial Action Report. This report will be submitted to the NYC Office of Environmental Remediation and will be thoroughly reviewed.

Storm-Water Management. To limit the potential for soil erosion and discharge, this cleanup plan has provisions for storm-water management. The main elements of the storm water management include physical barriers such as tarp covers and erosion fencing, and a program for frequent inspection.

Hours of Operation. The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. For this cleanup project, the hours of operation are 7:00 a.m. to 6:00 p.m.

Signage. While the cleanup is in progress, a placard will be prominently posted at the main entrance of the property with a laminated project Fact Sheet that states that the project is in the NYC Voluntary Cleanup Program, provides project contact names and numbers, and locations of project documents can be viewed.

Complaint Management. The contractor performing this cleanup is required to address all complaints. If you have any complaints, you can call the facility Project Manager Christopher Seib of Whitestone Associates, Inc. at 908-668-7777, the NYC Office of Environmental Remediation Project Manager Eric Ilijevich at 212-341-2034, or call 311 and mention the Site is in the NYC Voluntary Cleanup Program.

Utility Mark-outs. To promote safety during excavation in this cleanup, the contractor is required to first identify all utilities and must perform all excavation and construction work in compliance with NYC Department of Buildings regulations.

Soil and Liquid Disposal. All soil and liquid material removed from the Site as part of the cleanup will be transported and disposed of in accordance with all applicable City, State and Federal regulations and required permits will be obtained.

Soil Chemical Testing and Screening. All excavations will be supervised by a trained and properly qualified environmental professional. In addition to extensive sampling and chemical

testing of soils on the Site, excavated soil will be screened continuously using hand-held instruments, by sight, and by smell to ensure proper material handling and management, and community protection.

Stockpile Management. Soil stockpiles will be kept covered with tarps to prevent dust, odors and erosion. Stockpiles will be frequently inspected. Damaged tarp covers will be promptly replaced. Stockpiles will be protected with silt fences. Hay bales will be used, as needed to protect storm water catch basins and other discharge points.

Trucks and Covers. Loaded trucks leaving the Site will be covered in compliance with applicable laws and regulations to prevent dust and odor. Trucks will be properly recorded in logs and records and placarded in compliance with applicable City, State and Federal laws, including those of the New York State Department of Transportation. If loads contain wet material that can leak, truck liners will be used. All transport of materials will be performed by licensed truckers and in compliance with all laws and regulations.

Imported Material. All fill materials proposed to be brought onto the Site will comply with rules outlined in this cleanup plan and will be inspected and approved by a qualified worker located on-Site. Waste materials will not be brought onto the Site. Trucks entering the Site with imported clean materials will be covered in compliance with applicable laws and regulations.

Equipment Decontamination. All equipment used for cleanup work will be inspected and washed, if needed, before it leaves the Site. Trucks will be cleaned at a truck inspection station on the property before leaving the Site.

Housekeeping. Locations where trucks enter or leave the Site will be inspected every day and cleaned regularly to ensure that they are free of dirt and other materials from the Site.

Truck Routing. Truck routes have been selected to: (a) limit transport through residential areas and past sensitive nearby properties; (b) maximize use of city-mapped truck routes; (c) limit total distance to major highways; (d) promote safety in entry to highways; (e) promote overall safety in trucking; and (f) minimize off-Site line-ups (queuing) of trucks entering the property. Operators of loaded trucks leaving the Site will be instructed not to stop or idle in the local neighborhood.

Final Report. The results of all cleanup work will be fully documented in a final report (called a Remedial Action Report) that will be available for you to review in the public document repositories located at New York Public Library, Bronx Library Center; 310 East Kingsbridge Road, Bronx, New York.

Long-Term Site Management. To provide long-term protection after the cleanup is complete, the property owner will be required to comply with an ongoing Site Management Plan that calls for continued inspection of protective controls, such as Site covers. The Site Management Plan is evaluated and approved by the NYC Office of Environmental Remediation. Requirements that the property owner must comply with are established through a city environmental designation. A certification of continued protectiveness of the cleanup will be required from time to time to show that the approved cleanup is still effective.

REMEDIAL ACTION WORK PLAN

1.0 SITE BACKGROUND

Stillwell Self Storage, LLC has enrolled in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 1538 Stillwell Avenue and 1540 Bassett Avenue in the Bronx section of Bronx, New York (the “Site”). A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP) in a manner that will render the Site protective of public health and the environment consistent with the contemplated end use. This RAWP establishes remedial action objectives, provides a remedial alternatives analysis that includes consideration of a permanent cleanup, and provides a description of the selected remedial action. The remedial action described in this document provides for the protection of public health and the environment and complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

1.1 SITE LOCATION AND CURRENT USAGE

The Site is located at 1538 Stillwell Avenue and 1540 Bassett Avenue in Bronx, New York and is identified as Block 4219, Lot 16 and Block 4226, Lot 290 on the New York City Tax Map. Figure 1 shows the Site location. The Site is 44,149-square feet in total, which is comprised of 22,295-square feet on Lot 16 and 21,854-square feet on Lot 290, and is bounded by Bay Powder Coating Corp., Sacco, and residential buildings to the north, New Plumbing and Heating Corp., a vacant building, a lot with junk cars, and Frank & Son Autobody to the south, an Acela High Speed Transit Train line to the east, and F&J Transmission, Temple of Joy, Italy A&P Auto Repair, and Carib Prints, Ltd. beyond Stillwell Avenue to the west. Lot 16 (which is considered proposed Building A) is located to the west of Bassett Avenue and Lot 290 (which is considered proposed Building B) is located to the east of Bassett Avenue. A map of the site boundary is shown in Figure 2. Currently, Lot 16 of the subject property is situated between Stillwell Avenue and Bassett Avenue and currently houses a vacant, one- and two-story commercial structure that covers the entire lot. The ground floor/basement area of the site building on Lot 16 is divided into four open sections formerly used for paint storage and mixing

(per Sanborn Maps) with restrooms in the central portion and a loading dock area in the western portion. The second floor of the site building consists of open space with offices in the northwestern and northeastern portions. Lot 290 of the subject property is situated to the east of Bassett Avenue and houses several fenced storage yards formerly used for the storage of construction equipment and materials and automobiles.

1.2 PROPOSED REDEVELOPMENT PLAN

Site A: The proposed future use of the Site will consist of the demolition of the above-grade portions of the existing structure and construction of a 45,000-square feet (gross), three-story with cellar self-storage structure on Lot 16. The approximately 22,295-square feet (footprint) cellar level will consist of storage units, sprinkler room, gas meter room, electrical room, and elevator machine room. Access to the cellar is via stairs/elevator from above or from Bassett Avenue. The 9,652-square feet first floor will consist of storage units, an office, break room, retail and restroom area in the southwestern portion, a three-bay loading area in the northwestern portion, and a janitor's closet. The 6,858-square feet second and third floors will consist of storage units. The first floor of the structure is accessed via Stillwell Avenue. An elevator will be located in the western portion of the structure. Excavation will be required to achieve the required cellar height. No open/green spaces will be present on Lot 16. The structure will be serviced by new electric, water, sewer, and natural gas lines.

Site B: An approximately 9,271-square feet, one-story storage structure without a cellar is proposed on Lot 290. The slab-on-grade structure will consist of storage units, a sprinkler room, and an electrical room. The structure does not have occupiable spaces. The structure will be located along the western portion of the parcel with asphalt driveway areas to the south, east, and north. A belowground stormwater management system will be located to the north of the structure. This structure will be serviced by new electrical (overhead) and water lines. No open/green space will be located on Lot 290. Excavation will occur to install the stormwater system, otherwise, the site generally is proposed to be constructed at existing grades. Layout of the proposed site development is presented in Figure 4. The current zoning designation is M1-1 Manufacturing District. M1-1 districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities. The proposed use is consistent with existing zoning for the property.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

1.3 DESCRIPTION OF SURROUNDING PROPERTY

The subject property is bordered by Bay Powder Coating Corp., Sacco, and residential buildings to the north; an Acela High Speed Transit Train line to the east; New Plumbing and Heating Corp., a vacant building, a lot with junk cars, and Frank & Son Autobody to the south; and F&J Transmission, Temple of Joy, Italy A&P Auto Repair, and Carib Prints, Ltd. beyond Stillwell Avenue to the west.

Figure 3 shows the surrounding land usage.

1.4 REMEDIAL INVESTIGATION

A remedial investigation was performed and the results are documented in a companion document called “*Remedial Investigation Report, Proposed Self-Storage Facility*”, dated February 2015 (RIR).

Summary of Past Uses of Site and Areas of Concern

According to historical sources reviewed by Whitestone and conversations with the previous site owner, the site building located on Lot 16 has been vacant since approximately 2005. Prior to that time, the building was occupied by Amsterdam Color Works, a paint manufacturer, dating back to 1941, when the original northern portion of the building was constructed. Additions to the southern portion of the building occurred between the 1950's and early 1960's. Historic Sanborn Maps dated 1919 and 1929 depict a commercial building identified as “iron works” and a residential building on Lot 16. With the exception of a one-story storage shed located in the central portion of the lot on Sanborn Maps dated 1992 through 2007, Lot 290 historically has been undeveloped and used as storage yards. According to the previous site owner, this area of the site historically was a drainage ditch located along the railroad tracks and was filled in and graded approximately 40 years ago. The previous owner also indicated that the former shed structure located on Lot 290 was not serviced by utilities.

Whitestone's *Summary Report of Findings – Phase I Environmental Site Assessment* dated April 3, 2013 identified the following recognized environmental conditions/areas of concern (RECs/AOCs) at the site:

1. Based on historical sources reviewed by Whitestone, Lot 16 of the subject property historically was occupied by a paint manufacturing facility (Amsterdam Color Works, Inc.) from 1941 until 2005. Paint manufacturing operations typically include the use/storage of hazardous substances (including petroleum distillates, volatile organic solvents, pigments, dyes, etc.) and the generation of hazardous wastes. The subject property is identified on the RCRA Administrative Action Tracking System (RAATS), RCRA Small Quantity Generators (SQG), Integrated Compliance Information System (ICIS), Facility Index System (FINDS), and Manifest environmental databases under Amsterdam Color Works, Inc. located at 1546 Stillwell Avenue (USEPA ID No. NYD001360155). According to the database report, Amsterdam Color Works, Inc. was listed as a small quantity generator of hazardous waste, however, formerly was a large quantity generator of hazardous waste prior to 2002.
2. According to the site owner, one 1,000 gallon heating oil underground storage tank (UST) and two 1,000 solvent USTs reportedly were removed from the eastern and western interior portions of the site building over 20 years ago. The site owner indicated that, to his knowledge, no sampling was conducted following tank removal, and no documentation regarding the UST removal activities is available.
3. Evidence of a suspected existing UST (fill port) was observed in the sidewalk area to the east of the site building along Bassett Avenue, and a vent pipe was observed at the northwestern exterior of the site building along Stillwell Avenue, however, no information regarding this suspected UST or the vent pipe was available from the site owner.
4. Urban properties such as the subject site typically have been filled with material imported from off-site sources during initial site development or subsequent redevelopment to achieve final grades. According to the site owner, Lot 290 of

the subject property historically was a drainage ditch located along the railroad tracks and was filled in and graded approximately 40 years ago. Fill materials consisting of either silty sand with variable amounts of gravel and debris or poorly-graded sand with silt and gravel were encountered at the subject property to depths of up to 7.0 feet below ground surface (fbgs) during Whitestone's March 2012 preliminary Geotechnical Investigation. Such non-native materials may contain contaminants exceeding applicable standards.

Summary of the Work Performed under the Remedial Investigation

Whitestone, on behalf of Stillwell Self Storage, LLC, performed the following scope of work:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed 25 soil borings across the entire project Site, and collected 33 soil samples for chemical analysis from the soil borings to evaluate soil quality;
3. Installed three [3] pre-packed temporary wellpoints and seven [7] groundwater monitoring wells throughout the Site to establish groundwater flow and collected 16 groundwater samples for chemical analysis to evaluate groundwater quality; and
4. Installed nine [9] soil vapor probes around Site perimeter and collected nine [9] samples for chemical analysis.

Summary of Environmental Findings

1. Elevation of the property ranges from 16.5 feet to 24.0 feet above mean sea level (msl) on the Building B parcel to the east of Bassett Avenue and 20 feet to 27 feet msl on the Building A parcel to the west of Bassett Avenue.
2. Depth to groundwater ranges from 7.0 fbgs to 13.5 fbgs at the Site. Groundwater was only detected in overburden soils above bedrock in three of the 25 borings advanced at the site. These conditions are not indicative of true groundwater and are representative of perched water conditions in these areas. True groundwater was encountered within bedrock.

3. Groundwater flow is generally from west to east beneath the Site.
4. Depth to bedrock ranges from 4.5 fbs to 18.0 fbs at the Site.
5. The stratigraphy of the site, from the surface down, consists of up to 0.5 feet of concrete, up to 0.4 feet of asphalt, or up to 0.4 feet of gravel at the surface underlain by up to 13.0 feet of fill material consisting of sand with variable amounts of silt, gravel, and debris or silt with variable amounts of sand, gravel, and debris in select borings. The fill materials are underlain in select borings by sandy silt or silty sand with variable amounts of mica, rock fragments, and gravel down to bedrock.
6. Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives (SCOs) and Restricted Residential Soil Cleanup Objectives as presented in 6NYCRR Part 375-6.8 and CP51. Data collected during the RI showed VOCs including 1,2,4-Trimethylbenzene (at 6.1 mg/kg), acetone (max. of 0.14 mg/kg), isopropylbenzene (max. of 4.7 mg/kg), n-butylbenzene (max. of 25 mg/kg), n-propylbenzene (max. of 13 mg/kg), sec-butylbenzene (max. of 16 mg/kg) and xylenes (max. of 0.554 mg/kg) were detected in one or more samples at concentrations exceeding Unrestricted Use SCOs. Six SVOCs, 2-methylnaphthalene (max. of 9.2 mg/kg), benzo(b)fluoranthene (max. of 1.6 mg/kg), chrysene (max. of 1.3 mg/kg), dibenz(a,h)anthracene (max. of 0.39 mg/kg), di-n-butylphthalate (max. 0.035 mg/kg) and indeno(1,2,3-cd)pyrene (max. of 0.93 mg/kg) were detected above Unrestricted Use SCOs in one or more soil samples. All VOC and SVOC concentrations were below their Restricted Commercial SCOs. PCBs were not detected in any soil samples and p,p,-DDD (max. of 0.0050 mg/kg) was detected in three samples exceeding Unrestricted Use SCOs. Metals including arsenic (max. of 50 mg/kg), barium (max. of 610 mg/kg), cadmium (max. of 3.7 mg/kg), chromium (max. of 470 mg/kg), copper (max. of 190 mg/kg), mercury (max. of 1.7 mg/kg), nickel (max. of 34 mg/kg), lead (max. of 4,200 mg/kg), and zinc (max. of 480 mg/kg) exceeded Unrestricted Use SCOs in several soil samples. And of these metals, arsenic (one location), lead (one location) and barium (two locations) also exceeded their Track 2 Restricted Commercial SCOs in sample location B-1, indicating a

hotspot area. The PAH and metals concentrations are indicative of regional fill materials previously placed at and in the vicinity of the subject property.

7. Groundwater sample results were compared to New York State 6NYCRR Part 703.5 Class GA Groundwater Quality Standards (GQS). Groundwater samples collected during the RI showed that PCBs and pesticides were not detected in any groundwater samples. SVOCs including 2,4-dimethylphenol, benzo(a)anthracene, benzo(a)pyrene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected above GQS within the groundwater samples. VOCs including 1,2,4-trimethylbenzene (27 µg/L, one location), 1,3,5-trimethylbenzene (24 µg/L, one location), 4-isopropyltoluene (5.3 µg/L, one location), chloroethane (12 µg/L, one location), cis-1,2-dichloroethene (110 µg/L, three locations), sec-butylbenzene (19 µg/L, one location), tetrachloroethene (PCE, 110 µg/L, four locations), trichloroethene (TCE, ranging from 8.0 µg/L to 290 µg/L, six locations), and vinyl chloride (12 µg/L, one location) were detected in select locations at concentrations exceeding their respective GQSs. Several metals were identified but only dissolved iron, manganese, and magnesium were detected at concentrations exceeding their respective GQSs. These detections are indicative of naturally-occurring metal concentrations.
8. Soil vapor results collected during the RI were compared to the compounds listed in the Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Data collected during the RI indicated petroleum-related VOCs were present at low concentrations. For Site B, chlorinated VOCs were detected at elevated concentrations. Tetrachloroethene (PCE) was detected in three of four of four soil gas samples ranging in concentration from 2,560 µg/m³ to 6,710 µg/m³ (SV-6). Trichloroethene (TCE) was detected in all four soil vapor samples at a maximum concentration of 15,500 µg/m³ (SV-6). Carbon tetrachloride was detected at a maximum concentration of 13.9 µg/m³ and 1,1,1-trichloroethane (TCA) was detected at a maximum concentration of 4,690 µg/m³. The PCE, TCE, and TCA concentrations are above the mitigation level ranges established within the NYSDOH

Final Guidance on Soil Vapor Intrusion and require mitigation. For Site A, PCE was detected in one of four soil gas samples at a concentration of 110 $\mu\text{g}/\text{m}^3$. TCE was detected in three of four soil vapor samples at a maximum concentration of 35 $\mu\text{g}/\text{m}^3$. Carbon tetrachloride was not detected and TCA was detected at a maximum concentration of 30 $\mu\text{g}/\text{m}^3$. The PCE, TCE, and TCA concentrations are below the mitigation level ranges established within the NYSDOH Final Guidance on Soil Vapor Intrusion and require mitigation.

For more detailed results, consult the RIR. Based on an evaluation of the data and information from the RIR and this RAWP, disposal of significant amounts of hazardous waste is not suspected at this site.

2.0 REMEDIAL ACTION OBJECTIVES

Based on the results of the RI, the following Remedial Action Objectives (RAOs) have been identified for this Site:

Groundwater

- Prevent direct exposure to contaminated groundwater.
- Prevent exposure to contaminants volatilizing from contaminated groundwater.

Soil

- Prevent direct contact with contaminated soil.
- Prevent exposure to contaminants volatilizing from contaminated soil.
- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

- Prevent exposure to contaminants in soil vapor.
- Prevent migration of soil vapor into dwelling and other occupied structures.

3.0 REMEDIAL ALTERNATIVES ANALYSIS

The goal of the remedy selection process is to select a remedy that is protective of human health and the environment taking into consideration the current, intended, and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedence of applicable standards, criteria, and guidance values (SCGs). A remedy is then developed based on the following nine criteria:

- Protection of human health and the environment;
- Compliance with SCGs;
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community acceptance;
- Land use; and
- Sustainability.

The following is a detailed description of the alternatives analysis and remedy selection to address impacted media at the Site. As required, a minimum of two remedial alternatives (including a Track 1 scenario) are evaluated, as follows: Alternative 1 is a Track 1 alternative that involves removal of all soil impacted above Track 1 Unrestricted Use SCOs. Alternative 2 removes all impacted soil above Track 4 Site-Specific SCOs.

- Alternative 1 involves:
 - Selection of 6NYCRR Part 375 Table 6.8 (a) Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs).

- Removal of all soils exceeding Unrestricted Use SCOs throughout the Site and confirmation that Track 1 Unrestricted Use SCOs have been achieved with post-excavation end-point sampling. If soil/fill containing analytes at concentrations above Unrestricted Use SCOs is still present at the base of the excavation after removal of all soil required for construction of the new building is complete, additional excavation will be performed to ensure complete removal of soil that does not meet Track 1 SCOs.
- No Engineering or Institutional Controls can be utilized in a Track 1 cleanup, but installation of vapor barriers/coatings and passive sub-slab venting systems (SSVS) beneath/on the new buildings would be necessary as part of construction to prevent exposures from soil vapor.
- Placement of a final cover over the entire Site as part of new development.
- Alternative 2 involves:
 - Establishment of Track 4 Site-Specific SCOs.
 - Removal of all soils exceeding Track 4 Site-Specific SCOs throughout the Site. This alternative will involve excavation to a depth of six [6] feet for construction of the building cellar (Building A) and stormwater management system (Lot 290) and additional excavation within the immediate area of the metals “hot-spot” at B-1 and the potential VOC source area at SV-6/6A. End-point soil samples will be collected to confirm remaining soil meets Track 4 Site-Specific SCOs;
 - Placement of a final cover over the entire Site to eliminate exposure to remaining soil/fill;
 - Placement of vapor barriers beneath the building slabs and to the foundation side walls, installation of passive SSVSs beneath the buildings, and applying vapor coatings to interior below grade foundation walls in Building A;
 - Establishment of use restrictions including prohibitions on the use of groundwater from the Site and prohibitions on sensitive Site uses, such as farming or vegetable gardening, to eliminate future exposure pathways;

- Establishment of an approved SMP to ensure long-term management of these EC/ICs including the performance of periodic inspections and certification that the controls are performing as they were intended; and
- Placement of a deed restriction to memorialize the remedial action and the EC/ICs to ensure that future owners of the Site continue to maintain these controls as required.

3.1 THRESHOLD CRITERIA

Protection of Public Health and the Environment

This criterion is an evaluation of the remedy's ability to protect public health and the environment, and an assessment of how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, and implementation of EC/ICs. Protection of public health and the environment must be achieved for all approved remedial actions.

Alternative 1 would be protective of human health and the environment by removing the historic fill and other contaminated soils at the Site, thus eliminating the potential for human and environmental exposure to contaminated soil/fill once construction is complete and eliminating the risk of contamination leaching into groundwater. Potential exposure to contaminated soils during construction would be minimized by implementing an approved Soil/Materials Management Plan and CAMP. There is minimal potential for contact with contaminated groundwater as it is neither used nor anticipated to be encountered during construction and the remedial action.

Potential post-remediation exposures to Site occupants from soil vapors remain a concern since the volatile contaminants in groundwater and soil vapor are believed to originate from an off-Site source. This will be addressed by the installation of vapor barriers/coatings and passive SSVSs beneath/on the new buildings. However, in order to prevent the migration of soil vapor from off-Site sources into the proposed buildings and to prevent associated inhalation exposures, ECs/ICs are needed. A Track 1 Remedy cannot employ ICs or ECs. Therefore, even though Alternative 1 would provide the maximum protection of public health and the environment based

on on-Site contamination, Alternative 1 would not adequately meet the RAOs of preventing exposure to contaminants in soil vapor from off-Site sources and preventing migration of soil vapor into structures without ECs/ICs that can be monitored in the long term.

Alternative 2: Alternative 2 would be protective of human health and the environment by excavating historic fill and other contaminated soils at the Site to a depth of six [6] feet as part of building cellar (Building A) and stormwater management system (Lot 290) construction and by ensuring that all remaining soil/fill meets Track 4 Site-Specific SCOs, by capping the entire Site with building slabs and pavements (composite cover system), and by placing ICs. The composite cover system would prevent direct contact with any remaining on-Site soil/fill. Implementing ICs including a deed notice and a SMP would ensure that the composite cover system remains intact and protective. Establishment of Track 4 Site-Specific SCOs would minimize the risk of contamination leaching into groundwater. Potential exposure to contaminated soils during construction would be minimized by implementing an approved Soil/Materials Management Plan and CAMP. Potential contact with contaminated groundwater would be eliminated as its use would be prohibited by the deed notice, and it is not anticipated to be encountered during construction or the remedial action. Potential migration of soil vapors into the new buildings would be prevented by installing vapor barriers and passive SSVs.

3.2. BALANCING CRITERIA

Compliance with Standards, Criteria and Guidance (SCGs)

This evaluation criterion assesses the ability of the alternative to achieve applicable standards, criteria and guidance.

Alternative 1 would achieve compliance with the remedial goals, chemical-specific SCGs, and RAOs for soil through removal to Track 1 Unrestricted Use SCOs. Attainment of soil vapor SCGs would not be possible without ECs. Focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance with applicable SCGs.

Alternative 2 would achieve compliance with the remedial goals, chemical-specific SCGs, and RAOs for soil through removal of soil to meet Track 4 Site-Specific SCOs. Compliance

with SCGs for soil vapor will also be achieved by installation of vapor barriers and passive SSVs. Similar to the Track 1 alternative, focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance with applicable SCGs.

Short-term effectiveness and impacts

This evaluation criterion assesses the effects of the alternative during the construction and implementation phase until remedial action objectives are met. Under this criterion, alternatives are evaluated with respect to their effects on public health and the environment during implementation of the remedial action, including protection of the community, environmental impacts, time until remedial response objectives are achieved, and protection of workers during remedial actions.

Both Track 1 and Track 4 Alternatives have similar short-term effectiveness during their respective implementations, as each requires excavation of contaminated soils. Short-term impacts are significantly higher for the Track 1 Alternative due to excavation of greater amounts of contaminated soils in Building B. However, focused attention to means and methods during the remedial action during a Track 1 removal action, including a CAMP and appropriate truck routing, would minimize or negate the overall impact of these activities and any differences between these alternatives.

The Track 1 and Track 4 Alternatives would both employ appropriate measures to prevent short-term impacts, including a CAMP and a Soil/Materials Management Plan, during all on-Site soil disturbance activities and would effectively prevent the release of significant contaminants into the environment. Both alternatives provide short-term effectiveness in protecting the surrounding community by decreasing the risk of contact with on-Site contaminants. Construction workers operating under appropriate management procedures and a Construction Health and Safety Plan (CHASP) will be protected from on-Site contaminants (personal protective equipment would be worn consistent with the documented risks within the respective work zones).

Long-term effectiveness and permanence

This evaluation criterion addresses the results of a remedial action in terms of its permanence and quantity/nature of waste or residual contamination remaining at the Site after response objectives have been met, such as permanence of the remedial alternative, magnitude of remaining contamination, adequacy of controls including the adequacy and suitability of ECs/ICs that may be used to manage contaminant residuals that remain at the Site and assessment of containment systems and ICs that are designed to eliminate exposures to contaminants, and long-term reliability of Engineering Controls.

Alternative 1 would achieve long-term effectiveness and permanence related to on-Site contamination by permanently removing all impacted soil/fill. However, ECs would be required to prevent exposure to off-Site soil vapor contamination, and these ECs prevent the attainment of a Track 1 cleanup status.

Alternative 2 would provide long-term effectiveness by removing most on-Site contamination and attaining Track 4 Site-Specific SCOs, establishing a composite cover system across the Site, establishing use restrictions, establishing a Site Management Plan to ensure long-term management of IC/ECs, and placing a deed restriction to memorialize these controls for the long term. Establishment of an SMP and a deed restriction will ensure that this protection remains effective for the long-term. The SMP will ensure long term effectiveness of all ECs and ICs by requiring periodic inspection and certification that these controls and use restrictions continue to be in place and are functioning as they were intended assuring that protections designed into the remedy will provide a continued high level of protection in perpetuity.

Reduction of toxicity, mobility, or volume of contaminated material

This evaluation criterion assesses the remedial alternative's use of remedial technologies that permanently and significantly reduce toxicity, mobility, or volume of contaminants as their principal element. The following is the hierarchy of source removal and control measures that are to be used to remediate a Site, ranked from most preferable to least preferable: removal and/or treatment, containment, elimination of exposure and treatment of source at the point of exposure. It is preferred to use treatment or removal to eliminate contaminants at a Site, reduce

the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media.

Alternative 1 would permanently eliminate the toxicity, mobility, and volume of contaminants from on-Site soil by removing all soil in excess of Track 1 Unrestricted Use SCOs.

Alternative 2 would remove most of the impacted soil present on the Site and any remaining soil would meet Track 4 Site-Specific SCOs. Alternative 1 would eliminate a greater total mass of contaminants on Site.

Implementability

This evaluation criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation, including technical feasibility of construction and operation, reliability of the selected technology, ease of undertaking remedial action, monitoring considerations, administrative feasibility (e.g. obtaining permits for remedial activities), and availability of services and materials.

Although a Track 1 remedial strategy reduces the public health risk greatly and requires no EC/ICs for soil, it is not economically feasible and would require a very large and complex soil removal/replacement portion to the construction time frame.

The techniques, materials, and equipment to implement Alternatives 1 and 2 are readily available and have been proven effective in remediating the contaminants associated with the Site. They use standard materials and services that are well established technology. The reliability of each remedy is also high. There are no special difficulties associated with any of the activities proposed.

Cost effectiveness

This evaluation criterion addresses the cost of alternatives, including capital costs (such as construction costs, equipment costs, disposal costs, and engineering expenses) and site management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action.

Initial costs associated with the Track 1 Alternative will be significantly higher than the Track 4 Alternative based on both the volume of soil that requires excavation and off-Site disposal and the volume of clean soil imported to the Site that would be required to raise the elevation backup to necessary grades. However, long-term costs for Alternative 2 are likely higher than Alternative 1 based on implementation of a SMP and placement of a deed restriction as part of Alternative 2.

Community Acceptance

This evaluation criterion addresses community opinion and support for the remedial action. Observations here will be supplemented by public comment received on the RAWP.

Based on the overall goals of the remedial program and initial permitting associated with the proposed site development, no adverse community opinion is anticipated for either alternative. This RAWP will be subject to a public review under the NYC VCP and will provide the opportunity for detailed public input on the remedial alternatives and the selected remedy. This public comment will be considered by OER prior to approval of this plan. The Citizen Participation Plan for the project is provided in Appendix 1.

Land use

This evaluation criterion addresses the proposed use of the property. This evaluation has considered reasonably anticipated future uses of the Site and takes into account: current use and historical and/or recent development patterns; applicable zoning laws and maps; NYS Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law; applicable land use plans; proximity to real property currently used for residential use, and to commercial, industrial, agricultural, and/or recreational areas; environmental justice impacts, Federal or State land use designations; population growth patterns and projections; accessibility to existing infrastructure; proximity of the site to important cultural resources and natural resources, potential vulnerability of groundwater to contamination that might emanate from the site, proximity to flood plains, geography and geology; and current Institutional Controls applicable to the site.

The proposed redevelopment of the Site is compatible with its current zoning and is consistent with recent development patterns. Following remediation, the Site will meet either

Track 2 Commercial Use or Track 4 Site-Specific SCOs, which is appropriate for its planned commercial use. Improvements in the current environmental condition of the property achieved by both alternatives are also consistent with the City's goals for cleanup of contaminated land and bringing such properties into productive reuse. Both alternatives are equally protective of natural resources and cultural resources.

Sustainability of the Remedial Action

This criterion evaluates the overall sustainability of the remedial action alternatives and the degree to which sustainable means are employed to implement the remedial action including those that take into consideration NYC's sustainability goals defined in *PlaNYC: A Greener, Greater New York*. Sustainability goals may include: maximizing the recycling and reuse of non-virgin materials; reducing the consumption of virgin and non-renewable resources; minimizing energy consumption and greenhouse gas emissions; improving energy efficiency; and promotion of the use of native vegetation and enhancing biodiversity during landscaping associated with Site development.

While Alternative 2 would potentially result in lower energy usage based on reducing the volume of material transported off-Site, both remedial alternatives are comparable with respect to the opportunity to achieve sustainable remedial action.

4.0 REMEDIAL ACTION

4.1 SUMMARY OF PREFERRED REMEDIAL ACTION

The preferred remedial action alternative is Alternative 2, the Track 4 Alternative. The preferred remedial action alternative achieves protection of public health and the environment for the intended use of the property. The preferred remedial action alternative will achieve all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action alternative is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants. The preferred remedial action alternative is cost effective and implementable and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Perform a Community Air Monitoring Program (CAMP) for particulates and volatile organic carbon compounds (VOCs).
3. Establish Site-Specific (Track 4) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs, and marking & staking excavation areas.
5. Completion of a Waste Characterization Study prior to excavation activities. Waste characterization soil samples will be collected at a frequency dictated by the selected disposal facility(s) acceptance criteria. Waste characterization results will be provided to OER prior to construction start.
6. Excavation and removal of soil/fill exceeding SCOs. For development purposes, Site A will be excavated to depths of 6 feet across the majority of the Site for the new cellar level. Building B is slab-on-grade and will be excavated minimally for footings and a stormwater management system. Additionally, a hot-spot for metals (B-1) will be excavated to a depth of 5.0 fbg and a second hot-spot for VOCs in soil gas (SV-6/6A)

will be excavated to a depth of 7.0 fbs. Approximately, 6,255 tons of soils will be excavated and removed from this Site.

7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID.
8. Management of excavated materials including temporarily stockpiling and segregating to prevent co-mingling of contaminated material and non-contaminated materials.
9. Removal of underground storage tanks (USTs) (as encountered) including the suspected UST location in the sidewalk area to the east of Site A and closure of petroleum spills (if evidence of a spill/leak is encountered during Site excavation) in compliance with applicable local, State, and Federal laws and regulations.
10. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on Site.
11. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
12. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
13. Installation of a passive sub-slab venting system.
14. Installation of a vapor membrane system beneath the building slabs and to outside foundation sidewalls below grade. Application of a vapor coating on existing interior below grade foundation walls in Building A.
15. Construction and maintenance of an engineered composite cover consisting of a minimum of four [4] inches of concrete and asphalt pavements, concrete building slabs, and associated subbase to prevent human exposure to residual soil/fill remaining under the Site;
16. Demarcation of residual soil/fill.

17. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
18. Submission of a RAR that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, lists any changes from this RAWP, and describes all EC/ICs to be implemented at the Site.
19. Submission of an approved SMP in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of EC/ICs and reporting at a specified frequency.
20. Recording of a Declaration of Covenants and Restrictions that includes a listing of EC/ICs and a requirement that management of these controls must be in compliance with an approved SMP. ICs will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER approval.

4.2 SOIL CLEANUP OBJECTIVES AND SOIL/FILL MANAGEMENT

Track 4 Soil Cleanup Objectives (SCOs) are proposed for this project. The 6 NYCRR Part 375, Table 6.8(b) Track 2 Restricted Commercial SCOs will be used as amended by the following Track 4 Site-Specific SCOs:

<u>Contaminant</u>	<u>Track 4 Site-Specific SCOs</u>
Total SVOCs	250 ppm
Lead	1,200 ppm
Arsenic	23 ppm
Barium	750 ppm

Excavation will consist of

- Removal of a metals hot-spot at B-1 (10' x 10' x 5' Deep, 30 Tons);

- Removal of possible SV-6/6A source area (40' x 15' x 7' Deep, 225 Tons); and
- Excavation for development purposes, including up to six [6] feet of excavation in the footprint of the proposed Building A and stormwater management system on Lot 290.

Soil and materials management on-Site and off-Site, including excavation, handling and disposal, will be conducted in accordance with the Soil/Materials Management Plan in Appendix 3. The location of planned excavations is shown in Figure 5.

Discrete contaminant sources (such as hot-spots) identified during the remedial action will be identified by GPS or surveyed. This information will be provided in the Remedial Action Report.

Estimated Soil/Fill Removal Quantities

The total quantity of soil/fill expected to be excavated and disposed off-Site is 6,255 tons (See Table 1).

Disposal facilities will be reported to OER when they are identified and prior to the start of remedial action.

End-Point Sampling

Removal actions for development purposes under this plan will be performed in conjunction with confirmation soil sampling. Four confirmation samples will be collected from the base of the excavation at locations to be determined by OER. For comparison to Track 2 SCOs, analytes will include VOCs, SVOC, pesticides, PCBs and metals according to analytical methods described below. For comparison to Track 4 SCOs, analytes will only include trigger compounds and elements established on the Track 4 SCO list.

Hot-spot removal actions, whether established under this RAWP or identified during the remedial program, will be performed in conjunction with post remedial end-point samples to ensure that hot-spots are fully removed. Analytes for end-point sampling will be those parameters that are driving the hot-spot removal action and will be approved by OER. Frequency for hot-spot end-point sample collection is as follows:

1. For excavations less than 20 feet in total perimeter, at least one bottom sample and one sidewall sample biased in the direction of surface runoff.

2. For excavations 20 to 300 feet in perimeter:

- For surface removals, one sample from the top of each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
- For subsurface removals, one sample from each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.

3. For sampling of volatile organics, bottom samples should be taken within 24 hours of excavation, and should be taken from the zero to six-inch interval at the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches.

4. For contaminated soil removal, post remediation soil samples for laboratory analysis should be taken immediately after contaminated soil removal. If the excavation is enlarged horizontally, additional soil samples will be taken pursuant to bullets 1-3 above.

Post-remediation end-point sample locations and depth will be biased towards the areas and depths of highest contamination identified during previous sampling episodes unless field indicators such as field instrument measurements or visual contamination identified during the remedial action indicate that other locations and depths may be more heavily contaminated. In all cases, post-remediation samples should be biased toward locations and depths of the highest expected contamination.

New York State ELAP certified labs will be used for all confirmation and end-point sample analyses. Labs performing confirmation and end-point sample analyses will be reported in the RAR. The RAR will provide a tabular and map summary of all confirmation and end-point sample results and will include all data including non-detects and applicable standards and/or guidance values. End-point samples will be Confirmation samples will be analyzed for compounds and elements as described above utilizing the following methodology:

Soil analytical methods will include:

- Volatile organic compounds by EPA Method 8260;
- Semi-volatile organic compounds by EPA Method 8270;
- Target Analyte List metals; and
- Pesticides/PCBs by EPA Method 8081/8082.

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for characterization and “finger print analysis” and required regulatory reporting (i.e. spills hotline) will be performed.

Quality Assurance/Quality Control

Quality Assurance/Quality Control for the chemical analytical program and assessment of the usability of the data will be provided by the contracted laboratory and consultant. Chemical analyses will be performed by a NYSDOH ELAP-certified laboratory. Analyses will be sufficient to allow comparison of soil data to applicable Standards, Criteria, and Guidance including 6NYCRR Part 375.

Collected samples will be appropriately packaged, placed in coolers, and shipped via overnight courier or delivered directly to the analytical laboratory by field personnel. Samples will be containerized in appropriate laboratory provided glassware and shipped in coolers. Samples will be preserved through the use of ice or “cold-paks” to maintain a temperature of 4°C.

Dedicated disposable sampling materials will be used for the collection end-point samples, eliminating the need to prepare field equipment (rinsate) blanks. However, if non-disposable equipment is used, (stainless steel scoop, etc.), field rinsate blanks will be prepared at the rate of one for every eight samples collected. Decontamination of non-dedicated sampling equipment will consist of the following:

- Gently tap or scrape to remove adhered soil
- Rinse with tap water
- Wash with Alconox® detergent solution and scrub
- Rinse with tap water

- Rinse with distilled or deionized water

Prepare field blanks by pouring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers. Trip blanks will be used whenever samples are transported to the laboratory for analysis of VOCs. Trip blanks will not be used for samples to be analyzed for PCBs, metals, SVOCs, or pesticides. One duplicate sample will be prepared and submitted for analysis every 20 samples.

Import and Reuse of Soils

Import of soils onto the property and reuse of soils already onsite will be performed in conformance with the Soil/Materials Management Plan in Appendix 3. The estimated quantity of soil to be imported into the Site for backfill and cover soil is 650 tons. The estimated quantity of onsite soil/fill expected to be reused/relocated on Site is 100 tons (See Table 1).

4.3 ENGINEERING CONTROLS

The excavation required for the proposed Site development will achieve Track 4 Site-Specific SCOs. Engineering Controls (ECs) were employed in the remedial action to address residual contamination remaining at the site. The Site has three [3] primary Engineering Control Systems. These are:

Composite Cover System

Exposure to residual soil/fill will be prevented by an engineered, composite cover system to be built on the Site. This composite cover system is comprised of a minimum of four [4] inches of concrete pavement or building slab or asphalt pavement and associated subbase.

Figure 8 shows the typical design for each remedial cover type used on this Site. Figure 8 shows the location of each cover type built at the Site.

The composite cover system is a permanent engineering control for the Site. The system will be inspected and reported at specified intervals as required by this RAWP and the SMP. A Soil Management Plan will be included in the SMP and will outline the procedures to be followed in the event that the composite cover system and underlying residual soil/fill is

disturbed after the remedial action is complete. Maintenance of this composite cover system will be described in the SMP in the RAR.

Waterproofing/Vapor Membrane/Coating

Migration of soil vapor will be mitigated with a combination of building slab and vapor membrane/waterproofing/coating.

A spray-applied (Liquid Boot) vapor membrane will be installed over the entire building footprints prior to pouring the buildings' concrete slabs. The vapor membrane system will consist of a 20 mil polyethylene geomembrane coated with 40 mil Liquid Boot. A protection fabric will be above the Liquid Boot membrane. These products are manufactured by CETCO. An OER-approved equivalent could be substituted. The vapor membrane will extend beneath the entire slab areas and be applied to the footings of the new buildings which are to be constructed at the Site. The specifications for installation will be provided to the construction management company and the foundation contractor or the installer of the membrane. The specifications state that all vapor membrane seams, penetrations, and repairs will be sealed according to the manufacturer's recommendations and instructions.

The extent of the proposed vapor membranes is provided in Figure 6. Installation details (penetrations, joints, etc.) with respect to the proposed building foundations, footings, slabs, and sidewalls are also provided in Figure 6. Product specification sheets are provided in Appendix 6. The Remedial Action Report will include photographs (maximum of two photos per page) of the installation process, PE/RA-certified letter (on company letterhead) from primary contractor responsible for installation oversight and field inspections, and a copy of the manufacturer's certificate of warranty.

The interior surfaces of existing foundation walls in Building A that are proposed to remain in place will be coated with Land Science Technologies' Retro-Coat (or OER-approved equivalent). The application will consist of a layer of primer and two layers of Retro-Coat. In addition, waterproofing will be applied to the exteriors of new below grade foundation walls for Building A.

Sub-Slab Venting System

Migration of soil vapor will be mitigated with the construction of passive sub-slab venting systems (SSVSs). The SSVSs will consist of a single loop with laterals installed beneath the cellar slab of the proposed Building A and a single lateral beneath proposed Building B. The layout plans for the SSVSs are provided as Figure 6. Design details of the SSVSs are also provided as Figure 6.

The horizontal vent is to be constructed of low-profile CETCO Geovent. Fill material around the horizontal vent piping will be RCA or granular base. The horizontal pipes will extend to the roof via 4-inch schedule 40 PVC vertical pipes. The exhaust stacks will be located a minimum of 10 feet from windows and ventilation inlets.

PE-certified drawings of the SSVSs are provided as Figure 6. The Remedial Action Report will include photographs of the installation of SSVS laterals as well as if any deviations have occurred due to construction scope changes. The Remedial Action Report will include PE/RA-certified as-built plans depicting SSVS lateral and riser pipe configurations and locations.

4.4 INSTITUTIONAL CONTROLS

Institutional Controls (IC) have been incorporated in this remedial action to manage residual soil/fill and other media and render the Site protective of public health and the environment. Institutional Controls are listed below. Long-term employment of EC/ICs will be established in a Declaration of Covenant and Restrictions (DCR) assigned to the property by the title holder and will be implemented under a site-specific SMP that will be included in the RAR.

Institutional Controls for this remedial action are:

- Recording of an OER-approved DCR with the City Register or county clerk, as appropriate. The DCR will include a description of all ECs and ICs, will summarize the requirements of the SMP, and will note that the property owner and property owner's successors and assigns must comply with the DCR and the approved SMP. The recorded DCR will be submitted in the RAR. The DCR will be recorded prior to OER issuance of the Notice of Completion;

- Submittal of a SMP in the RAR for approval by OER that provides procedures for appropriate operation, maintenance, monitoring, inspection, reporting and certification of ECs. SMP will require that the property owner and property owner's successors and assigns will submit to OER a periodic written statement that certifies that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by OER; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. OER retains the right to enter the Site in order to evaluate the continued maintenance of any controls. This certification shall be submitted at a frequency to be determine by OER in the SMP and will comply with RCNY §43-1407(1)(3).
- Vegetable gardens and farming on the Site are prohibited in contact with residual soil materials;
- Use of groundwater underlying the Site is prohibited without treatment rendering it safe for its intended use;
- All future activities on the Site that will disturb residual material must be conducted pursuant to the soil management provisions in an approved SMP;
- The Site will be used for commercial use and will not be used for a higher level of use without prior approval by OER.

4.5 SITE MANAGEMENT PLAN

Site Management is the last phase of remediation and begins with the approval of the RAR and issuance of the Notice of Completion (NOC) for the Remedial Action. The SMP describes appropriate methods and procedures to ensure implementation of all ECs and ICs that are required by the DCR and this RAWP. The SMP is submitted as part of the RAR but will be written in a manner that allows its use as an independent document. Site Management continues until terminated in writing by OER. The property owner is responsible to ensure that all Site Management responsibilities defined in the DCR and the SMP are implemented.

The SMP will provide a detailed description of the procedures required to manage residual soil/fill left in place following completion of the remedial action in accordance with the Brownfield Cleanup Agreement with OER. This includes a plan for: (1) implementation of ECs and ICs; (2) implementation of monitoring programs; (3) operation and maintenance of ECs; (4) inspection and certification of ECs; and (5) reporting.

Site management activities, reporting, and EC/IC certification will be scheduled by OER on a periodic basis to be established in the SMP and will be subject to review and modification by OER. The SMP will be based on a calendar year and certification reports will be due for submission to OER by March 31 of the year following the reporting period.

4.6 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

The objective of the qualitative exposure assessment is to identify potential receptors and pathways for human exposure to the contaminants of concern (COC) that are present at, or migrating from, the Site. The identification of exposure pathways describes the route that the COC takes to travel from the source to the receptor. An identified pathway indicates that the potential for exposure exists; it does not imply that exposures actually occur.

Investigations reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA). As part of the VCP process, a QHHEA was performed to determine whether the Site poses an existing or future health hazard to the Site's exposed or potentially exposed population. The sampling data from the RI were evaluated to determine whether there is any health risk by characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. This QHHEA was prepared in accordance with Appendix 3B and Section 3.3 (b) 8 of the NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation.

Known and Potential Sources

Historic fill is present to depths of up to 13 fbg at the Site.

Based on the results of the RIR, the contaminants of concern found are:

Soil

- Metals, including lead, barium, and arsenic, exceeding Track 2 Restricted Commercial SCOs;
- Pesticides, SVOCs and VOCs were identified, but did not exceed Track 2 Restricted Commercial SCOs.

Groundwater

- VOCs exceeding GQS. Contaminants present in the true groundwater aquifer (not associated with perched conditions) are attributable to off-site sources.

Soil vapor

- Chlorinated VOCs.

Nature, Extent, Fate and Transport of Contaminants

SVOCs and metals are present in the historic fill materials throughout the Site. One contaminated soil hot-spot was identified in the vicinity of sample B-1. Other remaining soil contaminants include generally immobile compounds associated with a regional fill condition or residual VOCs. The migration/leaching of these contaminants to groundwater is not anticipated as groundwater is located within the bedrock aquifer and only limited areas of perched groundwater are present. Potential physical migration and leaching will be limited upon installation of the proposed ECs and other site improvements. Groundwater contamination identified on site is either the result of an off-site source (VOCs) or regional/naturally-occurring conditions (metals). Elevated soil vapors were identified in Building B areas.

Potential Routes of Exposure

An exposure route is the mechanism by which a receptor comes into contact with a chemical. Three potential primary routes exist by which chemicals can enter the body:

- Ingestion of fill/soil;
- Inhalation of vapors and particulates; and
- Dermal contact fill/soil or building materials.

Existence of Human Health Exposure

Existing

The Site is vacant and partially uncapped. Under current Site conditions, exposure to surficial impacted soils is possible. Groundwater is not exposed at the Site, and because the Site is served by the public water supply, groundwater is not used at the Site. Soil vapor could be accumulating in the vacant on-site structure.

Construction/Remediation Activities

Once redevelopment activities begin, construction workers could come into direct contact with surface and subsurface soils as a result of on-Site construction/excavation activities. Similarly, off-Site receptors could be exposed to dust from on-Site activities. During construction, on-Site and off-Site exposures to contaminated dust from on-Site will be addressed through dust controls, and through the implementation of the CAMP and a CHASP. The CHASP also will be implemented to prevent worker exposure to soil. Groundwater is not anticipated to be encountered and there will be no fully-enclosed structures on Site where soil vapor could accumulate during construction.

Proposed Future Conditions

Once the remedial actions and redevelopment of the Site have been completed, there will be no potential on-Site or off-Site exposure pathways. Not only will soil/fill exceeding Track 4 Site-Specific SCOs be removed, but the Site will also be fully capped with the concrete building slabs and concrete and asphalt pavements which will prevent contact with any residual soils. Any exposures to vapors will be prevented by installation of a vapor membranes/coatings, building slabs, and passive SSVSs.

Receptor Populations

On-Site Receptors - The Site is currently vacant and a fence and locked structure generally restrict access to the Site. Therefore, the only potential on-Site receptors are Site representatives and trespassers. During redevelopment of the Site, the on-Site potential receptors will include construction workers, site representatives, and visitors. Once the Site is redeveloped, the on-Site potential sensitive receptors will include workers and visitors.

Off-Site Receptors - Potential off-Site receptors within a 0.25-mile radius of the Site include: adult and child residents and commercial and construction workers, pedestrians, trespassers, and cyclists, based on the following:

1. Commercial Businesses (up to 0.25 mile) – existing and future
2. Residential Buildings (up to 0.25 mile) – existing and future
3. Building Construction/Renovation (up to 0.25 mile) – existing and future
4. Pedestrians, Trespassers, Cyclists (up to .25 mile) – existing and future
5. Schools (up to .25 mile) – existing and future

Overall Human Health Exposure Assessment

Based upon this analysis, complete on-Site exposure pathways appear to be present only during the current unremediated phase and the remedial action phase. Under current conditions, on-Site exposure pathways are minimized by preventing access to the Site. There is no complete exposure pathway under future conditions after the Site is developed. This assessment takes into consideration the reasonably anticipated use of the Site, which includes commercial structures, site-wide impervious surface cover cap, and subsurface vapor barriers for the buildings. During remedial construction, on-Site and off-Site exposures to contaminated dust from contaminated soil will be addressed through dust controls and through the implementation Community Air Monitoring Program, the Soil/Materials Management Plan, and a Construction Health and Safety Plan. After the remedial action is complete, there will be no remaining exposure pathways to on-Site soil/fill, as the entire Site will be capped with concrete and asphalt, and the vapor membranes/coatings, concrete building slabs, and passive SSVSs will interrupt the potential for soil vapor intrusion. Potential post-construction use of groundwater is not considered an option because groundwater in this area of New York City is not used as a potable water source. Surface waters in close proximity to the Site will not be impacted by future site conditions. A deed restriction will be placed on property and periodic inspections will be performed to ensure those controls remain effective.

5.0 REMEDIAL ACTION MANAGEMENT

5.1 PROJECT ORGANIZATION AND OVERSIGHT

Principal personnel who will participate in the remedial action include Michael Marsicano (Whitestone Environmental Specialist). Michael will be responsible for field oversight. The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are Keith D'Ambrosio, P.E., LSRP and Christopher Seib, LSRP, respectively.

5.2 SITE SECURITY

Site access will be controlled by gated entrances to the fenced property.

5.3 WORK HOURS

The hours for operation of remedial construction will be from 7:00 a.m. to 6:00 p.m.. These hours conform to the New York City Department of Buildings construction code requirements.

5.4 CONSTRUCTION HEALTH AND SAFETY PLAN

The Health and Safety Plan is included in Appendix 4. The Site Safety Coordinator will be Michael Marsicano. Remedial work performed under this RAWP will be in full compliance with applicable health and safety laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. Confined space entry, if any, will comply with OSHA requirements and industry standards and will address potential risks. The parties performing the remedial construction work will ensure that performance of work is in compliance with the HASP and applicable laws and regulations. The HASP pertains to remedial and invasive work performed at the Site until the issuance of the Notice of Completion.

All field personnel involved in remedial activities will participate in training required under 29 CFR 1910.120, including 40-hour hazardous waste operator training and annual 8-hour refresher training. Site Safety Officer will be responsible for maintaining workers training records.

Personnel entering any exclusion zone will be trained in the provisions of the HASP and be required to sign an HASP acknowledgment. Site-specific training will be provided to field personnel. Additional safety training may be added depending on the tasks performed. Emergency telephone numbers will be posted at the site location before any remedial work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a log book or specific form.

An emergency contact sheet with names and phone numbers is included in the HASP. That document will define the specific project contacts for use in case of emergency.

5.5 COMMUNITY AIR MONITORING PLAN

Real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedences of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings must be recorded and be available for OER personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate

monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed $150 \text{ mcg}/\text{m}^3$ above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than $150 \text{ mcg}/\text{m}^3$ above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within $150 \text{ mcg}/\text{m}^3$ of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for OER personnel to review.

5.6 AGENCY APPROVALS

All permits or government approvals required for remedial construction have been or will be obtained prior to the start of remedial construction. Approval of this RAWP by OER does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

5.7 SITE PREPARATION

Pre-Construction Meeting

OER will be invited to attend the pre-construction meeting at the Site with all parties involved in the remedial process prior to the start of remedial construction activities.

Mobilization

Mobilization will be conducted as necessary for each phase of work at the Site. Mobilization includes field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member will attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

Utility Marker Layouts, Easement Layouts

The presence of utilities and easements on the Site will be fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose an electrocution, explosion, or other hazard during excavation or drilling activities. All invasive activities will be performed in compliance with applicable laws and regulations to assure safety. Utility companies and other responsible authorities will be contacted to locate and mark the locations, and a copy of the Markout Ticket will be retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Overhead utilities may also be present within the anticipated work zones. Electrical hazards associated with drilling in the vicinity of overhead utilities will be prevented by maintaining a safe distance between overhead power lines and drill rig masts.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations will be employed during invasive and other work contemplated under this RAWP. The integrity and safety of on-Site and off-Site structures will be maintained during all invasive, excavation or other remedial activity performed under the RAWP.

Dewatering

Dewatering is not anticipated during construction. If necessary, dewatering will be conducted in accordance with construction standards and permit requirements.

Equipment and Material Staging

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations.

Stabilized Construction Entrance

Steps will be taken to ensure that trucks departing the site will not track soil, fill or debris off-Site. Such actions may include use of cleaned asphalt or concrete roads or use of stone or other aggregate-based egress paths between the truck inspection station and the property exit. Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris.

Truck Inspection Station

An outbound-truck inspection station will be set up close to the Site exit. Before exiting the NYC VCP Site, trucks will be required to stop at the truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. Soil and debris will be removed. Brooms, shovels and potable water will be utilized for the removal of soil from vehicles and equipment, as necessary.

Extreme Storm Preparedness and Response Contingency Plan

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, the enrollee will undertake the following steps for site preparedness prior to the event and response after the event.

Storm Preparedness

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and

generators will be removed from holes, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, haybales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to OER at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911. Petroleum spills will be reported to NYS DEC within 2 hours of identification and consistent with State regulations. Emergency and spill conditions will also be reported to OER. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed. Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Storm-water control systems and structures will be inspected and maintained as necessary. If soil or fill materials are discharged off site to adjacent properties, property owners and OER will be notified and corrective measure plan designed to remove and clean dislocated material will be submitted to OER and implemented following approval by OER and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of OER. If onsite petroleum spills are identified, a qualified environmental

professional will determine the nature and extent of the spill and report to NYS DEC's spill hotline at DEC 800-457-7362. If the source of the spill is ongoing and can be identified, it should be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYS DEC.

Storm Response Reporting

A site inspection report will be submitted to OER at the completion of site inspection. An inspection report established by OER is available on OER's website (www.nyc.gov/oer) and will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the OER project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number. Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYS DEC; description of corrective actions; schedule for corrective actions. This report should be completed and submitted to OER project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

5.8 TRAFFIC CONTROL

Drivers of trucks leaving the NYC VCP Site with soil/fill will be instructed to proceed without stopping in the vicinity of the site to prevent neighborhood impacts. The planned route on local roads for trucks leaving the site will be determined based on the destination/disposal facility at the time of implementation, and details will be provided to and approved by OER.

5.9 DEMOBILIZATION

Demobilization will include:

- As necessary, restoration of temporary access areas and areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access area);
- Removal of sediment from erosion control measures and truck wash and disposal of materials in accordance with applicable laws and regulations;
- Equipment decontamination; and
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (e.g., soil excavators) will be washed at the truck inspection station as necessary. In addition, all investigation and remediation derived waste will be appropriately disposed.

5.10 REPORTING AND RECORD KEEPING

Daily Reports

Daily reports providing a general summary of activities for each day of *active remedial work* will be emailed to the OER Project Manager by the end of the following day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);
- A summary of CAMP excursions, if any; and
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary

mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication. Daily reports will be included as an Appendix in the Remedial Action Report.

Record Keeping and Photo-Documentation

Job-site record keeping for all remedial work will be performed. These records will be maintained on-Site during the project and will be available for inspection by OER staff. Representative photographs will be taken of the Site prior to any remedial activities and during major remedial activities to illustrate remedial program elements and contaminant source areas. Photographs will be submitted at the completion of the project in the RAR in digital format (i.e. jpeg files).

5.11 COMPLAINT MANAGEMENT

All complaints from citizens will be promptly reported to OER. Complaints will be addressed and outcomes will also be reported to OER in daily reports. Notices to OER will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems.

5.12 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

All changes to the RAWP will be reported to the OER Project Manager and will be documented in daily reports and reported in the Remedial Action Report. The process to be followed if there are any deviations from the RAWP will include a request for approval for the change from OER noting the following:

- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy; and
- Determination that the remedial action with the deviation(s) is protective of public health and the environment.

6.0 REMEDIAL ACTION REPORT

A Remedial Action Report (RAR) will be submitted to OER following implementation of the remedial action defined in this RAWP. The RAR will document that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The RAR will include:

- Information required by this RAWP;
- As-built drawings for all constructed remedial elements, required certifications, manifests and other written and photographic documentation of remedial work performed under this remedy;
- Site Management Plan;
- Description of any changes in the remedial action from the elements provided in this RAWP and associated design documents;
- Tabular summary of all end point sampling results and all material characterization results, QA/QC results for end-point sampling, and other sampling and chemical analysis performed as part of the remedial action and DUSR;
- Test results or other evidence demonstrating that remedial systems are functioning properly;
- Account of the source area locations and characteristics of all contaminated material removed from the Site including a map showing source areas;
- Account of the disposal destination of all contaminated material removed from the Site. Documentation associated with disposal of all material will include transportation and disposal records, and letters approving receipt of the material;
- Account of the origin and required chemical quality testing for material imported onto the Site;
- Recorded Declaration of Covenants and Restrictions; and
- Reports and supporting material will be submitted in digital form.

Remedial Action Report Certification

The following certification will appear in front of the Executive Summary of the Remedial Action Report. The certification will include the following statements:

I, Keith T D'Ambrosio, am currently a professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the Proposed Self-Storage Facility Site OER Project No. 15CVCP086X.

I, Christopher Seib, am a qualified Environmental Professional. I had primary direct responsibility for implementation remedial program for the Proposed Self-Storage Facility Site OER Project No. 15CVCP086X.

I certify that the OER-approved Remedial Action Work Plan dated month day year and Stipulations in a letter dated month day, year; if any were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

7.0 SCHEDULE

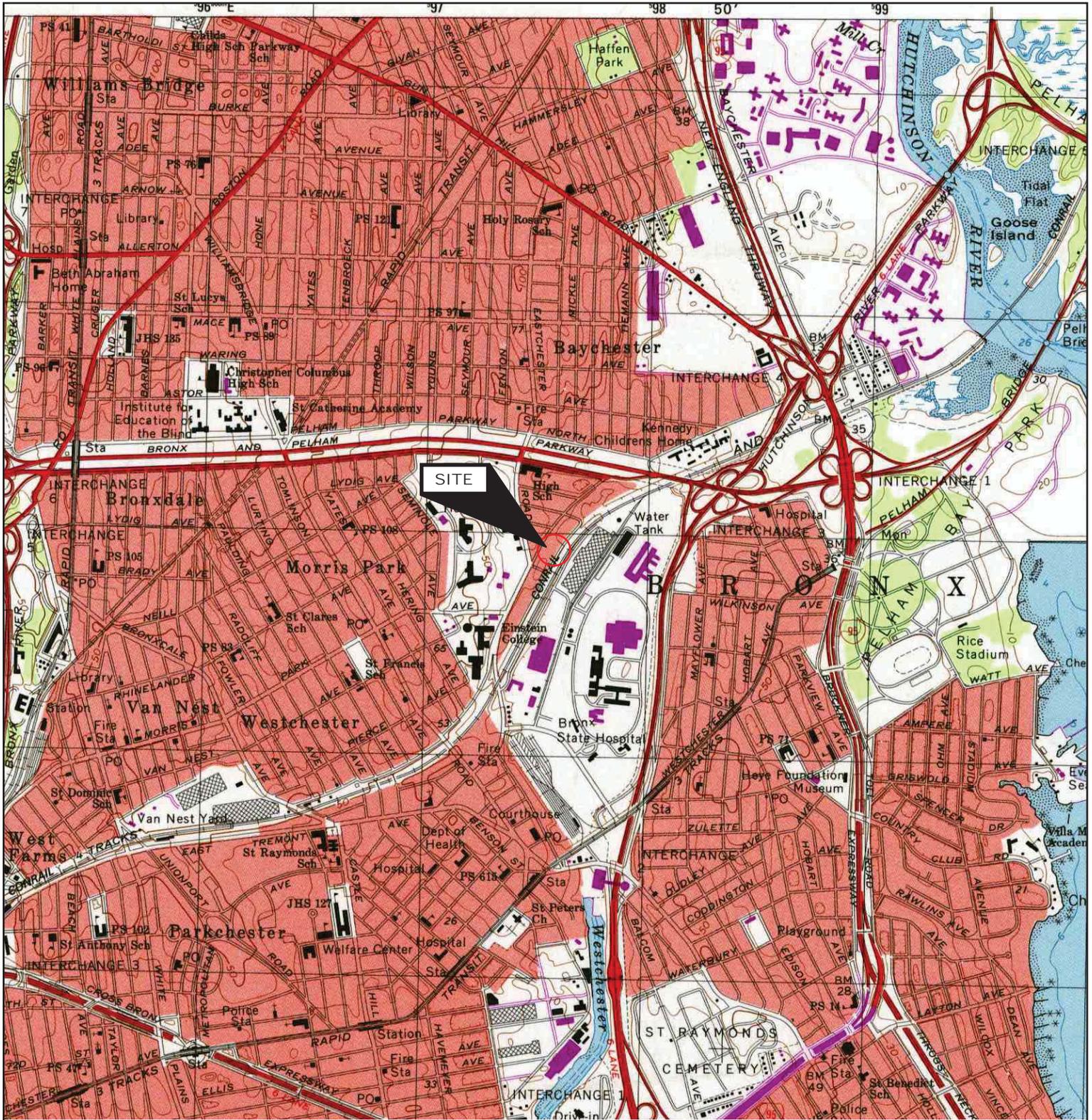
The table below presents a schedule for the proposed remedial action and reporting. If the schedule for remediation and development activities changes, it will be updated and submitted to OER. Currently, a 15 month remediation period is anticipated.

Schedule Milestone	Weeks from Remedial Action Start	Duration (weeks)
OER Approval of RAWP	0	-
Fact Sheet 2 announcing start of remedy	0	-
Mobilization	2	1
Remedial Excavation/Site Construction	49	47
Demobilization	50	1
Record Declaration of Covenants and Restrictions	48	1
Submit Remedial Action Report	60	---



FIGURE 1
Site Location Map

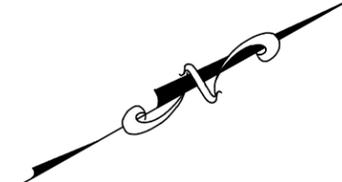
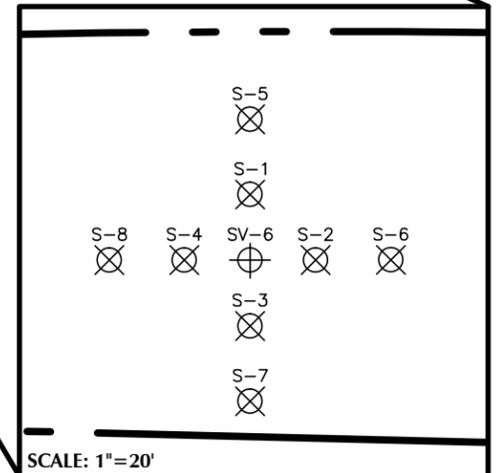
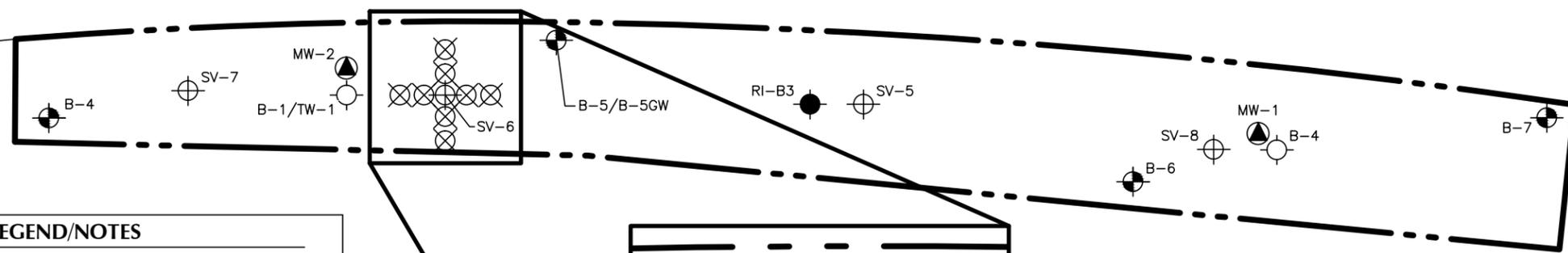
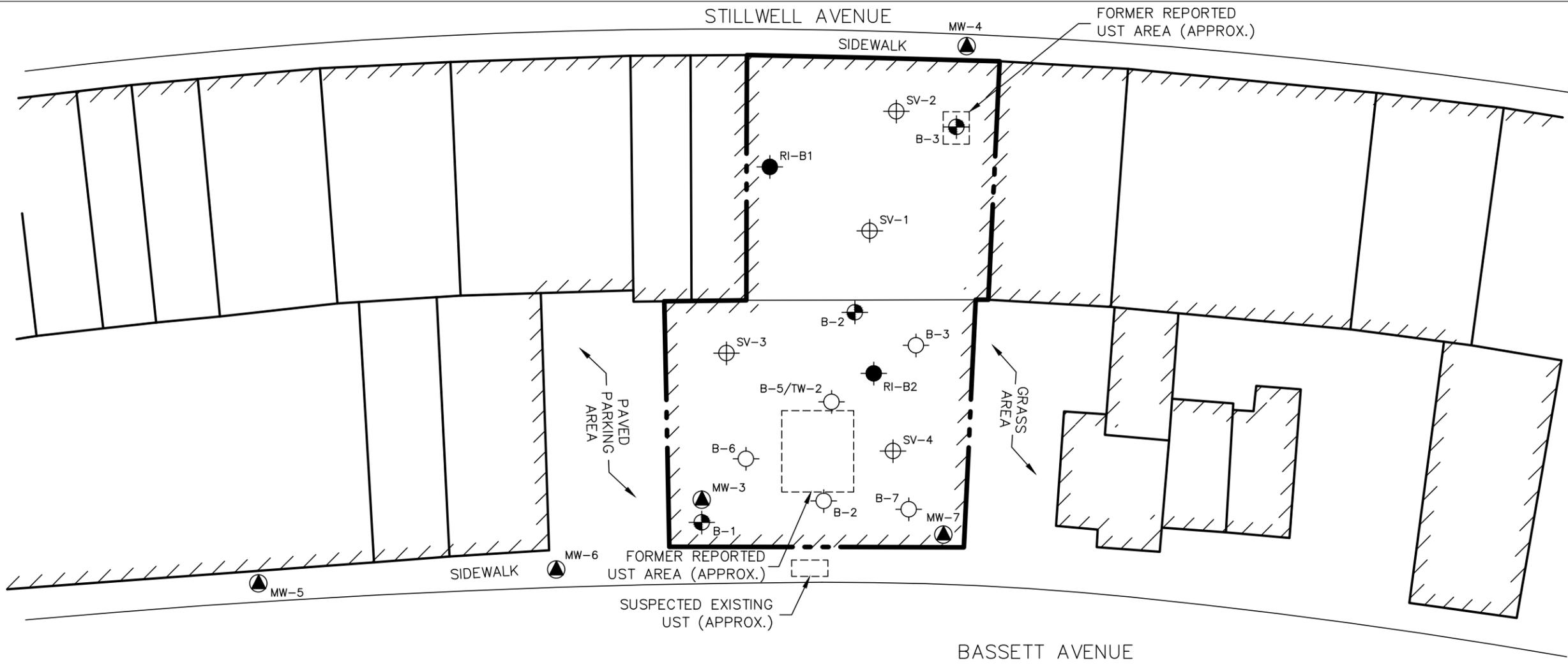
Historical Topographic Map



	TARGET QUAD	SITE NAME: Proposed Self-Storage Facility	Whitestone Associates, Inc.
	NAME: FLUSHING	ADDRESS: 1538 Stillwell Avenue	
	MAP YEAR: 1995	BRONX, NY 10461	FIGURE 1
	SERIES: 7.5	LAT/LONG: 40.8538 / -73.8419	
	SCALE: 1:24000		



FIGURE 2
Boring/Sample Monitor
Well Location Plan

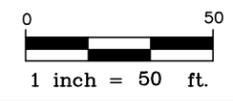


LEGEND/NOTES

	S-1	NOVEMBER 2012 SOIL BORING LOCATION (APPROX.)
	RI-B1	JUNE 2012 BORING LOCATION (APPROX.)
	B-1/TW-1	OCTOBER 2011 BORING/TEMPORARY WELLPOINT LOCATION (APPROX.)
	B-5/B-5GW	MARCH 2012 BORING/TEMPORARY WELLPOINT LOCATION (APPROX.)
	SV-1	SOIL VAPOR SAMPLE LOCATION (APPROX.)
	MW-1	BEDROCK MONITORING WELL LOCATION
	UST	UNDERGROUND STORAGE TANK
		SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

THIS PLAN IS BASED UPON AN UNDATED AERIAL IMAGE OBTAINED FROM GOOGLE MAPS, AN UNDATED CONCEPT SITE PLAN PREPARED BY BUTZ WILBERN, LTD, AND AN OCTOBER 13, 2012 MONITORING WELL LOCATION MAP PREPARED BY DPK CONSULTING, LLC.



BORING/SAMPLE/MONITORING WELL LOCATION PLAN

WHITESTONE ASSOCIATES, INC.
 35 TECHNOLOGY DRIVE
 WARREN, NEW JERSEY 07059
 908.668.7777 • 908.754.5936 FAX

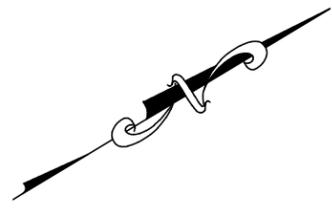
PROJECT #:	EJ111829.002
BY:	GR
PROJ. MGR.:	CS
DATE:	09/09/14
SCALE:	AS SHOWN
FIGURE:	2

CLIENT:	STILLWELL SELF STORAGE, LLC
PROJECT:	REMEDIAL ACTION WORK PLAN PROPOSED SELF-STORAGE FACILITY 1538 STILLWELL AVENUE AND 1540 BASSETT AVENUE BRONX, BRONX COUNTY, NEW YORK

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FIGURE 3
AOC, Surrounding Properties,
and Overall Site Plan



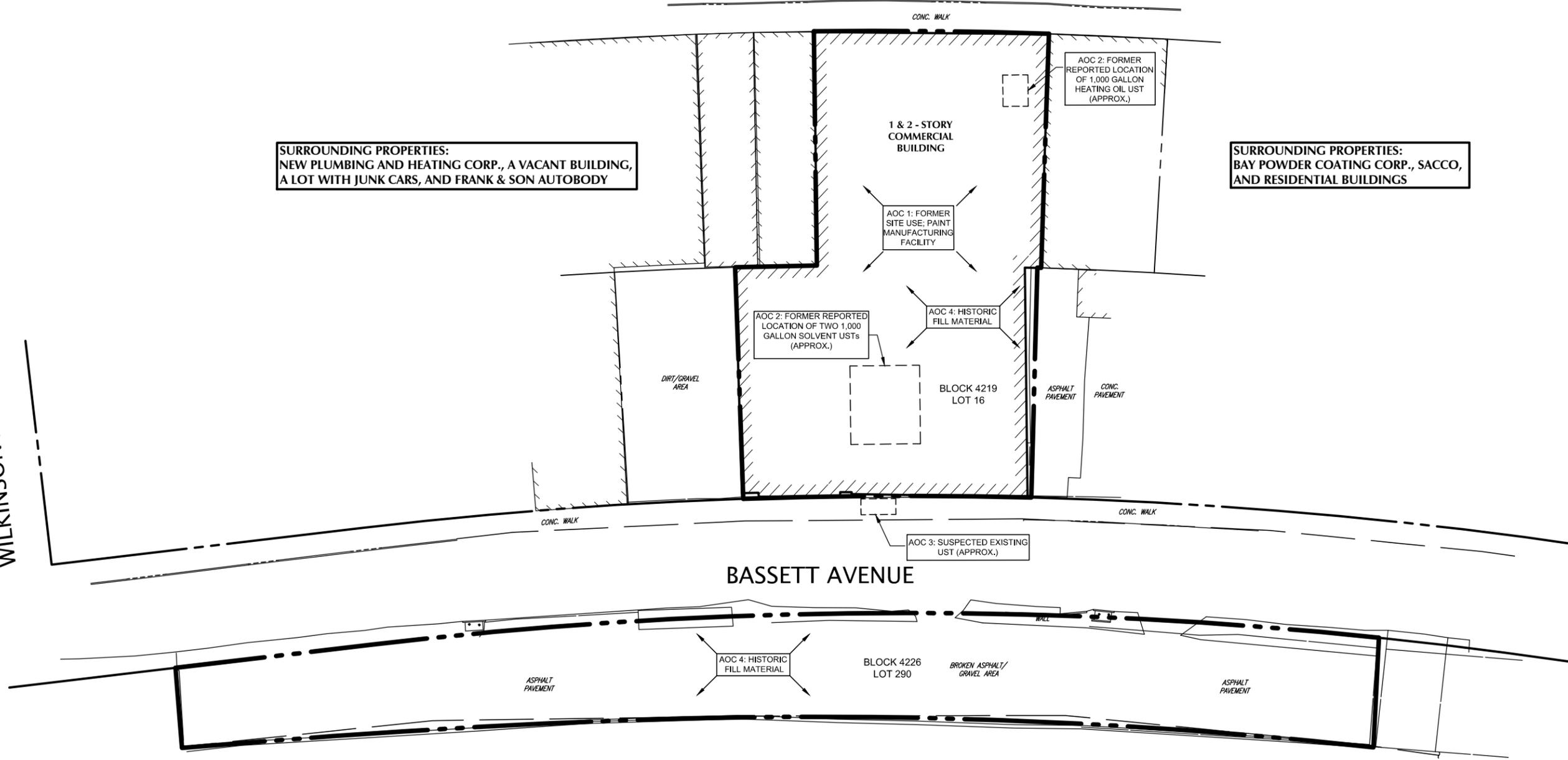
SURROUNDING PROPERTIES:
F&J TRANSMISSION, TEMPLE OF JOY, ITALY
A&P AUTO REPAIR, AND CARIB PRINTS, LTD.

STILLWELL AVENUE

SURROUNDING PROPERTIES:
NEW PLUMBING AND HEATING CORP., A VACANT BUILDING,
A LOT WITH JUNK CARS, AND FRANK & SON AUTOBODY

SURROUNDING PROPERTIES:
BAY POWDER COATING CORP., SACCO,
AND RESIDENTIAL BUILDINGS

WILKINSON AVENUE



SURROUNDING PROPERTIES:
ACELA HIGH SPEED TRANSIT TRAIN LINE

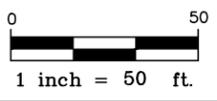
LEGEND/NOTES

UST UNDERGROUND STORAGE TANK

----- SUBJECT PROPERTY BOUNDARY

REFERENCE

THIS PLAN IS BASED UPON A MARCH 8, 2012 PRELIMINARY BOUNDARY & TOPOGRAPHIC SURVEY PREPARED BY CONTROL POINT ASSOCIATES, INC.



WHITESTONE ASSOCIATES, INC.
35 TECHNOLOGY DRIVE
WARREN, NEW JERSEY 07059
908.668.7777 • 908.754.5936 FAX



TITLE:
AOC, SURROUNDING PROPERTIES,
AND OVERALL SITE PLAN

CLIENT: STILLWELL SELF STORAGE, LLC

PROJECT: REMEDIAL ACTION WORK PLAN
1538 STILLWELL AVENUE AND
1540 BASSETT AVENUE
BRONX, BRONX COUNTY, NEW YORK

PROJECT #:
EJ111829.002

BY: GR

PROJ. MGR.: CS

DATE: 09/09/14

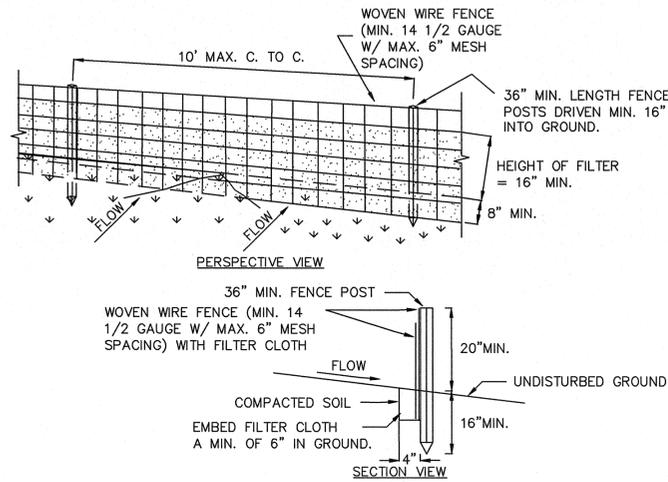
SCALE: 1"=50'

FIGURE: 3

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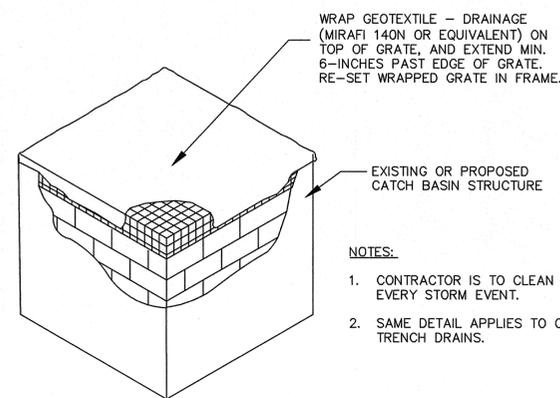
FIGURE 4
Proposed Site
Redevelopment Plans



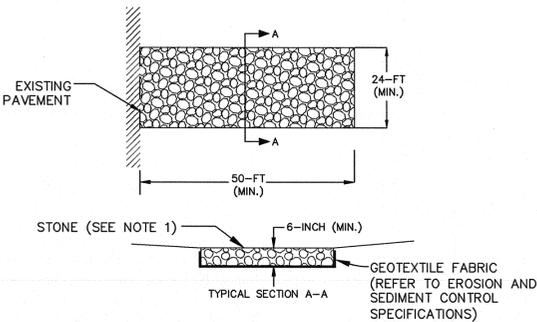
1 SILT FENCE
N.T.S.

CONSTRUCTION SPECIFICATIONS:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.



3 FILTER FABRIC INLET PROTECTION
N.T.S.

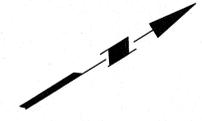
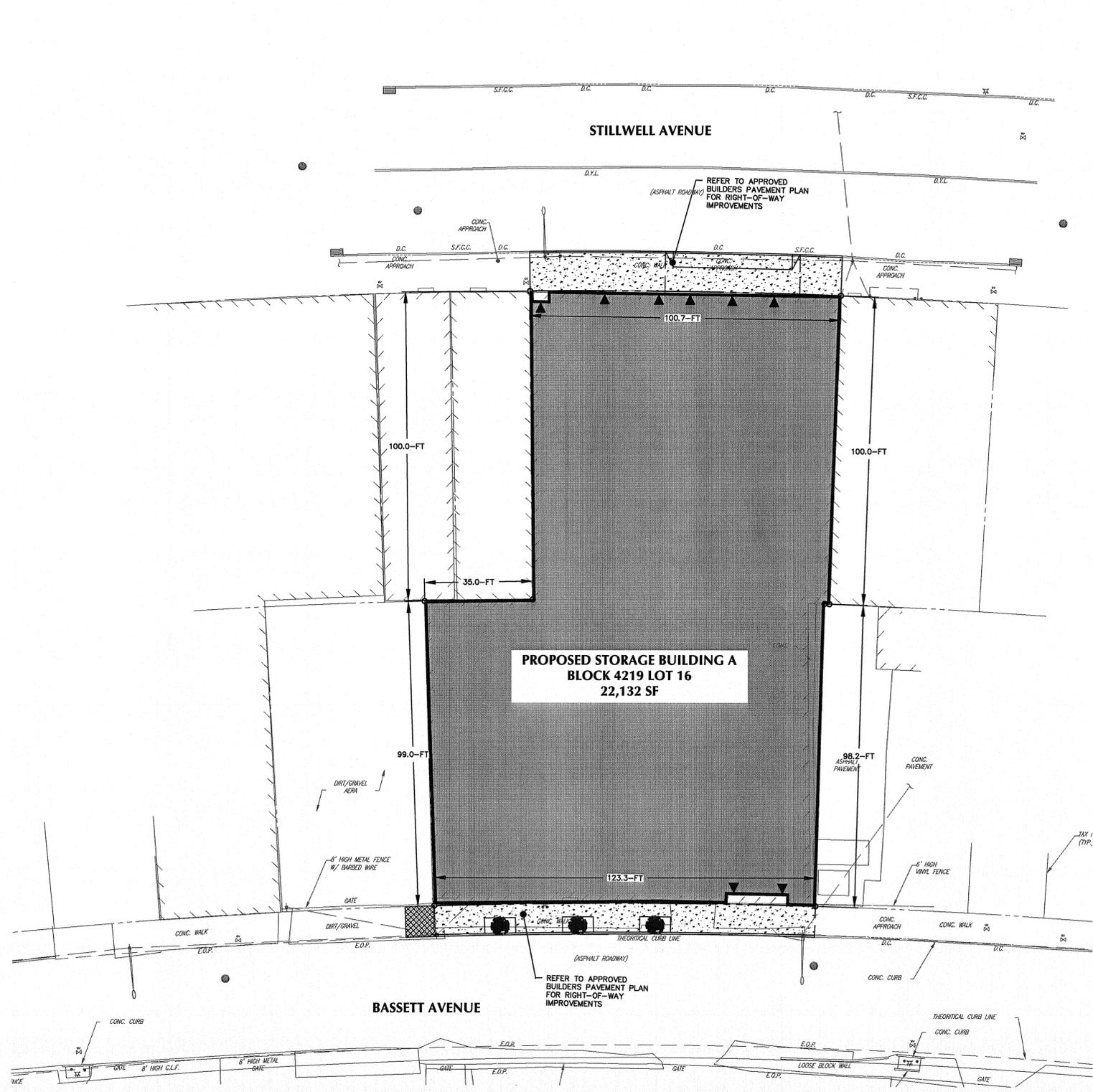


2 STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

- STONE SIZE - USE AASHTO NO. 1 CRUSHED STONE
THICKNESS OF STONE - NOT LESS THAN SIX INCHES.
LENGTH OF STABILIZED CONSTRUCTION ACCESS - NOT LESS THAN 50 FEET
WIDTH - TWELVE FEET MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR FEET IF SINGLE ENTRANCE TO SITE.
GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. (REFER TO EROSION AND SEDIMENT CONTROL SPECIFICATIONS)
SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

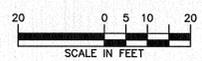
GENERAL SITE NOTES:

1. THESE PLANS REPRESENT THE OVERALL SITework IMPROVEMENTS REQUIRED FOR PROJECT CONSTRUCTION. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITework CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER MAKES NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY AVAILABLE INFORMATION WHICH WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS AND RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL MAKE ADDITIONAL TOPOGRAPHIC SURVEYS HE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
3. THE CONTRACTOR SHALL, WHEN THEY DEEM NECESSARY, PROVIDE WRITTEN REQUESTS FOR INFORMATION (RFIS) TO THE OWNER AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITework ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF TWO WORK DAYS OR ADDITIONAL REASONABLE TIME FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITework ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
4. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO CONSTRUCTION. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO CONSTRUCTION.
5. THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.



LEGEND	
PROPERTY LINE	---
PROPOSED CURB	====
DOOR	▼
BUILDING LINE	— —

1 SITE PLAN
1" = 20'



LANGAN
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
T: 212.479.5400 F: 212.479.5444 www.langan.com
Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying and
Landscape Architecture, D.P.C.
Langan International LLC
Collectively known as Langan

ISSUE DATE: 1 5/23/2013 PERMIT SET

REVISION DATE:

Stillwell Avenue Self Storage - Bldg. A

Stillwell Self Storage LLC
1538 Stillwell Avenue
Bronx, NY

NYC DOB NB#

BOW
BUTZ+WILBERN LTD
Planning | Architecture
Interiors | Property Visioning
800 W. Broad St. Suite 363
Falls Church, Virginia 22046
703-356-6771 fax: 356-7010

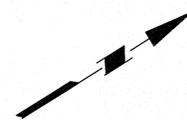
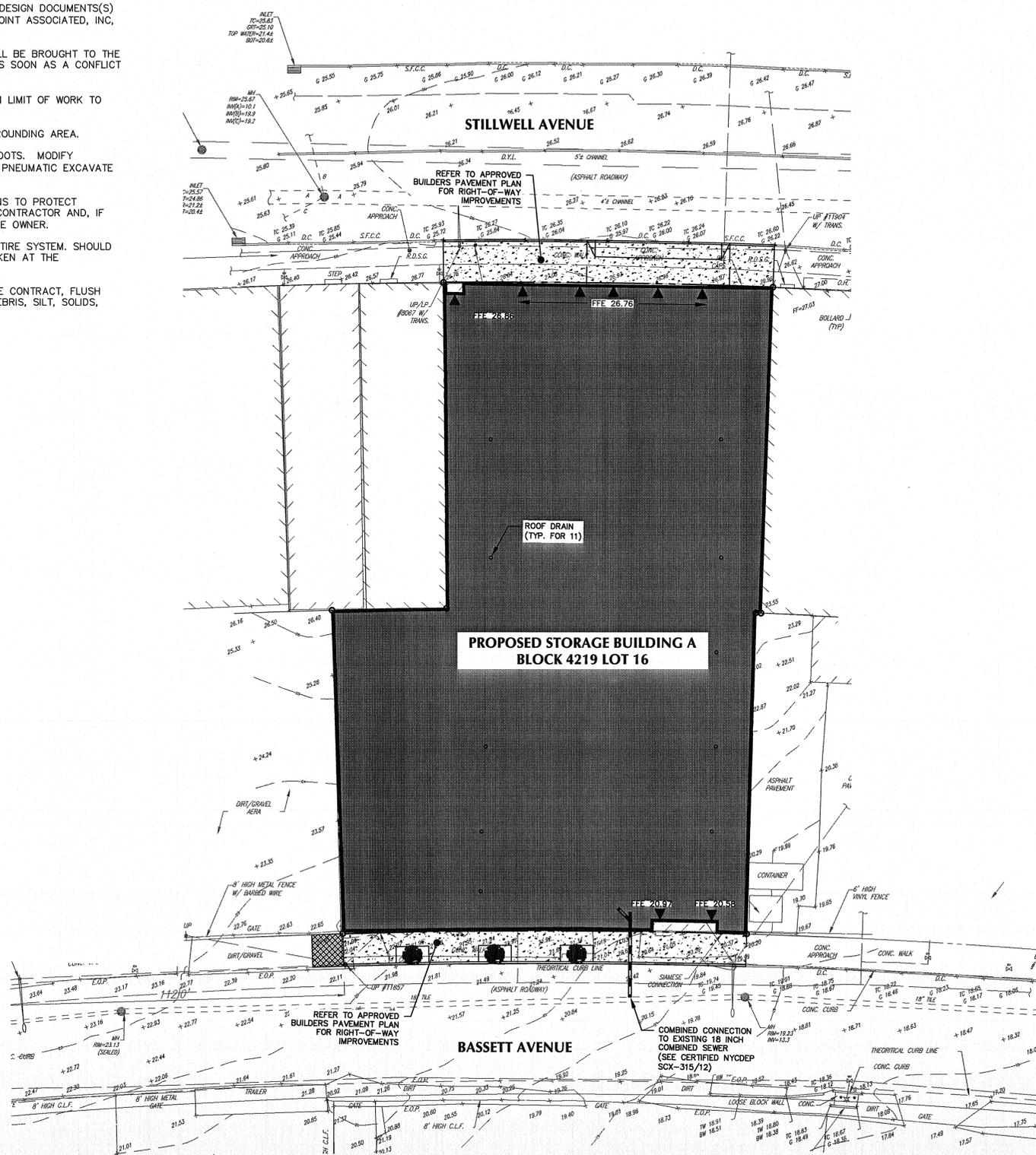
STATE OF NEW YORK
SEAL OF CHRISTOPHER WILBERN
WARNING: It is a violation of the NYS Education Law, Article 145, for any person, unless he is acting under the direction of a licensed Professional Engineer, to alter this item in any way.
© Butz+Wilbern Ltd. 2013

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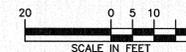
GENERAL NOTES:

- EXISTING TOPOGRAPHIC, BOUNDARY AND/OR UTILITY INFORMATION AS SHOWN ON THIS/THESE DESIGN DOCUMENTS(S) ARE BASED ON PLANS(S) "BOUNDARY AND TOPOGRAPHIC SURVEY", PREPARED BY CONTROL POINT ASSOCIATED, INC, DATED 3/8/2012.
- ANY CONFLICT OR DISCREPANCIES BETWEEN THE PLANS AND OBSERVED SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION, OR AS SOON AS A CONFLICT / DISCREPANCY IS DISCOVERED.
- ADJUST ALL EXISTING DRAINAGE STRUCTURES AND UTILITY MANHOLES / VALVE COVERS WITHIN LIMIT OF WORK TO NEW GRADE.
- ALL CATCH BASINS / INLET STRUCTURES SHALL BE LOCATED AT THE LOW POINT WITHIN SURROUNDING AREA.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO PROTECT EXISTING TREES AND THEIR ROOTS. MODIFY TRENCHES OR CHANNELS TO AVOID EXISTING TREES AND THEIR ROOTS. ONLY HAND AND/OR PNEUMATIC EXCAVATE WITHIN THE DROP LINES OF EXISTING TREES.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING EXCAVATION / GRADING OPERATIONS TO PROTECT EXISTING FACILITIES TO REMAIN. SAID FACILITIES SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR AND, IF DAMAGED, SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE IS ACHIEVED THROUGHOUT THE ENTIRE SYSTEM. SHOULD THE CONTRACTOR FAIL TO ACHIEVE POSITIVE DRAINAGE, CORRECTIVE MEASURES SHALL BE TAKEN AT THE CONTRACTOR'S EXPENSE AND AS DIRECTED BY THE OWNER.
- THE CONTRACTOR SHALL, AS NEEDED TO ENSURE DRAINAGE, AND AT THE COMPLETION OF THE CONTRACT, FLUSH ALL ON-SITE STORM SEWER LINES AND CLEAR THE PIPES OF ANY AND ALL CONSTRUCTION DEBRIS, SILT, SOLIDS, ETC.
- REFER TO PLUMBING, STRUCTURAL, AND ARCHITECTURAL PLANS FOR TRENCH DRAIN DETAILS.



LEGEND	
SEWER PIPE	☐
SPOT ELEVATION	× 27.00
DOOR SYMBOL WITH FINISHED FLOOR ELEVATION	FFE X.XX
PROPOSED ON-SITE BOTTOM OF CURB ELEVATION	× BC 27.00
PROPOSED TOP OF CURB ELEVATION	× TC 27.00
EXISTING AMTRAK BOTTOM OF CURB ELEVATION	× (BC 27.00)

1 GRADING AND DRAINAGE PLAN 1" = 20'



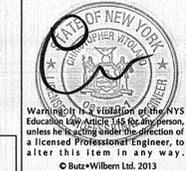
LANGAN
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 Langan Engineering & Environmental Services, Inc.
 Langan Engineering, Environmental, Surveying and
 Landscape Architecture, D.P.C.
 Langan International LLC
 Collectively known as Langan

ISSUE DATE:
1 5/23/2013 PERMIT SET

REVISION DATE:

Stillwell Avenue Self Storage - Bldg. A
 Stillwell Self Storage LLC
 1538 Stillwell Avenue
 Bronx, NY
 NYC DOB NB#

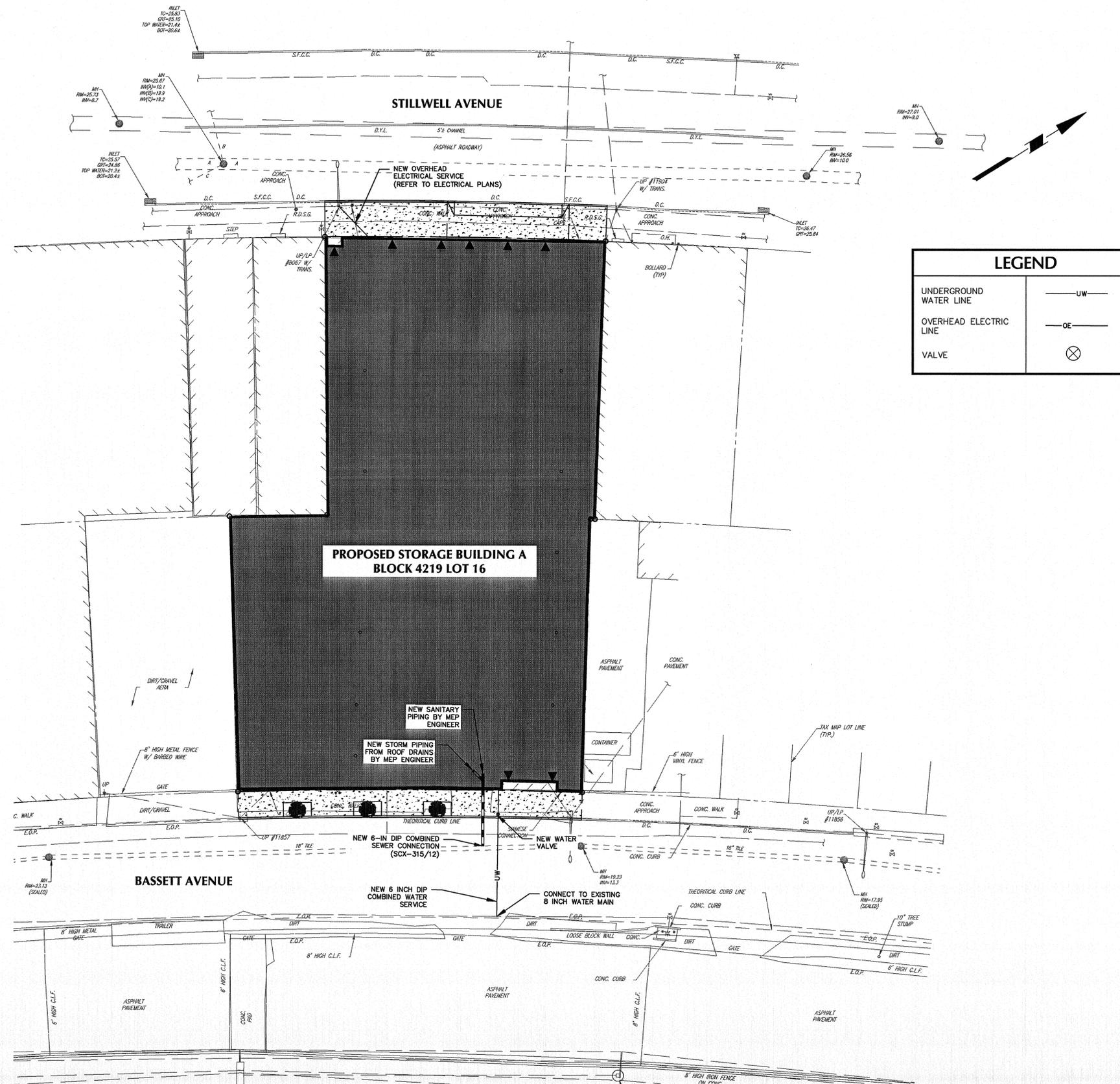
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 800 W. Broad St. Suite 363
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 703-356-6771 fax: 356-7010



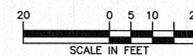
C-211.00
4 OF 12
12005

GENERAL NOTES:

1. THE CONTRACTOR SHALL PERFORM ANY TEST PITS NECESSARY TO CONFIRM THE DESIGN AND EXISTING CONDITIONS PRESENTED IN THESE CONTRACT DOCUMENTS PRIOR TO THE COMMENCEMENT OF WORK.
2. ALL UTILITIES NOT SPECIFICALLY CALLED OUT FOR REMOVAL SHALL BE MAINTAINED AND PROTECTED THROUGHOUT THE COURSE OF CONSTRUCTION.
3. ADJUST ALL EXISTING DRAINAGE STRUCTURES AND UTILITY MANHOLES/VALVE COVERS WITHIN LIMIT OF WORK TO NEW GRADE.
4. EXISTING GAS SERVICE TO BUILDING. ELECTRICAL SERVICE TO BUILDINGS SHOWN CONCEPTUALLY. ELECTRICAL AND TELECOM SCOPES TO BE CONFIRMED BY ELECTRICAL ENGINEER.



