

REMEDIAL ACTION WORKPLAN

For:

Sonero Metro City Auto Site 1001 Whitlock Avenue Bronx, New York 10459

BCP # C203148

Prepared for:

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CERTIFICATIONS

I, Fuad Dahan, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10)

Fuad Dahan		
NYS Professional Engineer (# 090531)	Date	Signature

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TABLE OF CONTENTS

I			
LIST OF		ONYMS	I
EXECU	TIVE \$	SUMMARY	1
1.0 IN	rod	UCTION	4
1.1	SIT	E LOCATION AND DESCRIPTION	5
1.2	PR	OPOSED REDEVELOPMENT PLAN	5
2.0 DE	SCRI	PTION OF SUPPLEMENTAL REMEDIAL INVESTIGATION COI	NCLUSIONS
6			
2.1	SO	IL	6
2.2	GR	OUNDWATER	6
2.3	SO	IL VAPOR	7
2.4	GE	OLOGICAL CONDITIONS	7
2.5	CO	NCEPTUAL SITE MODEL OF CONTAMINATION TRANSPORT.	7
2.6	IDE	NTIFICATION OF STANDARDS, CRITERIA AND GUIDANCE	8
2.7	ΕN	VIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS	9
2.7	7.1	QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT .	9
2.7	7.2	FISH AND WILDLIFE IMPACT ANALYSIS	10
2.8	SIG	NIFICANT THREAT	11
2.9	REI	MEDIAL ACTION OBJECTIVES	11
2.9	9.1	GROUNDWATER	11
2.9	9.2	SOIL	11
2.9	9.3	SOIL VAPOR RAOs	11
3.0 DE	SCRI	PTION OF THE REMEDIAL ACTION PLAN	12
3.1	EV	ALUATION OF REMEDIAL ALTERNATIVES	12
3.2	SEI	ECTION OF THE PREFERRED REMEDY	19
3.3	SUI	MMARY OF SELECTED REMEDIAL ACTIONS	19
4.0 RE	MED	AL ACTION PROGRAM	21
4.1	GO	VERNING DOCUMENTS	21
4.1	1.1	SITE-SPECIFIC HEALTH & SAFETY PLAN	21
4.1	1.2	QUALITY ASSURANCE PROJECT PLAN (QAPP)	21
4.1	1.3	SOIL/MATERIAL MANAGEMENT PLAN (SoMP)	21
4.1	1.4	STORM-WATER POLLUTION PREVENTION PLAN	21
4.1	1.5	COMMUNITY AIR MONITORING PLAN (CAMP)	21

4.2	GE	ENERAL REMEDIAL CONSTRUCTION INFORMATION	22
	4.2.1	PROJECT ORGANIZATION	22
	4.2.2	REMEDIAL ENGINEER	22
	4.2.3	REMEDIAL ACTION CONSTRUCTION SCHEDULE	23
	4.2.4	WORK HOURS	23
	4.2.5	SITE SECURITY	23
	4.2.6	PRE-CONSTRUCTION MEETING WITH NYSDEC	23
	4.2.7	EMERGENCY CONTACT INFORMATION	24
4.3	SI	TE PREPARATION	24
	4.3.1	MOBILIZATION	24
	4.3.2	EROSION AND SEDIMENTATION CONTROLS	24
	4.3.4	UTILITY MARKER AND EASEMENTS LAYOUT	25
	4.3.5	SHEETING AND SHORING	25
	4.3.6	DEWATERING	25
	4.3.7	EQUIPMENT AND MATERIAL STAGING	26
	4.3.8	DECONTAMINATION AREA	26
	4.3.9	SITE FENCING	26
	4.3.10	DEMOBILIZATION	26
4.4	RE	PORTING	26
	4.4.1	DAILY REPORTS	26
	4.4.2	MONTHLY REPORTS	27
	4.4.3	OTHER REPORTING	28
	4.4.4	COMPLAINT MANAGEMENT PLAN	28
	4.4.5	DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN	28
5.0	REMED	DIAL ACTION	29
5.1	CL	EANUP OBJECTIVES	29
5.2	RE	MEDIAL PERFORMANCE EVALUATION	29
	5.2.1	SOIL REMOVAL VERIFICATION	29
	5.2.2	SOIL VAPOR INTRUSION EVALUATION	30
	5.2.3	SVE SYSTEM EVALUATION	30
5.3	ME	ETHODOLOGY	31
5.4	RE	PORTING OF RESULTS	31
5.5	QA	VQC	31
5.6	DL	JSR	31

5.7	REF	PORTING OF PERFORMANCE MONITORING DATA IN FER	31
5.8	EST	IMATED MATERIAL REMOVAL QUANTITIES	32
5.9	SOI	L/MATERIALS MANAGEMENT PLAN	32
	5.9.1	SOIL SCREENING METHODS	32
	5.9.2	STOCKPILE METHODS FOR CONTAMINATED SOILS	33
	5.9.3	MATERIALS EXCAVATION AND LOAD OUT	33
	5.9.4	MATERIALS TRANSPORT OFF SITE	34
	5.9.5	MATERIAL DISPOSAL OFF-SITE	35
	5.9.6	FLUIDS MANAGEMENT	36
	5.9.7	DEMARCATION BARRIER	37
	5.9.8	BACKFILL FROM OFF-SITE SOURCES	37
	5.9.9	CONTINGENCY PLAN	38
	5.9.10	COMMUNITY AIR MONITORING PLAN	38
	5.9.11	ODOR, DUST, AND NUISANCE CONTROL	39
6.0	ENGINE	ERING CONTROLS	41
7.0	INSTITU	TIONAL CONTROLS	42
7.1	EN\	/IRONMENTAL EASEMENT	42
7.2	SIT	E MANAGEMENT PLAN	42
8.0	FINAL E	NGINEERING REPORT	44
8.1	CEF	RTIFICATIONS	45

TABLES

TABLE 4.1 PROJECT PERSONNELTABLE 4.2 REMEDIAL ACTION SCHEDULETABLE 4.3 EMERGENCY AND CONTACT NUMBERS

FIGURES

FIGURE 1.1	SITE LOCATION MAP
FIGURE 1.2	SITE PLAN
FIGURE 2.1	SOIL BORING SAMPLE RESULTS PLAN
FIGURE 2.2	GROUNDWATER SAMPLING RESULTS PLAN
FIGURE 2.3	SOIL VAPOR RESULTS AND LOCATION PLAN
FIGURE 2.4	GROUNDWATER CONTOUR MAP
FIGURE 3.1	PROPOSED EXCAVATION PLAN
FIGURE 3.2	PROPOSED SVE WELL LOCATIONS

APPENDICES

APPENDIX A SITE DEVELOPMENT PLAN
APPENDIX B COMMUNITY AIR MONITORING PLAN
APPENDIX C HEALTH AND SAFETY PLAN
APPENDIX D CITIZENS PARTICIPATION PLAN
APPENDIX E QUALITY ASSURANCE PROJECT PLAN
APPENDIX F NYSDEC SOIL CLEANUP OBJECTIVES
APPENDIX G SVE SYSTEM CONCEPTUAL REMEDIAL DESIGN DOCUMENT

LIST OF ACRONYMS

Acronym	Definition	
AWQS	Ambient Water Quality Standards	
BCA	Brownfield Cleanup Agreement	
BCP	Brownfield Cleanup Program	
CAMP	Community Air Monitoring Plan	
COC	Certificate of Completion	
CPP	Citizens' Participation Plan	
CSA	Carlin, Simpson & Associates	
CVOCs	Chlorinated Volatile Organic Compounds	
су	Cubic yard	
DER	Division of Environmental Remediation	
DER-10	NYSDEC Technical Guidance for Site	
	Investigation & Remediation	
DO	Dissolved Oxygen	
DUSR	Data Usability Summary Report	
ECs	Engineering Controls	
EE	Environmental Easement	
ESA	Environmental Site Assessment	
FER	Final Engineering Report	
ft-bgs	feet below ground surface	
FWRIA	Fish and Wildlife Resources Impact Analysis	
GAC	Granular Activated Carbon	
HASP	Health and Safety Plan	
ICs	Institutional Controls	
MCL	Maximum Contaminant Levels	
MW	Monitoring Well	
ng/l	nanograms per liter	
NYCDEP	New York City Department of Environmental	
	Protection	
NYCDOB	New York City Department of Buildings	
NYSDEC	New York State Department of Environmental	
	Conservation	
NYSDOH	New York State Department of Health	
PAHs	Polyaromatic Hydrocarbons	