1 UTILITY PLAN
1" = 20'



LANGAN
21 Penn Plaza, 360 West 31st Street, 8th Floor
New York, NY 10001
T: 212.479.5400 F: 212.479.5444 www.langan.com
Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying and
Landscape Architecture, D.P.C.
Langan International LLC
Collectively known as Langan

ISSUE DATE:
1 5/23/2013 PERMIT SET

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Stillwell Avenue Self Storage - Bldg. A

Stillwell Self Storage LLC
1538 Stillwell Avenue
Bronx, NY

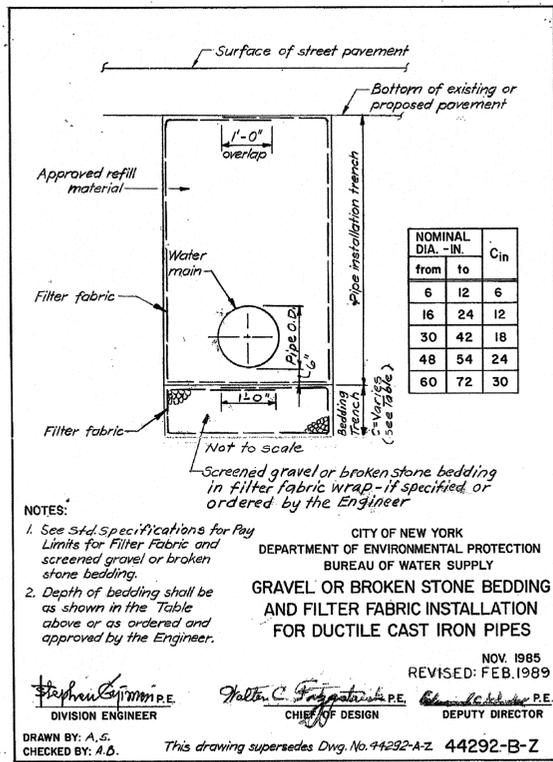
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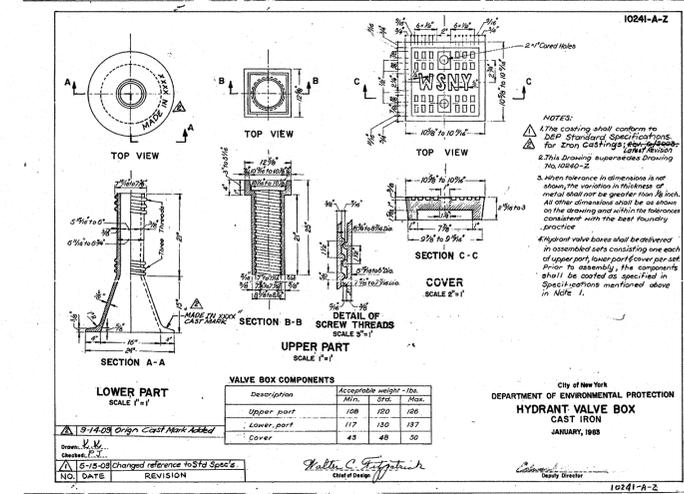
STATE OF NEW YORK
SEAL OF THE STATE ENGINEER
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5 OF 12

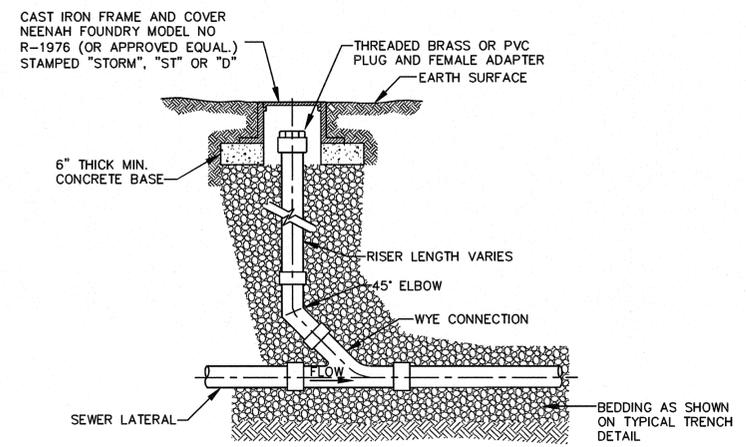
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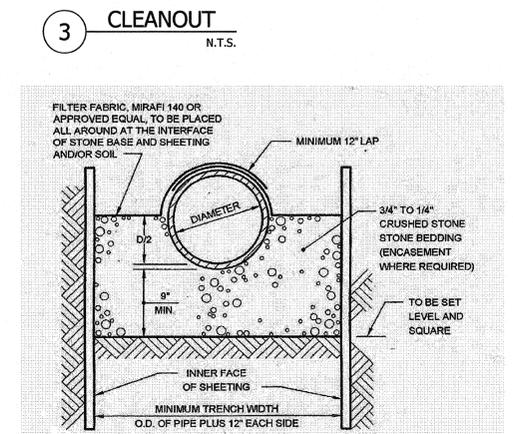
1 TYPICAL WATER MAIN TRENCHING N.T.S.



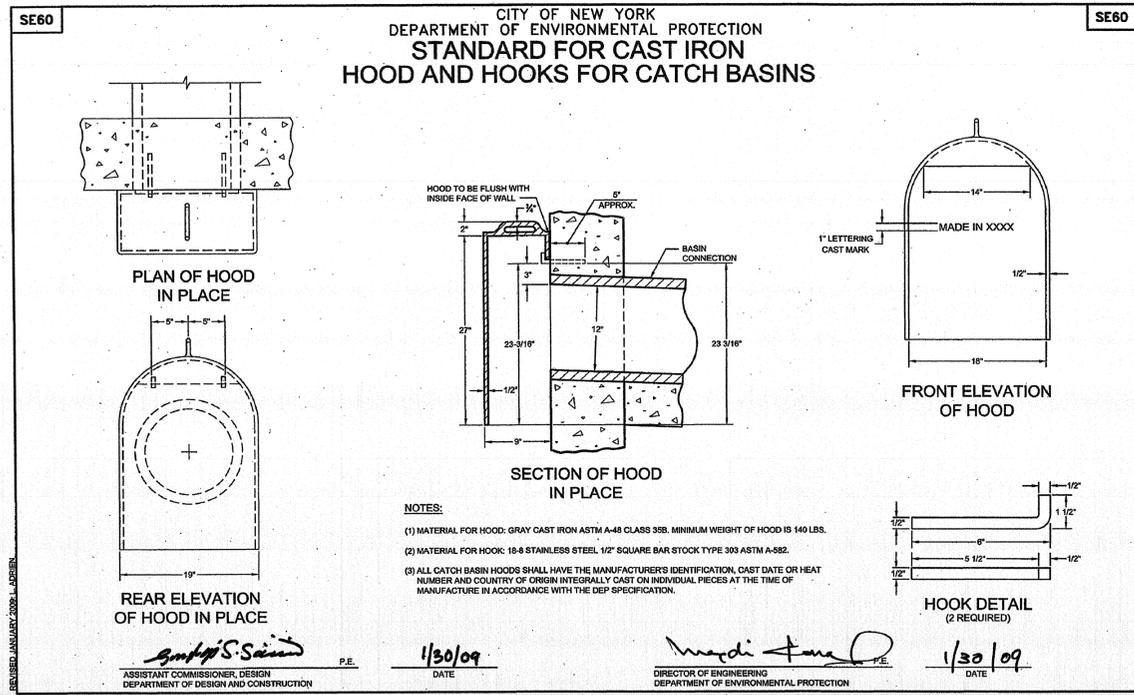
2 CURB VALVE BOX N.T.S.



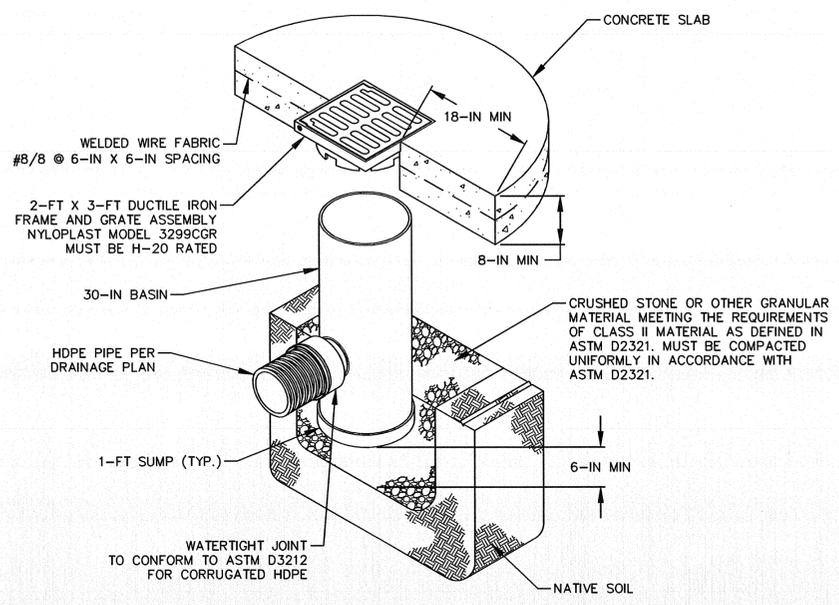
3 CLEANOUT N.T.S.



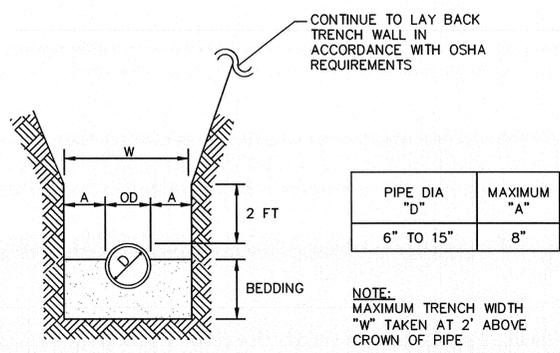
4 TYPICAL SEWER SERVICE TRENCHING N.T.S.



5 MANHOLE HOOD N.T.S.



6 NYLOPLAST DRAIN BASIN N.T.S.



7 STANDARD PIPE TRENCH WIDTH N.T.S.

ISSUE DATE:
1/31/2013 PERMIT SET

REVISION DATE:

Stillwell Avenue Self Storage - Bldg. A

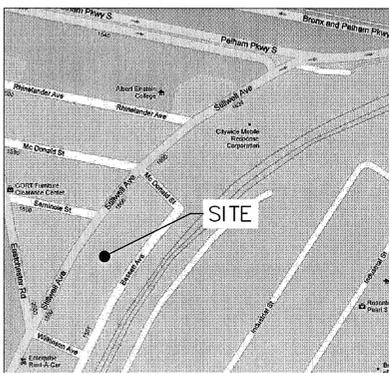
Stillwell Self Storage LLC
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New York, NY 10001
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Langan Engineering, Environmental, Surveying and
Landscape Architecture, D.P.C.
Langan International LLC
Collectively known as Langan

C-711.00
6 OF 12
12005



KEY PLAN
SCALE: N.T.S.

LEGEND

- 125 --- EXISTING CONTOUR
- x 123.45 EXISTING SPOT ELEVATION
- x 123.45 EXIST. TOP OF CURB ELEVATION
- x 123.45 EXIST. GUTTER ELEVATION
- x 123.45 EXIST. TOP OF WALL ELEVATION
- x 123.45 EXIST. BOTTOM OF WALL ELEVATION
- x 123.45 EXIST. FINISHED FLOOR ELEVATION
- x 123.45 LEGAL GRADE
- HYDRANT
- WATER VALVE
- GAS VALVE
- OVERHEAD WIRES
- UNCONFIRMED LOC. UNDERGROUND GAS LINE
- UNCONFIRMED LOC. UNDERGROUND ELEC. LINE
- UNCONFIRMED LOC. UNDERGROUND WATER LINE
- UTILITY POLE
- UTILITY POLE/LIGHT POLE
- BOLLARD
- EDGE OF PAVEMENT
- DEPRESSED CURB
- ROLL DOWN SECURITY GATE
- STEEL FACED CONC. CURB
- CHAIN LINK FENCE
- DOUBLE YELLOW LINE
- OVERSHAW
- 125 --- DENOTES OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE

GENERAL NOTES

1. EXISTING TOPOGRAPHIC AND BOUNDARY INFORMATION SHOWN HEREON IS A RESULT OF AN ACTUAL SURVEY PERFORMED BY CONTROL POINT ASSOCIATES, INC., DATED 12-19-12, LAST REVISED 5-29-13.
2. ELEVATIONS SHOWN HEREON ARE REFERENCED TO THE BOROUGH OF BRONX HIGHWAY DATUM, WHICH IS 2.608 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY, AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY.
3. SEWER SERVICE CONNECTIONS TO NYC DEP SEWERS SHALL BE DUCTILE IRON PIPE. NO SUBSTITUTIONS ALLOWED.
4. ALL SEWER WORK SHOWN ON THIS PLAN SHALL BE IN CONFORMANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION.

I, CHRISTOPHER VITOLANO, A LICENSED PROFESSIONAL ENGINEER, (NUMBER 081589) IN THE STATE OF NEW YORK, DO HEREBY CERTIFY THIS PLAN WAS DONE BY ME OR UNDER MY DIRECT SUPERVISION AND NO PART OF SAID WORK WAS DONE BY ANY EMPLOYEE OF THE CITY OF NEW YORK.

NYC LICENSED PROFESSIONAL ENGINEER NAME:
CHRISTOPHER VITOLANO, P.E.
ADDRESS:
LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING AND LANDSCAPE ARCHITECTURE, D.P.C.
21 PENN PLAZA 360 W. 31ST STREET, 8TH FL.
NEW YORK, NY, 10001
TELEPHONE NUMBER:
212.479.5400



DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OPERATIONS

SITE PLAN - SITE CONNECTION PROPOSAL
SCX - 315/12 DOB#

**STORM DESIGN CALCULATIONS
CONNECTION #1**

STORM FLOW CALCULATIONS WERE CALCULATED BASED ON NYC DEP "CRITERIA FOR DETERMINATION OF DETENTION FACILITY VOLUME"

SANITARY FLOW
ZONING: M1-1
AREA = 0.51 AC
 $Q_{SANITARY} = 10,000 \text{ GAL/AC/DAY} \times 1.00 \times \text{AREA}$
 $7.46 \times 86,400$
 $Q_{SANITARY} = 646,656 \text{ GAL/DAY} = 7.46 \times 86,400$
 $Q_{SANITARY} = 0.008 \text{ CFS}$
PEAK SANITARY FLOW MULTIPLIER = 2
 $Q_{SAN,PEAK} = 2 \times 0.008 \text{ CFS} = 0.02 \text{ CFS}$

ALLOWABLE STORM FLOW
 $Q_{ALLOWED} = C \times I \times A$
 $C = 0.44 \text{ BRONX PRE-1964}$
 $I = 4.00 \text{ IN/HR}$
 $A = 12,495 \text{ SF} (0.29 \text{ AC})$
 $Q_{ALLOWED} = C \times I \times A = 0.44 \times 4.00 \text{ IN/HR} \times 0.29 \text{ AC} = 0.51 \text{ CFS}$

DEVELOPED STORM FLOW
 $Q_{DEVELOPED} = C_{ROOF} \times I \times A$
 $I = 5.95 \text{ IN/HR}$
 $C_{ROOF} = 1.00$
 $Q_{DEVELOPED} = C_{ROOF} \times I \times A = 1.00 \times 5.95 \text{ IN/HR} \times 0.51 \text{ AC} = 3.03 \text{ CFS}$

RESTRICTED FLOW RATE
 $Q_{RESTRICTED} = \frac{Q_{ALLOWED}}{A \times C_{RW}} = \frac{0.51 \text{ CFS}}{0.51 \text{ AC} \times 1.00} = 1.00 \text{ CFS/ACRE}$

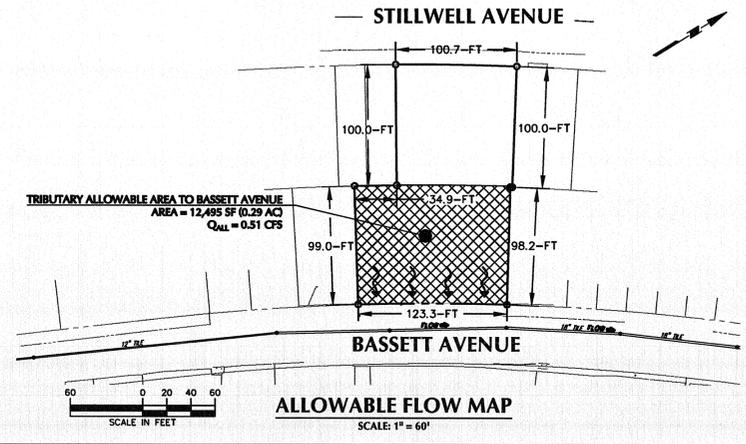
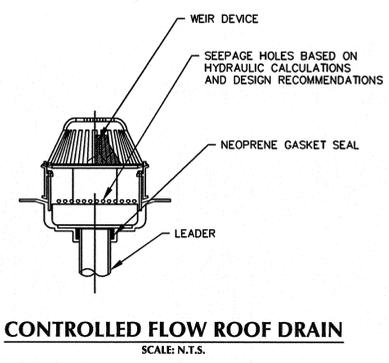
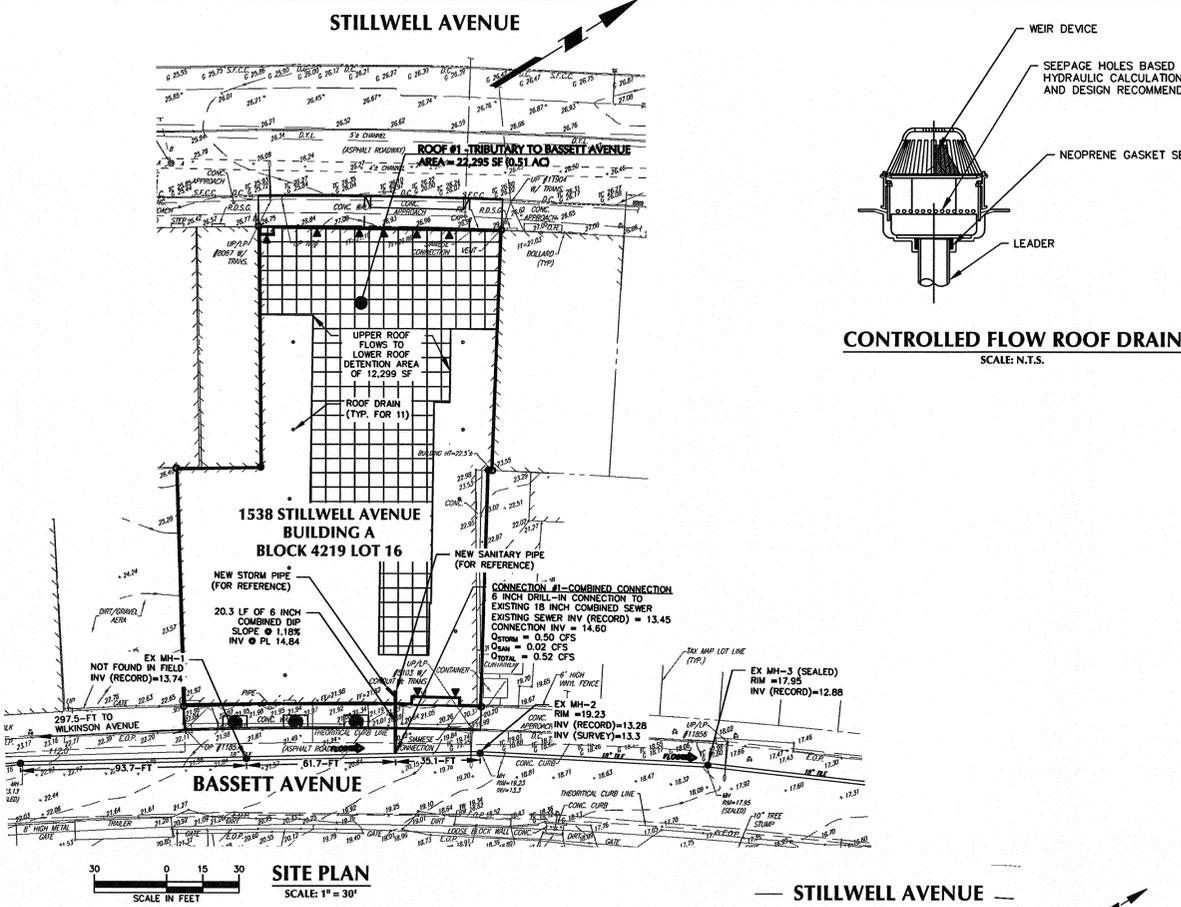
DURATION OF STORM (MINUTES)
 $t = \frac{12,600}{Q_{RESTRICTED}} - 15 = \frac{12,600}{1.00 \text{ CFS/ACRE}} - 15 = 41.13 \text{ MIN}$

VOLUME OF STORAGE REQUIRED
 $V = \left[\frac{8400}{(t+15)} - 40 \right] \times I \times A \times C_{RW}$
 $V = \left[\frac{8400}{(41.13 \text{ MIN} + 15)} - 40 \right] \times 41.13 \text{ MIN} \times 1.00 \text{ CFS/ACRE} \times 0.51 \text{ AC} \times 1.00 = 2,300.11 \text{ CF}$
 $V_{REQUIRED} = 2,300 \text{ CF} (17,207 \text{ GAL})$

VOLUME OF STORAGE PROVIDED
PROVIDE 2.25-INCH WATER DETENTION ACROSS 12,299 SF OF ROOF AREA
 $V_{PROVIDED} = 2.25 \text{ INCH} \times 12,299 \text{ SF} = 2,767 \text{ CF} (17,251 \text{ GAL})$
 $[V_{PROVIDED} = 2,767 \text{ CF}] \geq [V_{REQUIRED} = 2,300 \text{ CF}]$

FLOW FROM CONTROLLED FLOW ROOF DRAINS
NUMBER OF DRAINS: 11
PEAK FLOW PER DRAIN: 9.1 GPM PER INCH PER NYC DEP GUIDELINES
TOTAL OUTLET FLOW = $(11 \times 9.1 \text{ GPM/IN} \times 2.25 \text{ IN}) / 450 \text{ GPM} = 0.50 \text{ CFS}$
[OUTLET FLOW = 0.50 CFS] \leq [ALLOWABLE FLOW = 0.51 CFS]

COMBINED FLOW CALCULATION FOR CONNECTION #1
 $Q = Q_{RESTRICTED} + Q_{SAN,PEAK}$
 $Q = 0.50 \text{ CFS} + 0.02 \text{ CFS} = 0.52 \text{ CFS}$



PROJECT INFORMATION

BOROUGH:
BRONX
ADDRESS:
1538 STILLWELL AVENUE BRONX, NEW YORK 10461
BLOCKS:
4219
PRESENT LOTS:
16
TENTATIVE LOTS:

EXISTING ZONING:
M1-1
PROPOSED ZONING:

DEVELOPMENT TYPE:
STORAGE FACILITY
OWNERSHIP TYPE:
FEE SIMPLE

STORM FLOW DETENTION NOTES
(IF APPLICABLE):
ROOF FLOW TO PROPOSED CONNECTION 1 OF 3.03 CFS WILL BE RESTRICTED TO 0.50 CFS BY MEANS OF DETENTION FACILITIES AND CONTROLLED FLOW DEVICES.

SANITARY FLOW:
0.02 CFS
NAME OF CITY TREATMENT PLANT:
HUNTS POINT
DATUM:
BOROUGH OF BRONX HIGHWAY DATUM (2.608 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK NEW JERSEY, AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY)
OWNERS NAME AND ADDRESS:
MARK S. ROSEN
STILLWELL STORAGE LLC
22 MAPLE AVE.
MORRISTOWN, NJ 07960

APPLICANT INFORMATION

NAME:
CHRISTOPHER VITOLANO, P.E.
FIRM/ORGANIZATION:
LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING AND LANDSCAPE ARCHITECTURE, D.P.C.
ADDRESS:
21 PENN PLAZA, 360 WEST 31ST STREET
8TH FLOOR
NEW YORK, NEW YORK 10001
TELEPHONE:
(212) 479-5400

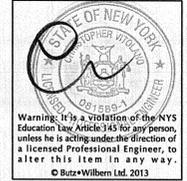
REVISIONS

NO.	DATE	DESCRIPTION
6TH SUBMISSION		
5TH SUBMISSION		
4TH SUBMISSION		
3RD SUBMISSION	14 JUNE 2013	
2ND SUBMISSION	18 JANUARY 2013	
1ST SUBMISSION	22 JUNE 2012	

**CERTIFICATION BOX
(DEP USE ONLY)**

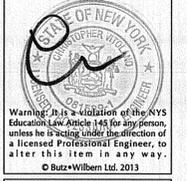
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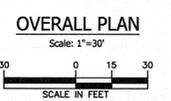
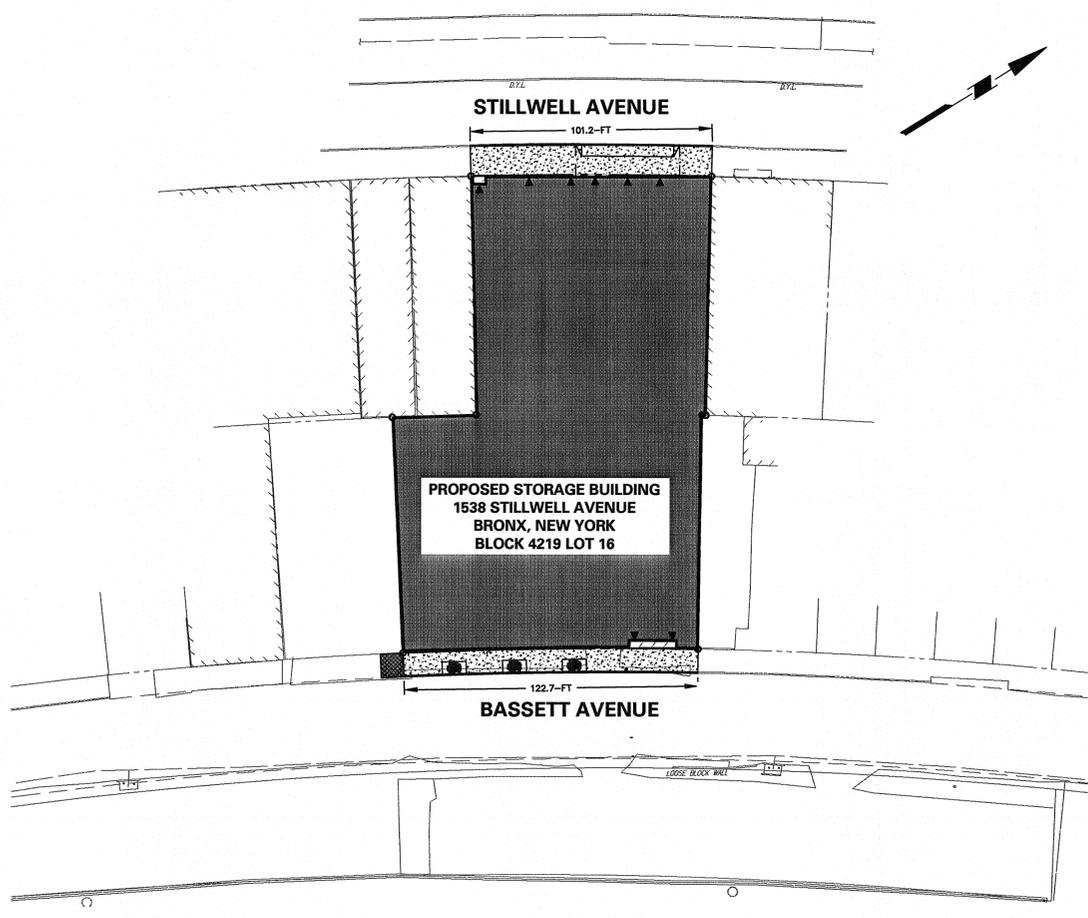
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Borough: BRONX	Sheet 1 of 5
DOB App. No.:	BPP NO.:
NEW YORK CITY DEPARTMENT OF TRANSPORTATION BUILDERS PAVEMENT PLAN PROJECT DATA	
BLOCKS 4219	LOTS 16
ZONING M1-1	ZONING MAP NO. 4A
ADDRESS 1538 STILLWELL AVENUE BRONX NY 10461	
OWNER STILLWELL STORAGE LLC 22 Maple Ave Morristown, NJ	
PLANS PREPARED BY: CHRISTOPHER VITOLANO, P.E. NEW YORK STATE PROFESSIONAL ENGINEER LIC. NO. 081589	
COMPANY LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING AND LANDSCAPE ARCHITECTURE, D.P.C. ADDRESS 21 PENN PLAZA, 360 W. 31ST STREET, 8TH FLOOR CITY/STATE/ZIP NEW YORK, NY 10001 PHONE NO. (212) 479-5400	
WAIVERS	
DOT REQUIREMENT WAIVED	AS PER / DATE
1.	
NOTES	
GENERAL REQUIREMENTS 1. ALL DESIGNS, MATERIALS, CONSTRUCTION METHODS AND WORKMANSHIP SHALL COMPLY WITH THE FOLLOWING PUBLICATIONS OF THE BUREAU OF HIGHWAYS: STANDARD SPECIFICATIONS, STANDARD DETAILS OF CONSTRUCTION, RULES OF THE BUREAU OF HIGHWAY OPERATIONS, GUIDELINES FOR THE DESIGN OF INFRASTRUCTURE COMPONENTS. 2. ALL NON STANDARD MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE SPECIFICALLY APPROVED IN WRITING BY THE DOT. 3. ANY WORK NOT COMPLYING WITH THE REQUIREMENTS OF THE DOT SHALL BE REMOVED AND REPLACED. 4. THIS PLAN SHALL BE VALID FOR THE ISSUANCE OF CONSTRUCTION PERMITS FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL OR SELF-CERTIFICATION, AS APPLICABLE. 5. ALL SIDEWALK AND STREET AREAS CONSTRUCTED UNDER THIS PLAN SHALL REMAIN OPEN TO THE PUBLIC AT ALL TIMES.	
ISSUANCE OF PERMITS 6. NO SIDEWALK, CURB OR ROADWAY WORK SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH HIGHWAY SUPERINTENDENT. APPLICATION SHALL BE MADE THREE DAYS BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL HAVE ALL REQUIRED INSURANCE COVERAGE ON FILE. 7. NO WORK ON DRAINAGE STRUCTURES SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH OFFICE OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. 8. ANY VAULT WORK AT THE SITE SHALL BE DONE AS PER THE APPLICABLE RULES OF THE DOT AND THE DEPT. OF BUILDINGS.	
CONSTRUCTION ACTIVITY 9. A CONSTRUCTION PLAN SHOWING MAINTENANCE AND PROTECTION OF TRAFFIC, INCLUDING PLACE OF SIDEWALK BRIDGES, BARRIERS AND SIGNAGE, SHALL BE SUBMITTED TO THE BOROUGH HIGHWAY OFFICE BEFORE CONSTRUCTION BEGINS. 10. NO SIDEWALK SHALL BE CLOSED WITHOUT A PERMIT. PEDESTRIAN AND TRAFFIC SAFETY SHALL BE PROTECTED AT ALL TIMES. ROADWAY CLOSINGS SHALL BE AS DIRECTED. 11. THE SITE SHALL BE MAINTAINED IN A CLEAN AND SAFE CONDITION.	
FINAL SIGN-OFF 12. PERMITS SHALL BE PRESENTED FROM ALL PUBLIC AGENCIES AND UTILITIES HAVING OWNERSHIP OF STRUCTURES RELOCATED OR REMOVED DURING CONSTRUCTION. 13. ALL PAVEMENT MARKINGS INCLUDING THERMOPLASTIC LANE DIVIDERS, REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN KIND TO THE BUREAU OF TRAFFIC STANDARDS. 14. ALL EXISTING CATCH BASINS ON SITE SHALL BE CLEANED AND MADE OPERABLE. 15. ALL DAMAGE CAUSED BY CONSTRUCTION ON THIS PROJECT OUTSIDE THE PROJECT LIMITS SHALL BE REPAIRED AS DIRECTED. 16. THE ROADWAY SHALL BE PAVED TO THE REQUIREMENTS OF THE DOT AND AS DIRECTED.	
DOT APPROVAL	
PROPOSED AND EXISTING WORK SHOWN HERE REVIEWED FOR COMPLIANCE WITH ALL APPLICABLE RULES AND REQUIREMENTS BY: _____ PLAN EXAMINER APPROVAL FOR ISSUANCE OF WORK PERMITS GRANTED BY: _____ DEPARTMENT OF TRANSPORTATION DATE: / /	
[B-SCAN STICKER]	
DATE: 08/01/2012	PROJECT No.: 170192401
DRAWING BY: GS	CHK BY: MLN
DWG No.:	BPP-001.00
SHEET No.:	1 of 5
CHRISTOPHER VITOLANO, PE PROFESSIONAL ENGINEER N.Y. LIC. No. 081589	

**BUILDERS PAVEMENT PLAN FOR:
 STILLWELL AVENUE SELF STORAGE
 1538 STILLWELL AVENUE BRONX, NY 10461**

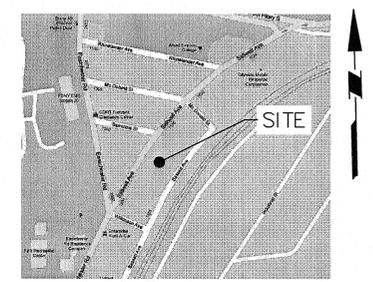


DPR NOTES

- CONTRACTOR SHALL CONTACT NYC PARKS IF ANY UNDERGROUND INFRASTRUCTURE (GAS/WATER/ELECTRIC ETC.) AFFECTS ANY PROPOSED/EXISTING TREES ON SITE. PROJECT MANAGER IS AWARE THAT ANY WORK DONE ON OR NEAR A CITY TREE REQUIRES A PERMIT FROM NYC PARKS. THIS INCLUDES UTILITY, SIDEWALK, PRUNING OR ANY OTHER WORK WITHIN THE DRIPLINE OF A TREE (WITHIN THE RIGHT OF WAY) DONE BY THE GENERAL CONTRACTOR OR ANY SUBCONTRACTORS. THE CONTRACTOR WILL FOLLOW NYC PARKS PLANTING AND FORESTRY SPECIFICATIONS. UTILITIES MAY NOT BE LABELED. IF UNKNOWN, THE PROJECT MANAGE MUST AMEND PLANS WITH NYC PARKS IN THE FUTURE.
- ALL PIT SIZES INDICATED ARE TO BE FULLY EXCAVATED TO THE DIMENSIONS LABELED AND REPLACED WITH NEW TOPSOIL TO NYC PARKS STANDARDS.

STREET TREE SUMMARY

TOTAL TREE COUNT	224 FT
TOTAL FRONTAGE	9
REQUIRED BY ZONING/NYC DOB:	9
EXISTING TREES TO REMAIN/PROTECT:	0
EXISTING TREES TO REMOVE WITH NYC PARKS DOCUMENTATION:	0
EXISTING TREES TO RELOCATE WITH NYC PARKS DOCUMENTATION:	0
PROPOSED TREES TO PLANT:	3
TREES TO PAY INTO TREE FUND:	6



AREA MAP
 NOT TO SCALE

INSPECTION/FINAL SIGN-OFF

- THE CONTRACTOR IS RESPONSIBLE TO PROCURE OR PROVIDE ALL ITEMS NECESSARY FOR FINAL NYCDOT/ANYCDOT SIGN-OFF, INCLUDING BUT NOT LIMITED TO:
 -NYCDOT INSPECTION AND SIGN-OFF
 -FINAL AS-BUILT SURVEY SIGNED AND SEALED BY A NYS PLS
 -FULL-TIME CONTROLLED INSPECTION AND CONCRETE CORE TESTS SIGNED AND SEALED BY A NYS P.E. OR R.A., ACCOMPANIED BY BPP-11 (ENGINEER'S INSPECTION AFFIDAVIT)

GENERAL NOTES

- BACKGROUND SHOWN PROVIDED BY CONTROL POINT ASSOCIATES, PER PLAN TITLED "BOUNDARY AND TOPOGRAPHIC SURVEY," DATED 3/8/2012.
- ELEVATIONS SHOWN ARE REFERENCED TO BOROUGH OF BRONX HIGHWAY DATUM, 2.808 FEET ABOVE NGVD 1929 DATUM.
- THE CONTRACTOR IS RESPONSIBLE FOR CREATING ALL REQUIRED SITE LOGISTICS PLANS, AND FOR COORDINATING SAID PLANS AND ALL REQUIRED PERMITS WITH THE NEW YORK CITY OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC).
- SIDEWALK REPLACEMENT TO CONSIST OF REMOVING EXISTING CONCRETE SIDEWALK AND CONSTRUCTING NEW 4-INCH AND 7-INCH THICK NYC DOT STANDARD CONCRETE SIDEWALK, AS NOTED (H-1045 TYPE I AND TYPE III).
- TRANSVERSE EXPANSION JOINTS 1/2 INCH WIDE SHALL BE PROVIDED AT INTERVALS OF MAXIMUM 20 FEET AND FILLED WITH PREFORMED BITUMINOUS CELLULAR JOINT FILLER. SCORE LINES SHALL BE EVERY 5 FEET ON CENTER.
- EXPANSION JOINT WITH JOINT FILLER TO BE PROVIDED AT INTERFACE OF NEW SIDEWALK AND ALL PROPOSED AND EXISTING SIDEWALK FEATURES (BUILDINGS, VAULT GRATES, MANHOLES, NYC STRUCTURES, ETC.) EXCEPT TRAFFIC SIGNS.
- CONTRACTOR TO OBTAIN NECESSARY DOT WORK PERMITS AND PERFORM ALL WORK IN ACCORDANCE WITH DOT REQUIREMENTS AND STANDARDS.
- ADJUST ALL SURFACE FEATURES TO MATCH EXISTING GRADE AS NECESSARY (EX. HYDRANTS, VALVE COVERS, VAULT LIDS, ETC.). CONTRACTOR TO COORDINATE THIS WORK WITH THE APPROPRIATE UTILITY OWNERS, AS REQUIRED.
- ALL STREET SIGNS SHALL BE TEMPORARILY REMOVED AND REPLACED IN KIND.
- IN ORDER TO COMPLY WITH ADA REQUIREMENTS, THE CONTRACTOR IS REQUIRED TO BREAK THE TRANSVERSE GRADE OF SIDEWALKS SUCH THAT THERE SHALL BE A MINIMUM OF FIVE (5) FEET WIDTH OF SIDEWALK WITH A TRANSVERSE SLOPE NOT EXCEEDING 2% AND THE REMAINING SIDEWALK SLOPE NOT EXCEEDING 5%, WHERE POSSIBLE.
- EXISTING ROAD STRIPING SHALL BE REPLACED IN KIND FOLLOWING RIGHT-OF-WAY WORK.

SUMMARY OF WORK

- MAINTAIN AND PROTECT ALL EXISTING UTILITIES.
- REMOVE EXISTING SIDEWALK AND CONCRETE CURB FRONTING THE SITE ON STILLWELL AND BASSETT AVENUE.
- INSTALL NEW CONCRETE SIDEWALK AND STEEL FACED CONCRETE CURB ALONG STILLWELL AND BASSETT AVENUE.
- CONSTRUCT NEW DROP CURBS AS NOTED, AND IN ACCORDANCE WITH APPROVED CURB CUT PLANS.

LIST OF DRAWINGS

- BPP COVER SHEET
- STILLWELL AVENUE PLAN & PROFILE
- BASSETT AVENUE NORTH SIDE PLAN & PROFILE
- BPP DETAILS
- BPP DETAILS

LIST OF STANDARD NYC DOT DRAWINGS

H-1045	CONCRETE SIDEWALK
H-1042A	STANDARD TRENCH OR HOLE RESTORATION
H-1010	STEEL FACED CURB: STEEL FACING TYPE D
H-1015	STEEL FACED DROP CURB DRIVEWAYS

NOTE: THE LATEST REVISIONS OF THE APPLICABLE REFERENCED STANDARDS THAT HAVE BEEN AUTHORIZED UP TO THE START OF ADVERTISING SHALL BE CONSIDERED AS PART OF THESE DOCUMENTS.

LIST OF ESTIMATED QUANTITIES

NEW CURB	224	LN. FT.
NEW SIDEWALK	2573	SQ. FT.
NEW ROADWAY	74.7	SQ. YDS.
NEW TREES	3	EACH
NEW CBS	0	EACH
NEW DIP	0	LN. FT.
NEW MANHOLES	0	EACH

Date	Description	No.
Revisions		

Warning: It is a violation of the NYS Education Law Article 145 for any person, unless he is acting under the direction of a licensed Professional Engineer, to alter this item in any way.

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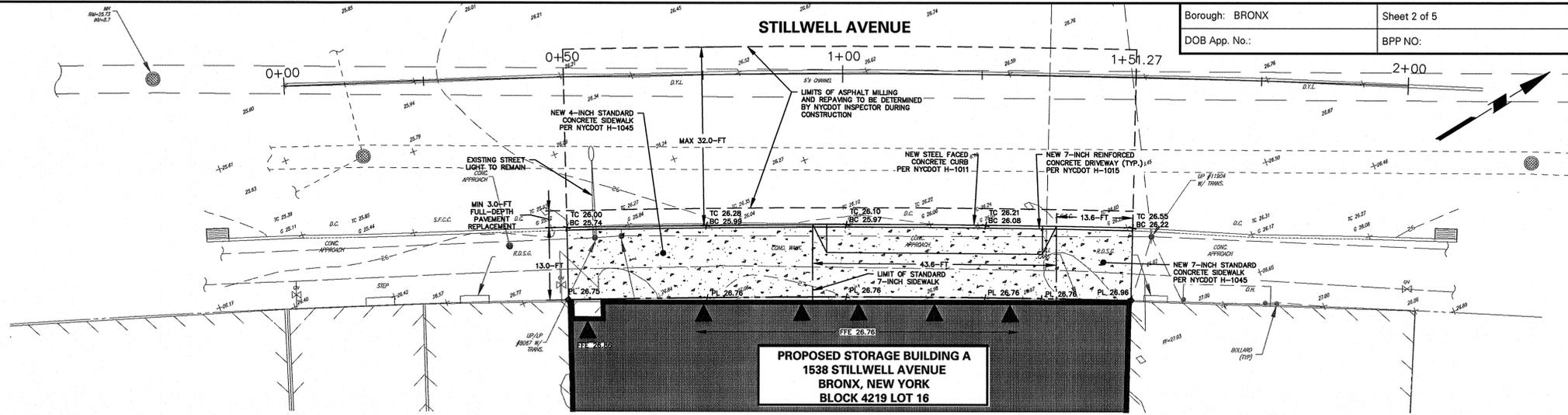
Project
**STILLWELL AVENUE
 SELF-STORAGE
 BLDG. A.**
 BRONX NEW YORK

Drawing Title
BPP COVER SHEET

CHRISTOPHER VITOLANO, PE
 PROFESSIONAL ENGINEER N.Y. LIC. No. 081589

DATE: 08/01/2012
 PROJECT No.: 170192401
 DRAWING BY: GS
 CHK BY: MLN
 DWG No.:
BPP-001.00
 SHEET No.:
 1 of 5

Stillwell Avenue Self Storage - Bldg. A
 Stillwell Self Storage LLC
 1538 Stillwell Avenue
 Bronx, NY
 NYC DOB NB#



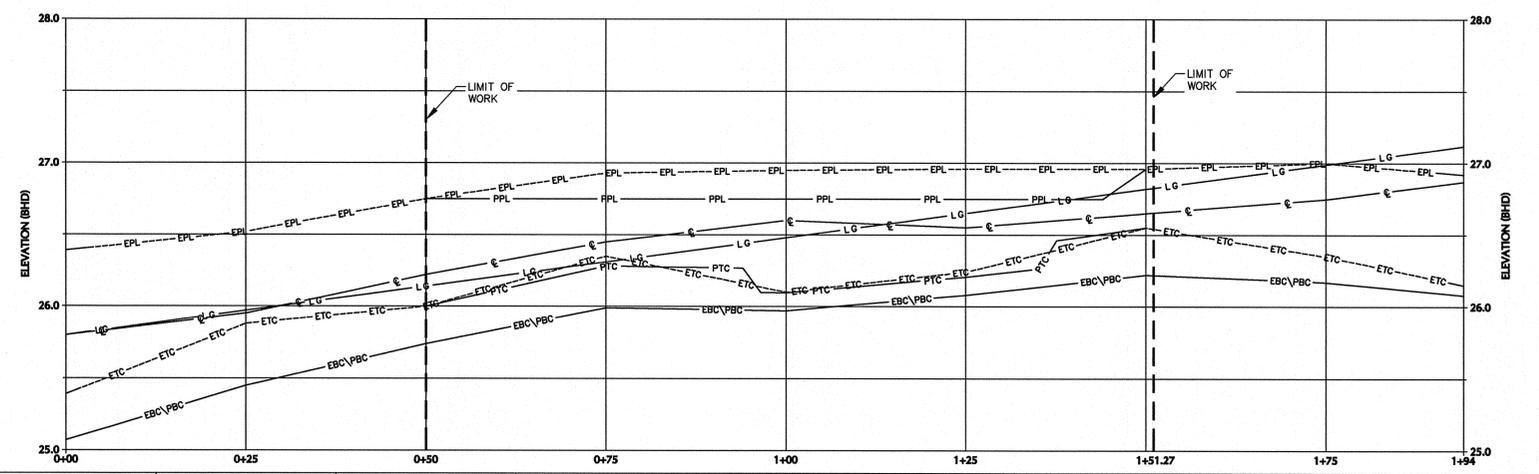
Borough: BRONX
 DOB App. No.:
 Sheet 2 of 5
 BPP NO.:

LEGEND: PLAN

- 123 EXISTING CONTOUR
- X 123.45 EXISTING SPOT ELEVATION
- X TC 123.45 EXIST. TOP OF CURB ELEVATION
- X G 122.85 EXIST. GUTTER ELEVATION
- X TW 123.45 EXIST. TOP OF WALL ELEVATION
- X BW 122.85 EXIST. BOTTOM OF WALL ELEVATION
- X FF=123.45 EXIST. FINISHED FLOOR ELEVATION
- X LG(25.9) LEGAL GRADE
- HYDRANT
- WV WATER VALVE
- GV GAS VALVE
- OH OVERHEAD WIRES
- UNCONFIRMED LOC. UNDERGROUND GAS LINE
- UNCONFIRMED LOC. UNDERGROUND ELEC. LINE
- UNCONFIRMED LOC. UNDERGROUND WATER LINE
- UTILITY POLE
- UTILITY POLE/LIGHT POLE
- BOLLARD
- E.O.P. EDGE OF PAVEMENT
- D.C. DEPRESSED CURB
- R.D.S.G. ROLL DOWN SECURITY GATE
- S.F.C.C. STEEL FACED CONC. CURB
- C.L.F. CHAIN LINK FENCE
- D.Y.L. DOUBLE YELLOW LINE
- O.H. OVERHANG
- LO' DENOTES OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE

LEGEND: PROFILE

- EXISTING CENTERLINE
- ETC/PTC EXISTING / PROPOSED TOP OF CURB
- EBC/PBC EXISTING / PROPOSED BOTTOM OF CURB
- EPL EXISTING PROPERTY LINE
- PPL PROPOSED PROPERTY LINE
- LG LEGAL GRADE



STATIONS	0+00	0+25	0+50	0+75	1+00	1+25	1+51.27	1+75	2+00
EX. CURB REVEAL (IN)	3.84	5.16	3.12	4.32	1.56	1.92	3.96	2.16	0.84
PR. CURB REVEAL (IN)	-	-	3.12	3.50	1.50	1.50	3.96	-	-
EX. SIDEWALK X-SLOPE*	7.69	4.92	5.77	4.46	6.54	5.54	3.15	5.00	5.62
PR. SIDEWALK X-SLOPE*	-	-	5.77	3.68	5.12	4.27	3.15	-	-
EX. ROAD X-SLOPE	2.74	1.87	1.80	1.72	2.36	1.76	2.17	2.96	-
PR. ROAD X-SLOPE	-	-	1.80	1.72	2.36	1.76	1.61	-	-
EX. CENTERLINE GRADE	25.80	25.95	26.22	26.45	26.60	26.55	26.65	26.75	26.87
LEGAL GRADE	25.8	26.0	26.1	26.3	26.5	26.6	26.8	27.0	27.1
EX. PROPERTY LINE	26.39	26.52	26.75	26.93	26.95	26.96	26.96	27.00	26.88
PR. PROPERTY LINE	-	-	26.75	26.76	26.76	26.76	26.96	-	-
EX. TOP OF CURB	25.39	25.88	26.00	26.35	26.10	26.24	26.55	26.35	26.15
PR. TOP OF CURB	-	-	26.00	26.28	26.10	26.21	26.55	-	-
EX. BOTTOM OF CURB	25.07	25.45	25.74	25.99	25.97	26.08	26.22	26.17	26.08
PR. BOTTOM OF CURB	-	-	25.74	25.99	25.97	26.08	26.22	-	-

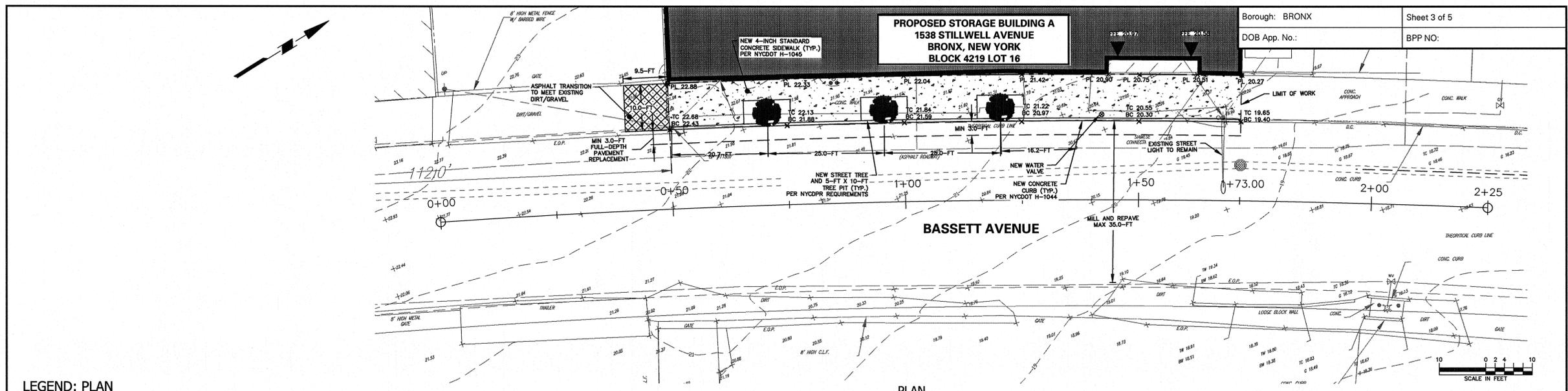
*AVERAGE CROSS-SLOPE VALUES PRESENTED.

PROFILE
 SCALE: 1" = 0.5' (V) 1" = 10' (H)

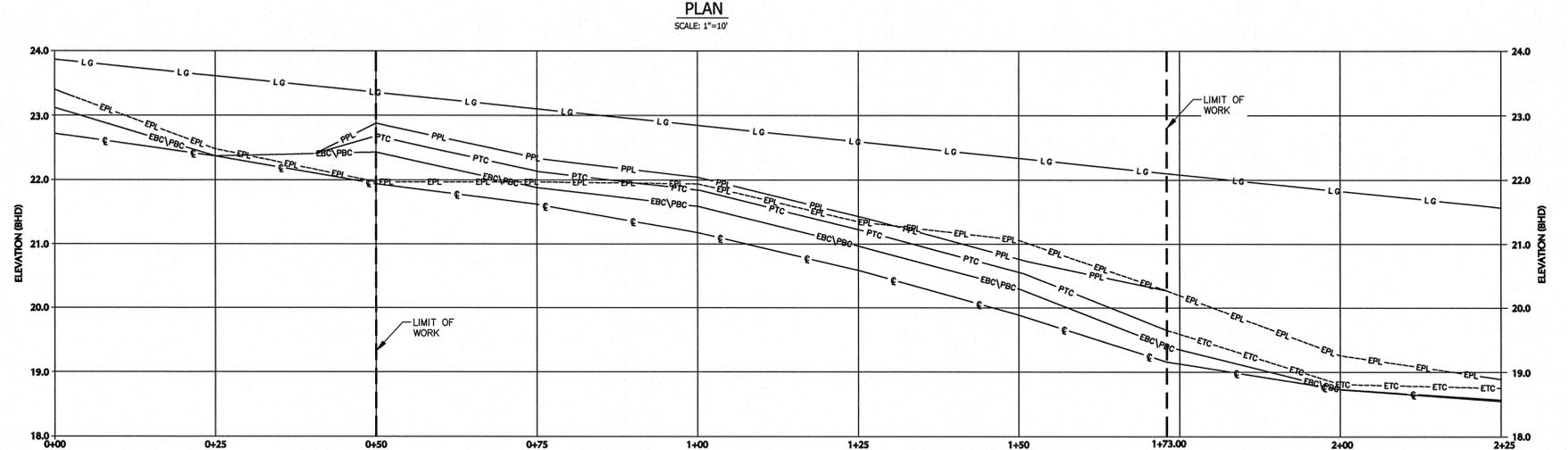
[B-SCAN STICKER]

	<p>Warning: It is a violation of the NYS Education Law Article 145 for any person, unless he is acting under the direction of a licensed Professional Engineer, to alter this item in any way.</p>	<p>LANGAN 21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, NY 10001 T: 212 476 4500 F: 212 476 4544 www.langan.com NEW JERSEY NEW YORK VIRGINIA CALIFORNIA PENNSYLVANIA CONNECTICUT FLORIDA MULTI-STATE: ARIZONA COLORADO DUBAI ISTANBUL Langan Engineers, Environmental, Surveying and Landscape Architects, D.P.C. Langan Engineering and Environmental Services, Inc. Langan International LLC Educational: www.langan.com</p>	<p>Project STILLWELL AVENUE SELF-STORAGE BLDG. A.</p>	<p>Drawing Title STILLWELL AVENUE PLAN & PROFILE</p>	<p>DATE: 08/01/2012 PROJECT No.: 170192401 DRAWING BY: GS CHK BY: MLN DWG No.: BPP-002.00 SHEET NO.: 2 of 5</p>						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Description</th> <th>No.</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;">Revisions</td> </tr> </tbody> </table>	Date	Description	No.	Revisions							
Date	Description	No.									
Revisions											

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SEE APPROVED NYCD0B BUILDERS PAVEMENT PLAN



- LEGEND: PLAN**
- 123 EXISTING CONTOUR
 - X 123.45 EXISTING SPOT ELEVATION
 - X TC 123.45 EXIST. TOP OF CURB ELEVATION
 - X G 122.85 EXIST. GUTTER ELEVATION
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 - O.M. OVERHANG
 - 1.0' DENOTES OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE



STATIONS	0+00	0+25	0+50	0+75	1+00	1+25	1+50	1+73.00	2+00	2+25
EX. CURB REVEAL (IN)	-	-	-	-	-	-	-	3.00	0.96	2.40
PR. CURB REVEAL (IN)	-	-	3.00	3.00	3.00	3.00	3.00	3.00	-	-
EX. SIDEWALK X-SLOPE*	2.50	1.00	-4.60	0.90	3.50	3.80	6.20	4.50	-	1.40
PR. SIDEWALK X-SLOPE*	-	-	2.00	2.00	2.00	2.00	2.00	2.00	-	-
EX. ROAD X-SLOPE	-1.54	-0.04	-1.88	-1.00	-1.58	-1.46	-1.58	-0.92	0.00	0.08
PR. ROAD X-SLOPE	-	-	-1.88	-1.00	-1.58	-1.46	-0.92	-	-	-
EX. CENTERLINE GRADE	22.72	22.37	21.94	21.62	21.18	20.59	19.89	19.16	18.73	18.57
LEGAL GRADE	23.9	23.6	23.4	22.8	22.3	22.6	22.3	21.8	21.8	21.6
EX. PROPERTY LINE	23.40	22.48	21.97	21.97	21.94	21.35	21.06	20.27	19.26	18.89
PR. PROPERTY LINE	-	-	22.88	22.33	22.04	21.42	20.75	20.27	-	-
EX. TOP OF CURB	-	-	-	-	-	-	-	19.65	18.81	18.75
PR. TOP OF CURB	-	-	22.68	22.13	21.84	21.22	20.55	19.65	-	-
EX. BOTTOM OF CURB	23.12	22.38	22.43	21.88	21.59	20.97	20.30	19.40	18.73	18.55
PR. BOTTOM OF CURB	-	-	22.43	21.88	21.59	20.97	20.30	19.40	-	-

*AVERAGE CROSS-SLOPE VALUES PRESENTED.

PROFILE
SCALE: 1" = 1' (V) 1" = 10' (H)

[B-SCAN STICKER]

Date	Description	No.
Revisions		

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LANGAN INTERNATIONAL LLC
CONSULTING ENGINEER AT LARGE

Project
**STILLWELL AVENUE
SELF-STORAGE
BLDG. A.**
BRONX NEW YORK

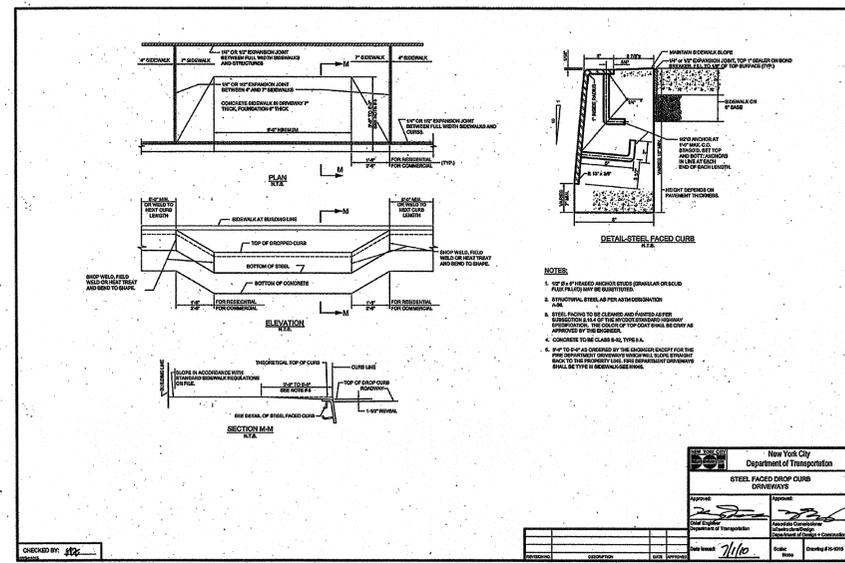
Drawing Title
**BASSETT AVENUE
NORTH SIDE
PLAN & PROFILE**

CHRISTOPHER VITOLANO, PE
PROFESSIONAL ENGINEER N.Y. LIC. No. 081589

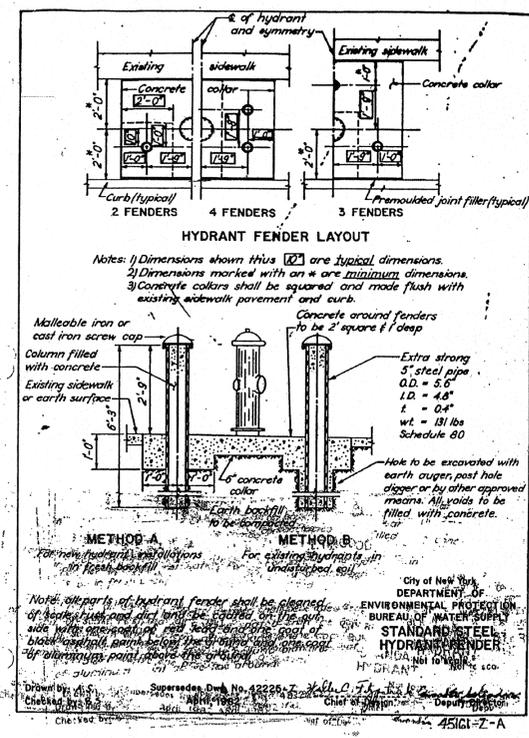
DATE: 08/01/2012
PROJECT No.: 170192401
DRAWING BY: GS
CHK BY: MLN
DWG No.:
BPP-003.00
SHEET NO.: 3 of 5

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Borough: BRONX	Sheet 5 of 5
DOB App. No.:	BPP NO.:



1 STEEL FACED DROP CURB DRIVEWAYS N.T.S.



3 HYDRANT FENDER LAYOUT N.T.S.

[B-SCAN STICKER]

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Stillwell Avenue Self Storage - Bldg. A
 Stillwell Self Storage LLC
 1538 Stillwell Avenue
 Bronx, NY
 NYC DOB NB#

BOW
BUTZ•WILBERN LTD
 Planning | Architecture
 Interiors | Property Visioning
 800 W. Broad St. Suite 363
 Falls Church, Virginia 22046
 703-356-6771 fax: 356-7010



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 12005

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AREA MAP

NOT TO SCALE

INSPECTION/FINAL SIGN-OFF

1. THE CONTRACTOR IS RESPONSIBLE TO PROCURE OR PROVIDE ALL ITEMS NECESSARY FOR FINAL NYCDOT/NYCDOT SIGN-OFF, INCLUDING BUT NOT LIMITED TO:

- NYCDOT INSPECTION AND SIGN-OFF
- FINAL AS-BUILT SURVEY SIGNED AND SEALED BY A NYS PLS
- FULL-TIME CONTROLLED INSPECTION AND CONCRETE CORE TESTS SIGNED AND SEALED BY A NYS P.E. OR R.A., ACCOMPANIED BY BPP-11 (ENGINEER'S INSPECTION AFFIDAVIT)

GENERAL NOTES

1. BACKGROUND SHOWN PROVIDED BY CONTROL POINT ASSOCIATES, PER PLAN TITLED 'BOUNDARY AND TOPOGRAPHIC SURVEY,' DATED 3/8/2012.
2. ELEVATIONS SHOWN ARE REFERENCED TO BOROUGH OF BRONX HIGHWAY DATUM, 2.608 FEET ABOVE NGVD 1929 DATUM.
3. THE CONTRACTOR IS RESPONSIBLE FOR CREATING ALL REQUIRED SITE LOGISTICS PLANS, AND FOR COORDINATING SAID PLANS AND ALL REQUIRED PERMITS WITH THE NEW YORK CITY OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC).
4. SIDEWALK REPLACEMENT TO CONSIST OF REMOVING EXISTING CONCRETE SIDEWALK AND CONSTRUCTING NEW 4-INCH AND 7-INCH THICK NYC DOT STANDARD CONCRETE SIDEWALK, AS NOTED (H-1045 TYPE I AND TYPE III).
5. TRANSVERSE EXPANSION JOINTS 1/2 INCH WIDE SHALL BE PROVIDED AT INTERVALS OF MAXIMUM 20 FEET AND FILLED WITH PREFORMED BITUMINOUS CELLULAR TYPE JOINT FILLER. SCORE LINES SHALL BE EVERY 5 FEET ON CENTER.
6. EXPANSION JOINT WITH JOINT FILLER TO BE PROVIDED AT INTERFACE OF NEW SIDEWALK AND ALL PROPOSED AND EXISTING SIDEWALK FEATURES (BUILDINGS, VAULT GRATES, MANHOLES, NYCT STRUCTURES, ETC.) EXCEPT TRAFFIC SIGNS.
7. CONTRACTOR TO OBTAIN NECESSARY DOT WORK PERMITS AND PERFORM ALL WORK IN ACCORDANCE WITH DOT REQUIREMENTS AND STANDARDS.
8. ADJUST ALL SURFACE FEATURES TO MATCH EXISTING GRADE AS NECESSARY (EX. HYDRANTS, VALVE COVERS, VAULT LIDS, ETC.). CONTRACTOR TO COORDINATE THIS WORK WITH THE APPROPRIATE UTILITY OWNER(S), AS REQUIRED.
9. ALL STREET SIGNS SHALL BE TEMPORARILY REMOVED AND REPLACED IN KIND.
10. IN ORDER TO COMPLY WITH ADA REQUIREMENTS, THE CONTRACTOR IS REQUIRED TO BREAK THE TRANSVERSE GRADE OF SIDEWALKS SUCH THAT THERE SHALL BE A MINIMUM OF FIVE (5) FEET WIDTH OF SIDEWALK WITH A TRANSVERSE SLOPE NOT EXCEEDING 2% AND THE REMAINING SIDEWALK SLOPE NOT EXCEEDING 5%, WHERE POSSIBLE.
11. EXISTING ROAD STRIPING SHALL BE REPLACED IN KIND FOLLOWING RIGHT-OF-WAY WORK.
12. THE CONTRACTOR IS TO STRIP AND RESURFACE ROADWAY AS NOTED ON THE PLAN OR TO THE EXTENTS NECESSARY AS DIRECTED BY NYCDOT OR NYCDOT. REPAIR OR REPLACE 6-INCH TO 9-INCH CONCRETE BASE (MATCH EXISTING, 6-INCH MIN.) AS REQUIRED BY INSPECTOR. RESURFACE WITH 3-INCH DEPTH ACWC, OR AS INDICATED. NYCDOT RESERVES THE RIGHT, UPON BPP INSPECTION, TO REQUIRE THE OWNER TO MILL AND RESURFACE ENTIRE STREET WIDTH.

SUMMARY OF WORK

1. MAINTAIN AND PROTECT ALL EXISTING UTILITIES.
2. REMOVE EXISTING SIDEWALK AND CONCRETE CURB FRONTING THE SITE ON BASSETT AVENUE.
3. INSTALL NEW CONCRETE SIDEWALK AND STEEL FACED CONCRETE CURB ALONG BASSETT AVENUE.
4. CONSTRUCT NEW DROP CURBS AS NOTED, AND IN ACCORDANCE WITH APPROVED CURB CUT PLANS.

LIST OF DRAWINGS

1. BPP COVER SHEET
2. BASSETT AVENUE SOUTH SIDE PLAN & PROFILE; STA. 0+00 TO 2+00
3. BASSETT AVENUE SOUTH SIDE PLAN & PROFILE; STA. 2+00 TO 4+00
4. BASSETT AVENUE SOUTH SIDE PLAN & PROFILE; STA. 4+00 TO 6+25
5. BPP DETAILS
6. BPP DETAILS

LIST OF STANDARD NYC DOT DRAWINGS

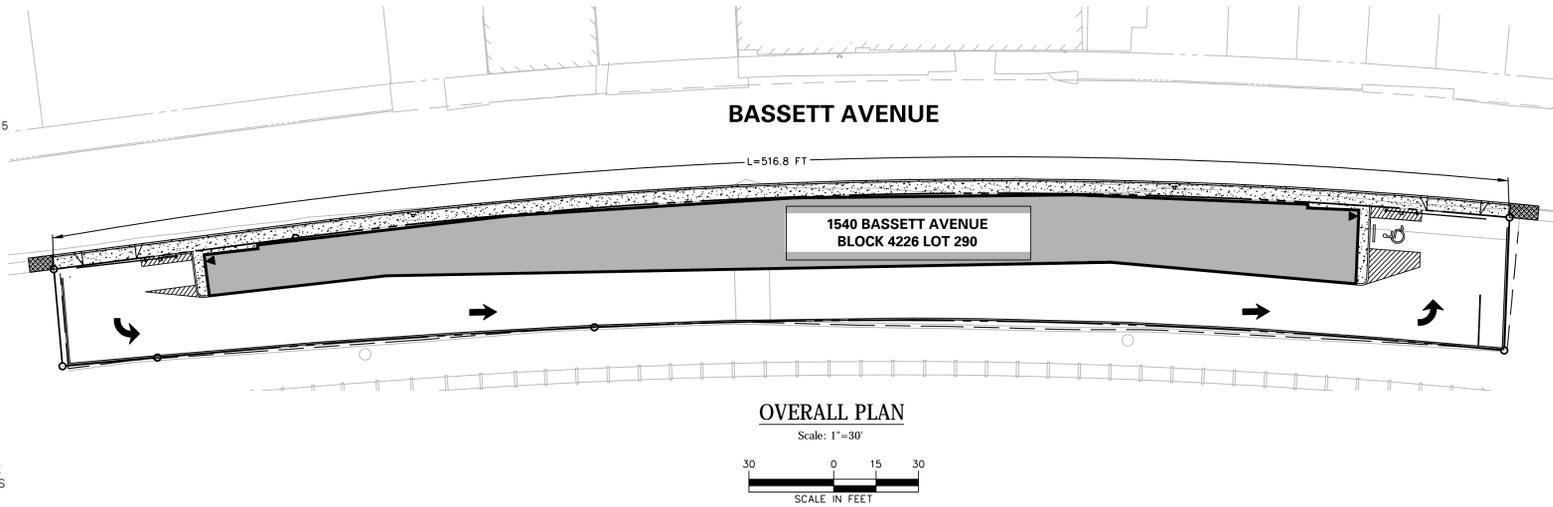
- H-1045 CONCRETE SIDEWALK
- H-1042A STANDARD TRENCH OR HOLE RESTORATION
- H-1010 STEEL FACED CURB: STEEL FACING TYPE D
- H-1015 STEEL FACED DROP CURB DRIVEWAYS

NOTE: THE LATEST REVISIONS OF THE APPLICABLE REFERENCED STANDARDS THAT HAVE BEEN AUTHORIZED UP TO THE START OF ADVERTISING SHALL BE CONSIDERED AS PART OF THESE DOCUMENTS.

LIST OF ESTIMATED QUANTITIES

NEW CURB	516.8	LIN. FT.
NEW SIDEWALK	2584	SQ. FT.
NEW ROADWAY	172.3	SQ. YDS.
NEW TREES	0	EACH
NEW CBS	0	EACH
NEW DIP	0	LIN. FT.
NEW MANHOLES	0	EACH

**BUILDERS PAVEMENT PLAN FOR:
STILLWELL AVENUE SELF STORAGE
1540 BASSETT AVENUE BRONX, NY 10461**



NYC DPR NOTES

1. CONTRACTOR SHALL CONTACT NYC PARKS IF ANY UNDERGROUND INFRASTRUCTURE (GAS/WATER/ELECTRIC ETC.) AFFECTS ANY PROPOSED/EXISTING TREES ON SITE. PROJECT MANAGER IS AWARE THAT ANY WORK DONE ON OR NEAR A CITY TREE REQUIRES A PERMIT FROM NYC PARKS. THIS INCLUDES UTILITY, SIDEWALK, PRUNING OR ANY OTHER WORK WITHIN THE DRIPLINE OF A TREE (WITHIN THE RIGHT OF WAY) DONE BY THE GENERAL CONTRACTOR OR ANY SUBCONTRACTORS. THE CONTRACTOR WILL FOLLOW NYC PARKS PLANTING AND FORESTRY SPECIFICATIONS. UTILITIES MAY NOT BE LABELED. IF UNKNOWN, THE PROJECT MANAGER MUST AMEND PLANS WITH NYC PARKS IN THE FUTURE.
2. PROTECT ALL EXISTING STREET TREES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH 'TEMPORARY WOODEN TREE GUARD' DETAIL BY NYCDOT.
3. ALL PIT SIZES INDICATED ARE TO BE FULLY EXCAVATED TO THE DIMENSIONS LABELED AND REPLACED WITH NEW TOPSOIL TO NYC PARKS STANDARDS.
4. STREET TREE SITE PLAN REF # XXXXX

STREET TREE SUMMARY

TOTAL TREE COUNT	
TOTAL FRONTAGE:	516.8 FT
REQUIRED BY ZONING/NYC DOB:	21
EXISTING TREES TO REMAIN/PROTECT:	0
EXISTING TREES TO REMOVE WITH NYC PARKS DOCUMENTATION:	0
EXISTING TREES TO RELOCATE WITH NYC PARKS DOCUMENTATION:	0
PROPOSED TREES TO PLANT:	0
TREES TO PAY INTO TREE FUND:	21

Borough: BRONX Sheet 1 of 6

DOB NB No.: 220333182

DOB BPP No.:

NEW YORK CITY
DEPARTMENT OF TRANSPORTATION
BUILDERS PAVEMENT PLAN

PROJECT DATA

BLOCKS 4226 LOTS 290
ZONING M1-1 ZONING MAP NO. 4A
ADDRESS 1540 BASSETT AVENUE BRONX NY 10461
OWNER MARC S. ROSEN
STILLWELL STORAGE LLC
22 MAPLE AVE
MORRISTOWN, NJ 07960

PLANS PREPARED BY:
CHRISTOPHER VITOLANO, P.E.
NEW YORK STATE PROFESSIONAL ENGINEER LIC. NO. 081589

COMPANY LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING AND LANDSCAPE ARCHITECTURE, D.P.C.
ADDRESS 21 PENN PLAZA, 360 W. 31ST STREET, 8TH FLOOR
CITY/STATE/ZIP NEW YORK, NY 10001
PHONE NO. (212) 479-5400

WAIVERS

DOT REQUIREMENT WAIVED AS PER / DATE
1.

NOTES

GENERAL REQUIREMENTS

1. ALL DESIGNS, MATERIALS, CONSTRUCTION METHODS AND WORKMANSHIP SHALL COMPLY WITH THE FOLLOWING PUBLICATIONS OF THE BUREAU OF HIGHWAYS: STANDARD SPECIFICATIONS, STANDARD DETAILS OF CONSTRUCTION; RULES OF THE BUREAU OF HIGHWAY OPERATIONS; GUIDELINES FOR THE DESIGN OF INFRASTRUCTURE COMPONENTS.
2. ALL NON STANDARD MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE SPECIFICALLY APPROVED IN WRITING BY THE DOT.
3. ANY WORK NOT COMPLYING WITH THE REQUIREMENTS OF THE DOT SHALL BE REMOVED AND REPLACED.
4. THIS PLAN SHALL BE VALID FOR THE ISSUANCE OF CONSTRUCTION PERMITS FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL OR SELF-CERTIFICATION, AS APPLICABLE.
5. ALL SIDEWALK AND STREET AREAS CONSTRUCTED UNDER THIS PLAN SHALL REMAIN OPEN TO THE PUBLIC AT ALL TIMES.

ISSUANCE OF PERMITS

6. NO SIDEWALK, CURB OR ROADWAY WORK SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH HIGHWAY SUPERINTENDENT. APPLICATION SHALL BE MADE THREE DAYS BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL HAVE ALL REQUIRED INSURANCE COVERAGE ON FILE.
7. NO WORK ON DRAINAGE STRUCTURES SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH OFFICE OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
8. ANY VAULT WORK AT THE SITE SHALL BE DONE AS PER THE APPLICABLE RULES OF THE DOT AND THE DEPT. OF BUILDINGS.

CONSTRUCTION ACTIVITY

9. A CONSTRUCTION PLAN SHOWING MAINTENANCE AND PROTECTION OF TRAFFIC, INCLUDING PLACEMENT OF SIDEWALK BRIDGES, BARRIERS AND SIGNAGE, SHALL BE SUBMITTED TO THE BOROUGH HIGHWAY OFFICE BEFORE CONSTRUCTION BEGINS.
10. NO SIDEWALK SHALL BE CLOSED WITHOUT A PERMIT. PEDESTRIAN AND TRAFFIC SAFETY SHALL BE PROTECTED AT ALL TIMES. ROADWAY CLOSINGS SHALL BE AS DIRECTED.
11. THE SITE SHALL BE MAINTAINED IN A CLEAN AND SAFE CONDITION.

FINAL SIGN-OFF

12. PERMITS SHALL BE PRESENTED FROM ALL PUBLIC AGENCIES AND UTILITIES HAVING OWNERSHIP OF STRUCTURES RELOCATED OR REMOVED DURING CONSTRUCTION.
13. ALL PAVEMENT MARKINGS INCLUDING THERMOPLASTIC LANE DIVIDERS, REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN KIND TO THE BUREAU OF TRAFFIC STANDARDS.
14. ALL EXISTING CATCH BASINS ON SITE SHALL BE CLEANED AND MADE OPERABLE.
15. ALL DAMAGE CAUSED BY CONSTRUCTION ON THIS PROJECT OUTSIDE THE PROJECT LIMITS SHALL BE REPAIRED AS DIRECTED.
16. THE ROADWAY SHALL BE PAVED TO THE REQUIREMENTS OF THE DOT AND AS DIRECTED.

DOT APPROVAL

PROPOSED AND EXISTING WORK SHOWN HERE REVIEWED FOR COMPLIANCE WITH ALL APPLICABLE RULES AND REQUIREMENTS BY:

PLAN EXAMINER

APPROVAL FOR ISSUANCE OF WORK PERMITS GRANTED BY:

DEPARTMENT OF TRANSPORTATION

DATE

[B-SCAN STICKER]

LIST OF ESTIMATED QUANTITIES

NEW CURB	516.8	LIN. FT.
NEW SIDEWALK	2584	SQ. FT.
NEW ROADWAY	172.3	SQ. YDS.
NEW TREES	0	EACH
NEW CBS	0	EACH
NEW DIP	0	LIN. FT.
NEW MANHOLES	0	EACH

Date	Description	No.
Revisions		

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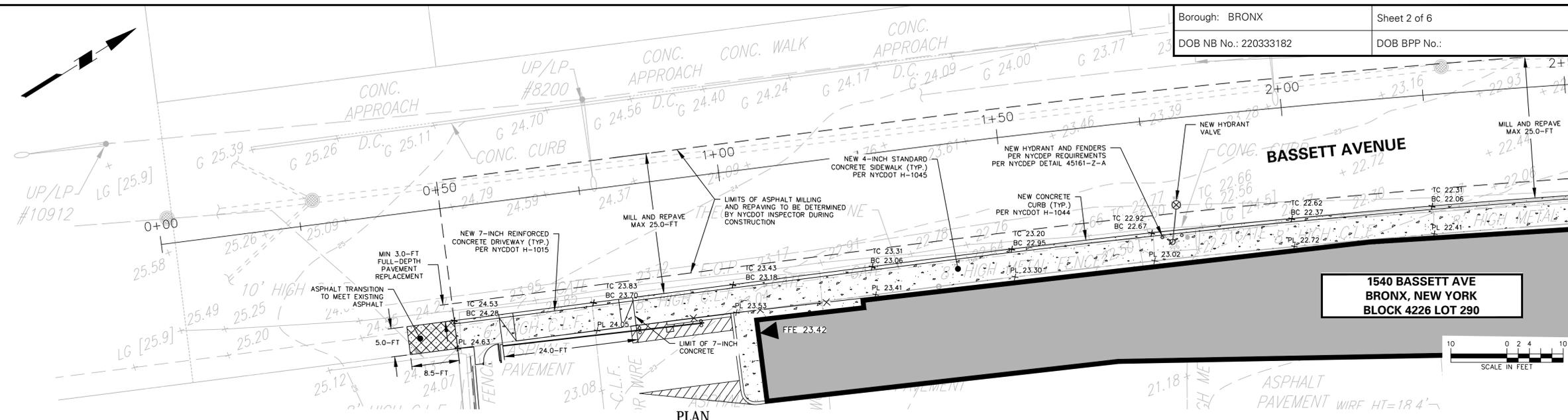
NEW JERSEY NEW YORK VIRGINIA CALIFORNIA
PENNSYLVANIA CONNECTICUT FLORIDA
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Langan Engineering, Environment, Surveying and Landscape Architecture, D.P.C.
Langan Engineering and Environmental Services, Inc.
Langan International LLC
Collectively known as Langan

Project
**STILLWELL AVENUE
SELF-STORAGE
BLDG B.**
BRONX NEW YORK

Drawing Title
BPP COVER SHEET

DATE: 01/23/2014
PROJECT No.: 170192401
DRAWING BY: DL
CHK BY: MLN
DWG No.:
BPP-001.00
SHEET NO.: 1 of 6
CHRISTOPHER VITOLANO, PE
PROFESSIONAL ENGINEER N.Y. LIC. No. 081589



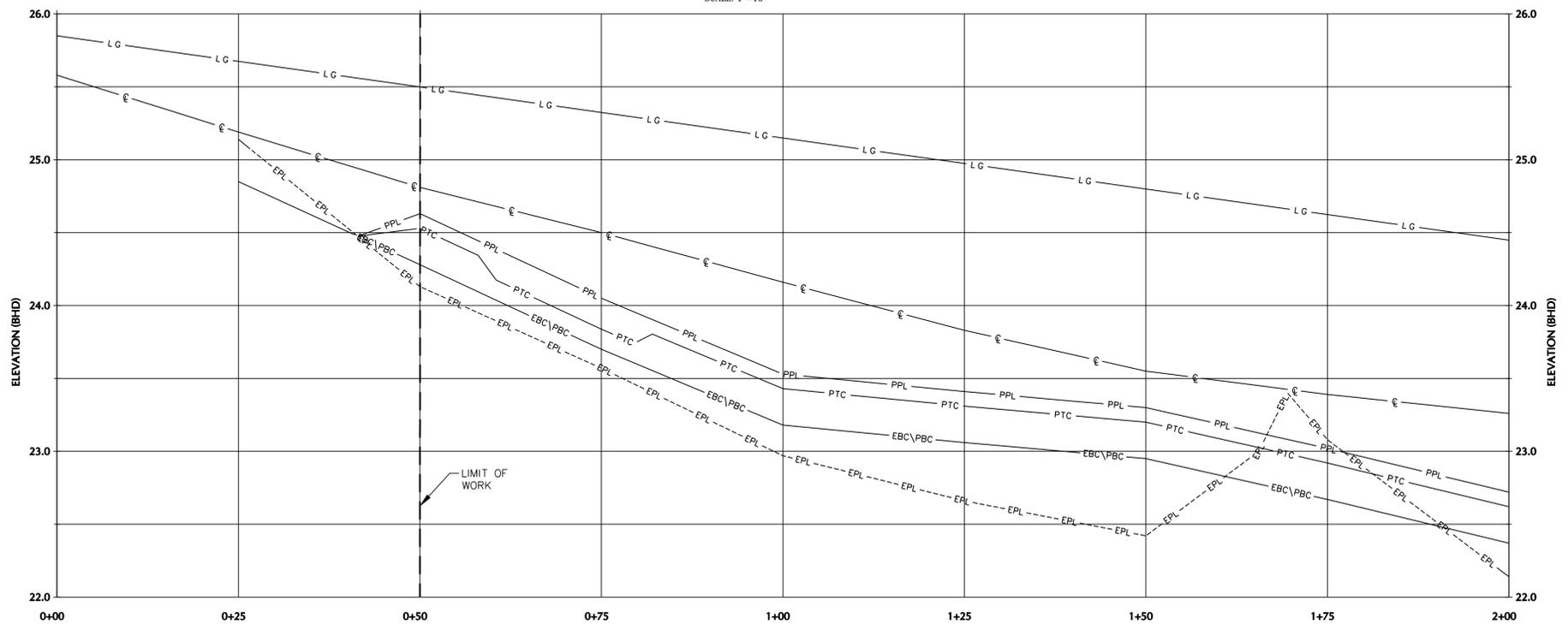
**1540 BASSETT AVE
 BRONX, NEW YORK
 BLOCK 4226 LOT 290**



PLAN
 SCALE: 1"=10'

LEGEND: PROFILE

- 123 — EXISTING CONTOUR
- x 123.45 EXISTING SPOT ELEVATION
- x TC 123.45 EXIST. TOP OF CURB ELEVATION
- x G 122.95 EXIST. GUTTER ELEVATION
- x TW 123.45 EXIST. TOP OF WALL ELEVATION
- x BW 122.95 EXIST. BOTTOM OF WALL ELEVATION
- x FF=123.45 EXIST. FINISHED FLOOR ELEVATION
- x LG[25.9] LEGAL GRADE
- HYDRANT
- WATER VALVE
- GAS VALVE
- OH — OVERHEAD WIRES
- G — UNCONFIRMED LOC. UNDERGROUND GAS LINE
- E — UNCONFIRMED LOC. UNDERGROUND ELEC. LINE
- W — UNCONFIRMED LOC. UNDERGROUND WATER LINE
- UTILITY POLE
- UTILITY POLE/LIGHT POLE
- BOLLARD
- E.O.P. EDGE OF PAVEMENT
- D.C. DEPRESSED CURB
- R.D.S.G. ROLL DOWN SECURITY GATE
- S.F.C.C. STEEL FACED CONC. CURB
- C.L.F. CHAIN LINK FENCE
- D.Y.L. DOUBLE YELLOW LINE
- O.H. OVERHANG
- 1'0" DENOTES OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE



LEGEND: PROFILE

- C — EXISTING CENTERLINE
- ETC/PTC — EXISTING / PROPOSED TOP OF CURB
- EBC/PBC — EXISTING / PROPOSED BOTTOM OF CURB
- EPL — EXISTING PROPERTY LINE
- PPL — PROPOSED PROPERTY LINE
- LG — LEGAL GRADE

STATIONS	0+00	0+25	0+50	0+75	1+00	1+25	1+50	1+75	2+00
EX. CURB REVEAL (IN)	-	-	-	-	-	-	-	1.08	-
PR. CURB REVEAL (IN)	-	-	3.00	1.56	3.00	3.00	3.00	3.00	3.00
EX. SIDEWALK X-SLOPE*	-	-	-	-	-	-	-	3.20	-
PR. SIDEWALK X-SLOPE*	-	-	2.00	4.40	2.00	2.00	2.00	3.20	2.00
EX. ROAD X-SLOPE	-	-	2.43	3.71	4.49	3.53	2.75	3.30	4.08
PR. ROAD X-SLOPE	-	-	2.43	3.71	4.49	3.53	2.75	3.30	4.08
EX. CENTERLINE GRADE	25.58	25.19	24.81	24.51	24.16	23.83	23.55	23.39	23.26
LEGAL GRADE	25.9	25.7	25.3	25.1	25.0	24.6	24.6	24.6	24.4
EX. PROPERTY LINE	-	25.14	24.13	23.57	22.97	22.66	22.42	23.08	22.14
PR. PROPERTY LINE	-	-	24.63	24.05	23.53	23.41	23.30	23.02	22.72
EX. TOP OF CURB	-	-	-	-	-	-	-	22.76	-
PR. TOP OF CURB	-	-	24.53	23.83	23.43	23.31	23.20	22.92	22.62
EX. BOTTOM OF CURB	-	24.85	24.28	23.70	23.18	23.06	22.95	22.67	22.37
PR. BOTTOM OF CURB	-	-	24.28	23.70	23.18	23.06	22.95	22.67	22.37

*AVERAGE CROSS-SLOPE VALUES PRESENTED.

PROFILE
 SCALE: 1" = 0.5' (V) 1"=10' (H)

[B-SCAN STICKER]

Date	Description	No.
Revisions		

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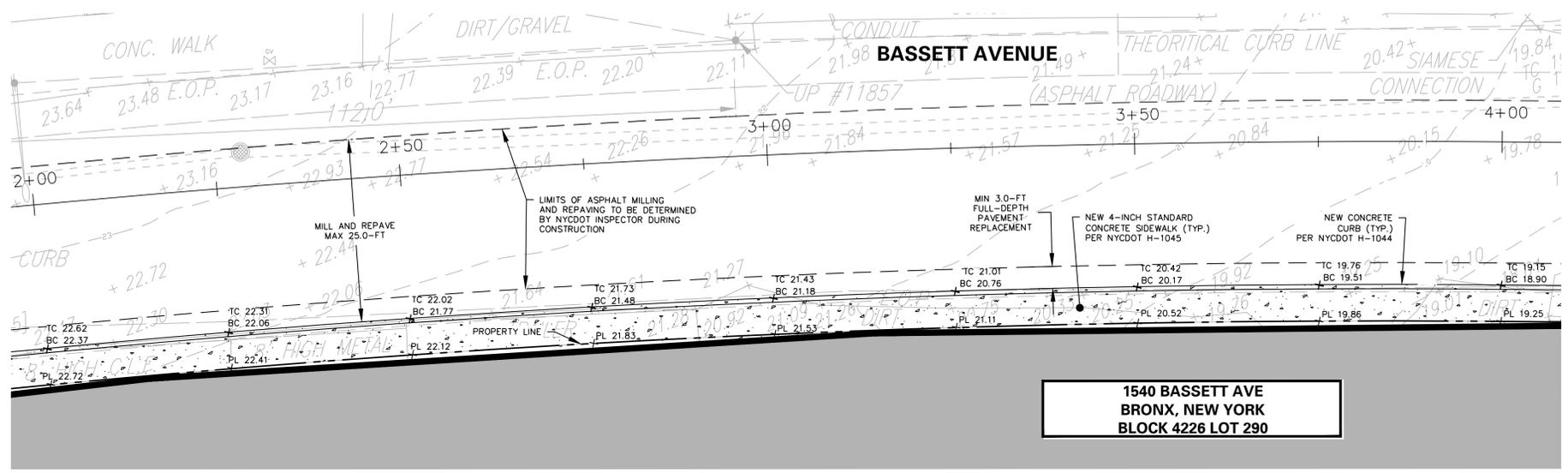
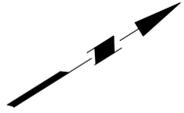
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Project
**STILLWELL AVENUE
 SELF-STORAGE
 BLDG. B.**
 BRONX

Drawing Title
**BASSETT AVENUE
 SOUTH SIDE
 PLAN & PROFILE;
 STA 0+00 TO 2+00**
 NEW YORK

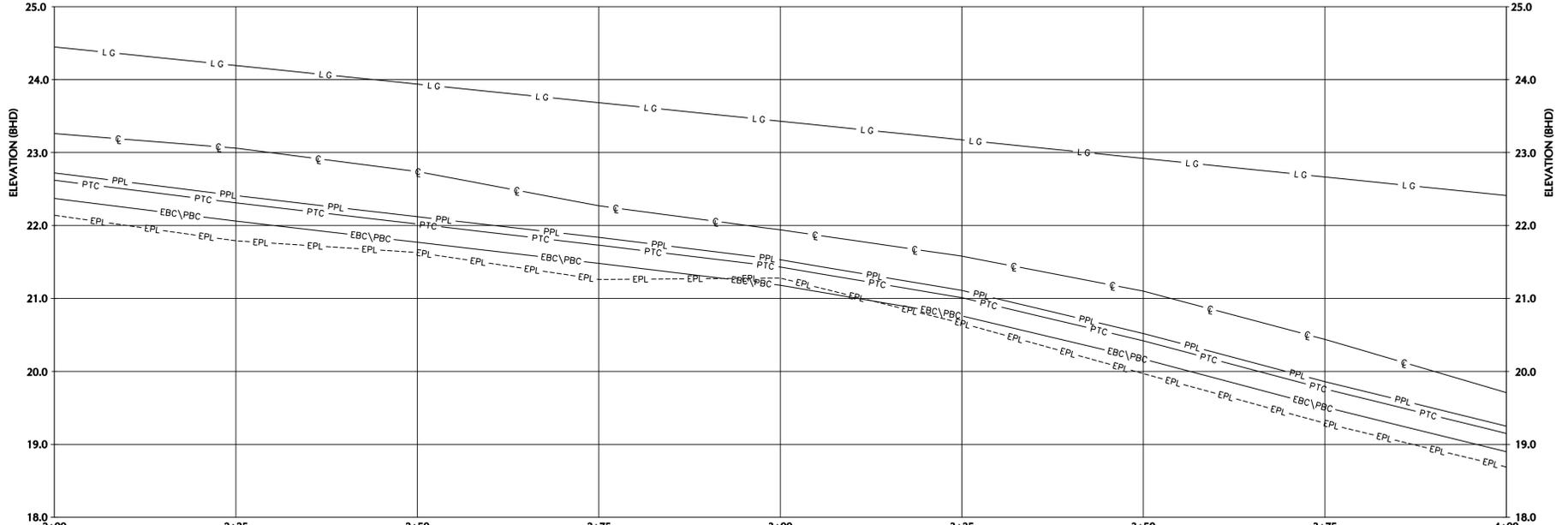
CHRISTOPHER VITOLANO, PE
 PROFESSIONAL ENGINEER N.Y. LIC. No. 081589

DATE: 01/23/2014
 PROJECT No.: 170192401
 DRAWING BY: DL
 CHK BY: MLN
 DWG No.:
BPP-002.00
 SHEET NO.: 2 of 6



**1540 BASSETT AVE
 BRONX, NEW YORK
 BLOCK 4226 LOT 290**

PLAN
 SCALE: 1"=10'



- LEGEND: PROFILE**
- 123 — EXISTING CONTOUR
 - x 123.45 EXISTING SPOT ELEVATION
 - x TC 123.45 EXIST. TOP OF CURB ELEVATION
 - x G 122.95 EXIST. GUTTER ELEVATION
 - x TW 123.45 EXIST. TOP OF WALL ELEVATION
 - x BW 122.95 EXIST. BOTTOM OF WALL ELEVATION
 - x FF=123.45 EXIST. FINISHED FLOOR ELEVATION
 - x LG[25.9] LEGAL GRADE
 - HYDRANT
 - WV WATER VALVE
 - OV OVERHEAD WIRES
 - OH UNCONFIRMED LOC. UNDERGROUND GAS LINE
 - E UNCONFIRMED LOC. UNDERGROUND ELEC. LINE
 - W UNCONFIRMED LOC. UNDERGROUND WATER LINE
 - UTILITY POLE
 - UTILITY POLE/LIGHT POLE
 - BOLLARD
 - E.O.P. EDGE OF PAVEMENT
 - D.C. DEPRESSED CURB
 - R.D.S.G. ROLL DOWN SECURITY GATE
 - S.F.C.C. STEEL FACED CONC. CURB
 - CL.F. CHAIN LINK FENCE
 - D.Y.L. DOUBLE YELLOW LINE
 - O.H. OVERHANG
 - 1.0' DENOTES OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE

STATIONS	2+00	2+25	2+50	2+75	3+00	3+25	3+50	3+75	4+00
EX. CURB REVEAL (IN)	-	-	-	-	-	-	-	-	-
PR. CURB REVEAL (IN)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
EX. SIDEWALK X-SLOPE*	-	-	-	-	-	-	-	-	-
PR. SIDEWALK X-SLOPE*	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
EX. ROAD X-SLOPE	4.08	4.58	4.45	3.62	3.48	3.76	4.26	4.26	3.71
PR. ROAD X-SLOPE	4.08	4.58	4.45	3.62	3.48	3.76	4.26	4.26	3.71
EX. CENTERLINE GRADE	23.26	23.06	22.74	22.27	21.94	21.58	21.10	20.44	19.71
LEGAL GRADE	24.4	24.2	23.9	23.7	23.4	23.2	22.9	22.4	22.4
EX. PROPERTY LINE	22.14	21.79	21.63	21.26	21.28	20.66	19.97	19.29	18.69
PR. PROPERTY LINE	22.72	22.41	22.12	21.83	21.53	21.11	20.52	19.86	19.25
EX. TOP OF CURB	-	-	-	-	-	-	-	-	-
PR. TOP OF CURB	22.62	22.31	22.02	21.73	21.43	21.01	20.42	19.76	19.15
EX. BOTTOM OF CURB	22.37	22.06	21.77	21.48	21.18	20.76	20.17	19.51	18.90
PR. BOTTOM OF CURB	22.37	22.06	21.77	21.48	21.18	20.76	20.17	19.51	18.90

- LEGEND: PROFILE**
- LG — EXISTING CENTERLINE
 - ETC/PTC — EXISTING / PROPOSED TOP OF CURB
 - EBC/PBC — EXISTING / PROPOSED BOTTOM OF CURB
 - EPL — EXISTING PROPERTY LINE
 - PPL — PROPOSED PROPERTY LINE
 - LG — LEGAL GRADE

*AVERAGE CROSS-SLOPE VALUES PRESENTED.

PROFILE
 SCALE: 1" = 1' (V) 1" = 10' (H)

[B-SCAN STICKER]

Date	Description	No.
Revisions		

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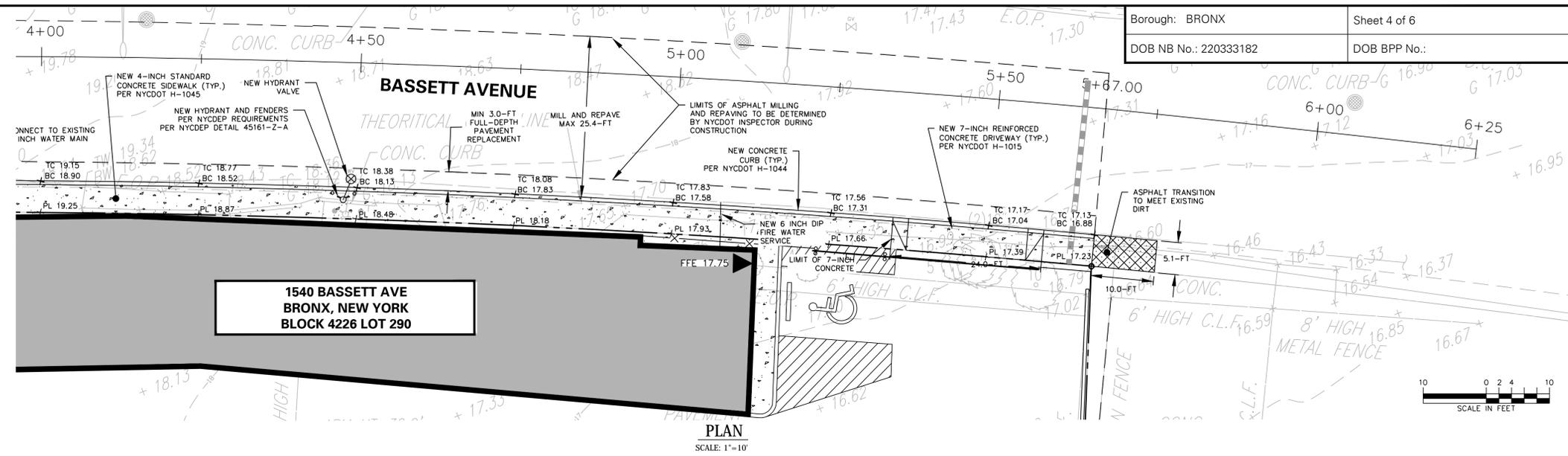
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Project
**STILLWELL AVENUE
 SELF-STORAGE
 BLDG. B.**
 BRONX NEW YORK

Drawing Title
**BASSETT AVENUE
 SOUTH SIDE
 PLAN & PROFILE;
 STA 2+00 TO 4+00**

CHRISTOPHER VITOLANO, PE
 PROFESSIONAL ENGINEER N.Y. LIC. No. 081589

DATE: 01/23/2014
 PROJECT No.: 170192401
 DRAWING BY: DL
 CHK BY: MLN
 DWG No.:
BPP-003.00
 SHEET No.: 3 of 6

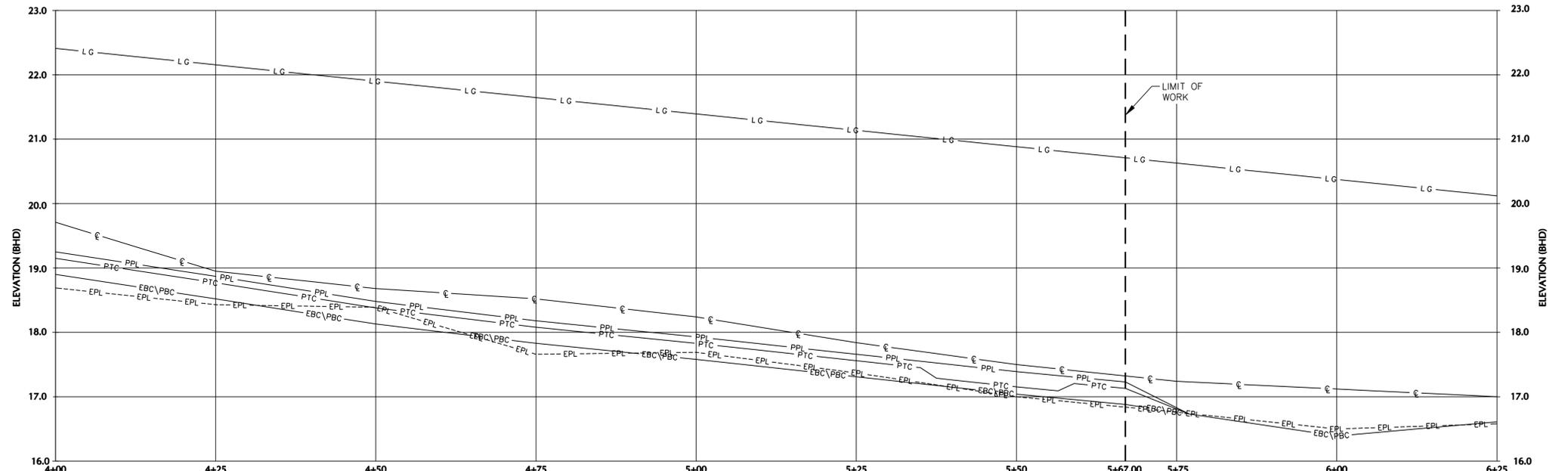


1540 BASSETT AVE
 BRONX, NEW YORK
 BLOCK 4226 LOT 290

PLAN
 SCALE: 1"=10'

LEGEND: PROFILE

- 123 — EXISTING CONTOUR
- x 123.45 EXISTING SPOT ELEVATION
- x TC 123.45 EXIST. TOP OF CURB ELEVATION
- x G 122.95 EXIST. GUTTER ELEVATION
- x TW 123.45 EXIST. TOP OF WALL ELEVATION
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- O.H. OVERHANG
- 1.0' DENOTES OFFSET OF STRUCTURE AT GROUND LEVEL RELATIVE TO PROPERTY LINE



STATIONS	4+00	4+25	4+50	4+75	5+00	5+25	5+50	5+67.00	5+75	6+00	6+25
EX. CURB REVEAL (IN)	-	-	2.88	-	-	-	-	-	-	-	-
PR. CURB REVEAL (IN)	3.00	3.00	3.00	3.00	3.00	3.00	1.56	3.00	-	-	-
EX. SIDEWALK X-SLOPE*	-	-	0.20	-	-	-	-	-	-	-	-
PR. SIDEWALK X-SLOPE*	2.00	2.00	2.00	2.00	2.00	2.00	4.40	2.00	-	-	-
EX. ROAD X-SLOPE	3.71	1.97	2.52	3.16	3.02	2.43	2.11	2.02	-	-	-
PR. ROAD X-SLOPE	3.71	1.97	2.52	3.16	3.02	2.43	2.11	2.02	-	-	-
EX. CENTERLINE GRADE	19.71	18.95	18.68	18.52	18.24	17.84	17.50	17.32	17.24	17.12	17.00
LEGAL GRADE	22.4	22.2	21.9	21.6	21.4	21.1	20.9	20.7	20.6	20.4	20.1
EX. PROPERTY LINE	18.69	18.43	18.39	17.66	17.69	17.37	17.00	16.84	16.79	16.50	16.58
PR. PROPERTY LINE	19.25	18.87	18.48	18.18	17.93	17.66	17.39	17.23	-	-	-
EX. TOP OF CURB	-	-	18.37	-	-	-	-	-	-	-	-
PR. TOP OF CURB	19.15	18.77	18.38	18.08	17.83	17.56	17.17	17.13	-	-	-
EX. BOTTOM OF CURB	18.90	18.52	18.13	17.83	17.58	17.31	17.04	16.88	16.76	16.39	16.61
PR. BOTTOM OF CURB	18.90	18.52	18.13	17.83	17.58	17.31	17.04	16.88	-	-	-

LEGEND: PROFILE

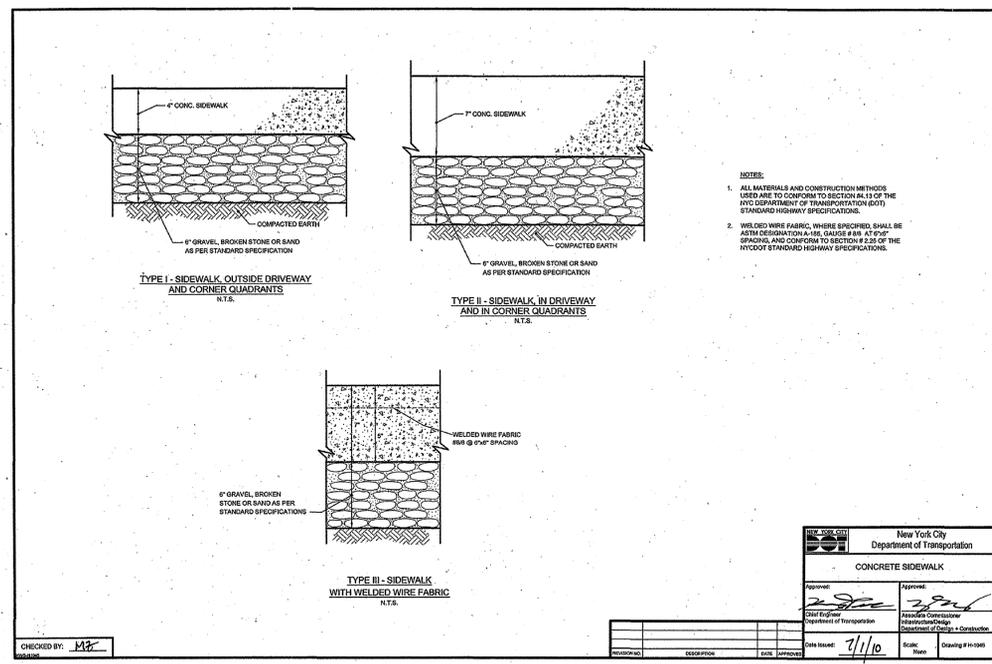
- C — EXISTING CENTERLINE
- ETC/PTC — EXISTING / PROPOSED TOP OF CURB
- EBC/PBC — EXISTING / PROPOSED BOTTOM OF CURB
- EPL — EXISTING PROPERTY LINE
- PPL — PROPOSED PROPERTY LINE
- LG — LEGAL GRADE

*AVERAGE CROSS-SLOPE VALUES PRESENTED.

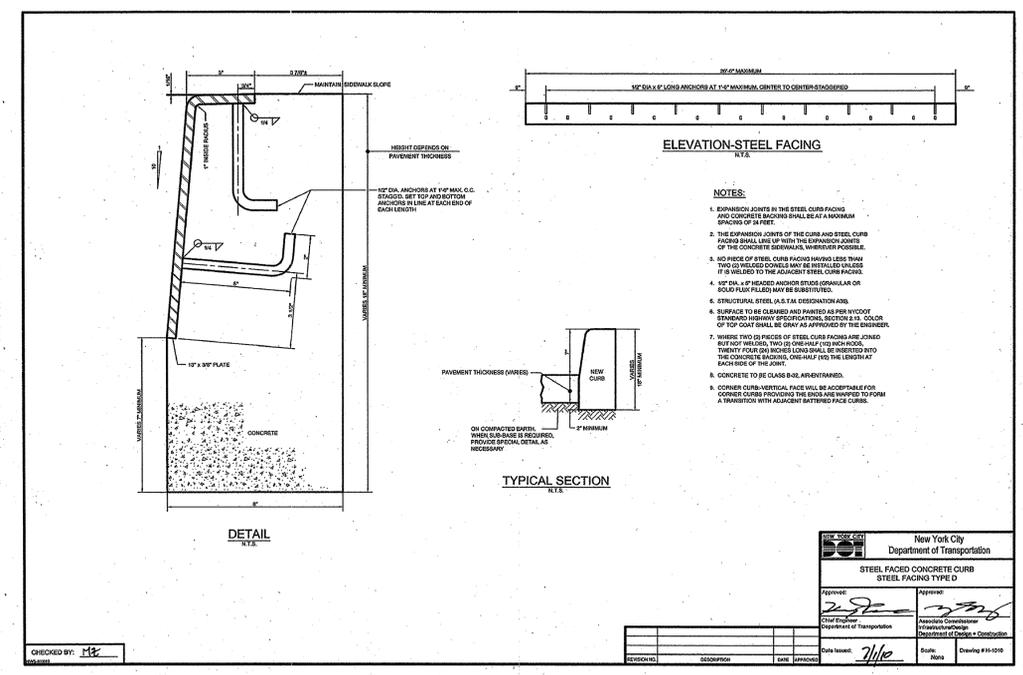
PROFILE
 SCALE: 1" = 1' (V) 1"=10' (H)

[B-SCAN STICKER]

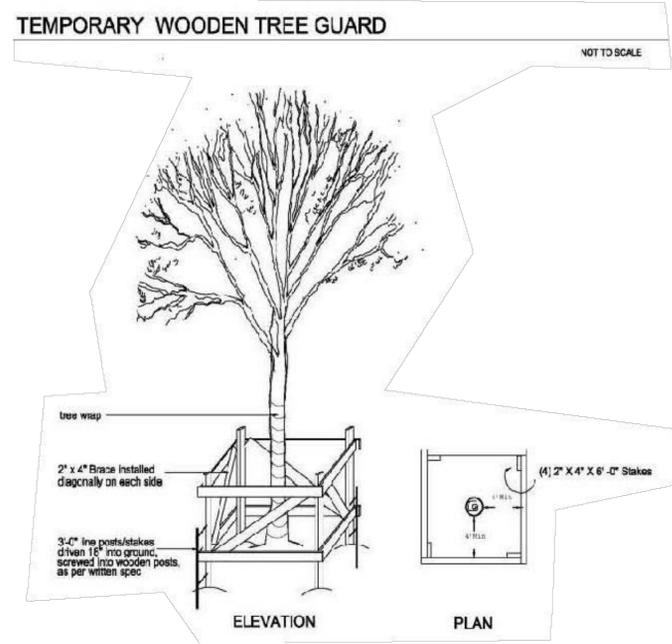
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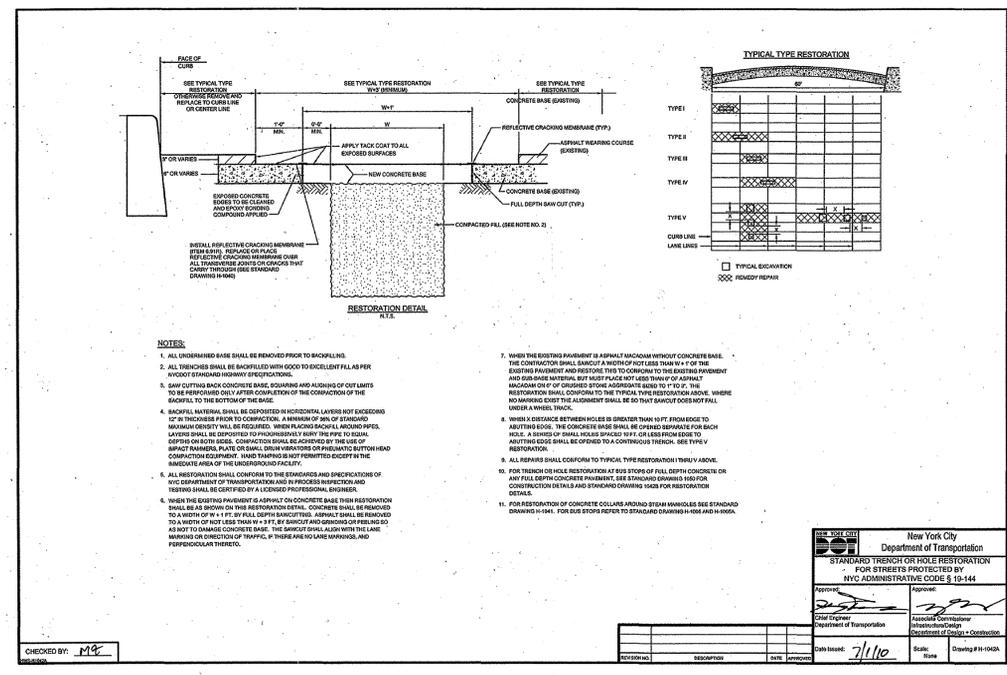
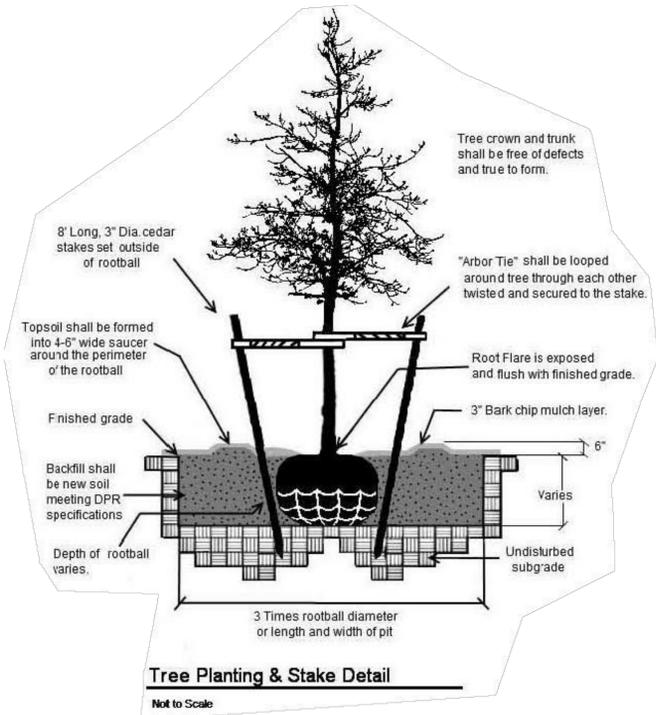
1 CONCRETE SIDEWALK
 N.T.S.



2 STEEL FACED CURB
 N.T.S.



3 TREE PIT DETAIL
 N.T.S.



4 TRENCH RESTORATION WITHIN THE RIGHT-OF-WAY
 N.T.S.

Date	Description	No.
Revisions		

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Project
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 SELF-STORAGE
 BLDG. B.**

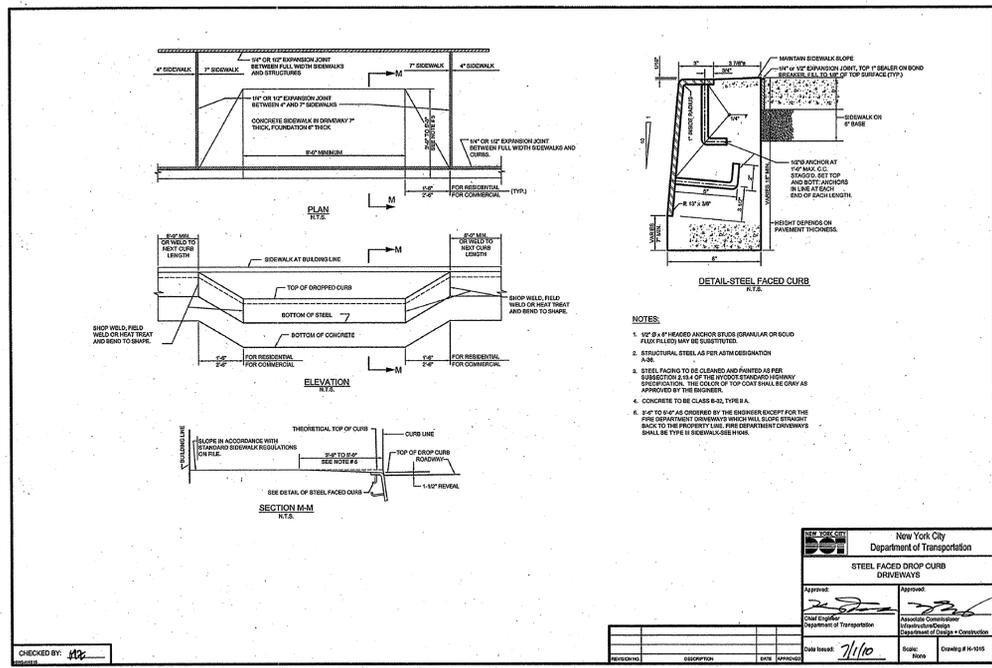
BRONX NEW YORK

Drawing Title
BPP DETAILS

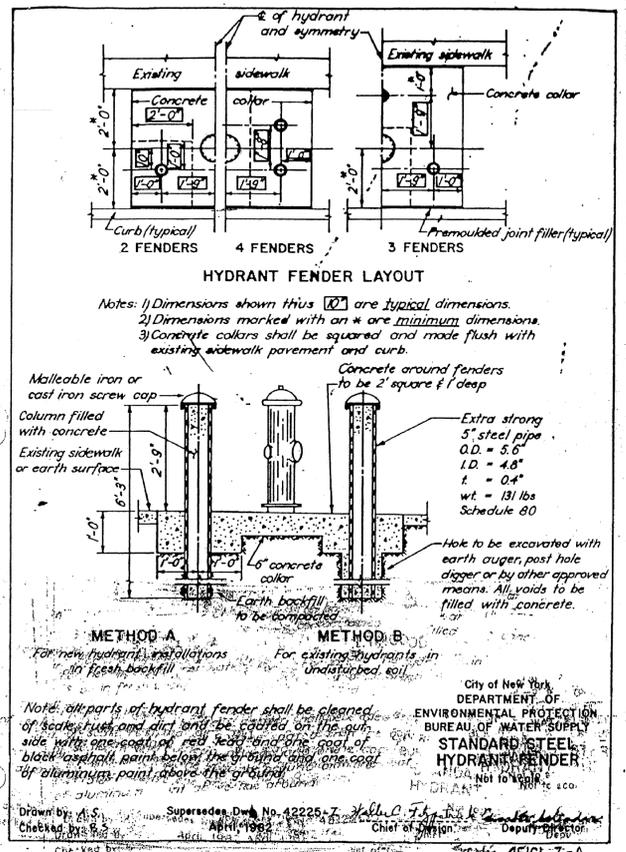
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 PROFESSIONAL ENGINEER N.Y. LIC. No. 081589

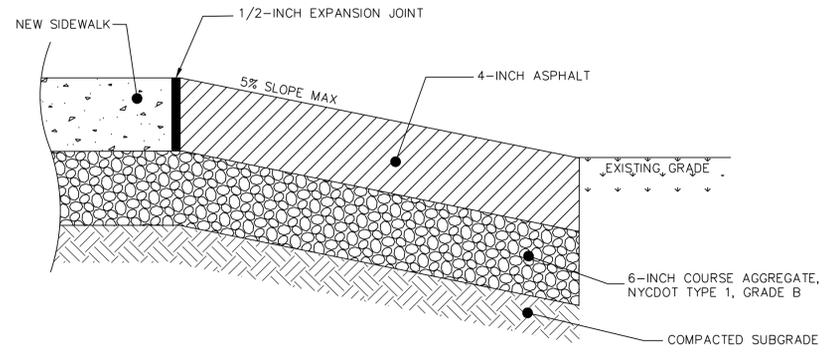
DATE: 01/23/2014
 PROJECT No.: 170192401
 DRAWING BY: DL
 CHK BY: MLN
 DWG No.:
BPP-005.00
 SHEET No.: 5 of 6



5 STEEL FACED DROP CURB DRIVEWAYS
 N.T.S.



6 HYDRANT FENDER LAYOUT
 N.T.S.



7 ASPHALT TRANSITION TO EXISTING GRADE
 N.T.S.

[B-SCAN STICKER]

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<table border="1"> <thead> <tr> <th>Date</th> <th>Description</th> <th>No.</th> </tr> </thead> <tbody> <tr> <td colspan="3">Revisions</td> </tr> </tbody> </table>			Date	Description	No.	Revisions			<p>CHRISTOPHER VITOLANO, PE PROFESSIONAL ENGINEER N.Y. LIC. No. 081589</p>		<p>© 2013 Langan</p>		<p>File name: \\langan.com\data\NY\170192401\Cadd Data - 170192401\SheetFiles\NYCDOB BPP and CCV\170192401-C-92X-BPP.dwg Date: 2/25/2014 Time: 09:29 User: dlizzo Style Table: Langan.stb Layout: 6</p>	
Date	Description	No.												
Revisions														

EXISTING BASE MAP NOTES:

1. BASE MAPPING REFERENCE

EXISTING TOPOGRAPHIC, BOUNDARY AND/OR UTILITY INFORMATION AS SHOWN ON THIS/THESE DESIGN DOCUMENT(S) ARE BASED ON PLAN(S) "BOUNDARY AND TOPOGRAPHIC SURVEY", PREPARED BY CONTROL POINT ASSOCIATES, INC., DATED 3/8/2012.

ACTUAL SITE CONDITIONS MAY VARY FROM THOSE ENCOUNTERED AT THE TIME THE SURVEY DATA SHOWN HEREON WAS OBTAINED.

PRIOR TO ANY USE OF THIS DATA, INCLUDING BUT NOT LIMITED TO DESIGN OR CONSTRUCTION, THE APPROPRIATE DATA CONFIRMATIONS SHALL BE MADE.

ADDITIONAL UTILITY REFERENCES USED IN THE PREPARATION OF THE REFERENCED PLAN ARE SHOWN THEREON.

2. UTILITY REFERENCE

LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING AND LANDSCAPE ARCHITECTURE, D.P.C. (LANGAN) CANNOT AND DOES NOT REPRESENT THAT THE ACCURACY OF THE UTILITY INFORMATION SHOWN ON THE REFERENCED PLAN(S) IS ACCURATE. LANGAN DOES NOT REPRESENT THAT THE UNDERGROUND UTILITIES SHOWN HEREON ARE IN SERVICE, ABANDONED, SUITABLE FOR USE OR ARE OF THE EXACT TYPE, SIZE, LOCATION (HORIZONTAL AND VERTICAL) OR CONFIGURATION INDICATED HEREON, NOR COMPRISE ALL THE UTILITIES WITHIN THE SUBJECT AREA.

ACTUAL CONDITIONS MAY VARY FROM THOSE ENCOUNTERED AT THE TIME THE DATA WAS OBTAINED AND/OR SUPPLIED.

PRIOR TO ALL DESIGN AND CONSTRUCTION, THE APPROPRIATE UTILITY AGENCIES SHALL BE CONTACTED TO OBTAIN WRITTEN VERIFICATION OF UTILITY TYPE AND FIELD LOCATION. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, UTILITY LOCATIONS, TYPES, ETC. AND INVERTS PRIOR TO THE START OF CONSTRUCTION. ANY CONDITIONS FOUND THAT DIFFER FROM THOSE SHOWN ON THESE DOCUMENTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER IN WRITING PRIOR TO CONDUCTING ANY INTRUSIVE WORK.

EROSION & SEDIMENT CONTROL NOTES:

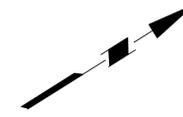
1. THE CONTRACTOR IS REQUIRED TO COMPLY WITH ALL DIRECTIONS OF THE OWNER AND OWNER'S REPRESENTATIVE WITH RESPECT TO EROSION AND SEDIMENT CONTROL MEASURE INSTALLATION, REPAIRS, ETC.
2. SILT FENCE INSTALLATION SHALL BE PHASED AS REQUIRED TO PROTECT ACTUAL AREAS OF EXPOSED DISTURBED SOIL AT ANY GIVEN TIME.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN. THE CONTRACTOR IS ALSO RESPONSIBLE FOR THE PROPER CONSTRUCTION AND STABILIZATION OF PERMANENT CONTROL MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN.
4. ALL SEDIMENT CONTROL ELEMENTS SHALL BE INSTALLED PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES, IN PROPER SEQUENCE, AND MAINTAINED UNTIL EXTERIOR CONSTRUCTION IS COMPLETED. ALL SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED ON A DAILY BASIS AND AFTER EACH SIGNIFICANT RAINFALL EVENT. THIS DAILY PROCEDURE SHALL BE DOCUMENTED IN A LOG BOOK. DAMAGE TO ANY SEDIMENTATION CONTROL STRUCTURE SHALL BE REPAIRED IMMEDIATELY. REFER TO "MAINTENANCE SCHEDULE" NOTES ON THIS SHEET FOR MORE INFORMATION.
5. SOIL SEDIMENT REMOVED FROM ANY TEMPORARY CONTROL MEASURE DURING REGULAR MAINTENANCE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.
6. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH THE LATEST NYS DEC STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL AND MEET 2003 EPA CONSTRUCTION GENERAL PERMIT REQUIREMENTS.
7. ALL APPLICABLE SEDIMENT CONTROL PRACTICES SHALL BE LEFT IN PLACE UNTIL CONSTRUCTION IS COMPLETED AND/OR DISTURBED AREAS ARE STABILIZED AS PER NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL SECTION, 2.3.
8. "STABILIZED" SHALL BE DEFINED AS HAVING SUBBASE IN PLACE FOR PAVEMENT AREAS, AND A UNIFORM, 80% VEGETATIVE COVER FOR LANDSCAPED AREAS.
9. CONTRACTOR SHALL IMPLEMENT DUST CONTROL MEASURES DURING CONSTRUCTION. CONTRACTOR TO MINIMIZE DUST CLOUDS BY WATERING DOWN CONSTRUCTION AREA OR OTHER APPROVED METHODS, AS REQUIRED.
10. CONTRACTOR SHALL INSTALL AND MAINTAIN STABILIZED CONSTRUCTION ENTRANCE(S) AS REQUIRED BY THE MEANS AND METHODS FOR THIS WORK.
11. ALL CONSTRUCTION VEHICLES HAULING MATERIALS EITHER INTO OR OUT OF THE CONSTRUCTION AREA SHALL HAVE A SECURED TARP OVER MATERIALS TO PREVENT SEDIMENT POLLUTION OF PUBLIC ROADWAYS.
12. ROADWAYS, PATHS, AND PAVED AREAS IN AND AROUND THE CONSTRUCTION SITE SHALL BE KEPT FREE OF CONSTRUCTION DEBRIS AT ALL TIMES. THESE LOCATIONS SHALL BE SWEEP CLEAN AT THE END OF EACH WORKING DAY AND AS REQUIRED BY THE OWNER.
13. AS NEW DRAINAGE STRUCTURES ARE INSTALLED, INLET PROTECTION SHALL CONCURRENTLY BE INSTALLED IN THE NEW STRUCTURES. CONTRACTOR SHALL PROVIDE FOR PROPER DRAINAGE OF THE SITE AT ALL TIMES DURING REMOVALS AND CONSTRUCTION.
14. CLEAN STORM DRAINAGE STRUCTURES AS REQUIRED/DIRECTED AND AT THE COMPLETION OF THE PROJECT.
15. THE OWNER MAY REQUIRE ADDITIONAL SOIL EROSION MEASURES TO BE INSTALLED.
16. CONTRACTOR SHALL SWEEP AREAS OUTSIDE THE WORK ZONE AS NECESSARY TO PREVENT MUD TRACKING ON ROADWAYS AROUND THE CONSTRUCTION AREA.

MAINTENANCE SCHEDULE:

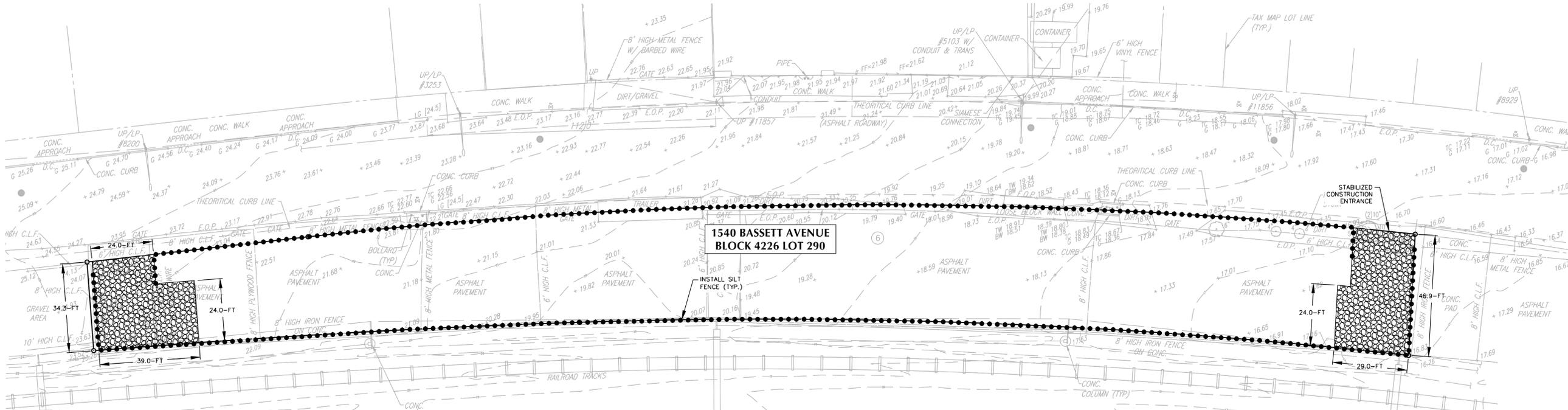
ALL MAINTENANCE METHODS DESCRIBED BELOW ARE IN DIRECT ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL. MAINTENANCE ON ANY EROSION CONTROL MEASURE MAY BE ORDERED BY THE OWNER AT ANY TIME, INDEPENDENT OF THE PRESCRIBED STANDARD MAINTENANCE INTERVALS.

SILT FENCE: MAINTENANCE OF ALL SILT FENCE INSTALLED SHALL BE PERFORMED AS NEEDED. WHEN "BULGES" OF MATERIAL DEVELOP ON THE FENCE, IT SHALL BE REMOVED.

FILTER FABRIC INLET PROTECTION: FABRIC SHALL BE WRAPPED AROUND THE INLET GRATE. INSPECT THE FABRIC BARRIER AFTER EACH RAIN EVENT AND MAKE REPAIRS OR REPLACE AS NEEDED. UPON STABILIZATION OF THE DRAINAGE AREA, REMOVE ALL MATERIALS AND UNSTABLE SEDIMENT AND DISPOSE OF IN ACCORDANCE WITH APPLICABLE REGULATIONS.



LEGEND	
SILT FENCE	••••••••
STABILIZED CONSTRUCTION ENTRANCE	



1 EROSION AND SEDIMENT CONTROL PLAN
1" = 20'



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1 5/23/2013 PERMIT SET 2 2/3/2014 PERMIT SET ONE STORY

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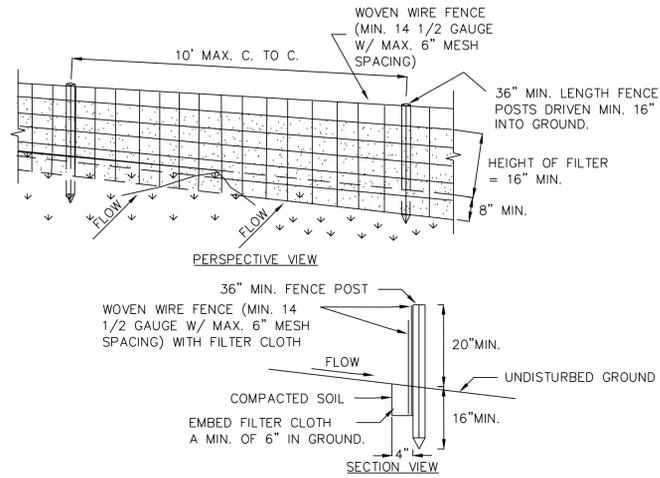
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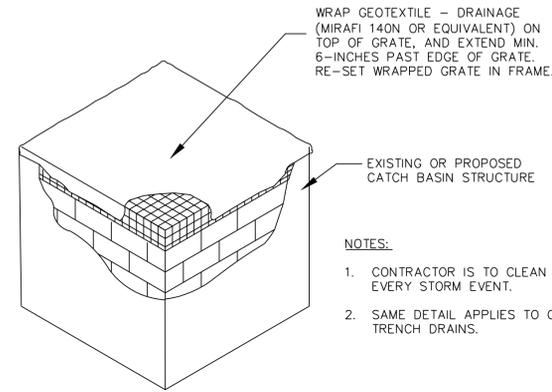
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1 OF 6
12005



1 SILT FENCE
N.T.S.

CONSTRUCTION SPECIFICATIONS:

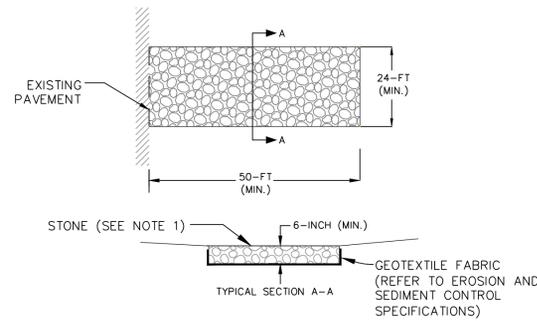
- WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
- FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
- PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.



NOTES:

- CONTRACTOR IS TO CLEAN FILTER FABRIC AFTER EVERY STORM EVENT.
- SAME DETAIL APPLIES TO CIRCULAR INLETS AND TRENCH DRAINS.

3 FILTER FABRIC INLET PROTECTION
N.T.S.



2 STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

- STONE SIZE - USE AASHTO NO. 1 CRUSHED STONE
 THICKNESS OF STONE - NOT LESS THAN SIX INCHES.
 LENGTH OF STABILIZED CONSTRUCTION ACCESS - NOT LESS THAN 50 FEET
 WIDTH - TWELVE FEET MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR FEET IF SINGLE ENTRANCE TO SITE.
 GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. (REFER TO EROSION AND SEDIMENT CONTROL SPECIFICATIONS)
 SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
 MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
 WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
 PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

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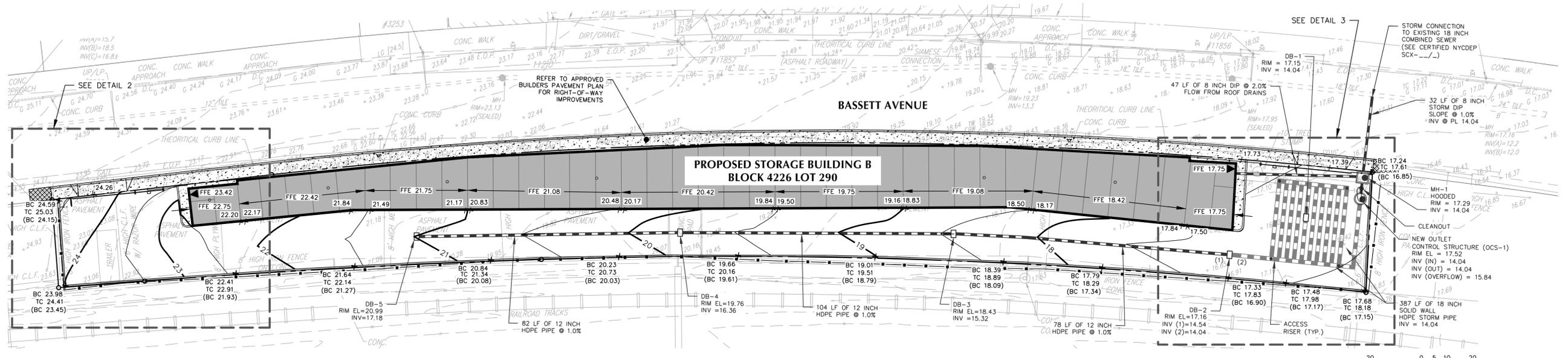
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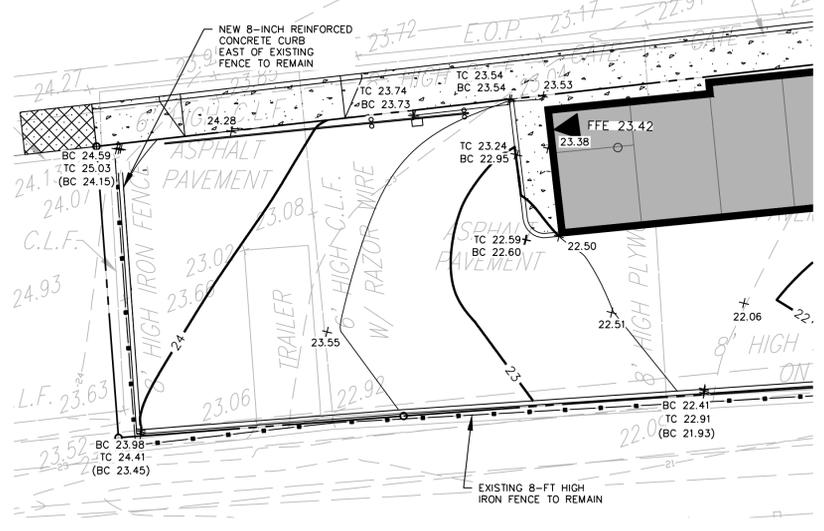
GENERAL NOTES:

- EXISTING TOPOGRAPHIC, BOUNDARY AND/OR UTILITY INFORMATION AS SHOWN ON THIS/THESE DESIGN DOCUMENTS(S) ARE BASED ON PLANS(S) "BOUNDARY AND TOPOGRAPHIC SURVEY", PREPARED BY CONTROL POINT ASSOCIATED, INC. DATED 3/8/2012.
- ANY CONFLICT OR DISCREPANCIES BETWEEN THE PLANS AND OBSERVED SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION, OR AS SOON AS A CONFLICT / DISCREPANCY IS DISCOVERED.
- ADJUST ALL EXISTING DRAINAGE STRUCTURES AND UTILITY MANHOLES / VALVE COVERS WITHIN LIMIT OF WORK TO NEW GRADE.
- ALL CATCH BASINS / INLET STRUCTURES SHALL BE LOCATED AT THE LOW POINT WITHIN SURROUNDING AREA.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE TO PROTECT EXISTING TREES AND THEIR ROOTS. MODIFY TRENCHES OR CHANNELS TO AVOID EXISTING TREES AND THEIR ROOTS. ONLY HAND AND/OR PNEUMATIC EXCAVATE WITHIN THE DROP LINES OF EXISTING TREES.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING EXCAVATION / GRADING OPERATIONS TO PROTECT EXISTING FACILITIES TO REMAIN. SAID FACILITIES SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR AND, IF DAMAGED, SHALL BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE IS ACHIEVED THROUGHOUT THE ENTIRE SYSTEM. SHOULD THE CONTRACTOR FAIL TO ACHIEVE POSITIVE DRAINAGE, CORRECTIVE MEASURES SHALL BE TAKEN AT THE CONTRACTOR'S EXPENSE AND AS DIRECTED BY THE OWNER.
- THE CONTRACTOR SHALL, AS NEEDED TO ENSURE DRAINAGE, AND AT THE COMPLETION OF THE CONTRACT, FLUSH ALL ON-SITE STORM SEWER LINES AND CLEAR THE PIPES OF ANY AND ALL CONSTRUCTION DEBRIS, SILT, SOLIDS, ETC.

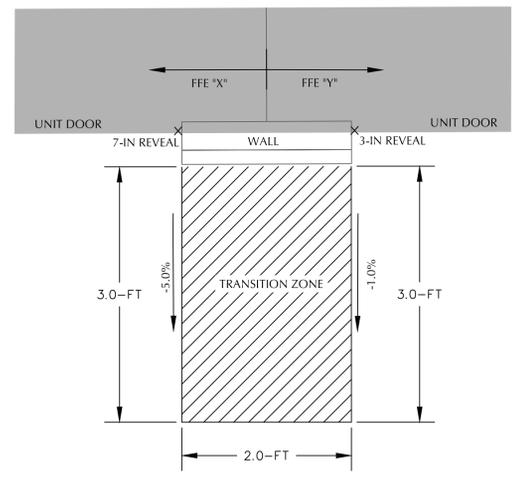
LEGEND	
SEWER PIPE	
SPOT ELEVATION	× 27.00
DOOR SYMBOL WITH FINISHED FLOOR ELEVATION	FFE X.XX
PROPOSED ON-SITE BOTTOM OF CURB ELEVATION	× BC 27.00
PROPOSED TOP OF CURB ELEVATION	× TC 27.00
EXISTING AMTRAK BOTTOM OF CURB ELEVATION	× (BC 27.00)



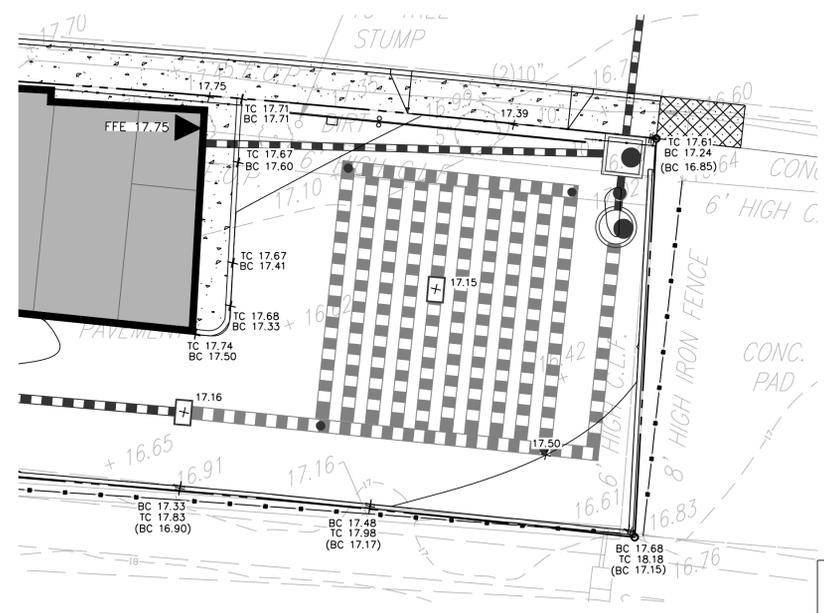
1 GRADING AND DRAINAGE PLAN
1" = 20'



2 SOUTH ENTRANCE GRADING AND DRAINAGE
1" = 10'



4 ASPHALT TRANSITION ZONE BETWEEN VARYING FFE
NTS



3 NORTH ENTRANCE GRADING AND DRAINAGE
1" = 10'

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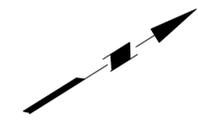
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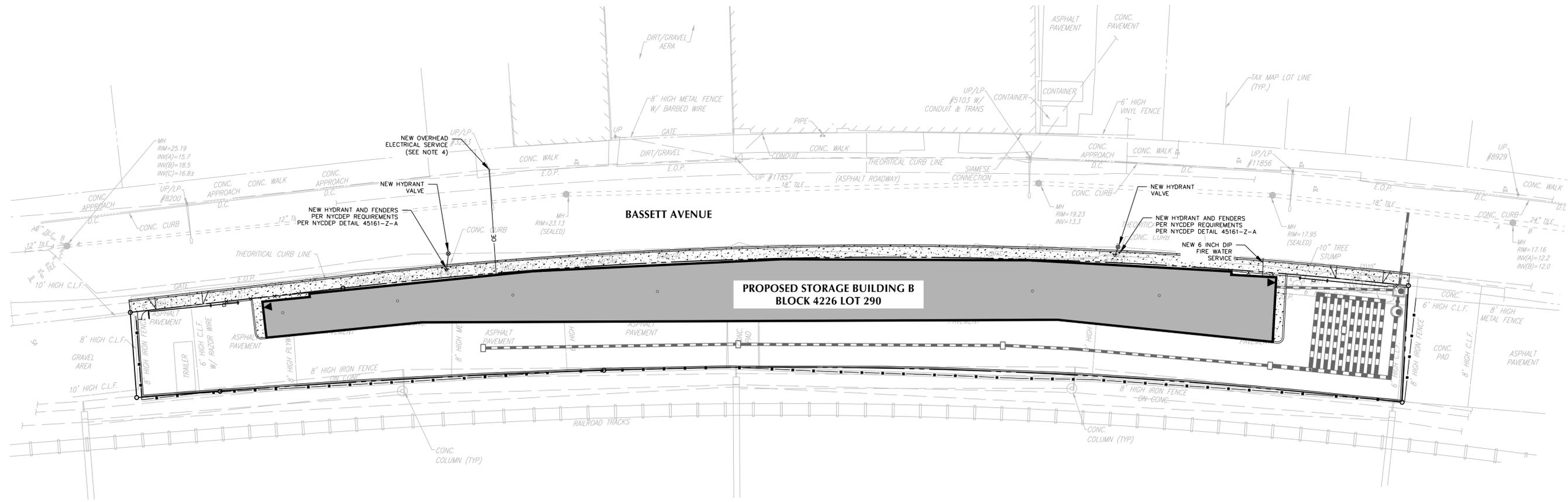
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GENERAL NOTES:

1. THE CONTRACTOR SHALL PERFORM ANY TEST PITS NECESSARY TO CONFIRM THE DESIGN AND EXISTING CONDITIONS PRESENTED IN THESE CONTRACT DOCUMENTS PRIOR TO THE COMMENCEMENT OF WORK.
2. ALL UTILITIES NOT SPECIFICALLY CALLED OUT FOR REMOVAL SHALL BE MAINTAINED AND PROTECTED THROUGHOUT THE COURSE OF CONSTRUCTION.
3. ADJUST ALL EXISTING DRAINAGE STRUCTURES AND UTILITY MANHOLES/VALVE COVERS WITHIN LIMIT OF WORK TO NEW GRADE.
4. ELECTRICAL SERVICE TO BUILDING SHOWN CONCEPTUALLY. ELECTRICAL AND TELECOM SCOPES TO BE CONFIRMED BY ELECTRICAL ENGINEER.



LEGEND	
UNDERGROUND WATER LINE	— UW —
OVERHEAD ELECTRIC LINE	— OE —
VALVE	⊗



1 UTILITY PLAN
1" = 20'

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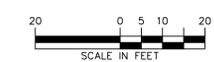
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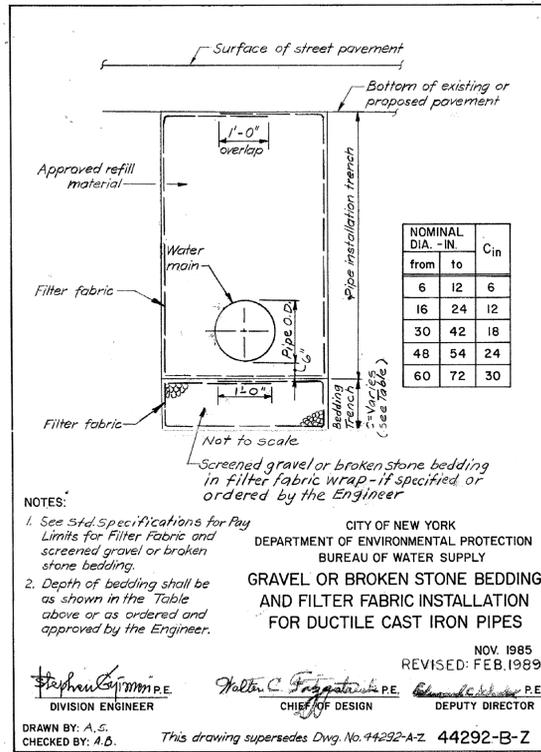
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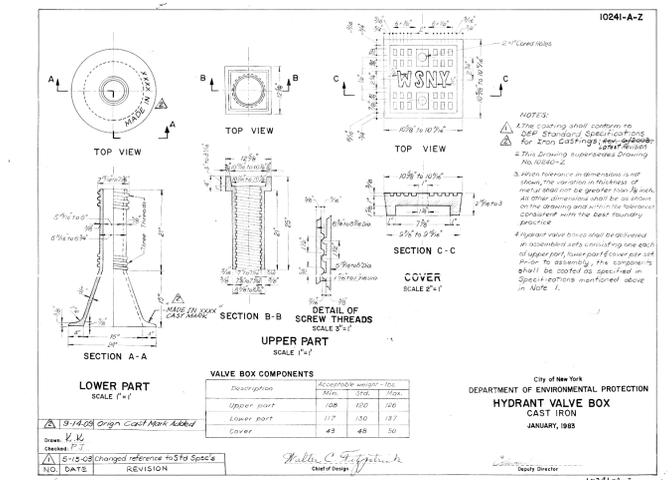
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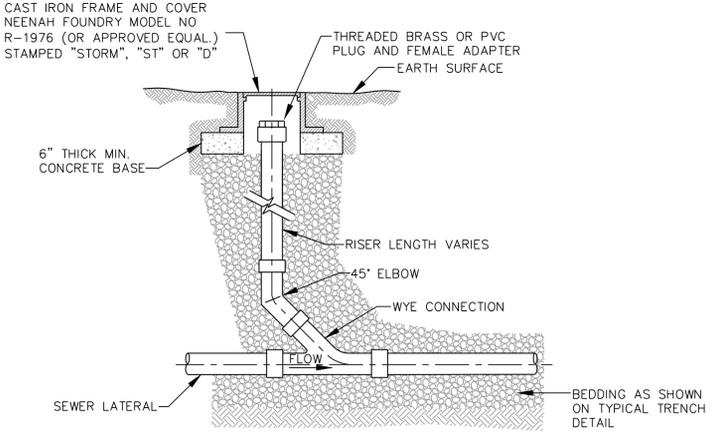




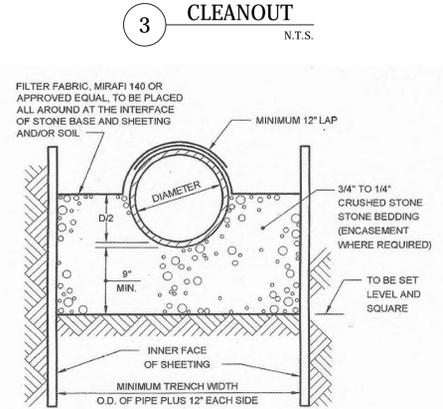
1 TYPICAL WATER MAIN TRENCHING N.T.S.



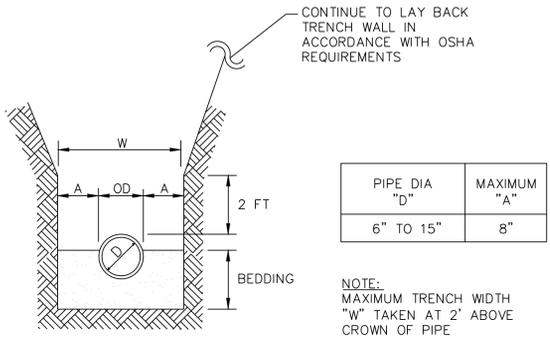
2 CURB VALVE BOX N.T.S.



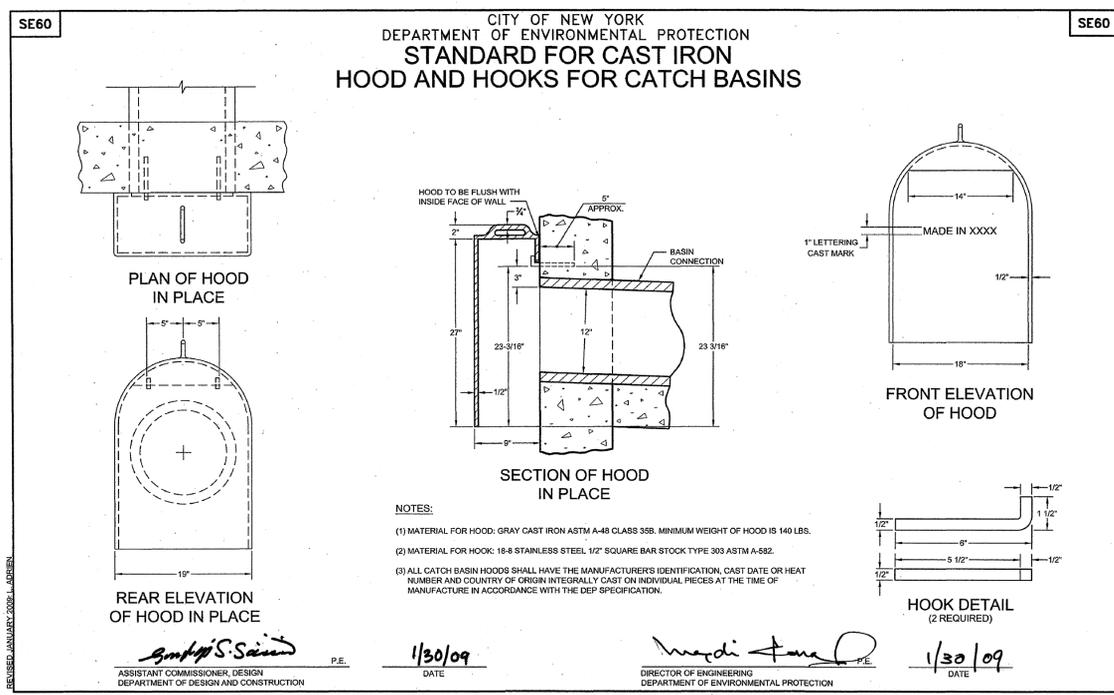
NOTES:
1. RISER AND FITTING MATERIALS SHALL MATCH SEWER LATERAL MATERIAL AND DIAMETER.



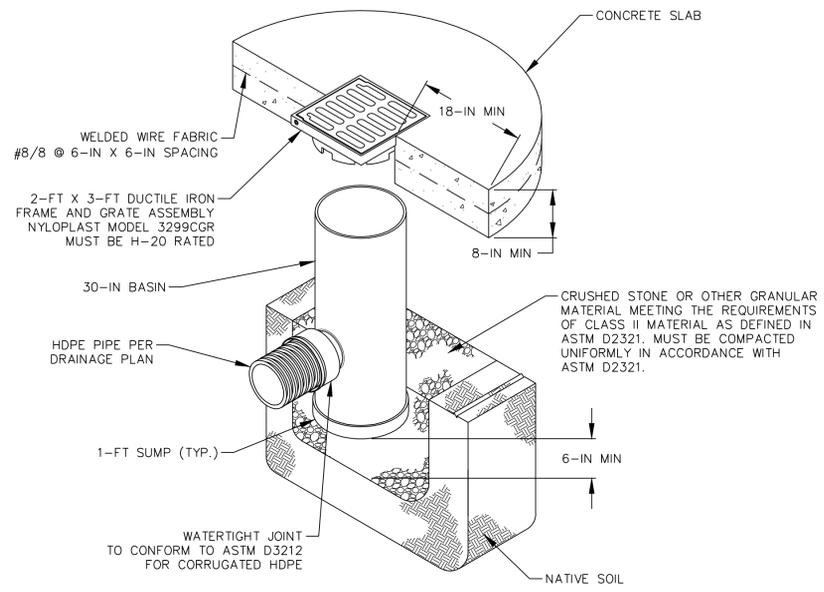
3 CLEANOUT N.T.S.



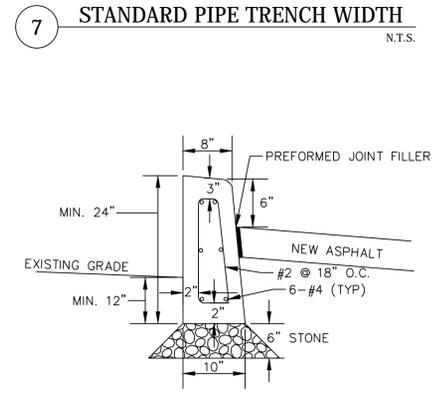
4 TYPICAL SEWER SERVICE TRENCHING N.T.S.



5 MANHOLE HOOD N.T.S.



6 NYLOPLAST DRAIN BASIN N.T.S.



NOTES:
1. CONCRETE SHALL BE CLASS A-40, 4000 P.S.I. AS PER SECTION 3.05 OF STANDARD HIGHWAY SPECIFICATIONS.
2. STEEL REINFORCEMENT SHALL BE AS PER ASTM A615, GRADE 60.
3. THE SLOPE OF THE TOP OF CURB SHALL CONFORM TO SLOPE OF SIDEWALK IN ALL CASES.
4. EXPANSION JOINTS IN CURB SHALL NOT EXCEED 20'-0" O.C.

8 8-INCH REINFORCED CONCRETE CURB N.T.S.

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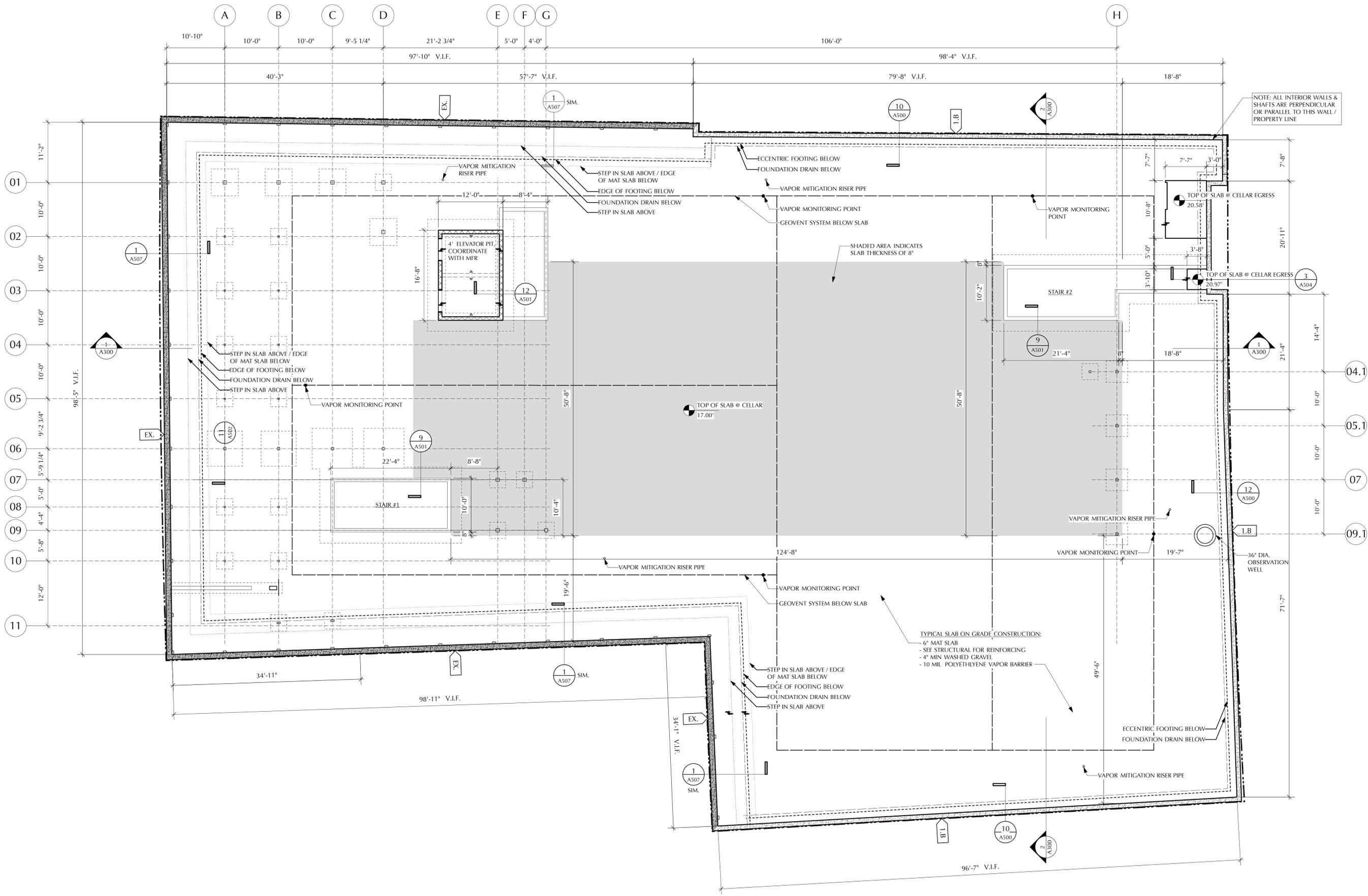
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NOTE: ALL INTERIOR WALLS & SHAFTS ARE PERPENDICULAR OR PARALLEL TO THIS WALL / PROPERTY LINE

TYPICAL SLAB ON GRADE CONSTRUCTION:
 - 6" MAT SLAB
 - SEE STRUCTURAL FOR REINFORCING
 - 4" MIN WASHED GRAVEL
 - 10 MIL POLYETHYLENE VAPOR BARRIER

ISSUE DATE:	
1 Permit Set	05/23/13

REVISION DATE:	
2 Permit Comments #2	10/31/13

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SLAB PLAN

A-099.00

14 OF 40

11041

1 Slab Plan
 Scale: 1/8" = 1'-0"

Responsibilities

OWNER

STILLWELL SELF STORAGE LLC.
20 Church Street 9th Floor
Hartford, CT 06103
CONTACT: Dean Conrad
860-525-1666 phone

ARCHITECT

BUTZ+WILBERN LTD.
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CIVIL ENGINEER

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STRUCTURAL ENGINEER

O'DONELL & NACCARATO
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Philadelphia, PA 19106

CONTACT: Brian Rawlings
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E, M & P ENGINEER

GHT LIMITED
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CONTACT: James Hansen
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PERMIT EXPEDITOR

JAM CONSULTANTS
104 West 29th Street 9th Flr.
New York, NY 10001

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212-244-4427 phone
212-244-4497 fax

Building Code Analysis

(for zoning analysis see sheets Z001.00 - Z003.00)

DESCRIPTION OF A NEW SELF STORAGE WAREHOUSE FACILITY

Three story new self storage facility with cellar composed of bearing wall structure at 10'± centers supporting non composite metal floor deck with concrete fill and a TPO membrane roof. Exterior skin will be insulated metal panel with metal stud wall structure with corrugated metal siding at the parapet

APPLICABLE CODES

CITY OF NEW YORK 2008 BUILDING CODES
2011 NEW YORK CITY ENERGY CONSERVATION CODE

CONSTRUCTION TYPE:

II-B

BUILDING CODE OCCUPANCY:

S-1 (MODERATE-HAZARD STORAGE)
NONSEPARATED MIX USE GROUPS:
'B' - OFFICE (@ 1ST. FLOOR)

ZONING CODE OCCUPANCY:

16D - WAREHOUSE

BUILDING AREA:

22,258 SF F.A.R. AREA PROPOSED
45,500 SF TOTAL BUILDING AREA PROPOSED
(Also see Zoning Area Calculations on Z-002)

BUILDING HEIGHT:

41'-0" / 3 STORIES PROPOSED

FIRE SUPPRESSION SYSTEM:

FULLY SPRINKLERED PER NFPA 13 & LOCAL CODE

PROPOSED AREA	S-1 (STORAGE)	B (OFFICE)
BASEMENT STORAGE	90 SF	N/A
1ST. FLR. STORAGE	7,505 SF	947 SF
2ND. FLR. STORAGE	6,858 SF	N/A
3RD. FLR. STORAGE	6,858 SF	N/A
TOTAL AREA	21,311 SF	947 SF

TOTAL ZONING AREA (S-1 + B) = 22,258 SF

Loading Area (NIC) = 1,200 SF
Cellar Storage Area (NIC) = 22,042 SF
TOTAL BUILDING AREA = 45,500 SF

AREA AND HEIGHT PER TABLE 503

AREA ALLOWED FOR S-1 TYPE II-B CONSTRUCTION = 7,500 SF
+200% AREA INCREASE FOR SPRINKLER = 15,000 SF
TOTAL AREA AREA ALLOWED PER FLOOR = 22,500 SF X 3 = 67,500 SF MAX
45,500 SF PROPOSED - COMPLIES

HEIGHT ALLOWED FOR S-1 TYPE II-B CONSTRUCTION = 55' & 3 STORIES

3STORY BUILDING PROPOSED - COMPLIES
41' TALL BUILDING PROPOSED - COMPLIES

FOR EGRESS OCCUPANT LOAD CALCULATIONS SEE SHEET A-030.00

MAX. EXIT ACCESS DISTANCE 200 FT. PER 1015.1

NUMBER OF EXITS REQUIRED 2 FOR S-1

EXIT LOCATIONS 1/3 OF THE MAX. OVERALL DIAGONAL DISTANCE

DEAD ENDS 20'-00" OR NOT TO EXCEED 2.5 TIMES LEAST WIDTH OF DEAD END CORRIDOR (PER SECTION 1016.3 Exception #3)

FIRE RESISTANCE RATING REQUIREMENTS

NON BEARING EXTERIOR WALLS (TABLE 601 & 602)	REQUIRED	PROPOSED
Fire Separation Distance <5'	2 HR	2 HR
Fire Separation Distance > 5' to <10'	1HR	1 HR
Fire Separation Distance > 10' to <30'	1 HR	1HR
Fire Separation Distance >30'	0 HR	0 HR
STRUCTURAL FRAME (TABLE 601) Including Columns, Girders, trusses	0 HR	0 HR
BEARING WALLS (TABLE 601 & 602) Exterior (Fire Separation Distance > 10' to <30')	1 HR	1 HR
Interior	0 HR	0 HR
NONBEARING WALLS & PARTITIONS (TABLE 601) Interior	0 HR	0 HR
FLOOR CONSTRUCTION (TABLE 601) Including supporting beams and joists	0 HR	0 HR
ROOF CONSTRUCTION (TABLE 601) Including supporting beams and joists	0 HR	0 HR
SHAFT ENCLOSURES (SECTION 707.4)	2 HR	2 HR

WATER & SEWER

NEW CONNECTIONS TO WATER AND SEWER PER PLUMBING DRAWINGS

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	A-002.00	2	PLOT PLAN	•
	Z-001.00	3	ZONING ANALYSIS	•
	Z-002.00	4	ZONING ANALYSIS	•
	Z-003.00	5	ZONING ANALYSIS	•
	A-030.00	6	EGRESS PLANS	•
	A-040.00	7	SECURITY PLANS	•
	A-041.00	8	SECURITY PLANS	•
	A-060.00	9	FIRE RATED ASSEMBLIES	•
	A-061.00	10	FIRE RATED ASSEMBLIES	•
	A-062.00	11	FIRE RATED ASSEMBLIES	•
	A-070.00	12	WALL TYPES	•
	A-080.00	13	DOOR, WINDOW & FINISH SCHEDULES	•
PLANS	A-099.00	14	SLAB PLAN	•
	A-100.00	15	CELLAR PLAN	•
	A-101.00	16	FIRST FLOOR PLAN	•
	A-102.00	17	SECOND FLOOR PLAN	•
	A-103.00	18	THIRD FLOOR PLAN	•
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SECTIONS	A-300.00	22	BUILDING SECTIONS	•
BLOW UP PLANS	A-400.00	23	OFFICE BLOW UP PLAN	•
	A-401.00	24	FINISH SCHEDULE & OFFICE INTERIOR ELEVATIONS	•
	A-402.00	25	OFFICE INTERIOR ELEVATIONS	•
	A-403.00	26	OFFICE INTERIOR ELEVATIONS	•
	A-404.00	27	OFFICE INTERIOR ELEVATIONS	•
	A-410.00	28	STAIR BLOW UP PLANS & SECTION	•
	A-411.00	29	STAIR BLOW UP PLANS & SECTION	•
	A-412.00	30	TYPICAL STAIR DETAILS	•
	A-420.00	31	ELEVATOR BLOW UP PLANS	•
	A-421.00	32	ELEVATOR BLOW UP SECTIONS	•
DETAILS	A-500.00	33	DETAILS	•
	A-501.00	34	DETAILS	•
	A-502.00	35	DETAILS	•
	A-503.00	36	DETAILS	•
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	A-505.00	38	DETAILS	•
	A-506.00	39	DETAILS	•
	A-507.00	40	DETAILS	•
STRUCTURAL				
PLANS	S-100.00	1	FOUNDATION / CELLAR PLAN	•
	S-101.00	2	FIRST FLOOR / LOWER ROOF FRAMING PLAN	•
	S-102.00	3	SECOND FLOOR FRAMING PLAN	•
	S-103.00	4	THIRD FLOOR FRAMING PLAN	•
	S-104.00	5	ROOF FRAMING PLAN	•
DETAILS	S-200.00	6	DETAILS	•
	S-201.00	7	TYPICAL DETAILS & SCHEDULES	•
	S-202.00	8	NOTES	•
	S-300.00	9	DETAILS	•
MECHANICAL				
	M-001.00	1	MECHANICAL COVER SHEET	•
PLANS	M-100.00	2	CELLAR PLAN	•
	M-101.00	3	FIRST FLOOR PLAN	•
	M-102.00	4	SECOND FLOOR PLAN	•
	M-103.00	5	THIRD FLOOR PLAN	•
	M-104.00	6	ROOF PLAN	•
	M-400.00	7	OFFICE PLAN	•
DETAILS	M-500.00	8	DETAILS	•
	M-600.00	9	SCHEDULES	•
	EN-001.00	10	ENERGY COMPLIANCE FORMS	•
ELECTRICAL				
	E-001.00	1	ELECTRICAL COVER SHEET	•
PLANS	E-100.00	2	CELLAR LEVEL PLAN	•
	E-101.00	3	FIRST FLOOR PLAN	•
	E-102.00	4	SECOND FLOOR PLAN	•
	E-103.00	5	THIRD FLOOR PLAN	•
	E-104.00	6	ROOF POWER PLAN	•
	E-400.00	7	PART PLAN SHEET	•
DETAILS	E-500.00	8	DETAIL SHEET	•
SCHEDULES	E-600.00	9	RISER DIAGRAM	•
	E-601.00	10	SCHEDULE SHEET	•
PLUMBING				
	P-001.00	1	PLUMBING COVER SHEET	•
PLANS	P-100.00	2	CELLAR LEVEL PLAN	•
	P-101.00	3	FIRST FLOOR PLAN	•
	P-102.00	4	SECOND FLOOR PLAN	•
	P-103.00	5	THIRD FLOOR PLAN	•
	P-104.00	6	ROOF PLAN	•
	P-400.00	7	OFFICE PLAN	•
DETAILS	P-500.00	8	DETAIL SHEET	•
	P-600.00	9	RISER SHEET	•
	P-601.00	10	RISER SHEET	•
VAPOR MITIGATION				
	VM- 1	1	SUB SLAB VENTING SYSTEM GENERAL ARRANGEMENT	•
	VM- 2	2	DETAILS	•
	VM- 3	3	DETAILS	•

ISSUE DATE:

1 Permit Set 05/23/13

REVISION DATE:

2 Permit Comments #2 10/31/13
3 Permit Comments #3 12/13/13

Stillwell Avenue Self Storage - Bldg. A

Stillwell Self Storage LLC
1538 Stillwell Ave.
Bronx, NY



BUTZ+WILBERN LTD

Planning | Architecture

Interiors | Property Visioning

800 W. Broad St. Suite 363

Falls Church, Virginia 22046

703-356-6771 fax: 356-7010

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COVER SHEET

A-001.00

1 OF 40

11041

TR-1 Controlled Inspections

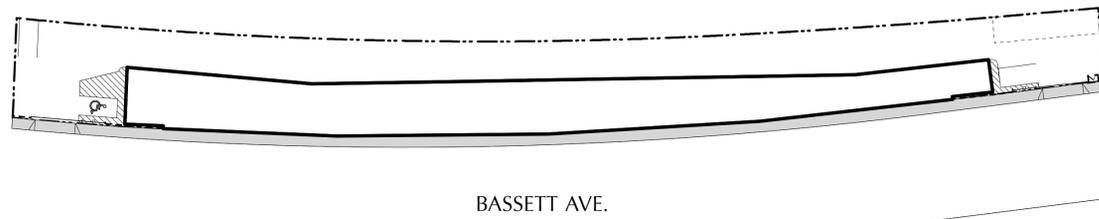
Y	N	SPECIAL INSPECTIONS ITEMS	CODE SECTION
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Flood Zone Compliance	BC G105
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fire Alarm Test	BC 907, BC 1704.13
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Photoluminescent Exit Path Markings	TR7 BC 1026.11
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Emergency Power Systems (Generators)	BC 1704.13, BC 2702
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Structural Steel - Welding	BC 1704.3.1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Structural Steel - Erection & Bolting	BC 1704.3.2, BC 1704.3.3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Structural Cold-Formed Steel	BC 1704.3.4
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concrete - Cast-In-Place	BC 1704.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concrete - Precast	BC 1704.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concrete - Prestressed	BC 1704.4
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Masonry	BC 1704.5
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood - Off-Site fabrication of Structural Elements	BC 1704.6
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood - Installation of High-Load Diaphragms	BC 1704.6.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood - Installation of Metal-Plate-Connected Trusses	BC 1704.6.3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood - Installation of Prefabricated I-joists	BC 1704.6.4
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils - Site Preparation	BC 1704.7.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soils - Fill placement & In-Place Density	BC 1704.7.2, BC 1704.7.3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils - Investigations (Borings/Test Pits)	TR4 BC 1704.7.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pile Foundations & Drilled Pier Installation	TR5 BC 1704.8
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pier Foundations	BC 1704.9
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wall Panels, Curtain Walls, and Veneers	BC 1704.10
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sprayed Fire-Resistant Materials	BC 1704.11
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Exterior Insulation Finish Systems (EIFS)	BC 1704.12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alternative Materials - OTCR Buildings Bulletin # _____	BC 1704.13
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Smoke Control Systems	BC 1704.14
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Mechanical Systems	BC 1704.15
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fuel-Oil Storage and Fuel-Oil Piping Systems	BC 1704.16
<input type="checkbox"/>	<input checked="" type="checkbox"/>	High-Pressure Steam Piping (Welding)	BC 1704.17
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fuel-Gas Piping (Welding)	BC 1704.18
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Structural Safety - Structural Stability	BC 1704.19
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mechanical Demolition	BC 1704.19, BC 3306.6
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Excavation - Sheeting, Shoring, and Bracing	BC 1704.19, BC 3304.4.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil Percolation Test - Drywell	BC 1704.20.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Raising and Moving of a Building	BC 1704.19, BC 1704.27
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil Percolation Test - Septic	BC 1704.20.1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site Storm Drainage Disposal and Detention System Installation	BC 1704.20
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Septic System Installation	BC 1704.20
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sprinkler Systems	BC 1704.21
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Standpipe Systems	BC 1704.22
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Heating Systems	BC 1704.23
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Firestop, Draftstop, and Fireblock systems	BC 1704.25
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Aluminum Welding	BC 1704.26
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seismic Isolation Systems	BC 1707.8
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concrete Test Cylinders	TR2 BC 1905.6
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concrete Design Mix	TR3 BC 1905.3

Y	N	PROGRESS INSPECTIONS ITEMS	CODE SECTION
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Preliminary	28-116.2.1, BC 109.2
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Footings and Foundation	BC 109.3.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lowest Floor Elevation (attach FEMA form)	BC 109.3.2
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Frame Inspection	BC 109.3.3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Energy Code Compliance Inspections	TR8 BC 109.3.5
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fire-Resistance Rated Construction	BC 109.3.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Public Assembly Emergency Lighting	28-116.2.2
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Final	

Architectural Site Plan

SEE PLOT PLAN A002 FOR MORE INFORMATION

AMTRAK RAILWAY



BASSETT AVE.



SCALE: 1" = 40'-0"

TR-1 Controlled Inspections

Y	N	SPECIAL INSPECTIONS ITEMS	CODE SECTION
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Flood Zone Compliance	BC G105
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fire Alarm Test	BC 907, BC 1704.13
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Photoluminescent Exit Path Markings	BC 1026.11
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Emergency Power Systems (Generators)	BC 1704.13, BC 2702
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Structural Steel - Welding	BC 1704.3.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Structural Steel - Erection & Bolting	BC 1704.3.2, BC 1704.3.3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Structural Cold-Formed Steel	BC 1704.3.4
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concrete - Cast-In-Place	BC 1704.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concrete - Precast	BC 1704.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Concrete - Prestressed	BC 1704.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Masonry	BC 1704.5
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood - Off-Site fabrication of Structural Elements	BC 1704.6
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood - Installation of High-Load Diaphragms	BC 1704.6.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood - Installation of Metal-Plate-Connected Trusses	BC 1704.6.3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood - Installation of Prefabricated I-joists	BC 1704.6.4
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils - Site Preparation	BC 1704.7.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soils - Fill placement & In-Place Density	BC 1704.7.2, BC 1704.7.3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils - Investigations (Borings/Test Pits)	TR4, BC 1704.7.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pile Foundations & Drilled Pier Installation	TR5, BC 1704.8
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Pier Foundations	BC 1704.9
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Wall Panels, Curtain Walls, and Veneers	BC 1704.10
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sprayed Fire-Resistant Materials	BC 1704.11
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Exterior Insulation Finish Systems (EIFS)	BC 1704.12
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Alternative Materials - OTCR Buildings Bulletin #	BC 1704.13
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Smoke Control Systems	BC 1704.14
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mechanical Systems	BC 1704.15
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fuel-Oil Storage and Fuel-Oil Piping Systems	BC 1704.16
<input type="checkbox"/>	<input checked="" type="checkbox"/>	High-Pressure Steam Piping (Welding)	BC 1704.17
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fuel-Gas Piping (Welding)	BC 1704.18
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Structural Safety - Structural Stability	BC 1704.19
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mechanical Demolition	BC 1704.19, BC 3306.6
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Excavation - Sheeting, Shoring, and Bracing	BC 1704.19, BC 3304.4.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil Percolation Test - Drywell	BC 1704.20.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Raising and Moving of a Building	BC 1704.19, BC 1704.27
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Soil Percolation Test - Septic	BC 1704.20.1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Site Storm Drainage Disposal and Detention System Installation	BC 1704.20
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Septic System Installation	BC 1704.20
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sprinkler Systems	BC 1704.21
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Standpipe Systems	BC 1704.22
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Heating Systems	BC 1704.23
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Firestop, Draftstop, and Fireblock systems	BC 1704.25
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Aluminum Welding	BC 1704.26
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seismic Isolation Systems	BC 1707.8
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concrete Test Cylinders	TR2, BC 1905.6
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concrete Design Mix	TR3, BC 1905.3

Y	N	PROGRESS INSPECTIONS ITEMS	CODE SECTION
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Preliminary	28-116.2.1, BC 109.2
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Footing and Foundation	BC 109.3.1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Lowest Floor Elevation (attach FEMA form)	BC 109.3.2
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Frame Inspection	BC 109.3.3
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Energy Code Compliance Inspections	TR8, BC 109.3.5
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fire-Resistance Rated Construction	BC 109.3.4
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Public Assembly Emergency Lighting	28-116.2.2
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Final	28-116.2.4.2, BC 109.5, Directive 14 of 1975, and 1 RCNY §101-10

Responsibilities

OWNER	CIVIL ENGINEER	E, M & P ENGINEER
STILLWELL SELF STORAGE LLC. 20 Church Street 9th Floor Hartford, CT 06103 CONTACT: Dean Conrad 860-525-1666 phone	LANGAN ENGINEERING 21 Penn Plaza New York, NY 10001-2727 CONTACT: Michael Nilson, PE 212-479-5400 phone 212-479-5444 Fax	GHT LIMITED 1010 N. Glebe Road, Suite 200 Arlington VA 22201 CONTACT: James Hansen 703-243-1200 phone 703-276-1376 Fax
ARCHITECT	STRUCTURAL ENGINEER	PERMIT EXPEDITOR
BUTZ•WILBERN LTD. JACK WILBERN, R.A. NY#026629-1 800 West Broad St., Suite 363 Falls Church, Virginia 22046 CONTACT: Jack Wilbern 703-356-6771 phone 703-356-7010 fax	O'DONNELL & NACCARATO 111 S Independence Mall East, Suite 950 Philadelphia, PA 19106 CONTACT: Brian Rawlings 215-925-3788 phone	JAM CONSULTANTS 104 West 29th Street 9th Flr. New York, NY 10001 CONTACT: Muriel Henriquez 212-244-4427 phone 212-244-4497 fax

TR-8 Energy Code Progress Inspections

Y	N	ENERGY CODE PROGRESS INSPECTIONS	Table Reference in 1RCNY 5000-01 (h) (1) and (2)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Protection of foundation insulation	(IA1),(IIA1)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Insulation placement and R values	(IA2),(IIA2)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fenestration thermal values and ratings	(IA3),(IIA3)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fenestration ratings for air leakage	(IA4),(IIA4)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fenestration areas	(IA5),(IIA5)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Air sealing and insulation - Visual	(IA6),(IIA6)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Air sealing and insulation - Testing	(IA7)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Projection factors	(IA7)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Loading deck weather seals	(IIA8)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vestibules	(IIA9)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Fireplaces	(IB1),(IIB1)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dampers integral to building envelope	(IB2),(IIB2)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	HVAC and service water heating equipment	(IB3),(IIB3)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	HVAC and service water heating system controls	(IB4),(IIB4)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Duct plenum and piping insulation and sealing	(IB5),(IIB5)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Duct leakage testing	(IB6),(IIB6)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Electrical metering	(IC1),(IIC1)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lighting in dwelling units	(IC2),(IIC2)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Interior lighting power	(IIC3)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Exterior lighting power	(IIC4)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lighting controls	(IIC5)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Exit signs	(IIC6)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Tandem wiring	(IIC7)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Electrical motors	(IIC8)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Maintenance information	(ID1),(IID1)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Permanent certificate	(ID2)

Energy Compliance Note.

THIS IS A NON-HEATED STORAGE BUILDING THUS IT IS NOT FULLY INSULATED THEREFORE ENERGY CODE COMPLIANCE IS NOT APPLICABLE.

Building Code Analysis

(for zoning analysis see sheets Z001.00 - Z003.00)

DESCRIPTION OF A NEW SELF STORAGE FACILITY

One story new self storage facility composed of bearing wall structure at 10'± centers supporting non composite metal floor deck with concrete fill and a TPO membrane roof. Exterior skin will be insulated metal panel

APPLICABLE CODES

CITY OF NEW YORK 2008 BUILDING CODES
2011 NEW YORK CITY ENERGY CONSERVATION CODE

CONSTRUCTION TYPE: II-B

BUILDING CODE OCCUPANCY : S-1 (MODERATE-HAZARD STORAGE)

BUILDING CODE OCCUPANCY : 16D WAREHOUSE

BUILDING AREA: 9,271 SF F.A.R. AREA PROPOSED
9,271 SF TOTAL BUILDING AREA PROPOSED
(Also see Zoning Area Calculations on Z-002)

BUILDING HEIGHT: 15'-6" / 1 STORY PROPOSED

FIRE SUPPRESSION SYSTEM: FULLY SPRINKLERED PER NFPA 13 & LOCAL CODE

PROPOSED AREA	S-1 (STORAGE)
1ST. FLR. STORAGE	9,271 SF
TOTAL AREA	9,271 SF

AREA AND HEIGHT PER TABLE 503

AREA ALLOWED FOR S-1 TYPE II-B CONSTRUCTION = 7,500 SF
+200% AREA INCREASE FOR SPRINKLER = 15,000 SF
TOTAL AREA AREA ALLOWED PER FLOOR = 22,500 SF X 2 = 45,000 SF MAX
9,271 SF PROPOSED

HEIGHT ALLOWED FOR S-1 TYPE II-B CONSTRUCTION = 55' & 3 STORES
1 STORY BUILDING PROPOSED - COMPLIES
15'-6" TALL BUILDING - COMPLIES

FIRE RESISTANCE RATING REQUIREMENTS

NON BEARING EXTERIOR WALLS (TABLE 601 & 602)	REQUIRED	PROPOSED
Fire Separation Distance <5'	2 HR	N/A
Fire Separation Distance > 5' to <10'	1HR	N/A
Fire Separation Distance > 10' to <30'	1 HR	N/A
Fire Separation Distance >30'	0 HR	0 HR
STRUCTURAL FRAME (TABLE 601)		
Including Columns, Girders, trusses	0 HR	0 HR
BEARING WALLS (TABLE 601 & 602)		
Exterior (Fire Separation Distance > 10' to <30')	1 HR	N/A
Interior	0 HR	0 HR
NONBEARING WALLS & PARTITIONS (TABLE 601)		
Interior	0 HR	0 HR
FLOOR CONSTRUCTION (TABLE 601)		
Including supporting beams and joists	0 HR	0 HR
ROOF CONSTRUCTION (TABLE 601)		
Including supporting beams and joists	0 HR	0 HR
SHAFT ENCLOSURES (SECTION 707.4)	1 HR	N/A

WATER & SEWER

NEW CONNECTIONS TO WATER AND SEWER PER PLUMBING DRAWINGS

Vicinity Map



Sheet Index

			05/23/13 Permit Set	02/03/14 Permit Set 1 Story
ARCH	A-001.00	1	COVER SHEET	• •
	A-002.00	2	PLOT PLAN	• •
	Z-001.00	3	ZONING ANALYSIS	• •
	Z-002.00	4	ZONING ANALYSIS	• •
	Z-003.00	5	ZONING ANALYSIS	• •
	A-040.00	6	SECURITY PLAN	• •
	A-070.00	7	WALL TYPES	• •
	A-080.00	8	DOOR & FINISH SCHEDULES	• •
PLANS	A-100.00	9	SITE & GATE PLAN	• •
	A-101.00	10	SLAB/1ST FLOOR/ROOF PLANS	• •
ELEVATIONS	A-200.00	11	BUILDING ELEVATIONS	• •
SECTIONS	A-300.00	12	BUILDING SECTIONS	• •
DETAILS	A-500.00	13	DETAILS	• •
STRUCTURAL PLANS	S-100.00		FOUNDATION PLAN	• •
	S-101.00		ROOF FRAMING PLAN	• •
DETAILS	S-200.00		DETAILS	• •
	S-201.00		TYPICAL DETAILS & SCHEDULES	• •
	S-202.00		GENERAL NOTES	• •
	S-300.00		DETAILS	• •
ELECTRICAL	E-001.00	1	ELECTRICAL COVER SHEET	• •
PLANS	E-101.00	2	FLOOR PLANS	• •
	E-400.00	3	PARTIAL PLANS	• •
DETAILS	E-500.00	4	DETAILS	• •
	E-600.00	5	RISER DIAGRAMS	• •
PLUMBING	P-001.00	1	PLUMBING COVER SHEET	• •
PLANS	P-101.00	2	FLOOR PLANS	• •
DETAILS	P-500.00	3	DETAILS & RISER DIAGRAM	• •

Symbols

	REFERENCE ELEVATION		INTERIOR ELEVATION MARK (SHEET DRAWN ON INTERIOR ELEVATION NUMBER)		PROPERTY LINE
	REVISION NUMBER AREA REVISED		(SHEET DRAWN ON SHEET KEYED FROM)		CENTER LINE
	AREA SHOWN IN DETAIL		STEP DOWN		ROOM/SPACE NUMBER
	DOOR SYMBOL		BEGIN/END SECTION (SHEET DRAWN ON SHEET KEYED FROM)		EXIT LIGHT
	WALL TYPE				
	END OF PARTIAL SECTION				

List Of Separate App.