Definition
Polychlorinated Biphenyls
Tetrachloroethene
Per and Polyfluoroalkyl Substances
Perfluorooctanoic Acid
Perfluorooctanesulfonic Acid
Petroleum Hydrocarbon
Photoionization Detector
Quality Assurance Project Plan
Quality Assurance/Quality Control
Occupational Safety and Health Administration
Remedial Action Objectives
Remedial Action Work Plan
Resource Conservation and Recovery Act
Recognized Environmental Concerns
Remedial Investigation
Remedial Investigation Report
Remedial Investigation Work Plan
Restricted Residential Soil Cleanup Objectives
Soil Cleanup Objectives
Soil Erosion and Sediment Control
SESI Consulting Engineers, DPC
Site Management Plan
Support of Excavation
Soil/Materials Management Plan
Supplemental Remedial Investigation
Supplemental Remedial Investigation Report
Supplemental Remedial Investigation Work Plan
Sub-Slab Depressurization System
Soil Vapor Extraction
Semi-Volatile Organic Compounds
Technical and Administrative Guidance
Memorandum
Target Analyte List
Trichloroethene
Target Compound List
Technical and Operations Guidance Series

Acronym	Definition
USCO	Unrestricted Use Soil Cleanup Objectives
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

Site Description/Physical Setting/Site History

The New York State Department of Environmental Conservation (NYSDEC) entered into a Brownfield Cleanup Program (BCP) Agreement (BCA) with Whitlock Point LLC and Whitlock Point Services LLC (the "Volunteers"), for the 0.788-acre property known as Sonero Metro City Auto Site (BCP# C203148) ("Site"), 1001 Whitlock Avenue, Bronx, New York (portion of Block 2756, Lot 85) on October 21, 2021. The Site is located in an area characterized by a mix of residential, commercial, industrial, and manufacturing developments. The Site is currently vacant and unpaved with no structures or other improvements. The Site is bounded by a vacant former industrial building to the north followed by 165th Street, Aldus Street to the south, Whitlock Avenue to the east, and residential properties followed by Longfellow Avenue to the west. Historically, the Site was improved with "auto sales" or "garages" and a gas filling station located at the southernmost extent of the Site from the 1950s to 1977. The Site was identified as Sonero Auto Repair from 1999 to 2012 and was also operated as Metro City Auto Repair. Four (4) 1,000-gallon gasoline underground storage tanks (USTs) were closed in place at the Site on December 1, 1999.

According to subsurface investigations conducted by PVE, Carlin, Simpson & Associates (CSA), and SESI Consulting Engineers (SESI), the subsurface conditions consist of brown to black fine to medium sand, mixed with traces of gravel, bricks and crushed concrete (fill) to depths of 2 to 13 ft-bgs. Results of CSA's geotechnical study have identified that the fill is underlain by dense brown coarse to fine sands, silt, and gravel to depths of 20 to 29 feet below ground surface (ft-bgs). The coarse sands are underlain by weathered schist at depths ranging from 20 to 33 ft-bgs. Groundwater was encountered at depths ranging from 18 to 21 ft-bgs during SESI's February 2022 Supplemental Remedial Investigation (SRI).

Summary of the Supplemental Remedial Investigation (RI)

The SRI was performed on the Site in February 2022 and conducted in general accordance with the Supplemental Remedial Investigation Work Plan (SRIWP), which was last revised on February 8, 2022, and subsequently approved by the NYSDEC on February 9, 2022.

The SRI consisted of collecting 30 soil samples from 10 boring locations and three (3) groundwater samples from three (3) monitoring wells. A description of the sampling activities for each media is included below.

Soil samples were collected in order to systematically investigate Site contamination on a Site-wide basis. The samples were analyzed for a combination of full target compound list (TCL) and target analyte list (TAL) analytes – which include volatile organic compounds (VOCs) (USEPA Method 8260), metals (USEPA Methods 6010/7471), semi-volatile organic compounds (SVOCs) (USEPA Method 8270), polychlorinated biphenyls (PCBs) and pesticides (USEPA Methods 8081/8082), per and polyfluoroalkyl substances (PFAS) (USEPA Method 537), and 1,4 dioxane (USEPA Method 8270). Duplicates and field blanks were collected for quality assurance/quality control (QA/QC) purposes.

Based on the results of the soil sampling analytical data, one (1) polycyclic aromatic hydrocarbon (PAH) compound in one (1) sample and seven (7) metals were detected in excess of their respective Unrestricted Use Soil Cleanup Objectives (USCOs) in 14 samples, with one (1) PAH compound and one (1) metal also exceeding restricted residential soil cleanup objectives (RRSCOs) in one (1) sample each.

Perfluorooctanesulfonic acid (PFOS) was identified in three (3) soil samples exceeding the guidance value. No exceedances of VOCs, PCBs, pesticides, or cyanide were identified above their respective USCOs in any of the soil samples collected.

In groundwater, no VOCs, pesticides, PCBs, cyanide, or 1,4-dioxane were detected at concentrations in excess of the Ambient Water Quality Standards (AWQS). One (1) SVOC, benzo(a)pyrene, exceeded the AWQS in two (2) wells. Metals exceedances of the AWQS included three (3) common naturally occurring metals (iron, manganese and sodium), as well as lead and chromium in one (1) well. Perfluorooctanoic acid (PFOA) and PFOS were identified in excess of the NYSDEC Guidance Value of 10 nanograms per liter (ng/l) in all three (3) wells.

Soil vapor sampling conducted during the previous RI and Phase II investigations identified numerous VOCs in soil vapor including tetrachloroethene (PCE) and trichloroethene (TCE) which may present a vapor intrusion risk to future buildings constructed on the Site. No corresponding VOCs were detected exceeding any standard in soil or groundwater during the SRI.

Summary of Selected Remedial Actions

This Remedial Action Work Plan (RAWP) includes an analysis of the remedial alternatives available to remediate the nature and extent of contamination as determined from data gathered during a previous remedial investigation (RI) and two (2) Phase II investigations performed between 2016-2019, and an SRI conducted by SESI in February 2022, and then selects a preferred remedy.

The planned remedy for the Site is to meet a conditional Track 1 remedy throughout the Site with no long-term engineering or institutional controls (ICs and ECs) to the extent feasible.

The remedial actions selected for the Site include the following:

- Installation of a support of excavation (SOE) system;
- Excavation of all Site soils exceeding the USCOs and therefore achieving a Track 1 remedy for soils for the entire Site;
- Collection and analysis of documentation endpoint samples in accordance with DER-10 to evaluate the performance of the remedy with respect to the attainment of Track 1, unrestricted use SCOs;
- Removal of closed-in-place USTs, if present;
- Installation of soil vapor barrier/waterproofing membrane sealing layer as an element of construction in the sub slab of the building footprint, and the elements of a sub-slab depressurization system (SSDS) beneath the lowest level of the building;
- Installation of a soil vapor extraction (SVE) system on the western side of the Site to prevent the offsite migration of soil vapor beneath the residences to the west;
- Conducting a Soil Vapor Evaluation including sub-slab vapor and indoor air sampling after construction of the garage level has been completed, and soil vapor sampling along the western perimeter of the Site to determine if the SVE system is still required to function as an engineering control, and if the SSDS is required an engineering control for the proposed building;
- Preparation of a Site Management Plan (SMP), for post-remediation management of any residual contamination as required by the Environmental Easement (EE), particularly as they pertain to future phases of construction, including plans for: (1) ICs and ECs, (2) soil vapor monitoring, and (3) reporting.

Remedial Design

A Conceptual SVE Design Document is attached to this RAWP as **Appendix G**. The final design document will be submitted separately and will provide final technical specifications, including detailed shop drawings for the proposed SVE system and SSDS.

1.0 INTRODUCTION

The New York State Department of Environmental Conservation entered into a BCP Agreement with Whitlock Point LLC and Whitlock Point Services LLC (the "Volunteers"), for the 0.788-acre property known as Sonero Metro City Auto Site (BCP# C203148) ("Site"), 1001 Whitlock Avenue, Bronx, New York (portion of Block 2756, Lot 85) on September 22, 2021. The Site is located in an area characterized by a mix of residential, commercial, industrial, and manufacturing developments. The Site is currently vacant and unpaved with no structures or other improvements. The Site is bounded by a vacant former industrial building to the north followed by 165th Street, Aldus Street to the south, Whitlock Avenue to the east, and residential properties followed by Longfellow Avenue to the west. **Figure 1.1** presents a Site Location Map. **Figure 1.2** presents a Site Plan.

SESI Consulting Engineers (SESI) has prepared this RAWP on behalf of the Volunteers. This RAWP includes an analysis of the remedial alternatives available to remediate the nature and extent of contamination as determined from data gathered during the RI and SRI, and then selects a preferred remedy.

A Remedial Investigation Report (RIR) was previously prepared for the Site by SESI and submitted to the NYSDEC in April 2021. The RIR was prepared using previously collected data in anticipation of a Track 4 remedy for the Site, and an RAWP was also prepared detailing the Track 4 remedy and submitted to the NYSDEC with the BCP application. The Volunteers changed their plans for the Site to a Track 1 remedy, which required that a more extensive SRI be conducted at the Site. To achieve this, an SRIWP was prepared for the Site, which was last revised on February 8, 2022, and subsequently approved by the NYSDEC on February 9, 2022. The field work for the SRI was performed from February 14 to 22, 2022. A Supplemental Remedial Investigation Report (SRIR) summarizing the results of SRI was submitted to NYSDEC in April 2022. The RI/SRI collectively defined the nature and extent of contamination on-Site, identified contaminant source areas, migration pathways and produced data of sufficient quantity and quality to complete an on-Site exposure assessment and a qualitative off-Site exposure assessment for purposes of designing the remedial action for the Site.

The RI/SRI for this Site did not identify fish and wildlife resources. Per DER-10 Appendix 3C, no fish and wildlife impact analysis is needed since there are no fish or wildlife resources on or near the Site.

1.1 SITE LOCATION AND DESCRIPTION

The Site is an approximately 0.788-acre property located at 1001 Whitlock Avenue, Bronx, New York, in an area characterized by a mix of residential, commercial, industrial, and manufacturing developments. The Site is currently vacant and unpaved with no structures or other improvements. The Site is bounded by a vacant former industrial building to the north followed by 165th Street, Aldus Street to the south, Whitlock Avenue to the east, and residential properties followed by Longfellow Avenue to the west.

1.2 PROPOSED REDEVELOPMENT PLAN

The Remedial Action to be performed under the RAWP is intended to make the Site protective of human health and the environment. The planned redevelopment of the Site entails the construction of a new residential apartment building, with one (1) subgrade level to be used for parking and storage. The proposed Site development plan is included as **Appendix A**.

2.0 DESCRIPTION OF SUPPLEMENTAL REMEDIAL INVESTIGATION CONCLUSIONS

The Site was investigated in accordance with the scope of work presented in the NYSDECapproved SRIWP. Findings of the previous environmental investigations were summarized in both the SRIR and SRIWP. Copies of all previous environmental reports were included as an appendix to the SRIWP. The SRIR was submitted to NYSDEC and New York State Department of Health (NYSDOH) on April 5, 2022.

2.1 SOIL

The following conclusions were made based on the soil results (illustrated on **Figure 2.1**).

- One (1) PAH, indeno(1,2,3-cd)pyrene, was identified in one (1) sample from one (1) soil boring at a concentration exceeding both the USCO and RRSCO.
- Seven (7) metals (barium, cadmium, copper, lead, mercury, nickel, and zinc) exceeded USCOs, with at least one (1) metal exceeding in 14 samples across nine (9) boring locations. Only barium exceeded the RRSCO in one (1) sample. The maximum exceedance depth for metals was 15 ft-bgs.
- No VOCs, cyanide, pesticides, or PCBs were identified exceeding the USCO or the RRSCO.
- PFOS was detected in three (3) soil samples above its respective NYSDEC soil Guidance Value (June 2022). PFOA was not detected in any soil samples exceeding the soil guidance values.

2.2 GROUNDWATER

Based on the groundwater results (illustrated on Figure 2.2) it was concluded that:

- Metals exceedances of the AWQS included three (3) common naturally occurring metals (iron, manganese and sodium), as well as lead and chromium in one (1) well.
- One SVOC, benzo(a)pyrene, was detected at concentrations exceeding the AWQS in two
 (2) wells.
- PFOA and PFOS were identified in excess of the NYSDEC Maximum Contaminant Levels (MCLs) of 10 ng/l in all three (3) wells.

2.3 SOIL VAPOR

The following conclusions were made based on the soil vapor results from the previous RIR and Phase II ESA, which are illustrated on **Figure 2.3**:

- The chlorinated VOCs (CVOCs) PCE, TCE, and methylene chloride were detected in soil vapor points on the western portion of the Site.
- The petroleum hydrocarbon (PHC) VOCs 1,2,4-trimethylbenzene, 1,3,5trimethylbenzene, 1,3 butadiene, benzene, ethylbenzene, xylenes, heptane, hexane, and toluene were detected in soil vapor.
- None of the detected VOCs were identified in corresponding soil or groundwater samples in excess of any standard.

2.4 GEOLOGICAL CONDITIONS

Based on soil borings conducted by PVE, CSA and SESI, subsurface geology generally consisted of brown to black fine to coarse sand, mixed with traces of gravel, silt, bricks and crushed concrete (fill) to depths of 2 to 13 feet ft-bgs. Results of CSA's geotechnical study identified that the fill is underlain by dense brown coarse to fine sands, silt, and gravel to depths of 20 to 29 ft-bgs. The coarse sands are underlain by weathered schist at depths ranging from 20 to 33 ft-bgs. Probable bedrock was encountered during the SRI at depths as shallow as 2.5 ft-bgs and as deep as 20 ft-bgs.

Groundwater was encountered at depths ranging from 9 to 18.6 ft-bgs in September 2017 and December 2017 in soil borings performed by PVE and CSA. During the SRI, groundwater was encountered at depths between 18 and 21 ft bgs. The groundwater was determined to flow in a northerly direction across the Site (**Figure 2.4**). Regionally groundwater is expected to flow to the east towards the Bronx River.

2.5 CONCEPTUAL SITE MODEL OF CONTAMINATION TRANSPORT

The overall depth of impacted soils ranged from 0 to 15 ft-bgs. One (1) PAH compound exceeding both the USCOs and the RRSCOs was identified at a depth of 12.5-13 ft-bgs in one (1) location (RI-SB6). One (1) metal exceeding the RRSCOs was identified at a depth of 4.5-5 ft-bgs (RI-SB4), and metals exceeding the USCO extend down to 15 ft-bgs in two (2) locations (RI-SB-1 and RI-SB-4). No exceedances of VOCs, PCBs, pesticides, or cyanide were identified in any of the soil samples collected above their respective USCOs. However, degraded petroleum contamination indicative of a historic petroleum spill was discovered near the south end of the

Site in a waste characterization boring where stained, odorous soils were encountered. This apparent contamination was separately delineated to approximately 22 ft-bgs. VOC grab sample from the stained material did not reveal any USCO exceedances.

In groundwater, no VOCs, pesticides, PCBs, cyanide, or 1,4-dioxane were detected at concentrations in excess of the AWQS. Metals exceedances of the AWQS included three (3) common naturally occurring metals (iron, manganese and sodium), as well as lead and chromium in one (1) well. PFOA and PFOS were identified in excess of the NYSDEC MCLs of 10 ng/l in all three (3) wells. These PFOA/PFOS may be indicative of regional background contamination of PFOS/PFOA that has been documented at many BCP sites to be ubiquitous at these levels in urban environments.