- CURB CUT
- EXTERIOR SIGNS ILLUMINATED & NON-ILLUMINATED
- SPRINKLER
- BUILDERS PAVEMENT PLAN
- SD 1 & 2
- FIRE PROTECTION PLAN (FPP)

ISSUE DATE:

1 Permit Set 05/23/13
2 Permit Set 1 Story 02/03/14

REVISION DATE:

Stillwell Avenue Self Storage - Bldg. B

Stillwell Self Storage LLC
1540 Bassett Ave.
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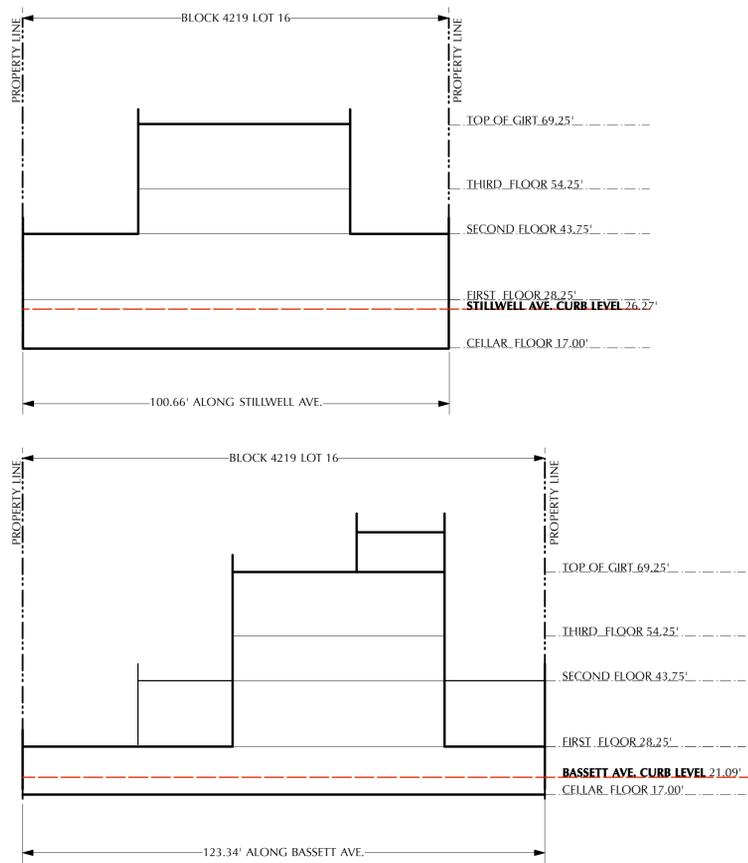
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COVER SHEET

A-001.00

1 OF 13

11041

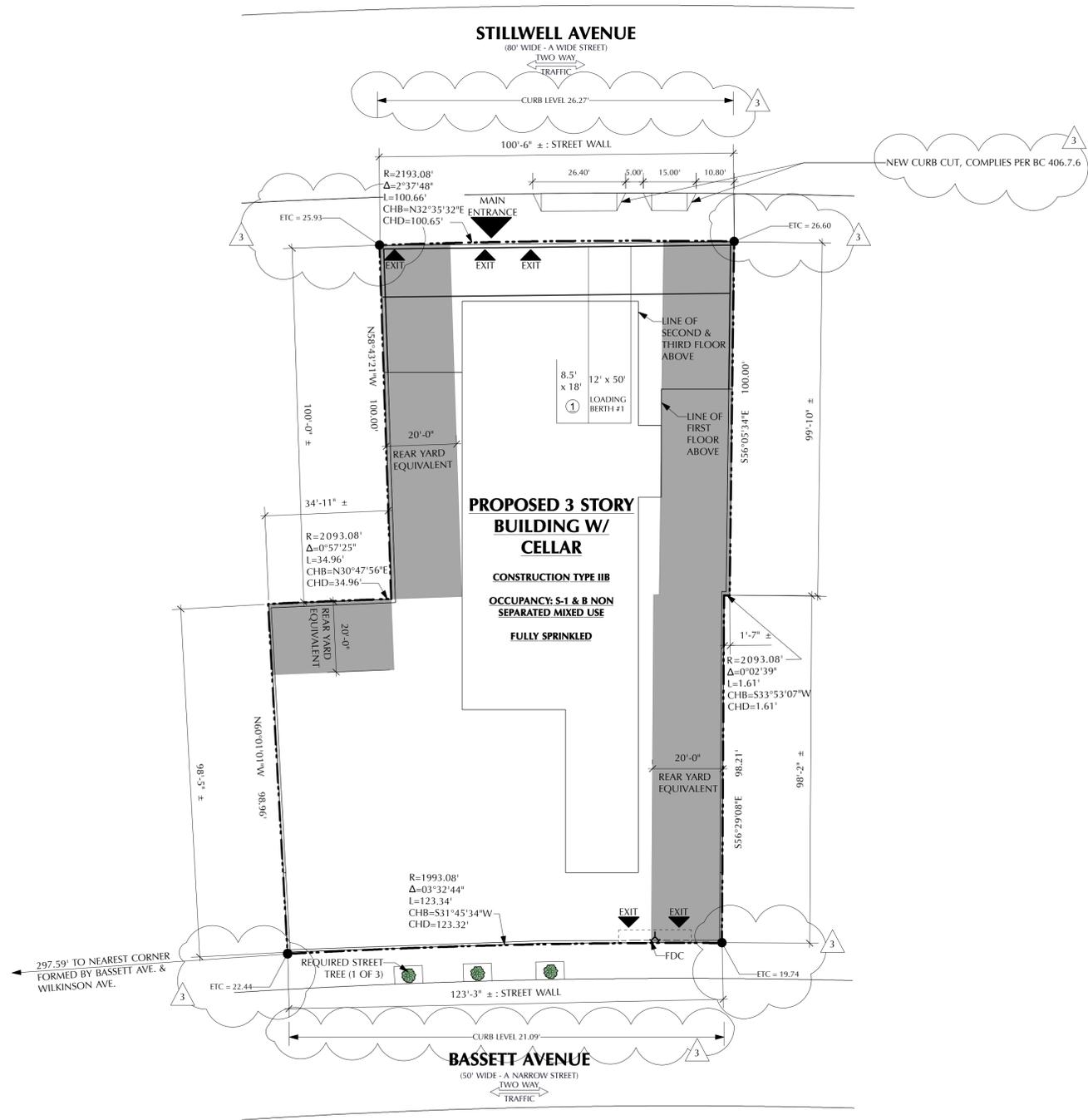


STREET FRONTAGE	CURB LEVEL (PER ZR 12_10)	FRONTAGE LENGTH
STILLWELL AVENUE	$(25.93' + 26.60')/2 = 26.27'$	100.66'
BASSETT AVENUE	$(22.44' + 19.74')/2 = 21.09'$	123.34'

*SEE PROVIDED SURVEY FOR VERIFICATION OF EXISTING TOP OF CURB ELEVATIONS

2 CURB LEVEL CALCULATIONS

A-002 Scale: 1" = 20 ft



1 PLOT PLAN BLOCK 4219, LOT 16 (22,295 SF)

A-002 Scale: 1" = 20 ft

ISSUE DATE:

1 Permit Set 05/23/13

REVISION DATE:

1 Permit Comments 10/01/13
2 Permit Comments #2 10/31/13
3 Permit Comments #3 12/13/13

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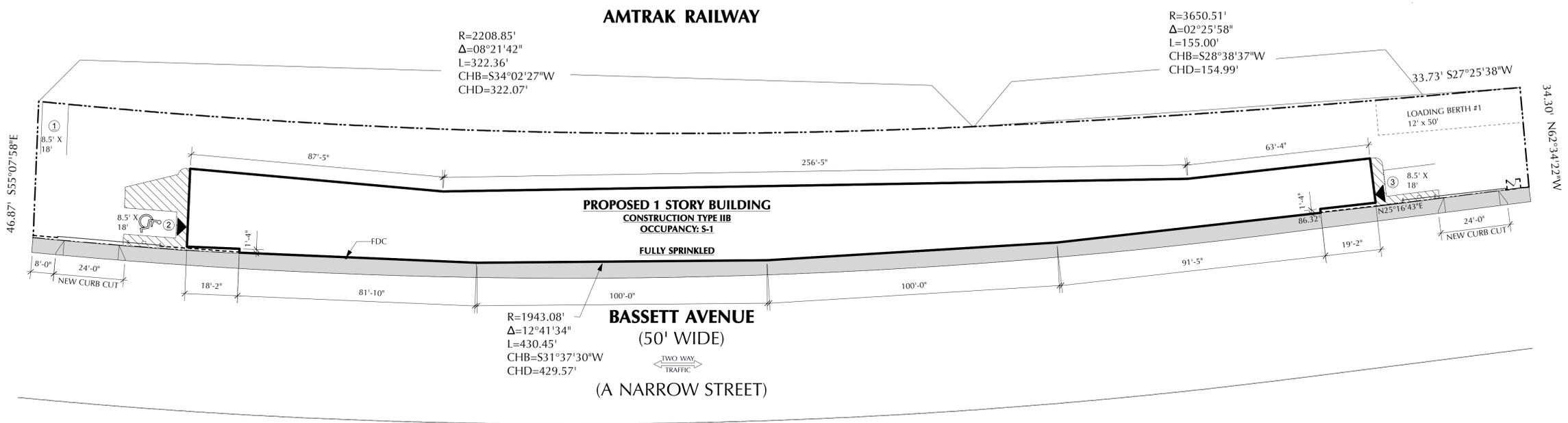
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PLOT PLAN

A-002.00

2 OF 40

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1 PLOT PLAN BLOCK 4226, LOT 290 (21,854 SF)
 A-002 Scale: 1" = 20 ft

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1 Permit Set	05/23/13
2 Permit Set 1 Story	02/03/14

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PLOT PLAN

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SITE & GATE
PLANS

A-100.00

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AMTRAK RAILWAY

3
A100

2
A100

EXISTING IRON FENCE

1 STORY SELF STORAGE BUILDING

BASSETT AVE.

1 SITE PLAN
A-100 Scale: 1/16" = 1'-0"

EXISTING IRON FENCE TO REMAIN

EXISTING IRON FENCE TO REMAIN

NEW 8' HIGH VINYL DIPPED CHAIN LINK FENCE

24'-0" GATE OPENING

12'-0" GATE STANCHION

ALICORN

GATE OPERATOR

1'-4" RECESS IN WALL

NEW 8' HIGH VINYL DIPPED CHAIN LINK FENCE TO FACE OF BUILDING

CORNER OF PROPERTY LINE

8'-0"

24'-0" CURB CUT

39'-0" V.I.F.

2 GATE PLAN
A-100 Scale: 1/8" = 1'-0"

EXISTING IRON FENCE TO REMAIN

EXISTING IRON FENCE TO REMAIN VERIFY EXTENT IN FIELD

MAN GATE: PROVIDE APPLIED METAL SCREENING MESH @ ADJACENT FIXED FENCE PANEL, EXTEND FULL LENGTH OF EITHER SIDE OF LOCK SET

NEW 8' HIGH VINYL DIPPED CHAIN LINK FENCE

12'-0" GATE STANCHION

24'-0" GATE OPENING

1'-4" RECESS IN WALL

GATE OPERATOR

24'-0" CURB CUT

8'-0"

NEW 8' HIGH VINYL DIPPED CHAIN LINK FENCE TO FACE OF BUILDING

40'-4" V.I.F.

3 GATE PLAN
A-100 Scale: 1/8" = 1'-0"

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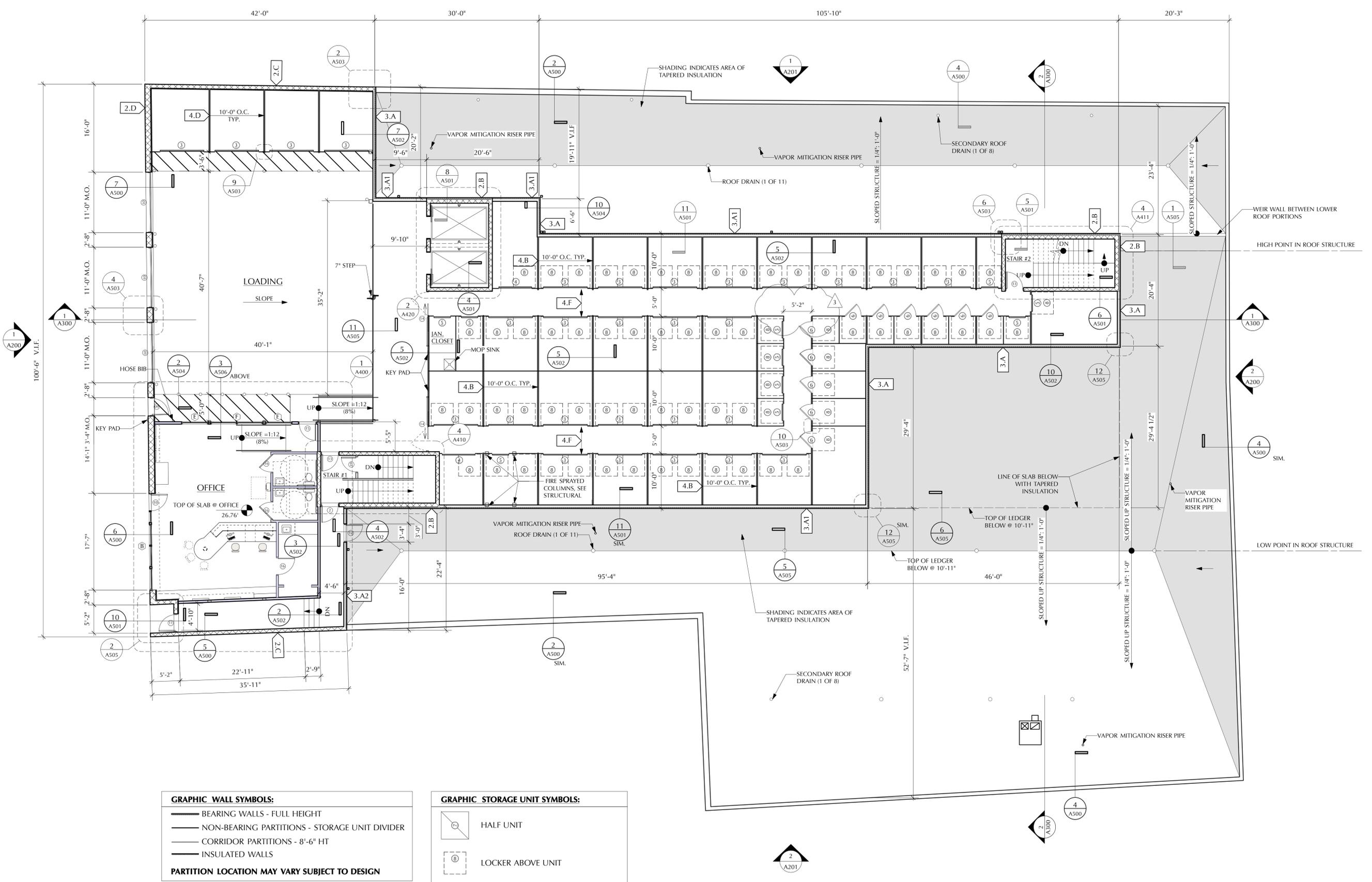
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FIRST FLOOR
PLAN

A-101.00

16 OF 40

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GRAPHIC WALL SYMBOLS:

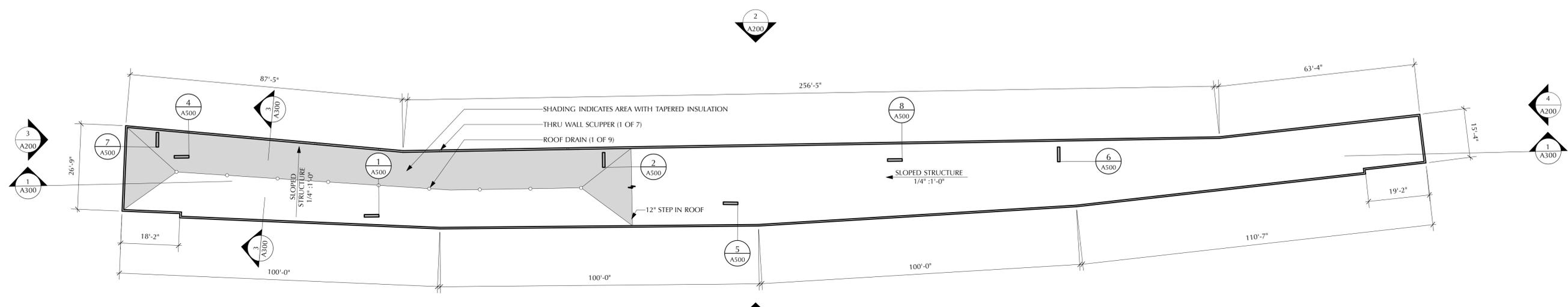
	BEARING WALLS - FULL HEIGHT
	NON-BEARING PARTITIONS - STORAGE UNIT DIVIDER
	CORRIDOR PARTITIONS - 8'-6" HT
	INSULATED WALLS

PARTITION LOCATION MAY VARY SUBJECT TO DESIGN

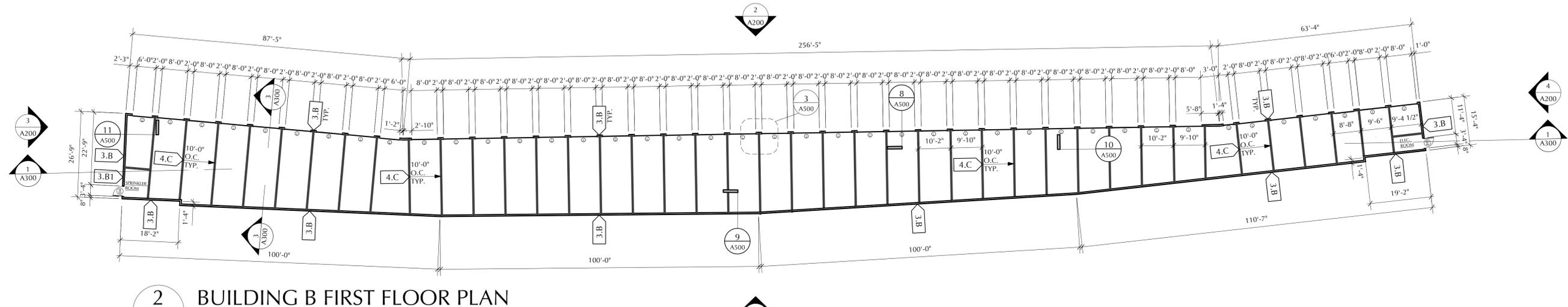
GRAPHIC STORAGE UNIT SYMBOLS:

	HALF UNIT
	LOCKER ABOVE UNIT
	HALF UNIT WITH LOCKER ABOVE

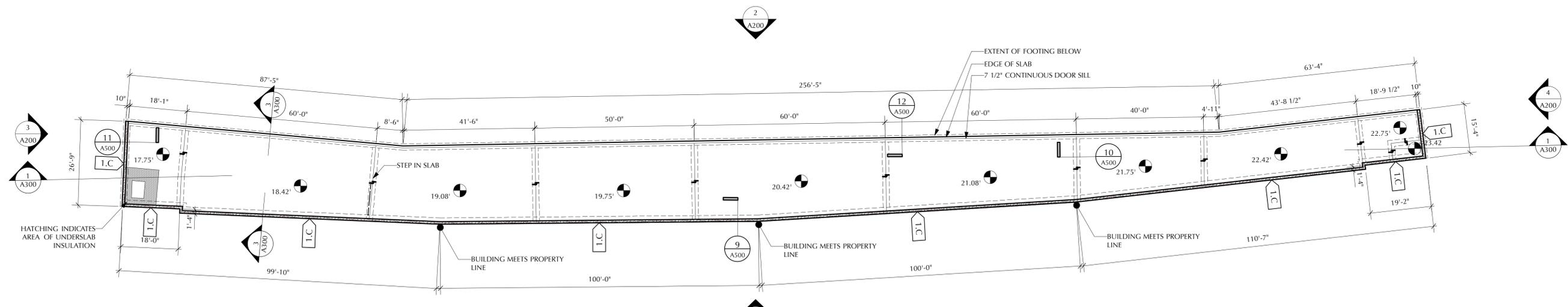
1 First Floor Plan
Scale: 1/8" = 1'-0"



1 BUILDING B ROOF PLAN
A-102 Scale: 1/16" = 1'-0"



2 BUILDING B FIRST FLOOR PLAN
A-101 Scale: 1/16" = 1'-0"



1 BUILDING B SLAB PLAN
A-101 Scale: 1/16" = 1'-0"

ISSUE DATE:	
1 Permit Set	05/23/13
REVISION DATE:	
2 Permit Comments #2	10/31/13
3 Permit Comments #3	12/13/13

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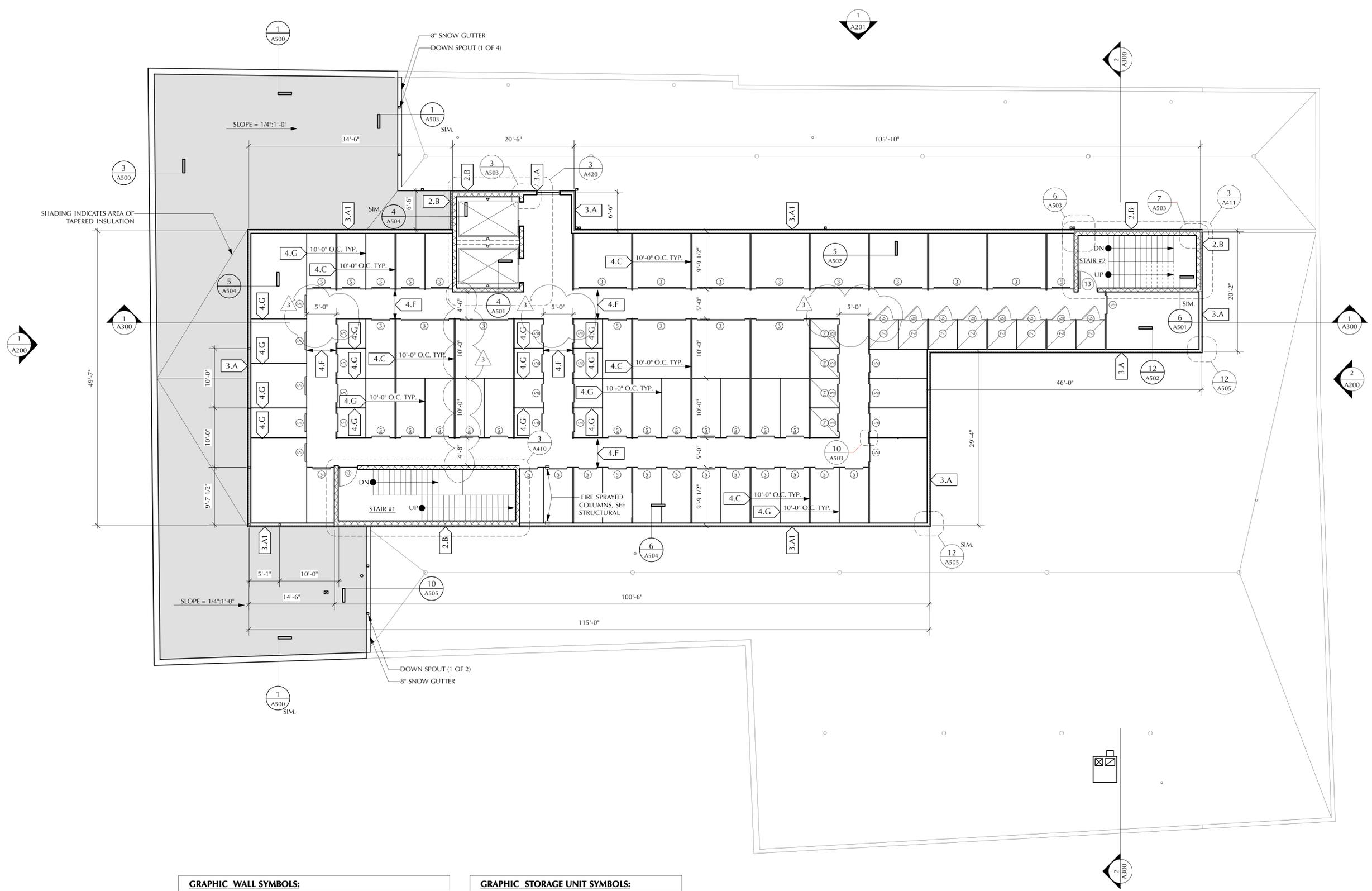
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SECOND FLOOR
 PLAN

A-102.00

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GRAPHIC WALL SYMBOLS:

	BEARING WALLS - FULL HEIGHT
	NON-BEARING PARTITIONS - STORAGE UNIT DIVIDER
	CORRIDOR PARTITIONS - 8'-6" HT
	INSULATED WALLS

PARTITION LOCATION MAY VARY SUBJECT TO DESIGN

GRAPHIC STORAGE UNIT SYMBOLS:

	HALF UNIT
	LOCKER ABOVE UNIT
	HALF UNIT WITH LOCKER ABOVE

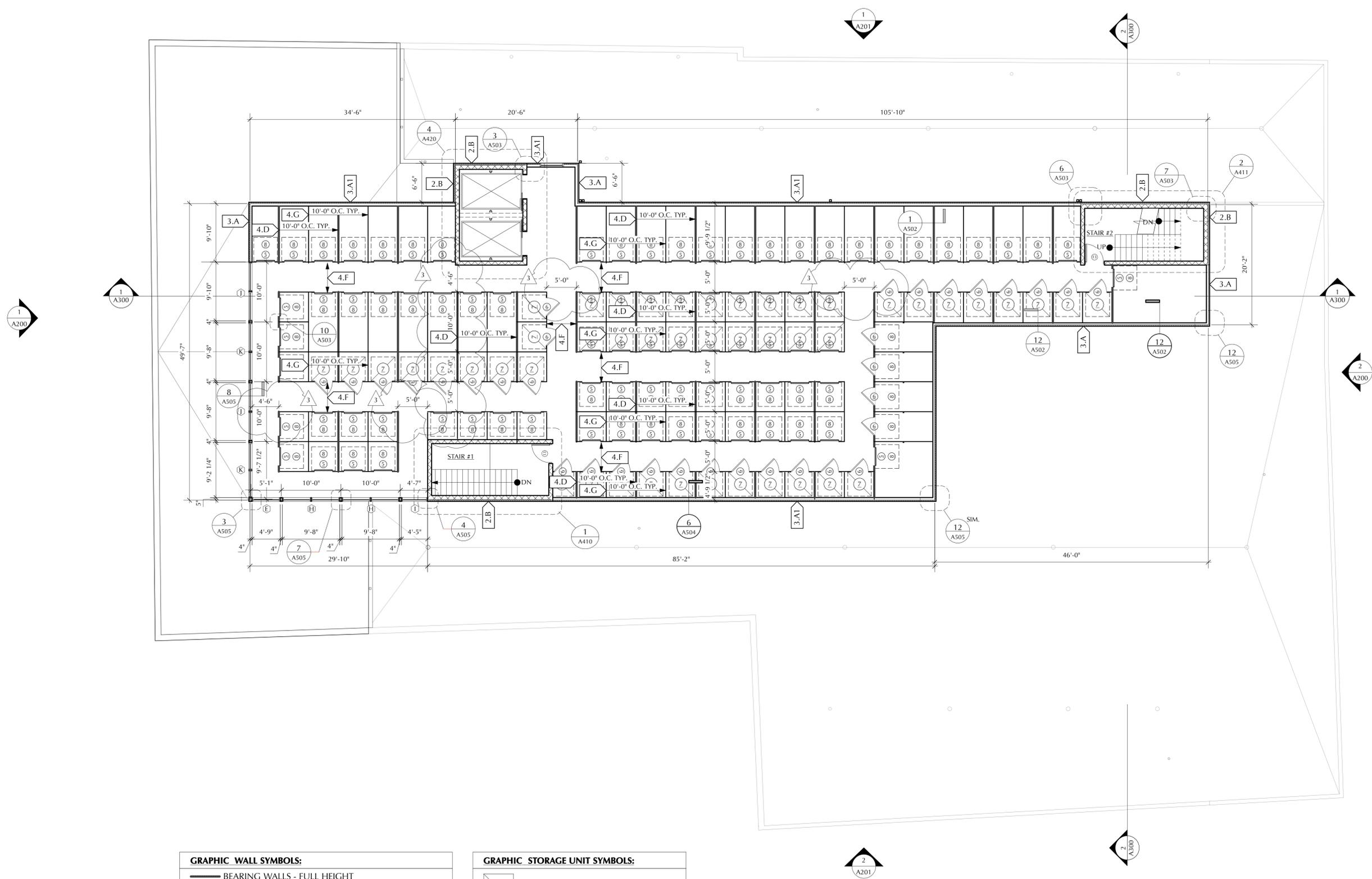
1 2nd Floor Plan
 A-102 Scale: 1/8" = 1'-0"

ISSUE DATE:	
1 Permit Set	05/23/13
REVISION DATE:	
2 Permit Comments #2 10/31/13	
3 Permit Comments #3 12/13/13	

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THIRD FLOOR PLAN
A-103.00
18 OF 40
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GRAPHIC WALL SYMBOLS:

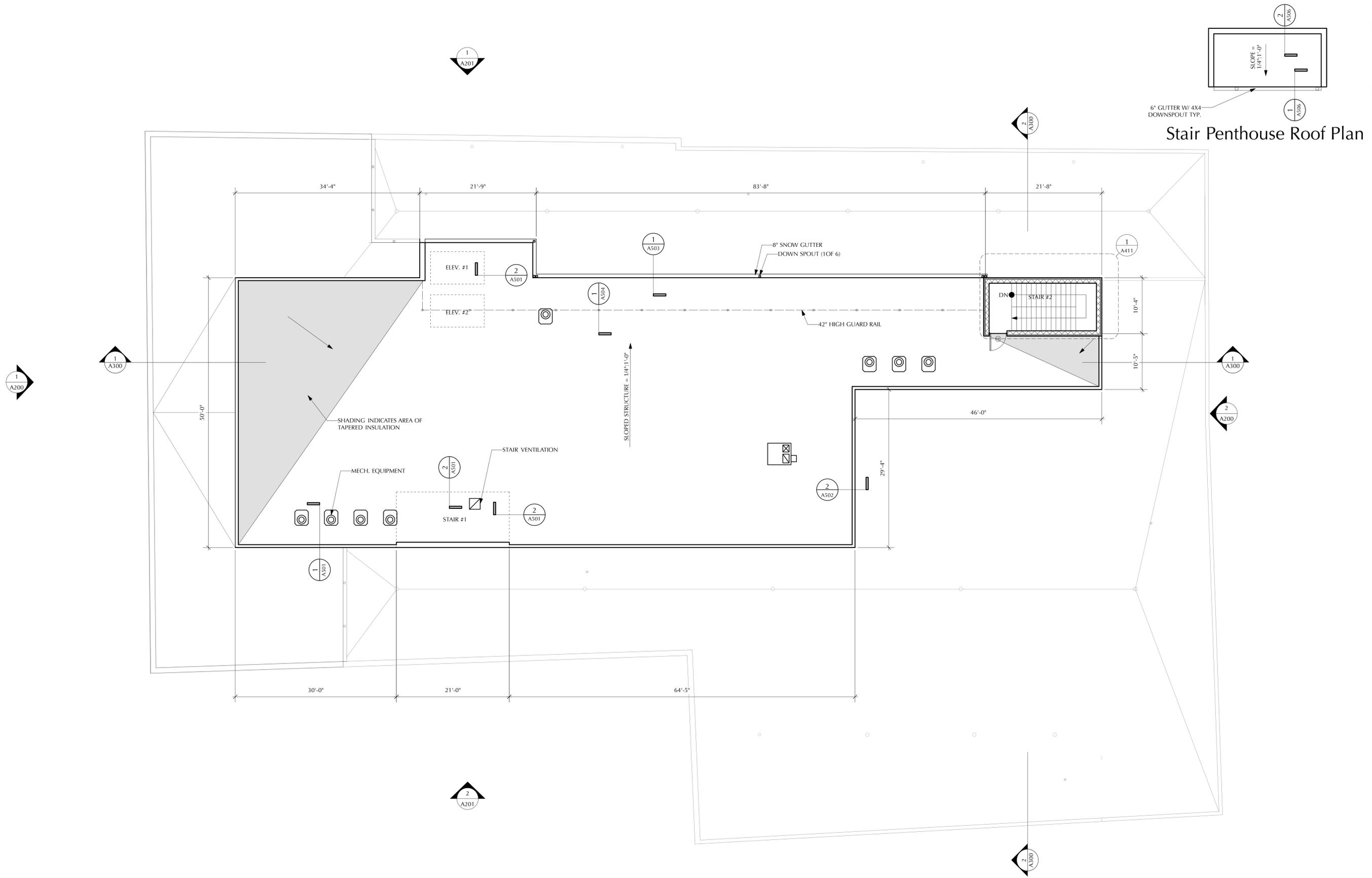
	BEARING WALLS - FULL HEIGHT
	NON-BEARING PARTITIONS - STORAGE UNIT DIVIDER
	CORRIDOR PARTITIONS - 8'-6" HT
	INSULATED WALLS

PARTITION LOCATION MAY VARY SUBJECT TO DESIGN

GRAPHIC STORAGE UNIT SYMBOLS:

	HALF UNIT
	LOCKER ABOVE UNIT
	HALF UNIT WITH LOCKER ABOVE

1
 A-103
 3rd Floor Plan
 Scale: 1/8" = 1'-0"



Stair Penthouse Roof Plan

ISSUE DATE:	
1 Permit Set	05/23/13

REVISION DATE:	
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ROOF PLAN

A-104.00

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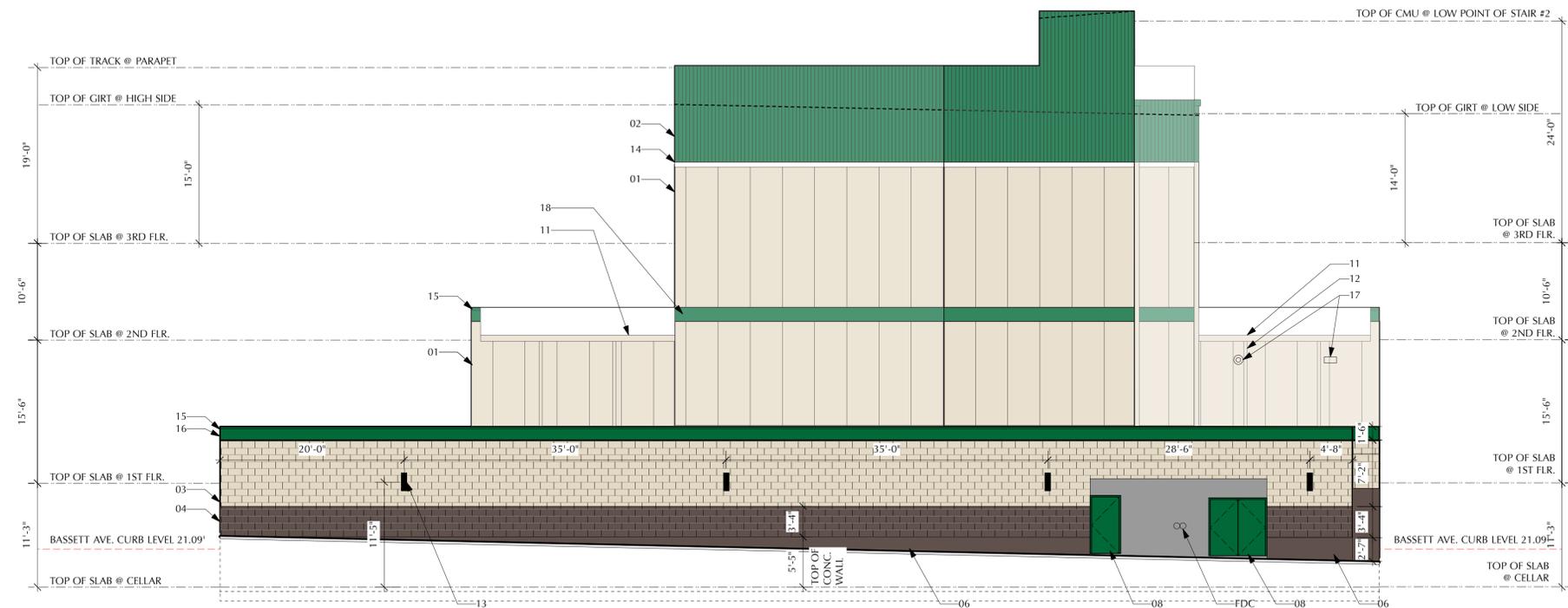
1 Roof Plan
 A-104 Scale: 1/8" = 1'-0"

#	Item	Finish	Material	Color	Manufacturer	Remarks
01	INSULATED METAL PANEL	AZTECO EMBOSSED	METAL	SURREY BEIGE	KINGSPAN	
02	INSULATED METAL PANEL	INVERTED RIB	METAL	EVERGREEN	KINGSPAN	
03	CMU-1	PAINTED		MATCH SURREY BEIGE	BETCO	
04	CMU-2	PAINTED		BROWN	BETCO	
05	CMU SOLDIER COURSE	PAINTED		BROWN	BETCO	
06	CONCRETE WALL	POINTED & PAINTED		BROWN		
07	STORE FRONT ASSEMBLY	PREFINISHED	ALUMINUM	INTERSTATE GREEN	VISTA WALL	
08	EGRESS DOOR	PAINT		MATCH EVERGREEN		
09	OVERHEAD DOOR	PREFINISHED		MATCH EVERGREEN		
10	WINDOW ASSEMBLY	PREFINISHED	ALUMINUM	INTERSTATE GREEN		
11	GUTTER	PREFINISHED	METAL	MATCH COLOR OF ADJACENT MATERIAL		
12	DOWNSPOUT	PREFINISHED	METAL	MATCH COLOR OF ADJACENT MATERIAL		
13	EXTERIOR LIGHT FIXTURE	PREFINISHED				
14	6" Z FLASHING	PREFINISHED	METAL	WHITE		
15	CAP FLASHING	PREFINISHED	METAL	MATCH EVERGREEN		
16	CMU-3	PAINTED		MATCH EVERGREEN	BETCO	
17	MECHANICAL EQUIP.	PAINTED	METAL	SEE NOTE #1		
18	18" PAINTED STRIPE	PAINTED	METAL	MATCH EVERGREEN		
19	METAL FENCE	PREFINISHED	METAL			

NOTES:
1. Color of downspouts and mechanical louvers to match adjacent material.
2. Painters do samples on site to be approved prior to commencement of painting.
3. All mortar to match adjacent block unless noted otherwise.



1 NORTH ELEVATION
Scale: 1/8" = 1'-0"



2 SOUTH ELEVATION
Scale: 1/8" = 1'-0"

ISSUE DATE:
1 Permit Set 05/23/13

REVISION DATE:
1 Permit Comments 10/01/13
2 Permit Comments #2 10/31/13

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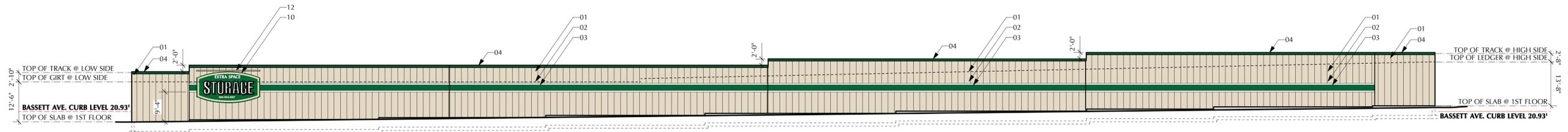
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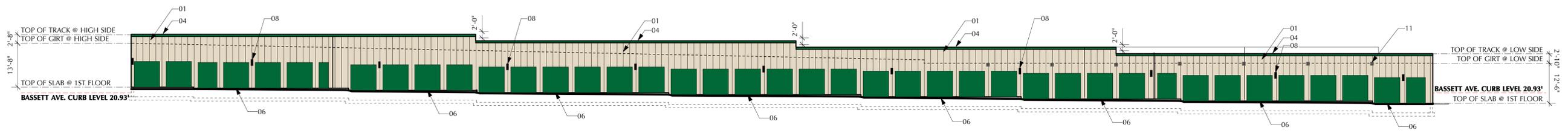
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BUILDING ELEVATIONS
A-200.00
20 OF 40

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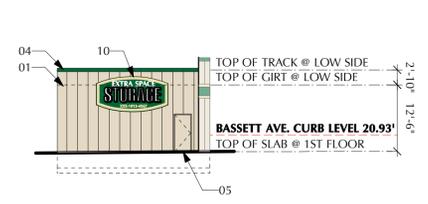


1 NORTH ELEVATION
A-200 Scale: 1/16" = 1'-0"



2 SOUTH ELEVATION
A-200 Scale: 1/16" = 1'-0"

#	Item	Finish	Material	Color	Manufacturer	Remarks
01	INSULATED METAL PANEL	AZTECO EMBOSSED	METAL	SURREY BEIGE	KINGSPAN	
02	6" ACCENT STRIPE 1	PAINTED		(WHITE) MATCH EXTRASPACE STANDARD SIGNAGE		
03	20" ACCENT STRIPE 2	PAINTED		(GREEN) MATCH EXTRASPACE STANDARD SIGNAGE		
04	CAP FLASHING	PREFINISHED	METAL	MATCH EVERGREEN		
05	UTILITY ROOM DOOR	PAINT		MATCH SURREY BEIGE		
06	ROLLUP DOOR	PREFINISHED	METAL	MATCH EVERGREEN		
08	EXTERIOR LIGHT FIXTURE	PREFINISHED				
10	EXTRASPACE SIGN	--	--			SIGN BY OTHERS, PROVIDE BLOCKING AS NEEDED FOR FUTURE SIGN
11	THRU WALL SCUPPER	PREFINISHED	--	MATCH SURREY BEIGE		
12	SIGN DOWN LIGHT	PREFINISHED	--	MATCH SURREY BEIGE		



3 EAST ELEVATION
A-200 Scale: 1/16" = 1'-0"



4 WEST ELEVATION
A-200 Scale: 1/16" = 1'-0"

ISSUE DATE:

1 Permit Set	05/23/13
2 Permit Set 1 Story	02/03/14

REVISION DATE:

1 Permit Comments	10/14/13
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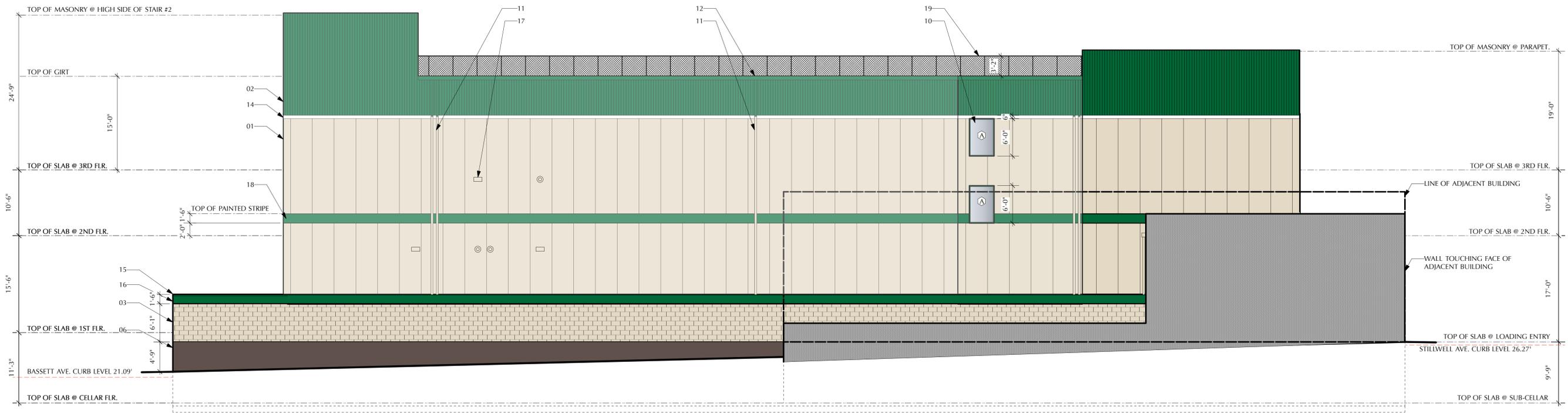
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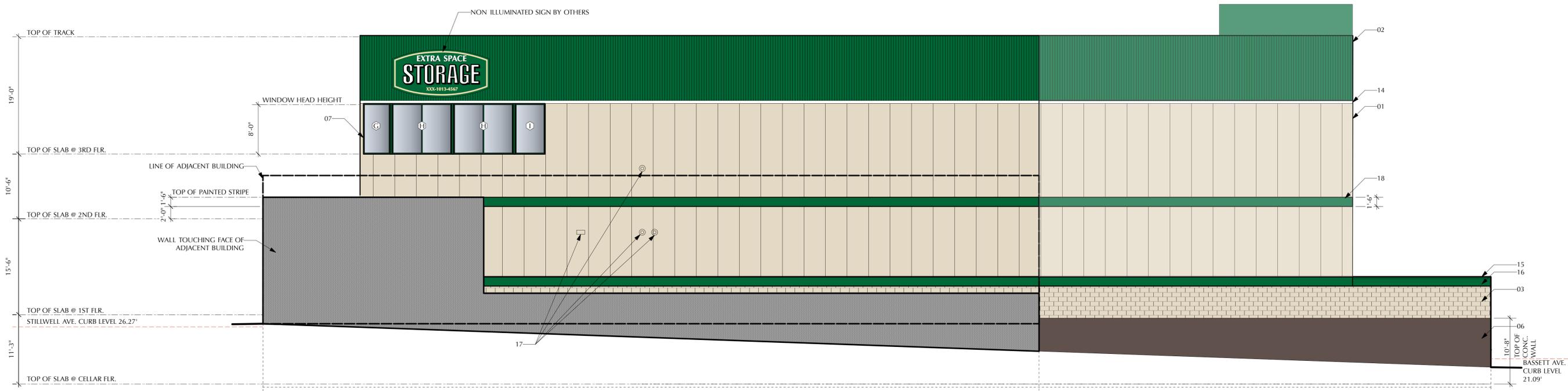
BUILDING ELEVATIONS

A-200.00

11 OF 13



1 EAST ELEVATION
 A-201 Scale: 1/8" = 1'-0"



2 WEST ELEVATION
 A-201 Scale: 1/8" = 1'-0"

#	Item	Finish	Material	Color	Manufacturer	Remarks
01	INSULATED METAL PANEL	AZTECO EMBOSSED	METAL	SURREY BEIGE	KINGSPAN	
02	INSULATED METAL PANEL	INVERTED RIB	METAL	EVERGREEN	KINGSPAN	
03	CMU-1	PAINTED		MATCH SURREY BEIGE	BETCO	
04	CMU-2	PAINTED		BROWN	BETCO	
05	CMU SOLDIER COURSE	PAINTED		BROWN	BETCO	
06	CONCRETE WALL	POINTED & PAINTED		BROWN		
07	STORE FRONT ASSEMBLY	PREFINISHED	ALUMINUM	INTERSTATE GREEN	VISTA WALL	
08	EGRESS DOOR	PAINT		MATCH EVERGREEN		
09	OVERHEAD DOOR	PREFINISHED		MATCH EVERGREEN		
10	WINDOW ASSEMBLY	PREFINISHED	ALUMINUM	INTERSTATE GREEN		
11	GUTTER	PREFINISHED	METAL	MATCH COLOR OF ADJACENT MATERIAL		
12	DOWNSPOUT	PREFINISHED	METAL	MATCH COLOR OF ADJACENT MATERIAL		
13	EXTERIOR LIGHT FIXTURE	PREFINISHED				
14	6" Z FLASHING	PREFINISHED	METAL	WHITE		
15	CAP FLASHING	PREFINISHED	METAL	MATCH EVERGREEN		
16	CMU-3	PAINTED		MATCH EVERGREEN	BETCO	
17	MECHANICAL EQUIP.	PAINTED	METAL	SEE NOTE #1		
18	18" PAINTED STRIPE	PAINTED	METAL	MATCH EVERGREEN		
19	METAL FENCE	PREFINISHED	METAL			

- NOTES:
- Color of downspouts and mechanical louvers to match adjacent material.
 - Painters do samples on site to be approved prior to commencement of painting
 - All mortar to match adjacent block unless noted otherwise

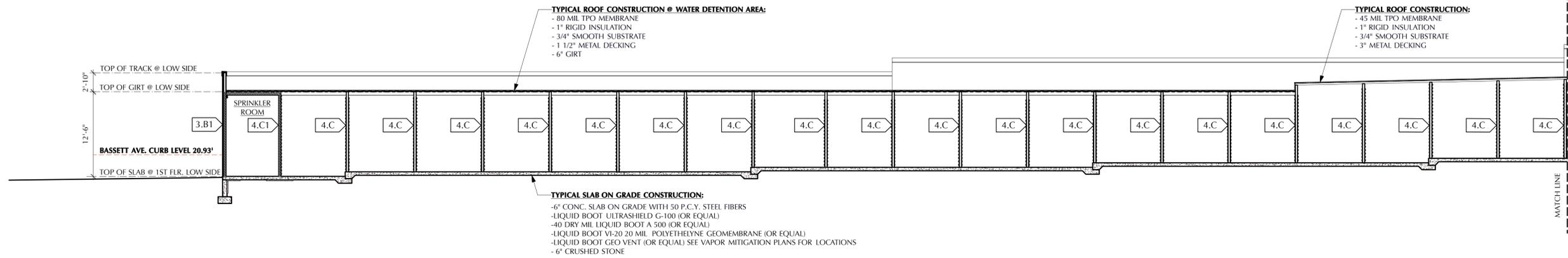
ISSUE DATE:
 1 Permit Set 05/23/13

REVISION DATE:
 1 Permit Comments 10/01/13
 2 Permit Comments #2 10/31/13

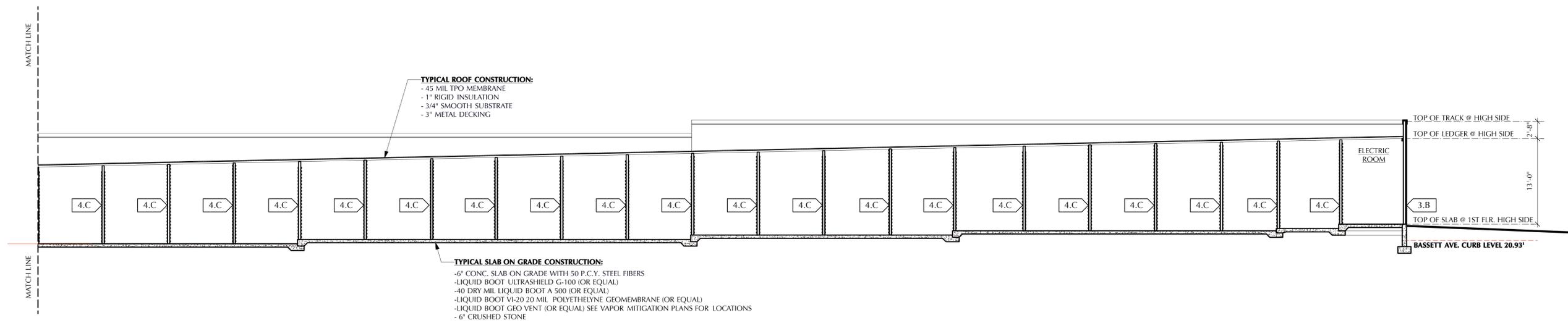
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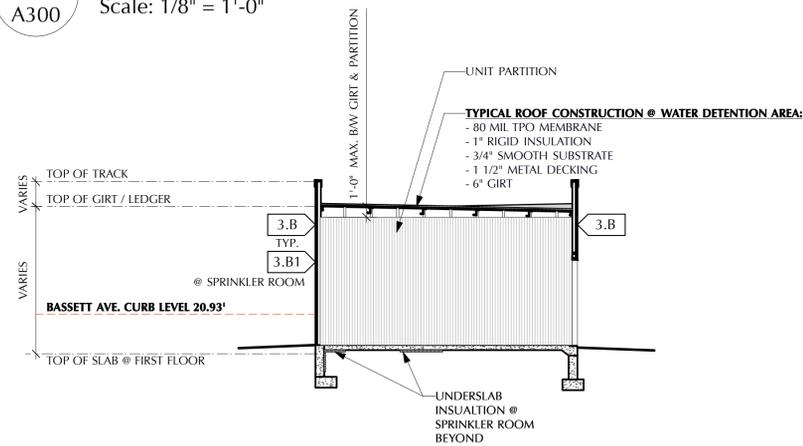
BUILDING ELEVATIONS
 A-201.00
 21 OF 40
 11041



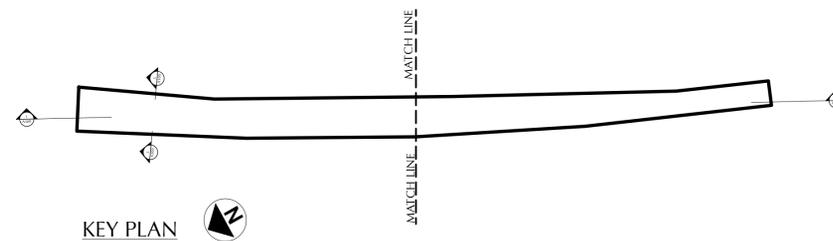
1 BUILDING SECTION
A300 Scale: 1/8" = 1'-0"



2 BUILDING SECTION
A300 Scale: 1/8" = 1'-0"



3 BUILDING CROSS SECTION
A300 Scale: 1/8" = 1'-0"



ISSUE DATE:	
1 Permit Set	05/23/13
2 Permit Set 1 Story	02/03/14

REVISION DATE:	
1 Permit Comments	10/14/13

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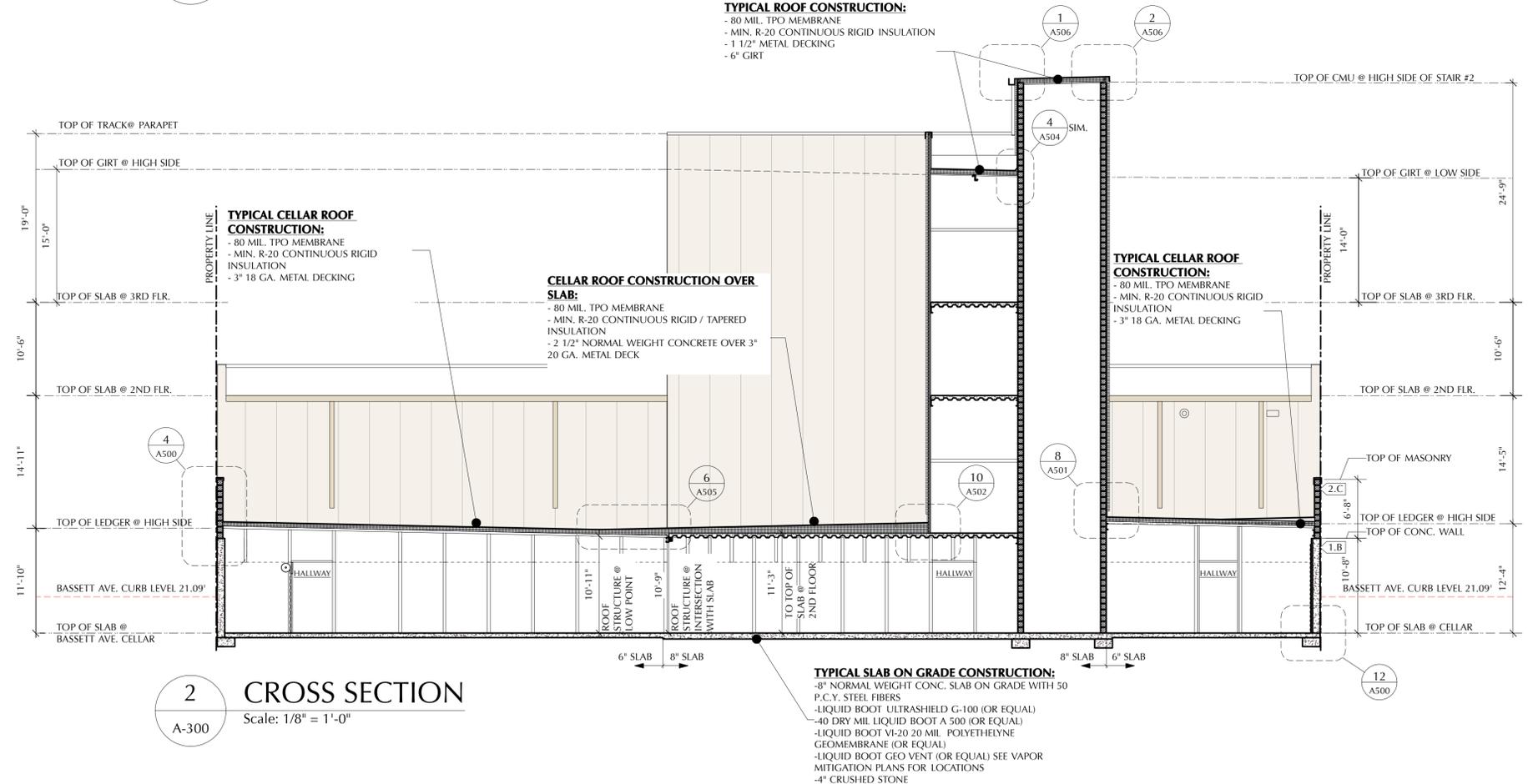
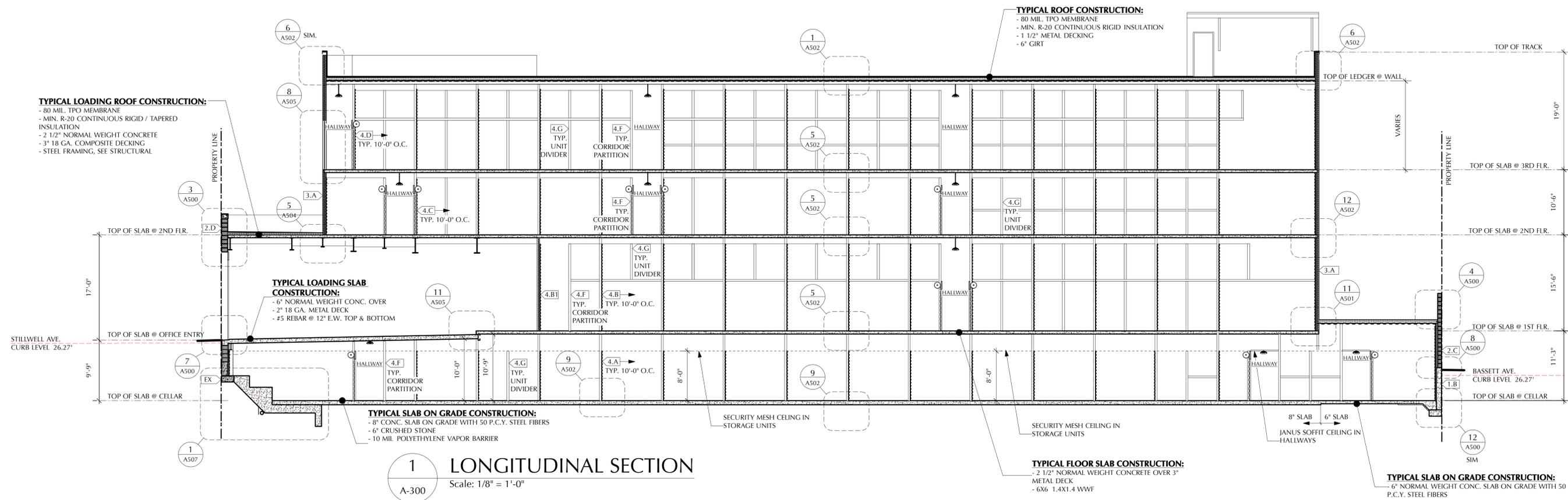
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BUILDING SECTIONS

A-300.00

12 OF 13

11041



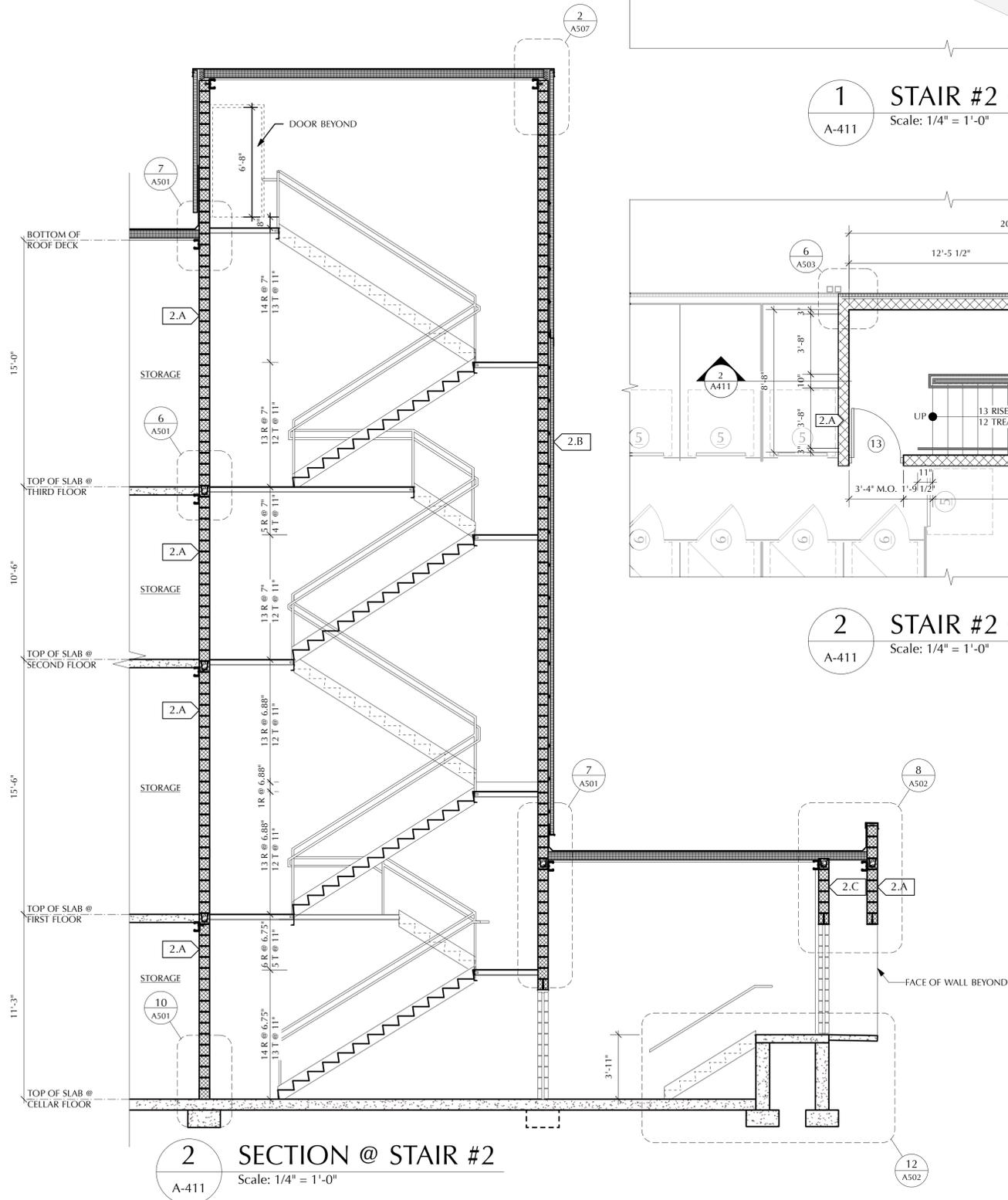
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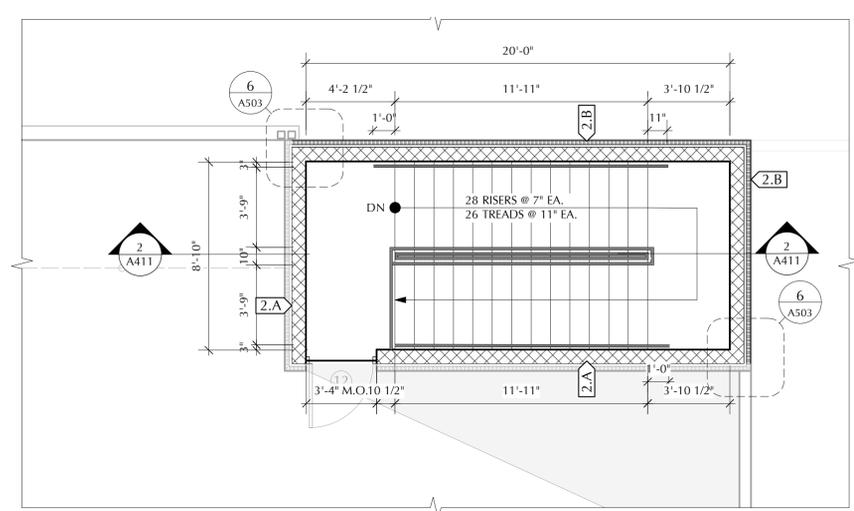


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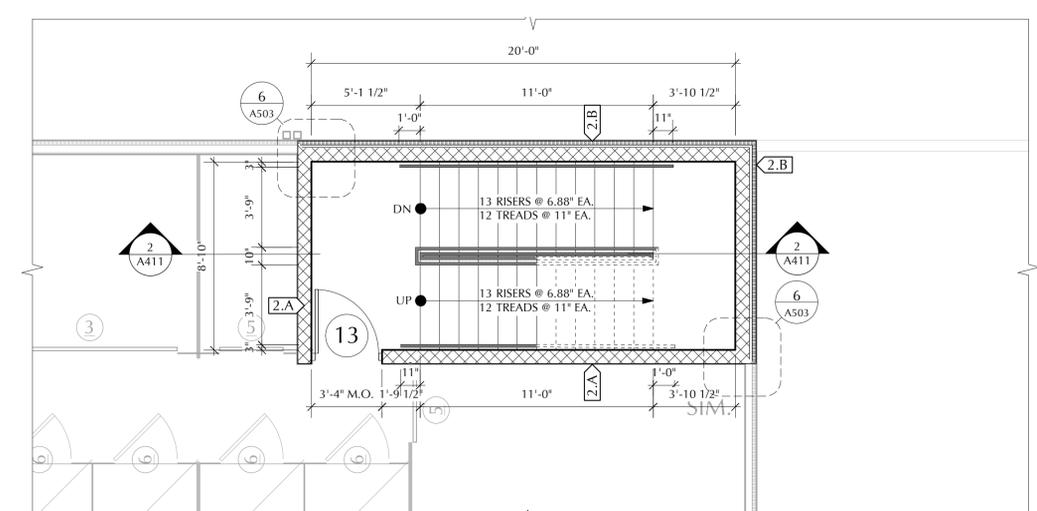
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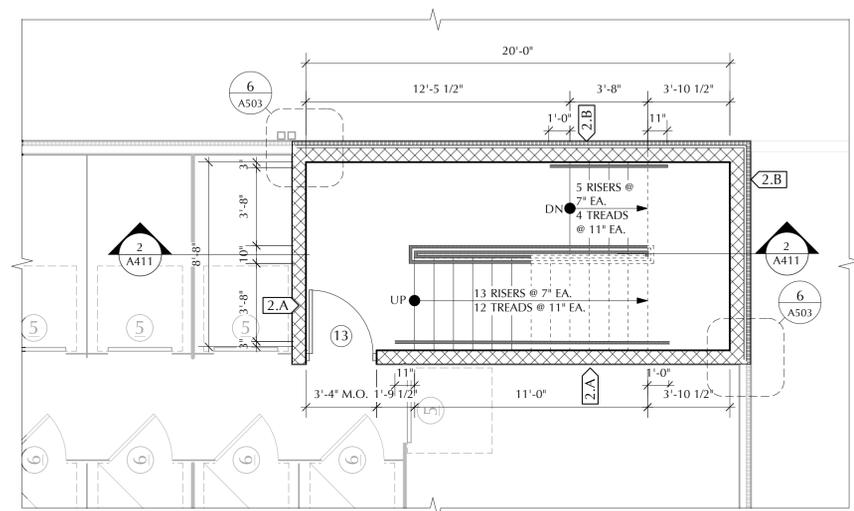
2 SECTION @ STAIR #2
A-411 Scale: 1/4" = 1'-0"



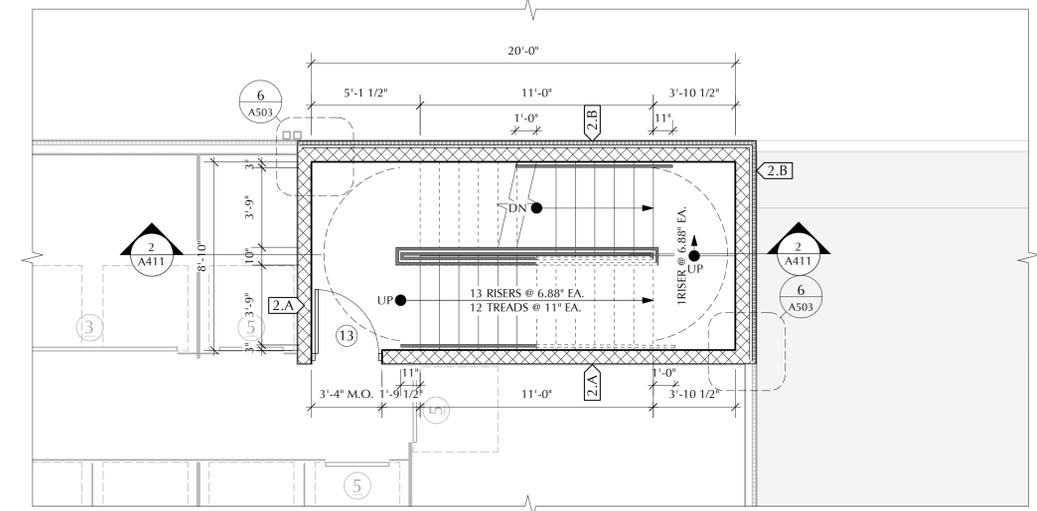
1 STAIR #2 @ ROOF
A-411 Scale: 1/4" = 1'-0"



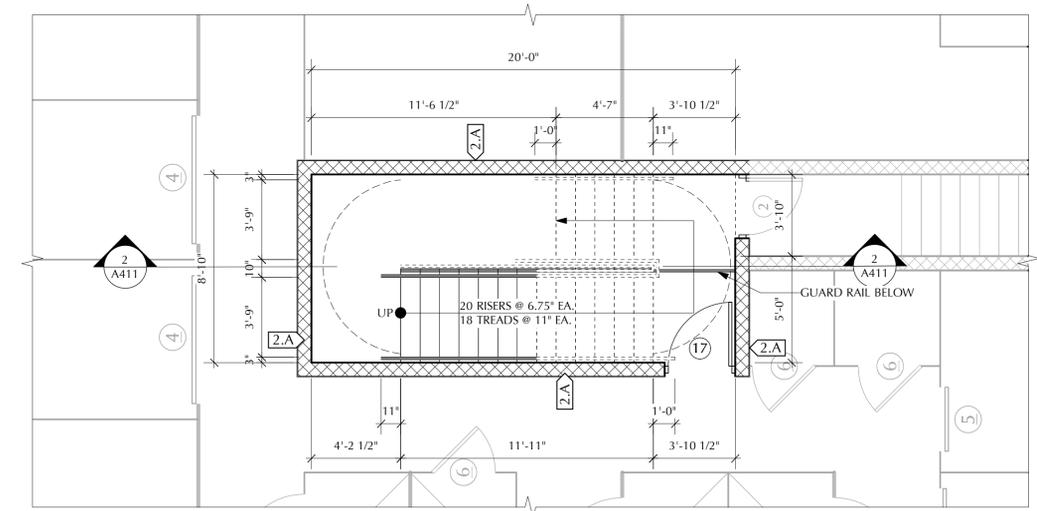
3 STAIR #2 @ SECOND FLOOR
A-411 Scale: 1/4" = 1'-0"



2 STAIR #2 @ THIRD FLOOR
A-411 Scale: 1/4" = 1'-0"



4 STAIR #2 @ FIRST FLOOR
A-411 Scale: 1/4" = 1'-0"



5 STAIR #2 @ CELLAR FLOOR
A-411 Scale: 1/4" = 1'-0"

ISSUE DATE:
1 Permit Set 05/23/13

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**STAIR BLOW UP
PLANS & SEC.**

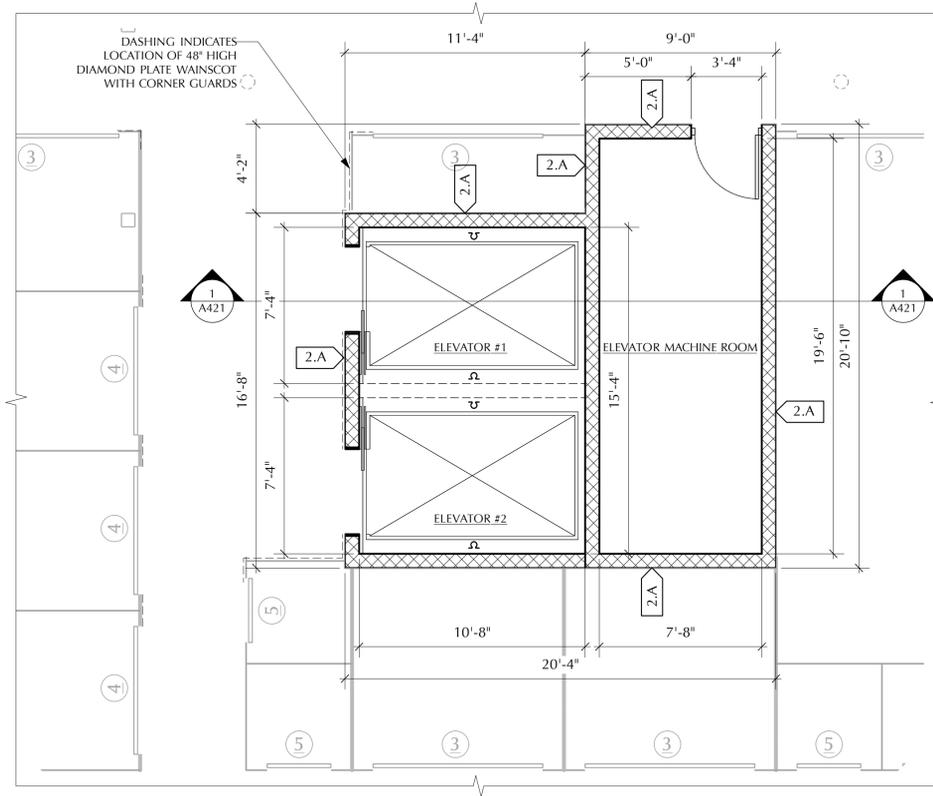
A-411.00
29 OF 40

11041

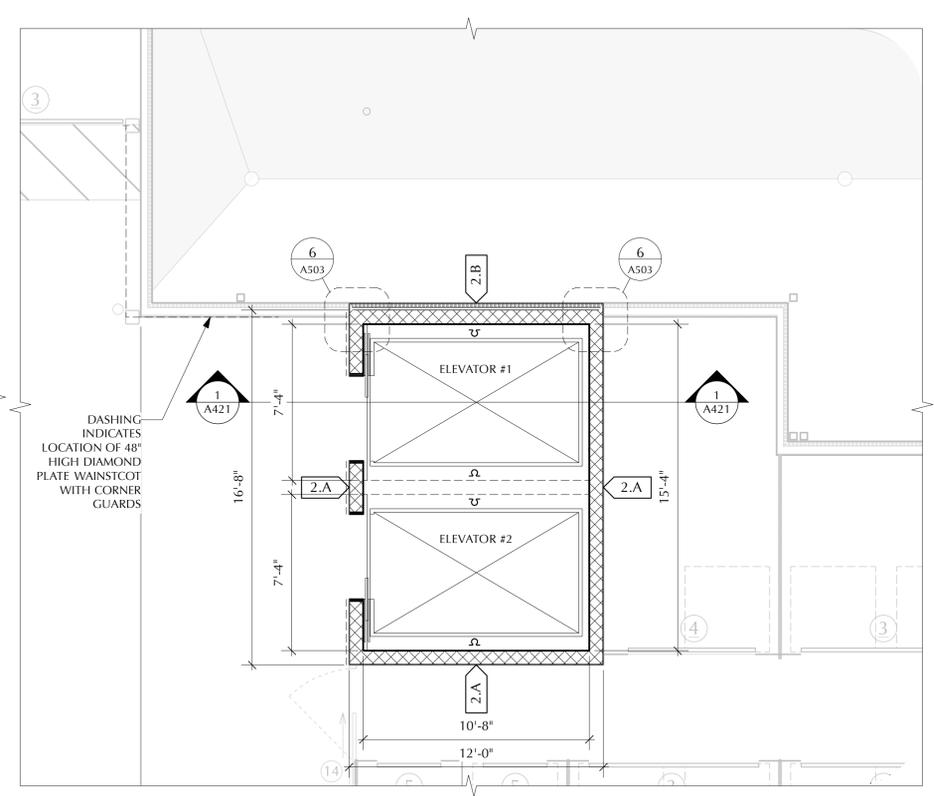
ELEVATOR SPECIFICATION & DATA		
ELEVATOR NO	#1	#2
BASIS OF DESIGN	SCHINDLER 330A HOSPITAL SERVICE	SCHINDLER 330A HOSPITAL SERVICE
TYPE	HYDRAULIC	HYDRAULIC
CAPACITY	4500 LB	4500 LB
SPEED	100 FPM	100 FPM
NUMBER OF OPENINGS	2 AT FRONT & 2 AT REAR	2 AT FRONT & 2 AT REAR
NET TRAVEL	37'3"	37'3"
MINIMUM CAR INSIDE	68" WIDE x 94" DEEP	68" WIDE x 94" DEEP
CLEAR CAB HEIGHT UNDER CEILING	96" MIN.	96" MIN.
DOOR SIZE	4'0"WIDE x 7'0" TALL	4'0"WIDE x 7'0" TALL
DOOR TYPE	2SSO	2SSO
DOOR PROTECTION	INFRARED DETECTOR	INFRARED DETECTOR
DOOR FIRE RATING	1 1/2 HRS	1 1/2 HRS
LOBBY & ALTERNATE FLOOR	1 & 2	1 & 2
CAR OPERATING FEATURES	SEE NOTE 3	SEE NOTE 3
TECHNICAL DATA		
POWER SUPPLY	208V - 3Ph - 60Hz	208V - 3Ph - 60Hz
MOTOR H.P.	40 HP	40 HP
TYPE OF START	SOLID STATE-SEE NOTE 1	SOLID STATE-SEE NOTE 1

NOTE:
 1- PROVISION FOR KEYPAD IN CAR (PROVIDED AND INSTALLED BY SECURITY CONTRACTOR)
 2- FOR CAB ENCLOSURE FINISHES SEE CAB SCHEDULE
 3- SIMPLEX COLLECTIVE OPERATIONS, SINGLE SPEED FAN, ON/OFF LIGHT SWITCH, REMOTE ELEVATOR MONITORING REM, CAR-STALL PROTECTION, FIREFIGHTERS' SERVICE PHASE I AND PHASE II, TOP OF CAR INSPECTION
 4- CONTRACTOR TO PROVIDE PRICE INFO FOR BOTH HOLES & HOLELESS ELEVATOR

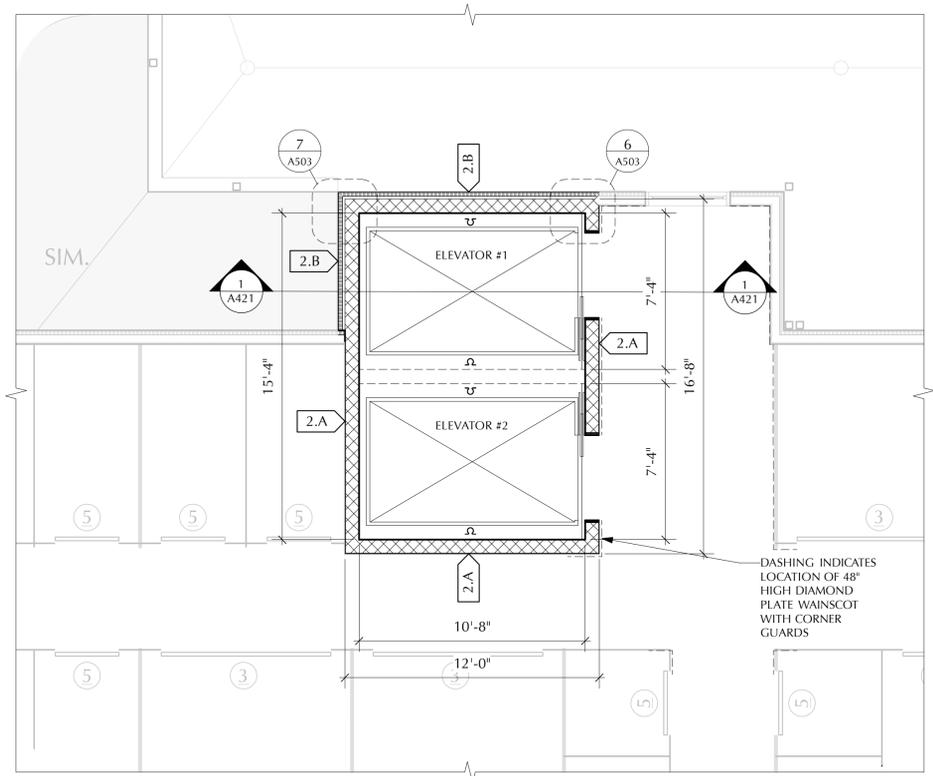
ELEVATOR CAB SCHEDULE					
CAB #	FLOOR	WALLS	DOOR	CEILING	REMARKS
ELEV CAB #1		DIAMOND PLATE	SEE NOTE #2 & #3	SEE NOTE #5	SEE NOTE #4
ELEV CAB #2		DIAMOND PLATE	SEE NOTE #2 & #3	SEE NOTE #5	SEE NOTE #4
NOTE: 1. NOT USED 2. WOOD CORE WITH ALUM. DIAMOND PLATE FINISH FULL HEIGHT 3. 2" x 3/8" #4 SATIN FINISH HANDRAILS ON SIDES W/O DOOR @ 32" A.F.F. 4. RECESSED FLUORESCENT LIGHTING IN WHITE ENAMEL CANOPY W/ VANDAL RESISTANT GUARD 5. #4 STAINLESS STEEL RETURN/DOORS					



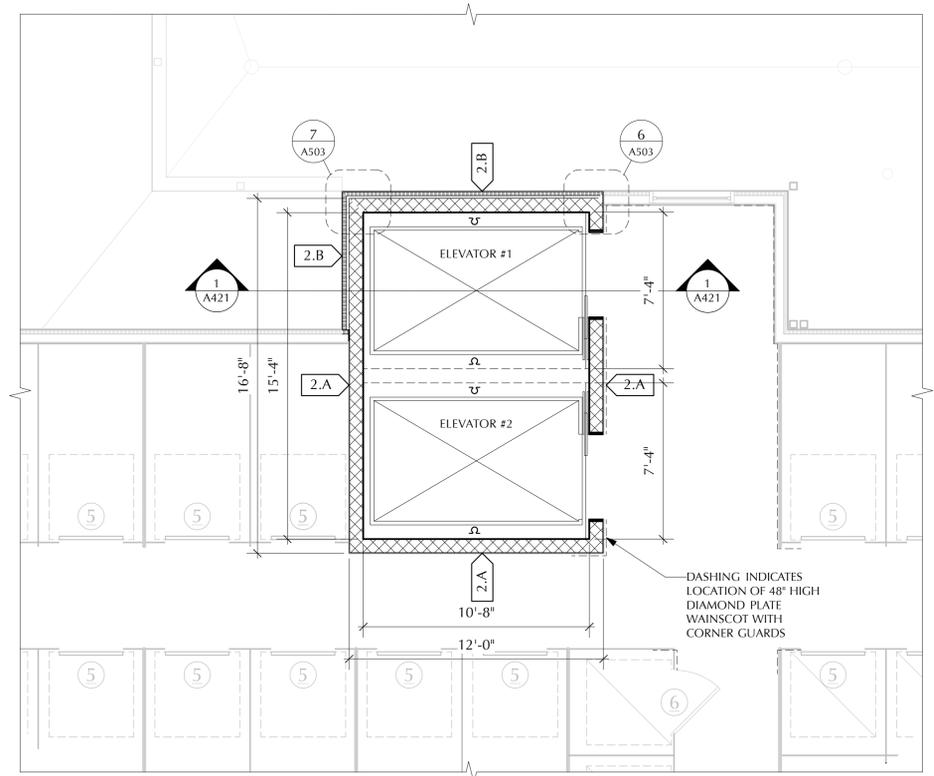
1 ELEVATOR @ CELLAR FLOOR
 Scale: 1/4" = 1'-0"
 A-420



2 ELEVATOR @ FIRST FLOOR
 Scale: 1/4" = 1'-0"
 A-420



3 ELEVATOR @ SECOND FLOOR
 Scale: 1/4" = 1'-0"
 A-420



4 ELEVATOR @ THIRD FLOOR
 Scale: 1/4" = 1'-0"
 A-420

ISSUE DATE: 05/23/13
 REVISION DATE: 10/31/13
 2 Permit Comments #2

Stillwell Avenue Self Storage - Bldg. A

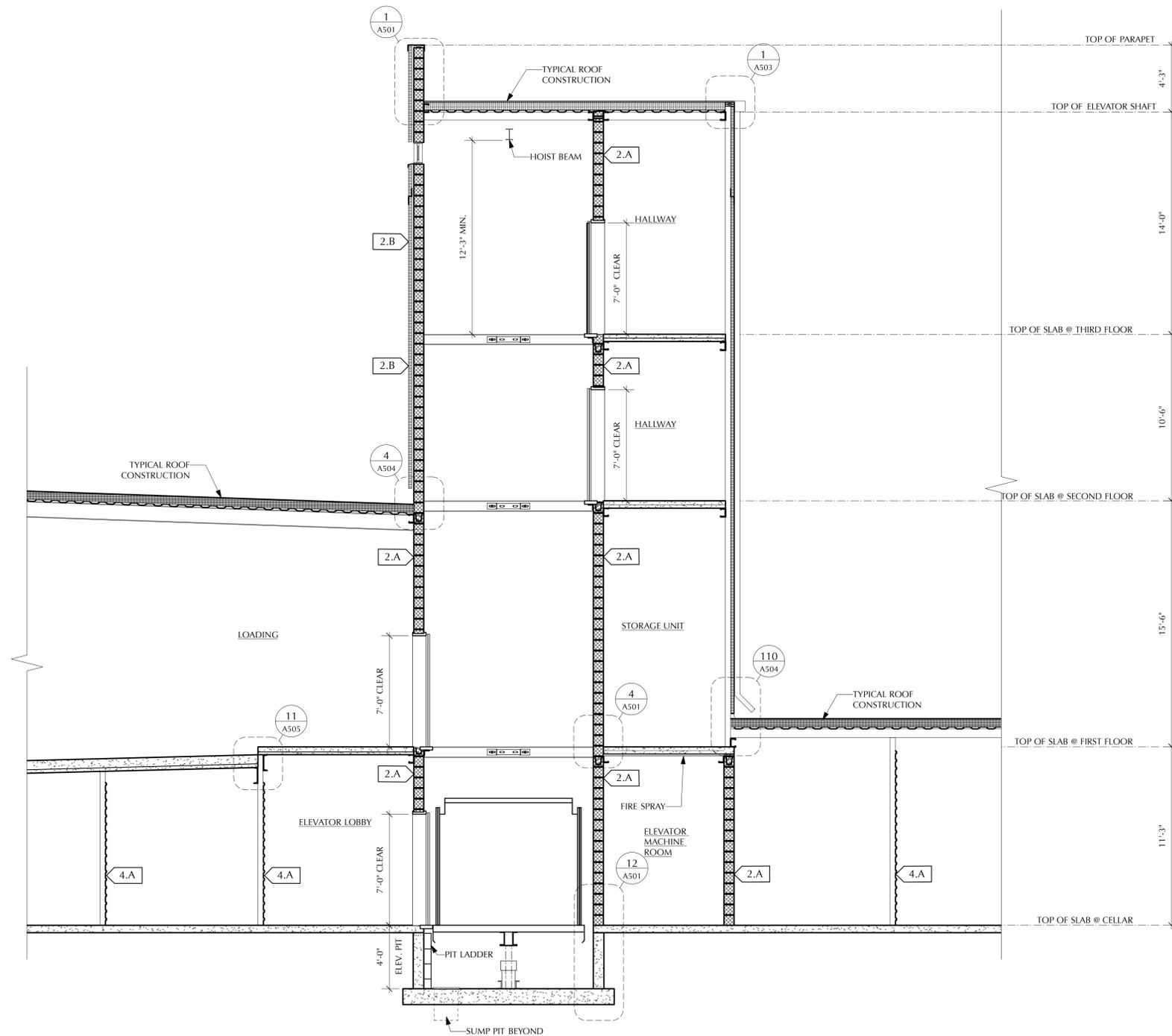
Stillwell Self Storage LLC
 1538 Stillwell Ave.
 Bronx, NY

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ELEVATOR BLOW UP PLANS
 A-420.00
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1 Elevator Section
 Scale: 1/4" = 1'-0"

• ISSUE DATE: •	
1 Permit Set	05/23/13

• REVISION DATE: •	
2 Permit Comments #2	10/31/13

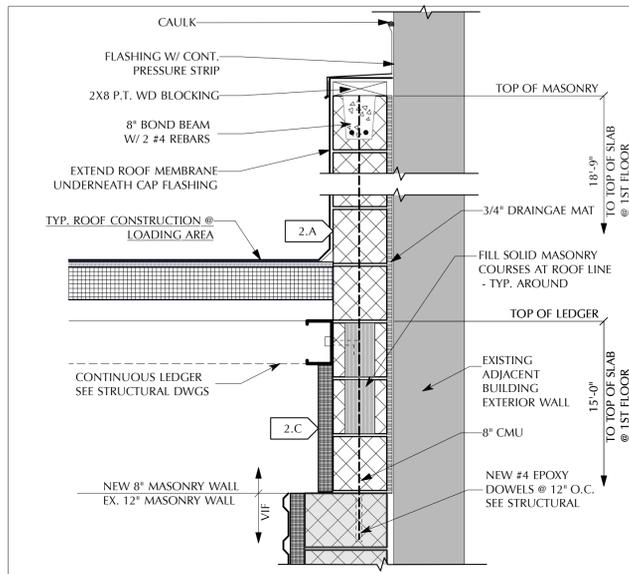
Stillwell Avenue Self Storage - Bldg. A

Stillwell Self Storage LLC
 1538 Stillwell Ave.
 Bronx, NY

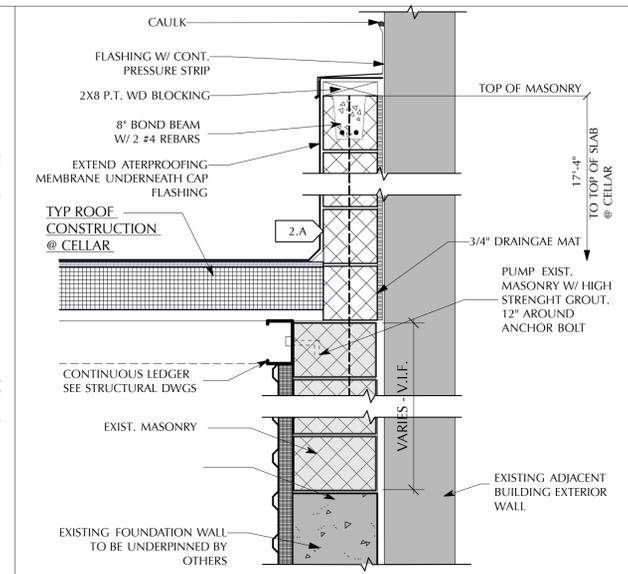
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ELEVATOR BLOW UP SECTIONS
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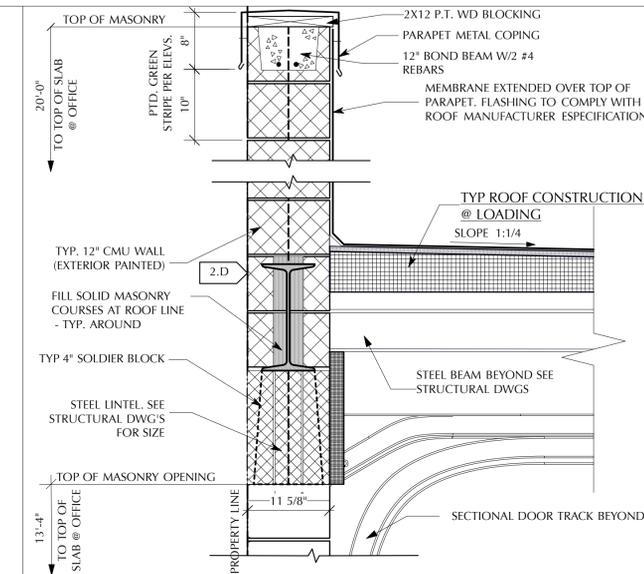
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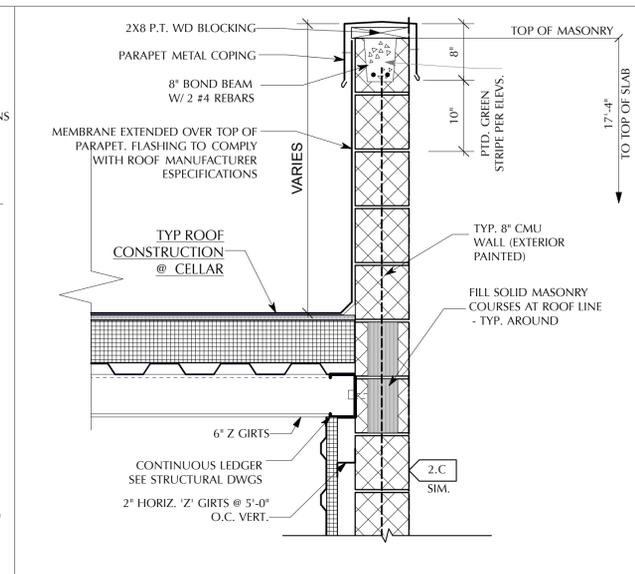
1 PARAPET @ 1ST FLOOR ROOF
SCALE: 1" = 1'-0"



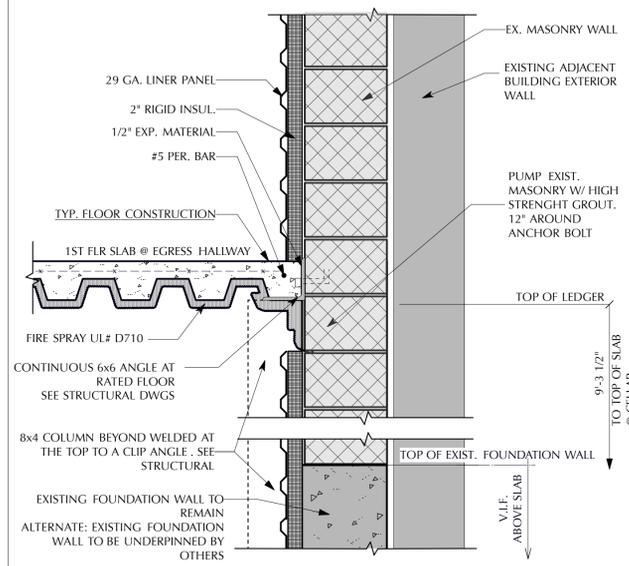
2 PARAPET @ CELLAR ROOF
SCALE: 1" = 1'-0"



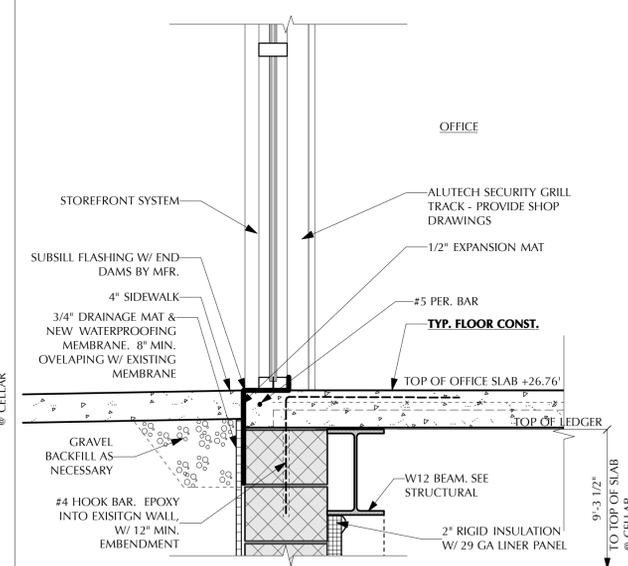
3 SECT. DOOR HEAD @ LOADING
SCALE: 1" = 1'-0"



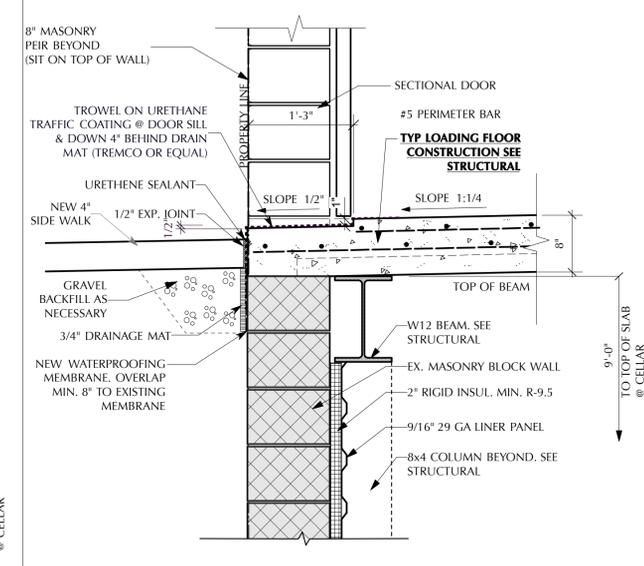
4 TYP. PARAPET @ BASSET AV.
SCALE: 1" = 1'-0"



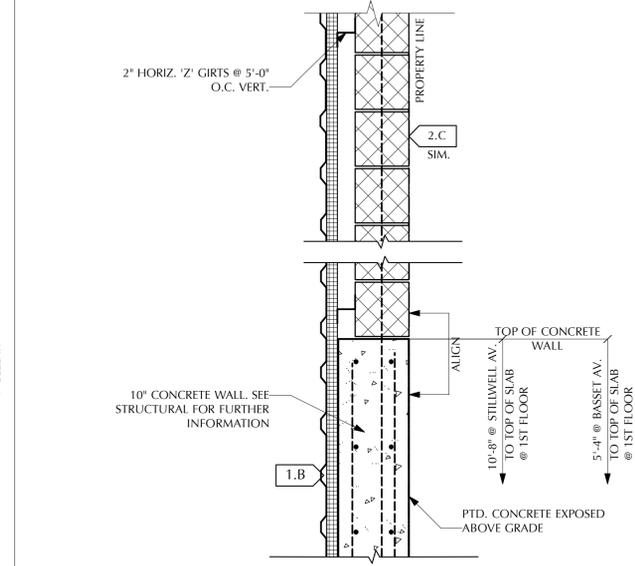
5 WALL SECTION @ 1ST FLOOR PLAN
SCALE: 1" = 1'-0"



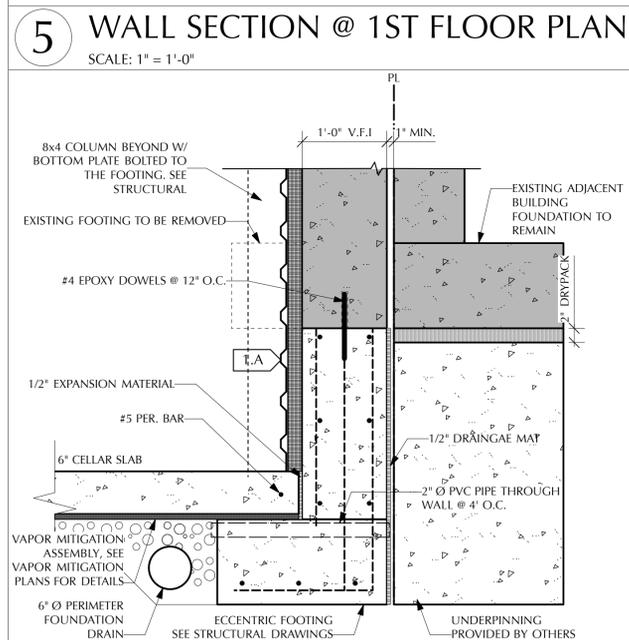
6 WINDOW SILL @ OFFICE
SCALE: 1" = 1'-0"



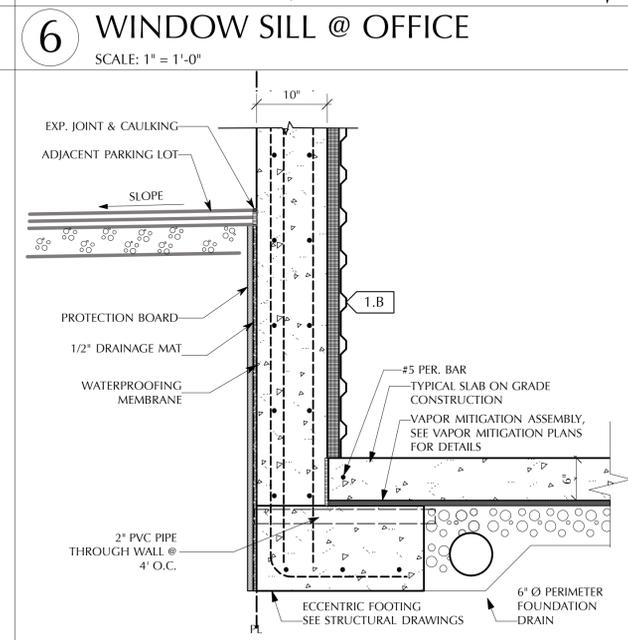
7 SECTIONAL DOOR SILL @ LOADING
SCALE: 1" = 1'-0"



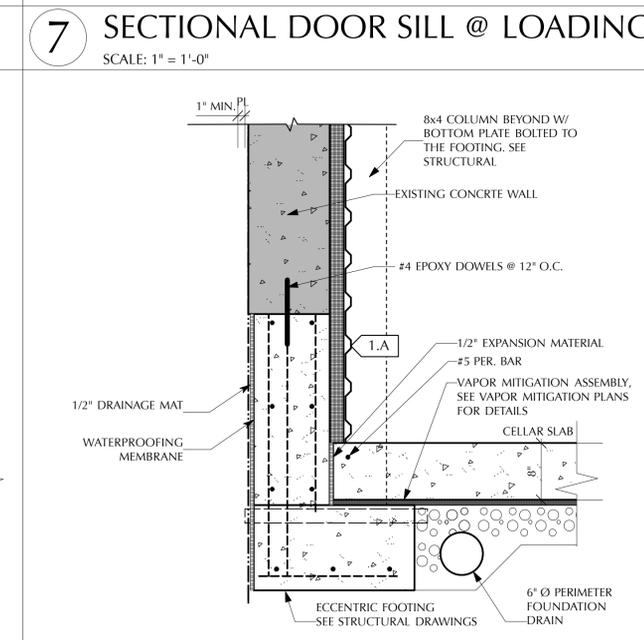
8 TYP. EXTERIOR WALL @ BASSET AV.
SCALE: 1" = 1'-0"



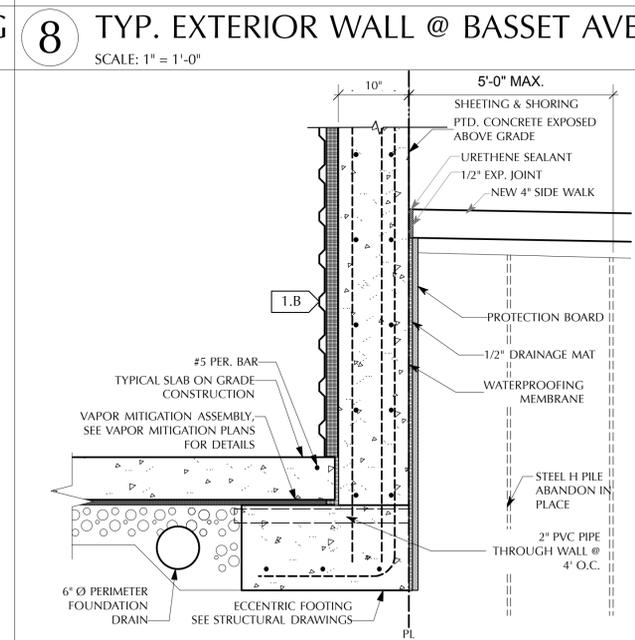
9 ALTERNATE: UNDERPINNING DETAIL
SCALE: 1" = 1'-0"



10 TYP. FOUNDATION DETAIL
SCALE: 1" = 1'-0"



11 ALTERNATE FOUNDATION @ STILLWELL AV.
SCALE: 1" = 1'-0"



12 TYP. FOUNDATION @ BASSET AV.
SCALE: 1" = 1'-0"

ISSUE DATE:
1 Permit Set 05/23/13

REVISION DATE:
2 Permit Comments #2 10/31/13

Stillwell Avenue Self Storage - Bldg. A

Stillwell Self Storage LLC
1538 Stillwell Ave.
Bronx, NY

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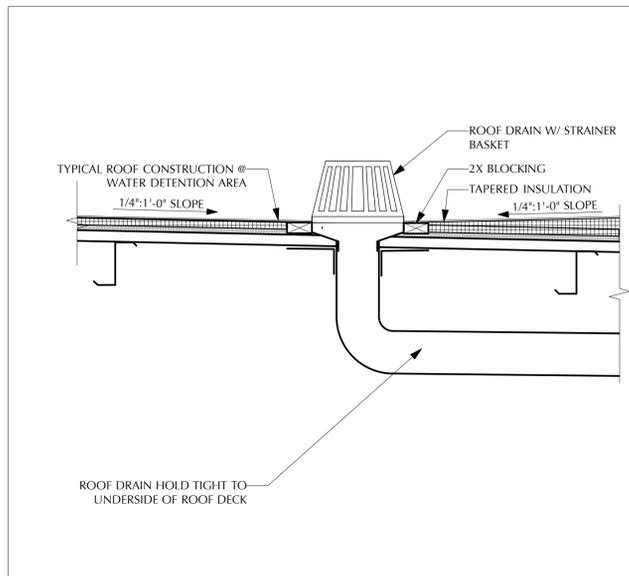
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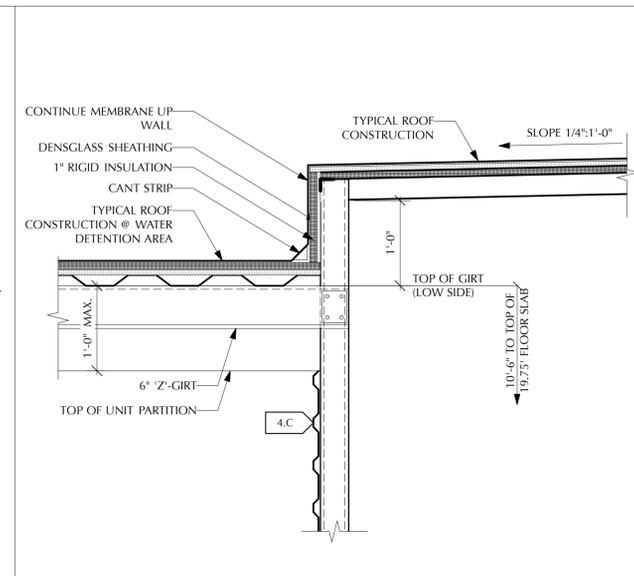
DETAILS

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33 OF 40

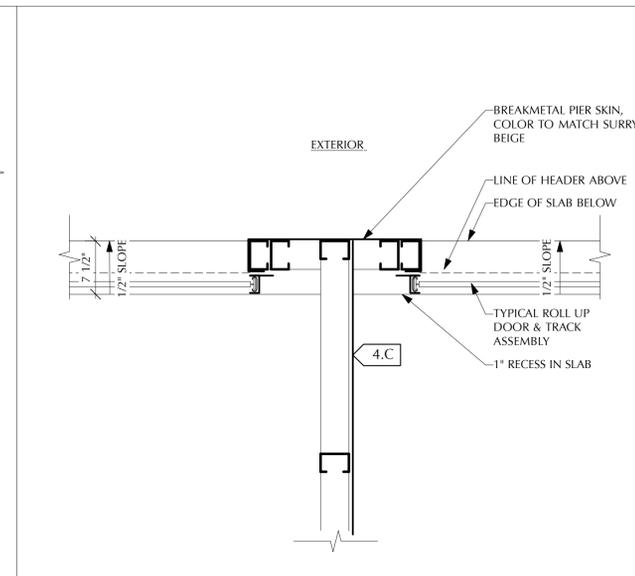
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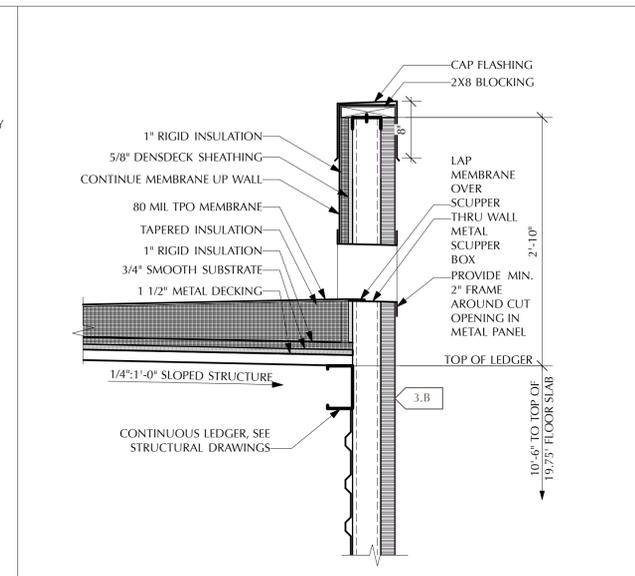
1 TYPICAL ROOF DRAIN
SCALE: 1" = 1'-0"



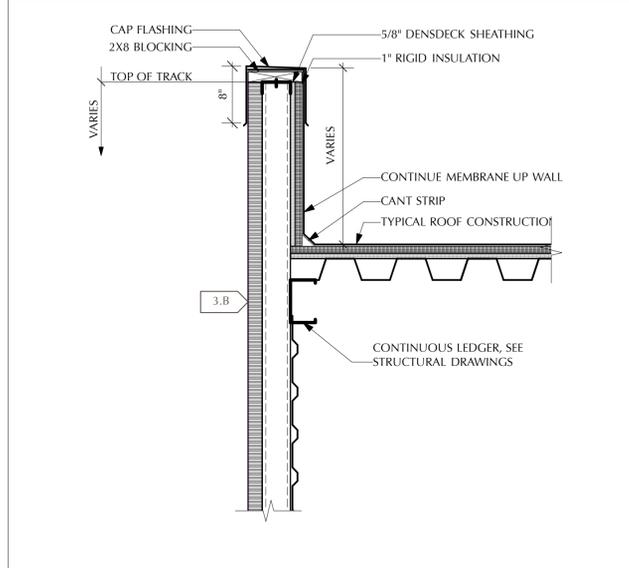
2 STEP IN ROOF
SCALE: 1" = 1'-0"



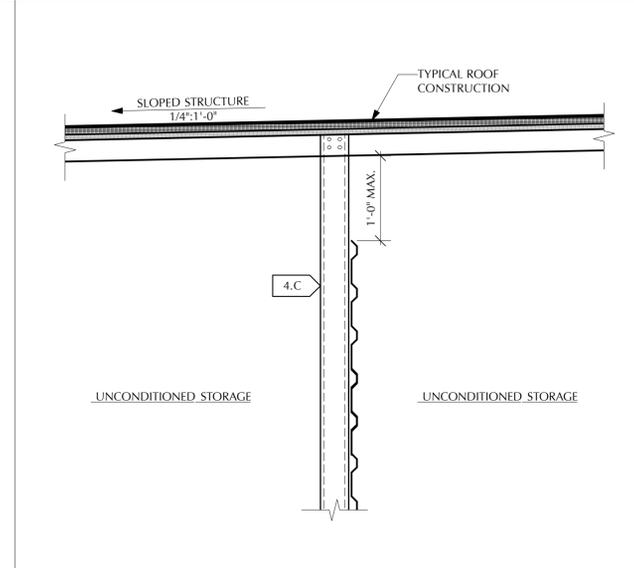
3 TYPICAL PIER @ ROLL UP DOOR
SCALE: 1" = 1'-0"



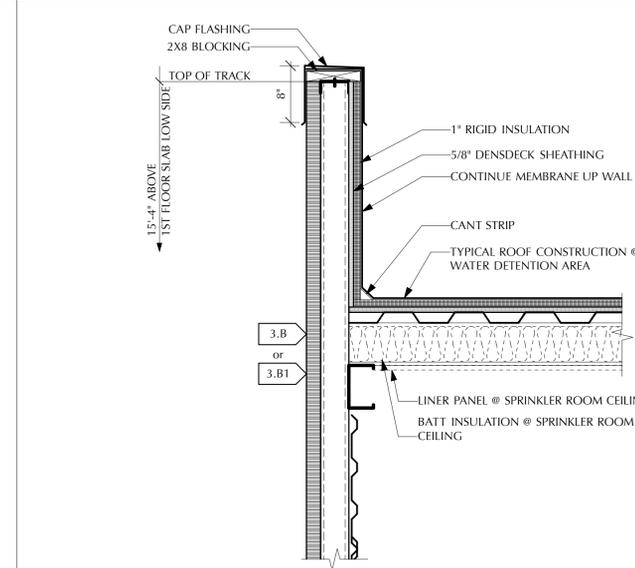
4 THRU WALL SCUPPER BOX
SCALE: 1" = 1'-0"



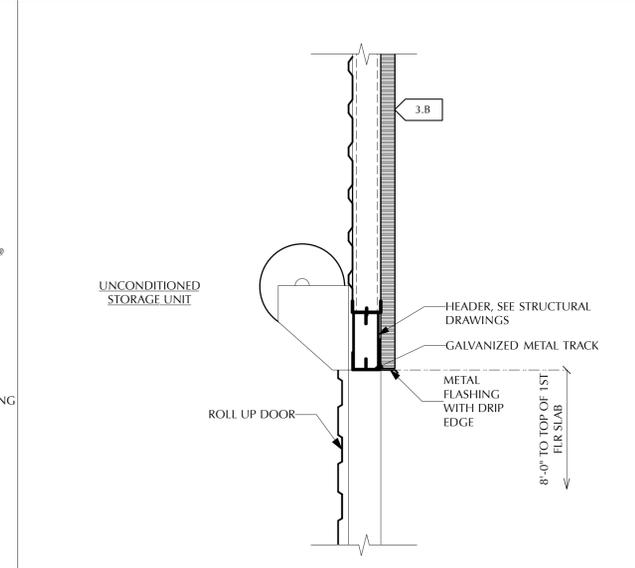
5 PARAPET @ TYPICAL ROOF CONST.
SCALE: 1" = 1'-0"



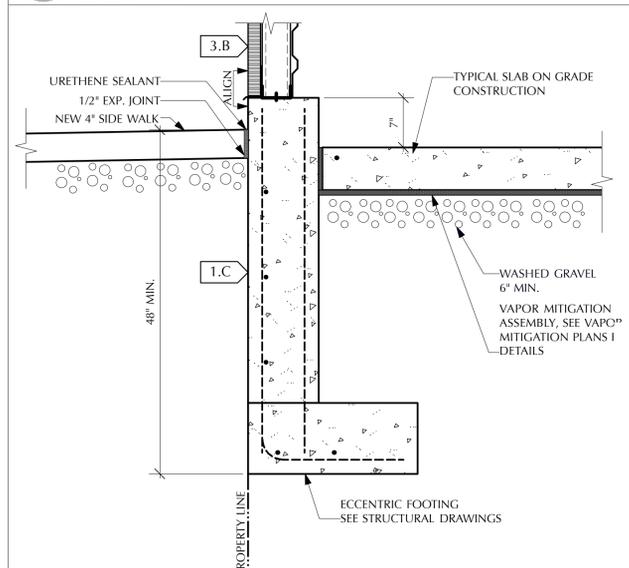
6 BEARING WALL @ TYPICAL ROOF
SCALE: 1" = 1'-0"



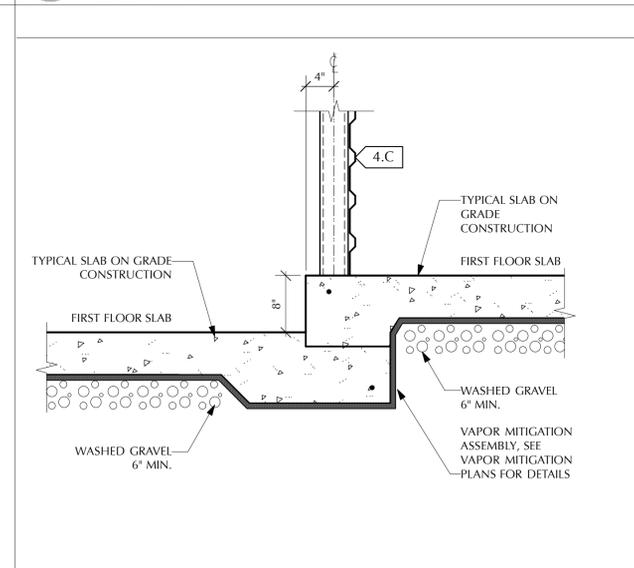
7 PARAPET @ WATER DETENTION AREA
SCALE: 1" = 1'-0"



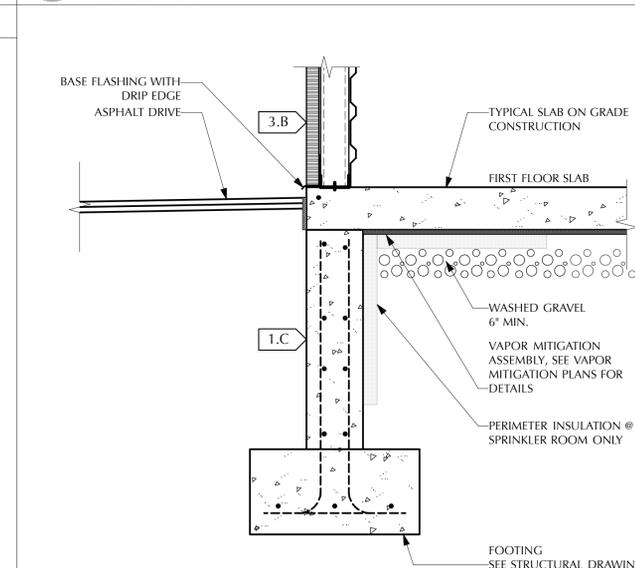
8 HEAD CONDITION @ ROLL UP DOOR
SCALE: 1" = 1'-0"



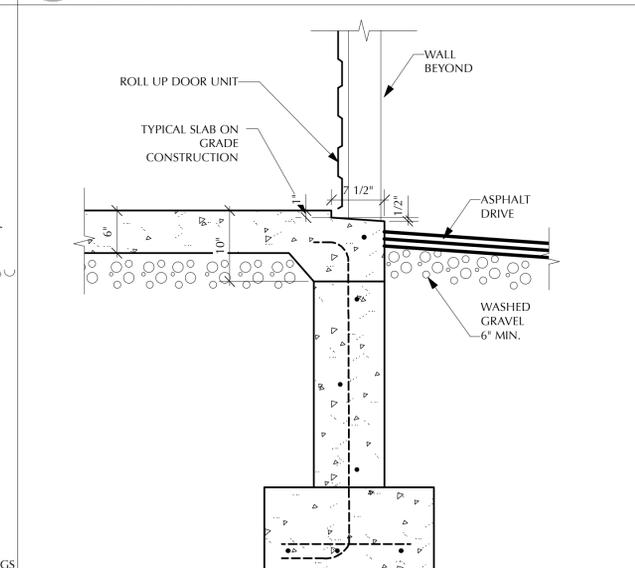
9 FOUNDATION @ STREET WALL
SCALE: 1" = 1'-0"



10 STEP IN FLOOR SLAB
SCALE: 1" = 1'-0"



11 FOUNDATION @ EAST ELEVATION
SCALE: 1" = 1'-0"



12 FOUNDATION @ ROLL UP DOOR
SCALE: 1" = 1'-0"

ISSUE DATE:

1 Permit Set 05/23/13
2 Permit Set 1 Story 02/03/14

REVISION DATE:

Stillwell Avenue Self Storage - Bldg. B

Stillwell Self Storage LLC
1540 Bassett Ave.
Bronx, NY

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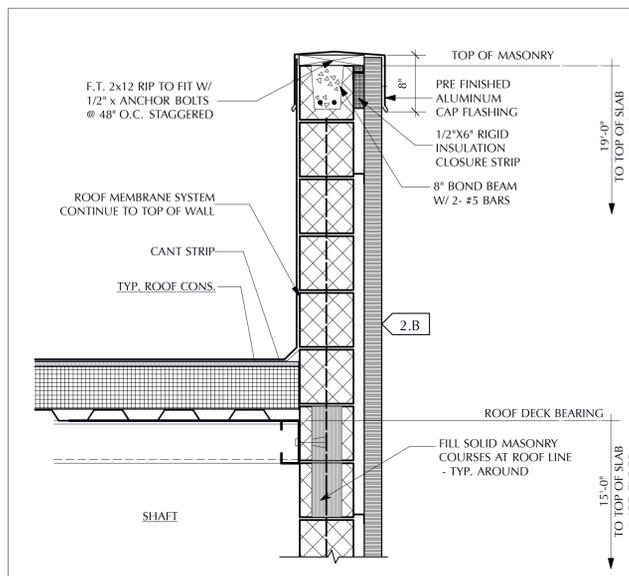
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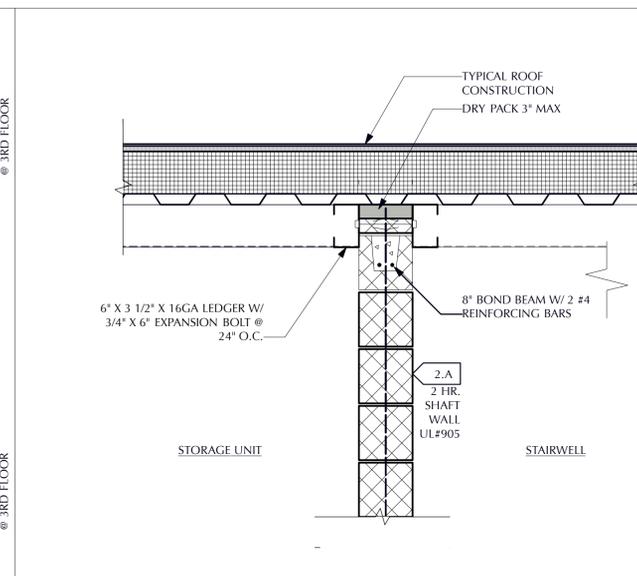
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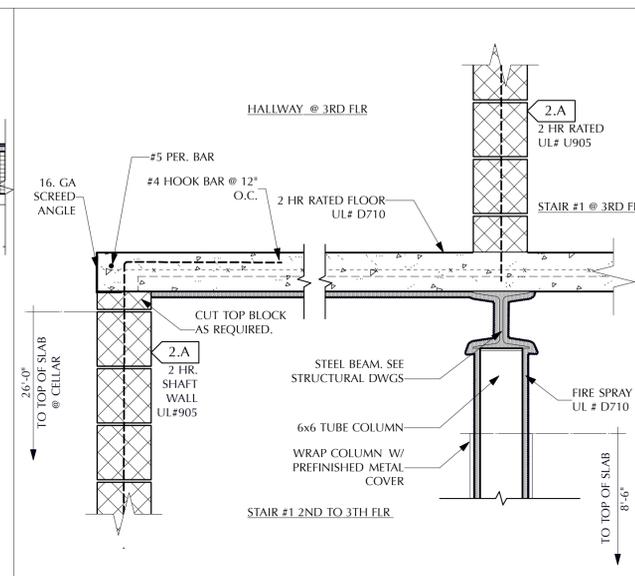
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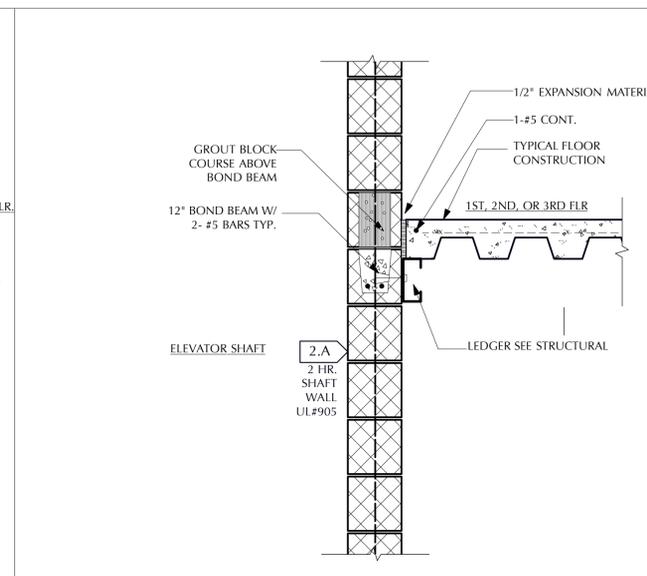
1 TYP. PARAPET @ STAIRWELL
SCALE: 1" = 1'-0"



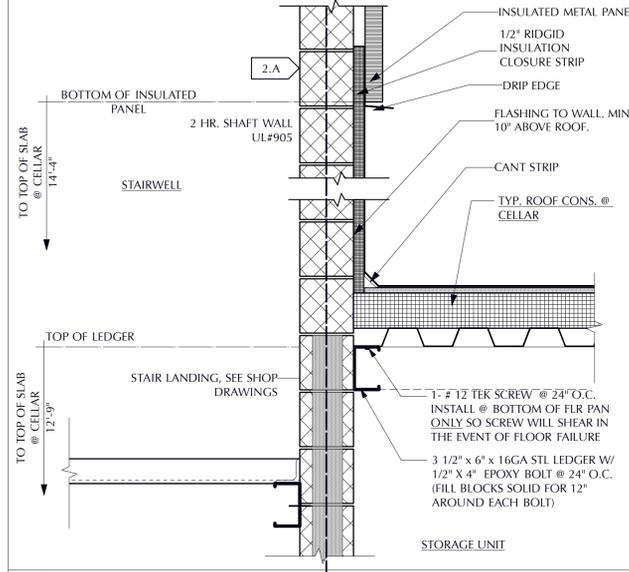
2 STAIRWELL / ELEVATOR ROOF CONNECTION
SCALE: 1" = 1'-0"



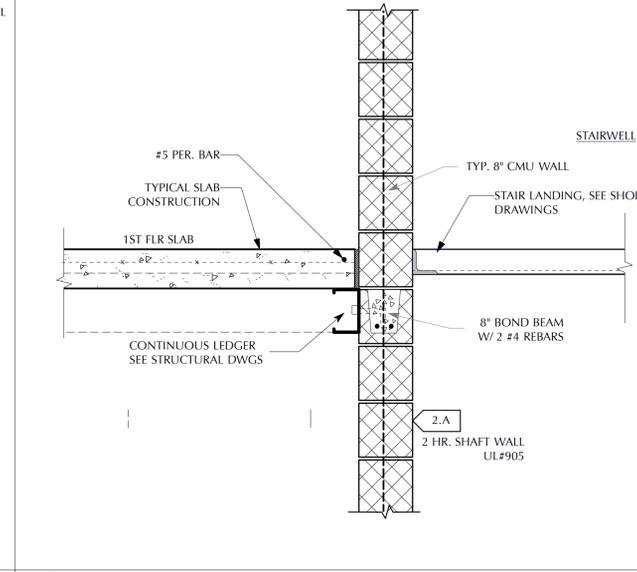
3 STAIR #1 PARTIAL SECTION @ 3TH FLR
SCALE: 1" = 1'-0"



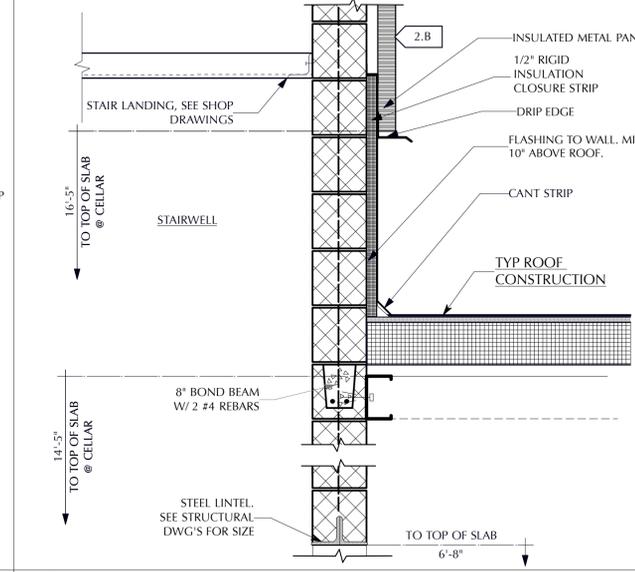
4 ELEVATOR SHAFT @ TYP. FLR CONSTRUCTION
SCALE: 1" = 1'-0"



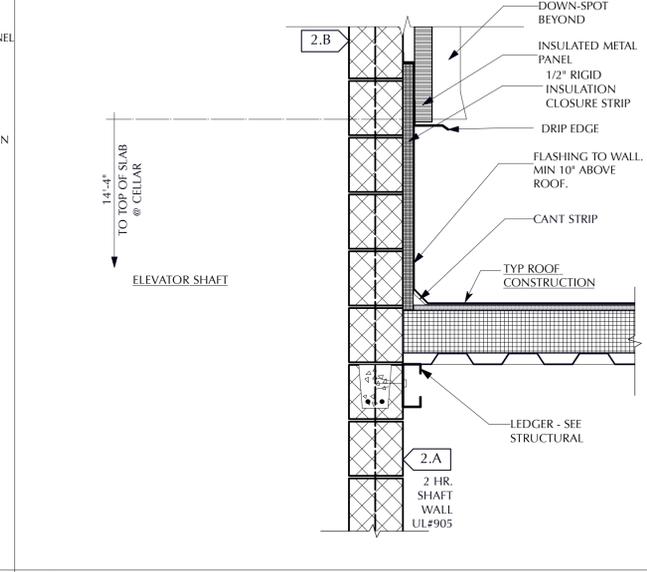
5 TYP. STAIRWELL WALL @ LOWER ROOF
SCALE: 1" = 1'-0"



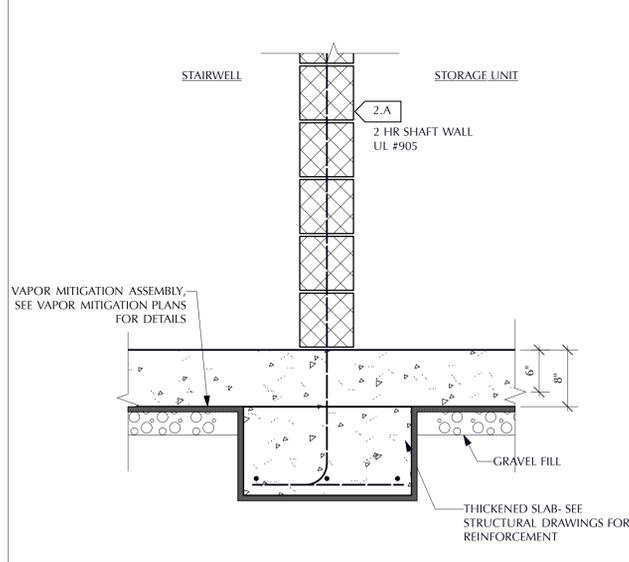
6 TYP. STAIRWELL WALL @ 1ST FLR SLAB
SCALE: 1" = 1'-0"



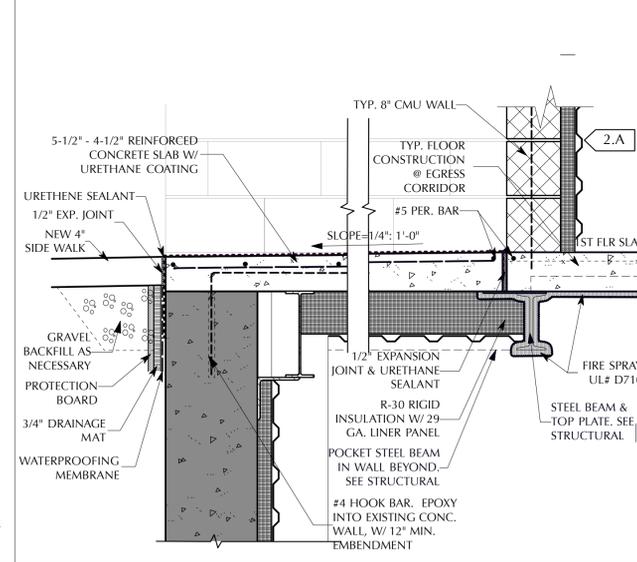
7 STAIRWELL WALL @ LOWER EGRESS CORRIDOR
SCALE: 1" = 1'-0"



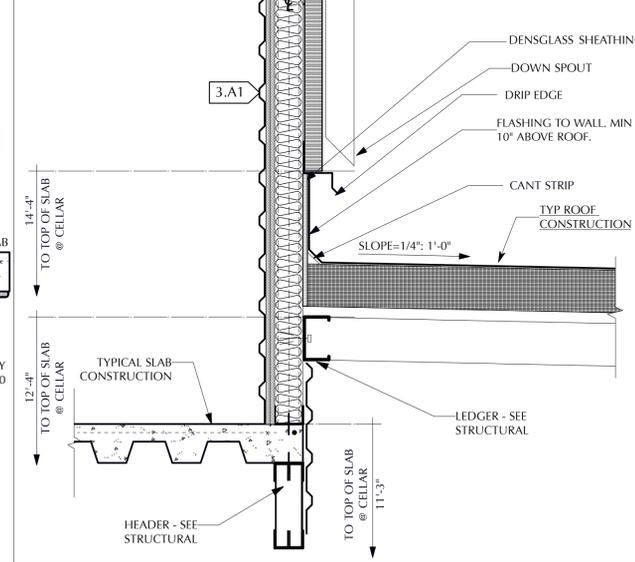
8 ELEVATOR SHAFT @ LOWER ROOF
SCALE: 1" = 1'-0"



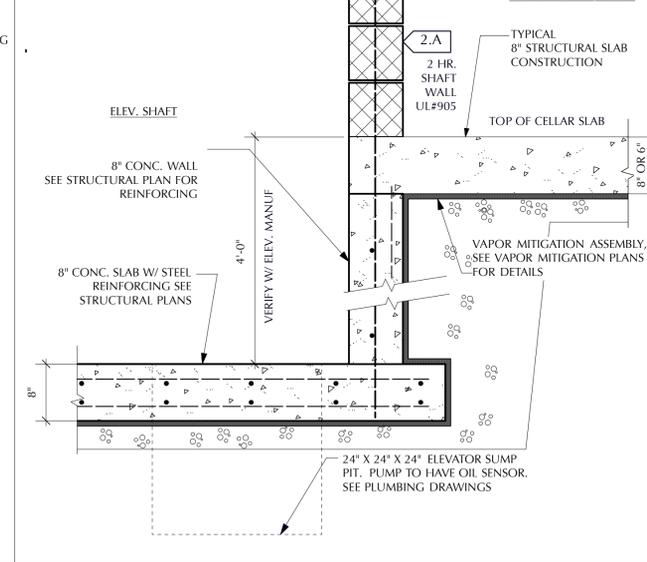
9 TYP. STAIRWELL WALL @ SLAB ON GRADE
SCALE: 1" = 1'-0"



10 EGRESS EXIT @ STILLWELL AVE. DETAIL
SCALE: 1" = 1'-0"



11 EXTERIOR WALL @ LOWER ROOF DETAIL
SCALE: 1" = 1'-0"



12 TYP. ELEVATOR PIT FOUNDATION
SCALE: 1" = 1'-0"

ISSUE DATE:
1 Permit Set 05/23/13

REVISION DATE:
2 Permit Comments #2 10/31/13

Stillwell Avenue Self Storage - Bldg. A

Stillwell Self Storage LLC
1538 Stillwell Ave.
Bronx, NY

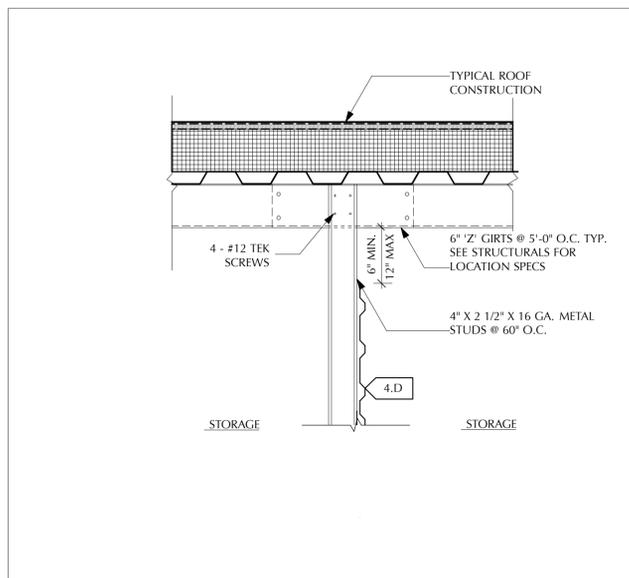
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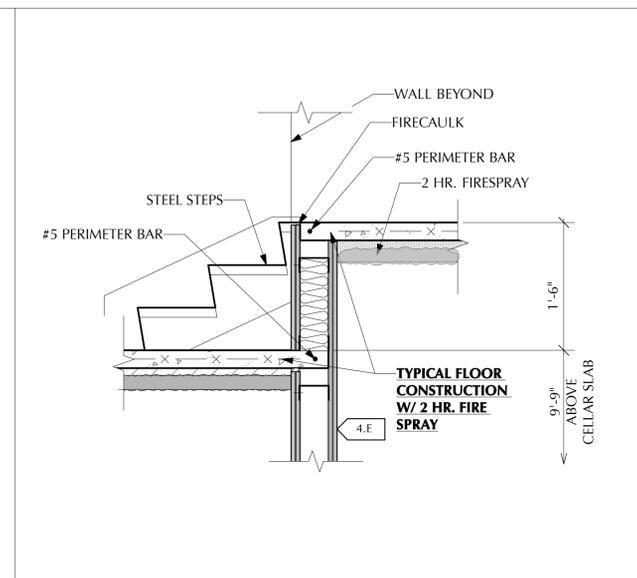
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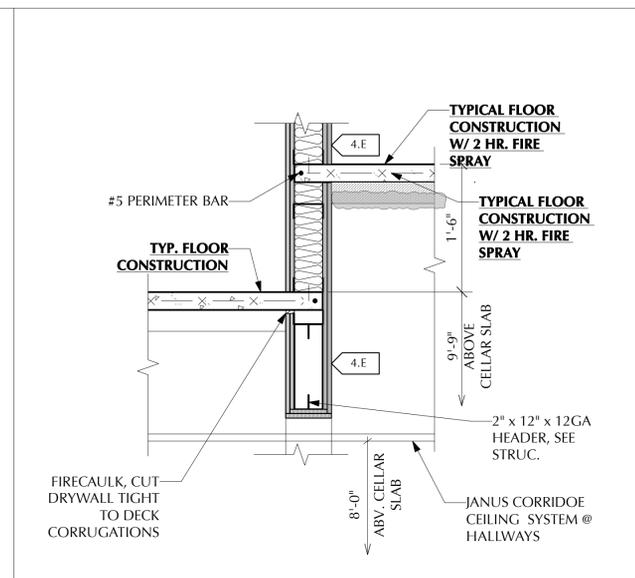
Thursday, September 9, 2013
New Detail Master



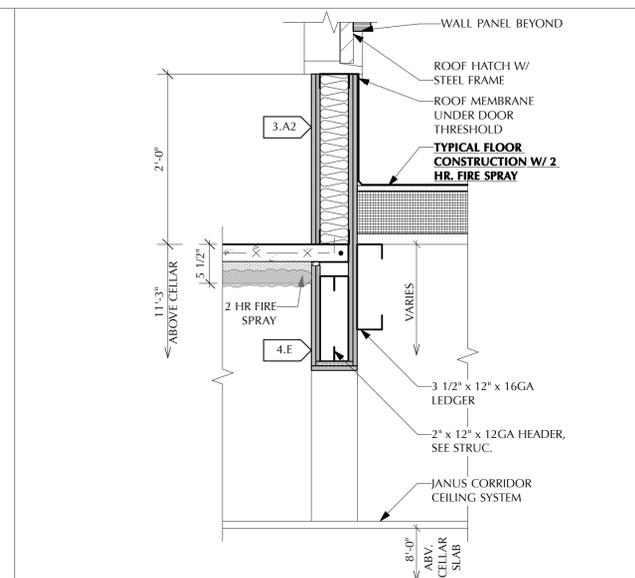
1 TYP. BEARING WALL @ ROOF
SCALE: 1" = 1'-0"



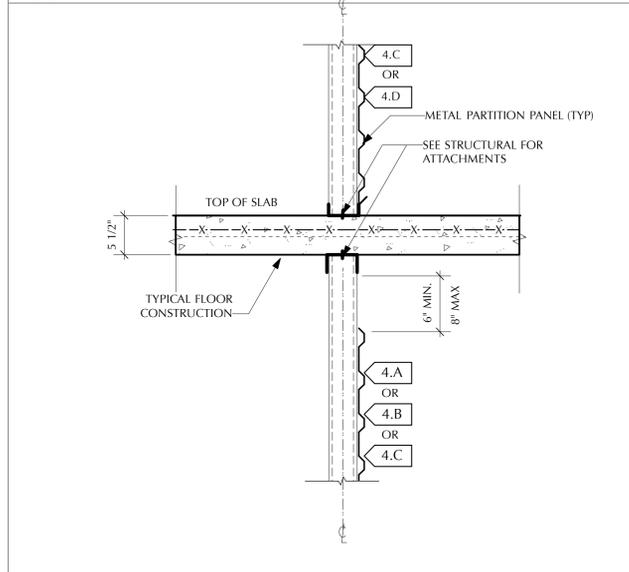
2 METAL STAIR @ EGRESS CORRIDOR
SCALE: 1" = 1'-0"



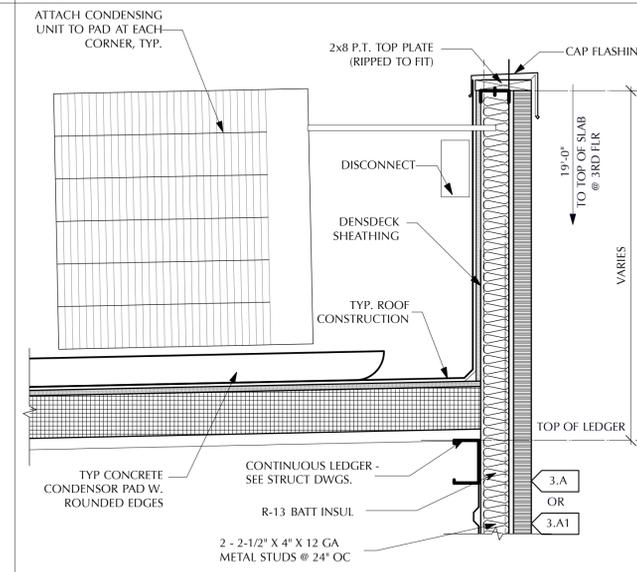
3 EGRESS CORRIDOR WALL DETAIL
SCALE: 1" = 1'-0"



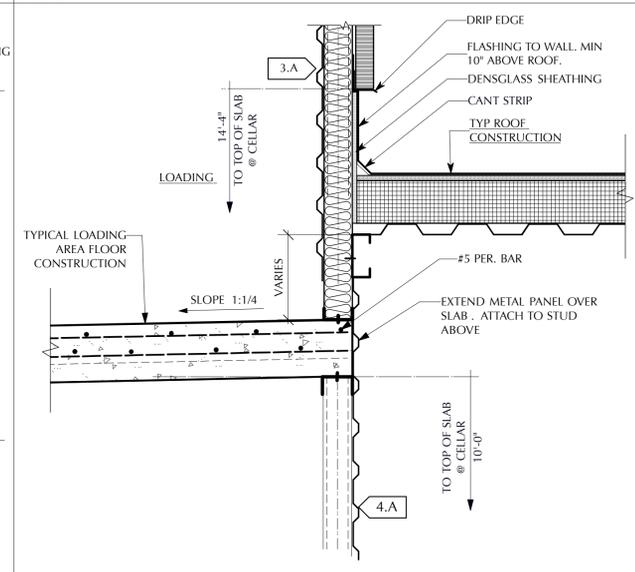
4 EGRESS CORRIDOR @ LOWER ROOF
SCALE: 1" = 1'-0"



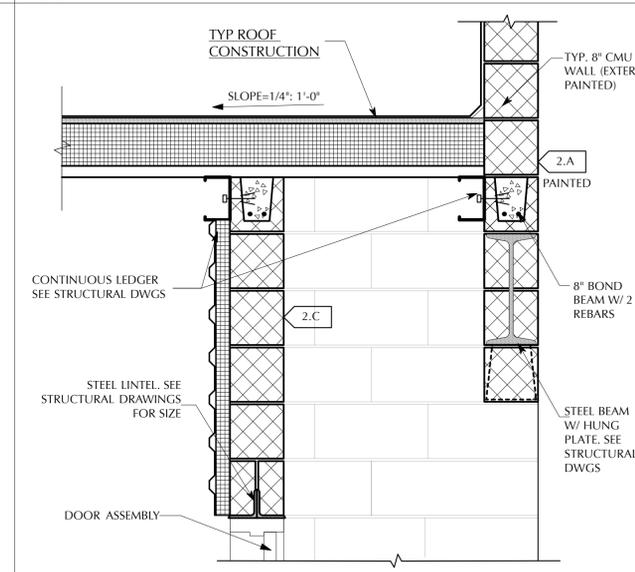
5 TYP. BEARING WALL @ INTERMEDIATE FLR.
SCALE: 1" = 1'-0"



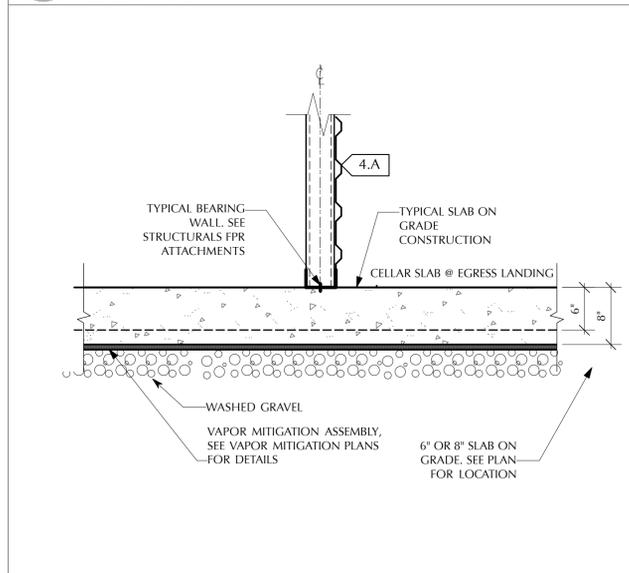
6 TYP. PARPET @ UPPER ROOF
SCALE: 1" = 1'-0"



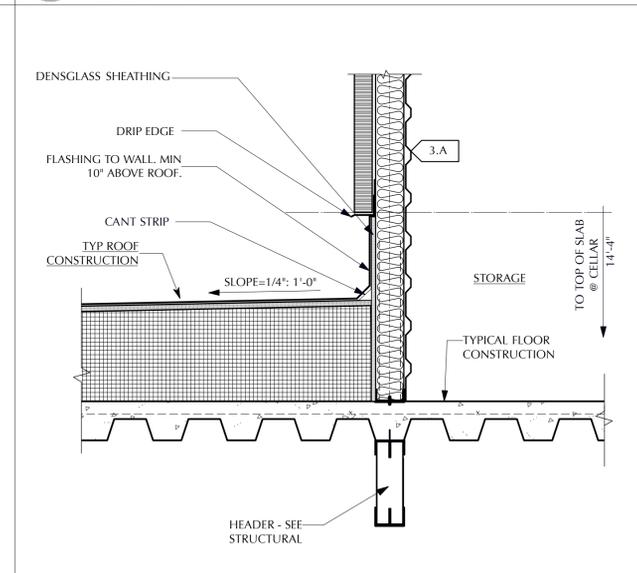
7 LOADING AREA WALL @ LOWER ROOF
SCALE: 1" = 1'-0"



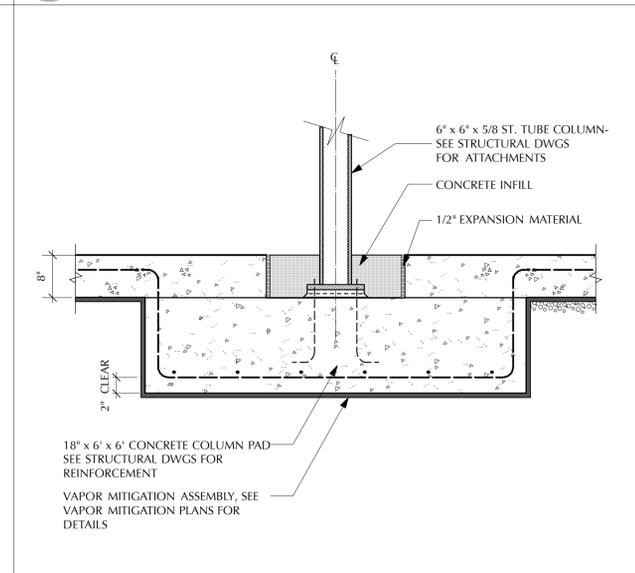
8 TYP. CELLAR EGRESS DOOR HEADER
SCALE: 1" = 1'-0"



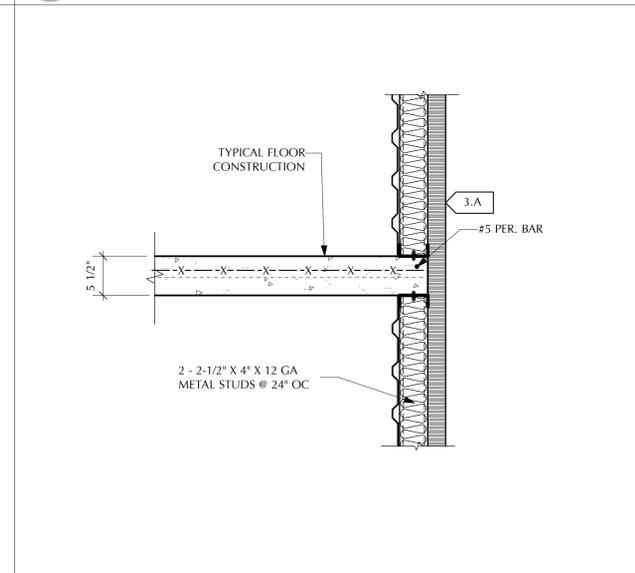
9 TYP. STEP @ THE CELLAR SLAB
SCALE: 1" = 1'-0"



10 EXTERIOR WALL @ LOWER ROOF
SCALE: 1" = 1'-0"



11 COLUMN BASE DETAIL
SCALE: 3/4" = 1'-0"



12 TYP. EXTERIOR WALL @ UPPER FLOORS
SCALE: 1" = 1'-0"

ISSUE DATE:
1 Permit Set 05/23/13

REVISION DATE:
2 Permit Comments #2 10/31/13

Stillwell Avenue Self Storage - Bldg. A

Stillwell Self Storage LLC
1538 Stillwell Ave.
Bronx, NY

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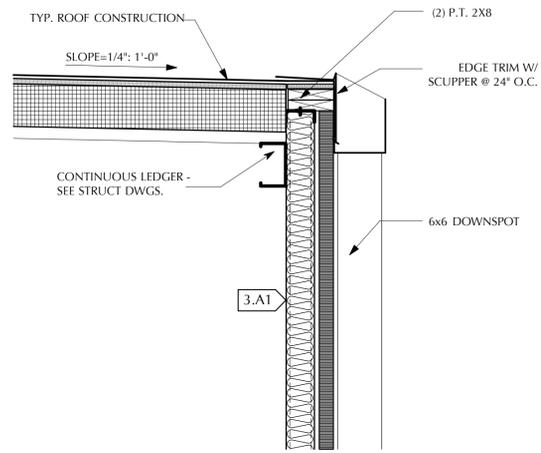
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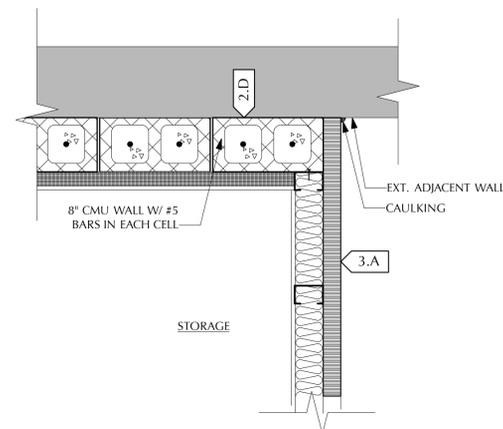
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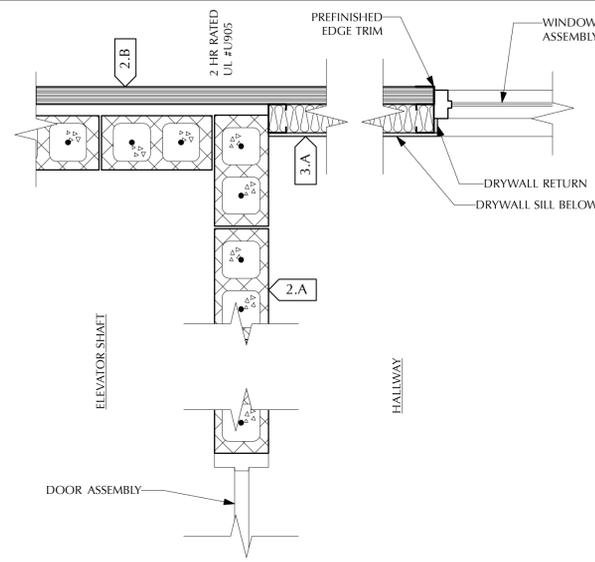
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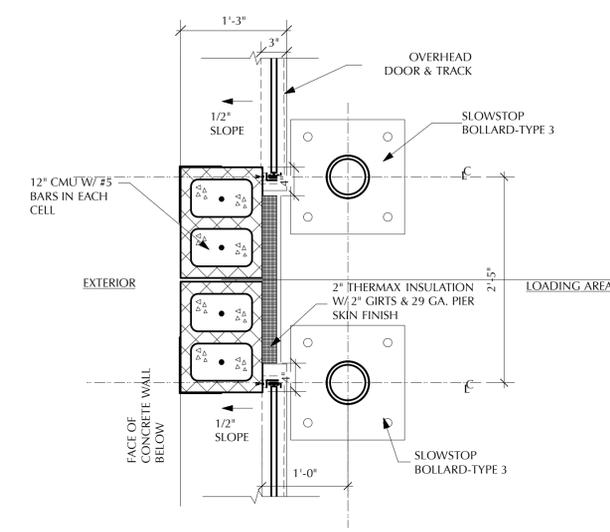
1 TYP. SCUPPER DETAIL
SCALE: 1" = 1'-0"



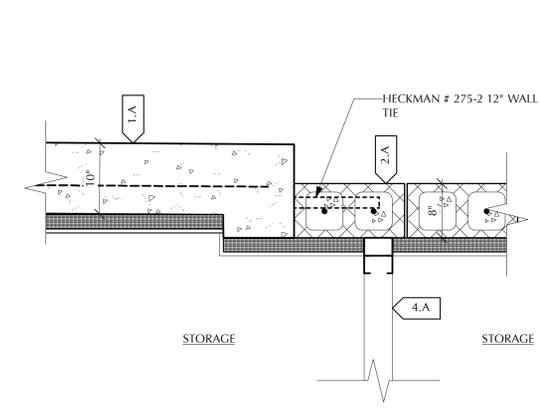
2 CMU WALL TO STUD WALL @ LOADING
SCALE: 1" = 1'-0"



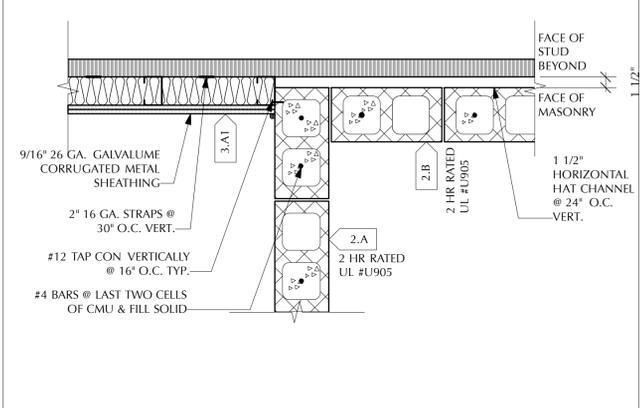
3 CMU WALL PLAN @ ELEVATOR SHAFT
SCALE: 1" = 1'-0"



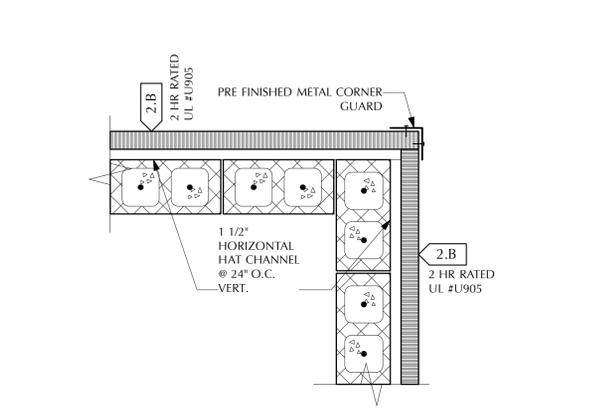
4 TYP. CMU PIER DETAIL @ LOADING
SCALE: 1" = 1'-0"



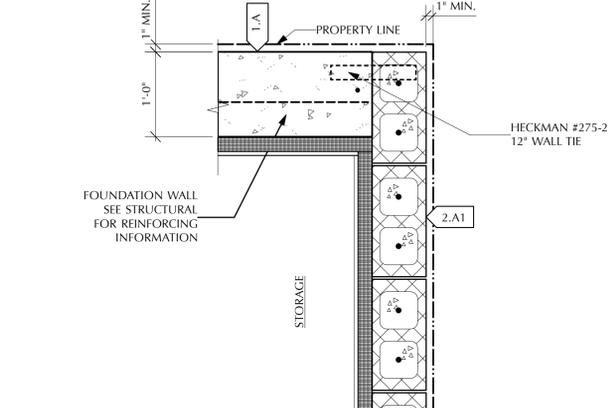
5 FOUNDATION TO CMU WALL @ CELLAR
SCALE: 1" = 1'-0"



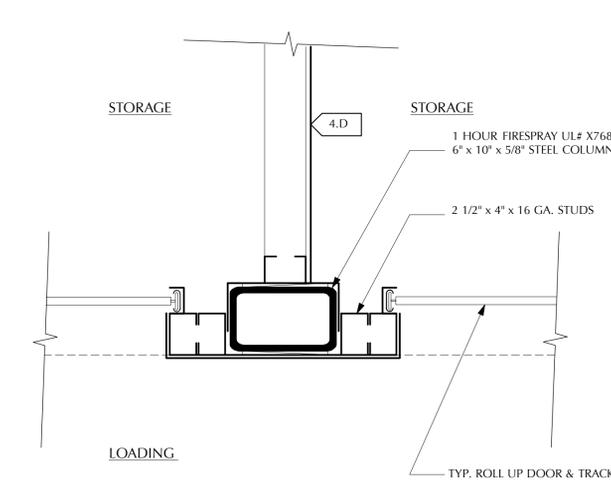
6 EXTERIOR 2HR RATED CMU WALL
SCALE: 1" = 1'-0"



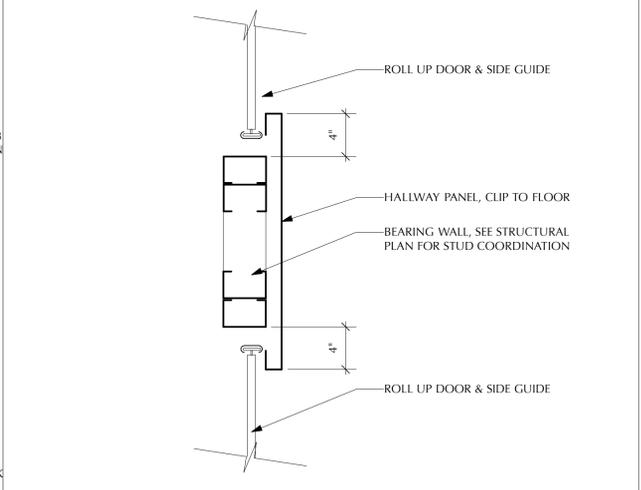
7 STAIR EXTERIOR CORNER PLAN
SCALE: 1" = 1'-0"



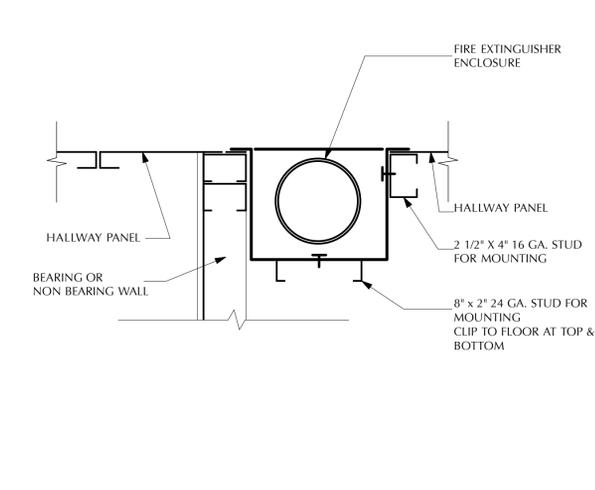
8 FOUNDATION TO CMU WALL @ BASSET AV
SCALE: 1" = 1'-0"



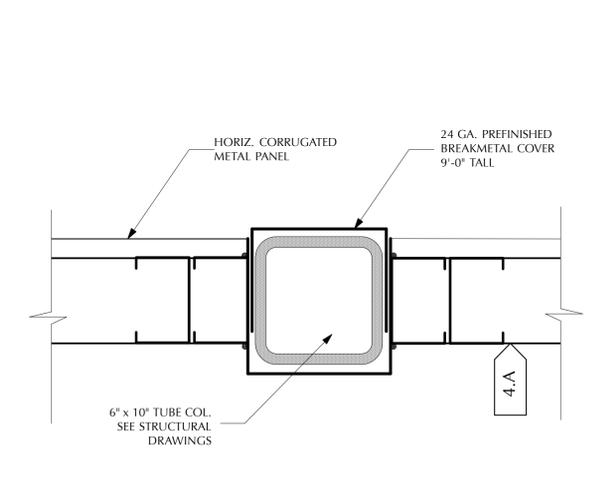
9 TYP. STEEL COLUMN @ STORAGE UNIT
SCALE: 1-1/2" = 1'-0"



10 ROLL UP DOOR @ BEARING WALL
SCALE: 1-1/2" = 1'-0"



11 FIRE EXTINGUISHER PLAN DETAIL
SCALE: 1-1/2" = 1'-0"



12 TYP. COLUMN @ CELLAR
SCALE: 3" = 1'-0"

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1 Permit Set 05/23/13

REVISION DATE:
2 Permit Comments #2 10/31/13

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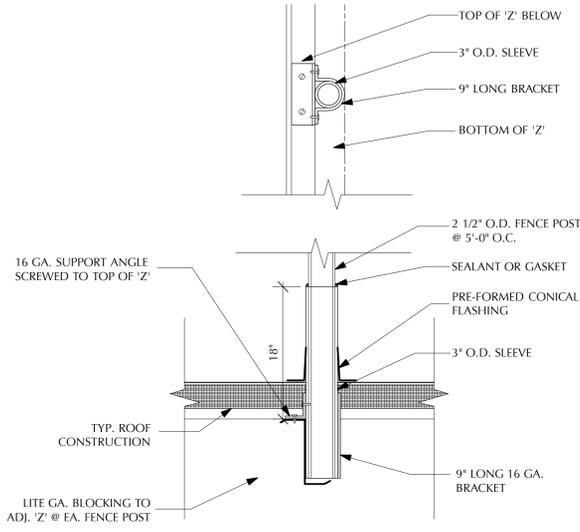
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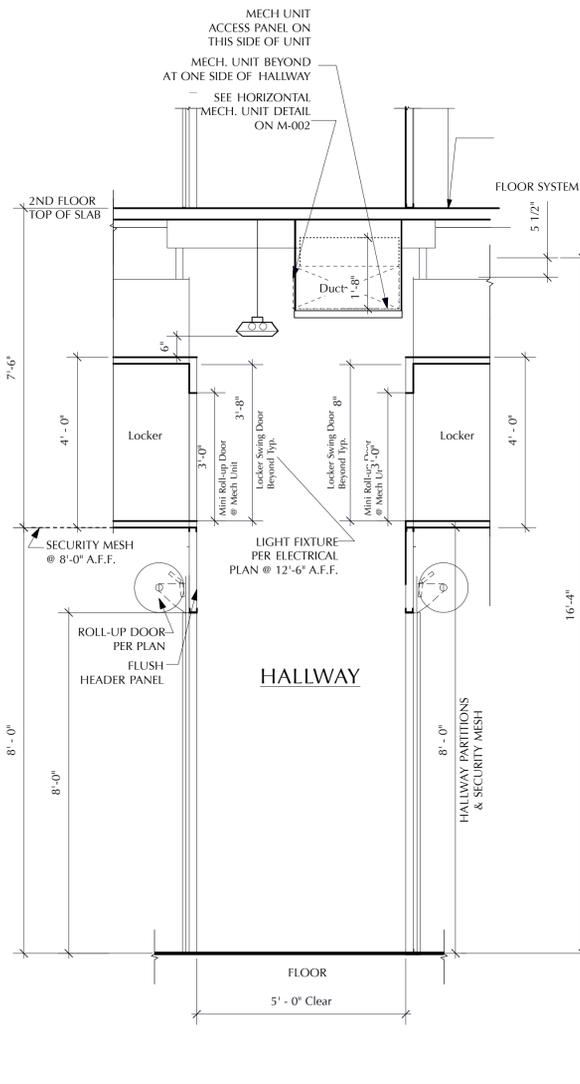
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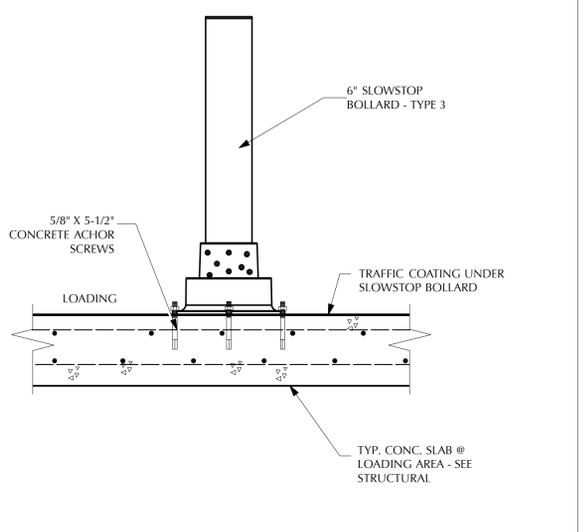


1 ROOF POST DETAIL
SCALE: 1/2" = 1'-0"

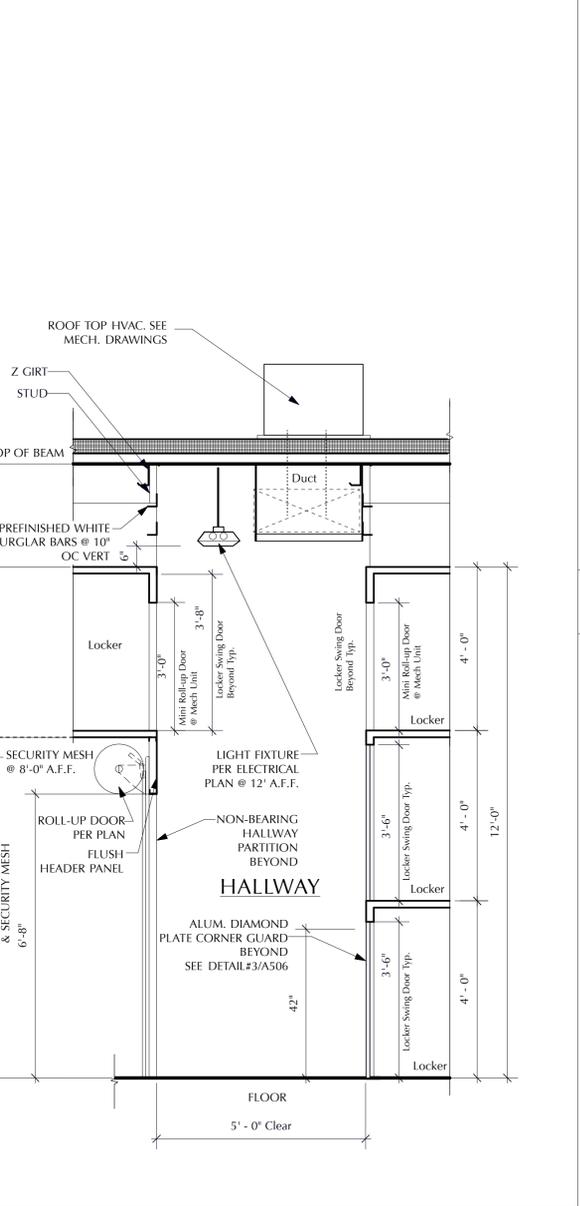
NOTES:
 • MECHANICAL UNITS MUST BE SET AS CLOSE TO THE UNDERSIDE OF FLOOR DECK TO ELIMINATE ANY CONFLICTS WITH LOCKER DOORS
 • CONTRACTOR IS TO MOUNT MECH. UNITS WITH 1'-8" DIMENSION AS HEIGHT OF UNIT.
 • CONTRACTOR IS TO MOUNT MECH UNIT CLOSE TO ONE SIDE OF HALLWAY FOR UNIT ACCESS PANEL AND CENTERED BETWEEN BEAMS (TO AVOID BEAMS)



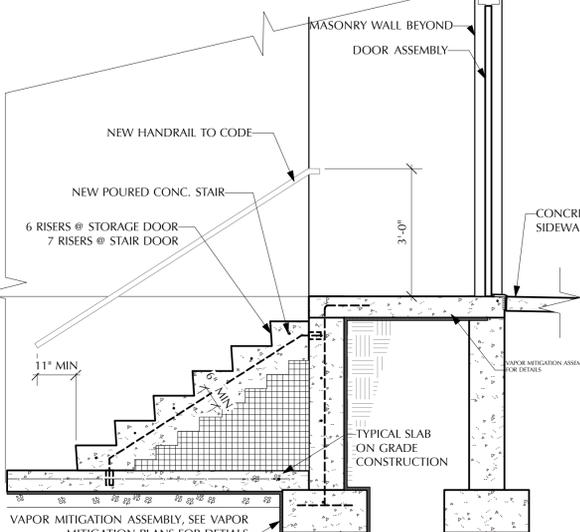
7 TYP. HALLWAY SECTION @ 1ST FLOOR
SCALE: 1/2" = 1'-0"



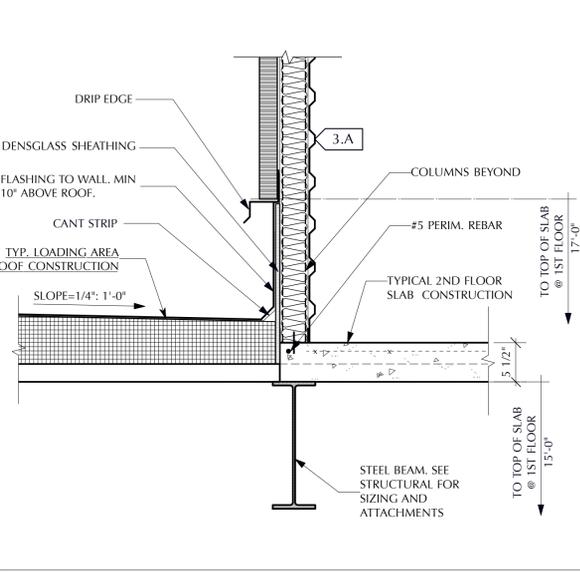
2 INTERIOR BOLLARD DETAIL
SCALE: 1" = 1'-0"



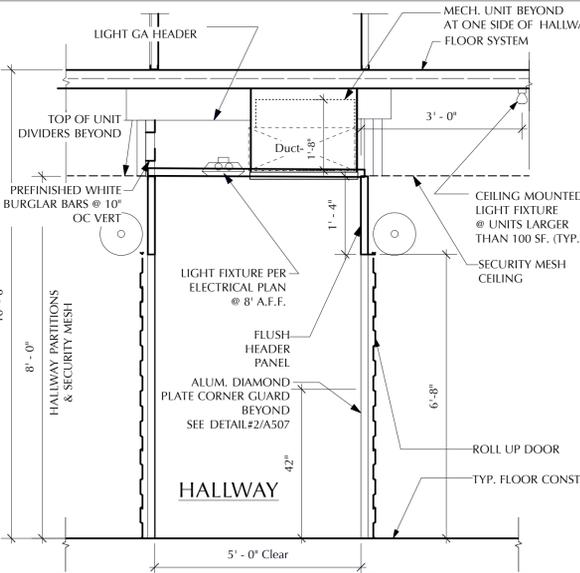
8 TYP. HALLWAY SECTION @ 3TH FLOOR
SCALE: 1/2" = 1'-0"



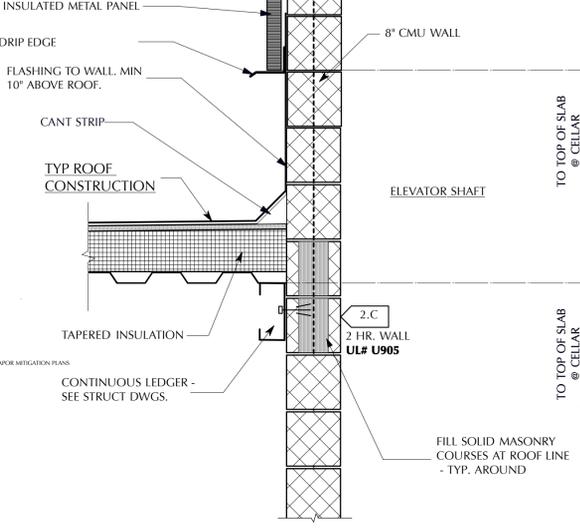
3 CELLAR EGRESS STAIR DETAIL
SCALE: 1/2" = 1'-0"



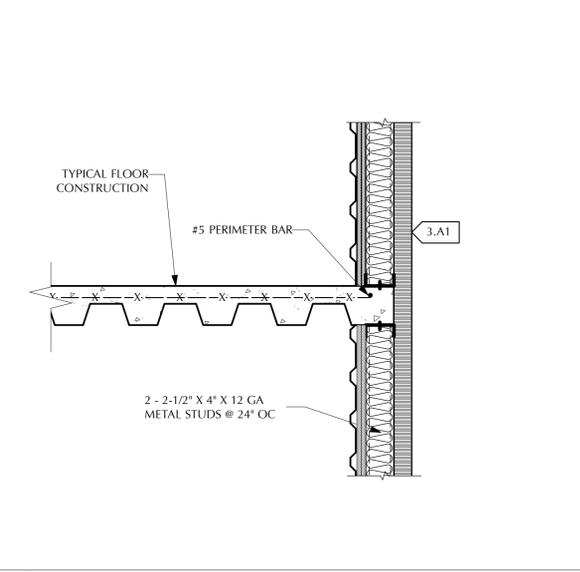
5 EXTERIOR WALL @ LOADING ROOF
SCALE: 1" = 1'-0"



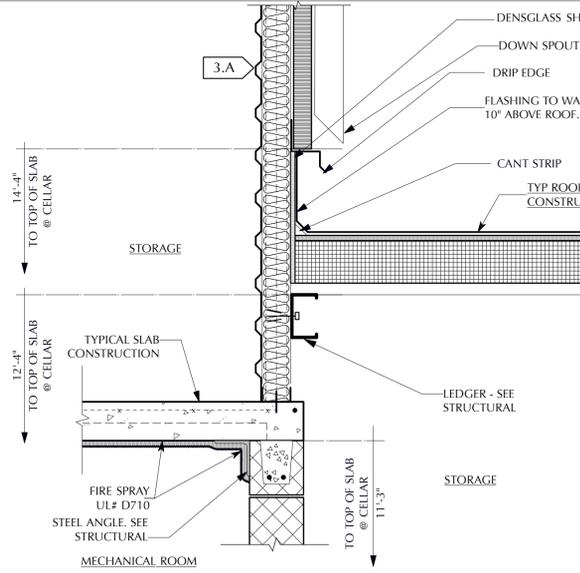
9 TYP. HALLWAY SECTION @ CELLAR
SCALE: 1/2" = 1'-0"



4 ELEVATOR SHAFT @ LOADING ROOF
SCALE: 1" = 1'-0"



6 1HR RATED WALL DETAIL
SCALE: 1" = 1'-0"



10 EXTERIOR WALL @ MECHANICAL ELEV. ROOM
SCALE: 1" = 1'-0"

ISSUE DATE:
1 Permit Set 05/23/13

REVISION DATE:
2 Permit Comments #2 10/31/13

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Stillwell Self Storage LLC
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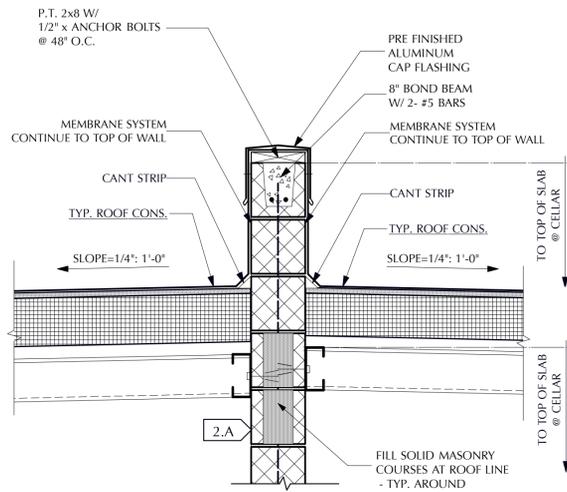
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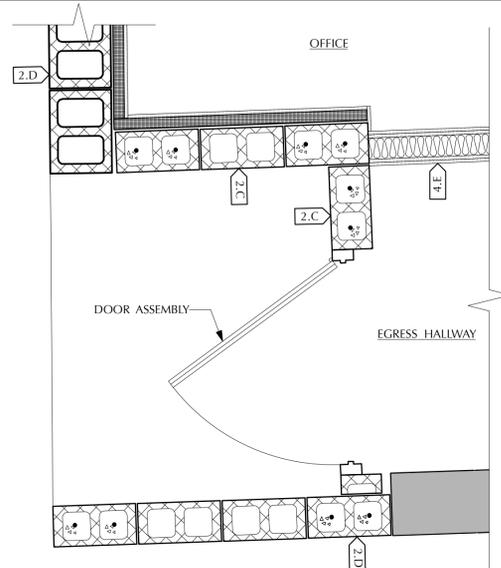
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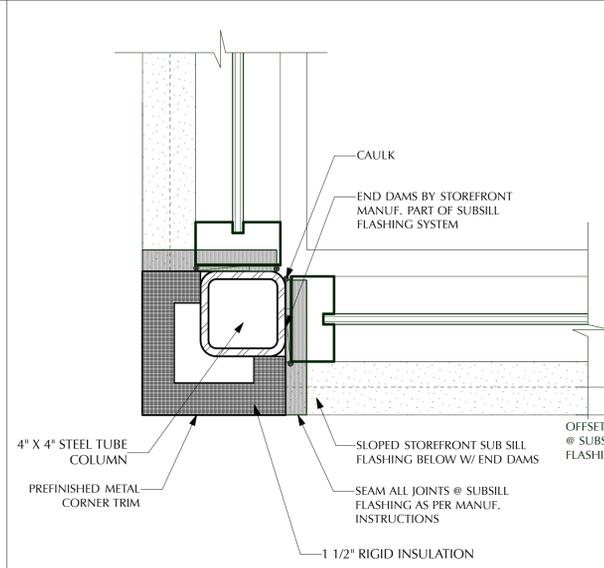
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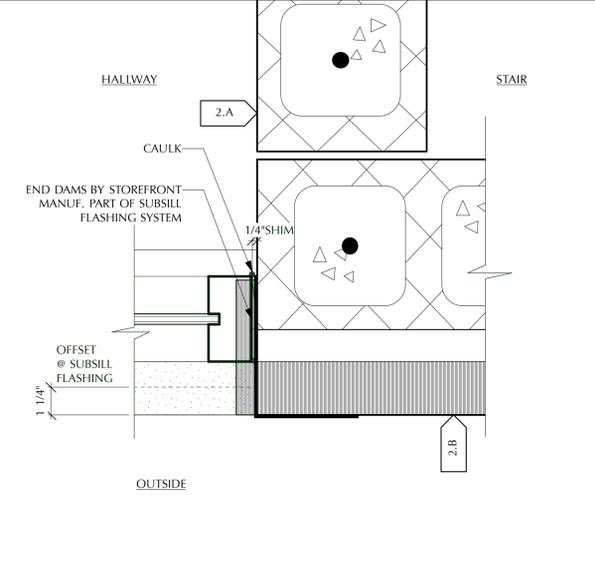
1 WEIR WALL @ LOWER ROOF DETAIL
SCALE: 1" = 1'-0"



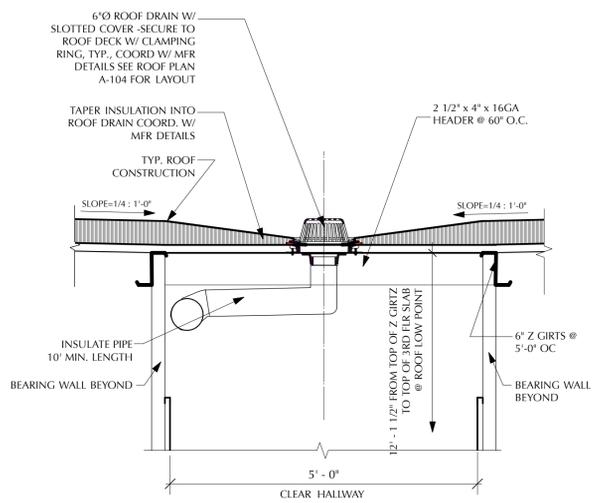
2 EGRESS EXIT @ STILLWELL AV
SCALE: 3/4" = 1'-0"



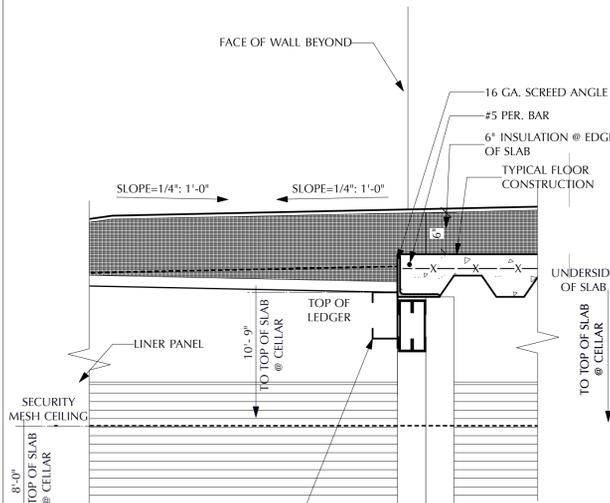
3 STOREFRONT SYSTEM CORNER DETAIL
SCALE: 3" = 1'-0"



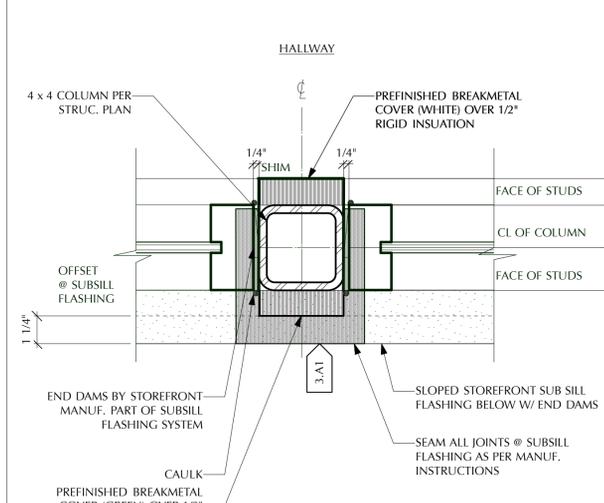
4 HALLWAY STOREFRONT @ STAIR
SCALE: 3" = 1'-0"



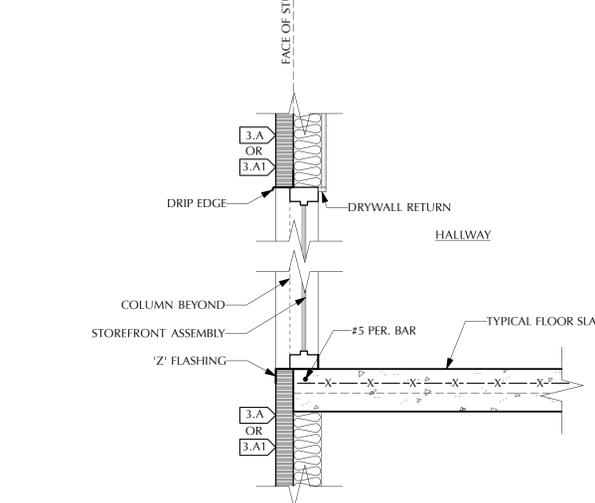
5 TYP. ROOF DRAIN DETAIL
SCALE: 3/4" = 1'-0"



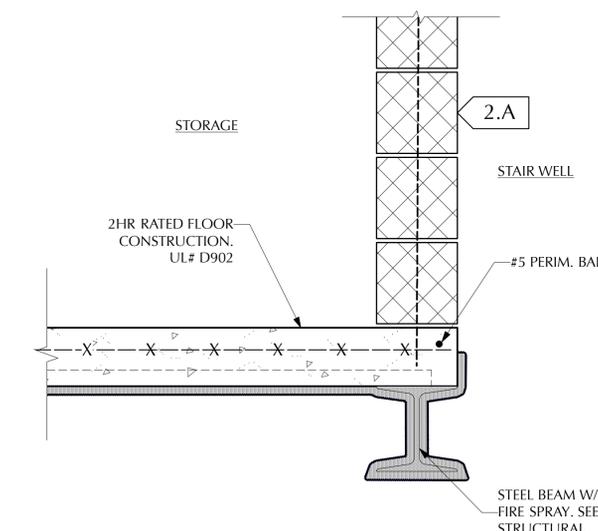
6 1 FLR DECK EXTENSION DETAIL
SCALE: 1" = 1'-0"



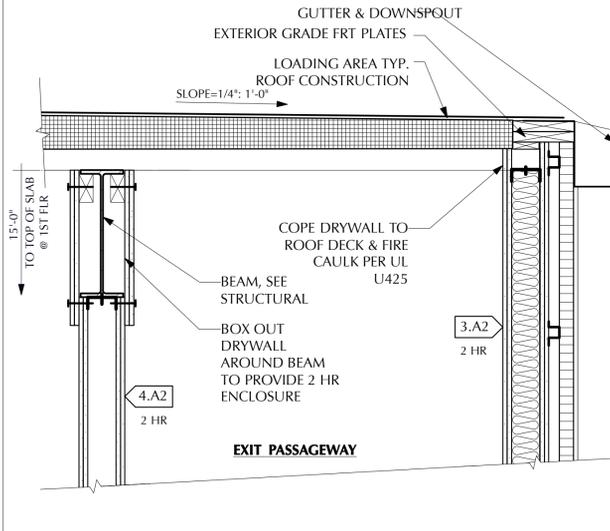
7 COLUMN @ HALLWAY STORE FRONT
SCALE: 3" = 1'-0"



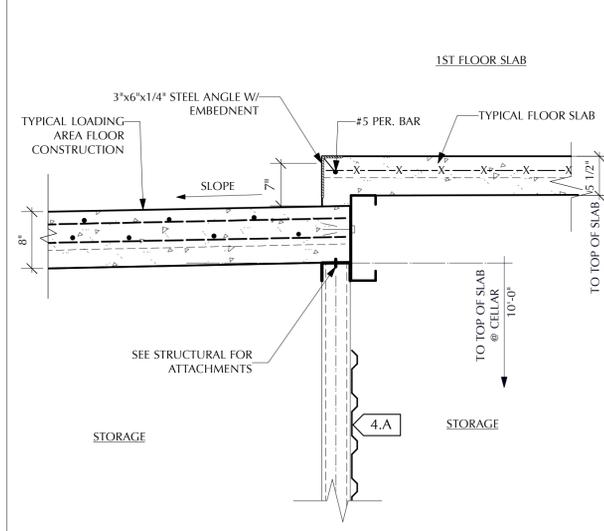
8 3TH FLOOR WINDOWS SECTION DETAIL
SCALE: 1" = 1'-0"



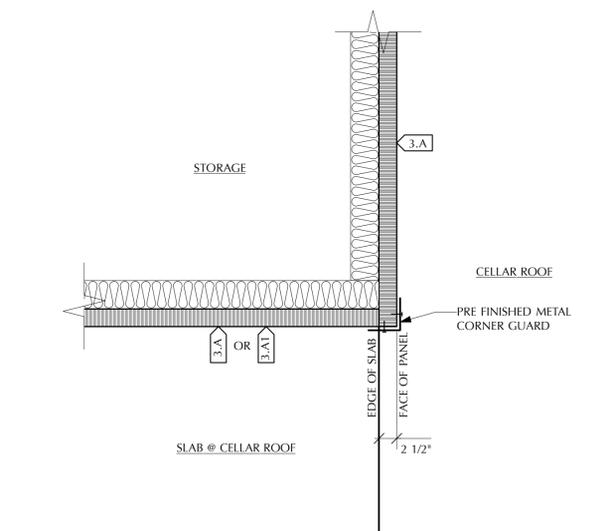
9 RATED FLOOR @ STAIR #2 DETAIL
SCALE: 1 1/2" = 1'-0"



10 ROOF @ EGRESS HALLWAY DETAIL
SCALE: 1" = 1'-0"



11 STEP @ LOADING AREA SLAB
SCALE: 1" = 1'-0"



12 TYP. EXTERIOR WALL CORNER
SCALE: 1" = 1'-0"

ISSUE DATE:
1 Permit Set 05/23/13

REVISION DATE:
2 Permit Comments #2 10/31/13

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Bronx, NY

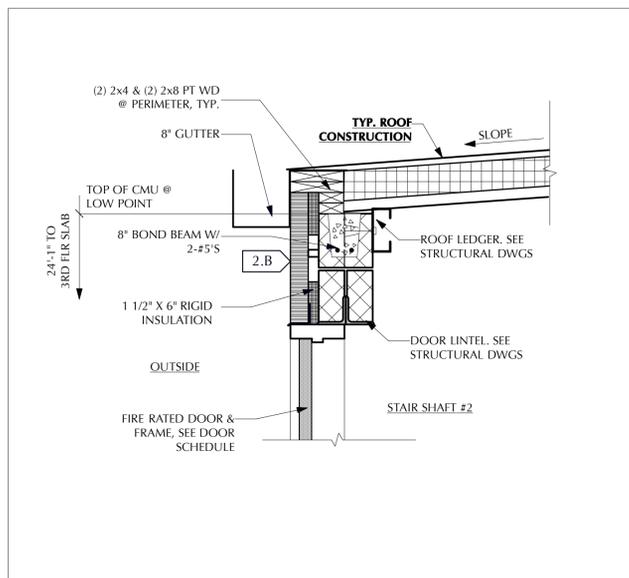
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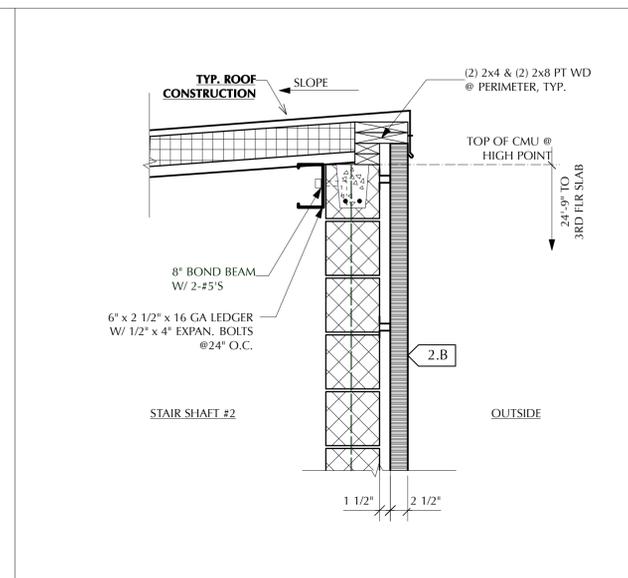
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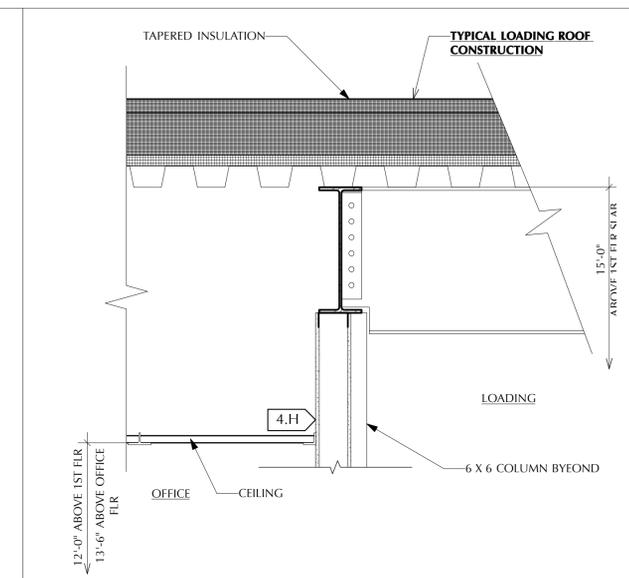
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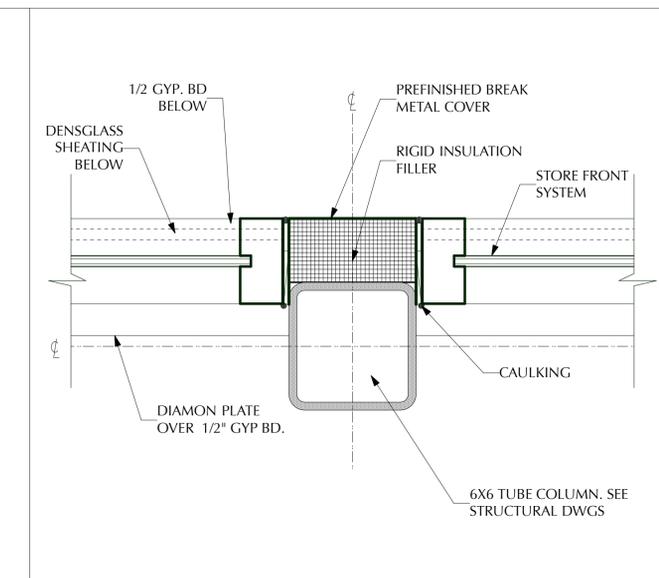
1 LOW POINT ROOF DETAIL @ STAIR #2
SCALE: 1" = 1'-0"