Groundwater was encountered in overburden soils in all three (3) wells installed during the SRI, and groundwater depths in overburden ranged from 18 to 21 ft-bgs in these wells, flowing in a northerly direction. However, local groundwater flow direction can be affected by subsurface openings or obstructions such as basements and utilities, groundwater pumping and other factors.

The PHC VOCs and CVOCs detected in soil vapor have the potential to cause soil vapor intrusion into the future on-Site buildings. A vapor intrusion evaluation may be required for the Site's proposed enclosed areas in the future.

2.6 IDENTIFICATION OF STANDARDS, CRITERIA AND GUIDANCE

The following standards and criteria typically will apply to Site Characterizations, Remedial Investigations, remedy selection, remedial actions and Site management activities:

- DER-10 / Technical Guidance for Site Investigation and Remediation
- DER-13 / Strategy for Evaluating Soil Vapor Intrusion at Remedial Sites in New York New York State Department of Environmental Conservation
- 6 NYCRR Part 257 Air Quality Standards
- 29 CFR Part 1910.120 Hazardous Waste Operations and Emergency Response
- TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations
- NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006 with updates)
- DER Interim Strategy for Groundwater Remediation at Contaminated Sites in New York State

6 NYCRR Part 375 - Regulations Subparts 1, 3 and 6 applicable to the Brownfield Cleanup

Program

DER-23 / Citizen Participation Handbook for Remedial Programs (January 2021)

- Site Characterization and Technology Selection for CERCLA sites with Volatile Organic Compounds in Soils (September 1993)
- 6 NYCRR Part 371 Identification and Listing of Hazardous Wastes (November 1998)
- 6 NYCRR Subpart 374-2 Standards for the Management of Used Oil (November 1998)
- 6 NYCRR 375 Table 375-6.8(a) and Table 375-6.8(b)
- 6 NYCRR Parts 700-706 Water Quality Standards (June 1998)
- 40 CFR Part 280 Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks
- CP-51 Soil Cleanup Guidance
- Spill Guidance Manual
- Permanent Closure of Petroleum Storage Tanks (July 1988)
- 10 NYCRR Part 67 Lead
- 6 NYCRR Part 371 Identification and Listing of Hazardous Wastes (November 1998)
- 6 NYCRR Part 372 Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities (November 1998)
- 6 NYCRR Subpart 374-1 Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities (November 1998)
- 6 NYCRR Subpart 374-3 Standards for Universal Waste (November 1998)
- TAGM 4013 Emergency Hazardous Waste Drum Removal/ Surficial Cleanup Procedures (March 1996)
- TAGM 4059 Making Changes to Selected Remedies (May 1998)
- Groundwater Effluent Limitations
- TOGS 1.3.8 New Discharges to Publicly Owned Treatment Works
- TOGS 2.1.2 Underground Injection/Recirculation (UIR) at Groundwater Remediation Sites
- OSWER Directive 9200.4-17 Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites (November 1997)
- Groundwater Monitoring Well Decommissioning Procedures (May 1995)
- Sampling, Analysis and Assessment of Per and Polyfluorinated Alkyl Substances (PFAS) under NYSDEC's Part 375 Remedial Programs (June 2021)

2.7 ENVIRONMENTAL AND PUBLIC HEALTH ASSESSMENTS

2.7.1 QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT

There are some exposure pathways related to the contamination if left unaddressed:

The migration pathway for PAHs and metals impacts from the soils into groundwater can be through infiltration of stormwater or groundwater. However, the soil that is likely the source of the

impacts is planned to be removed through excavation activities to an approximate depth of up to 16 ft-bgs for soil remediation.

The pathway of the contaminated groundwater to human receptors is limited to the direct ingestion of the groundwater or direct exposure during dewatering activities that may be conducted during excavation work. Naturally occurring metals and PFOS/PFOA may still be present in Site groundwater following Site remediation and development. However, groundwater in this area in the Bronx is not used for drinking water, and once the Site is dewatered and a foundation installed, excavation to the depths at which groundwater is present is unlikely. Therefore, groundwater is not anticipated to be a pathway for human heath exposure. In addition, the impacted Site groundwater is not likely to have an ecological pathway since there are no ecological receptors in the immediate vicinity of the Site.

In Site soil vapor, the petroleum VOCs and CVOCs detected may indicate the potential for exposure via soil vapor intrusion in the future building depending on the corresponding concentration in indoor air. However, since these VOCs were not detected in Site groundwater or soil, soil will be removed through Site remediation activities, and the Site development will include a subgrade parking level that will be ventilated in accordance with the NYC Department of Buildings Mechanical Code requirement, the potential for soil vapor intrusion is not considered to be a significant concern for the Site development. A soil vapor barrier sealing layer will be installed under the basement level concrete slab during foundation construction as a requirement under New York City Department of Buildings (NYCDOB) construction regulations for new buildings as well as a NYSDEC green remediation element. The vapor barrier sealing layer will be a certified type for use as a vapor barrier (Grace[®], Stego[®] Wrap or equivalent). In addition, the elements of the SSDS including the venting layer, the venting pipes, and the risers will be installed beneath the vapor barrier as a precautionary remedial measure, and an SVE system is proposed to be installed along the western edge of the Site to mitigate the potential for offsite migration of CVOC vapors towards residences in that direction.

2.7.2 FISH AND WILDLIFE IMPACT ANALYSIS

The Site does not contain any ecologically sensitive resources and hence the contaminated soils are not expected to have any impacts on any ecological resources.

2.8 SIGNIFICANT THREAT

The NYSDEC and NYSDOH have evaluated the SRIR to discern if this Site poses a significant threat to human health and the environment. Based on all Site data presented, the Site received a positive significant threat determination in June 2022.

2.9 REMEDIAL ACTION OBJECTIVES

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

2.9.1 GROUNDWATER

RAOs for Public Health Protection

- Prevent ingestion of groundwater containing contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of, volatiles emanating from contaminated groundwater.

RAOs for Environmental Protection

Remove any potential source of groundwater contamination.

2.9.2 SOIL

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil.

RAOs for Environmental Protection

Prevent migration of contaminants that would result in groundwater contamination.

2.9.3 SOIL VAPOR RAOs

RAOs for Public Health Protection

• Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings on site or off site.

3.0 DESCRIPTION OF THE REMEDIAL ACTION PLAN

3.1 EVALUATION OF REMEDIAL ALTERNATIVES

The objective of the remedy for the planned mixed-use residential and commercial development, is to achieve at least a conditional Track 1 cleanup, which is most protective of human health and the environment. An unconditional Track 1 soil remedy is expected to be achieved. No Site-related groundwater contamination was identified in the groundwater samples, and thus no remedy should be required for groundwater. An SVE system is proposed to be installed along the western edge of the Site to mitigate the potential for offsite migration of CVOC vapors toward residences in that direction.

Track 1

A remedy pursuant to this Track requires compliance with the USCOs for soils set forth in 6 NYCRR Table 375-6.8(a) in the remaining soils on the Site after remedial excavation.

For an unconditional Track 1 remedy, no institutional or engineering controls are allowed. For a conditional Track 1 remedy, institutional and engineering controls (ICs and ECs) are allowed only for periods of less than five (5) years. Both Track 1 remedies involve the complete removal of all soil exceeding USCOs and any potential sources, which were encountered as deep as 15 ft-bgs at this Site during the RI/SRI. A feasible remedial technology that may be used to implement this alternative involves the excavation of the contaminated soil and transportation to an approved off-site facility for disposal, followed by the collection of confirmatory endpoint samples in accordance with DER-10 from the bottoms of the excavations and along the western boundary if the excavation does not extend beyond the site boundary. The excavation will continue until the post-excavation sampling has resulted in levels that are below the USCOs or if bedrock is encountered, whichever comes first. The results will be sent to the NYSDEC/DOH for confirmation.

In a conditional Track 1 scenario, short-term institutional controls (ICs) and engineering controls (ECs) may be implemented to address contamination in soil vapor and groundwater, if necessary. However, since the only groundwater AWQS exceedances are due to naturally occurring metals, no remedy for groundwater is proposed.