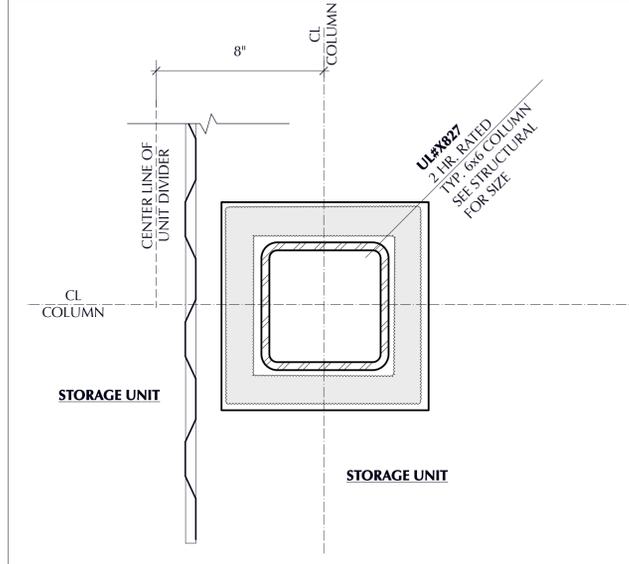
2 HIGH POINT ROOF DETAIL @ STAIR #2
SCALE: 1" = 1'-0"



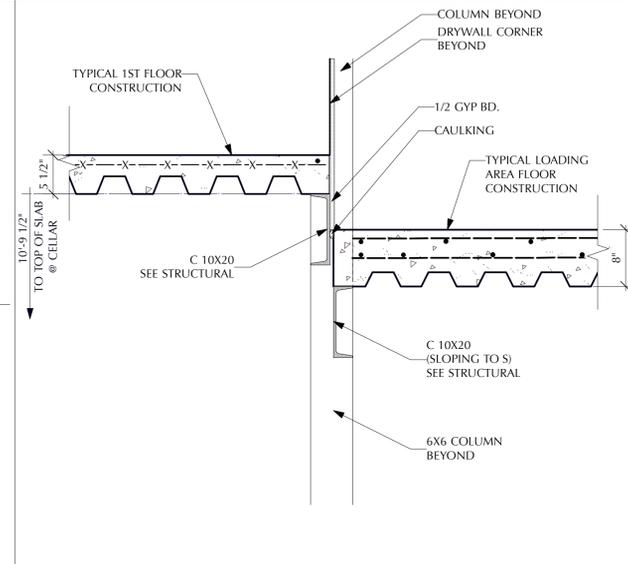
3 POST & BEAM DETAIL @ OFFICE WALL
SCALE: 1" = 1'-0"



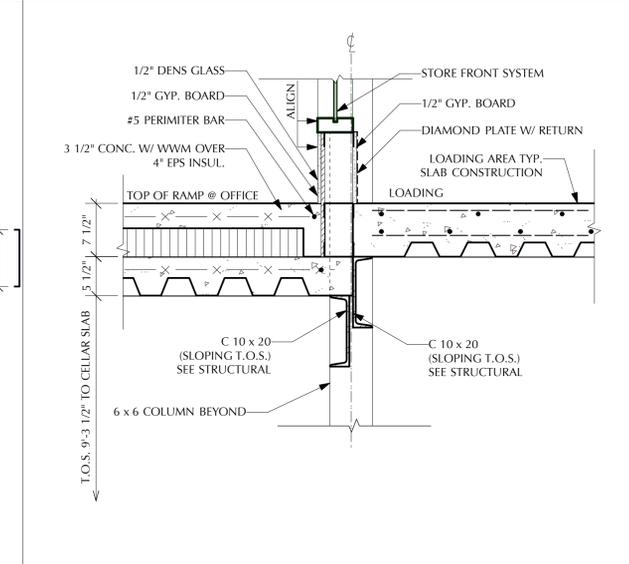
4 COLUMN @ OFFICE STORE FRONT
SCALE: 3" = 1'-0"



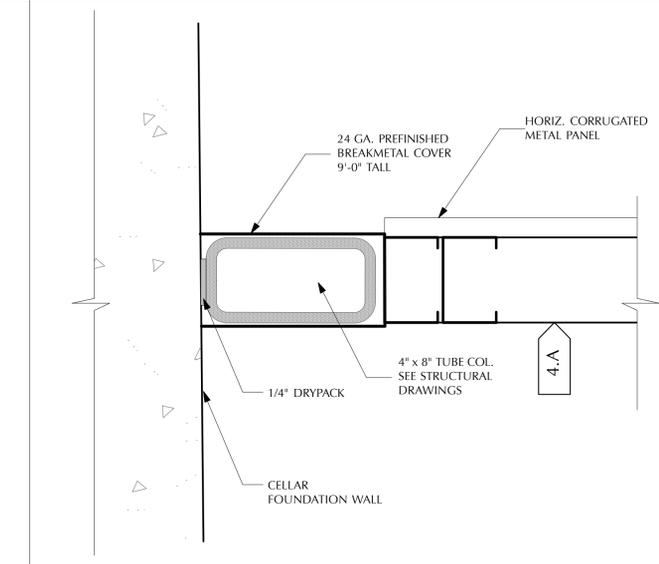
5 TYP. 2HR RATED COLUMN PLAN
SCALE: 3" = 1'-0"



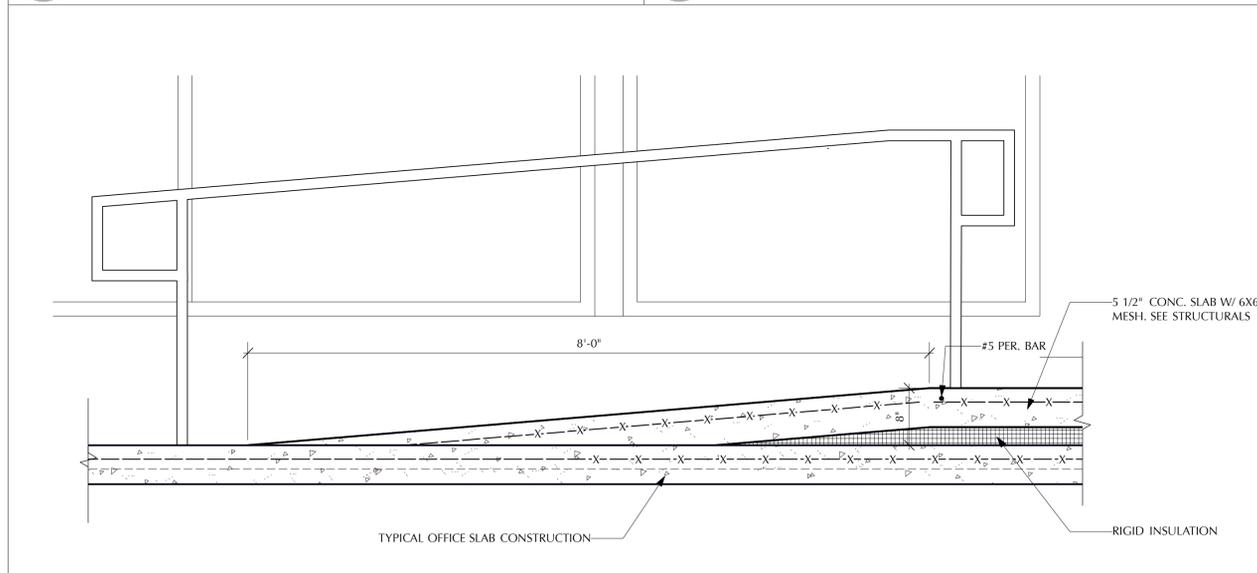
6 LOADING & 1ST FLR. SLAB DETAIL
SCALE: 1" = 1'-0"



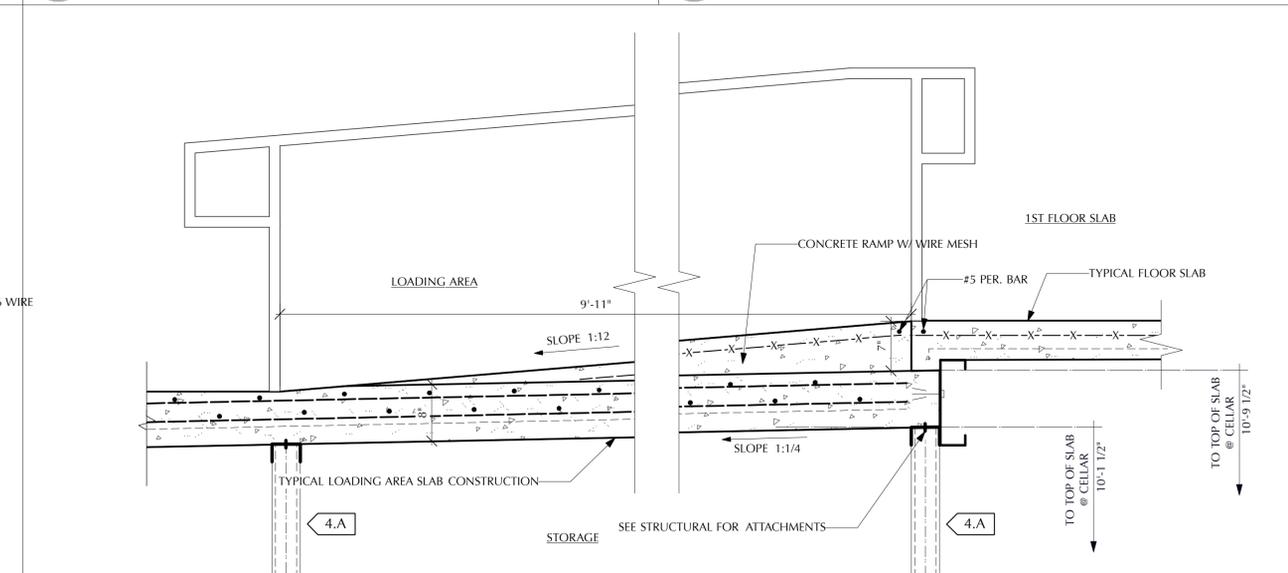
7 OFFICE RAMP & LOADING SLAB DETAIL
SCALE: 1" = 1'-0"



8 TYP. COLUMN DETAIL @ UNDERPINNING
SCALE: 3" = 1'-0"



9 RAMP @ OFFICE
SCALE: 1" = 1'-0"



10 RAMP @ LOADING
SCALE: 1" = 1'-0"

ISSUE DATE:

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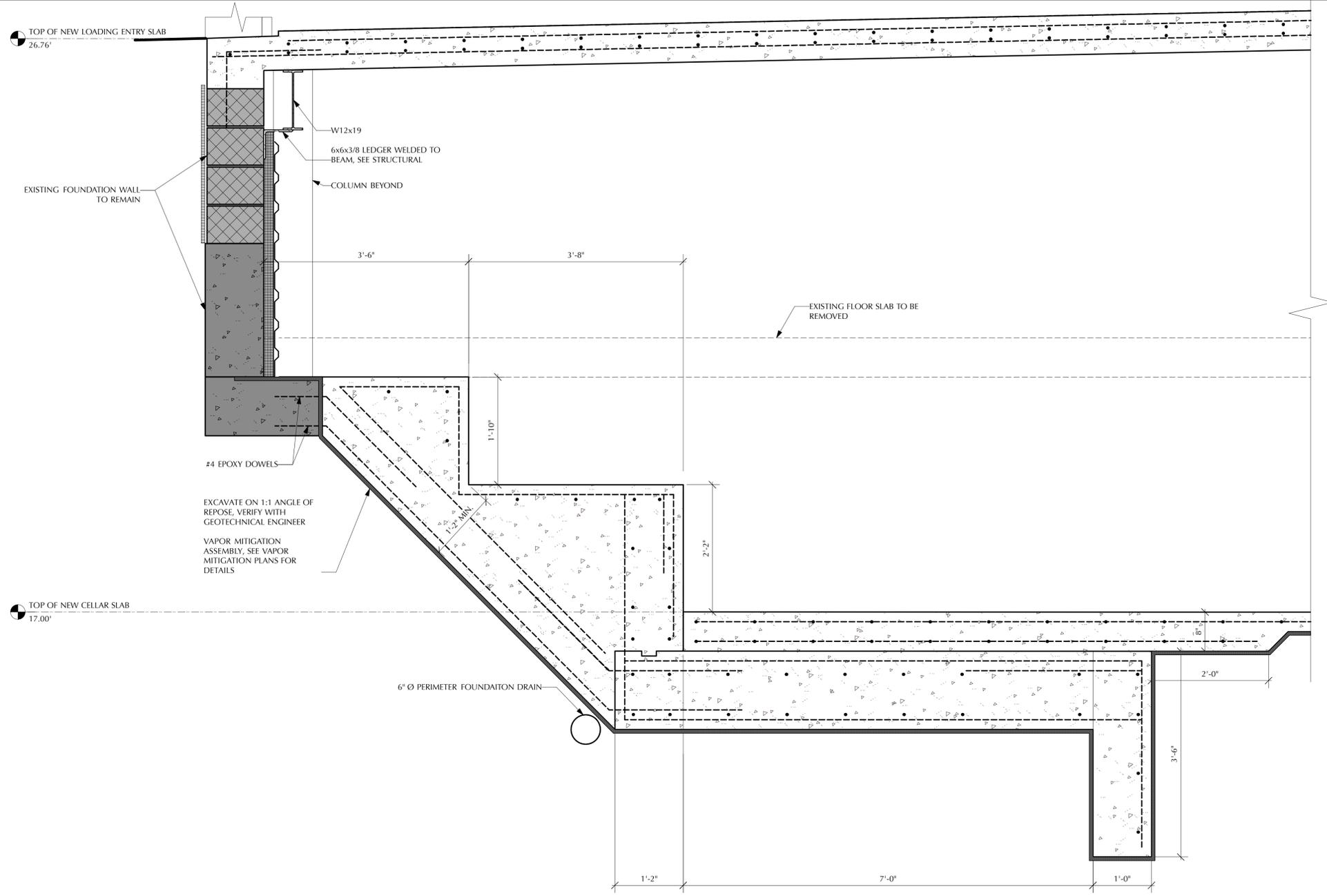
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1 FOUNDATION @ STILLWELL AVE.
SCALE: 1" = 1'-0"

2 NOT USED
SCALE:

3 NOT USED
SCALE:

4 NOT USED
SCALE:

5 NOT USED
SCALE:

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1 Permit Set	05/23/13

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2 Permit Comments #2	10/31/13

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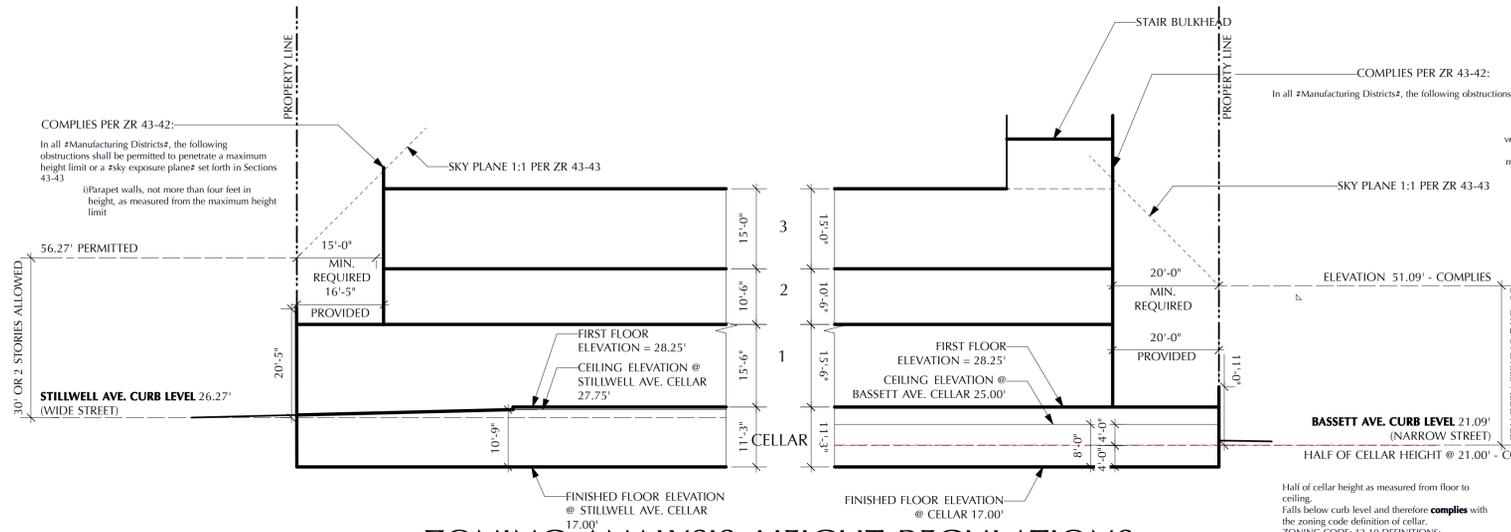
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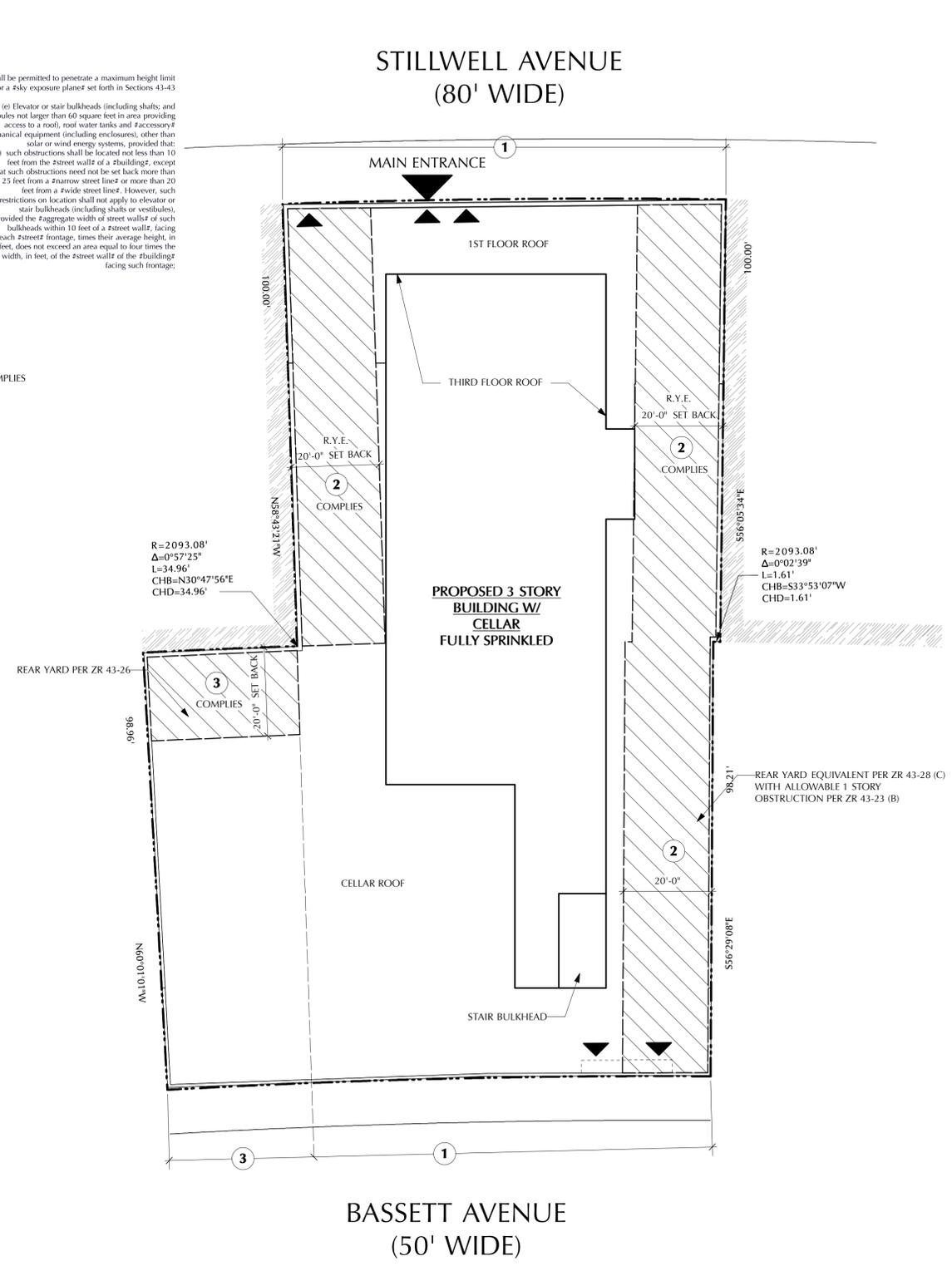
40 OF 40



ZONING ANALYSIS: HEIGHT REGULATIONS

Scale: 1/16" = 1'-0"

ZONING SUMMARY		MAY 20TH, 2013		
ZONE:	M1-1	PREPARED BY JACK WILBERN RA		
BLOCK:	4219			
LOT:	16			
ZONING MAP NUMBER:	4A			
TOTAL SITE AREA BLOCK 4219 LOT 16:	22,295 SF	*SEE PROVIDED SURVEY FOR VERIFICATION OF ZONING LOT AREA		
BUILDING AREAS:				
CELLAR FLOOR AREA	22,132 SF			
1ST FLOOR AREA	9,652 SF			
2ND FLOOR AREA	6,858 SF			
3RD FLOOR AREA	+ 6,858 SF			
TOTAL BUILT AREA:	45,500 SF			
BUILDING AREA DEDUCTIONS:				
LOADING AREA	1,200 SF	*ALLOWED ACCESSORY OFF-STREET LOADING BERTHS FAR EXCLUSION SEE NOTE #4		
CELLAR AREA	+ 22,132 SF	*ALLOWED CELLAR FAR EXCLUSION PER ZR12_10 #FLOOR AREA# (1)		
TOTAL BUILDING AREA DEDUCTIONS:	23,332 SF			
	45,500 SF	TOTAL BUILT AREA		
	- 23,332 SF	TOTAL BUILDING AREA DEDUCTIONS		
TOTAL FLOOR AREA BASED ON FAR	22,168 SF			
ZONING REGULATION	PERMITTED/REQUIRED	PROPOSED	COMPLIES	APPLICABLE ZR SECTION
ZONING USE GROUP		16D	YES	32_25 & 42_12
MAX FLOOR AREA BASED ON FAR	22,295 SF	22,168 SF	YES	12_10 SEE NOTE #1
MAX FLOOR AREA RATIO (FAR)	1	.994	YES	43_12
MIN. REAR YARD EQUIVALENT	20 FT	20 FT	YES	43_28
MIN SIDE YARD	0 FT	0 FT	YES	43_25
FRONT YARD	0 FT	0 FT	YES	43_43
MAX BUILDING HEIGHT AT STREET	30 FT	20 FT	YES	43_43
MAX BUILDING HEIGHT (STORIES) AT STREET	2	1	YES	43_43
INITIAL SETBACK & SKYPLANE @ STILLWELL AVE.	15 / 1:1	15 / 1:1	YES	43_43
INITIAL SETBACK & SKYPLANE @ BASSETT AVE.	15 / 1:1	15 / 1:1	YES	43_43
NO. PARKING SPACES	1	1	YES	44_21 & 32_25 SEE NOTE #2
NO. OF LOADING BERTHS	1	1	YES	44_52 SEE NOTE #3
SIZE OF LOADING BERTHS	50' X 12' X 14'	50' X 12' X 14'	YES	44_52
NOTES:				
1) MAX FLOOR AREA BASED ON FAR OF 1 FOR ENTIRE SITE				
MAX FAR ALLOWED = 1	PER ZR 43_12			
TOTAL ZONING LOT AREA = 22,295 SF	PER PROVIDED SURVEY			
TOTAL FLOOR AREA BASED ON FAR = 22,258 SF				
FAR = TOTAL FLOOR AREA / TOTAL ZONING LOT AREA	MAX FAR ALLOWED	FAR PROPOSED	COMPLIES	
22,168 SF / 22,295 SF = .994 FAR	1	0.994	YES	
2) ACCESSORY OFF STREET PARKING SPACES REQUIRED FOR DISTRICT M1-1 USE GROUP 16D PARKING REQUIREMENT CATEGORY G PER ZR 44_21 & ZR 32_25				
1 PER 2,000SF OF #FLOOR AREA#, OR 1 PER 3 EMPLOYEES, WHICHEVER WILL REQUIRE A LESSER NUMBER OF SPACES - M1-1, M1-2, M1-3				
NUMBER OF SPACES REQUIRED FOR 3 EMPLOYEES = 1				
NUMBER OF EMPLOYEES WORKING IN BUILDING = 3				
1SPACE/3 EMPLOYEES X 3 EMPLOYEES = 1 SPACE REQUIRED				
3) ACCESSORY OFF-STREET LOADING BERTHS REQUIRED FOR USE GROUP 16D PER ZR 44_52				
REQUIRED	PROPOSED	COMPLIES		
0 BERTHS FOR FIRST 8,000 SF	0 BERTHS FOR FIRST 8,000 SF	YES		
1 BERTH FOR NEXT 17,000 SF	1 BERTH FOR NEXT 17,000 SF	YES		
1 BERTH FOR NEXT 15,000 SF	N/A	N/A		
1 BERTH FOR EACH ADDITIONAL 80,000 SF	N/A	N/A		
1 BERTH	1 BERTH	YES		
4) ALLOWED ACCESSORY OFF-STREET LOADING BERTHS FAR EXCLUSION PER ZR 12_10 #FLOOR AREA# (7)				
THE FLOOR AREA OF A BUILDING SHALL NOT INCLUDE FLOOR SPACE USED FOR ACCESSORY OFF-STREET LOADING BERTHS, UP TO 200% OF THE AMOUNT REQUIRED BY THE APPLICABLE DISTRICT REGULATION				
NUMBER OF LOADING BERTHS REQUIRED = 1	PER ZR 44_52			
AREA OF LOADING BERTH REQUIRED = 600 SF	PER ZR 44_52			
ACCESSORY OFF-STREET LOADING BERTH FAR EXCLUSION ALLOWED = 200% REQUIRED LOADING AREA	PER ZR 12_10			
1 X 600SF = 600SF				
600SF X 200% = 1,200SF LOADING FAR EXCLUSION				



ZONING ANALYSIS: YARD REGULATIONS

Scale: 1/16" = 1'-0"

ZONING ANALYSIS SUMMARY FOR YARD REGULATIONS				
NUMBER	ZONING DEFINITION	REMARKS	CODE SECTION	COMPLIES
1	Through Lot	Rear yard equivalent per ZR 43-28 (c) 1 story obstruction allowed per ZR 43-23 (b)	ZR 43-23 Permitted Obstructions in Rear Yards or Rear Yard Equivalents (b) Any building or portion of a building used for any permitted use ...and provided that the height of such building shall not exceed one story...nor in any event 23 feet above curb level	YES
2	Rear Yard Equivalent	Rear Yard Equivalent per ZR 43-28 (c) 1 story obstruction allowed per ZR 43-23 (b)	ZR 43-28 Special Provisions for Through Lots (c) an open area adjoining and extending along the full length of each side lot line with a minimum width of 20 feet measured from such side lot line.	YES
3	Interior Lot Portion	20' Rear Yard Provided 1 story obstruction allowed per ZR 43-23 (b)	ZR 43-26 Rear Yards a rear yard with a depth of not less than 20' shall be provided at all rear lot lines	YES

ISSUE DATE:	05/23/13
1 Permit Set	

REVISION DATE:	
1 Permit Comments	10/01/13
2 Permit Comments #2	10/31/13
3 Permit Comments #3	12/13/13

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 Stillwell Self Storage LLC
 1538 Stillwell Ave.
 Bronx, NY

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1 Permit Set	05/23/13
2 Permit Set 1 Story	02/03/14
REVISION DATE:	
1 Permit Comments	10/14/13

Stillwell Avenue Self Storage - Bldg. B

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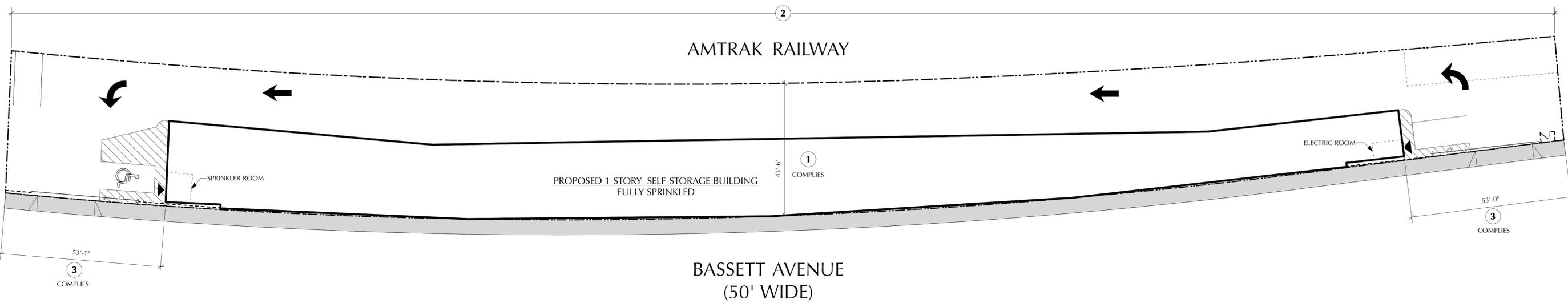


ZONING ANALYSIS

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3 OF 13

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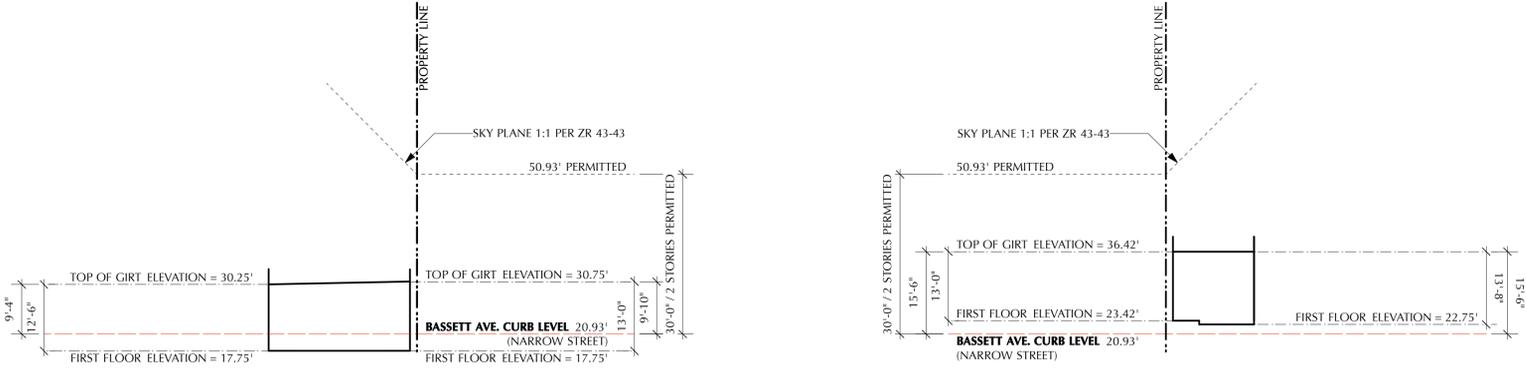


ZONING ANALYSIS: YARD REGULATIONS

Scale: 1/16" = 1'-0"

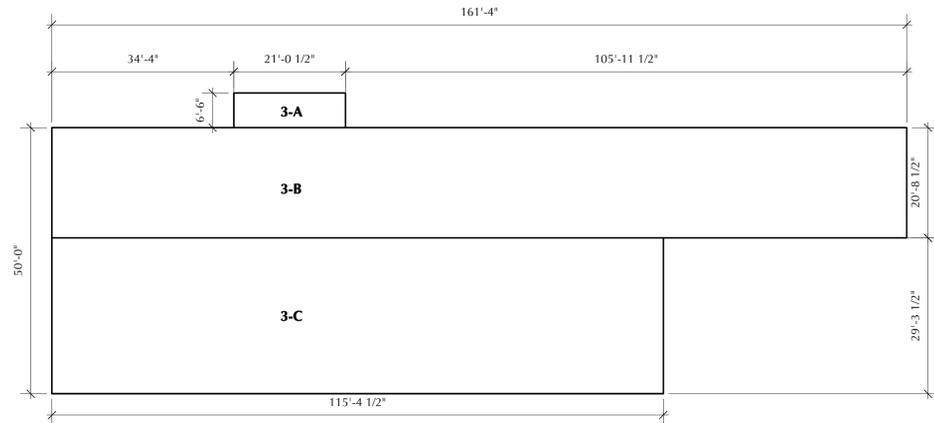
ZONING SUMMARY				
MAY 20TH, 2013				
ZONE:	M1-1			PREPARED BY JACK WILBERN RA
BLOCK:	4226			
LOT:	290			
ZONING MAP NUMBER:	4A			
TOTAL SITE AREA BLOCK 4226 LOT 290:	21,854 SF			* SEE PROVIDED SURVEY FOR VERIFICATION OF ZONING LOT AREA
BUILDING AREAS:				
1ST FLOOR AREA	9,271 SF			
TOTAL FLOOR AREA BASED ON FAR	9,271 SF			
	PROPOSED	ALLOWED	COMPLIES	
TOTAL FLOOR AREA (FAR)	9,271 SF	21,854	YES	
TOTAL BUILT AREA	18,542 SF			
ZONING REGULATION				
ZONING USE GROUP	PERMITTED/REQUIRED	PROPOSED	COMPLIES	APPLICABLE ZR SECTION
MAX FLOOR AREA BASED ON FAR	21,854 SF	9,271 SF	YES	12_10 SEE NOTE #1
MAX FLOOR AREA RATIO (FAR)	1	.424	YES	43_12
MIN. REAR YARD	0 FT	18 FT	YES	43_29 & 43_27
MIN SIDE YARD	0 FT	53 FT	YES	43_25
FRONT YARD	0 FT	0 FT	YES	43_43
MAX BUILDING HEIGHT AT STREET	30 FT	15'-6"	YES	43_43
MAX BUILDING HEIGHT (STORIES) AT STREET	2	1	YES	43_43
INITIAL SETBACK & SKYPLANE @BASSETT AVE.	20' / 1:1	20' / 1:1	YES	43_43
NO. PARKING SPACES	1	3	YES	44_21 SEE NOTE #2
NO. OF LOADING BERTHS	1	1	YES	44_52 SEE NOTE #3
SIZE OF LOADING BERTHS	50' X 12' X 14'	50' X 12' X 14'	YES	44_52
NOTES:				
1) MAX FLOOR AREA BASED ON FAR OF 1 FOR ENTIRE SITE				
MAX FAR ALLOWED = 1		PER ZR 43_12		
TOTAL ZONING LOT AREA = 21,854 SF		PER PROVIDED SURVEY		
TOTAL FLOOR AREA BASED ON FAR = 9,271 SF				
FAR = TOTAL FLOOR AREA / TOTAL ZONING LOT AREA		MAX FAR ALLOWED	FAR PROPOSED	COMPLIES
9,271 SF / 21,854 SF = .424 FAR		1	0.424	YES
2) ACCESSORY OFF STREET PARKING SPACES REQUIRED FOR DISTRICT M1-1 USE GROUP 16D PARKING REQUIREMENT CATEGORY G PER ZR 44_21 & ZR 32_25				
1 PER 2,000SF OF #FLOOR AREA#, OR 1 PER 3 EMPLOYEES, WHICHEVER WILL REQUIRE A LESSER NUMBER OF SPACES - M1-1 M1-2 M1-3				
NUMBER OF SPACES REQUIRED FOR 3 EMPLOYEES = 1				
NUMBER OF EMPLOYEES WORKING IN BUILDING = 3				
1SPACE/3 EMPLOYEES X 3 EMPLOYEES = 1 SPACE REQUIRED				
3) ACCESSORY OFF-STREET LOADING BERTHS REQUIRED FOR USE GROUP 16D PER ZR 44_52				
REQUIRED				
0 BERTHS FOR FIRST 8,000 SF	0 BERTHS FOR FIRST 8,000 SF	YES		
1 BERTH FOR NEXT 17,000 SF	1 BERTH FOR NEXT 17,000 SF	YES		
1 BERTH FOR NEXT 15,000 SF	N/A	N/A		
1 BERTH FOR EACH ADDITIONAL 80,000 SF	N/A	N/A		
1 BERTH	1 BERTH	YES		

ZONING ANALYSIS SUMMARY FOR YARD REGULATIONS				
NUMBER	ZONING DEFINITION	REMARKS	CODE SECTION	COMPLIES
1	Shallow Interior Lot	No rear yard required per ZR 43-27	ZR 43-27 Special Provisions for Shallow Interior Lots (b) No rear yard is required on any interior lot with a maximum depth of less than 50 feet required on any #interior lot.	YES
2	Along Rail Road Right of Way	No rear yard required per ZR 43-29	ZR 43-29 Special Provisions Applying along Railroad Rights-of-Way In all districts, as indicated, along such portion of a rear lot line which coincides with a boundary of a railroad right of way, no rear yard shall be required line# which coincides with a boundary of a railroad right-of-way, no #rear yard# shall be required.	YES
3	Side Yard	No side yard required per ZR 43-25	ZR 43-25 Minimum Required Side Yards In all districts, as indicated, no side yards are required. However, if an open area extending along a side lot line is provided, it shall be at least eight feet wide.	YES

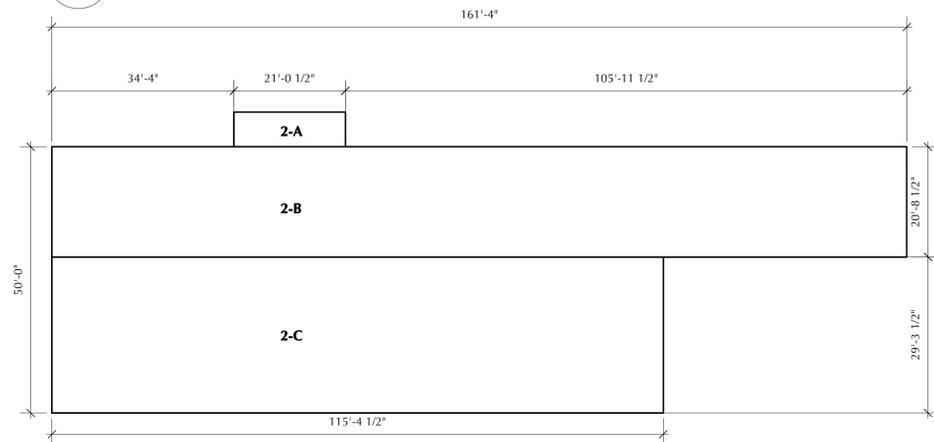


ZONING ANALYSIS: HEIGHT REGULATIONS

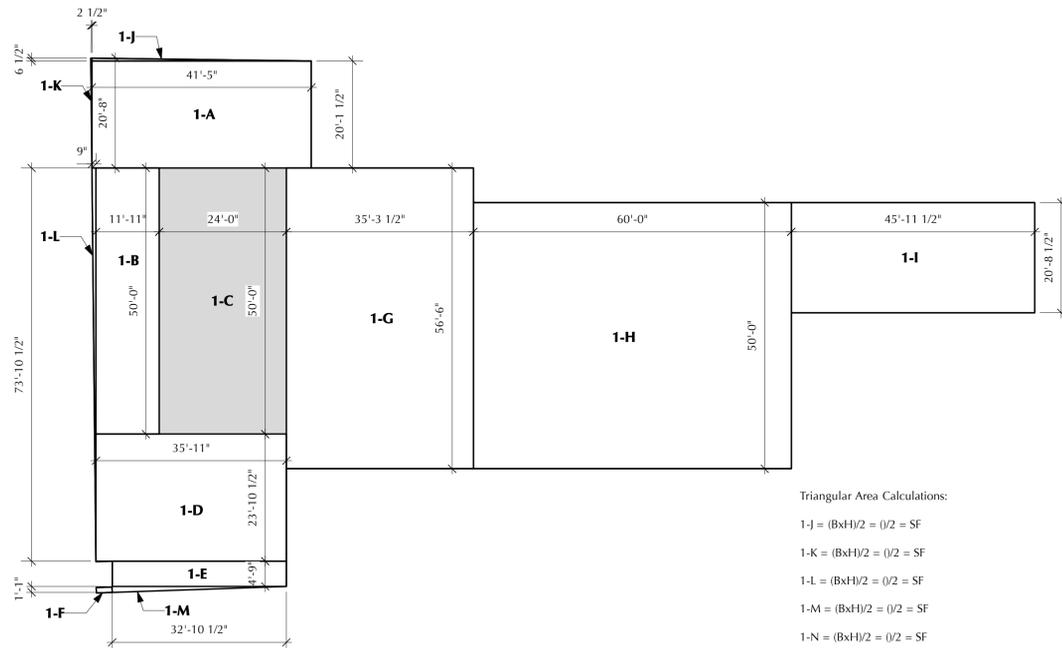
Scale: 1/16" = 1'-0"



4 THIRD FLOOR PLAN
Scale: 1/16" = 1'-0"



3 SECOND FLOOR PLAN
Scale: 1/16" = 1'-0"

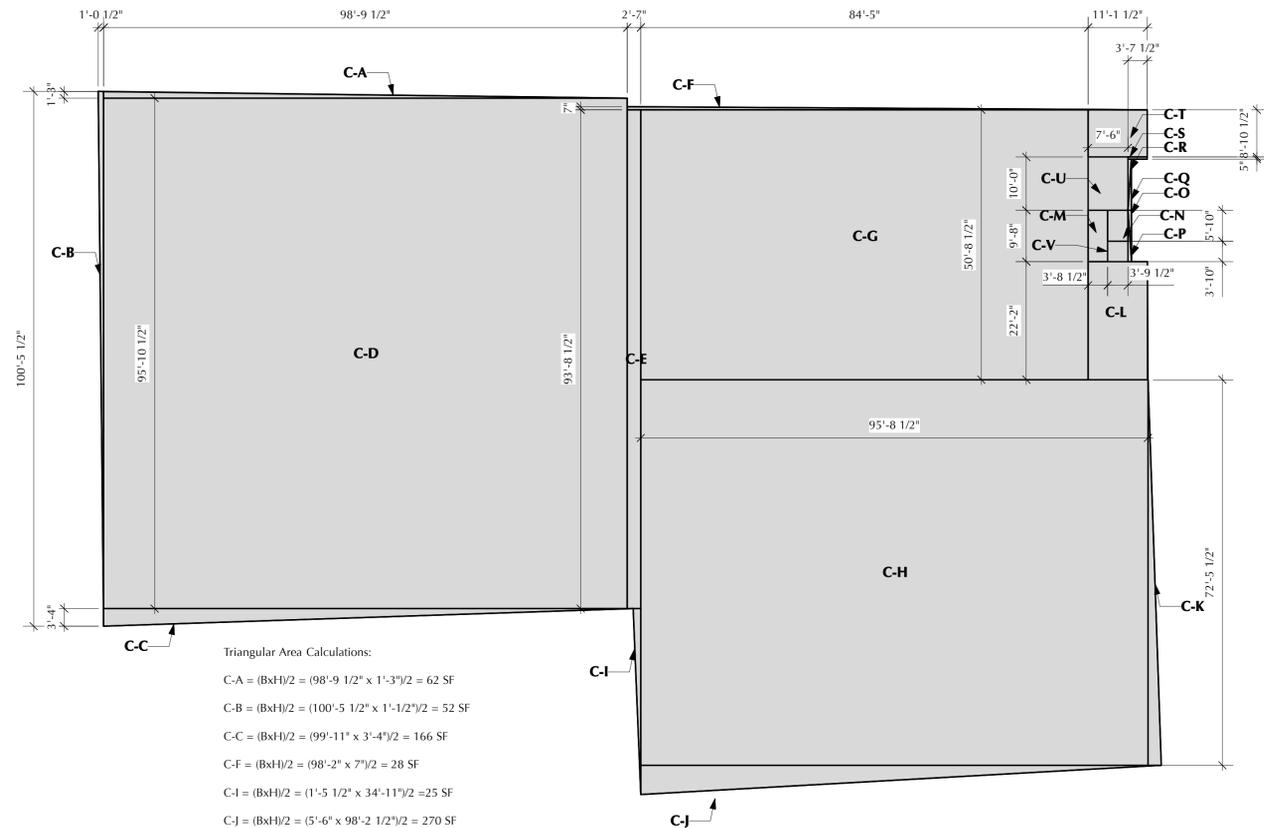


2 FIRST FLOOR PLAN
Scale: 1/16" = 1'-0"

Triangular Area Calculations:
 1-J = (BxH)/2 = 0/2 = SF
 1-K = (BxH)/2 = 0/2 = SF
 1-L = (BxH)/2 = 0/2 = SF
 1-M = (BxH)/2 = 0/2 = SF
 1-N = (BxH)/2 = 0/2 = SF

AREA KEY:
 FAR AREA
 NON FAR AREA

PROPOSED SELF STORAGE BUILDING AREA CALCULATIONS						
LOCATION	AREA	WIDTH	HEIGHT	BUILDING TOTAL	NON FAR TOTAL	FAR TOTAL
CELLAR PLAN	C-A	See Calcs	See Calcs	62 SF	62 SF	0 SF
CELLAR PLAN	C-B	See Calcs	See Calcs	52 SF	52 SF	0 SF
CELLAR PLAN	C-C	See Calcs	See Calcs	166 SF	166 SF	0 SF
CELLAR PLAN	C-D	98'-9 1/2"	95'-10 1/2"	9,473 SF	9,473 SF	0 SF
CELLAR PLAN	C-E	2'-7"	93'-8 1/2"	242 SF	242 SF	0 SF
CELLAR PLAN	C-F	See Calcs	See Calcs	28 SF	28 SF	0 SF
CELLAR PLAN	C-G	84'-5"	50'-8 1/2"	4,280 SF	4,280 SF	0 SF
CELLAR PLAN	C-H	95'-8 1/2"	72'-5 1/2"	6,933 SF	6,933 SF	0 SF
CELLAR PLAN	C-I	See Calcs	See Calcs	25 SF	25 SF	0 SF
CELLAR PLAN	C-J	See Calcs	See Calcs	270 SF	270 SF	0 SF
CELLAR PLAN	C-K	See Calcs	See Calcs	91 SF	91 SF	0 SF
CELLAR PLAN	C-L	11'-2 1/2"	22'-2"	248 SF	248 SF	0 SF
CELLAR PLAN	C-M	3'-8 1/2"	9'-8"	36 SF	36 SF	0 SF
CELLAR PLAN	C-N	3'-9 1/2"	5'-10"	22 SF	22 SF	0 SF
CELLAR PLAN	C-O	See Calcs	See Calcs	3 SF	3 SF	0 SF
CELLAR PLAN	C-P	See Calcs	See Calcs	3 SF	3 SF	0 SF
CELLAR PLAN	C-Q	See Calcs	See Calcs	3 SF	3 SF	0 SF
CELLAR PLAN	C-R	See Calcs	See Calcs	3 SF	3 SF	0 SF
CELLAR PLAN	C-S	5'	3'-7 1/2"	2 SF	2 SF	0 SF
CELLAR PLAN	C-T	11'-1 1/2"	8'-10 1/2"	99 SF	99 SF	0 SF
CELLAR PLAN	C-U	7'-6"	10'-0"	75 SF	75 SF	0 SF
CELLAR PLAN	C-V	3'-10"	3'-10"	15 SF	15 SF	0 SF
PARTIAL BASEMENT TOTAL					22,132 SF	0 SF
1ST FLOOR PLAN	1-A	41'-5"	20'-1 1/2"	834 SF	0 SF	834 SF
1ST FLOOR PLAN	1-B	11'-11"	50'-0"	596 SF	0 SF	596 SF
1ST FLOOR PLAN	1-C	24'-0"	50'-0"	1,200 SF	1,200 SF	0 SF
1ST FLOOR PLAN	1-D	35'-11"	23'-10 1/2"	858 SF	0 SF	858 SF
1ST FLOOR PLAN	1-E	4'-9"	32'-10 1/2"	156 SF	0 SF	156 SF
1ST FLOOR PLAN	1-F	3'-0"	1'-0"	3 SF	0 SF	3 SF
1ST FLOOR PLAN	1-G	35'-3 1/2"	56'-6"	1,994 SF	0 SF	1,994 SF
1ST FLOOR PLAN	1-H	60'-0"	50'-0"	3,000 SF	0 SF	3,000 SF
1ST FLOOR PLAN	1-I	45'-11 1/2"	20'-8 1/2"	952 SF	0 SF	952 SF
1ST FLOOR PLAN	1-J	See Calcs	See Calcs	11 SF	0 SF	11 SF
1ST FLOOR PLAN	1-K	See Calcs	See Calcs	2 SF	0 SF	2 SF
1ST FLOOR PLAN	1-L	See Calcs	See Calcs	28 SF	0 SF	28 SF
1ST FLOOR PLAN	1-M	See Calcs	See Calcs	18 SF	0 SF	18 SF
1ST FLOOR TOTAL					1,200 SF	8,452 SF
2ND FLOOR PLAN	2-A	21'-1/2"	6'-6"	137 SF	0 SF	137 SF
2ND FLOOR PLAN	2-B	161'-4"	20'-8 1/2"	3,341 SF	0 SF	3,341 SF
2ND FLOOR PLAN	2-C	115'-4 1/2"	29'-3 1/2"	3,380 SF	0 SF	3,380 SF
2ND FLOOR TOTAL					6,711 SF	6,858 SF
3RD FLOOR PLAN	3-A	21'-1/2"	6'-6"	137 SF	0 SF	137 SF
3RD FLOOR PLAN	3-B	161'-4"	20'-8 1/2"	3,341 SF	0 SF	3,341 SF
3RD FLOOR PLAN	3-C	115'-4 1/2"	29'-3 1/2"	3,380 SF	0 SF	3,380 SF
3RD FLOOR TOTAL					6,711 SF	6,858 SF
TOTAL FAR:						22,168 SF



Triangular Area Calculations:
 C-A = (BxH)/2 = (98'-9 1/2" x 1'-3")/2 = 62 SF
 C-B = (BxH)/2 = (100'-5 1/2" x 1'-1/2")/2 = 52 SF
 C-C = (BxH)/2 = (99'-11" x 3'-4")/2 = 166 SF
 C-F = (BxH)/2 = (98'-2" x 7")/2 = 28 SF
 C-I = (BxH)/2 = (1'-5 1/2" x 34'-11")/2 = 25 SF
 C-J = (BxH)/2 = (5'-6" x 98'-2 1/2")/2 = 270 SF
 C-K = (BxH)/2 = (72'-5 1/2" x 2'-6 1/2")/2 = 91 SF
 C-O = (BxH)/2 = (8" x 9'-8")/2 = 3 SF
 C-P = (BxH)/2 = (8 1/2" x 9'-8")/2 = 3 SF
 C-Q = (BxH)/2 = (8" x 9'-7")/2 = 3 SF
 C-R = (BxH)/2 = (7 1/2" x 9'-7")/2 = 3 SF

1 CELLAR FLOOR PLAN
Scale: 1/16" = 1'-0"

ISSUE DATE:
1 Permit Set 05/23/13

REVISION DATE:
2 Permit Comments #2 10/31/13
3 Permit Comments #3 12/13/13

Stillwell Avenue Self Storage - Bldg. A
 Stillwell Self Storage LLC
 1538 Stillwell Ave.
 Bronx, NY

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ZONING ANALYSIS

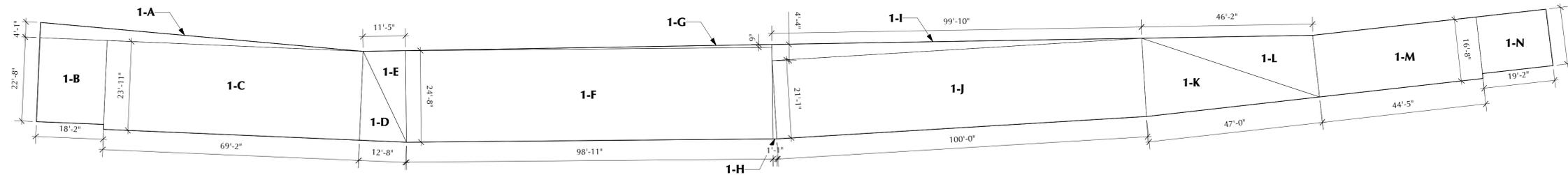
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PROPOSED SELF STORAGE BUILDING AREA CALCULATIONS

LOCATION	AREA	WIDTH	HEIGHT	BUILDING TOTAL	NON FAR TOTAL	FAR TOTAL
1ST FLOOR PLAN	1-A	See Calcs	See Calcs	179 SF	0 SF	179 SF
1ST FLOOR PLAN	1-B	18'-2"	22'-8"	411 SF	0 SF	411 SF
1ST FLOOR PLAN	1-C	69'-2"	23'-11"	1,657 SF	0 SF	1,657 SF
1ST FLOOR PLAN	1-D	See Calcs	See Calcs	152 SF	0 SF	152 SF
1ST FLOOR PLAN	1-E	See Calcs	See Calcs	141 SF	0 SF	141 SF
1ST FLOOR PLAN	1-F	98'-11"	24'-8"	2,441 SF	0 SF	2,441 SF
1ST FLOOR PLAN	1-G	See Calcs	See Calcs	38 SF	0 SF	38 SF
1ST FLOOR PLAN	1-H	See Calcs	See Calcs	11 SF	0 SF	11 SF
1ST FLOOR PLAN	1-I	See Calcs	See Calcs	217 SF	0 SF	217 SF
1ST FLOOR PLAN	1-J	100'-0"	21'-1"	2,111 SF	0 SF	2,111 SF
1ST FLOOR PLAN	1-K	See Calcs	See Calcs	496 SF	0 SF	496 SF
1ST FLOOR PLAN	1-L	See Calcs	See Calcs	384 SF	0 SF	384 SF
1ST FLOOR PLAN	1-M	44'-5"	16'-8"	741 S1	0 SF	741 S1
1ST FLOOR PLAN	1-N	19'-2"	15'-4"	292 SF	0 SF	292 SF
1ST FLOOR TOTAL					0 SF	9,271 SF
						TOTAL FAR: 9,271 SF

TRIANGULAR AREA CALCULATIONS:

- 1-A = (BxH)/2 = (87'-4"x4'-1")/2 = 179 SF
- 1-D = (BxH)/2 = (23'-11"x12'-8")/2 = 152 SF
- 1-E = (BxH)/2 = (11'-5"x24'-8")/2 = 141 SF
- 1-G = (BxH)/2 = (9"x98'-11")/2 = 38 SF
- 1-H = (BxH)/2 = (1'-1"x24'-8")/2 = 11 SF
- 1-I = (BxH)/2 = (4'-4"x99'-10")/2 = 217 SF
- 1-K = (BxH)/2 = (21'-1"x47'-0")/2 = 496 SF
- 1-L = (BxH)/2 = (16'-8"x46'-2")/2 = 384 SF



1 FIRST FLOOR PLAN
Scale: 1/16" = 1'-0"

ISSUE DATE:

- 1 Permit Set 05/23/13
- 2 Permit Set 1 Story 02/03/14

REVISION DATE:

Stillwell Avenue Self Storage - Bldg. B

Stillwell Self Storage LLC
1540 Basset Ave.
Bronx, NY



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800 W. Broad St. Suite 363
Falls Church, Virginia 22046
703-356-6771 fax: 356-7010

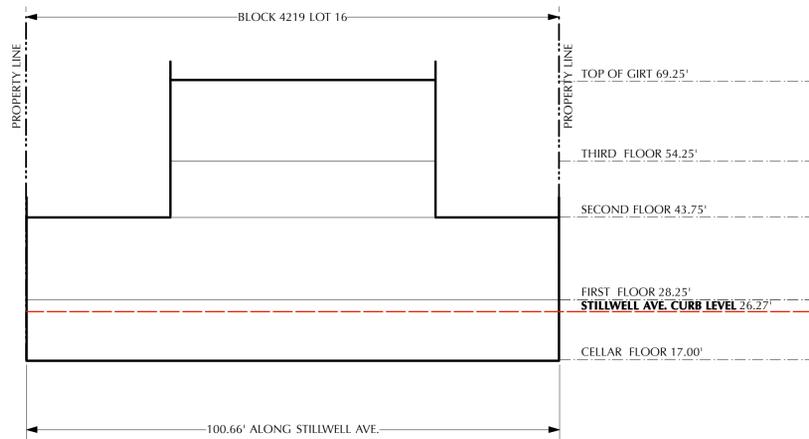
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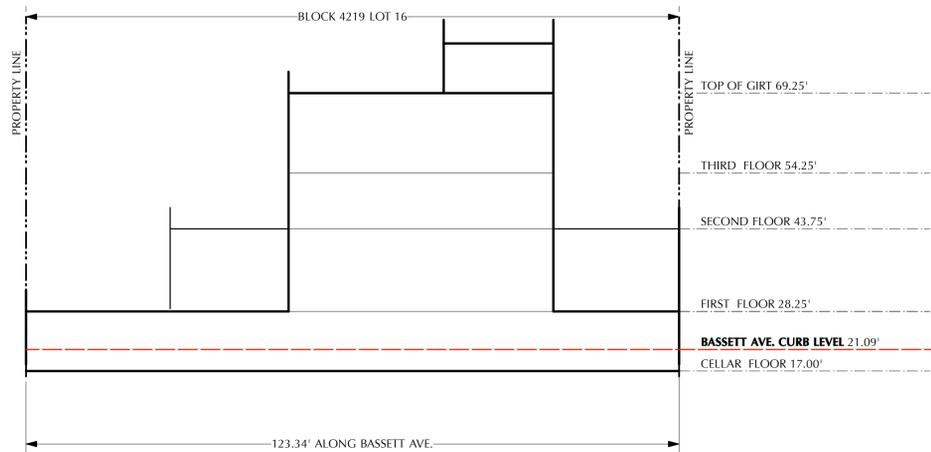
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BASSETT AVE. ELEVATION

Scale: 1/16" = 1'-0"



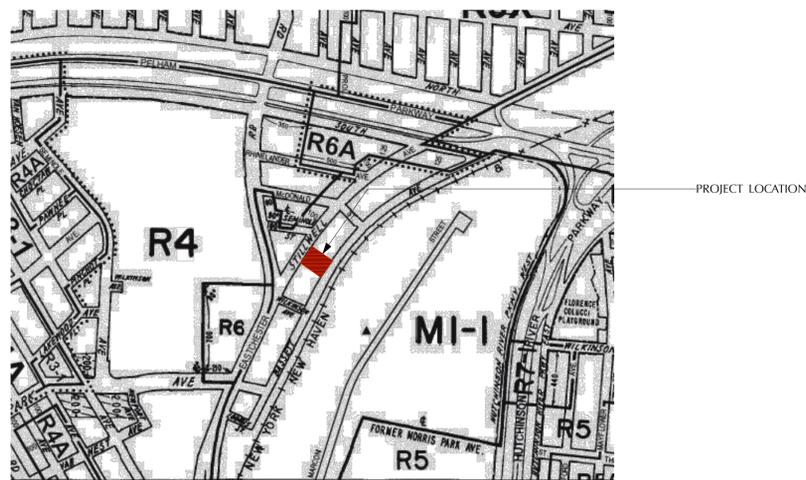
STILLWELL AVE. ELEVATION

Scale: 1/16" = 1'-0"

STREET FRONTAGE	CURB LEVEL (PER ZR 12_10)	FRONTAGE LENGTH
STILLWELL AVENUE	$(25.93' + 26.60') / 2 = 26.27'$	100.66'
BASSETT AVENUE	$(22.44' + 19.74') / 2 = 21.09'$	123.34'

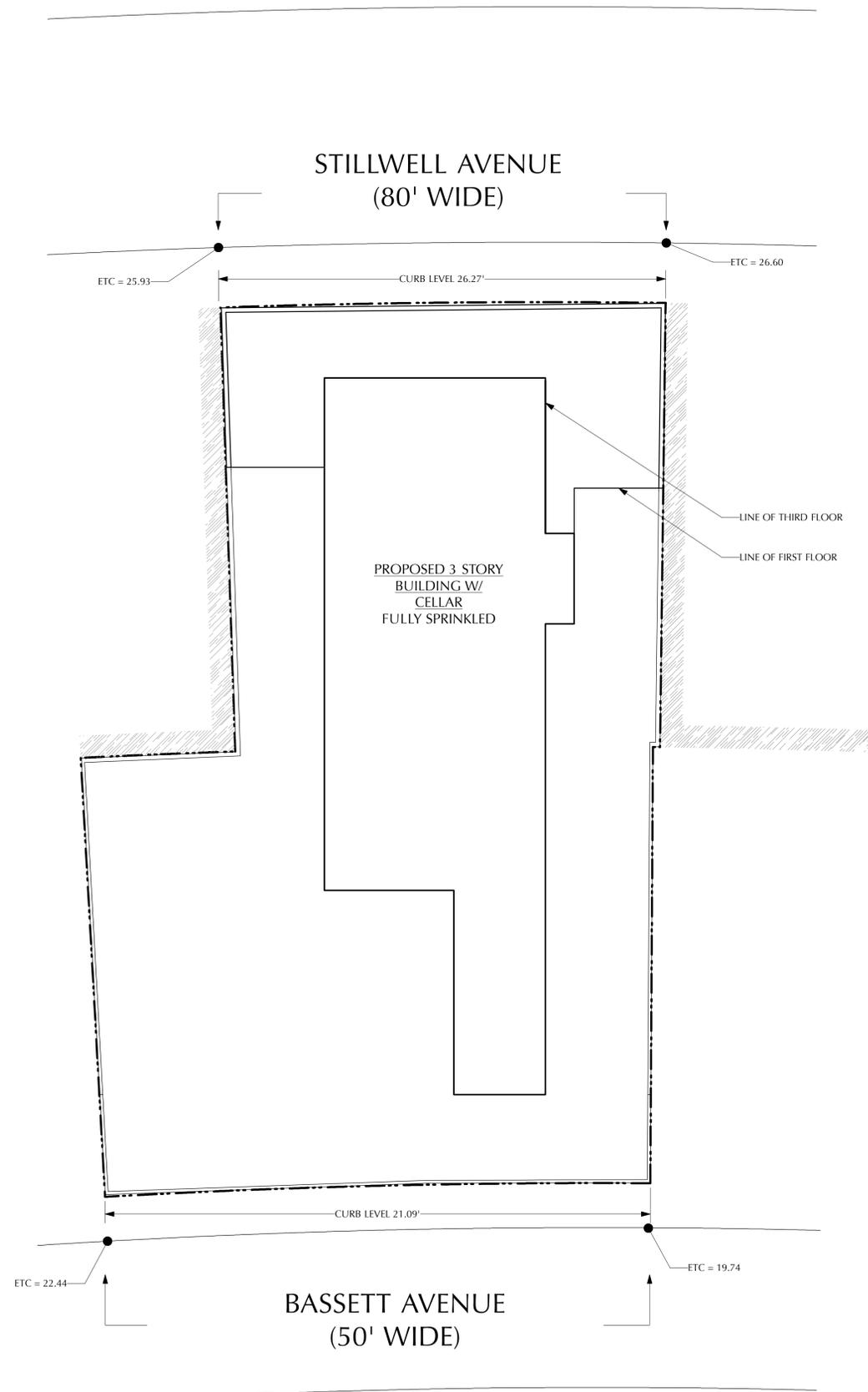
*SEE PROVIDED SURVEY FOR VERIFICATION OF EXISTING TOP OF CURB ELEVATIONS

CURB LEVEL CALCULATIONS



PROJECT LOCATION

NOTE: NYC ZONING MAP N.Y.S.



ZONING ANALYSIS: CURB ANALYSIS

ISSUE DATE:
1 Permit Set 05/23/13

REVISION DATE:
1 Permit Comments 10/01/13
2 Permit Comments #2 10/31/13
3 Permit Comments #3 12/13/13

Stillwell Avenue Self Storage - Bldg. A

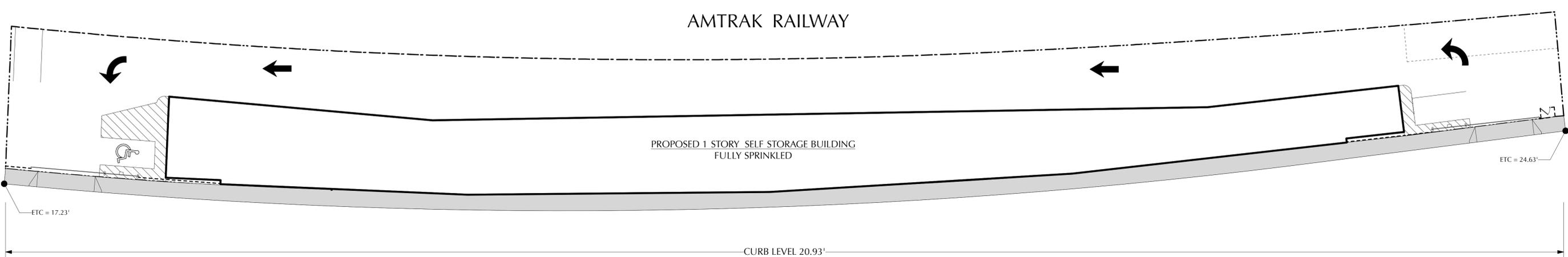
Stillwell Self Storage LLC
1538 Stillwell Ave.
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BASSETT AVENUE
(50' WIDE)

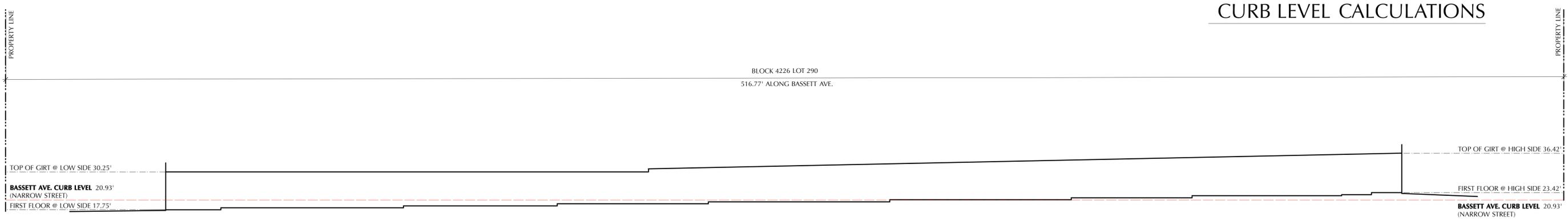
ZONING ANALYSIS: CURB ANALYSIS

Scale: 1/16" = 1'-0"

STREET FRONTAGE	CURB LEVEL (PER ZR 12-10)	FRONTAGE LENGTH
BASSETT AVENUE	$(17.23' + 24.63')/2 = 20.93'$	516.77'

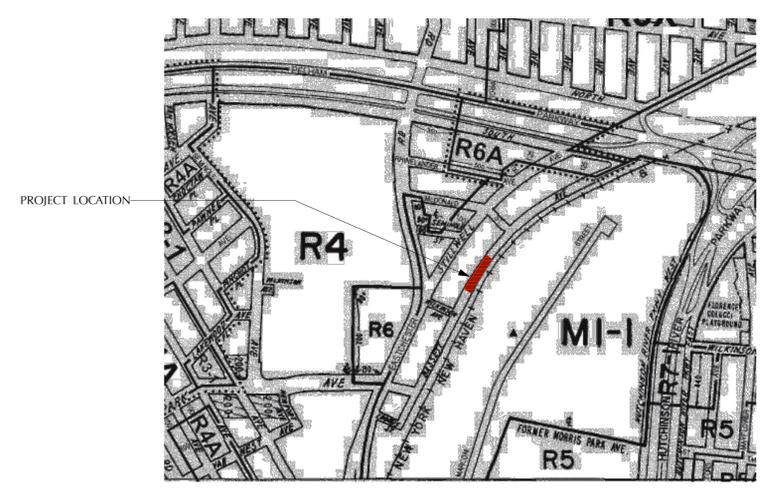
* SEE PROVIDED SURVEY FOR VERIFICATION OF EXISTING TOP OF CURB ELEVATIONS.

CURB LEVEL CALCULATIONS



BASSETT AVE. ELEVATION

Scale: 1/16" = 1'-0"



PROJECT LOCATION

NOTE: NYC ZONING MAP N.T.S.

ISSUE DATE:

1 Permit Set	05/23/13
2 Permit Set 1 Story	02/03/14

REVISION DATE:

1 Permit Comments	10/14/13
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Stillwell Avenue Self Storage - Bldg. B
 Stillwell Self Storage LLC
 1540 Bassett Ave.
 Bronx, NY



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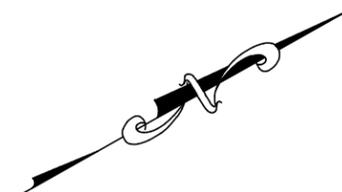
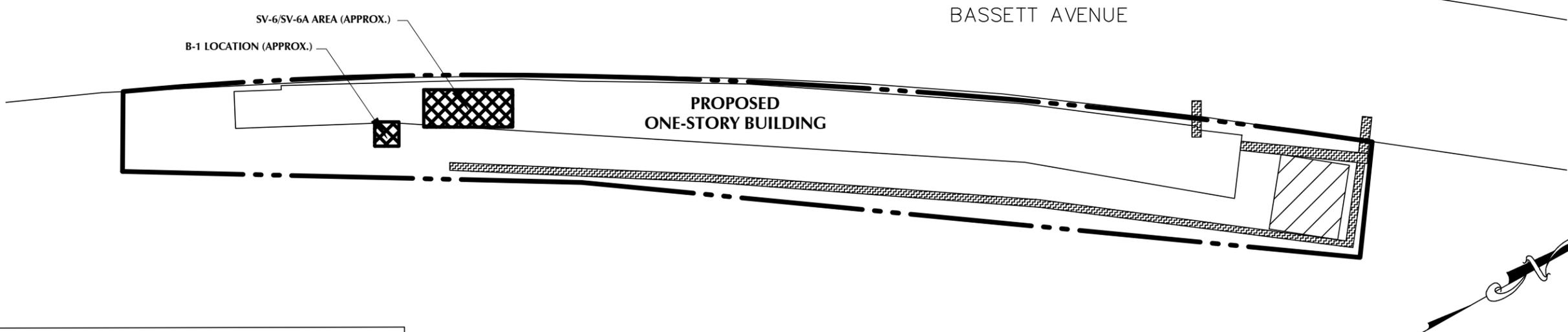
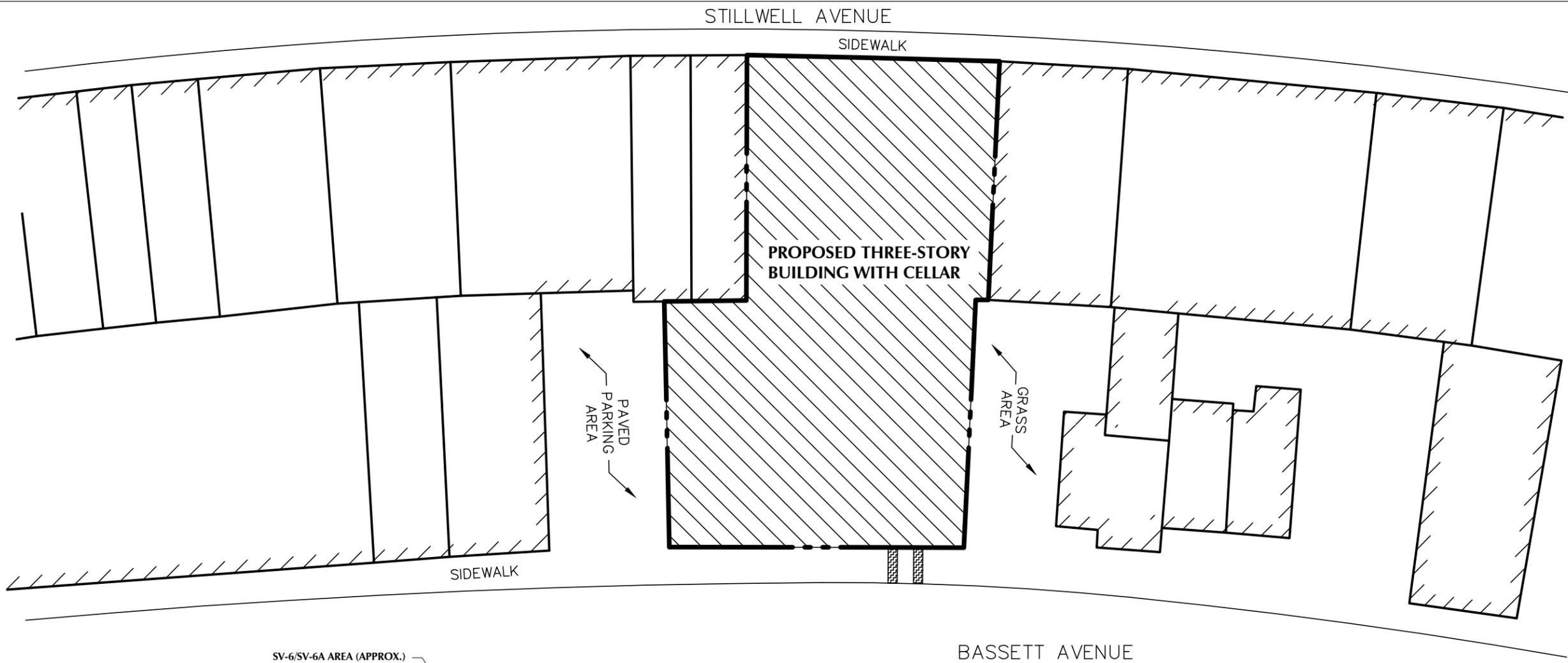
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FIGURE 5
Proposed Excavation, Grading,
Soil/Fill Reuse and Backfilling
Location Plan

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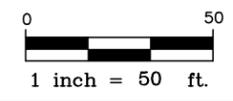


LEGEND/NOTES

	PROPOSED "HOT-SPOT" EXCAVATION (APPROX.)
	PROPOSED STORMWATER MANAGEMENT SYSTEM EXCAVATION (APPROX.)
	PROPOSED UTILITY EXCAVATION (APPROX.)
	PROPOSED CELLAR EXCAVATION (APPROX.)
	SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

THIS PLAN IS BASED UPON A MAY 23, 2013 (LAST REVISED FEBRUARY 3, 2014)
 UTILITY PLAN PREPARED BY LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, INC.



TITLE:
**PROPOSED EXCAVATION, GRADING,
 AND SOIL/FILL REUSE AND BACKFILLING
 LOCATION PLAN**



WHITESTONE ASSOCIATES, INC.
 35 TECHNOLOGY DRIVE
 WARREN, NEW JERSEY 07059
 908.668.7777 • 908.754.5936 FAX

CLIENT: STILLWELL SELF STORAGE, LLC

PROJECT: REMEDIAL ACTION WORK PLAN
 PROPOSED SELF-STORAGE FACILITY
 1538 STILLWELL AVENUE AND
 1540 BASSETT AVENUE
 BRONX, BRONX COUNTY, NEW YORK

PROJECT #:
 EJ111829.002

BY:
 GR

PROJ. MGR.:
 CS

DATE:
 09/09/14

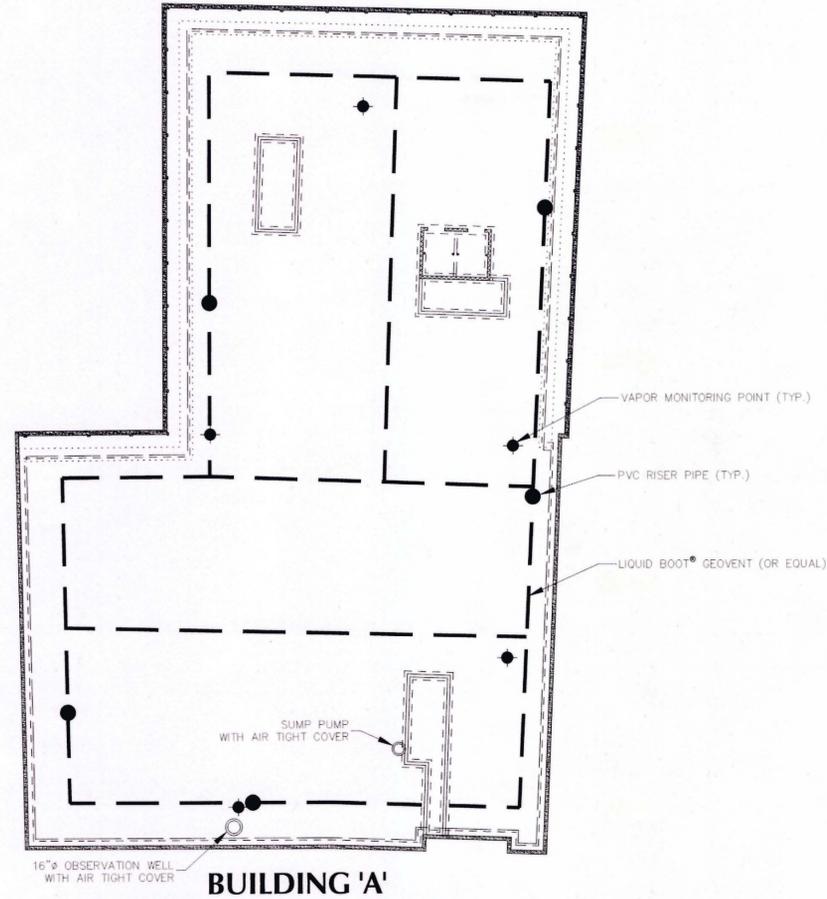
SCALE:
 1" = 50'

FIGURE:
 5

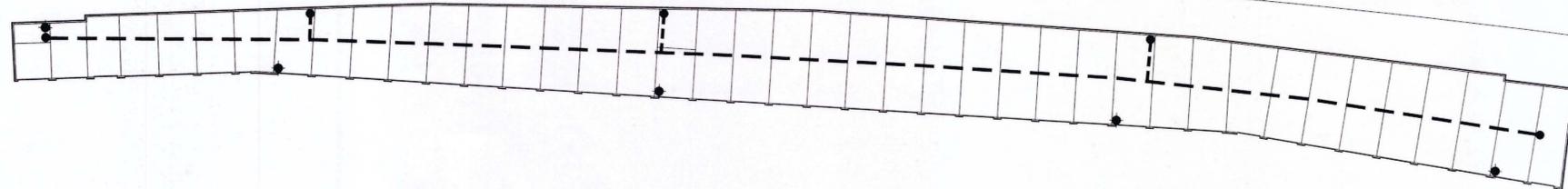


FIGURE 6
Vapor Mitigation System Details

STILLWELL AVENUE

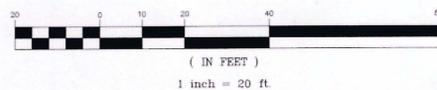


BASSETT AVENUE



BUILDING 'B'

GRAPHIC SCALE



GENERAL NOTES:

1. THE INFORMATION SHOWN IS SCHEMATIC IN NATURE ONLY. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATIONS AND LAYOUT OF THE VAPOR MITIGATION SYSTEM COMPONENTS IN THE FIELD BASED ON ACTUAL SITE CONDITIONS AND OTHER PROPOSED WORK.
2. THE BUILDING INFORMATION SHOWN IS FOR REFERENCE ONLY. THE PLANS DO NOT SHOW EACH AND EVERY CONDITION AT THE SITE. THE CONTRACTOR SHALL CONFIRM THE EXISTING SITE CONDITIONS, INCLUDING SUB-SLAB UTILITIES AND FOUNDATIONS, PRIOR TO STARTING INSTALLATION OF THE VAPOR MITIGATION SYSTEM COMPONENTS.
3. INSTALLATION OF THE VAPOR MITIGATION SYSTEM SHALL BE COORDINATED WITH THE CONSTRUCTION OF OTHER UTILITIES, STRUCTURAL ELEMENTS, AND ALL OTHER TRADES.
4. NOTIFY WHITESTONE ASSOCIATES, INC. IMMEDIATELY OF ANY CONFLICTS BETWEEN THE WORK SHOWN ON THESE PLANS AND ANY OTHER WORK REQUIRED FOR CONSTRUCTION.
5. CONCRETE DELIVERY TRUCKS SHALL NOT CROSS THE VENT SYSTEM (LIQUID BOOT® GEOEVENT OR EQUAL) OR VAPOR BARRIER WITHOUT BRIDGING. LASER SCREEDS ARE PERMITTED TO DRIVE ON THE VAPOR BARRIER UPON APPROVAL. ALL VEHICLE MOVEMENT ON THE VAPOR BARRIER SHOULD BE LIMITED TO STRAIGHT LINES ON AND OFF OF THE VAPOR BARRIER WITH LIMITED TO NO TURNING. THIS MAY AFFECT THE SEQUENCING OR METHOD OF PLACING CONCRETE. COORDINATE WITH VAPOR MITIGATION SYSTEM CONTRACTOR, WHITESTONE ASSOCIATES, INC., AND CONCRETE CONTRACTORS.
6. SEE ARCHITECTURAL/STRUCTURAL DRAWINGS TO CONFIRM SLAB ELEVATION AND THICKNESS AND BASE MATERIAL.
7. WHITESTONE ASSOCIATES, INC. MUST BE ON SITE DURING THE INSTALLATION OF THE VAPOR MITIGATION SYSTEM TO CONDUCT INSPECTIONS. THE INSTALLATION CONTRACTOR MUST TAKE DIRECTION FROM WHITESTONE ASSOCIATES, INC.'S ON-SITE INSPECTOR. ALL INSTALLATION-RELATED ISSUES MUST BE PROVIDED TO WHITESTONE ASSOCIATES, INC. FOR REVIEW AND CLARIFICATION.
8. VAPOR MONITORING POINTS ARE EXTERIOR OF STORAGE UNITS IN BUILDING 'A' WITH THE EXCEPTION OF THE GAS METER ROOM IN BUILDING 'A'.
9. ALL SIMPS/WELLS/DRENDS TO HAVE AIR TIGHT COVERS.

EXCAVATION AND BACKFILL NOTES:

1. EXCAVATION MAY BE REQUIRED IN AREAS WHERE OTHER UTILITIES HAVE BEEN INSTALLED OR OTHER CONSTRUCTION HAS BEEN COMPLETED. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND STRUCTURES FROM DAMAGE DURING VAPOR MITIGATION SYSTEM INSTALLATION.

VENTING SYSTEM NOTES:

1. DO NOT INSTALL VENTING SYSTEM IN GROUNDWATER OR OTHER WATER. IF WATER IS PRESENT IN THE TRENCH, CONTACT WHITESTONE ASSOCIATION, INC. FOR DIRECTION.
2. RISER PIPE TO TERMINATE 2'-0" ABOVE ROOF PARAPET.
3. PVC CONNECTIONS TO BE THREADED OR SCREWED. NO GLUES CAN BE USED TO CONNECT PVC COMPONENTS.
4. ROLL OUT LIQUID BOOT® GEOEVENT (OR EQUAL) PER LAYOUT DESIGN.
5. AT POINTS OF INTERSECTION AND CONNECTION, CUT AWAY GEOTEXTILE TO PRODUCE RECTANGULAR FLAPS. INTERLOCK EXPOSED DIMPLE BOARD IN A LEG-LIKE FASHION. FOLD FLAPS OF GEOTEXTILE IN A MANNER SO THAT THE DIMPLE BOARD IS COVERED COMPLETELY. SECURE GEOTEXTILE FOLDS WITH LIQUID BOOT® FIBER REINFORCED TAPE (OR OTHER MANUFACTURER EQUAL) SO THAT THE GEOTEXTILE IS COMPLETELY IMPERMEABLE TO FILL.
6. USE LIQUID BOOT® GEOEVENT END OUTLET (OR OTHER MANUFACTURER EQUAL) TO ATTACH TO SOLID 4" DIAMETER PVC VENT PIPE. SEE THE DETAIL DESCRIBING CONNECTION TO A VENT RISER ON SHEET 2 OF 3.
7. THE CONTRACTOR IS NOT RESPONSIBLE FOR INSTALLING BLOWER/FAN ON ROOF. ELECTRICAL CONTRACTOR TO PROVIDE POWER TO PROPOSED BLOWER/FAN AREA FOR FUTURE USE.
8. VENT STACKS WITHIN STORAGE UNITS.

VAPOR BARRIER NOTES:

1. THE VAPOR BARRIER SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. VAPOR BARRIER CONTRACTOR TO PROVIDE CERTIFICATION AND TESTING RESULTS (SMOKE TEST OR EQUAL) FOR VAPOR BARRIER INSTALLATION.
2. INSPECT SUBGRADE PRIOR TO INSTALLATION OF VAPOR BARRIER AND REMOVE DEBRIS OR OTHER OBJECTS THAT COULD PUNCTURE, TEAR, OR OTHERWISE DAMAGE THE MEMBRANE.
3. SEAL ALL VAPOR BARRIER TERMINATIONS AT FOOTINGS, COLUMNS, AND PENETRATIONS IN ACCORDANCE WITH THE VAPOR BARRIER MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS ON SHEET 2 OF 3 AND 3 OF 3.
4. SEAL PENETRATIONS IN ACCORDANCE WITH THE VAPOR BARRIER MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS ON SHEET 2 OF 3.
5. CONTRACTOR SHALL PROTECT VAPOR BARRIER FROM PUNCTURE, TEARING, OR OTHER DAMAGE AND THOROUGHLY INSPECT VAPOR BARRIER FOR DAMAGE PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED SECTIONS OF VAPOR BARRIER.
6. DO NOT PUNCTURE VAPOR BARRIER OR OTHER COMPONENTS OF VAPOR MITIGATION SYSTEM WITH FORMWORK STAKES UNLESS PERMITTED BY VAPOR MITIGATION SYSTEM MANUFACTURER/CONTRACTOR. REPAIR DAMAGE AS REQUIRED BY VAPOR MITIGATION MANUFACTURER.
7. EXISTING SURFACE COVERINGS ON EXISTING FOUNDATION WALLS TO REMAIN MUST BE REMOVED PRIOR TO APPLICATION OF RETRO-COAT™ PRODUCTS. RETRO-COAT™ ON INTERIOR FOUNDATION WALLS LOCATED BELOW GRADE.
8. VAPOR BARRIER TO BE INSTALLED ABOVE 2" PVC PIPES THROUGH WALLS.

LEGEND

- LIQUID BOOT® GEOEVENT (OR EQUAL) (APPROX.)
- 4" DIAMETER RISER PIPE (APPROX.)
- VAPOR MONITORING POINT (APPROX.)

REFERENCE

THIS PLAN IS BASED UPON A MAY 23, 2013 (LAST REVISED JULY 23, 2014) SLAB/FIRST FLOOR/ROOF PLANS PREPARED BY BUTZ - WILBERN, LTD.

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REVISIONS				
REV.	DATE	COMMENT	BY:	CS
1	09/08/14	BUILDING 'B' REDESIGNED	CS	

JOB No: EJ1111829.002
 DRAWN BY: GR
 CHECKED BY: CS/KTD
 DATE: 09/09/14
 SCALE: AS SHOWN

PROJECT:
STILLWELL AVENUE SELF STORAGE - BUILDINGS 'A' & 'B'
 FOR
1538 STILLWELL AVENUE AND 1540 BASSETT AVENUE BRONX, BRONX COUNTY, NEW YORK

Whitestone Associates, Inc.
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KEITH T. D'AMBROSIO

 PROFESSIONAL ENGINEER
 NEW YORK LICENSE NO. 076095-1

SHEET TITLE:
VAPOR MITIGATION PLAN (SUB-SLAB VENTING SYSTEM [SSVS] GENERAL ARRANGEMENT)
 SHEET NUMBER:
1 OF 3
 REVISIONS - 1

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REV.	DATE	COMMENT	BY
1	09/08/14	BUILDING 'B' REDESIGNED	CS

JOB No.: EJ111829.002
 OR
 DRAWN BY: CS/KTD
 CHECKED BY: CS/KTD
 DATE: 09/09/14
 SCALE: AS SHOWN

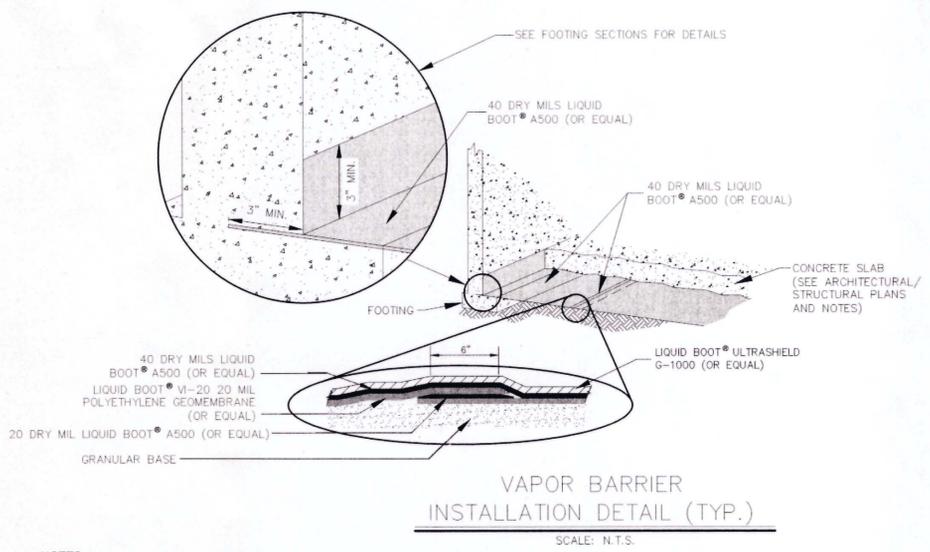
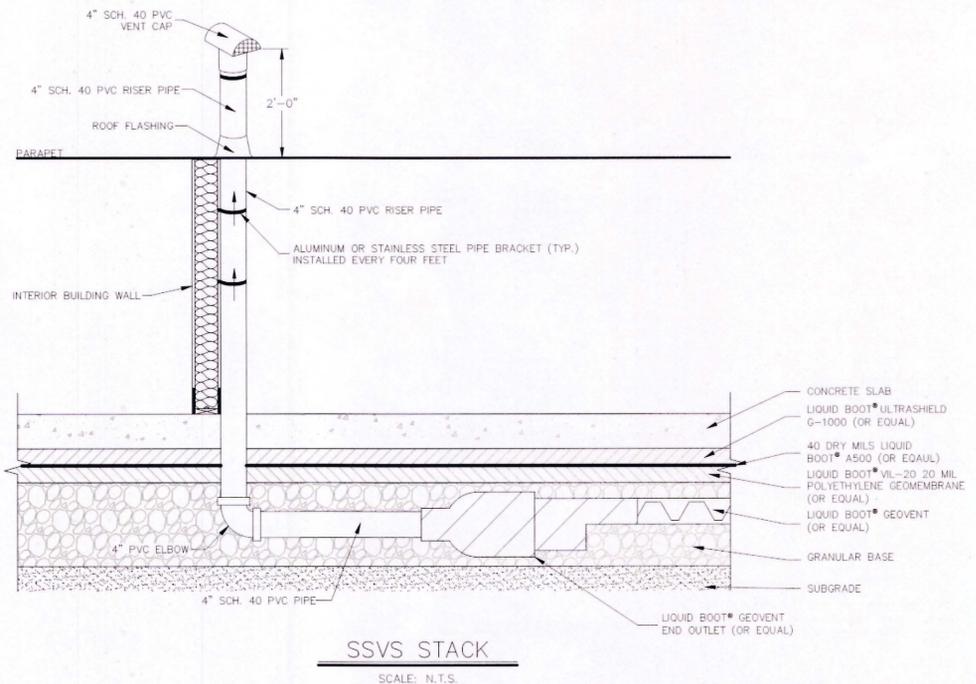
PROJECT:
STILLWELL AVENUE SELF STORAGE - BUILDINGS 'A' & 'B'
 FOR
1538 STILLWELL AVENUE AND 1540 BASSETT AVENUE BRONX, BRONX COUNTY, NEW YORK

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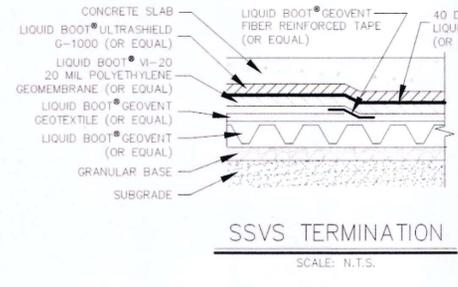
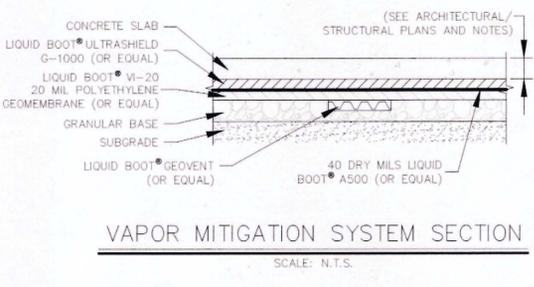
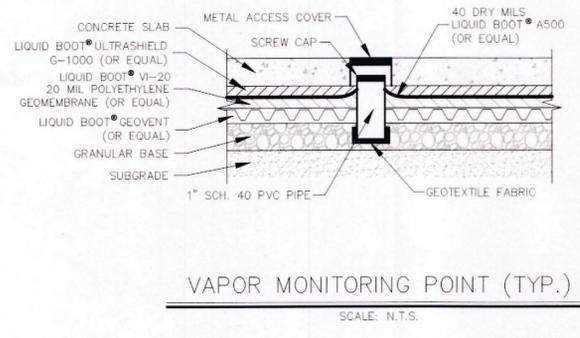
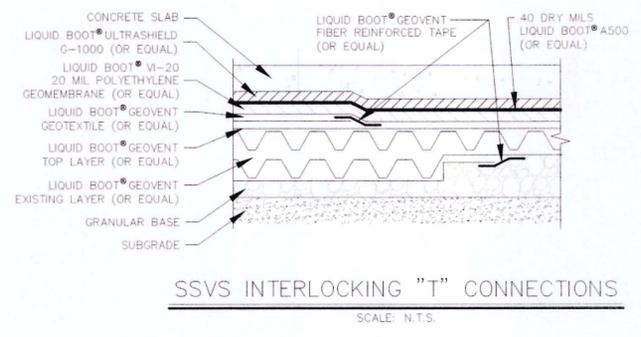
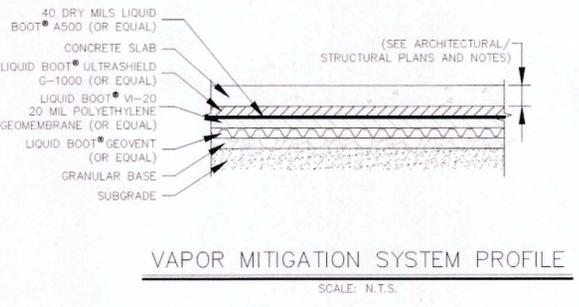
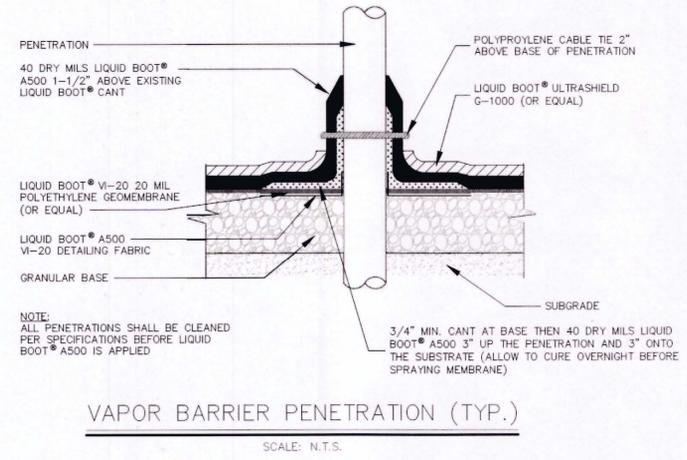
KEITH T. D'AMBROSIO

 PROFESSIONAL ENGINEER
 NEW YORK LICENSE No. 076095-1

SHEET TITLE:
VAPOR MITIGATION PLAN (DETAILS)
 SHEET NUMBER:
2 OF 3
 REVISIONS - 1

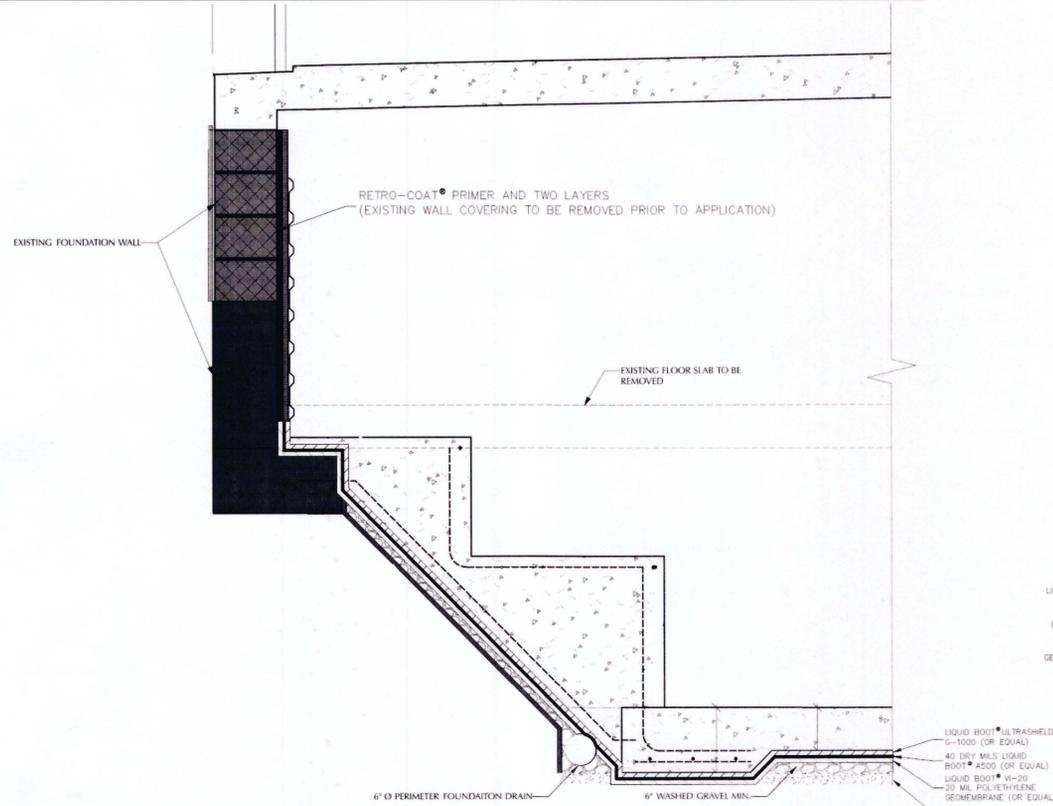


- NOTES:**
- THIS PLAN IS FOR USE IN SIZING AND GENERAL LAYOUT OF VAPOR MITIGATION SYSTEM ONLY. ANY STRUCTURAL ELEMENTS SHOWN ARE FOR GENERAL ILLUSTRATION ONLY. REFER TO STRUCTURAL DRAWINGS AND/OR CONTACT THE STRUCTURAL ENGINEER OF RECORD REGARDING ANY STRUCTURAL COMPONENTS.
 - ALL PVC CONNECTIONS SHALL BE SLIP FITTINGS OR FASTENED WITH STAINLESS STEEL SCREWS. NO GLUE SHALL BE UTILIZED AT ANY PVC CONNECTIONS.
 - THE LIQUID BOOT® GEOVENT (OR EQUAL) SHALL BE PLACED BENEATH THE CONCRETE FLOOR SLAB. DO NOT SUPPORT THE LIQUID BOOT® GEOVENT (OR EQUAL) FROM THE CONCRETE FLOOR SLAB.
 - THE VENTING SYSTEM EXHAUST SHALL BE INSTALLED TWO FEET ABOVE THE TOP OF THE ROOF PARAPET AND A MINIMUM OF TEN FEET FROM ANY OPENINGS TO INTERIOR SPACES.
 - 40 DRY MILS LIQUID BOOT® A500 (OR EQUAL) SHALL BE INSTALLED CONTINUOUSLY BENEATH THE CONCRETE FLOOR SLAB IN ACCORDANCE WITH ASTM STANDARD E-1643-94 AND MANUFACTURER'S INSTRUCTIONS.
 - ALL PENETRATIONS THROUGH THE VAPOR BARRIER SHALL BE SEALED PER MANUFACTURER'S SPECIFICATIONS AND THE DETAILS.
 - THIS SYSTEM HAS BEEN DESIGNED AS A PASSIVE SUB-SLAB VENTING SYSTEM. IF WARRANTED SUBSEQUENT TO INSTALLATION, THE SYSTEM MAY BE RETRO-FITTED WITH BLOWERS/FANS TO CREATE AN ACTIVE VENTING SYSTEM. RETRO-FITTING WOULD INCLUDE CONNECTING BLOWERS/FANS TO THE ROOF EXHAUSTS. PREPARATION AND APPROVAL OF PROJECT-SPECIFIC DESIGN PLANS FOR AN ACTIVE SYSTEM WOULD BE REQUIRED PRIOR TO ANY FUTURE CONVERSION OF THIS SYSTEM TO AN ACTIVE SYSTEM.
 - EXISTING SURFACE COVERINGS ON EXISTING FOUNDATION WALLS TO REMAIN MUST BE REMOVED PRIOR TO APPLICATION OF RETRO-COAT® PRODUCTS.