Precautionary engineering controls will address potential remaining soil vapor at the Site. The VOCs and CVOCs detected in soil vapor may indicate the potential for a vapor intrusion risk depending on the corresponding concentration in indoor air. However, since these VOCs were not detected in Site groundwater or soil, soil will be removed through Site remediation activities,

and the Site development will include a subgrade parking level which will be ventilated, the potential for soil vapor intrusion should be addressed by the Site remedy. A soil vapor barrier sealing layer will be installed under the basement level concrete slab during foundation construction as a requirement under NYCDOB construction regulations for new buildings as well as a NYSDEC green remediation element. The vapor barrier sealing layer will be a certified type for use as a vapor barrier (Grace[®], Stego[®] Wrap or equivalent). The barrier will prevent any vapor or moisture from entering the slab. In addition, the elements of the SSDS (venting layer, venting pipes, and risers) will be installed beneath the vapor barrier, and an SVE system is proposed to be installed along the western edge of the Site to mitigate the potential for offsite migration of CVOC vapors towards residences in that direction. A soil vapor evaluation consisting of sub-slab vapor and indoor air sampling will be performed after construction of the garage level. If the results of the evaluation indicate that there is no potential for soil vapor intrusion, the SSDS will not be required as engineering control. The SVE system conceptual design is described in **Appendix G**, and the system performance and monitoring are described in Section 5.2.3. The SVE will be monitored during the five-year post-Certificate of Completion (COC) period that is allowed as part of a conditional Track 1. If influent VOC stream concentrations from the SVE system and soil vapor concentrations from the SVE treatment area indicate that the SVE system is no longer necessary to prevent offsite vapor migration, the system will cease to function as an engineering control with the pre-approval of the NYSDEC and NYSDOH. If the SVE or soil vapor concentrations indicate that the potential for offsite vapor migration remains, the SVE system will continue to function and may be rebalanced to help minimize the potential for offsite migration of soil vapor.

Track 2

A Track 2 remedy consists of achievement of the application restricted use soil cleanup objectives, which for this Site would be the restricted residential soil cleanup objectives (RRSCOs. This Track requires the Volunteer to implement at least a soil cleanup that achieves the lower of the RRSCOs, or the protection of groundwater soil cleanup objectives (PGWSCOs) from the tables in 6 NYCRR 375-6.8(b) within the top 15 feet of soil (or bedrock if less than 15 feet). Under a Track 2 remedy, the remedial program may include the use of long-term institutional or engineering controls to address residual contamination related to other media including, but not limited to groundwater and soil vapor. The Site remediation pursuant to Track 2 would still involve excavation and disposal of the contaminated soils to 15 feet bgs to meet the RRSCOs.

Soil will be excavated down to one (1) foot below the deepest USCO exceedance based on the RI/SRI results within each grid cell. Confirmatory endpoint samples will be collected in accordance with DER-10 from the bottom of the excavation and along the western boundary if the excavation does not extend beyond the site boundary (see **Figure 3.1**). However, if Track 1 is not confirmed at this depth and further excavation is not possible, a Track 2 remedy will be a contingent option for all or part of the Site soils. The results will be sent to the NYSDEC/DOH for confirmation.

The same ICs and ECs for Site soil and precautionary soil vapor measures will be implemented for a Track 2 remedy in the event that only Track 2 can be achieved on all or portions of the Site. An SMP and EE as institutional controls will be temporarily put in place to ensure that all of the institutional and engineering controls are maintained until no longer required by NYSDEC and NYSDOH.

Track 4

All soils in the upper two feet which exceed the restricted residential SCOs as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. Approximately 19,000 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and, and in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

Track 4 also includes an SMP and EE as institutional controls to ensure that all of the institutional and engineering controls, including the cover system, are maintained, and any soil removed from the Site post remedial action is managed properly. The SMP will include periodic (annual) monitoring and reporting in relation to the integrity of the cover system to ensure continued protection of the human health and the environment.

No Action Alternative

The no action alternative would leave existing sources of contamination in soil, groundwater and soil vapor, which would cause potential exposure to anyone present on the Site. The no action alternative is thus unacceptable and has not been compared to the factors below.

Protection of human health and the environment:

Although all Tracks would provide adequate protection of human health and the environment, Track 1 is more protective than the other cleanup tracks because it would remove all soil contamination. Moreover, because a Track 1 remedy requires no long-term ongoing institutional or engineering controls to manage contamination indefinitely into the future, the cleanup does not rely on human intervention or mechanical equipment to remain effective in protecting human health and the environment. A Track 2 or Track 4 remedy would also be protective of human health and the environment if the proper long-term engineering and institutional controls are put in place and managed in an SMP.

Compliance with standards, criteria, and guidelines:

All cleanup Tracks will achieve applicable cleanup standards. However, a Track 1 cleanup achieves a more stringent set of standards than a Track 2 or 4 cleanup.

Short-term effectiveness and impacts:

Generally, Track 1 provides the best short-term effectiveness because it promptly removes the most contaminant mass from the Site and achieves the most permanent long-term remedy. Track 2 also accomplishes this, but to a lesser extent. Tracks 1 and 2 are somewhat less favorable in terms of short-term impacts primarily because mass removal of the contaminated soils generates more trucks trips and potential off-site impacts such as dust than a Track 4 limited removal remedy. A Track 4 approach also reduces the risk of construction worker exposure by reducing the volume of contaminated soil being managed and has less potential to cause dust and traffic issues. Excavation may result in a greater potential for migration of impacts from the open excavation (e.g. wind erosion, storm water intrusion, etc.). However, best management practices in relation to soil handling, the community air monitoring program (CAMP, **Appendix B**), and erosion and sediment controls, and dust control measures will be implemented to minimize and control any migration of dust on-Site and off-Site.

Long-term effectiveness and Performance:

Because Tracks 1 and 2 would involve removal of the greatest amount of contaminated soil that may be impacting groundwater and soil vapor, these remedial alternatives will provide the most long-term effectiveness. As already discussed above, a Track 1 cleanup will allow the Site to be used for any purpose without restriction and without reliance on the long-term employment of ICs or ECs (which can fail and require on-going monitoring and maintenance to remain effective over the long-term). A restricted residential Track 2 clean-up allows the Site to be re-developed, but may have longer-term ECs and ICs.

The long-term effectiveness of the Track 4 clean-up will be ensured with adherence to the SMP and recording of an EE. Although contaminants are left in on-Site soils, a properly maintained cover system would be effective at eliminating the risk of dermal exposure.

Reduction of toxicity, mobility, or volume of contaminated material:

Tracks 1 through 4 will reduce of toxicity and mobility. A Track 1 or 2 would result in more reduction in the volume of contaminated soils than in a Track 4 clean-up. While Track 4 provides a relatively smaller reduction in volume than the other tracks, it relies primarily on the decrease of contaminant mobility.

Constructability:

Track 1 and/or Track 2 are implementable given the location and the planned use for the Site.

While there are short-term potential impacts from a Track 1 or 2 remedy, the Site is located in the middle of an urban area, and, therefore, off-Site disposal of the contaminated soils in trucks can be readily controlled. Moreover, these short-term impacts will be mitigated through implementation of the CAMP and Health and Safety Plan (HASP, **Appendix C**), which will employ truck tire washing and odor and dust control measures. Therefore, Track 1 or 2 are implementable remedies for this Site.

Cost effectiveness:

The preferred alternative should provide optimal suitability of the eight (8) accompanying evaluation factors with minimal remedial cost. The contaminated soil/fill layer (USCO exceedances) extend from the surface up to 15 ft-bgs, and the stained/odorous soils in the limited petroleum spill area may extend up to 22 ft-bgs. Removal of the soil exceeding the USCOs to achieve Track 1 or 2 Site-wide will be the most costly of the remedial alternatives. However, this mass removal results in long-term savings by eliminating (or, in the case of Track 2, significantly reducing) the need for indefinite cap monitoring and maintenance. Therefore, a Track 1 or 2 remedy for the Site is cost effective in the long term.