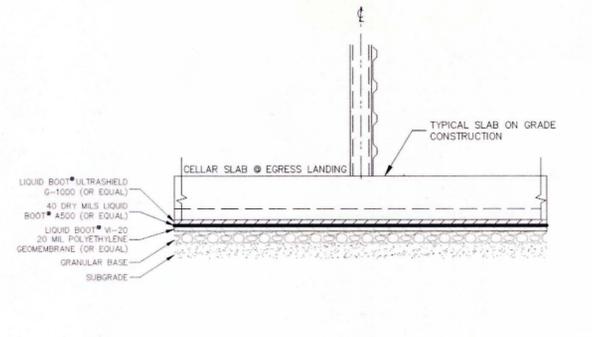


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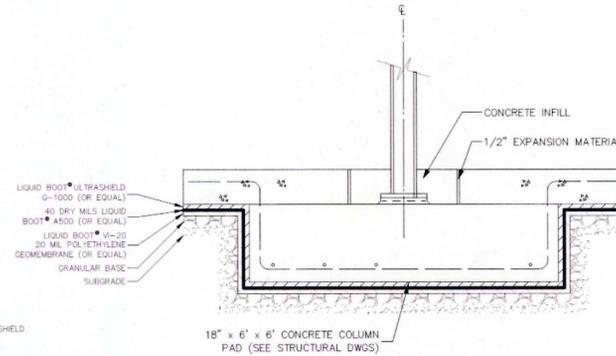
BUILDING 'A' DETAILS



FOUNDATION @ STILLWELL AVE.
SCALE: = N.T.S.

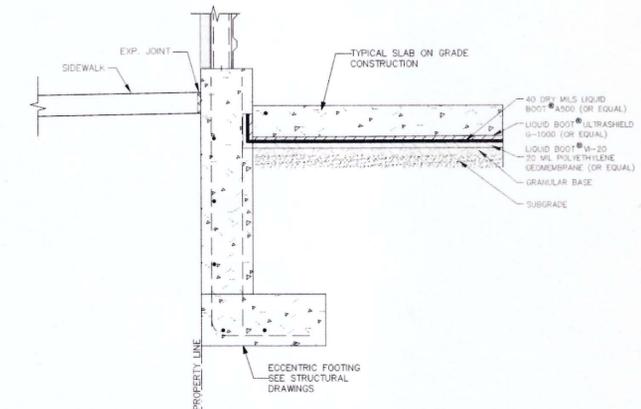


TYP. STEP @ THE CELLAR SLAB
SCALE: = N.T.S.

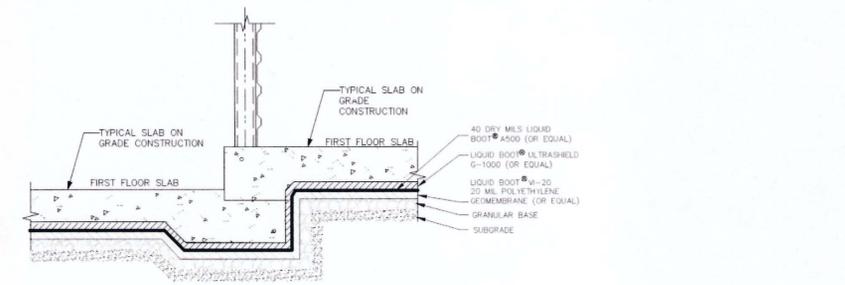


COLUMN BASE DETAIL
SCALE: = N.T.S.

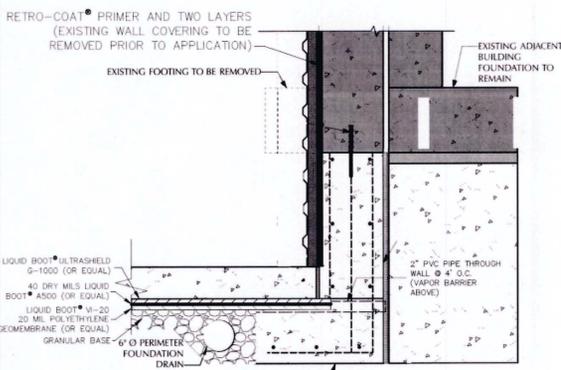
BUILDING 'B' DETAILS



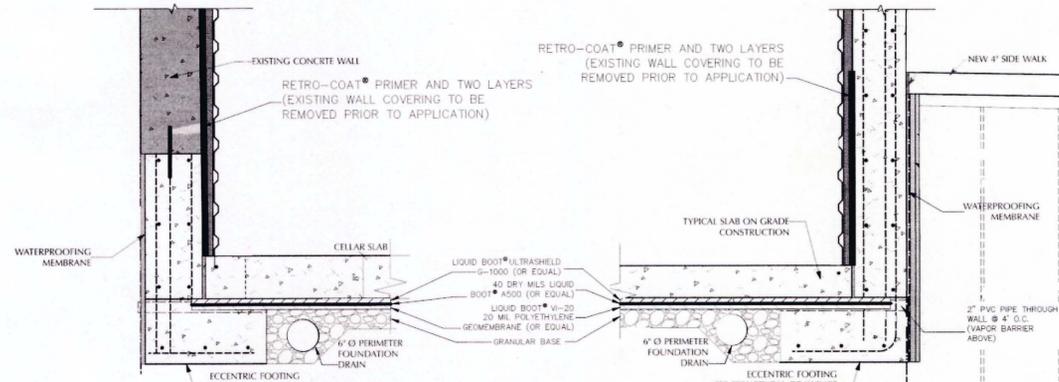
FOUNDATION @ STREET WALL
SCALE: = N.T.S.



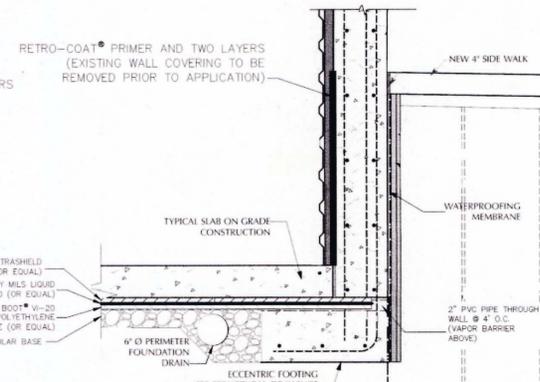
STEP IN FLOOR SLAB
SCALE: = N.T.S.



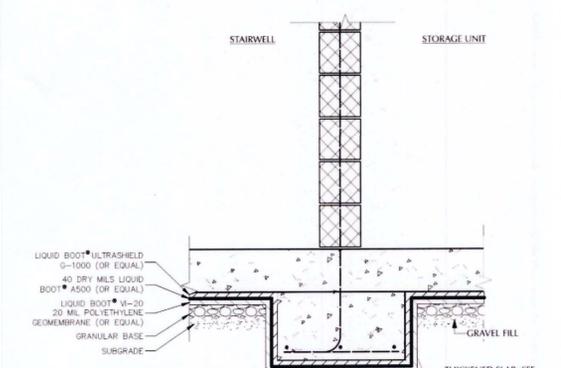
TYP. UNDERPINNING DETAIL (ALTERNATE)
SCALE: = N.T.S.



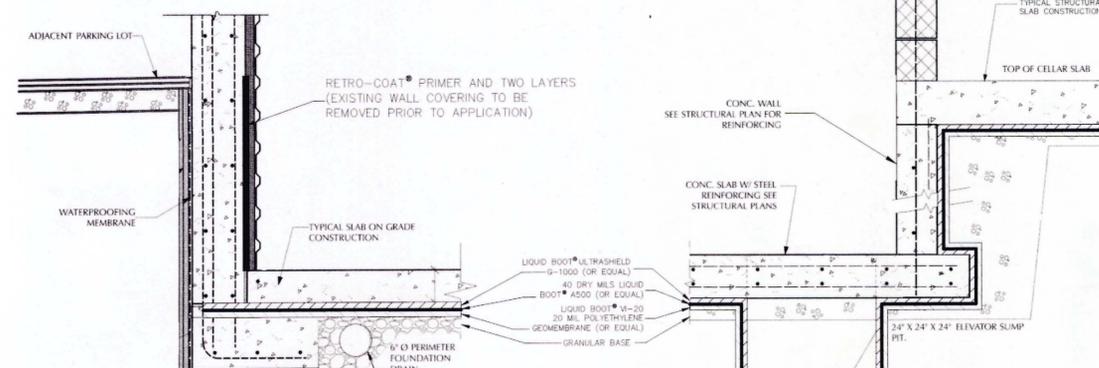
FOUNDATION & UNDERPINNING @ STILLWELL AVE. (ALTERNATE)
SCALE: = N.T.S.



TYP. FOUNDATION @ BASSET AVE.
SCALE: = N.T.S.

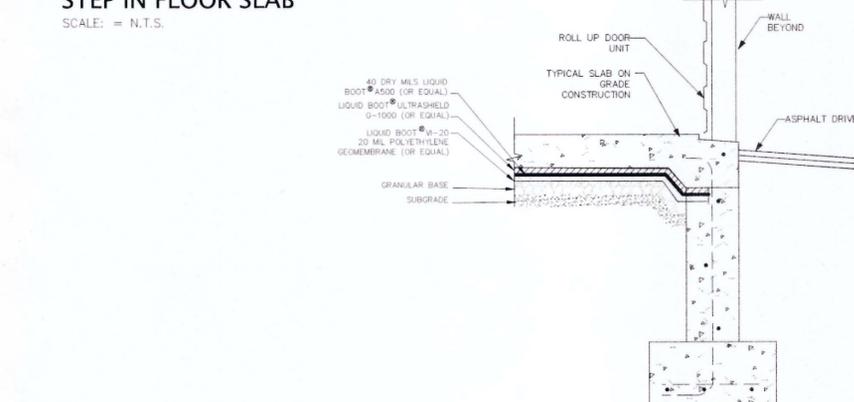


TYP. STAIRWELL WALL @ SLAB ON GRADE
SCALE: = N.T.S.

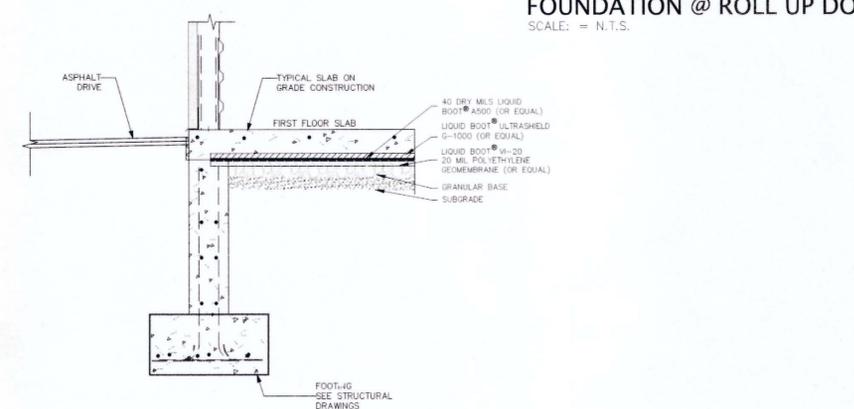


TYP. FOUNDATION DETAIL
SCALE: = N.T.S.

TYP. ELEVATOR PIT FOUNDATION
SCALE: = N.T.S.



FOUNDATION @ ROLL UP DOOR
SCALE: = N.T.S.



FOUNDATION @ EAST ELEVATION
SCALE: = N.T.S.

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OFFICES
● CHALFONT, PA
● BETHLEHEM, PA
● BETHLEHEM, VA

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REVISIONS			
REV.	DATE	COMMENT	BY
1	09/08/14	BUILDING 'B' REDESIGNED	CS

JOB No.: E1111829.002
DRAWN BY: CS/KTD
CHECKED BY: CS/KTD
DATE: 09/09/14
SCALE: AS SHOWN

PROJECT:
STILLWELL AVENUE SELF STORAGE - BUILDINGS 'A' & 'B'
FOR
1538 STILLWELL AVENUE AND 1540 BASSETT AVENUE
BRONX, BRONX COUNTY, NEW YORK

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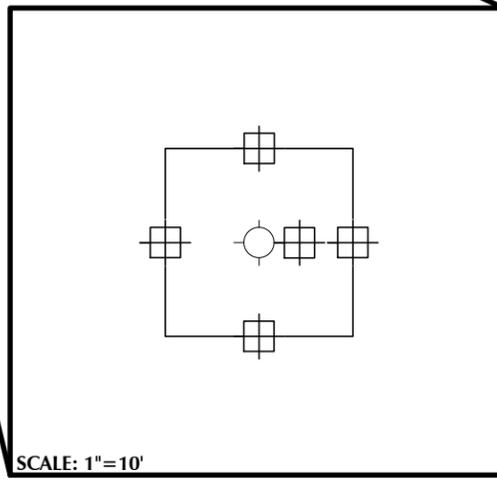
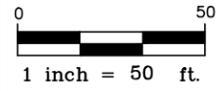
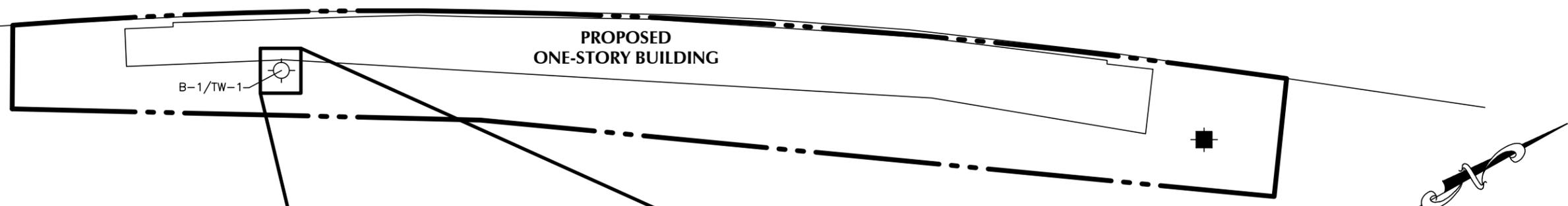
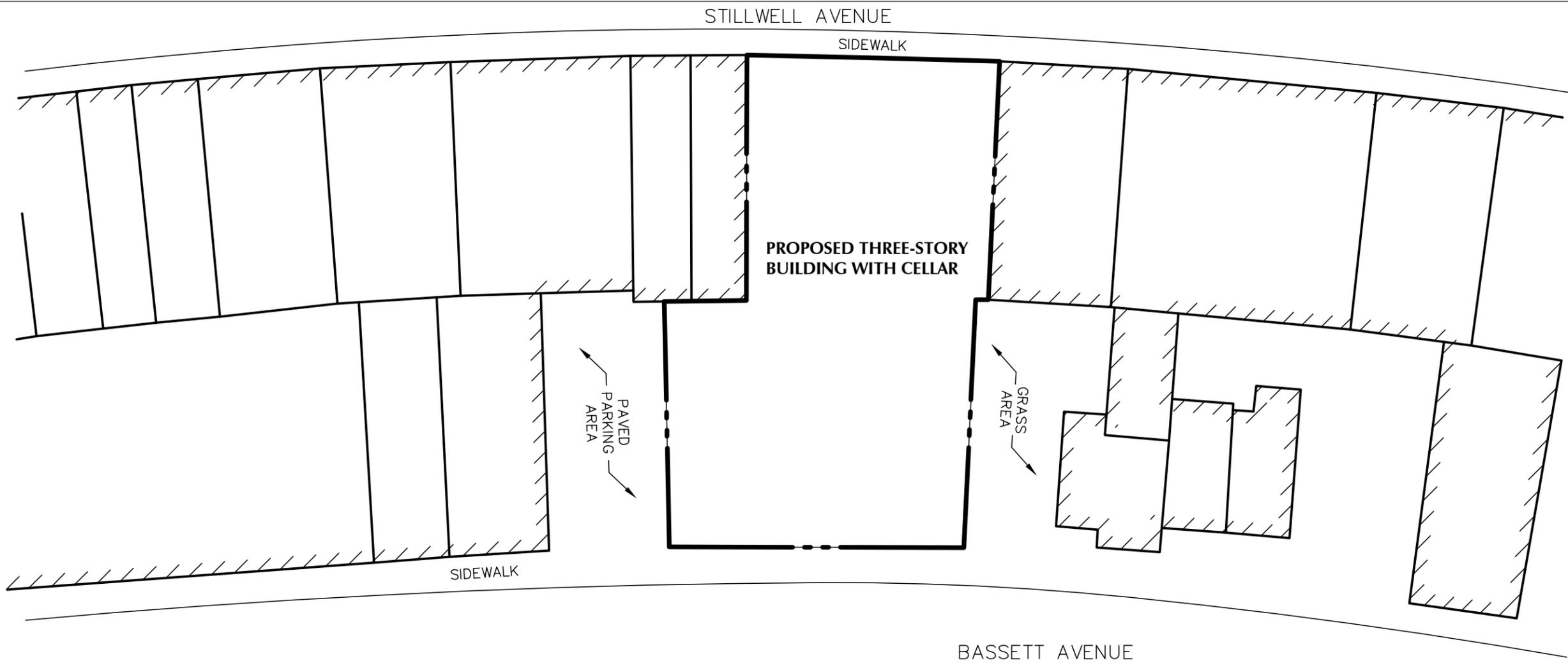
KEITH T. D'AMBROSIO
STATE OF NEW YORK
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER
NEW YORK LICENSE No. 076095-1

SHEET TITLE:
VAPOR MITIGATION PLAN (DETAILS)
SHEET NUMBER:
3 OF 3
REVISIONS - 1



FIGURE 7
Proposed End-Point
Sample Location Plan

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NOTES

TAL	TARGET ANALYTE LIST
SVOCs	SEMI-VOLATILE ORGANIC COMPOUNDS
VOCs	VOLATILE ORGANIC COMPOUNDS
PCBs	POLYCHLORINATED BIPHENYLS

1. THE PROPOSED END-POINT SAMPLE LOCATIONS ADJACENT TO BORING B-1 WILL BE ANALYZED FOR ARSENIC AND LEAD ONLY.

LEGEND

	B-1/TW-1	OCTOBER 2011 BORING/TEMPORARY WELLPOINT LOCATION (APPROX.)
		PROPOSED END-POINT SAMPLE LOCATION (APPROX.) - TO BE ANALYZED FOR VOCs, SVOCs, PCBs, PESTICIDES, AND TAL METALS
		PROPOSED CONTAMINANT-SPECIFIC END-POINT SAMPLE LOCATION - SEE NOTE 1 (APPROX.)
		SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

THIS PLAN IS BASED UPON A MAY 23, 2013 (LAST REVISED FEBRUARY 3, 2014) UTILITY PLAN PREPARED BY LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, INC.

TITLE:

PROPOSED END-POINT SAMPLE LOCATION PLAN

WHITESTONE ASSOCIATES, INC.
 35 TECHNOLOGY DRIVE
 WARREN, NEW JERSEY 07059
 908.668.7777 • 908.754.5936 FAX

CLIENT: STILLWELL SELF STORAGE, LLC

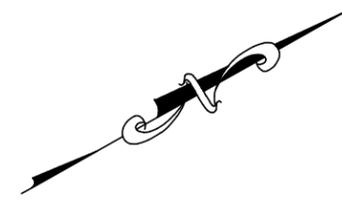
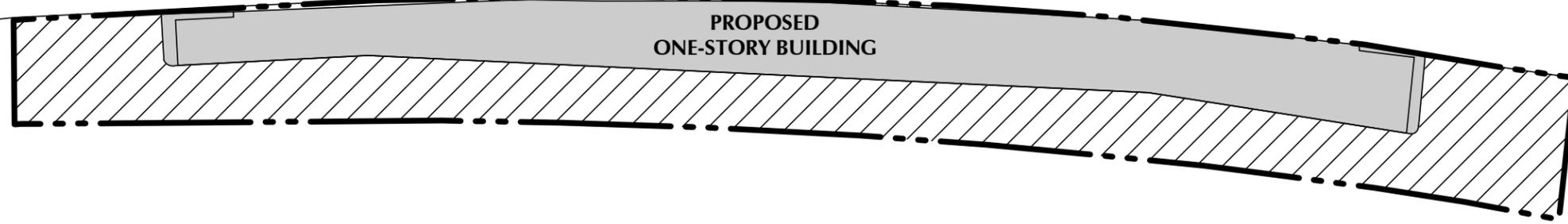
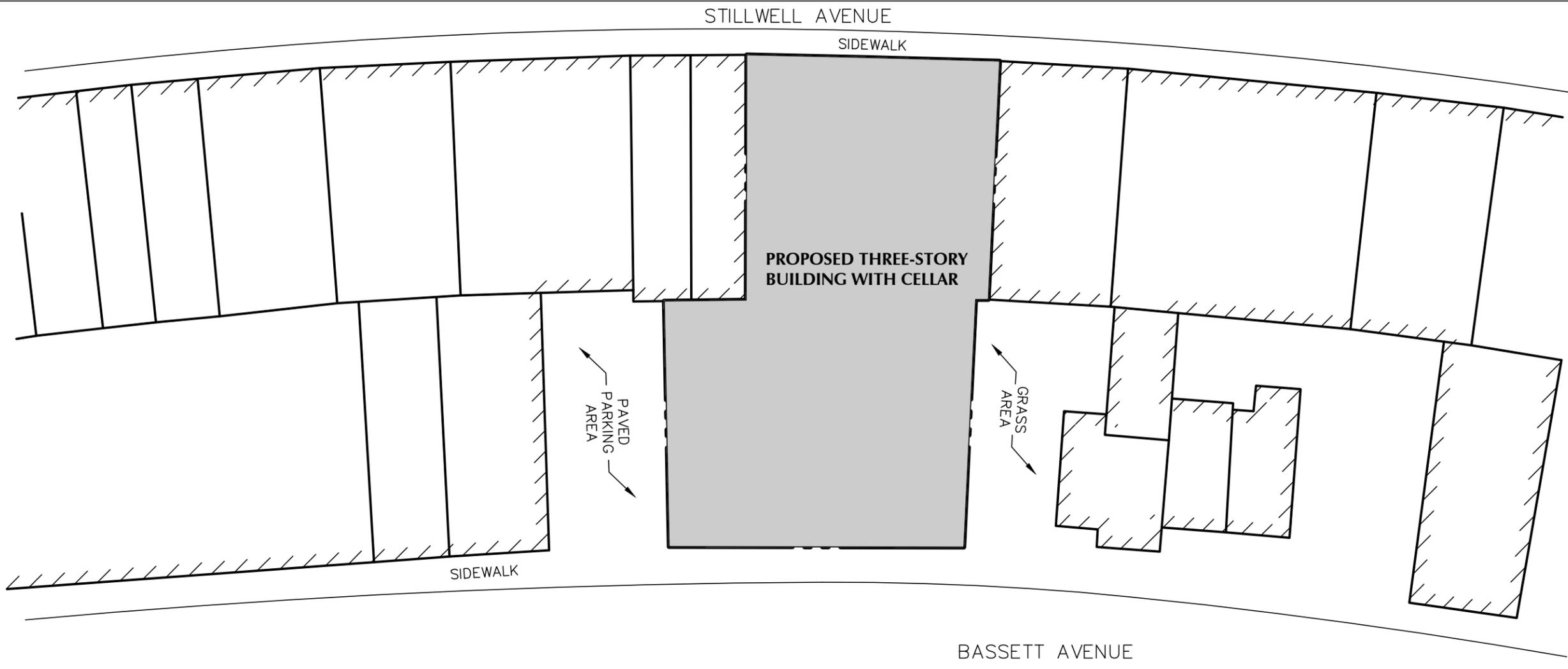
PROJECT: REMEDIAL ACTION WORK PLAN
 PROPOSED SELF-STORAGE FACILITY
 1538 STILLWELL AVENUE AND
 1540 BASSETT AVENUE
 BRONX, BRONX COUNTY, NEW YORK

PROJECT #:	EJ111829.002
BY:	GR
PROJ. MGR.:	CS
DATE:	09/09/14
SCALE:	AS SHOWN
FIGURE:	7



FIGURE 8
Cover System Location and
Detail Plan

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LEGEND/NOTES

 ASPHALT COVER AREA (APPROX.)

 CONCRETE COVER AREA (APPROX.)

 SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

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 UTILITY PLAN PREPARED BY LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, INC.

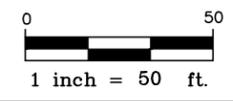
COVER DETAILS (NOT TO SCALE)

ASPHALT COVER AREA

- ASPHALT (MIN. 4")
- COMPACTED AGGREGATE BASE COURSE (MIN. 4")
- EXISTING FILL MATERIAL

CONCRETE COVER AREA

- CONCRETE (MIN. 4")
- COMPACTED AGGREGATE BASE COURSE (MIN. 4")
- EXISTING FILL MATERIAL



TITLE:
 COVER SYSTEM LOCATION
 AND DETAIL PLAN



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 35 TECHNOLOGY DRIVE
 WARREN, NEW JERSEY 07059
 908.668.7777 • 908.754.5936 FAX

CLIENT: STILLWELL SELF STORAGE, LLC

PROJECT: REMEDIAL ACTION WORK PLAN
 PROPOSED SELF-STORAGE FACILITY
 1538 STILLWELL AVENUE AND
 1540 BASSETT AVENUE
 BRONX, BRONX COUNTY, NEW YORK

PROJECT #:
 EJ1111829.002

BY:
 GR

PROJ. MGR.:
 CS

DATE:
 09/09/14

SCALE:
 1" = 50'

FIGURE:
 8

TABLE 1
Quantities for Soil Disposal,
Reuse, and Import

TABLE 1
QUANTITIES FOR SOIL DISPOSAL, REUSE, AND IMPORT
Existing Commercial Building and Storage Lots
1538 Stillwell Avenue and 1540 Bassett Avenue
Bronx, Bronx County, New York

Material	Quantities (Tons)	Disposal/Source Information
Clean Soil to be Disposed Off Site (General Earthwork)	None	NA
“Hot-Spot” Contaminated Soil to be Disposed Off Site (B-1 and SV-6/6A)	255	TBD
Excess Contaminated Soil to be Disposed Off Site (General Earthwork)	6,000	TBD
Soil to be Reused On Site	100	Site
Material to be Imported as Backfill	Soil - 50 Stone - 200 Topsoil - 100 RCA - 300	TBD TBD TBD NYSDEC-Permitted RCA Facility

Notes:

RCA Recycled Concrete Aggregate
NA Not Applicable
TBD To Be Determined



APPENDIX 1
Citizen Participation Plan

APPENDIX 1

CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Stillwell Self Storage, LLC have established this Citizen Participation Plan because the opportunity for citizen participation is an important component of the NYC Voluntary Cleanup Program. This Citizen Participation Plan describes how information about the project will be disseminated to the Community during the remedial process. As part of its obligations under the NYC VCP, Stillwell Self Storage, LLC will maintain a repository for project documents and provide public notice at specified times throughout the remedial program. This Plan also takes into account potential environmental justice concerns in the community that surrounds the project Site. Under this Citizen Participation Plan, project documents and work plans are made available to the public in a timely manner. Public comment on work plans is strongly encouraged during public comment periods. Work plans are not approved by the NYC Office of Environmental Remediation (OER) until public comment periods have expired and all comments are formally reviewed. An explanation of cleanup plans in the form of a public meeting or informational session is available upon request to OER's project manager assigned to this Site, Eric Ilijevich, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at 212-341-2034.

Project Contact List. OER has established a Site Contact List for this project to provide public notices in the form of fact sheets to interested members of the Community. Communications will include updates on important information relating to the progress of the cleanup program at the Site as well as to request public comments on the cleanup plan. The Project Contact List includes owners and occupants of adjacent buildings and homes, principal administrators of nearby schools, hospitals and day care centers, the public water supplier that serves the area, established document repositories, the representative Community Board, City Council members, other elected representatives and any local Brownfield Opportunity Area (BOA) grantee organizations. Any member of the public or organization will be added to the Site Contact List on request. A copy of the Site Contact List is maintained by OER's project

manager. If you would like to be added to the Project Contact List, contact NYC OER at (212) 788-8841 or by email at brownfields@cityhall.nyc.gov.

Repositories. A document repository is maintained in the nearest public library that maintains evening and weekend hours. This document repository is intended to house, for community review, all principal documents generated during the cleanup program including Remedial Investigation plans and reports, Remedial Action work plans and reports, and all public notices and fact sheets produced during the lifetime of the remedial project. Stillwell Self Storage, LLC will inspect the repositories to ensure that they are fully populated with project information. The repository for this project is:

New York Public Library

Bronx Library Center

310 East Kingsbridge Road

Bronx, New York 10458

(718) 579-4244

Monday-Saturday 9:00 a.m. to 9:00 p.m.

Sunday 12:00 p.m. to 6:00 p.m.

Digital Documentation. NYC OER strongly encourages the use of digital documents in repositories as a means of minimizing paper use while also increasing convenience in access and ease of use.

Identify Issues of Public Concern. The major issues of concern to the public will be potential impacts of nuisance odors and dust during the disturbance of contaminated soils at the Site. This work will be performed in accordance with procedures which will be specified under a detailed remedial program which considers and takes preventive measures for exposures to future residents of the property and those on adjacent properties during construction. Detailed plans to monitor the potential for exposure including a CHASP and a CAMP are required components of the remedial program. Implementation of these plans will be under the direct oversight of OER.

These plans will specify the following worker and community health and safety activities during remedial activity at the Site:

- On-Site air monitoring for worker protection, and
- Perimeter air monitoring for community protection.

The CHASP and the CAMP prepared as part of the RAWP will be available for public review at the document repository

Public Notice and Public Comment. Public notice to all members of the Project Contact List is required at three major steps during the performance of the cleanup program (listed below) and at other points that may be required by OER. Notices will include Fact Sheets with descriptive project summaries, updates on recent and upcoming project activities, repository information, and important phone and email contact information. All notices will be prepared by Stillwell Self Storage, LLC, reviewed and approved by OER prior to distribution and mailed by Stillwell Self Storage, LLC. Public comment is solicited in public notices for all work plans developed under the NYC Voluntary Cleanup Program. Final review of all work plans by OER will consider all public comments. Approval will not be granted until the public comment period has been completed.

Citizen Participation Milestones. Public notice and public comment activities occur at several steps during a typical NYC VCP project. See flow chart on the following page, which identifies when during the NYC VCP public notices are issued: These steps include:

- **Public Notice of the availability of the Remedial Investigation Report and Remedial Action Work Plan and a 30-day public comment period on the Remedial Action Work Plan.**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the availability of the Remedial Investigation Report and Remedial Action Work Plan and the initiation of a 30-day public comment period on the Remedial Action Work Plan. The Fact Sheet summarizes the findings of the RIR and provides details of the RAWP. The public comment period will be extended an additional 15 days

upon public request. A public meeting or informational session will be conducted by OER upon request.

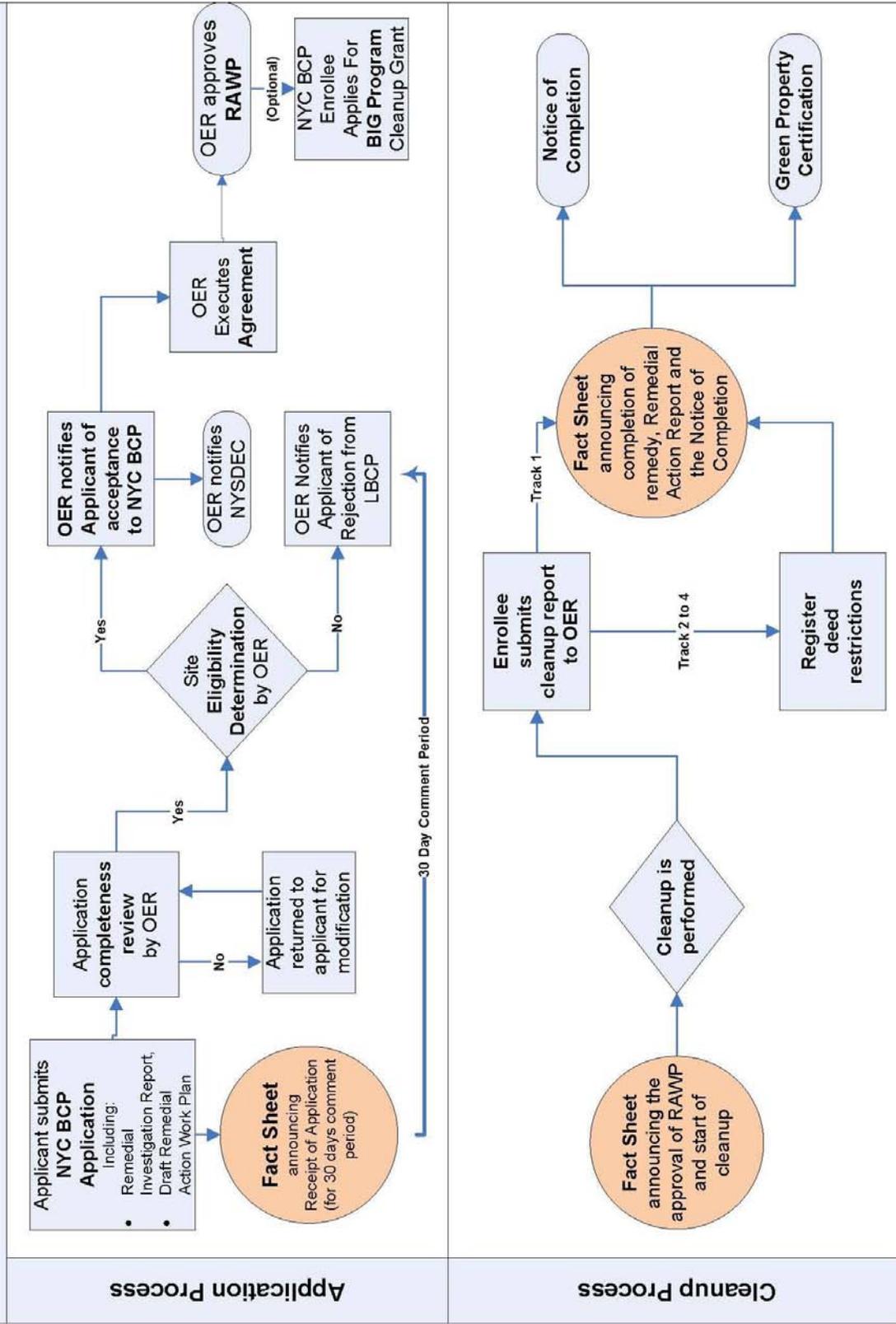
- **Public Notice announcing the approval of the RAWP and the start of remediation.**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the approval of the RAWP and the start of remediation.

- **Public Notice announcing the completion of remediation, designation of Institutional and Engineering Controls and issuance of the Notice of Completion.**

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the completion of remediation, providing a list of all Institutional and Engineering Controls implemented for to the Site and announcing the issuance of the Notice of Completion.

Flow Chart For NYC Brownfield Cleanup Program (NYC BCP)





APPENDIX 2
Sustainability Statement

APPENDIX 2

SUSTAINABILITY STATEMENT

This Sustainability Statement documents sustainable activities and green remediation efforts planned under this remedial action.

Reuse of Clean, Recyclable Materials. Reuse of clean, locally-derived recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction.

This project intends to use recycled concrete aggregate (RCA) wherever possible in grading and backfilling the Site. An estimate of the quantity (in tons) of clean, non-virgin materials (reported by type of material) reused under this plan will be quantified and reported in the RAR.

Reduce Consumption of Virgin and Non-Renewable Resources. Reduced consumption of virgin and non-renewable resources lowers the overall environmental impact of the project on the region by conserving these resources.

The project will reduce the consumption of virgin materials by substituting recycled concrete aggregate (RCA) for mined gravel and/or sand backfill whenever possible. An estimate of the quantity (in tons) of virgin and non-renewable resources, the use of which will be avoided under this plan, will be quantified and reported in the RAR.

Reduced Energy Consumption and Promotion of Greater Energy Efficiency. Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, can lower traffic congestion, and provides substantial cost savings.

Recycled concrete materials (RCA) and other backfill materials will be locally sourced reducing the energy consumption associated with transporting these materials to the Site. Best efforts will be made to quantify energy efficiencies achieved during the remediation and will be reported in the Remedial Action Report (RAR). Where energy savings cannot be easily quantified, a gross indicator of the amount of energy saved or the means by which energy savings was achieved will be reported.

Conversion to Clean Fuels. Use of clean fuel improves NYC's air quality by reducing harmful emissions.

An estimate of the volume of clean fuels used during remedial activities will be quantified and reported in the RAR.

Recontamination Control. Recontamination after cleanup and redevelopment is completed undermines the value of work performed, may result in a property that is less protective of public health or the environment, and may necessitate additional cleanup work later or impede future redevelopment. Recontamination can arise from future releases that occur within the property or by influx of contamination from off-Site.

An estimate of the area of the Site that utilizes recontamination controls under this plan will be reported in the RAR in square feet.

Storm-water Retention. Storm-water retention improves water quality by lowering the rate of combined storm-water and sewer discharges to NYC's sewage treatment plants during periods of precipitation, and reduces the volume of untreated influent to local surface waters.

An estimate of the enhanced storm-water retention capability of the redevelopment project will be included in the RAR.

Linkage with Green Building. Green buildings provide a multitude of benefits to the city across a broad range of areas, such as reduction of energy consumption, conservation of resources, and reduction in toxic materials use.

The number of Green Buildings that are associated with this brownfield redevelopment property will be reported in the RAR. The total square footage of green building space created as a function of this brownfield redevelopment will be quantified for residential, commercial and industrial/manufacturing uses.

Paperless Brownfield Cleanup Program. Stillwell Self Storage, LLC is participating in OER's Paperless Brownfield Cleanup Program. Under this program, submission of electronic documents will replace submission of hard copies for the review of project documents, communications and milestone reports.

Low-Energy Project Management Program. Stillwell Self Storage, LLC is participating in OER's low-energy project management program. Under this program, whenever possible, meetings are held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation.

Trees and Plantings. Trees and other plantings provide habitat and add to NYC's environmental quality in a wide variety of ways. Native plant species and native habitat provide optimal support to local fauna, promote local biodiversity, and require less maintenance.

An estimate of the land area that will be vegetated, including the number of trees planted or preserved, will be reported in square feet in the RAR.



APPENDIX 3
Soil/Materials Management Plan

APPENDIX 3

SOIL/MATERIALS MANAGEMENT PLAN

1.1 SOIL SCREENING METHODS

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional and will be reported in the RAR. Soil screening will be performed during invasive work performed during the remedy and development phases prior to issuance of the Notice of Completion.

1.2 STOCKPILE METHODS

Excavated soil from suspected areas of contamination (e.g., hot-spots, USTs, drains, etc.) will be stockpiled separately and will be segregated from clean soil and construction materials. Stockpiles will be used only when necessary and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters and other discharge points.

1.3 CHARACTERIZATION OF EXCAVATED MATERIALS

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Soils proposed for reuse on-Site will be managed as defined in this plan.

1.4 MATERIALS EXCAVATION, LOAD-OUT AND DEPARTURE

The PE/QEP overseeing the remedial action will:

- oversee remedial work and the excavation and load-out of excavated material;
- ensure that there is a party responsible for the safe execution of invasive and other work performed under this work plan;
- ensure that Site development activities and development-related grading cuts will not interfere with, or otherwise impair or compromise the remedial activities proposed in this RAWP;
- ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate parties;
- ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site; and
- ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site remediation.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Open and uncontrolled mechanical processing of historical fill and contaminated soil on-Site will not be performed without prior OER approval.

1.5 OFF-SITE MATERIALS TRANSPORT

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized.

Outbound truck transport routes are described in Section 5.8 of the RAWP. This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

1.6 MATERIALS DISPOSAL OFF-SITE

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in Bronx, New York under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material. These documents will be included in the RAR.

The Remedial Action Report will include an itemized account of the destination of all material removed from the Site during this remedial action. Documentation associated with disposal of all material will include records and approvals for receipt of the material. This information will be presented in the RAR.

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility).

Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization

sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the RAR. A manifest system for off-Site transportation of exported materials will be employed. Manifest information will be reported in the RAR. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e., clean soil removed for development purposes), including transport to a Part 360-16 Registration Facility, a formal request will be made for approval by OER with an associated plan compliant with 6NYCRR Part 360-16. This request and plan will include the location, volume and a description of the material to be recycled, including verification that the material is not impacted by site uses and that the material complies with receipt requirements for recycling under 6NYCRR Part 360. This material will be appropriately handled on-Site to prevent mixing with impacted material.

1.7 MATERIALS REUSE ON-SITE

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-Site. The soil cleanup objectives for on-Site reuse are the Commercial SCOs and the Track 4 SCOs listed in Section 4.2 of the RAWP. 'Reuse on-Site' means material that is excavated during the remedy or development, does not leave the property, and is relocated within the same property and on comparable soil/fill material, and addressed pursuant to the NYC VCP agreement subject to Engineering and Institutional Controls. The PE/QEP will ensure that reused materials are segregated from other materials to be exported from the Site and that procedures defined for material reuse in this RAWP are followed. The expected location for placement of reused material is shown in Figure 5.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer or within landscaping berms.

1.8 DEMARCATION

After completion of hot-spot removal and any other invasive remedial activities, and prior to backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of geosynthetic fencing or equivalent material to be placed on the surface of residual soil/fill to provide an observable reference layer. A description or map of the approximate depth of the demarcation layer will be provided in the SMP; or (2) a land survey of the top elevation of residual soil/fill before the placement of cover soils, pavement and associated sub-soils, or other materials or structures or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the remedy is complete. Demarcation may be established by one or any combination of these three methods. As appropriate, a map showing the method of demarcation for the Site and all associated documentation will be presented in the RAR.

This demarcation will constitute the top of the site management horizon. Materials within this horizon require adherence to special conditions during future invasive activities as defined in the Site Management Plan.

1.9 IMPORT OF BACKFILL SOIL FROM OFF-SITE SOURCES

This Section presents the requirements for imported fill materials to be used on site below the cover layer and within the clean soil cover layer (if applicable). All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill quality objectives include Commercial SCOs and the Track 4 SCOs in Section 4.2 of the RAWP.

A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;

- Clean soil from roadway or other transportation-related projects in compliance with applicable laws and regulations;
- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC.

All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this RAWP. The RAR will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.

Source Screening and Testing

Inspection of imported fill material will include visual, olfactory and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:

- Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
- The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
- Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material will be taken at a minimum frequency of one sample for every 500 cubic yards of material. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements and is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) will be imported from facilities permitted or registered by NYSDEC. Facilities will be identified in the RAR. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional testing, unless required by NYSDEC under its terms for operation of the facility.

RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA material is not acceptable for, and will not be used as cover material.

1.10 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable laws and regulations. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of New York Chapter 19. Discharge to the New York City sewer system will require an authorization and sampling data demonstrating that the groundwater meets the City's discharge criteria. The dewatering fluid will be pretreated as necessary to meet the NYC DEP discharge criteria. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility.

Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by New York State Department of Environmental Conservation.

1.11 STORM-WATER POLLUTION PREVENTION

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this RAWP (silt fences and barriers, and hay bale checks) will be installed around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Discharge locations will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor will be repaired immediately with

appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

1.12 CONTINGENCY PLAN

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC Spill Hotline. These findings will be included in the daily report. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides, and PCBs, as appropriate.

1.13 ODOR, DUST AND NUISANCE CONTROL

Odor Control

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP's certifying the Remedial Action Report.

Dust Control

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.
- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP's responsible for certifying the Remedial Action Report.

Other Nuisances

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided, during Site clearing and grubbing, and during the remedial program, as necessary, to prevent nuisances.



APPENDIX 4
Construction Health
and Safety Plan

SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR CONSTRUCTION

**PROPOSED SELF-STORAGE FACILITY
EXISTING COMMERCIAL BUILDING AND STORAGE LOTS
1538 STILLWELL AVENUE AND 1540 BASSETT AVENUE
BLOCK 4219, LOT 16 AND BLOCK 4226, LOT 290
BRONX, BRONX COUNTY, NEW YORK
OER PROJECT NO.: 15CVCP086X**

Submitted to:

**NEW YORK CITY OFFICE OF ENVIRONMENTAL REMEDIATION
100 Gold Street, 2nd Floor
New York, New York 10038**

Prepared for:

**STILLWELL SELF STORAGE, LLC
22 Maple Avenue
Morristown, New Jersey 07960**

Prepared by:

**WHITESTONE ASSOCIATES, INC.
35 Technology Drive
Warren, New Jersey 07059**

**Whitestone Proposal No. EJ1111829.002
February 2015**

Other Office Locations:

■ CHALFONT, PA
215.712.2700

■ STERLING, VA
703.464.5858

■ EVERGREEN, CO
303.670.6905

SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR CONSTRUCTION

**Proposed Self-Storage Facility
Stillwell Avenue and Bassett Avenue
Bronx, Bronx County, New York**

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SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR CONSTRUCTION

**Proposed Self-Storage Facility
Stillwell Avenue and Bassett Avenue
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SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR CONSTRUCTION

**Proposed Self-Storage Facility
Stillwell Avenue and Bassett Avenue
Bronx, Bronx County, New York**

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**SITE-SPECIFIC HEALTH AND SAFETY PLAN
FOR CONSTRUCTION**

**Proposed Self-Storage Facility
Stillwell Avenue and Bassett Avenue
Bronx, Bronx County, New York**

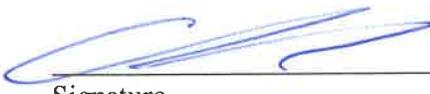
SIGNATURE SHEET

This Health and Safety Plan has been reviewed and approved. By their signatures, the following undersigned certify that this Health and Safety Plan meets the requirements of 29 CFR 1910.120 and other applicable regulations for the protection of worker health and safety at this site.

Thomas K. Uzzo, LSRP, Principal
Printed Name/Title

Signature

Whitestone Associates, Inc.
Company
2/13/15
Date

Christopher Seib, LSRP, Director/Project Manager
Printed Name/Title

Signature

Whitestone Associates, Inc.
Company
2/13/15
Date

Michael Marsicano, Site Inspector/Health & Safety Officer
Printed Name/Title

Signature

Whitestone Associates, Inc.
Company
2/13/15
Date

Printed Name/Title

Signature

Company

Date

SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR CONSTRUCTION

Proposed Self-Storage Facility
Stillwell Avenue and Bassett Avenue
Bronx, Bronx County, New York

ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
AOC	Area of Concern
ASTM	American Society of Testing Materials
CFR	Code of Federal Regulations
dba	Decibels
fbgs	Feet Below Ground Surface
H&S	Health and Safety
HASP	Site-Specific Health and Safety Plan
HSA	Hollow-Stem Auger
HST	Health and Safety Technician
IDLH	Immediately Dangerous to Life and Health
LTANKS	New York Leaking Underground Storage Tank List
MSA	Mine Safety Apparatus
MSDS	Material Safety Data Sheet
MSHA	Mine Safety Health Administration
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NYCDEP	New York City Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PNOC	Total Nuisance Dust/Particulates Not Otherwise Classified
PPE	Personal Protective Equipment
ppm	parts per million
PRCS	Permit Required Confined Space
RSCOs	Recommended Soil Cleanup Objectives
SHSO	Site Health and Safety Officer
SI	Site Investigation
SOP	Standard Operating Procedure
STEL	Short-Term Exposure Limit
SVOC	Semi-Volatile Organic Compound
TCLP	Toxicity Characteristics Leaching Procedure
TPHC	Total Petroleum Hydrocarbon
TWA	Time-Weighted Average
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound
Whitestone	Whitestone Associates, Inc.

SITE-SPECIFIC HEALTH AND SAFETY PLAN FOR CONSTRUCTION

Proposed Self-Storage Facility
Stillwell Avenue and Bassett Avenue
Bronx, Bronx County, New York

INTRODUCTION

The health and safety protocol established in this plan are based on the site conditions and chemical hazards known and/or anticipated to be present from available site data. The following *Site-Specific Health and Safety Plan for Construction* (HASP) was developed by Whitestone Associates, Inc. (Whitestone) and is intended solely for use during general construction phase grading and excavation (earthwork) and limited soil remediation operations associated with the Proposed Self-Storage Facility located at 1538 Stillwell Avenue and 1540 Bassett Avenue (Block 4219, Lot 16 and Block 4226, Lot 290) in the Bronx, Bronx County, New York (hereinafter referred to as the “site” or the “subject property”) as outlined in Whitestone’s February 2015 *Remedial Action Work Plan* (RAWP).

Operations associated with this project will be conducted in compliance with:

- ▶ Occupational Safety and Health (OSHA) Regulations 29 CFR 1910.120, "*Hazardous Waste Operations and Emergency Response*";
- ▶ Applicable parts of OSHA 29 CFR 1910, *General Industry*, OSHA Safety and Health Standards;
- ▶ Applicable parts of OSHA 29 CFR 1926, *Construction Industry*, OSHA Safety and Health Standards;
- ▶ Other applicable Federal, State, and local regulations; and
- ▶ Subcontractor general safety plans/requirements.

All persons wishing to gain entry to active work areas of the site will:

1. Read or review the contents of this HASP with the Site Health and Safety Officer (SHSO); and
2. Acknowledge, in writing on the attached HASP Acknowledgment/Visitor Sign-In Sheet, their understanding of this HASP and all revisions¹ made to it.

¹ This HASP is subject to review and revision based on actual conditions encountered in the field.

SECTION 1.0

Project Overview

1.1 SITE DESCRIPTION

The site is located at 1538 Stillwell Avenue and 1540 Bassett Avenue in the Bronx section of Bronx, New York and is identified as Block 4219, Lot 16 and Block 4226, Lot 290 on the New York City Tax Map. Figure 1 shows the Site location. The site is 44,149-square feet in total, which is comprised of 22,295-square feet on Lot 16 and 21,854-square feet on Lot 290, and is bounded by Bay Powder Coating Corp., Sacco, and residential buildings to the north, New Plumbing and Heating Corp., a vacant building, a lot with junk cars, and Frank & Son Autobody to the south, an Acela High Speed Transit Train line to the east, and F&J Transmission, Temple of Joy, Italy A&P Auto Repair, and Carib Prints, Ltd. beyond Stillwell Avenue to the west. Lot 16 (which is considered proposed Building A) is located to the west of Bassett Avenue and Lot 290 (which is considered proposed Building B) is located to the east of Bassett Avenue. A map of the site boundary is shown in Figure 2. Currently, Lot 16 of the subject property houses a vacant, one- and two-story commercial structure that covers the entire lot. The ground floor/basement area of the site building on Lot 16 is divided into four open sections formerly used for paint storage and mixing with restrooms in the central portion and a loading dock area in the western portion. The second floor of the site building consists of open space with offices in the northwestern and northeastern portions. Lot 290 of the subject property is situated to the east of Bassett Avenue and houses several fenced storage yards formerly used for the storage of construction equipment and materials and automobiles.

1.2 SCOPE OF WORK ITEMS COVERED BY HASP

This HASP is intended to cover potential exposures during general construction phase grading and excavation activities, limited soil remediation (areas B-1 and SV-6/6A) during site redevelopment (see Figure 2), and other activities outlined in Whitestone's February 2015 RAWP. All site contractors will be required to follow their own general safety plans/requirements for all typical construction-related activities and will be responsible for assuming the health and safety of their employees.

SECTION 2.0

Hazard Assessment and Risk Analysis

An assessment and analysis of chemical, physical, and biological hazards associated with this project is presented in the subsections that follow. A task-by-task risk analysis of the potential exposure to the identified hazards is provided below.

Task	Potential Exposure Risk
Mobilization/Demobilization	Low
General Earthwork (construction phase grading and excavation) Operations	Moderately High
Soil Remediation (B-1 and SV-6/6A)	High
Anticipated Exposure Risk Definitions:	
LOW =	Non-Intrusive Work--No Chance of Exposure.
SLIGHT =	Non-Intrusive Work, Possible Safety Hazards with Tools--Little to No Chance of Exposure.
MODERATE =	Non-Intrusive Work, Possible Safety Hazards with Power Tools, Heavy Equipment, and/or Work Near or in Water--No Possible Exposure to Contaminants.
MODERATELY HIGH =	Intrusive Work, Possible Safety Hazards with Equipment--Exposure to Contaminants Possible.
HIGH =	Intrusive Work, Possible Safety Hazards with Equipment--Exposure to Contaminants Probable.

2.1 CHEMICAL HAZARDS

2.1.1 Contaminants of Concern

Soil and groundwater samples collected in support of the Site Investigation/Remediation Investigation (SI/RI) efforts were analyzed for volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), polychlorinated biphenyls (PCBs), pesticides, and/or Target Analyte List (TAL) metals. Exposure information for these potential constituents of concern (COCs) are provided in Table 1.

The COCs associated with the soil remediation are limited to VOCs, lead, and arsenic in the areas of soil samples B-1 and SV-6/6A. Detailed contaminant data can be found in Whitestone's February 2015 *Remedial Investigation Report*.

**TABLE 1
POTENTIAL CHEMICAL EXPOSURES
Proposed Self-Storage Facility
Stillwell Avenue and Bassett Avenue
Bronx, Bronx County, New York**

Substance	Route of Entry	Exposure Symptoms	Action Level
VOC	Inhalation Contact	Acute - May cause unconsciousness and death. May cause the heart to beat irregularly or to stop. Chronic - High or repeated lower exposures can damage the liver and kidneys. Long term skin contact can cause thickening and cracking of the skin.	10 ppm
SVOC	Inhalation Ingestion Contact	CANCER SUSPECT AGENTS Irritation, pulmonary edema, sensitizer, dermatitis, dizziness, nausea, convulsions, kidney, and liver damage.	0.2 mg/m ³
PCBs	Contact Inhalation Ingestion	PCBs are KNOWN HUMAN CARCINOGENS AND MAY BE TERATOGENS. Exposure to PCBs can occur through inhalation or absorption and cause an acne like skin rash (called chloracne). PCBs can damage the liver. High exposure can damage the nervous system, causing numbness, weakness, and tingling ("pins and needles") in the arms and legs.	0.5 mg/m ³ SKIN
Pesticide	Inhalation Contact Ingestion	POTENTIAL CARCINOGEN - HANDLE WITH EXTREME CAUTION. Short-term exposure may irritate the eyes, the skin, and the respiratory tract. The substance may cause effects on the central nervous system. Exposure may result in death. Long-term or repeated exposure to the substance may have effects on the blood and liver.	NE
Metals			
Arsenic	Inhalation Contact	Ulceration of nasal septum; dermatitis; gastrointestinal disturbances; peripheral neuropathy; respiratory irritation; hyper pigmentation of skin; potential occupational carcinogen.	0.010 mg/m ³
Barium	Contact Inhalation Ingestion	Causes eye and skin irritation. Irritates the respiratory tract. Ingestion of large amounts may cause gastrointestinal irritation.	0.5 mg/m ³
Cadmium	Contact Inhalation Ingestion	Inhalation of fumes may cause metal-fume fever. May cause liver and kidney damage. May cause lung damage. Flammable solid. Cancer suspect agent. Air sensitive. Causes eye and skin irritation. Causes digestive and respiratory tract irritation. May cause reproductive and fetal effects. Harmful if swallowed. May be fatal if inhaled. Target Organs: Blood, kidneys, liver, lungs, skeletal structures, prostate.	0.2 mg/m ³ (dust) 0.1 mg/m ³ (fume) 0.6 mg/m ³ (C-dust) 0.3 mg/m ³ (C-fume) 2.5 mg/m ³ (action level)
Chromium	Inhalation Contact	CARCINOGEN - HANDLE WITH EXTREME CAUTION Chromium is a steel gray, lustrous metal often found as a powder. Chromium metal ore has been reported to cause lung allergy. Chromium fumes can cause "metal fume fever," a flu like illness lasting about 24 hours with chills, aches, cough and fever. Chromium particles can irritate the eyes.	0.5 mg/m ³

TABLE 1
POTENTIAL CHEMICAL EXPOSURES
Proposed Self-Storage Facility
Stillwell Avenue and Bassett Avenue
Bronx, Bronx County, New York

Substance	Route of Entry	Exposure Symptoms	Action Level
Copper	Contact Inhalation Ingestion	Causes irritation to skin, eyes, and respiratory tract. Affects the liver and kidneys. Chronic exposure may cause tissue damage.	1 mg/m ³ TWA (Copper Dust and Mists, as Cu) 0.1 mg/m ³ TWA (Copper Fume)
Lead	Skin Contact Eye Contact Ingestion Inhalation	TERATOGEN - HANDLE WITH EXTREME CAUTION. Repeated exposure causes lead build-up in the body. Low levels may cause tiredness, mood changes, headaches, stomach problems, and trouble sleeping. Higher levels may cause aching, weakness, and concentration or memory problems. Lead exposure can cause serious permanent kidney or brain damage at high levels and increases the risk of high blood pressure.	0.05 mg/m ³ 100 mg/m ³ IDLH
Mercury	Inhalation Absorption Contact	High exposure can cause chest pain, shortness of breath, and a build-up of fluid in the lungs (pulmonary edema). This can cause death. Repeated exposures can cause Mercury poisoning with kidney disease, tremors, gum problems, trouble remembering and concentrating and changes in mood. Long-term exposure can cause clouding of the eyes.	PEL: 0.01 mg/m ³ IDLH: 26 mg/m ³
Nickel	Inhalation Contact	CARCINOGEN - HANDLE WITH EXTREME CAUTION. Nickel is a silvery-white metal. Skin contact may cause skin allergy, with itching, redness and later rash. Lung allergy occasionally occurs with asthma-type effects. High exposure can cause cough, shortness of breath and fluid in the lungs, which is sometimes delayed for 1 to 2 days after exposure. HIGHLY FLAMMABLE SOLID - EXPLOSION HAZARD.	1.5 mg/m ³ Elemental/ Metal 0.1 mg/m ³ Soluble 0.2 mg/m ³ Insoluble
Zinc	Inhalation Contact	Zinc is a soft white metal with a bluish tinge. Exposure to solid Zinc is not known to cause acute or chronic health effects, but heated Zinc may give off Zinc Oxide Fume which can cause health effects. Metal fragments can scratch the eyes. When Zinc is refined, Cadmium is released. Cadmium is a cancer causing agent.	15 mg/m ³ Dust 5 mg/m ³ Fume

NOTES:

PEL OSHA's Final Rule Limits Permissible Exposure Limit for an 8-hour Time Weighted Average (TWA).
IDLH NIOSH Level Immediately Dangerous to Life and Health.
ppm parts per million
ACGIH American Conference of Governmental Industrial Hygienist
TWA 8-hour time weighted average (TWA) as established by ACGIH
STEL/C Short-Term Exposure Limit/Ceiling as established by ACGIH
NE Not Established

Hazards associated with potential exposure to the COCs identified in Table 1 will be mitigated through training, administrative controls (e.g., proper labeling and storage), and proper use of prescribed personal protective equipment (PPE).

2.1.2 Concrete

Persons who place concrete will be trained in the chemical hazards associated with handling concrete, which is mildly corrosive. Sufficient amounts of clean water will be available for workers to wash concrete from their skin and eyes. Safety glasses will be worn during concrete placement.

2.1.3 Chemicals Brought On Site

The use of chemicals on site will be in compliance with the requirements of 29 CFR 1910.1200 (OSHA's Hazard Communication Standard), all applicable Federal OSHA regulations found in 1910.1000, and the Spill Containment Plan (Appendix C). Potential hazards associated with chemicals brought on site for the work will be mitigated through training, administrative controls (e.g., proper labeling and storage), and proper use of prescribed PPE.

Material Safety Data Sheets (MSDSs) for all chemicals brought to the site shall be available in the location where the chemical is used or stored. The SHSO will be responsible for maintaining the project MSDS file.

2.2 PHYSICAL HAZARDS

The following general and physical hazards may be associated with earthwork operations at the subject property.

- ▶ **Potential Hazard:** Operation of heavy equipment.

Procedure(s) to Mitigate Hazard: (1) Before any machinery or mechanized equipment is placed in use, it will be inspected and tested by a competent person and certified to be in safe operating condition. The soil boring and monitor well installation subcontractor will designate a competent person to be responsible for the inspection of all machinery and equipment daily and during use to make sure it is in safe operating condition. Tests will be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition. All inspections will be documented. Any machinery or equipment found to be unsafe will be deadlined and its use prohibited until unsafe conditions have been corrected. (2) Only designated personnel holding required licenses will operate machinery and mechanized equipment. (3) Equipment deficiencies observed at any item that affect their safe operation will be corrected before continuing operation. (4) Utilize appropriate warning signs and backup alarms.

- ▶ **Potential Hazard:** Possible exposure to continuous sound pressure levels in excess of 85 dBA during heavy equipment operation.

Procedure(s) to Mitigate Hazard: Wear disposable ear plugs or ear muffs with a NRR rating of 20 or greater any time that noise is determined to be a hazard by the SHSO (or his designated site representative). An appropriate rule of thumb is that when normal conversation is difficult at a distance of two feet to three feet, hearing protection is required.

- ▶ **Potential Hazard:** Above and/or Underground Utilities within Work Area(s)

Procedure(s) to Mitigate Hazard: The soil boring and monitor well installation subcontractor will notify NEW YORK CITY ONE CALL (1-800-272-4480 or 811) a minimum of three days prior to performing any intrusive subsurface activities to request utility markout. Ensure that overhead electrical lines (if any) are not energized.

- ▶ **Potential Hazard:** Slips, Trips, and Falls.

Procedure(s) to Mitigate Hazard: (1) Exercise extreme caution in all work areas. (2) Be sure of footing during equipment access/egress and when moving through the work area. (3) Avoid stepping or standing on uneven or unsteady surfaces. (4) Clearly delineate excavations, open pits, and other fall hazards with caution tape. Securely cover as appropriate.

Any time that employees are exposed to a fall hazards or leading edge hazards, the SHSO or his designated representative will install protection or provide fall protection to prevent any personnel from falling during the course of project. The SHSO will attempt to limit these exposures with proper project planning. If at any time employees can not be kept from fall hazards or leading edges, employees will be issued and use proper fall protection. Fall Protection Training will be required before any employee is issued fall protection equipment.

Proper project house keeping is the key to preventing any slip, trips, or falls. Project personnel will do everything possible to keep the project site neat and tidy. A clean project site is a safe project site.

- ▶ **Potential Hazard:** Exposure to inclement weather.

Procedure(s) to Mitigate Hazard: Threats to site personnel can arise from natural causes (i.e., lightning, high winds, etc.). In the event that severe weather is imminent, the field engineer will notify site employees. As the storm approaches, all work will cease, loose objects will be secured, and site personnel will take shelter at pre-arranged locations. After the severe weather event has passed, the field engineer will inspect the work area(s) for safety hazards prior to resuming work.

- ▶ **Potential Hazard:** Housekeeping

Procedure(s) to Mitigate Hazard: (1) Store equipment properly. (2) Remove rubbish/scrap material from the work area.

- ▶ **Potential Hazard:** Hazardous Material Storage

Procedure(s) to Mitigate Hazard: (1) Segregate flammable/combustible liquid from ignition sources. (2) Store in approved containers. (3) Keep solvent wastes, oily rags, and liquids in fire resistant containers. (4) Provide spill control for equipment fueling operations.

The Standard Operating Procedures (SOPs), engineering controls, and work practices set forth in Section 10.0 are to be strictly adhered to by all site personnel to minimize the potential for physical injury.

2.3 BIOLOGICAL HAZARDS

2.3.1 Bites and Stings

The potential exists for encountering biting animals (dogs, rats) and insects (bees, spiders, flies). All animal and insect bites will be reported to the field engineer who will arrange for first aid treatment and/or medical evaluation. Individuals with allergies to wasps or bees shall notify his/her immediate supervisor of his/her condition prior to working at the site and should have a medical ID bracelet and epinephrine pen in his/her possession.

2.3.2 Bloodborne Pathogens

The following program has been developed in compliance with OSHA regulation 29 CFR 1910.1030 to protect first aid responders who may come into contact with potentially infectious materials.

Potentially, all employees trained in first aid may have exposure to infectious materials. In general, employees will:

- ▶ Avoid contact with blood;
- ▶ Clean-up blood with disinfectant;
- ▶ Wear PPE while cleaning up blood; and
- ▶ Contact the SHSO regarding medical evaluation if exposed (i.e., blood contacts eyes, mouth, or nose).

In addition, the following general guidelines will apply:

1. All employees will wash their hands immediately after potential exposure to infectious materials.
2. No eating, drinking, smoking, or applying cosmetics or lip balm will be permitted in designated work, decontamination, and first aid areas.
3. PPE (i.e., gloves, CPR shields, and respirators) will be available with all first aid kits.
4. PPE will be used by employees who are trained in first aid to prevent exposure to blood or other potentially infectious materials.
5. If a garment (including gloves) is penetrated by blood or other potentially infectious materials, the garment or garments will be removed immediately or as soon as feasible.

6. All equipment and environmental and working surfaces will be cleaned and decontaminated with an appropriate disinfectant immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials.
7. After an exposure incident, a confidential medical evaluation and follow-up will be immediately available to the exposed individual. Arrangements for the medical evaluation should be coordinated with the SHSO.

Hand washing facilities with clean paper towels will be provided at the job site. First aid kits will be equipped with antiseptic hand cleanser or antiseptic towelettes.

Employees will receive training on blood borne pathogens from the SHSO as part of the pre-entry safety briefing and thereafter when new tasks or procedures will affect the employee's occupational exposure.

2.4 AIR QUALITY HAZARDS

Dust shall be kept to a minimum during all operations. Clean (i.e., free from salt, oil, and other deleterious materials) water will be applied to control dust as necessary. The application rate will be controlled to prevent surface run-off.

SECTION 3.0 Project Organization

3.1 RESPONSIBILITIES

3.1.1 Whitestone Associates, Inc.

Whitestone has primary responsibility for ensuring the implementation of this HASP and the requirements of the RAWP during the construction phase grading and excavation activities and remediation described in Section 1.2 of this HASP. Whitestone personnel to be assigned to the project include the following.

Technical Advisor (Home Office)	Thomas K. Uzzo	908-668-7777 (Office)
Project Manager (Home Office)	Christopher Seib	908-668-7777 (Office) 908-803-5261 (Mobile)
Environmental Site Inspector/ Site Health & Safety Officer	Michael Marsicano	908-668-7777 (Office) 908-285-7649 (Mobile)

The Project Manager has overall responsibility for ensuring that all aspects of the RAWP and HASP are implemented. The Environmental Site Inspector is responsible for supervising on-site investigation and remediation activities as outlined in the RAWP. The Environmental Site Inspector will function as Whitestone's Site Health and Safety Officer (SHSO).

The SHSO generally will be responsible for day-to-day implementation of this HASP, and will have knowledge of conditions which may require the upgrading or downgrading of PPE. The SHSO will make recommendations to protect the health and safety of individuals on site. However, the SHSO will confirm with Project Management on matters of significant importance, such as recommendations for upgrading or downgrading PPE being used.

3.1.2 Subcontractors

Subcontractors will be required to follow the guidelines set forth in this HASP. All subcontractors are responsible for providing their employees with the PPE required by this HASP and for ensuring that this equipment is properly monitored and tested. All subcontractors are responsible for ensuring that their employees conform to all applicable health and safety regulations. All subcontractors will be required to follow their own general safety plans/requirements for all typical construction-related activities.

3.2 SURVEILLANCE AND INTERNAL AUDITING RESPONSIBILITIES

Whitestone's on-site representatives will monitor job-site safety via inspection at the start and completion of each day's work as well as monitoring the job site for this purpose throughout the day (when on site). Any safety violations shall be reported to the Project Manager and Owner's/subcontractor's site safety representative. All observed safety violations will be immediately corrected, explained to the perpetrator, and reviewed at the next safety meeting. Excessive violations of the site safety rules will be grounds for disciplinary action which could lead to employee termination or expulsion of subcontractor personnel from the site.

SECTION 4.0

Site Personnel Training Requirements

4.1 GENERAL TRAINING

Site workers shall be provided by their employer (Whitestone or the subcontractor, as appropriate) with the H&S training required to comply with its HASP, achieve compliance with regulatory standards, and other training and qualifications necessary for the workers to complete the assigned job duties safely and in an environmentally sound manner.

Documentation of all required training (e.g., training certificates, attendance rosters) shall be maintained by the Project Manager. Training documentation shall be maintained in an organized manner that is readily retrievable and shows that individual workers have the required training.

All personnel shall have the right and responsibility to stop work anytime when unsafe conditions (i.e., those that have not been previously addressed) arise, or the scope of work changes from that which was originally briefed or understood.

4.2 SITE-SPECIFIC TRAINING/SAFETY MEETINGS

4.2.1 Site Orientation

Prior to the commencement of field activities, all personnel assigned to the project shall have completed site-specific training that includes hazardous activities, procedures, monitoring, and equipment used in the site operations. Site-specific training also will include site layout, potential hazardous, risks associated with identified hazardous substances at the site, hazard communication as necessary, PPE, incident reporting, emergency response actions, and available emergency services. This training shall allow site workers to clarify anything they do not understand and to reinforce their responsibilities regarding H&S requirements and work operations for their particular activity.

4.2.2 Daily “Toolbox” Safety Meetings

The SHSO shall conduct daily “toolbox” H&S meetings prior to the start of each day’s work when on site. The meetings shall include a discussion of the planned work activities and periodic special H&S topics of interest to site personnel. In addition, the following items shall be discussed as appropriate:

- ▶ Necessary training requirements and site work rules;
- ▶ Changes in work practices or environmental conditions;
- ▶ Precautions and safe work practices related to the day’s site activities;

- ▶ New or modified procedures or requirements;
- ▶ Incident alerts;
- ▶ Disclosure of potential hazards or hazardous operations;
- ▶ Procedures into restricted areas;
- ▶ Vehicle rules and requirements;
- ▶ Equipment to be used;
- ▶ Restrictions on handling of materials; and
- ▶ PPE requirements.

Documentation of daily H&S meetings shall be maintained by the SHSO.

4.3 OSHA TRAINING

All personnel assigned to work in potentially contaminated areas at the Project Site will be in trained per the requirements of 29 CFR 1910 and 1926 as listed below. This will only apply to remediation performed in the areas of soil samples B-1 and SV-6/6A and grading and excavation activities that are in direct contact with existing contaminated fill materials/soil at the site. Site personnel shall have met the following requirements prior to the start of operations at the site:

- ▶ A 40-hour minimum hazardous materials safety and health course, as stipulated in 29 CFR 1926.65 e(3).
- ▶ An eight (8)-hour minimum refresher course per year after the 40-hour minimum training has occurred (29 CFR 1926.65.e[8]).

On-site managers and supervisors will be in compliance with the additional supervisory training requirements of 29 CFR 1926.65.e(4).

OSHA training certificates shall be maintained by the Project Manager.

4.4 SUBSTANCE ABUSE

The Project site will be “Drug Free Site”. Use or working under the influence of alcohol or controlled substances (other than prescribed or over-the-counter medication) is strictly prohibited at all times during the work shift. Use of alcohol or controlled substances at any time during the work shift shall result in immediate removal from the site and permanent loss of access. Site workers are subject to substance use testing at any time “for cause” or following a safety or property damage incident.

Subcontractors are responsible for conducting testing as specified by their own company policies.

4.5 OTHER REQUIRED TRAINING AND QUALIFICATIONS

Other training and qualifications may be required depending on the task work scope and assigned duties on an individual site worker. This may include training for waste handling, respiratory protection, hazard communication, noise exposure or hearing conservation, and various qualified/competent person requirements (e.g., operation of heavy equipment, confined space entry, excavation). Specific additional training/qualified person requirements will be identified by the subcontractors. All subcontractors are responsible for ensuring that identified training and/or qualified/competent person requirements are met for site workers. Subcontractors must identify who its competent person is for the activity as required. Documentation is required for establishing the basis of competency.

4.6 VISITORS

Visitors who must enter potentially contaminated work areas will receive health and safety instruction from the SHSO (or the SHSO's designated site representative). Visitor instruction will include:

- ▶ Hazard identification;
- ▶ PPE requirements;
- ▶ Decontamination procedures;
- ▶ Emergency procedures; and
- ▶ Other site-specific information as determined by the SHSO.

The SHSO (or designated site representative) will establish, on a case-by-case basis, a safe location from which visitors can observe the site activity of interest.

SECTION 5.0

Medical Surveillance

5.1 GENERAL

Medical monitoring is required by OSHA as a means of monitoring worker exposure to certain toxic substances under 29 CFR 1910.120(f), OSHA's Hazardous Waste Operations and Emergency Response Standard. If applicable, an examination will be given not more than one year prior to a worker reporting to the job site. The Medical Surveillance Exams will meet the requirement of the USEPA, OSHA Standard 29 CFR 1910.120, and ANSI 88.2 (1980).

Subcontractors shall provide Whitestone with a copy of the physician's statement certifying each employee's ability to work at task-specific operations upon request.

5.2 PROJECT-SPECIFIC MEDICAL MONITORING

As noted above.

5.3 HEAT STRESS MONITORING PROGRAM

The following program shall be implemented if the ambient air temperatures exceed 70°F.

Site personnel who wear protective clothing allow body heat to be accumulated with an elevation of the body temperature. Heat cramps, heat exhaustion, and heat stroke can be experienced, which, if not remedied, can threaten life or health. Therefore, an American Red Cross Standard First Aid book or equivalent will be maintained on site so that the SHSO and site personnel will be able to recognize symptoms of heat emergencies and be capable of controlling the problem.

When protective clothing is worn, especially Levels A, B, and C, the suggested guidelines for ambient temperature and maximum wearing time per excursion are:

Ambient Temperature (°F)	Maximum Wearing Time Per Excursion (Minutes)
Above 90	15
85 to 90	30
80 to 85	60
70 to 80	90
60 to 70	120
50 to 60	180

One method of measuring the effectiveness of employees' rest-recovery regime is by monitoring the heart rate as follows:

- ▶ During a 3-minute period, count the pulse rate for the last 30 seconds of the first minute, the last 30 seconds of the second minute, and the last 30 seconds of the third minute.
- ▶ Double the count.

If the recovery pulse rate during the last 30 seconds of the first minute is at 110 beats/minute or less and the deceleration between the first, second, and third minutes is at least 10 beats/minute, the work-recovery regime is acceptable. If the employee's rate is above that specified, a longer rest period is required, accompanied by an increased intake of fluids.

In the case of heat cramps or heat exhaustion, "Gatorade" or its equivalent is suggested as part of the treatment regime. The reason for this type of liquid refreshment is that such beverages will return much-needed electrolytes to the system. Without these electrolytes, body systems cannot function properly, thereby increasing the represented health hazard.

This liquid refreshment will be stored in a cooler at the edge of the decontamination zone in plastic squeeze bottles. The plastic bottles will be marked with individual's names. Disposable cups with lids and straws may be used in place of the squeeze bottles. Prior to drinking within the decontamination zone, the project personnel shall follow the following decontamination procedures:

- A. Personnel shall wash and rinse their outer gloves and remove them.
- B. Personnel shall remove their hard hats and respirators and place on table.
- C. Personnel shall remove their inner gloves and place them on table.
- D. Personnel shall wash and rinse their face and hands.
- E. Personnel shall carefully remove their personal bottle or cup from the cooler to ensure that their outer clothes do not touch any bottles, cups, etc.
- F. The used bottle or cups will not be returned to the cooler, but will be placed in a receptacle or container to be cleaned or disposed of.
- G. Personnel shall replace their respirators, hard hats, gloves, and tape gloves prior to re-entering the hazardous zone.

When personnel are working in situations where the ambient temperatures and humidity are high-and especially in situations where protection Levels A, B, and C are required, the SHSO must:

- ▶ Assure that all employees drink plenty of fluids ("Gatorade" or its equivalent);

- ▶ Assure that frequent breaks are scheduled so overheating does not occur; and
- ▶ Revise work schedules, when necessary, to take advantage of the cooler parts of the day (i.e., 5:00 a.m. to 1:00 p.m., and 6:00 p.m. to nightfall).

SECTION 6.0

Personal Protective Equipment

6.1 EQUIPMENT REQUIREMENTS

Based on an evaluation of potential hazards (see Section 2.0), the following minimum levels of protection have been assigned for this project:

<u>Work Operation</u>	<u>Initial Level of Protection</u>
Impacted Soil Excavation/Handling	Level D Modified
General Earthwork/Construction Phase Grading & Excavation	Level D Modified
Sample Collection	Level D Modified

The **Level D PPE** ensemble will include work clothing as dictated by weather; a hard hat; safety glasses; work gloves; and steel toe/steel shank work boots. Hearing protection (ear plugs) and disposable dust masks will be worn as directed by the SHSO (or his designated site representative). **Level D Modified** includes the afore-mentioned and latex gloves.

The initial level of protection identified is to be considered preliminary and may change based on site conditions encountered during project work (see Section 7.0).

In the event that prescribed dust suppression techniques do not adequately mitigate ambient particulate concentrations, alternative mitigative measures, PPE, and/or personnel training requirements may be instituted by the SHSO.

No changes to the specified level of protection will be made without the approval of the SHSO.

6.2 HEARING PROTECTION PROGRAM

Any and all possible controls will be used to protect employees from sound levels in excess of the levels shown in the table on the following page. If these controls are not sufficient, ear protective devices will be provided.

Exposure to impulse or impact noise should not exceed 140 dBA peak sound pressure level.

<u>Duration per days in hours</u>	<u>Sound level dBA Slow Response</u>
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25 or less	115

SECTION 7.0

Air Monitoring Program

To achieve compliance with 29 CFR 1926.55 (gases, vapors, fumes, dusts, and mists), administrative or engineering controls must first be implemented whenever feasible. When such controls are not feasible to achieve full compliance, protective equipment or other protective measures shall be used to keep the exposure of employees to air contaminants within applicable limits.

The presence of visible airborne dust/particulates requires mitigation via Section 2.4 of this HASP. Water will be utilized for dust suppression as deemed necessary by site safety personnel (Whitestone or Contractor as appropriate).

Air monitoring will be performed in accordance with the Community Air Monitoring Plan (CAMP) outlined in Section 5.5 of Whitestone's February 2015 *Remedial Action Work Plan* (RAWP).

SECTION 8.0 Site Security/Control

8.1 SITE SECURITY AND ACCESS

The SHSO will be responsible for coordinating access to the site with the Owner's Representative. The SHSO (or his designated site representative) will be responsible for controlling access to established work areas (see Section 8.2).

8.2 ESTABLISHMENT/CONTROL OF WORK AREA

The SHSO (or his designated site representative) will be responsible for establishing work zones. Work Zones shall be defined as follows:

- ▶ **Work Zone.** The Work Zone shall include all areas where a potential hazard may exist to workers. The level of PPE required in these areas shall be as stated in Section 6.0 of this HASP and as determined by the SHSO. The Work Zone will be set-up at work location at the time of the work.
- ▶ **Support Zone.** Whitestone's support zone shall be located in an area approved by the Owner's site representative.

The SHSO (or his designated site representative) will insure that the Work Zones are properly established and maintained. All Work Zones will be clearly laid out and delineated to prevent unauthorized access. Access to established Work Zones shall be controlled by the SHSO (or his designated site representative). **Unauthorized persons will not be permitted entry into established work areas.**

8.3 VISITOR CONTROL

All visitors must be escorted full-time by a Whitestone/Contractor employee trained in H&S requirements. At a minimum, visitors shall wear a hard hat and eye protection. Visitors shall receive a H&S orientation briefing from Whitestone's SHSO (see Section 4.6).

SECTION 9.0

Decontamination Procedures

9.1 PERSONNEL DECONTAMINATION

All personnel will be made aware of any personal habit that may allow contaminants into or onto the body. All personnel will check that regularly worn PPE (e.g., hard hats and liners, eye protection, etc.) is clean and in good condition. Any products for personal consumption or application are prohibited in any work area. Break area(s) will be limited to specific areas where eating, drinking, smoking, etc. and the storage of these materials will be allowed.

No PPE will be removed from a controlled work area without proper decontamination or disposal. All personnel leaving a controlled work area will pass through a contamination reduction zone where they will:

- ▶ Remove and discard any disposable, single use items (gloves, tyvek suits, overboots, etc.); and
- ▶ Thoroughly wash/rinse exposed skin with water and biodegradable soap (or equivalent).

Site workers are encouraged to shower and launder personal clothing as soon as possible upon completing daily activities.

All materials generated during decontamination will be drummed for disposal in accordance with applicable local, state, and federal regulations.

9.2 EQUIPMENT DECONTAMINATION

Tools and equipment that may have come into contact with contaminated materials will be decontaminated prior to commencing activities at each location, according to the following procedure:

1. Flush and wipe components to remove debris and other gross contamination.
2. Clean with potable water and non-phosphate detergent using a brush or high pressure wash, as necessary, to remove particulate matter and surface films.
3. Rinse thoroughly with potable water.
4. Allow to air dry as long as possible.

Sampling equipment (if not disposable) will be decontaminated prior to collecting each sample, according to the following procedure:

1. Wash with solution of Simple Green® (or equal) and potable (clean tap) water. Brush, if necessary, to remove all visible foreign matter.
2. Rinse with potable water.
3. Rinse with clean distilled water.
4. Visibly inspect openings and treads for solid materials.
5. Allow to air dry as long as possible on a clean polyethylene sheet or aluminum foil.
6. Wrap in clean polyethylene sheet or aluminum foil until required.

Soil will be removed from construction equipment prior to demobilization.

Wash water from equipment decontamination operations will be collected, packaged, and off-site disposal at an approved disposal facility in accordance with applicable local, state, and federal regulations.

SECTION 10.0

Site Standard Operating Procedures

Site workers will observe the following Standard Operating Safety Procedures and Engineering Controls when working at the project site.

10.1 STANDARD OPERATING SAFETY PROCEDURES

1. Ensure that all safety equipment and protective clothing is kept clean and well maintained.
2. Ensure that all prescription eyeglasses in use on this project are safety rated. Contact lenses are not permitted on site.
3. Ensure that all project personnel have vision or corrected vision to at least 20/40 in one eye.
4. Site workers found to be disregarding any provision of this HASP will, at the request of the SHSO, be barred from the project.
5. Prohibit eating, drinking, chewing gum or tobacco, and smoking in active work areas.
6. All personnel will thoroughly cleanse their hands, face, and forearms and other exposed areas prior to eating, smoking, or drinking.
7. Workers will shower at the completion of the work day.
8. All personnel will wash their hands, face, and forearms before using toilet facilities.
9. Do not allow alcohol, firearms, or drugs (without prescriptions) on site at any time.
10. All personnel who are on medication should report it to the SHSO who will make a determination whether or not the individual will be allowed to work and in what capacity. The SHSO may require a letter from the individual's personal physician stating what limitations (if any) the medication may impose on the individual.

10.2 ENGINEERING CONTROLS

The Contractor will provide all equipment and personnel necessary to control air emissions. Water will be utilized for dust suppression as deemed necessary by the on-site contractor's SHSO.

SECTION 11.0

Emergency Response and Contingency Plan

The following Emergency Response and Contingency Plan considers and recommends:

- ▶ Preventative measures;
- ▶ Personnel training and regular safety meetings conducted to reduce the likelihood of accidents;
- ▶ Mitigative measures to limit the scope of any accident; and
- ▶ Contingency actions to respond to and remedy the effects of accidents.

11.1 PRE-PLANNING

All work will be coordinated with the Owner's Site Representative. In addition, local police and fire departments, local hospital(s), and local ambulance services will be contacted by the SHSO prior to initiation of site operations to inform them of scheduled activities at the site if deemed necessary. Arrangements for emergency communication will be made with these organizations prior to initiating on-site operations.

Emergency response procedures will be covered as part of each site personnel's training. Training in site-specific emergency procedures will be provided by the site health and safety officer before work begins on-site in accordance with Section 5.0 of this HASP. This training will include, but is not limited to, the following;

- ▶ Emergency chain-of-command;
- ▶ Communication methods and signals;
- ▶ Location of phones and emergency numbers;
- ▶ Use of emergency equipment;
- ▶ Evacuation and emergency procedures;
- ▶ Off-site support;
- ▶ Site-specific hazards;
- ▶ Decontamination procedures;
- ▶ Standard operating procedures; and
- ▶ Location and use of first aid equipment.

11.2 EMERGENCY CHAIN-OF-COMMAND

Personnel will immediately notify the SHSO (or his designated site representative) in the event of an emergency using available communications (see Section 11.3).

The SHSO (or his designated site representative) will make a rapid assessment of the situation and take appropriate action which (depending upon emergency circumstances) can include notifying the Project Manager of the situation; initiating engineering controls (i.e., implementing dust or spill response control

measures); ordering the suspension of work; ordering evacuation of the work zone; implementing emergency altering and response procedures; requesting emergency medical treatment; and/or administering first aid.

11.3 COMMUNICATION METHODS AND SIGNALS

For emergency situations when two-way radio communication is not available or practical, oral, hand, and semaphore safety signals have been established to protect project personnel. These signals will be made available to personnel for all phases of operation before going on-site. This will ensure quick communication during adverse or emergency situations.

Examples of established signals and their meanings are provided below.

<u>Signal</u>	<u>Indicates</u>
Hand gripping throat	Out of air, can't breath
Wave hands over head from side-to-side	Attention: stand-by for next signal
Swing hand from direction of person receiving signal to directly overhead and through in a circle	Come here
Pointed finger on extended arm	Look in that direction
Grip partner's wrist or both hands around wrist	Leave the area immediately
Hands on top of head	Need assistance
Thumbs up	OK, I'm alright, I understand
Thumbs down	No, negative

Examples of audio signals include:

<u>Signal</u>	<u>Indicates</u>
Short blast of air or vehicle horn	Caution or look here
Four (4) blasts of air or vehicle horn	Leave the area

Each field team member will be assigned a buddy. Field personnel will watch for hazards or problems his/her buddy might encounter. Buddies will pre-arrange hand signals or other means of emergency signals for communication when respiratory protection or distance makes communication difficult. Communication between buddies must be maintained at all times. Visual contact must be maintained between buddies. Further, buddies must remain in close proximity to each other in order to assist in case of emergencies.

11.4 EVACUATION

Emergency escape routes will be designated by the SHSO for use in situations where rapid egress from the Exclusion Zone is required. The locations of these routes will be reviewed with site personnel during daily tool-box meetings.

An emergency evacuation alarm (i.e., air or vehicle horn) will be kept on site. A series of regularly spaced, repeated blasts (four blasts) will be used to signify that all personnel should evacuate the work area. After exiting the work area, personnel will meet at an upwind location designated by the SHSO (or his designated site representative). The emergency alarm will be sounded in the event of any serious problem or emergency on-site which requires the assistance of site personnel or the evacuation of the construction team.

In all situations when an on-site emergency results in evacuation of the Exclusion Zone, personnel will not be permitted to reenter until:

- ▶ The conditions resulting in the emergency have been corrected;
- ▶ The hazards have been reassessed;
- ▶ This HASP has been reviewed; and
- ▶ Site personnel have been briefed on any changes in the HASP.

11.5 EMERGENCY SERVICES/EMERGENCY VEHICLE ACCESS

Emergency telephone numbers (see Attachment B) will be posted at each project site telephone. Directions to the local hospital (see Attachment B) also will be posted at the site.

In the event that emergency services personnel (police, fire, rescue) need access to a location which is blocked by the working crew operations, those operations (equipment, materials, etc.) will be moved immediately to allow access. Emergency crews will be briefed as to site conditions and hazards by the SHSO (or his designated site representative).

11.6 WEATHER-RELATED HAZARD RESPONSE

Threats to site personnel can arise from natural causes (i.e., lightning, high winds, etc.). In the event that severe weather is imminent, the SHSO will notify field team members. As the storm approaches, all work will cease, loose objects will be secured, and site personnel will take shelter at pre-arranged locations. After the severe weather event has passed, the SHSO will inspect the work area for safety hazards prior to resuming work.

11.7 SPILL CONTROL AND CONTINGENCY PLAN

A site-specific Spill Prevention and Contingency Plan for equipment refueling is provided in Attachment C.

11.8 PERSONAL INJURIES

In the event of personal injuries the following procedures will be enacted.

1. **Initial alarm and first aid.** Upon observation of an injury, employees will quickly get the attention of other nearby workers; immediately act to protect the injured person from a life-threatening situation; render appropriate first aid; and warn unsuspecting persons of the potential hazard.
2. **Notify the SHSO.** Utilizing available personal radio communications or other rapid communication methods, the SHSO (or his designated site representative) will be notified of the situation, the identity of the injured person, the type of injury, and the project site location.
3. **Ambulance and hospital services.** The SHSO (or his designated site representative) will immediately assess the situation and, if necessary, notify the designated off-site hospital of the emergency situation.
4. **Follow-up.** The SHSO will determine why the injury occurred, and will take appropriate steps to prevent a similar recurrence. Events associated with the injury will be recorded in the safety officer's logbook.

An Incident Report Form (sample provided in Attachment A) must be completed by the SHSO and submitted to Project Manager within 24 hours of the injury.

11.8.1 Personnel Injury in the Exclusion Zone

Upon notification of any injury in the Exclusion Zone, the designated emergency signal will be sounded. All site personnel will assemble at a pre-arranged location. A rescue team made up of the SHSO (or his designated site representative) and other personnel as needed who have received proper training (see Section 4.0) will enter the Exclusion Zone (if required) to remove the injured person to the boundary of the Exclusion Zone.

The SHSO (or his designated site representative) then will evaluate the nature of the injury. Appropriate first aid will be initiated (see Section 11.12), and the ambulance and designated medical facility (Attachment B) will be contacted if required. No persons will reenter the Exclusion Zone until the cause of the injury or symptoms of the illness have been determined.

11.8.2 Personnel Injury in the Support Zone

Upon notification of an injury in the Support Zone, the SHSO (or his designated site representative) will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue. The appropriate first aid will be initiated (see Section 11.12) and necessary follow-up as stated in Section 11.5 above. If the injury increases the risk to others, the designated emergency signal will be sounded and all site personnel will move a prearranged location for further instructions. Activities on site will stop until the added risk is removed or minimized.

11.9 FIRE/EXPLOSION

The following contingency plan will be implemented in the event of a fire at the project site.

1. **Initial Alarm.** Upon observation of any on-site fire, personnel must immediately notify the SHSO (or his designated on-site representative). No attempt will be made to extinguish the fire prior to sounding the alarm.
2. **Control and/or extinguish small fires which can be suppressed promptly with available on-site equipment.** Without risking personal injury, an attempt will be made to control or extinguish small fire(s) utilizing ABC-type fire extinguishers. Water will not be used except on wood or paper fires.
3. **Notify local fire company.** The SHSO (or his designated on-site representative) will immediately assess the situation and, if deemed necessary, notify the local fire department of the location and type of fire or explosion. If required, the SHSO (or his designated site representative) will immediately order the site evacuated if a fire occurs which cannot be controlled with a portable fire extinguisher.
4. **Follow-up.** The SHSO will determine why the fire or explosion occurred, and will take appropriate steps to prevent a similar recurrence. Events associated with the fire or explosion will be recorded in the safety officer's logbook.

An Incident Report Form (sample provided in Attachment A) must be completed by the SHSO and submitted to the Project Manager within 24 hours of the fire/explosion.

11.10 PERSONAL PROTECTIVE EQUIPMENT FAILURE

If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy immediately will leave the Exclusion Zone and notify the SHSO (or his designated site representative). Reentry will not be permitted until the equipment has been replaced or repaired.

11.11 OTHER EQUIPMENT FAILURE

If any on-site equipment other than PPE (see Section 11.10 above) fails to operate properly, the SHSO (or his designated site representative) will be notified. The SHSO (or his designated site representative) then will determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents the completion of the assigned tasks, all personnel will leave the Work Zone until the situation is evaluated and all appropriate actions taken.

11.12 EMERGENCY EQUIPMENT AND ON-SITE FIRST AID

Emergency and first aid equipment to be maintained on-site includes:

- ▶ At least one first aid kit will be provided and maintained fully stocked at the site.
- ▶ The first aid kit locations will be specifically marked by the SHSO. Adequate water and other supplies necessary to cleanse and decontaminate burns, wounds, or lesions will be provided.
- ▶ 2A-10 B:C type dry chemical fire extinguishers will be provided at all site locations where flammable materials present a fire risk.

Agencies and medical facilities to be contacted in the event of an on-site emergency are identified in Attachment B of this HASP. The Emergency Response Notification Table also includes the route to the nearest hospital. The table will be posted in a prominent location(s) on site.

If a site worker becomes injured or ill, Red Cross first aid procedures will be followed. First aid or other appropriate initial actions will be provided by the site personnel closest to the incident. If the injury to the worker is chemical in nature, the following first aid procedures are to be instituted:

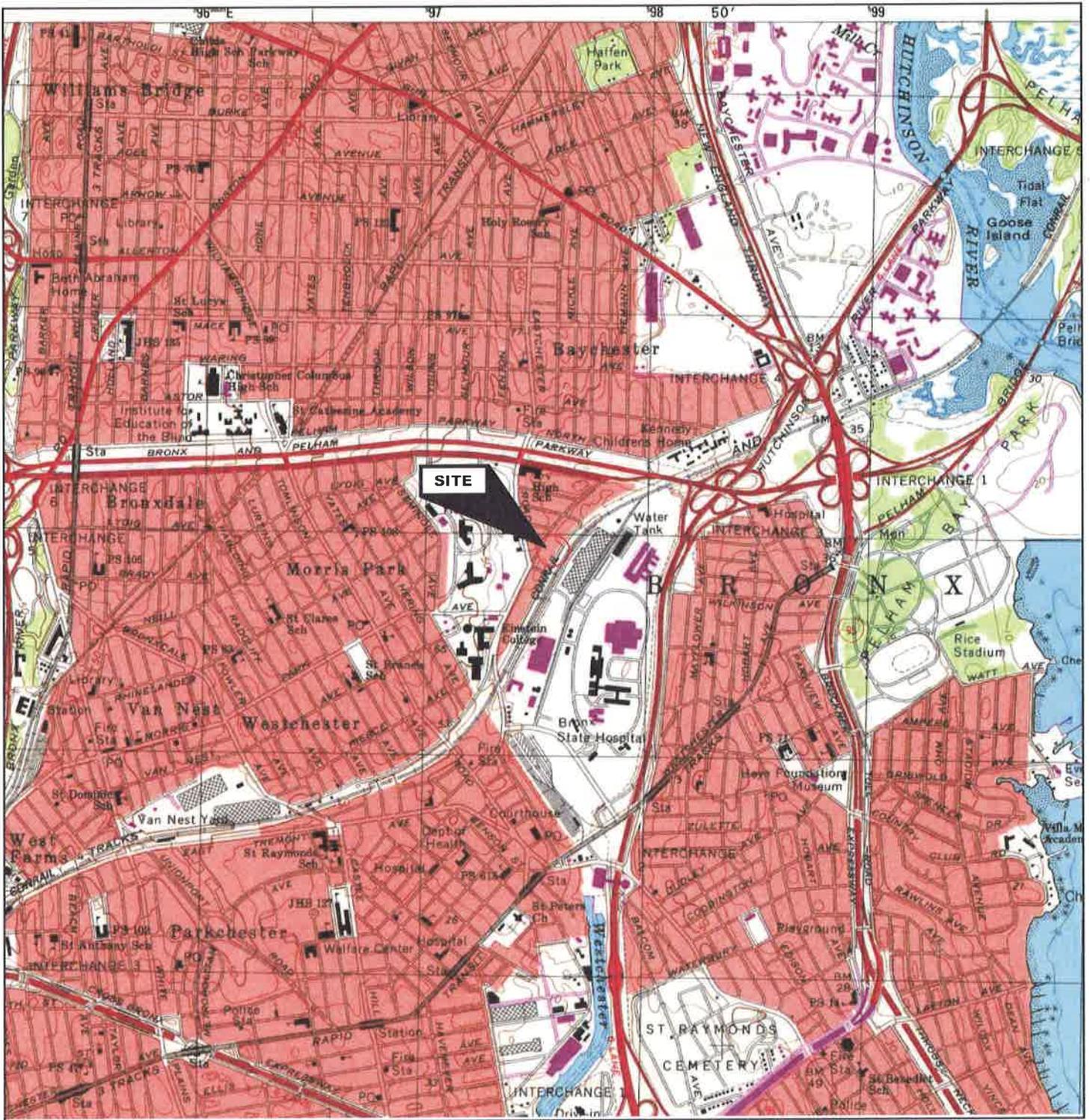
- ▶ ***Eye Exposure.*** If contaminated solids or liquids get into the eyes, wash eyes immediately using large amounts of water and lifting the lower and upper lids occasionally. Wash for at least 15 minutes. Obtain medical attention.
- ▶ ***Skin Exposure.*** If contaminated solids or liquids get on the skin, promptly wash the contaminated skin using soap and water. Obtain medical attention immediately when exposed to concentrated solids or liquids.
- ▶ ***Respiratory Exposure.*** Move victim to fresh air at once and begin CPR. Obtain immediate medical attention.
- ▶ ***Ingestion Exposure.*** For swallowed contaminants, identify the item swallowed. Follow appropriate procedures and obtain medical attention as soon as possible.

Any person transported to the hospital for treatment related to an exposure injury will take with them the appropriate information (i.e., Table 1 of this HASP or MSDS) on the chemical(s) to which he/she has been exposed. MSDSs (if available) for chemicals known or suspected to exist on site will be maintained on site by the SHSO.



FIGURE 1
Site Location Map

Historical Topographic Map

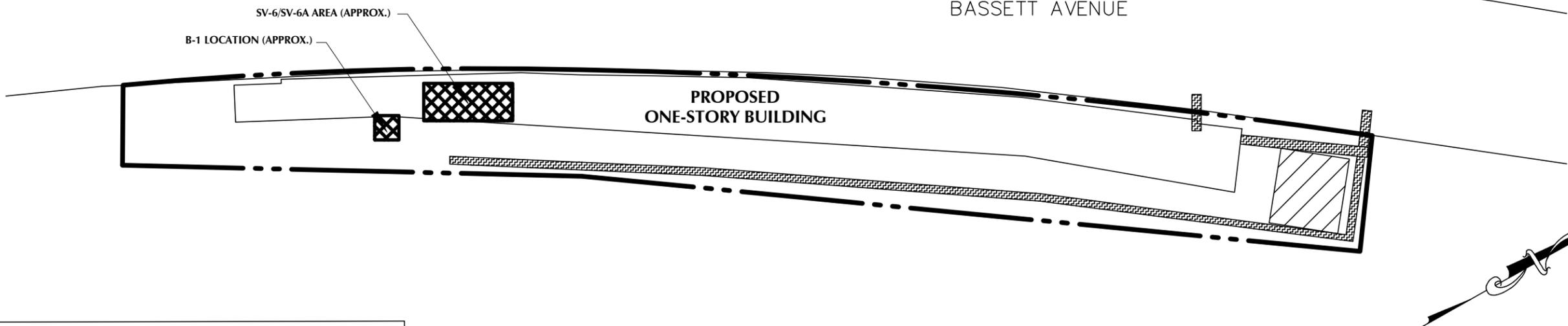
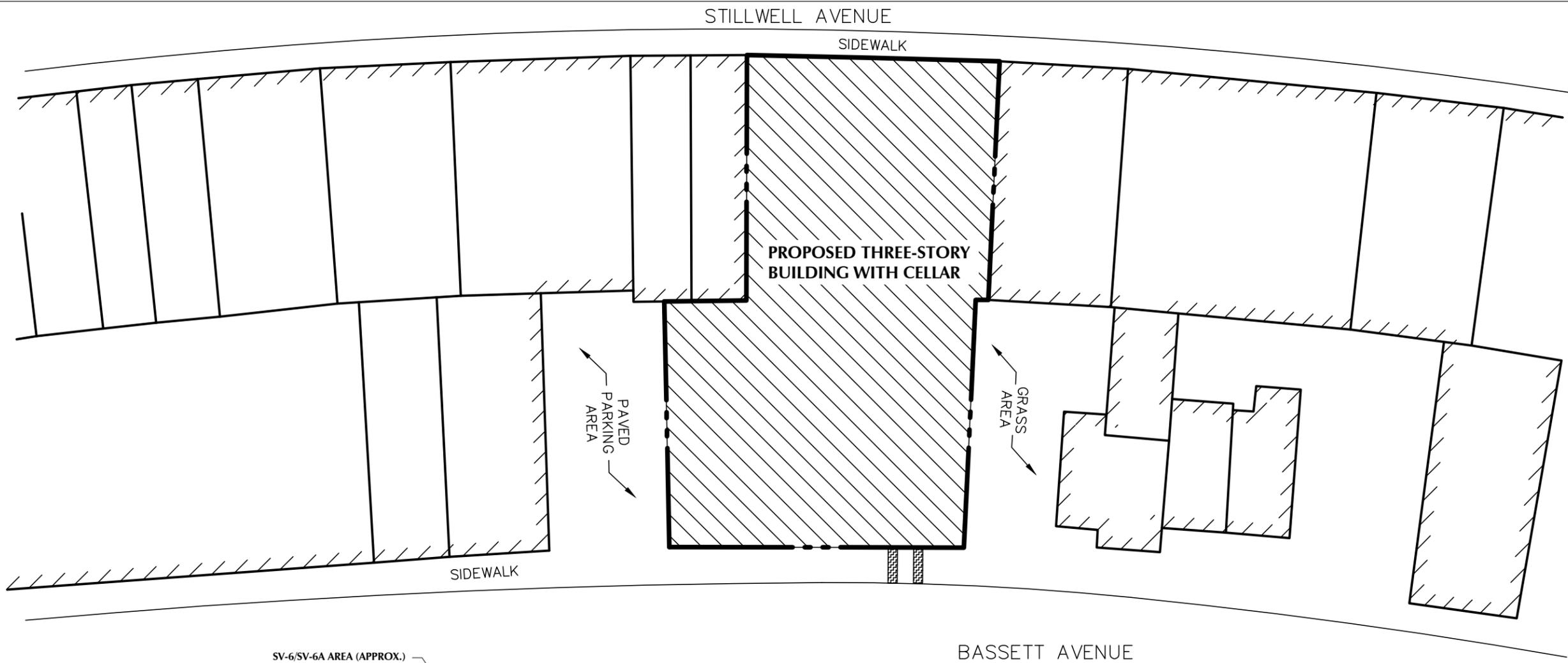


N ↑	TARGET QUAD	SITE NAME:	Proposed Self-Storage Facility	Whitestone Associates, Inc. FIGURE 1
	NAME: FLUSHING	ADDRESS:	1538 Stillwell Avenue Bronx, NY 10461	
	MAP YEAR: 1995	LAT/LONG:	40.8538 / -73.8419	
	SERIES: 7.5			
	SCALE: 1:24000			



FIGURE 2
Proposed Excavation, Grading,
and Soil/Fill Reuse and Backfilling
Location Plan

L:\Data\Job Folders\2011\111829EU\Drawings and Plans\111829.002 P EXCAV PLAN HASP.dwg

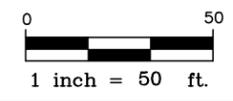


LEGEND/NOTES

	PROPOSED "HOT-SPOT" EXCAVATION (APPROX.)
	PROPOSED STORMWATER MANAGEMENT SYSTEM EXCAVATION (APPROX.)
	PROPOSED UTILITY EXCAVATION (APPROX.)
	PROPOSED CELLAR EXCAVATION (APPROX.)
	SUBJECT PROPERTY BOUNDARY (APPROX.)

REFERENCE

THIS PLAN IS BASED UPON A MAY 23, 2013 (LAST REVISED FEBRUARY 3, 2014)
 UTILITY PLAN PREPARED BY LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, INC.



TITLE:
**PROPOSED EXCAVATION, GRADING,
 AND SOIL/FILL REUSE AND BACKFILLING
 LOCATION PLAN**



WHITESTONE ASSOCIATES, INC.
 35 TECHNOLOGY DRIVE
 WARREN, NEW JERSEY 07059
 908.668.7777 • 908.754.5936 FAX

CLIENT: STILLWELL SELF STORAGE, LLC

PROJECT: HASP
 PROPOSED SELF-STORAGE FACILITY
 1538 STILLWELL AVENUE AND
 1540 BASSETT AVENUE
 BRONX, BRONX COUNTY, NEW YORK

PROJECT #:
 EJ111829.002

BY:
 GR

PROJ. MGR.:
 CS

DATE:
 09/05/14

SCALE:
 1" = 50'

FIGURE:
 2



ATTACHMENT A
Sample Health & Safety
Report Forms

DAILY SAFETY REPORT

Project Name: Proposed Self-Storage Facility Date: _____
 Project Location: Stillwell Avenue and Bassett Avenue; Bronx, NY

Weather Conditions

_____ A.M. Rain/Snowfall: _____ Inches (Approx.)
 _____ P.M. Temp.: ____°F (Minimum) ____°F (Maximum)

Scheduled Work Activities

Personnel	Activity	PPE	Equipment

Noticed Deficiencies/Corrective Action

Deficiency	Corrective Action	Date Corrected	Time Corrected

Accidents/Incidents/Illnesses: (Briefly Describe and Complete In Full Incident Report Form For Submittal to the Project Manager and QC Supervisor.) _____

Miscellaneous Comments: _____

Report Completed By:

_____ SHSO (Printed Name) _____ SHSO (Signature)

Date: _____

INCIDENT REPORT

Page: 2 of 5

INJURIES - FIRST INJURED PERSON:

Name of Injured: _____

Street Address: _____

City/State/Zip: _____

SSN: _____ Age: _____ Sex: _____

Years of Service: _____ Time on Present Job: _____

Job Title/Classification: _____

Severity of Injury: Non-Disabling Disabling Fatality Medical Treatment

Estimated No. of Days Away from Job: _____

Nature of Injury/
Illness: _____

Classification of Injury:

_____ Fractures	_____ Heat Burns	_____ Cold Exposure
_____ Dislocations	_____ Chemical Burns	_____ Frostbite
_____ Sprains	_____ Radiation Burns	_____ Heat Stroke
_____ Abrasions	_____ Bruises	_____ Heat Exhaustion
_____ Lacerations	_____ Blisters	_____ Concussion
_____ Punctures	_____ Toxic Resp. Exp.	_____ Faint/Dizziness
_____ Bites	_____ Respiratory Allergy	_____ Toxic Ingestion
_____ Dermal Allergy	_____ Other (Describe): _____	

Part of Body Affected: _____

Degree of Disability: _____

Date Medical Care was Received: _____

Where Medical Care was Received: _____

Address of Medical Care (If Off-Site): _____

If Hospitalized:

Hospital Name: _____

Address: _____

Telephone Number: _____

Physician:

Name: _____

Address: _____

Telephone Number: _____

INCIDENT REPORT

Page: 3 of 5

INJURIES - SECOND INJURED PERSON:

If more than two injuries, provide information on separate sheet.

Name of Injured: _____

Street Address: _____

City/State/Zip: _____

SSN: _____ Age: _____ Sex: _____

Years of Service: _____ Time on Present Job: _____

Job Title/Classification: _____

Severity of Injury: Non-Disabling Disabling Fatality Medical Treatment

Estimated No. of Days Away from Job: _____

Nature of Injury/
Illness: _____

Classification of Injury:

_____ Fractures	_____ Heat Burns	_____ Cold Exposure
_____ Dislocations	_____ Chemical Burns	_____ Frostbite
_____ Sprains	_____ Radiation Burns	_____ Heat Stroke
_____ Abrasions	_____ Bruises	_____ Heat Exhaustion
_____ Lacerations	_____ Blisters	_____ Concussion
_____ Punctures	_____ Toxic Resp. Exp.	_____ Faint/Dizziness
_____ Bites	_____ Respiratory Allergy	_____ Toxic Ingestion
_____ Dermal Allergy	_____ Other (Describe): _____	

Part of Body Affected: _____

Degree of Disability: _____

Date Medical Care was Received: _____

Where Medical Care was Received: _____

Address of Medical Care (If Off-Site): _____

If Hospitalized:

Hospital Name: _____

Address: _____

Telephone Number: _____

Physician:

Name: _____

Address: _____

Telephone Number: _____

INCIDENT REPORT

Page: 4 of 5

PROPERTY DAMAGE:

Brief Description of Property Damaged: _____

Estimate of Damage: \$ _____

INCIDENT LOCATION:

INCIDENT ANALYSIS:

Causative Agency Most Directly Related to Accident (Object, Substance, Material Machinery, Equipment, Conditions): _____

Was weather a factor? _____

Unsafe Mechanical/Physical/ Environmental Condition at Time of Incident (Be Specific, **Must be Answered**): _____

Personal Factors (Improper Attitude, Lack of Knowledge or Skill, Slow Reaction, Fatigue): _____

INCIDENT REPORT

Page: 5 of 5

ON-SITE INCIDENTS:

Level of Personal Protection _____
Equipment Required in Site _____
Safety Plan: _____

Modifications: _____

Was Injured Using Required Equipment? YES NO

Comments: _____

If not, how did actual equipment use differ from Plan? _____

ACTION TAKEN TO PREVENT RECURRENCE: Be very specific. What has or will be done? When will it be done? Who is the responsible party to insure that the correction is made?

INCIDENT REPORT COMPLETED BY:

(Printed Name)

(Signature)

OTHERS PARTICIPATING IN INVESTIGATION:

(Printed Name/Title)

(Signature)

(Printed Name/Title)

(Signature)

(Printed Name/Title)

(Signature)

INCIDENT FOLLOW-UP REPORT

Project Name: Proposed Self-Storage Facility Report Date: _____

Project Location: Stillwell Avenue and Bassett Avenue;
Bronx, NY Project No. _____

Report Prepared By: _____ Incident Date: _____

BRIEF DESCRIPTION OF INCIDENT:

OUTCOME OF INCIDENT:

PHYSICIAN'S RECOMMENDATIONS:

DATE INJURED RETURNED TO WORK: _____

AIR MONITORING REPORT

Project Name: Proposed Self-Storage Facility

Date: _____

Project Location: Stillwell Avenue & Bassett Avenue

Project No.: _____

Bronx, Bronx County, NY

Page: 1 2

INSTRUMENT CALIBRATION:

Instrument	Calibrated By:	Date	Time(s)	

PERIMETER & PERSONNEL SAMPLING:

Perimeter Samples
Collected:

Perimeter and Personnel
Sample Results from
Previous Days (Provide
Data When Received,
Indicate Date on Which
Sample Was Collected):

METEOROLOGICAL DATA:

Temperature: _____ °F Wind Direction: _____ Humidity: _____ %

Weather Condition (e.g., Gusty, Rain, Snow, Sun, Etc.) _____

COMMENTS:

AIR MONITORING REPORT

Project Name: Proposed Self-Storage Facility

Date: _____

Project Location: Stillwell Avenue & Bassett Avenue

Project No.: _____

Bronx, Bronx County, NY

Page: 2 2

INSTRUMENT CALIBRATION:

Instrument	Calibrated By:	Date	Time(s)	

PERIMETER & PERSONNEL SAMPLING:

Perimeter Samples Collected: _____

Perimeter and Personnel Sample Results from Previous Days (Provide Data When Received, Indicate Date on Which Sample Was Collected): _____

METEOROLOGICAL DATA:

Temperature: _____ °F Wind Direction: _____ Humidity: _____ %
 Weather Condition (e.g., Gusty, Rain, Snow, Sun, Etc.) _____

COMMENTS:

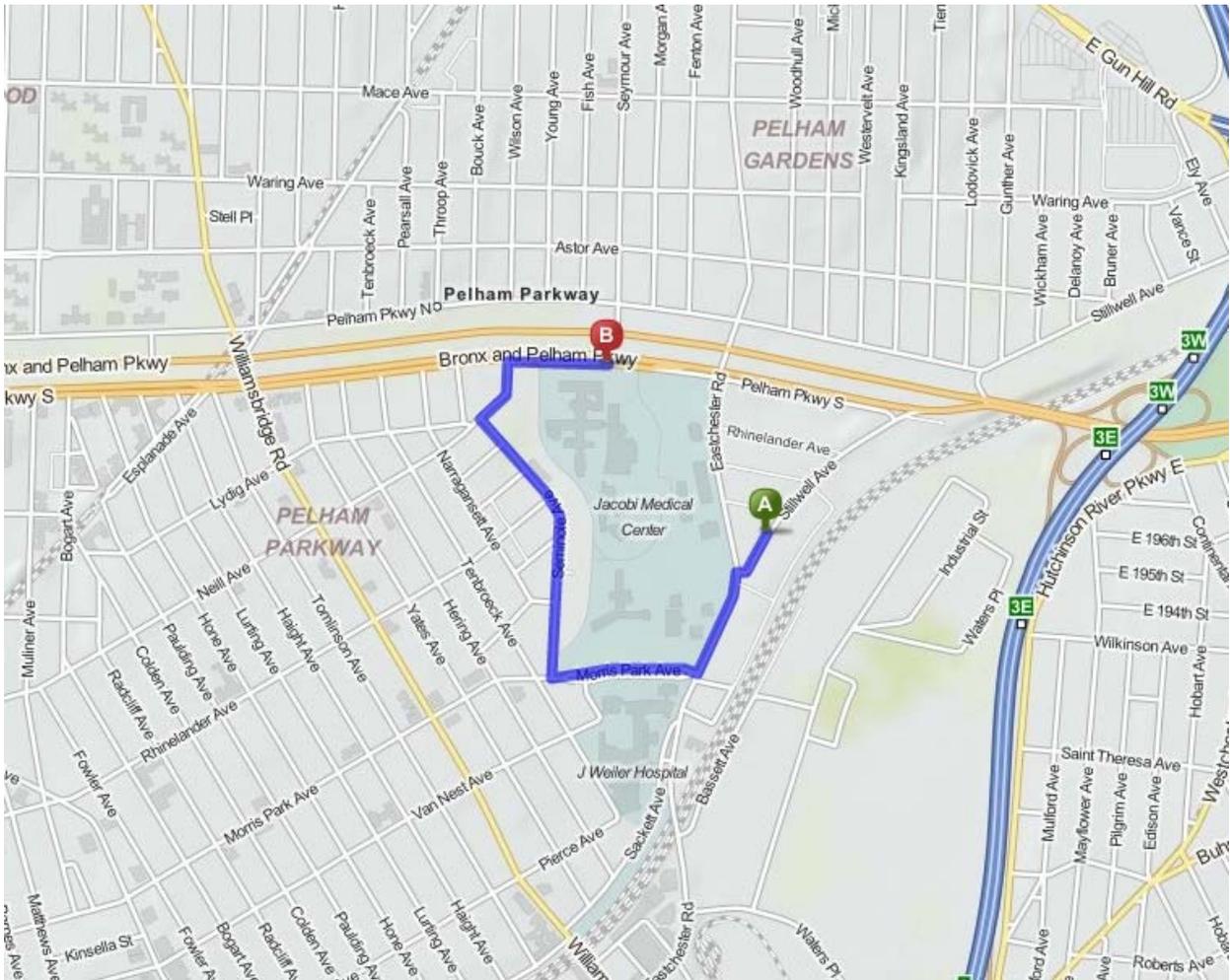
ATTACHMENT B
Emergency Notification Table
and Map to Hospital

**EMERGENCY NOTIFICATION TABLE
(Post On Site)**

Agency	Contact	Phone Number
Police	Emergency	911
Fire	Emergency	911
EMS/Ambulance	Emergency	911
Hospital	Jacobi Medical Center 1400 Pelham Parkway South Bronx, New York 10461	(718) 918-5000
Whitestone Associates, Inc.	Christopher Seib Project Manager	(908) 668-7777 <i>Office</i> (908) 803-5261 <i>Mobile</i>
	Michael Marsicano Site Inspector/Safety Officer	(908) 668-7777 <i>Office</i> (908) 285-7649 <i>Mobile</i>
Client Representatives (Stillwell Self Storage, LLC)	Eric Helstrom	(973) 630-9815
Spill Hotline	NYCDEP NYSDEC	(718) 595-4646 (800) 457-7362
NYC Office of Env. Remediation	Eric Ilijevich, Project Manager	(212) 341-2034
USEPA	Emergency Response Center	(800) 425-8500
	Regional Office	(800) 438-2474
Chemical Emergency Advice	CHEMTREC	(800) 424-9300
Poison Control Center	Hotline	(800) 962-1258
Utility Locating Service	New York City One-Call	(800) 272-4480 or 811
DIRECTIONS TO HOSPITAL (See Attached Map)	FROM THE SITE: Start out going southwest on Stillwell Ave toward Eastchester Road. Turn left onto Eastchester Road. Take the 1st right onto Morris Park Avenue. Take the 1st right onto Seminole Avenue. Turn right onto Neill Avenue. Neill Avenue becomes Wilson Avenue. Turn right onto Pelham Parkway South. Hospital is located at 1400 Pelham Parkway South on the right (approximately 1.07 miles, 3 minutes from the Site).	

MAP TO HOSPITAL

Jacobi Medical Center
1400 Pelham Parkway South
Bronx, New York 10461
718-918-5000



DIRECTIONS FROM SITE (A) TO HOSPITAL (B):

1. Start out going southwest on Stillwell Ave toward Eastchester Road. Turn left onto Eastchester Road.
2. Take the 1st right onto Morris Park Avenue.
3. Take the 1st right onto Seminole Avenue.
4. Turn right onto Neill Avenue. Neill Avenue becomes Wilson Avenue.
5. Turn right onto Pelham Parkway South. Hospital is located at 1400 Pelham Parkway South on the right (approximately 1.07 miles, 3 minutes from the Site).



ATTACHMENT C
Spill Prevention and
Contingency Plan

ATTACHMENT C

Spill Prevention and Contingency Plan

This Spill Prevention and Contingency Plan (SPCP) has been prepared for activities associated with the earthwork and remediation operations related to the Proposed Self-Storage Facility located at 1538 Stillwell Avenue and 1540 Bassett Avenue (Block 4219, Lot 16 and Block 4226, Lot 290) in the Bronx, Bronx, New York. Copies of this plan will be maintained by the SHSO on site. This plan will be reviewed with field personnel prior to project start-up and thereafter as necessary during regular safety meetings and daily briefings.

1.0 SPILL EMERGENCY NUMBERS

The names and phone numbers of emergency services and offices to be contacted in the event of a spill or other on-site emergency is provided in Attachment B of the HASP. This table will be posted by the SHSO in prominent position(s) throughout the site.

2.0 DEFINITION

For the purposes of this plan, a spill is defined as any material accidentally or intentionally leaked, pumped, poured, dumped, or emitted onto the ground, surface water, groundwater, or air. All spilled material will be considered hazardous; cleaned up following established spill response procedures; and reported as described in Section 4.0 of this plan.

Spills will be categorized in one of two ways: Priority 1 or Priority 2.

- ▶ **Priority 1 spills** result in a significant release of contamination into the air or onto the ground outside the exclusion zone.
- ▶ **Priority 2 spills** result in minor spillage (less than five [5] gallons) which can be cleaned up easily.

3.0 POTENTIAL SOURCES AND PREVENTATIVE MEASURES

The contracted work has one potential spill source.

Potential Spill Source	Preventative Measure(s)
Refueling on-site equipment	The amount of fuel kept on site should be limited to only that required for daily equipment usage. An easily accessible spill response station will be set up in the immediate vicinity of the equipment fueling area. The spill response station should contain absorbent pillows, floor dry, shovels, and/or brushes to be used in the event of a spillage.

4.0 SPILL RESPONSE PROCEDURES

The following procedures will be utilized in the event of a spill or release at the project site.

4.1 Initial Containment and Response

In the event of a spill, the following initial containment and response procedures must be implemented immediately.

1. ***Administer first aid to injured/contaminated persons.*** Any employee observing a spill will act immediately to remove and/or protect injured/contaminated persons from any life-threatening situation. First aid and/or decontamination procedures (see HASP, Section 11.12) will be implemented as appropriate.
2. ***Warn unsuspecting persons/vehicles of the hazard.*** Personnel will act to prevent any unsuspecting persons from coming in contact with spilled materials by alerting other nearby persons and by obtaining assistance of other project personnel who are familiar with spill control and cleanup techniques.
3. ***Stop the spill at the source, if possible.*** Without taking unnecessary risks, personnel will attempt to stop the spill at the source. This may involve activities such as uprighting a drum, closing a valve, or temporarily sealing a hole with a plug. Contractor personnel will not expend more than a brief effort prior to notifying the SHSO.
4. ***Notify the SHSO.*** Utilizing available on-site communication systems or other rapid communication procedures, the SHSO will be notified of the spill, including information on material spilled, quantity, personnel injuries, and immediate life-threatening hazards.

NOTE: If a flammable liquid is involved in the spill, remove all ignition sources and monitor for explosive conditions with an explosimeter during the clean-up. Also, remove any surrounding materials that might chemically react with the spill materials.

4.2 Spill Containment

The SHSO will make a rapid assessment of any spill occurring at the project site; apply the appropriate safety considerations to the use of protective clothing and equipment in the spill release zone; and direct primary containment measures.

Depending upon the nature of the spill, primary containment measures may include, but are not limited to:

- ▶ Constructing a temporary containment berm to control the horizontal flow of the spill using absorbent pads, booms, sandbags, sand, and/or other inert materials;
- ▶ Placing drums under the leak to collect the spilling material before it flows onto the ground;
- ▶ Digging a sump, installing a polyethylene liner, and diverting the spilled material to the sump; and/or
- ▶ Transferring the material from its original container to another container.

The SHSO will notify the Project Manager about the spill and steps taken to institute primary containment.

4.3 Spill Clean-Up

The SHSO and Project Manager will develop an incident-specific spill clean-up plan which takes into consideration associated hazards, quantity of spilled material, disposal methods, and costs. The incident-specific spill clean-up plan will be reviewed for acceptance by the Environmental Engineer and/or other involved federal, state, or local regulatory personnel.

Once approved, the spill clean-up plan will be implemented under the direct supervision of the SHSO.

Generally, all visually detectable spills, leaks, or releases of fuel oil will be collected and cleaned up using absorbent pads, booms, sandbags, sand, and/or other inert materials as practicable using the response procedures outlined below.

Spill Type	Response
Waste Oil on Ground	Contain spill and excavate visually contaminated soil. Containerize, sample for classification purposes, and dispose off site.
Building/Paved Surfaces	Contain spill. Power wash contaminated area. Collect and containerize resultant washwater. Sample for classification purposes and dispose off site.
Vehicle	Power wash in CRZ. Collect, handle, and dispose of decon fluids.

4.4 Inspection

A representative of the Environmental Engineer, the SHSO, and the Project Manager will jointly inspect the spill site to determine that the spill has been cleaned up to the satisfaction of involved regulatory agencies.

4.5 Spill Reporting

In the event of an incident, the SHSO will:

1. Immediately contact the Project Manager.
2. Initiate the emergency procedure steps provided in Sections 4.1 and 4.2 of this Plan, and
3. Complete a Spill Report Form (attached) for submittal to the Project Manager.

Priority 1 spills will be reported immediately following the incident. A written report will be submitted not more than seven days after the telephone call reporting the occurrence. The written report will include the item spilled, quantity, identification and manifest numbers, whether the amount spilled is USEPA/State/District reportable, exact location, containment procedures used, anticipated clean-up and disposal procedures, and disposal of spill residue.

5.0 EQUIPMENT

The following spill control equipment will be utilized as needed:

- ▶ Spill (absorbent) pads;
- ▶ Floor dry;
- ▶ Shovels and brushes;
- ▶ Salvage drums;
- ▶ Polyethylene sheeting;
- ▶ Sandbags;
- ▶ Pneumatic foam;
- ▶ Emergency eye wash station;
- ▶ Emergency decontamination equipment;
- ▶ Fire extinguishers, 10 A-20BC rated; and
- ▶ Modified Level D PPE.

APPENDIX 5
**Sample of Hazardous or Non-
Hazardous Disposal Manifests**

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number 007744181 JJK			
5. Generator's Name and Mailing Address				Generator's Site Address (if different than mailing address)				
Generator's Phone:								
6. Transporter 1 Company Name				U.S. EPA ID Number				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address				U.S. EPA ID Number				
Facility's Phone:								
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		No.	Type					
1.								
2.								
3.								
4.								
14. Special Handling Instructions and Additional Information								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offoror's Printed/Typed Name				Signature		Month	Day	Year
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name				Signature		Month	Day	Year
Transporter 2 Printed/Typed Name				Signature		Month	Day	Year
18. Discrepancy								
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
				Manifest Reference Number:				
18b. Alternate Facility (or Generator)				U.S. EPA ID Number				
Facility's Phone:								
18c. Signature of Alternate Facility (or Generator)						Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1.		2.		3.		4.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a								
Printed/Typed Name				Signature		Month	Day	Year

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number 2. Page 1 of 3. Emergency Response Phone 4. Waste Tracking Number

5. Generator's Name and Mailing Address Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name U.S. EPA ID Number

7. Transporter 2 Company Name U.S. EPA ID Number

8. Designated Facility Name and Site Address U.S. EPA ID Number

Facility's Phone:

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1.				
2.				
3.				
4.				

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1.				
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable International and national governmental regulations.

Generator's/Offeror's Printed/Typed Name Signature Month Day Year

15. International Shipments Import to U.S. Export from U.S. Port of entry/exit: _____
 Transporter Signature (for exports only): _____ Date leaving U.S.: _____

16. Transporter Acknowledgment of Receipt of Materials
 Transporter 1 Printed/Typed Name Signature Month Day Year

Transporter 2 Printed/Typed Name Signature Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space Quantity Type Residue Partial Rejection Full Rejection

Manifest Reference Number: U.S. EPA ID Number

17b. Alternate Facility (or Generator)

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name Signature Month Day Year

GENERATOR
INTL
TRANSPORTER
DESIGNATED FACILITY



APPENDIX 6
Vapor Mitigation
System Specifications

LIQUID BOOT® PLUS - Brownfield Membrane and Vent Systems Specifications

Section 07 2623.19 – July 2013 (Supersedes All Previous Versions)

Version 5.1

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. General and Supplementary Conditions and Division 1- General Requirements applies to this section. Provide gas vapor barrier as indicated, specified and required.

1.02 WORK SUMMARY

- A. Work in this section - principal items include:
1. Gas vapor barrier providing protection from the following gases: Methane, other Hydrocarbon vapors in concentrations up to 20,000ppm, Hydrogen Sulfide, Radon.
 2. Soil vapor extraction piping and low profile venting system beneath the gas vapor membrane.

1.03 RELATED REQUIREMENTS:

- A. Other specification Sections which directly relate to the work of this section include, but are not limited to, the following:
1. Division 03 Section "Cast-In-Place Concrete" for concrete slabs.
 2. Division 07 Section "Self-Adhering Sheet Waterproofing."
 3. Division 07 Section "Cold Fluid-Applied Waterproofing."
 4. Division 07 Section "Crystalline Waterproofing."
 5. Division 26 Section "Conduit and other Electrical Penetrations."
 6. Division 31 Section "Earthwork, Excavation and Fill, Shoring."
 7. Division 33 Section "Geocomposite Foundation Drainage."

1.04 SYSTEM DESCRIPTION

- A. Provide gas/vapor barrier system with prefabricated composite venting system to mitigate the passage of gas or vapor and install without defects, damage or failure. Gas vapor barrier shall be high performance VI-20 with EVOH core technology, Liquid Boot®, UltraShield protection course and applicable accessory products

1.05 SUBMITTALS

- A. General: Prepare and submit specified submittals in accordance with "Conditions of the Contract" and Division 1 Submittals Sections.
- B. Product Data: Submit manufacturer's product data, with complete general and specific installation instructions, recommendations, and limitations.
- C. Product Samples: Submit representative samples of the following for approval:
1. GeoVent – low profile vapor extraction system.
 2. VI-20 – high density polyethylene (HDPE) and ethylene vinyl alcohol (EVOH) composite membrane.
 3. Liquid Boot® Detailing Fabric – ethylene vinyl alcohol (EVOH) and polypropylene composite membrane.
 4. BaseFabric T-40 or T-60 – thermally bonded non woven polypropylene fabric.
 5. Liquid Boot® - asphalt latex spray applied gas vapor barrier membrane.
 6. UltraShield G-1000 – polypropylene needle punched protection course.
- D. Contractor Certificate: At time of bid, submit written certification that installer has current Approved Applicator status with gas vapor membrane manufacturer.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Gas vapor membranes and all accessory products shall be provided by a single manufacturer with a minimum of 25 years experience in the direct production and sales of gas vapor systems. Manufacturer shall be approving an acceptable installer/applicator and recommending appropriate installation methods.

- B. Installer Qualifications: A firm that is trained and approved by the gas vapor barrier system manufacturer for installation of the gas vapor barrier system required for this Project. The installing company should have at least three (3) years experience in work of the type required by this section, who can comply with manufacturer's warranty requirements.
- C. Pre-installation Conference: A pre-installation conference shall be held at the site prior to commencement of field installation to establish procedures to maintain required working conditions and to coordinate this work with related and adjacent work. Verify that final gas vapor barrier components and system details comply with gas vapor barrier manufacturer's current installation requirements and recommendations. Pre-con meeting attendees should include representatives for the owner, architect, inspection firm, general contractor, gas vapor installer/applicator, concrete contractor, excavating/backfill contractor, and mechanical and electrical contractors if work penetrates the gas vapor membrane.
- D. Independent Inspection: Owner shall make all arrangements and payments for an independent inspection service to monitor gas vapor membrane material installation compliance with the project contract documents and manufacturer's published literature and site specific details. Independent Inspection Firm shall be an approved company participating with the gas vapor membrane manufacturer's Certified Inspection Program. Inspection service shall produce reports and digital photographs documenting each inspection. Reports shall be made available to the Contractor, gas vapor membrane installer, gas vapor membrane material manufacturer, and Architect. Inspections should include substrate examination, beginning of gas vapor membrane installation, periodic intervals, and final inspection prior to concrete or backfill placement against the gas vapor barrier.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Delivery and Handling: Deliver materials in factory sealed and labeled packaging. Sequence deliveries to avoid delays, while minimizing on-site storage. Handle and store following manufacturer's instructions, recommendations and material safety data sheets. Protect from construction operation related damage, as well as, damage from weather, excessive temperatures and prolonged sunlight. Remove damaged material from site and dispose of in accordance with applicable regulations.
- B. Do not allow material to freeze in containers
- C. Remove and replace liquid materials that cannot be applied within their stated shelf life.

1.08 JOB CONDITIONS

- A. Environmental Limitations: Apply gas vapor barrier system within the range of ambient and substrate temperatures recommended by manufacturer. Do not apply gas vapor barrier system to a damp or wet substrate, when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F (3 deg C) above dew point.
- B. Do not apply gas vapor barrier system in snow, rain, fog or mist, or when such weather conditions are imminent during application and curing period.
- C. Maintain adequate ventilation during application and curing of gas vapor barrier system materials.
- D. Ambient temperature shall be within manufacturer's specifications. If winter conditions apply, we recommend the use of space heaters and necessary cover (i.e. visqueen) to bring the ambient temperature to at least +45°F until the protection course and structural slab rebar or a mudslab protection course has been placed.
- E. Surface preparation shall be per manufacturer's specification.

1.09 COORDINATION

- A. Coordinate application of gas vapor barrier with installation of other construction.
 1. Positively secure plumbing, electrical, mechanical, and structural items to be under or passing through the gas vapor barrier in their proper positions and appropriately protected prior to membrane application.
 2. Install gas vapor barrier before placement of reinforcing steel. When not possible, mask all exposed reinforcing steel prior to membrane application.

1.10 PRODUCT WARRANTY

- A. Upon delivery and acceptance by the Owner of material specified by this Section, the materials manufacturer will provide a written one year standard material indicating the material conforms to its product specifications and is free of material defects. Factors affecting the results obtained from using this product including weather, equipment utilized, construction, workmanship and other variables are all beyond the manufacturer's control.

Under this product warranty, manufacturer will provide replacement material, at no charge, for any product proven not to meet the material properties listed in the published product literature This warranty is in lieu of any and all other warranties expressed or implied (including any

implied warranty of merchantability or fitness for a particular use), and manufacturer shall have no further liability of any kind including liability for consequential or incidental damages resulting from any defects or delays caused by replacement or otherwise.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Provide Liquid Boot® Plus membranes, venting system and applicable accessories as manufactured by Colloid Environmental Technologies Company (CETCO), 2870 Forbs Ave, Hoffman Estates, IL 60192,, USA. Phone: (847) 851-1800; Fax: (847) 851-1899; Web-site: <http://www.sedimentremediation.com>.

2.02 QUALIFICATIONS

- A. The gas vapor barrier manufacturer must have produced at least 22 million square feet (2 million square meters) of gas vapor barrier, with at least 22 million square feet (2,000,000 square meters) installed. 10⁻¹³

2.03 MATERIALS

- A. VI-20® is a seven-layer co-extruded membrane made from ethylene vinyl alcohol (EVOH) and polyethylene to provide strength as well as resistance to VOC vapor transmission. VI-20 membrane is an under-slab barrier when used in conjunction with Liquid Boot® will inhibit volatile organic compound vapor migration through the concrete.

VI-20 geomembrane barrier physical properties:

PROPERTIES	TEST METHOD	VALUE
Thickness, nominal	ASTM D5199	0.51 mm
Weight	ASTM D5261	498 g/m ²
Tensile Strength	ASTM E154	258 N/cm (58 lb/in)
Methane Permeability	ASTM D 1434	< 5 x 10 ⁻¹⁰ m ² /d•atm
Radon Diffusion Coefficient		< 0.25 x 10 ⁻¹² m ² /s
Water Vapor Transmission	ASTM E154 & E96	0.0025 US Perms

- B. Fluid applied gas vapor barrier system - Liquid Boot®, a single course, high build, polymer modified asphaltic emulsion. Water borne and spray applied at ambient temperatures. A minimum thickness of 60 dry mils, unless specified otherwise as some cities and engineers may require a thicker membrane. Non-toxic and odorless. Liquid Boot® Trowel Grade has similar properties with greater viscosity and is trowel applied. Manufactured by CETCO in Santa Ana, CA and Cartersville, GA (714) 384-0111.

LIQUID BOOT® gas vapor barrier physical properties:

GAS VAPOR MEMBRANE	TEST METHOD	VALUE
Acid Exposure (10% H ₂ SO ₄ for 90 days)	ASTM D543	Less than 1% weight change
Diesel (1000 mg/l), Ethylbenzene (1000 mg/l), Naphthalene (5000 mg/l) and Acetone (500 mg/l) Exposure for 7 days	ASTM D543	Less than 1% weight change, Less than 1% tensile strength change
Radon Permeability	Tested by US Dept. of Energy	Zero permeability to Radon (222Rn)
Bonded Seam Strength Tests	ASTM D6392	Passed*
Micro Organism Resistance (Soil Burial)- average weight change,	ASTM D4068-88	Passed*
Methane Permeability	ASTM 1434-82	Passed*
Oil Resistance Test- average weight change, average tensile strength change, average tensile stress change, average elongation change, bonded seams, methane permeability	ASTM D543-87	Passed*
Heat Aging- average tensile strength change, average tensile stress change, average elongation change, bonded seams	ASTM D4068-88	Passed*
Dead Load Seam Strength	City of Los Angeles	Passed*
Environmental Stress-Cracking	ASTM D1693-78	Passed*
PCE Diffusion Coefficient	Tested at 120 mg/L	1.32 x 10 ⁻¹³ m ² /sec
TCE Diffusion Coefficient	Tested at 524 mg/L	9.07 x 10 ⁻¹³ m ² /sec
Soil Burial	ASTM E154-88	Passed
Water Vapor Permeability	ASTM E96	0.069 US Perms
Water Penetration Rate	ASTM D2434	<7.75 x 10 ⁻⁹ cm/sec

POTABLE WATER	TEST METHOD	VALUE
Toxicity Test	22 CCR 66696	Passed. CCR Bioassay—Flathead Minnow
Potable Water Containment	ANSI/NSF 61	NSF Certified for tanks >300,000 gal**
Hydrostatic Head Resistance	ASTM D751	Tested to 138 feet or 60 p.s.i
GENERAL INFORMATION	TEST METHOD	VALUE
Freeze-Thaw Resistance (100 Cycles)	ASTM A742	Meets criteria. No spalling or disbondment
Accelerated Weathering & Ultraviolet Exposure	ASTM D822	No adverse effect after 500 hours
Elongation	ASTM D412	1,332% - Ø reinforcement, 90% recovery
Tensile Strength	ASTM D412	58 p.s.i. without reinforcement
Tensile Bond Strength to Concrete	ASTM D413	2,707 lbs/ft ² uplift force

*per City of Los Angeles approval for 60-mil dry Liquid Boot

**per NSF approval for 80-mil Liquid Boot® potable water containment membrane

LIQUID BOOT® Agency Approvals:

1. City of Los Angeles Research Report # 24860-Approved for "Liquid Boot® Membrane for Below-Grade Waterproofing and Gas Barrier"
2. United States Navy-Approved for "Liquid Boot® for Use World Wide to Waterproof Earth-Covered Steel Ammunition Storage"
3. NSF International-NSF/61 approved for "Potable Water Tank Liner"
4. Canadian Construction Materials Board-Approved for "Waterproofing and Damp Proofing"
5. County of Los Angeles Department of public works-Approved for "Liquid Boot® Application as a Methane Gas Barrier"

C. ACCESSORY GAS VAPOR BARRIER PRODUCTS: All accessory gas vapor barrier materials shall be provided by the manufacturer or shall have manufacturer's written approval for substitution.

1. GeoVent – low profile vapor extraction system.
 - i. Liquid Boot® GeoVent end outlet.
 - ii. Liquid Boot® GeoVent interior Footing Sleeves.
 - iii. Liquid Boot® GeoVent Fabric Reinforced Tape.
2. Liquid Boot® Detailing Fabric – ethylene vinyl alcohol (EVOH) and polypropylene composite membrane.
3. Optional - vertical applications, Liquid Boot® BaseFabric T-40 or T-60 – thermally bonded nonwoven polypropylene fabric
4. UltraShield – polypropylene needle punched protection mat.
5. Adhesive system for Liquid Boot® UltraShield and Liquid Boot® UltraDrain: Use Liquid Boot® UltraGrip.
6. Hardcast CRT 1602 Tape 3" wide – covering cold joints, cracks form tie holes, etc.

PART 3 - EXECUTION

3.01 EXAMINATION

A. The installer, with the Owner's Independent Inspector present, shall examine conditions of substrates and other conditions under which this section work is to be performed and notify the contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected and are acceptable for compliance with manufacturer requirements. General substrate conditions acceptable for the gas vapor barrier installation are listed below. For conditions not covered in this Section, contact the gas vapor barrier manufacturer for guidance.

B. SOIL SUBSTRATES:

1. Moisture condition and compact sub-grade to a minimum relative compaction of 90 percent or as specified by civil/geotechnical engineer with finished surface smooth, uniform, free of debris and standing water.
2. Stones or dirt clods greater than 1/4 inch to be removed. Aggregate sub-bases shall be rolled flat, free from any protruding sharp edges.
3. Penetrations must be prepared in accordance with manufacturer's specifications. All form stakes that penetrate the membrane shall be of rebar which shall be bent over and left in the slab.
4. Trenches oversize are to be cut to accommodate gas vapor barrier membrane and protection course with perpendicular to sloped sides and maximum obtainable compaction. Finish grade and compact the adjoining grade.
5. Provide excavated walls vertical or sloped back, free of roots and protruding rocks.
6. Soil sterilant applications should at the sterilant manufacturer's recommended rate.

C. WOOD TIMBER SHORING: Wood lagging shoring should extend to the lowest level of the gas vapor membrane installation with any voids or cavities exterior of the lagging timbers filled with compacted soil or cementitious grout. Interior surface of lagging boards should be planar and tight together with gaps less than 1" (25 mm). Gaps in excess of 1" should be filled with cementitious grout, compacted soil, wood, extruded polystyrene (40 psi min.) Do not use plywood or other surface treatment over large lagging gaps that leave the cavity void.

D. CUT ROCK FACE OR AUGER CAST CAISSON SHORING WALLS: Interior surface of cut rock and concrete auger pile retention walls should be planar without irregular surface conditions, voids, and sharp transitions that would leave a void space to the outside of the gas vapor barrier installation. Irregular rock, void pockets, cracks, sharp concave transitions should be completely filled or smoothed with cementitious grout, shotcrete, or other approved solid material

- E. MECHANICAL OR OTHER PENETRATIONS: Mechanical, structural, or architectural materials that will pass through the plane of the gas vapor membrane shall be properly installed and secured in their final position prior to installation of the Liquid Boot® Plus system.
- F. CONCRETE: Concrete to be gas vapor proof shall be properly placed and consolidated. Reinforced structural slabs should be a minimum of 6" (150 mm) thick when placed on a working mud slab. Reinforced concrete slab(s) on compacted grade shall be a minimum of 4" (100 mm) thick.
 1. At cast in place concrete surfaces, provide a light broom finish or smoother, free of any dirt, debris, loose material, release agents or curing compounds. Fill voids more than 1/4 inch deep and 1/4 inch wide.
 2. At masonry joints, cold joints, and form joints, provide a struck smooth surface. Prepare penetrations in accordance with manufacturer's specifications.
 3. Provide a 3/4 inch minimum cant of Liquid Boot®, or other suitable material as approved by manufacturer, at all horizontal to vertical transitions and other inside corners of 120 degrees or less. Allow to cure overnight before the application of Liquid Boot®.
 4. Completely grout all cracks or cold joints greater than 1/16 inch with non-shrink grout. Install Hardcast reinforcing tape over all cold joints, cracks and form tie holes (after holes and cracks are grouted).

3.02 SURFACE PREPARATION-

- A. Provide 24 inch minimum clearance out from surfaces to receive the gas vapor barrier. The application surface shall be prepared and provided to the applicator in accordance with manufacturer's specifications listed below:
- B. Remove dirt, debris, oil, grease, cement laitance, or other foreign matter which will impair or negatively affect the performance of the gas vapor barrier and venting system.
- C. Protect adjacent work areas and finish surfaces from damage or Liquid Boot® over spraying during product applications.

3.03 INSTALLATION OF GAS COLLECTION/VENT SYSTEM

- A. Roll out Liquid Boot® GeoVent per approved layout
- B. Provide prefabricated Liquid Boot® GeoVent Sleeves or GeoVent End Outlets where venting penetrates interior footing
- C. At points of intersections, cut away geotextile to produce rectangular flaps. Interlock exposed dimple board in a Lego-like fashion. Fold flaps of geotextile in a manner so that the dimple board is covered completely. Secure geotextile folds with Liquid Boot® Fiber Reinforced Tape so that the geotextile is completely impermeable to sand fill
- D. Use Liquid Boot® GeoVent End Outlet to attach to a solid (non-perforated 2" (inches) diameter PVC pipe at penetration through building foundation. Seal/grout piping at penetrations through foundation using approved methods.

3.04 INSTALLATION ON CONCRETE/SHOTCRETE/MASONRY

- A. Seal around penetrations in accordance with manufacturer instructions.
- B. Provide a ¼ inch minimum cant of LIQUID BOOT®, or other suitable material as approved by manufacturer, at all horizontal to vertical transitions and other inside corners of 120° or less. Allow to cure overnight before the application of Liquid Boot®.
- C. Delineate a test area on site with a minimum dimension of 10 feet by 10 feet (3m by 3m). Apply Liquid Boot® to a thickness of 60 mils and let it cure for 24 hours. Observe for blisters. If minor or no blistering occurs, proceed to the next step. If significant blistering does occur, apply a thin (10 mil) tack coat of LIQUID BOOT® "A" side without catalyst to the entire concrete surface and allow to cure before proceeding.
- D. Spray apply Liquid Boot® to a 60 mil minimum dry thickness. Increase thickness to 100 dry mils if shotcrete is to be applied directly to membrane. If a second coat is required, remove any standing water from the membrane before proceeding with the second application.
- E. Non-horizontal surfaces: Spray on non-horizontal surfaces should begin at the bottom and work towards the top. This method allows the product to adhere to the surface before hitting catalyst runoff.
- F. Do not penetrate membrane. Keep membrane free of dirt and debris and traffic until a protective cover is in place. It is the responsibility of the General Contractor to insure that the membrane and the protection system are not penetrated.
- G. After membrane has cured and checked for proper thickness and flaws, install protection material pursuant to manufacturer's instructions.
 1. Perform all testing or inspection prior to placing protection course.

NOTE: Due to the nature of concrete as a substrate, it is normal for some blistering to occur. This is caused by either concrete's tendency to off-gas or water that is temporarily trapped between the concrete and the membrane. With time and the applied pressure of backfill or over-slab, blisters will absorb into the concrete without detriment to the membrane. A small number of blister heads should be sampled and checked for proper membrane thickness. If the samples have the minimum required membrane thickness, then the remaining blisters should not be punctured or cut. If the samples have less than the minimum required membrane thickness, then the area can either be re-sprayed to obtain the proper thickness, or the blisters can be cut out and the area re-sprayed or patched with Liquid Boot® Trowel Grade.

3.05 INSTALLATION ON DIRT SURFACES AND MUDSLABS

- A. Roll out VI-20 geomembrane on sub-grade and overlap seams a minimum of 6 inches. Lay geomembrane tight at all inside corners. Apply a thin 20 mil Liquid Boot® spray applied within the seam overlap. Line trenches with geomembrane extending at least six inches (6") onto adjoining sub-grade if slab and footings are to be sprayed separately.
- B. Minimize the use of nails to secure the geomembrane to the dirt subgrade. Remove all nails before spraying membrane, if possible. Nails that cannot be removed from the dirt subgrade are to be patched with Liquid Boot® Detailing Fabric or Hardcast reinforcing tape overlapping the nail head by a minimum of two inches (2"). Apply a 20 mil Liquid Boot® under the geomembrane patch, when patching with geomembrane.
- C. Sealing around penetrations.
- D. Spray apply Liquid Boot® onto VI-20 geomembrane to a 60 mil minimum dry thickness. Increase thickness to 100 dry mils if shotcrete is to be applied directly to membrane. If a second coat is required, remove any standing water from the membrane before proceeding with the second application.
- E. Do not penetrate membrane. Keep membrane free of dirt, debris and traffic until a protective cover is in place. It is the responsibility of the General Contractor to insure that the membrane and the protection system are not penetrated.
- F. After membrane has cured and checked for proper thickness and flaws, install protection material pursuant to manufacturer's instructions.
 - 1. Perform all testing or inspection to be performed prior to placing protection course.

3.06 SEALING AROUND PENETRATIONS

3.06.10 OPTION 1

- A. Clean all penetrations. Sand metal penetrations clean with emery cloth.
- B. For applications requiring VI-20, roll out geomembrane on sub-grade, overlapping seams a minimum of six inches (6"). Cut the geomembrane around penetrations so that it lays flat on the sub-grade. Lay geotextile tight at all inside corners. Apply a thin (20 mil) LIQUID BOOT® within the seam overlap then lap Liquid Boot® Detailing Fabric around penetrations extending 3 inches around the base of penetration.
- C. At the base of penetration Install a minimum ¼ inch thick membrane cant of Liquid Boot®, or other suitable material as approved by manufacturer. Extend the membrane at a 60 mil thickness three inches (3") around the base of penetration and up the penetration a minimum of three inches (3"). Allow to cure overnight before the application of Liquid Boot® membrane. (See manufacturer's standard detail.)
- D. Spray apply LIQUID BOOT® to an 60 mils minimum dry thickness around the penetration, completely encapsulating the collar assembly and to a height of one and one half inches (1 1/2") minimum above the membrane. Spray-apply Liquid Boot® to surrounding areas as specified for the particular application. (SEE MANUFACTURER'S STANDARD DETAIL)
- E. Allow LIQUID BOOT® to cure completely before proceeding to step "F".
- F. Wrap penetration with polypropylene cable tie at a point 2 inches above the base of the penetration. Tighten the cable tie firmly so as to squeeze, but not cut, the cured membrane collar.

3.06.20 OPTION 2

- A. Clean all penetrations. Sand metal penetrations clean with emery cloth.
- B. For applications requiring VI-20, roll out geomembrane on sub-grade overlapping seams a minimum of six inches (6"). Cut the geomembrane around penetrations so that it lays flat on the sub-grade. Lay geomembrane tight at all inside corners. Apply a thin (20 mil) of Liquid Boot® within the seam overlap then lap Liquid Boot® Detailing Fabric around penetrations extending 3 inches around the base of penetrations.
- C. Spray-apply LIQUID BOOT® to surrounding areas as specified for the particular application to a 60 mil minimum dry thickness. At the base of penetration Install a minimum 3/4 inch thick membrane cant of LIQUID BOOT®, or other suitable material as approved by manufacturer. Extend the membrane at 60 mil thickness up the penetration a minimum of three inches (3"). Allow to cure overnight before proceeding to D (SEE MANUFACTURER'S STANDARD DETAIL)
- D. Spray apply Liquid Boot® the membrane at an 60 mil thickness three inches (3") around the base of penetration and up the penetration, completely encapsulating the collar assembly, to a height of one and one half inches (1 1/2") minimum above the membrane. (SEE MANUFACTURER'S STANDARD DETAIL)
- E. Allow Liquid Boot® to cure completely before proceeding to step "F".

- F. Wrap penetration with polypropylene cable tie at a point two inches (2") above the base of the penetration. Tighten the cable tie firmly so as to squeeze, but not cut, the cured membrane collar.

3.07 FIELD QUALITY CONTROL

- A. The membrane must be cured at least overnight before inspecting for dry-thickness, holes, shadow shrinkage, and any other membrane damage. When thickness or integrity is in question the membrane should be tested in the proper manner as described below. However, over-sampling defeats the intent of inspections. Inspectors should always use visual and tactile measurement to guide them. Areas suspected of being too thin to the touch should be measured with the gauges to determine the exact thickness. With practice and by comparing tactile measurements with those of the gauges, fingers become very accurate tools.
- B. **ON CONCRETE/SHOTCRETE/MASONRY & OTHER HARD SURFACES**
1. Membrane may be checked for proper thickness with a blunt-nose depth gauge, taking one reading every 500 square feet. Record the readings. Mark the test area for repair, if necessary.
 2. If necessary, test areas are to be patched over with Liquid Boot® to a 60 mils minimum dry thickness, extending a minimum of 1 inch beyond the test perimeter.
- C. **ON DIRT AND OTHER SOFT SUBSTRATES**
1. Samples may be cut from the membrane and geomembrane sandwich to a maximum area of 2 square inches. Measure the thickness with a mil-reading caliper, per 500 sq. feet. Deduct the geomembrane thickness of 20 mils to determine the thickness of LIQUID BOOT® membrane. Mark the test area for repair.
 2. Patch voids left by sampling with Detailing Fabric underlay beneath the existing membrane with HDPE side up and a minimum of 2 inches overlap. Apply a thin tack coat of Liquid Boot® under the geomembrane patch. Then spray or trowel-apply Liquid Boot® to a 60 mils minimum dry thickness, extending at least three inches (3") beyond geotextile patch.
- D. **SMOKE TESTING FOR HOLES**
1. Smoke test the membrane for holes and other breaches in accordance with the manufacturer's written instructions.

END OF SECTION

TECHNICAL DATA

ULTRASHIELD™ G-1000

NON-WOVEN GEOTEXTILE FABRIC

DESCRIPTION

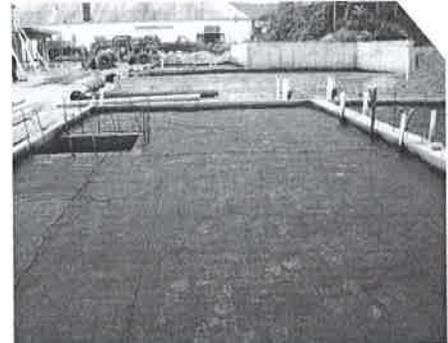
UltraShield™ G-1000 is a polypropylene, staple fiber, non-woven geotextile. The fibers are needled-punched, forming a stable network that retains dimensional stability relative to each other. The geotextile is resistant to ultraviolet degradation and biological and chemical environments found in soils. Manufacturing Quality Control tests have been performed and are accredited by the Geosynthetic Accreditation Institute's Laboratory Accreditation Program (GAI-LAP).

APPLICATION

UltraShield™ G-1000 is designed for use as an underslab adhesion protection course specially designed and required for underslab Liquid Boot® applications where the membrane must remain attached to the underslab of the building. This is to ensure the membrane remains in place despite soil settlement, which is common when building on a landfill.

BENEFITS

UltraShield™ G-1000 is installed directly over the finished Liquid Boot® gas vapor barrier, providing superior protection from other trades.



UltraShield™ G-1000 is a needle-punched, non-woven geotextile with superior tensile strength and puncture resistance.

TESTING DATA

PHYSICAL PROPERTIES			
PROPERTY	TEST METHOD	RESULT (ENGLISH)	RESULT (METRIC)
Tensile Bond Strength to Concrete	ASTM C 297-94	7 psi	
Mass/Unit Area	ASTM D 5261	10.0 oz/yd ²	339 g/m ²
Thickness	ASTM D 5199	105 mils	2.7 mm
Tensile Strength	ASTM D 4632	270 lbs.	1202 N
Elongation	ASTM D 4632	50%	50%
Mullen Burst	ASTM D 3786	520 psi	3585 kPa
Puncture Strength	ASTM D 4833	180 lbs.	801 N
Trapezoid Tear	ASTM D 4533	105 lbs.	467 N
UV Resistance	ASTM D 4355	70%	70%
A.O.S.	ASTM D 4751	100 U.S. Sleeve	0.150 mm
Permittivity	ASTM D 4491	1.2 sec ⁻¹	1.2 sec ⁻¹
Permeability	ASTM D 4491	0.30 cm/sec	0.30 cm/sec
Water Flow Rate	ASTM D 4491	85 gal/min/ft ²	3463 l/min/m ²

PACKAGING

UltraShield™ G-1000 is available in the following packaging option:

- ▶ 15 ft. x 180 ft. Rolls

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TECHNICAL DATA

VI-20™ GEOMEMBRANE

HIGH-PERFORMANCE GAS VAPOR BARRIER

DESCRIPTION

VI-20™ is a 7-layer co-extruded EVOH geomembrane made using high quality virgin-grade polyethylene and barrier resins that provide unmatched impact strength as well as superior resistance to VOC vapor transmission. EVOH technology serves as a highly resilient underslab and vertical wall barrier designed to restrict methane, radon and other harmful chemicals. Applications for EVOH originated in the manufacturing of automotive fuel systems to control emissions of hydrocarbons, whose use was mandated by the US EPA and the CA Air Resources Board (CARB) to reduce VOC emissions.

APPLICATION

VI-20™ is a 20-mil, high performance poly-ethylene-EVOH copolymer geomembrane, specially designed for use as a VOC barrier when used in conjunction with Liquid Boot® spray-applied gas vapor membrane to minimize gas vapor and nuisance water (non-hydrostatic conditions) migration into buildings. VI-20™ is ideal for applications with chlorinated solvents, BTEX and other PAHs.

BENEFITS

- ▶ Polyethylene layers provide excellent chemical resistance and physical properties
- ▶ EVOH barrier technology provides superior protection against diffusion of chemicals when compared to typical HDPE geomembranes
- ▶ Manufactured at ISO 9001:2008 certified plant

INSTALLATION

For use as a component of the Liquid Boot® Plus system, VI-20™ geomembrane is rolled out on prepared sub-grade, overlapping seams a minimum of six inches (6"). The geomembrane is cut around penetrations so that it lays flat on the sub-grade and tight at all inside corners. A thin (20 mil) tack coat of Liquid Boot® ("A" side without catalyst) is sprayed within the seam overlap. Once the VI-20™ geomembrane is installed, penetrations are then treated with VI-20™ Detailing Fabric prior to installation of the Liquid Boot® spray-applied gas vapor membrane and UltraShield™ G-1000 protection course.



EVOH technology provided in VI-20™ geomembrane has been shown to have VOC diffusion coefficients 20 times lower than an 80 mil HDPE geomembrane.

PACKAGING

VI-20™ Geomembrane is available in the following packaging option:

- ▶ 10 ft. x 150 ft. Rolls

VI-20™ CHEMICAL & PHYSICAL PROPERTIES

CHEMICAL PROPERTY	TEST METHOD	RESULT
Benzene Diffusion Coefficient	EPA Method 8260	4.5 x 10-15 m ² /s
Ethylbenzene Diffusion Coefficient	EPA Method 8260	4.0 x 10-15 m ² /s
m&p-Xylenes Diffusion Coefficient	EPA Method 8260	3.7 x 10-15 m ² /s
Methane Permeability	ASTM 1434	< 5 x 10-10 m ² /d • atm
o-Xylene Diffusion Coefficient	EPA Method 8260	3.7 x 10-15 m ² /s
Radon Diffusion Coefficient	EPA Method 8260	2.5 x 10-14 m ² /s
Toluene Diffusion Coefficient	EPA Method 8260	4.2 x 10-15 m ² /s
PHYSICAL PROPERTY	TEST METHOD	RESULT
Membrane Composite Thickness	ASTM D5199	20 mil
Puncture Resistance	ASTM D1709	2,600 g
Tensile Strength	ASTM E154 Section. 9	58 lbs
Water Vapor Transmission	ASTM E154 & E96	.0025 US Perms

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TECHNICAL DATA

LIQUID BOOT® 500

SPRAY-APPLIED GAS VAPOR BARRIER

DESCRIPTION

Liquid Boot® 500 is a seamless, spray-applied, water-based membrane containing no VOCs, which provides a barrier against vapor intrusion into structures. Liquid Boot® 500 spray-application directly to penetrations, footings, grade beams, pile caps and other irregular surfaces, provides for a fully-adhered gas vapor barrier system.

APPLICATION

Liquid Boot® 500 is used as an underslab gas vapor barrier, used to minimize vapor migration into buildings. Liquid Boot® 500 is ideal for methane migration control.

BENEFITS

- ▶ Can be installed more economically than Liquid Boot®, resulting in greater savings
- ▶ Liquid Boot® 500 is comprised of the same elements as Liquid Boot®
- ▶ Unique formulation provides superior protection from methane gas

INSTALLATION

Protect all adjacent areas not to receive gas vapor barrier. Ambient temperature shall be within manufacturer's specifications. All plumbing, electrical, mechanical and structural items to be under or passing through the gas vapor barrier shall be secured in their proper positions and appropriately protected prior to membrane application. Gas vapor barrier shall be installed before placement of reinforcing steel. Expansion joints must be filled with a conventional waterproof expansion joint material. Surface preparation shall be per manufacturer's specification. A minimum thickness of 60 dry mils, unless specified otherwise.

TESTING DATA

CHEMICAL & PHYSICAL PROPERTIES		
PROPERTY	TEST METHOD	RESULT
Elongation	ASTM D 412	800%
Bonded Seam Strength Tests	ASTM D 6392	Passed
Methane Permeability	ASTM D 1434	None Detected
Chemical Resistance:	Tested at 20,000 ppm	<1% weight change
Micro Organism Resistance (Soil Burial):	ASTM D4068-88	Passed
Oil Resistance Test	ASTM D543-87	Passed
Heat Aging:	ASTM D4068-88	Passed
Dead Load Seam Strength	City of Los Angeles	Passed
Environmental Stress-Cracking	ASTM D1693-78	Passed
Water Vapor Permeability	ASTM E96	0.22 perms
Adhesion to Concrete	ASTM C-836	Passed
Hardness	ASTM C-836	Passed
Hydrostatic Head Resistance (Tested at 20 psi)	ASTM D-751	Passed



Liquid Boot® 500 spray-application effectively seals penetrations, footings, grade beams and other irregular surfaces that are considered critical vapor intrusion pathways.

PACKAGING

Liquid Boot® 500 is available in the following packaging options:

- ▶ 55 Gallon Drum
- ▶ 275 Gallon Tote

EQUIPMENT

- ▶ COMPRESSOR: Minimum output of 155-185 cubic feet per minute (CFM)
- ▶ PUMPS: For "A" drum, an air-powered piston pump of 4:1 ratio (suggested model: Graco, 4:1 Bulldog). For "B" drum, an air-powered diaphragm pump (0-100 psi)
- ▶ HOSES: For "A" drum, 1/2" wire hose with a solvent resistant core (for diesel cleaning flush), hose rated for 500 psi minimum. For "B" drum, a 3/8" fluid hose rated at only 300 psi may be used.
- ▶ SPRAY WAND: Only the spray wand sold by CETCO is approved for the application of Liquid Boot®.
- ▶ SPRAY TIPS: Replacement tips can be purchased separately from CETCO.

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LIQUID BOOT® GeoVent Trenchless Gas Collection System

VERSION 1.3

These Specifications may have changed. Please contact CETCO Remediation Technologies at 714.384.0111 for the most recent version.

PART 1: GENERAL

- 1.1 **SUMMARY OF WORK**- Work related to the Soil Venting System includes providing soil vapor extraction piping and LIQUID BOOT® GeoVent beneath the LIQUID BOOT® gas vapor membrane.

PART 2: PRODUCTS

2.1 MATERIALS

- A. LIQUID BOOT® GeoVent is a composite low profile pressure relief, collection and venting system (PRCVS) consisting of a 3-dimensional vent core and wrapped with a non-woven needle punched filter fabric. This product meets the following specifications:
- B. Trenchless Gas Collection System properties:

TEST METHOD	TYPE OF TEST	MINIMUM VALUE
ASTM D-1621	Core - Compressive Strength	9,500 psf
ASTM D-1777	Core - Thickness	1.0 in.
ASTM D-4716	Core - Flow Rate (Hydraulic gradient = 0.1)	30 g/min/ft. width
ASTM D-4833	Fabric - Puncture Strength	65 lbs.
ASTM D-4751	Fabric - Apparent Opening Size (AOS)	70 US Sieve
ASTM D-4632	Fabric - Grab Tensile Strength	100 lbs.
ASTM D-4491	Fabric - Permeability	0.21 cm/sec
ASTM D-4491	Fabric - Flow Rate	140 gal. min. ft. ²
ASTM D-5261	Fabric - Mass per Unit Area	4.0 oz/yd ²
ASTM D-4355	Fabric - UV Resistance	70%
	Roll Weight	65 lbs
	Roll Width	12 in
	Roll Length	165 ft

- C. LIQUID BOOT® GeoVent end outlet
- D. LIQUID BOOT® GeoVent Interior Footing Sleeves
- E. LIQUID BOOT® GeoVent Fabric Reinforced Tape

PART 3: EXECUTION

3.1 INSTALLATION

- A. Roll out LIQUID BOOT® GeoVent per layout design as specified by Engineer.
- B. Use prefabricated LIQUID BOOT® GeoVent Sleeves where venting is to penetrate interior footings. See the detail describing LIQUID BOOT® GeoVent through footings.
- C. At points of intersection, cut away geotextile to produce rectangular flaps. Interlock exposed dimple board in a Lego-like fashion. Fold flaps of geotextile in a manner so that the dimple board is covered completely. Secure geotextile folds with LIQUID BOOT® Fiber Reinforced Tape so that the geotextile is completely impermeable to sand fill.
- D. Use LIQUID BOOT® GeoVent End Outlet to attach to solid (imperforated) 2 inch diameter PVC pipe at penetration through building foundation. Seal/ grout piping at penetrations through foundation using approved methods. See the detail describing connection to a vent riser.

TECHNICAL DATA

GEOVENT™ ACTIVE/PASSIVE GAS VENTING SYSTEM

DESCRIPTION

GeoVent™ consists of a three-dimensional vent core that is wrapped in a non-woven, needle-punched filter fabric.

APPLICATION

GeoVent™ is designed for use as active or passive venting when used with CETCO gas vapor mitigation systems.

BENEFITS

- ▶ Installed directly on subgrade eliminating trenching and potential interference or damage to existing underground utilities
- ▶ Placed in closer proximity to the gas vapor barrier allowing for more effective venting of any accumulated gas
- ▶ Greater opening area per lineal foot of pipe and integral filter fabric allows for higher ventilation efficiency



INSTALLATION

Product should be installed in accordance with specific installation guide specifications.

PACKAGING

- ▶ 1 ft. x 165 ft. Rolls

TESTING DATA

PHYSICAL PROPERTIES		
CORE PROPERTY	TEST METHOD	RESULT
Compressive Strength	ASTM D 1621	9,500 psf
Thickness	ASTM D 1777	1.0 in.
Flow Rate (Hydraulic gradient = .1)	ASTM D 4716	30 gpm/ft/width

FABRIC PROPERTY	TEST METHOD	RESULT
A.O.S.	ASTM D 4751	70 US Sieve
Grab Tensile Strength	ASTM D 4632	100 lbs.
Puncture Strength	ASTM D 4833	65 lbs.
Flow Rate	ASTM D 4491	140 gpm/ft ²
Permeability	ASTM D 4491	0.21 cm/sec
Fabric - Mass / Unit Area	ASTM D 5261	4.0 oz/yd ²
UV Resistance	ASTM D 4355	70%

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Vapor Intrusion Coating System for Existing Structures

Product Description

The **Retro-Coat™ (patent pending)** Vapor Intrusion Coating System is a complete product line that consists of chemically resistant materials to properly protect existing structures from the threat of contaminant vapor intrusion without the need for additional concrete protection. Developed by the R&D team of Land Science Technologies™, the Retro-Coat system has been subjected to rigorous testing procedures to prove its ability to combat the most aggressive chemical vapors. The main component of the Retro-Coat system is the **Retro-Coat** coating which is a two part, odorless, no VOC, 100% solids coating.

Retro-Coat finishes to a high gloss, easy-to-clean surface that is impervious to vapor and moisture transmission. Available in a variety of colors, **Retro-Coat** can be applied on damp as well as dry concrete, concrete masonry units, tile, brick and metal. For enhanced slip resistance, a suitable aggregate can be added. In addition, other additives or materials can be utilized to achieve a desired performance or aesthetic look.

Typical Application

Retro-Coat is suitable as a barrier to block contaminated vapors from entering existing structures. Particular uses include coating the horizontal surfaces of existing structures where contamination under, or adjacent to, a structure can potentially migrate inside the structure and create a vapor encroachment condition. This condition is most commonly found when the existing structure was operated as a dry cleaner, gas station, manufacturing facility or located in close proximity to any structure where carcinogenic chemicals were utilized.

A typical application consists of a minimum 20 mil thick system; consisting of two 10 mil coats of **Retro-Coat** at 160 SF/gallon per coat and is recommended along with a 6 mil coat of **Retro-Coat PRIMER**. The typical 20 mil application can withstand forklift traffic, other machinery and even act as secondary containment. However, if **Retro-Coat** may be exposed to more harsh conditions over a longer period of time, thicker applications ranging from 60 mil to ¼ -inch may be more suitable.

In either application, **Retro-Coat** is a traffic bearing surface and does not need a protective course placed over it.

Retro-Coat Advantages

- **Our R&D team developed all of the Retro-Coat system components specifically for vapor intrusion protection in existing structures**
- **Retro-Coat is resistant to both TCE and PCE, the vast majority of coatings cringe at such aggressive chemicals**
- **Retro-Coat is a wearing surface, meaning no additional concrete protection is necessary**
- **No odor and fast cure time reduce building downtime**
- **Carpet, tile, linoleum or other floor coverings can be applied directly over Retro-Coat, if desired**
- **Eliminates the need to remove the existing slab and when combined with in-situ treatment, lowers overall remediation cost**
- **Retro-Coat can increase the performance of an existing active sub-slab depressurization system**
- **Retro-Coat can aid in the retiring of existing active systems**
- **Available and installed by Land Science Technologies certified contractors**



Completed surface preparation consisting of shot blasting, Retro-Coat PREP to fill joints and cracks and a 6 mil application of Retro-Coat PRIMER



Application of Retro-Coat SEALANT to a 20 mil total thickness

Installation

Particular care must be taken to follow those instructions precisely to assure proper installation. These instructions pertain to a standard 20 mil application; please contact us if the desired application is different.

1. New concrete should be allowed to cure a minimum of 28 days and/or be checked with a rubber mat or plastic sheet to ensure adequate curing time has occurred.
2. All surfaces to be covered should be power washed, shot blasted, acid etched, scarified or sanded to present a clean, sound substrate to which to bond to. The prepared surface should have a ph of 7.
3. Any bugholes and cracks wider than 1/8" should be filled with **Retro-Coat PREP** and allowed to dry before coating. More severely damaged concrete or other special conditions will require the proper **Retro-Coat** product.
4. When installing the standard 20 mil application of **Retro-Coat**, apply a 6 mil coat of **Retro-Coat PRIMER** and allow to dry prior to applying the initial coat of **Retro-Coat**. Priming may not be necessary when **Retro-Coat** is applied to a thickness greater than 20 mils. On new concrete or old concrete with an open porosity and on wood surfaces apply **Retro-Coat PRIMER** and allow to dry.
5. The two **Retro-Coat** ingredients should be mixed in the prescribed ratios, using a low speed "jiffy-style" mixer, (maximum 750 rpm). Mix Part A for about 1 minute then, add Part B and mix until uniform in color and consistency (at least one additional minute.)
6. Do not mix less than the prescribed amount of any ingredient or add any solvent to the mix.
7. Apply the mixed **Retro-Coat** material with a short nap roller, a squeegee or a brush. Apply approximately 160 SF per gallon per coat to achieve 10 mils of coating.
8. Apply a second coat while the first coat is still tacky if using spike shoes or dry enough to walk on, but before 7 hours at 75°F. If the first coat has set and is no longer tacky then the first coat should be sanded before recoating.
9. A suitable aggregate may be broadcast onto the surface after backrolling to provide more anti-slip profile to the finished surface. It is advisable to test various types and sizes of aggregate to achieve the desired finished profile.

Product Specification

The specified area shall receive an application of **Retro-Coat** as manufactured by **Land Science Technologies, San Clemente, California**. The material shall be installed by precisely following the manufacturer's published recommendations pertaining to surface preparation, mixing and application. The material shall be a low odor, two part, solvent free 100% solids, high gloss flexibilized system with good resilience to resist thermal and mechanical shock. It should be able to be roller applied at a minimum of 10 mils thickness per coat on vertical surfaces without sagging (at ambient conditions). The system must adhere to damp as well as dry concrete, wood, metal tile, terrazzo and sound existing epoxy and urethane coatings. It shall have tensile elongation of at least 6.0% when tested under ASTM-638. Its bond strength to quarry tile shall exceed 1000 psi when tested with an Elcometer pull test. Its hardness shall not exceed 83, as measured on the Shore D scale. The system shall be unaffected by oils and greases and shall withstand chemical attack for at least 72 hours against 98% sulfuric, 50% hydrofluoric acid, glacial acetic acid and acrylonitrile.

Precautions

1. This is a fast reacting product; immediately pour onto floor after mixing and spread with notched squeegee. Recoat window without sanding at 70°F: 8 hours
2. A severe skin and eye irritant; check MSDS before use
3. Do not apply below 50°F

Note: Failure to follow the above instruction, unless expressly authorized by a Land Science Technologies Representative, will void our material warranty.

Chemical Resistance

Retro-Coat™ is considered chemically resistant to neat concentrated acids, caustics and solvents. For permeation or diffusion coefficients please contact Land Science Technologies.

Physical Properties

Tensile Strength (ASTM D-638)	: 9800 psi	Bond Strength to Quarry Tile	: >1000 psi
Tensile Elongation (D-638)	: 6.0%	Vapor Transmission Rate (E-96)	: .027 perms
Flexural Strength (D-790)	: 7035 psi	Water Absorption (D-570)	: 0.2% in 24hrs.
Hardness, Shore D (D-2240)	: 83	Taber Abrasion (D-1044)	: 86 mg loss.
Gardner Impact Strength (D-2794)	: 80 in. lbs.	60° Gloss	: 100

Physical Characteristics

Density, lbs/gal.	Mixing Ratios	By Volume	By Weight	
Pt. A : 11.0	Pt. A : Pt. B	2:1	2.3:1	
Pt. B : 8.9				
A&B Mixed : 9.3	Curing Times @	50° F	77° F	90° F
Viscosity @ 77°F, cps	Pot Life	35 min.	30 min.	20 min.
Pt. A : 18,400	Working Times	20 min.	20 min.	15 min.
Pt. B : 500	Hard, Foot Traffic	14 hrs.	7 hrs.	3 ½ hrs.
A&B Mixed : 4800	Maximum hardness and chemical resistance are achieved after 7 days at 77°F			

Color Availability

Standard colors: beige, black, blue, dark gray, green, gray, red, white, yellow
Shelf Life: 1 Year at 77°F in unopened containers

Packaging and Coverage Rates (for 20 mil coverage)

4 Gallon Kit	:	320 SF
20 Gallon Kit	:	1600 SF
100 Gallon Kit	:	8,000 SF

The data, statements and recommendations set forth in this product information sheet are based on testing, research and other development work which has been carefully conducted by Land Science Technologies, and we believe such data, statements and recommendations will serve as reliable guidelines. However, this product is subject to numerable uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and particular use or uses.

WARRANTY – All products manufactured by us are warranted to be first class material and free from defects in material and workmanship.

Liability under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us transportation prepaid. All claims hereunder on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further processing or combining with other materials and products. WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL.

THIS WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS.

Land Science Technologies Specifications for Retro-Coat™ Version 1.0

Part 1 – Scope

1.1 Product and Application

This specification describes the application of the Retro-Coat™ System. The minimum thickness of the system is between 25-30 mils, including a 20 mil minimum application of Retro-Coat.

1.2 Acceptable Manufacturers

- A. Retro-Coat as manufactured by Land Science Technologies San Clemente, CA.

1.3 Performance Criteria

- A. Retro-Coat as manufactured by Land Science Technologies San Clemente, CA.

1. Diffusion Coefficient (Columbia Labs)
PCE: 7.6×10^{-14} m²/s
TCE: 8.2×10^{-14} m²/s
2. Tensile Elongation (ASTM D-638)
Minimum: 6000 psi
3. Tensile Elongation (ASTM D-638)
Minimum: 6 %
4. Flexural Strength (ASTM D-790)
Minimum: 7000 psi
5. Hardness, Shore D (ASTM D-2240)
Maximum: 85
6. Gardner Impact (ASTM D-2794)
Minimum: 80 inch-pounds
7. Bond Strength to Quarry Tile
Minimum: 1000 psi
8. Vapor Transmission Rate (ASTM E-96)
Maximum: .07 perms
9. Water Absorption (ASTM D-570)
Maximum: .02% in 24 hours
10. 60° Gloss
Minimum: 100.

1.4 Materials

- A. Retro-Coat "A" shall be a modified epoxy containing special flexibilizers and specially formulated resins for superior chemical resistance and enhanced resilience. No solvents are allowed.
- B. Retro-Coat "B" shall be customized blend of hardeners specifically formulated to maximize chemical resistance. No solvents are allowed.

1.5 Applicator

- A. Applicator must be a certified contractor of Land Science Technologies.

Part 2 – Application

2.1 Surface Preparation

- A. All existing surfaces that will be covered with the systems specified herein should be mechanically ground, shot blasted or sand blasted to yield a minimum 60 grit surface texture. All loosely adhered coatings will be removed. Any grease and other contaminants found on the concrete must also be removed.
- B. All open cracks 1/2" and greater should be v-notched to a 3/4" width by 1/2" depth and cleaned of any debris. Such cracks should be filled with Retro-Coat Gel and struck off flush with the surrounding surface.
- C. Cut back and/or remove any expansion joint backing or filler strips to a minimum of 1 1/2" deep. Insert disposable filler in the joints to prevent filling with the overlayment materials and to allow for accurate location of final saw cuts in the overlayment.

2.2 Material Application

- A. Retro-Coat CAULK
 - 1. Apply Retro-Coat CAULK around the base of all pipe penetrations making sure to fill any gap between the penetration and concrete slab
 - 2. Apply Retro-Coat CAULK to the joint created between horizontal and vertical transitions. The caulking material should be applied and pressed into the joint filling any gaps that might be present.
- B. Retro-Coat PRIMER
 - 1. Apply Retro-Coat PRIMER to all areas at a thickness of 6 mil and allow to dry tack free. In areas where the concrete surface is in need of slight repair or needs to be leveled, a slurry form of Retro-Coat PRIMER called Retro-Coat PRIMER-S can be applied with a flat squeegee. Retro-Coat PRIMER-S is self priming and does not need to be primed again.
- C. Retro-Coat
 - 1. Mix Retro-Coat, Part A with a low-speed (<750 rpm) jiffy-style mixer for about 30 seconds, or until uniform in color, then mix in Retro-Coat Coating, Part B for another 30-60 seconds.
 - 2. Dump contents onto floor in a ribbon pattern, squeegee, and then back roll at a coverage rate of 160 SF/gallon to achieve a film thickness of 10 mils.
 - 3. Apply second coat 10 mil coat to achieve a total thickness of 20 mils. Repeat as necessary to achieve specified thickness.
 - 4. If a flooring material will be placed over Retro-Coat after it is applied, or appearance is not a priority, (1) 20 mil coat can be applied.

2.3 Protection of Finished Work

- A. Prohibit foot traffic on floor for 24 hours after laying (at 70°F). At 50°F, this time should be extended to 48 hours.
- B. Rinse off any chemicals that may come in contact within 7 days of installation with the freshly laid floor immediately.

2.4 Cleanup

- A. Properly dispose of all unused and waste materials.
- B. Tools can be washed in warm, soapy water when wet, but after drying, can only be cleaned by grinding or with a paint stripper.
- C. Unused resin can be set off with proper amount of hardener and disposed of in regular trash bins.

Part 3 – Quality Control

3.1 Warranty

- A. Installer shall provide a one year warranty against delamination, chemical attack and normal wear and tear.
- B. Manufacturer will provide a one year material warranty.

3.2 Quality Control

- A. Installer shall use a notched squeegee to apply Retro-Coat to the specified mil thickness and calculations shall be done to determine if the correct amount of material has been applied. Retro-Coat contains 100% solids at the time of application; therefore no material shrinkage will occur during the curing process. One gallon will cover 80 square feet.
- B. A wet mil film gauge can be used to spot check the Retro-Coat thickness to make certain the minimum 20 mil thickness has been applied, though some discretion should be used because high points or low points on the underlying surface can adversely affect the thickness measurements.

3.3 Floor Care

- A. The standard smooth surface of Retro-Coat should be cleaned on a regular basis by damp mopping the floor with conventional commercial cleaners. It is important to first remove any grease or oils by a suitable cleaner, preferably a citrus based cleaner. Rinse with clear water to help eliminate film buildup and then allow to dry. Never use abrasive powder cleaners like Ajax or Comet as they tend to scratch the floor.
- B. Additional steps can also be taken to prolong the look and life of a seamless floor:
 - 1. Protect the floor during transference of heavy equipment
 - 2. Educate the drivers inside the building the importance of avoiding "jack-rabbit" starts and stops, as well as keeping the metal forks lifted
 - 3. Regular cleaning should take place as to not allow the buildup of abrasive material, such as sand or dirt, on the coating
 - 4. Eliminate all metal wheels
 - 5. Change over to light-colored polyurethane wheels
 - 6. Do not slide heavy metal totes, drums or bins across the floor
 - 7. Immediately hose down chemical spills, especially on newly laid floors.



APPENDIX 7
Example RAR Deliverable
Requirements

APPENDIX 7

EXAMPLE RAR DELIVERABLE REQUIREMENTS

Sub-Slab Venting System

The passive sub-slab venting systems (SSVSs) are designed to maintain ventilation beneath the entire areas of the building slabs addressed by this RAWP. A PE-certified drawing(s) of the SSVSs is provided as Figure _____. The Remedial Action Report will include photographs of the installation of SSVS laterals as well as if any deviations have occurred due to construction scope changes. The Remedial Action Report will include PE/RA-certified as-built plans depicting SSVS laterals, blowers (if active), and riser pipe configurations and locations, as well as documentation proving that the SSVSs were appropriately designed to maintain ventilation beneath the entire areas of the building slabs.

Waterproofing/Vapor Membrane/Coating

Detailed certified drawings prepared by a PE or RA of Record depicting the extent of the proposed waterproofing/vapor barrier membrane/coating and the installation details (penetrations, joints, etc.) with respect to the proposed building foundations, footings, slabs, and sidewalls, and product specification sheets are provided as Figure _____. The Remedial Action Report will include photographs (maximum of two photos per page) of the installation process, PE/RA-certified letter (on company letterhead) from primary contractor responsible for installation oversight and field inspections, and a copy of the manufacturer's certificate of warranty.



APPENDIX 8
Previous Regulatory
Correspondence

Christopher Seib, LSRP

From: Moore, Hannah <HMoore@dep.nyc.gov>
Sent: Wednesday, June 06, 2012 5:59 PM
To: Christopher Seib; Thomas K. Uzzo
Cc: ms@postmgmt.com; Lauren Wolf; djengels@hampshireco.com; Chawla, Shaminder; Nicole M. Perkins
Subject: RE: Stillwell & Bassett Avenues - Bronx, New York
Categories: Filed by Newforma

Chris/ Tom,

The workplan is approved with the following comments:

- Soil samples should also be collected from the proposed groundwater sampling locations (same depth intervals as are proposed for the other soil borings).
- It is the project team's responsibility to implement a Health and Safety Plan (HASP). Although OER does not approve the contents of the HASP, please forward us a copy of the HASP in advance of the work.

Please let me know when the work is scheduled and if you have any questions.

Thanks,
Hannah

Hannah Moore
Project Manager
NYC Office of Environmental Remediation
HMoore@dep.nyc.gov
(212) 442-6372

From: Nicole M. Perkins [mailto:nperkins@whitestoneassoc.com]
Sent: Wednesday, June 06, 2012 2:34 PM
To: Moore, Hannah
Cc: ms@postmgmt.com; Lauren Wolf; djengels@hampshireco.com; Chawla, Shaminder; Christopher Seib; Thomas K. Uzzo
Subject: Stillwell & Bassett Avenues - Bronx, New York

Ms. Moore,

Attached is Whitestone's *Remedial Investigation Workplan* for the above-referenced site. Please contact Chris Seib or Tom Uzzo with any questions.

Thank you.



NICOLE M. PERKINS

35 TECHNOLOGY DRIVE
WARREN, NEW JERSEY 07059

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FAX: 908.754.5936 www.whitestoneassoc.com
V-Card

Christopher Seib, LSRP

From: Moore, Hannah <HMoore@dep.nyc.gov>
Sent: Thursday, October 11, 2012 5:37 PM
To: Christopher Seib, LSRP
Cc: Chawla, Shaminder
Subject: RE: Stillwell Avenue, Bronx - SRIW (Well Installation)

Categories: Filed by Newforma

Chris,

This is acceptable. Please be sure to implement an OSHA-compliant HASP, and let us know when the work is scheduled.

Thanks,
Hannah

From: Christopher Seib, LSRP [mailto:cseib@whitestoneassoc.com]
Sent: Thursday, October 11, 2012 1:21 PM
To: Moore, Hannah
Subject: Stillwell Avenue, Bronx - SRIW (Well Installation)

Hannah-

Attached is a plan showing the locations of the three additional bedrock groundwater monitor wells that are proposed to be installed at the site as requested by NYCDEP/NYSDEC. The wells will be installed and sampled in accordance with the procedures outlined in Whitestone's June 6, 2012 *Remedial Investigation Workplan*. The groundwater samples collected from the wells, however, will only be analyzed for volatile organics. Please confirm approval to complete the installation and sampling of the three new wells. Whitestone also will complete the additional remedial investigation outlined in Whitestone's August 14, 2012 *Supplemental Remedial Investigation Workplan* which previously was approved by NYCDEP. Thank you.



CHRISTOPHER SEIB, LSRP
DIRECTOR, ENVIRONMENTAL DIVISION

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Christopher Seib, LSRP

From: Moore, Hannah <HMoore@dep.nyc.gov>
Sent: Monday, December 03, 2012 3:12 PM
To: Christopher Seib, LSRP
Cc: Marc Slayton (ms@postmgmt.com); Don Engels (djengels@hampshireco.com); Thomas K. Uzzo, LSRP; Chawla, Shaminder
Subject: RE: Stillwell & Bassett Avenues - Bronx, New York
Categories: Filed by Newforma

Chris,

Shaminder and I spoke with Bob Cozzy from DEC this morning, and he agreed that OER could handle this Site under the NYC VCP program as long as soil removal near S-1/ S-5, Active SSD systems, vapor barriers, and capping are part of the remedy.

The next step is to submit the RIR and RAWP. When you are close to writing the RAWP, let's set up a time to discuss the RAWP, SCOs, and a "comp" for the RAWP so you can use language that has previously been approved by OER. Please let me know if you have any questions and when you'd like to discuss the RAWP.

Best,
Hannah

From: Christopher Seib, LSRP [mailto:cseib@whitestoneassoc.com]
Sent: Tuesday, November 20, 2012 9:27 AM
To: Moore, Hannah
Cc: Marc Slayton (ms@postmgmt.com); Don Engels (djengels@hampshireco.com); Thomas K. Uzzo, LSRP
Subject: Stillwell & Bassett Avenues - Bronx, New York

Hannah-

Attached are the soil, soil gas, and groundwater data tables from the supplemental RI completed at the site along with boring logs and a boring/groundwater contour plan. As you will see, the soil gas sample is consistent with the last round of sampling, and the remedy would be to install a vapor mitigation system beneath the site structures to address this condition. Based on the soil samples collected in the vicinity of the soil gas sample, a source area was not identified, and overburden groundwater was not present in the borings. As you will see, VOs are present in one of the groundwater wells located upgradient of our site. Accordingly, it appears that the groundwater condition is representative of a regional/off-site source. Please review the data and let us know a date/time that is convenient for you to discuss or meet to finalize the remedial requirements for the project. As always, thank you for your help on moving this project forward.



CHRISTOPHER SEIB, LSRP
DIRECTOR, ENVIRONMENTAL DIVISION

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