Community Acceptance:

A community communications program has been incorporated into all remedial alternatives, per NYSDEC Brownfield Program law and regulations and the Site-specific Citizens' Participation Plan (CPP). The Site development will include an affordable housing component and is part of an area-wide transit-oriented redevelopment that will include modern affordable apartments in the Bronx. The community should accept any of the remedies, however, the Track 1 or 2 remedy is likely preferable to the community since it will reduce the most contamination and prevent off-Site migration long-term.

Land use:

Tracks 1 and 2 would achieve remediation for the planned residential use of the Site. Developing the property will create short-term construction impacts, but the creation of a new urban affordable housing project on a remediated former brownfield site will provide significant community benefits.

- <u>Zoning:</u> All of the proposed remedies under each track will facilitate the Site to be utilized for a proposed mixed commercial-residential development, which is consistent with applicable zoning laws and anticipated future use of the site.
- <u>Applicable comprehensive community master plans or land use plans:</u> Implementation of all Tracks (with institutional controls) cleanup will facilitate the proposed commercialresidential development, which is consistent with current local land use plan.
- <u>Surrounding property uses:</u> Each cleanup approach is not expected to significantly impact land use of the surrounding properties as the truck traffic and access will be on public roads. There will be short term impacts from the remediation and construction project, but

these will result in long-term benefits of converting a defunct, mostly abandoned and contaminated property into new affordable housing and commercial uses.

- <u>Citizen Participation:</u> Citizen Participation during implementation of a remedial program will proceed in accordance with the Citizens' Participation Plan included as **Appendix D** of this RAWP, and as noted above, will have minimal community impact. Any short-term impacts will be addressed by the CAMP and HASP.
- Environmental justice concerns: There are no known environmental justice concerns associated with this project.
- Land use designations: A Track 1 remedy will not restrict any current or future land use designations. A restricted residential Track 2 will have very minimal restrictions on the future land use of the property. A Track 2 will have restrictions that will be managed in the SMP. A Track 4 remedy will have additional restrictions, which makes long-term site management more challenging.
- <u>Population growth patterns:</u> Any of the proposed remedies will not impact reasonably anticipated population growth patterns in the area other than to better accommodate growth by providing for new downtown, transit-oriented housing.
- <u>Accessibility to existing infrastructure:</u> Access to existing infrastructure is present in the surrounding area, and there is access to mass transit via the Whitlock Avenue 6 train subway station 0.2 miles away. Subsurface infrastructure will be removed during the remedy as part of site preparation activities. However, new infrastructure will be installed subsequent to the remediation as part of the redevelopment.
- <u>Proximity to natural resources:</u> The closest surface water body, the Bronx River, is located approximately 550 feet east of the Site. Storm water drainage patterns are generally consistent with the surrounding topography and primarily flow over paved surfaces into storm drains in the surrounding streets.
- <u>Off-Site groundwater impacts:</u> Based on the RI and SRI findings, it is not clear if there have been any off-Site groundwater impacts from historical site operations, especially given the heavily urban environment in which the Site is located.

Geography and geology of the Site: See Section 2.4 above.

Current Institutional Controls: There are no current institutional controls associated with the Site.

3.2 SELECTION OF THE PREFERRED REMEDY

The remedial alternatives analysis determined that a Track 1 (if achievable) or Track 2 remedy will be the goal for all or portions of the Site.

3.3 SUMMARY OF SELECTED REMEDIAL ACTIONS

A summary of the selected Track 1 remedial actions to address the impacts identified are discussed below:

- Installation of SOE system along the side walls of the excavation for structure stability of the remedial excavation pit and to prevent off-Site migration and impacts to off-site structures;
- 2. Excavation to achieve a Track 1 cleanup by removing the contaminated soil/fill source to USCOs, and any other identified sources such as underground storage tanks (USTs) and associated piping. If the identified contaminated soil and fill are removed after the remedial excavation, which is documented by endpoint confirmatory sampling or bedrock survey, then the remedy would achieve the Track 1 for soils on the Site. If any contaminated soil and/or fill is left in place, which is documented by endpoint confirmatory sampling, the Volunteer will try to achieve the Track 2 RRSCOs based on the contaminant levels in the remaining fill beneath the final excavation depth;
- Screening for indications of contamination (by visual means, odor, and monitoring with photoionization detector [PID]) of all excavated soil during the intrusive remediation Site work;
- Collection and analysis of end-point samples to evaluate the performance of the remedy with respect to attainment of the Track-specific SCOs. If bedrock is encountered during excavation, the bedrock surface will be surveyed in lieu of an endpoint sample;
- 5. Removal of USTs, if present, in accordance with State and local regulations;
- Documentation of all appropriate off-Site disposal of all material removed from the Site in accordance with all Federal, State and local rules and regulations for handling, transport, and disposal;
- 7. All responsibilities associated with the Remedial Action, including permitting requirements and pretreatment requirements, will be addressed in accordance with all

applicable Federal, State and local rules and regulations and overseen and certified by the SESI Remedial Engineer of Record described below.

- 8. Installation of soil vapor barrier/waterproofing membrane sealing layer as a construction element and the elements of the SSDS (venting layer, venting pipes, and risers) as a remedial element in the sub slab of the building footprint. The barrier and the elements of the SSDS will prevent any vapor or moisture from entering the slab.
- 9. Conducting a Soil Vapor Evaluation including sub-slab vapor and indoor air sampling after construction of the garage level has been completed.
- 10. Installation of an SVE system along the western edge of the Site to mitigate the potential for offsite migration of CVOC vapors towards residences in that direction.
- 11. Recording of an Environmental Easement for the entire Site if a conditional Track 1 or a Track 2 are accomplished;
- 12. Preparation of an SMP for long-term management of residual soil vapor and/or soil contamination as required by the Environmental Easement, particularly as they pertain to future phases of construction, including plans for: (1) Institutional and Engineering Controls, (2) monitoring, (3) soil excavation (only if Track 1 is not achieved and a Track 2 restricted residential has been achieved) and (4) reporting.

4.0 REMEDIAL ACTION PROGRAM

4.1 GOVERNING DOCUMENTS

4.1.1 SITE-SPECIFIC HEALTH & SAFETY PLAN

A copy of the SESI HASP is included as **Appendix C**. All remedial work performed under this plan will be in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

The Volunteers and associated parties preparing the remedial documents submitted to the State and those performing the construction work are completely responsible for the preparation of an appropriate HASP and for the appropriate performance of work according to that plan and applicable laws.

The HASP and requirements defined in this Remedial Action Work Plan pertain to all remedial and invasive work performed at the Site until the issuance of a COC.

4.1.2 QUALITY ASSURANCE PROJECT PLAN (QAPP)

A copy of the SESI QAPP is included as **Appendix E**. All field sampling procedures and analytical methods will be implemented in accordance with this QAPP.

4.1.3 SOIL/MATERIAL MANAGEMENT PLAN (SoMP)

The SoMP is included as Section 5.9 and includes detailed plans for managing all soils/materials that are disturbed at the Site, including excavation, handling, storage, transport and disposal. It also includes all of the controls that will be applied to these efforts to assure effective, nuisance-free performance in compliance with all applicable Federal, State and local laws and regulations.

4.1.4 STORM-WATER POLLUTION PREVENTION PLAN

A Storm Water Pollution Prevention Plan (SWPPP) plan for the Site will be prepared by others. A copy of the approved stormwater pollution prevention plan will be submitted to the NYSDEC prior to the start of excavation/remediation.

4.1.5 COMMUNITY AIR MONITORING PLAN (CAMP)

A copy of the CAMP for the Site is included as **Appendix B**.

4.2 GENERAL REMEDIAL CONSTRUCTION INFORMATION

4.2.1 PROJECT ORGANIZATION

Whitlock Point LLC and Whitlock Point Services LLC are the BCP Volunteers and the planned developer of the Site. SESI is the environmental consultant for these volunteer entities. A table summarizing the various personnel associated with the project is included as **Table 4.1** below.

Name	Company	Project Position	Address	Phone Number
Jay Martino	Whitlock Point LLC	Volunteer Contact	5959 Broadway, Suite 3 Bronx, NY	(914) 729- 4986
Jesse Mausner, PG	SESI Consulting Engineers, P.C.	Environmental Consultant's Project Manager	12A Maple Avenue Pine Brook, NJ 07058	(973) 808- 9050
Fuad Dahan, PE	SESI Consulting Engineers, P.C.	Remedial Engineer	12A Maple Avenue Pine Brook, NJ 07058	(973) 808- 9050
Michael MacCabe	NYSDEC	Project Manager	NYSDEC 625 Broadway Albany, NY 12233	(518) 402- 9687
Angela Martin	NYSDOH	Project Manager	NYSDOH Empire State Plaza, Corning Tower, Room 1787 Albany, New York 12237	(518) 402- 7860

Table 4.1 – Project Personnel

4.2.2 REMEDIAL ENGINEER

The Remedial Engineer for this project will be Fuad Dahan, PE. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the remedial program for the Sonero Metro City Auto Site. The Remedial Engineer will certify the Final Engineering Report (FER) that the remedial activities were observed by qualified environmental professionals under his supervision and that the remediation requirements set forth in this RAWP and any other relevant provisions of ECL 27-1419 have been achieved in full conformance with that Plan. Other Remedial Engineer certification requirements are listed later in this RAWP.

The Remedial Engineer will review all pre-remedial plans submitted by contractors for compliance with this RAWP and will certify compliance in the FER.

The Remedial Engineer will also provide the certifications listed in the FER

4.2.3 REMEDIAL ACTION CONSTRUCTION SCHEDULE

A remedial action construction schedule is included as **Table 4.2** below. The schedule includes estimates of time required to complete the activities associated with the remedial action. It is based on elapsed time from receipt of NYSDEC approval. Once NYSDEC approves this RAWP, an updated schedule showing actual dates will be provided to the NYSDEC as an addendum to this plan.

TABLE 4.2—Remedial Action Schedule

Activity	Date
NYSDEC approves RAWP and issues decision document	March 2023
Start of remedial work (excavation and soil disposal, dewatering)	February 2023
Completion of soil excavation	May 2023
Installation of elements of the SSDS beneath new building	August 2023
Installation of SVE system on west side	October 2023
Draft final engineering report, submit FER to NYSDEC	November 2023
Certificate of Completion	December 2023

4.2.4 WORK HOURS

The hours for operation of remedial construction will conform to the New York City Department of Buildings construction code requirements or according to specific variances issued by that agency. NYSDEC will be notified by the Applicant of any variances issued by the Department of Buildings.

4.2.5 SITE SECURITY

A description of the proposed Site security measures will be included in the Site Operations Plan. The Site is secured with fences and locked gates. Access to Site will be controlled by the local police patrolling the area.

4.2.6 PRE-CONSTRUCTION MEETING WITH NYSDEC

A pre-construction meeting will be held with NYSDEC prior to the start of major remedial construction activities.

4.2.7 EMERGENCY CONTACT INFORMATION

An emergency contact sheet with names and phone numbers is included in **Table 4.3** below. That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency.

Table 4.3 - Emergency and Contact Numbers

Medical, Fire, and Police:	911
One Call Center:	(800) 272-4480 (3-day notice required for utility markout)
Poison Control Center:	(800) 222-1222
Pollution Toxic Chemical Oil Spills:	(800) 424-8802
NYSDEC Spills Hotline	(800) 457-7362

Fuad Dahan – Remedial Engineer (SESI Consulting Engineers)	(973) 808-9050
Director of Construction TBD	TBD

* Note: Contact numbers subject to change and will be updated as necessary

TBD – To Be Determined

4.3 SITE PREPARATION

4.3.1 MOBILIZATION

Mobilization tasks will include:

- Construction of temporary facilities and utilities;
- Set-up of construction equipment and facilities;
- Construction of fencing and barriers;
- Construction of erosion control measures; and
- Construction of decontamination and materials staging areas.

4.3.2 EROSION AND SEDIMENTATION CONTROLS

Erosion and sediment control measures will be outlined in a Soil Erosion and Sediment Control Plan that will be prepared for the Site and approved by the New York City Department of Environmental Protection (NYCDEP).

4.3.4 UTILITY MARKER AND EASEMENTS LAYOUT

The Volunteers and their contractors will be solely responsible for the identification of utilities that might be affected by work under the RAWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this RAWP. The Volunteer and its contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. The Volunteers and their contractors will obtain any local, State or Federal permits or approvals pertinent to such work that may be required to perform work under this RAWP. Approval of this RAWP by NYSDEC does not constitute satisfaction of these requirements.

4.3.5 SHEETING AND SHORING

An SOE system will be installed along the property boundaries as necessary prior to the excavation activities as part of the Site preparation.

The Volunteers and their contractors will be solely responsible for safe execution of all invasive and other work performed under this Plan and the implementation of safety measures (Sheeting and Shoring) as necessary to maintain safe working environment. The Volunteers and their contractors will obtain any local, State or Federal permits or approvals that may be required to perform work under this Plan. Further, the Volunteers and their contractors are solely responsible for the implementation of all required, appropriate, or necessary health and safety measures during performance of work under the approved Plan.

4.3.6 DEWATERING

Dewatering may be required as part of this remedy because groundwater may be present at depths shallower than the planned remedial excavation depths depending on precipitation conditions. All groundwater encountered will be treated as contaminated groundwater. The groundwater will be pumped into temporary storage frac-tanks, treated on-Site via bag filters and granular activated carbon (GAC) units, and discharged to the combined or storm sewer. Appropriate discharge permits will be obtained from the NYCDEP.

4.3.7 EQUIPMENT AND MATERIAL STAGING

Equipment and material staging areas are expected to be relocated throughout the Site during remedial construction.

4.3.8 DECONTAMINATION AREA

The decontamination area construction and operational requirements are provided in the HASP. Truck tires must be washed before exiting the Site.

4.3.9 SITE FENCING

A construction safety fence is installed around the entire perimeter of the site. Access through gates will be provided at various points as required by the Volunteers and their contractors. These gates will be locked during non-construction hours.

4.3.10 DEMOBILIZATION

Demobilization will include the following:

- Restoration of areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management area[s], and access area);
- Removal of temporary access areas (whether on-Site or off-Site) and restoration of disturbed access areas to pre-remediation conditions;
- Removal of sediment and erosion control measures and disposal of materials in accordance with acceptable rules and regulations;
- Equipment decontamination; and
- General refuse disposal.

4.4 REPORTING

4.4.1 DAILY REPORTS

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers following each day when elements of the remedy (soil excavation, system installation) are completed and will include:

- Activities relative to the Site during the previous day and those anticipated for the next reporting day, including a quantitative presentation of work performed (i.e. number of wells sampled, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling, when applicable, results received following internal data review and validation, as applicable;
- Photographs of remedial program elements;
- CAMP data from the previous day;
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays; and
- Information regarding any complaints made.

4.4.2 MONTHLY REPORTS

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers by the 10th of the month to report on the previous month's activities and will include:

- Activities relative to the Site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (i.e. tons of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- A summary of any CAMP exceedances from the previous month, including explanations of how exceedances were resolved and if any actions were taken
- Sampling results received following internal data review and validation, as applicable; and,
- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays.

In the event of a dust or odor complaint and all exceedances related to the CAMP, the NYSDEC and NYSDOH project managers will be notified within 24 hours.

4.4.3 OTHER REPORTING

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital format. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the Site prior to any Remedial Actions will be provided. Representative photos will be provided of each contaminant source and/or source area as applicable before, during and after remediation. Photos will be submitted to NYSDEC electronically and will be sent to NYSDEC's Project Manager and to NYSDOH's Project Manager. A photo log will be prepared to provide explanation for all representative photos in the FER.

Job-site record keeping for all remedial work will be appropriately documented. These records will be maintained on-Site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff.

4.4.4 COMPLAINT MANAGEMENT PLAN

A public information board will be constructed at the perimeter of the Site. This information board will contain the phone number of the Volunteer where complaints may be directed. General information notices to the public will also be posted on this board for their benefit. The NYSDEC and NYSDOH project managers will be notified of an odor, dust, or health-related public complaint within 24 hours of the occurrence, or sooner, depending on the severity of the complaint.

4.4.5 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

If there are any deviations from the RAWP, the following steps will be taken:

- Reasons for deviating from the approved RAWP will be identified and communicated directly to the NYSDEC Project Manager;
- All deviations will be communicated verbally and in writing (by letter or email) to the NYSDEC Project Manager;
- The deviations will be implemented based on verbal or written approval of the NYSDEC Project Manager. All verbal approvals will be followed-up in writing.
- The effect of the deviations on the overall remedy will be described/addressed in the FER.

5.0 REMEDIAL ACTION

Removal of all contaminated soils under the Remedial Action for the Site will be implemented in accordance with the Soil Management Plan described below (Section 5.9) and the Site-specific QAPP (**Appendix E**).

A plan depicting the locations where the remedial excavation activities will be carried out is included as **Figure 3.1**.

A conceptual design for the SVE system is presented in **Appendix G**. A plan showing the proposed locations of the SVE wells is included as **Figure 3.2**.

The design of the SSDS elements including the venting layer, the venting pipes and risers, will be provided at a later time once the foundation plans for the proposed building are finalized.

5.1 CLEANUP OBJECTIVES

The Soil Cleanup Objectives for this Site are the Track 1 USCOs as listed in Appendix F.

Soil and materials management on-site will be conducted in accordance with the Soil Management Plan as described below (Section 5.9).

Groundwater cleanup objectives will be the NYSDEC TOGS AWQS.

Soil vapor mitigation objectives will be the NYSDOH Guideline Values and Decision Matrices for the specific contaminants of concern.

5.2 REMEDIAL PERFORMANCE EVALUATION

5.2.1 SOIL REMOVAL VERIFICATION

For all excavations, post-excavation soil samples will be collected in accordance with NYSDEC regulations. The proposed sample locations meet NYSDEC sampling frequency requirements (1 sample per 900 ft² of excavation bottom and 1 sample per 30 linear feet of excavation sidewall). If bedrock is encountered prior to reaching the proposed remedial excavation depth, the bedrock surface will be surveyed and photographed in lieu of an endpoint sample in the identified location.

5.2.2 SOIL VAPOR INTRUSION EVALUATION

A soil vapor intrusion evaluation will be conducted following construction of the sub-grade garage level that will be underlain by the vapor barrier/waterproofing membrane and the elements of the SSDS. The evaluation will include the collection of co-located sub-slab vapor and indoor air samples.

The results of the evaluation will determine if soil vapor intrusion is occurring or has the potential to occur, and if the SSDS is required as an engineering control for the proposed building. If the results of the evaluation indicate that there is no potential for soil vapor intrusion, the SSDS will no longer be required as an engineering control pending approval of NYSDEC and NYSDOH. If the results indicate that there is potential for soil vapor intrusion, the following actions may be taken:

- The SSDS may be completed with above ground components and switched to an active system with a blower;
- The garage ventilation system may be adjusted in such a way to help prevent intrusion of soil vapor;
- The building slab may be inspected for any potential leaks, and these will be sealed if present.

5.2.3 SVE SYSTEM EVALUATION

The SVE system performance will be monitored during the five-year post-COC period that is allowed as part of a conditional Track 1. Details regarding SVE system testing, balancing, and monitoring are included in the remedial design document in **Appendix G**. The final technical design document will be submitted separately. Soil vapor sampling will be conducted along the western perimeter of the Site concurrently with the evaluation detailed in Section 5.2.2 to determine if the SVE system is still required to function as an engineering control. If VOC influent stream concentrations from the SVE system and soil vapor concentrations from the SVE treatment area indicate that the SVE system is no longer necessary to prevent offsite vapor migration, the system will no longer be required as an engineering control pending approval of NYSDEC and NYSDOH. If SVE or soil vapor concentrations indicate that the potential for offsite vapor migration remains, the SVE system will continue to function and may be rebalanced to help minimize the potential for offsite migration of soil vapor.

5.3 METHODOLOGY

Soil samples will be collected in accordance with the QAPP using disposable gloves/trowels or dedicated, decontaminated stainless steel spoons. Soil vapor and indoor air samples will be collected in accordance with the QAPP using stainless steel Summa[®] canisters.

5.4 REPORTING OF RESULTS

Soil and soil vapor samples will be submitted to a NYSDOH ELAP certified laboratory. The results will be reported in accordance with NYSDEC requirements for Category B data deliverables (as outlined in DER-10).

5.5 QA/QC

Collection of quality assurance/quality control (QA/QC) samples to evaluate potential crosscontamination from sampling equipment and during shipment of samples and repeatability of laboratory analytical practices will be in accordance with the QAPP included as **Appendix E**. Field blanks, trip blanks and duplicate samples associated with daily sampling activities will be collected as a part of the QA/QC practices.

5.6 DUSR

To ensure that the field sampling and laboratory analytical practices are acceptable, the data associated with all the samples will be validated by a third party (in accordance with requirements of DER-10). The validation approach and results will be presented in a Data Usability Summary Report (DUSR) to be included in the FER.

5.7 REPORTING OF PERFORMANCE MONITORING DATA IN FER

The FER will include a table of end point data with highlights or a summary of exceedances of SCOs, if any. A spider map showing all SCO exceedances will also be presented in the FER.

Chemical labs used for all end-point sample results and contingency sampling will be NYSDOH ELAP certified.

End point sampling at the bottom of the excavation will be performed in accordance with DER-10 sample frequency requirements. Bottom samples will be collected at a rate of one for every 900 square feet. Side-wall sampling will not be applicable due to planned benching/sloping between cells as detailed in the following section. The FER will provide a tabular and map

summary of all end-point sample results and exceedances of SCOs.

The FER will also include SVE system performance monitoring data, if available.

5.8 ESTIMATED MATERIAL REMOVAL QUANTITIES

Source removal excavation activities will be implemented during the course of the remediation activities for the Site. Based on the RI/SRI, excavation depths required to achieve Track 1 SCOs may vary from 2 to 16 ft-bgs based on the deepest exceedance of USCOs in each boring plus one (1) additional foot. The resultant proposed excavation depths are shown on **Figure 3.1**, with the Site divided into cells around each RI boring location. In between each cell, the soil will be benched/sloped for safety reasons. The resulting estimated quantity of contaminated soil and fill to be removed and disposed of for off-site remediation is 19,000 cubic yards (CY), which includes a 40 percent overage factor to account for the planned benching/sloping between cells. In addition, the delineated spill area may require excavation as deep as 22 ft-bgs to remove stained/odorous soils.

The actual excavated volume will be reported in the FER as a tally of the manifests and tickets of the soils disposed off-Site. It is possible that waste characterization data reveals that more contaminated soil will have to be disposed of off-site at special disposal facilities.

5.9 SOIL/MATERIALS MANAGEMENT PLAN

Approximately 19,000 CY of material is anticipated to be excavated as part of remediation, with additional material removed for construction. Any required fill will consist of imported clean fill that meets the requirements per 6 NYCRR Part 375-6.7(d) and the requirements for emerging contaminants sampling per the June 2021 PFAS Guidance Document.

5.9.1 SOIL SCREENING METHODS

Visual, olfactory and PID soil field screening and assessment will be performed by a qualified environmental professional during all remedial excavations into known or potentially contaminated material. Soil screening will be performed regardless of when the invasive work is done and will include all excavation and invasive work performed during the remedy and during development phase, such as excavations for foundations and utility work, prior to issuance of the Certificate of Completion. Screening will be performed by qualified environmental professionals.

All primary contaminant sources identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the FER

5.9.2 STOCKPILE METHODS FOR CONTAMINATED SOILS

Stockpiles of contaminated materials, if needed, will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC.

Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected, and damaged tarp covers will be promptly replaced.

Soil stockpiles will be encircled with silt fences. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

5.9.3 MATERIALS EXCAVATION AND LOAD OUT

The Remedial Engineer or a qualified environmental professional under his/her supervision will oversee all invasive work and the excavation and load-out of all excavated material.

The Volunteers and their contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site has been investigated during the remedial investigation work. It has been determined that no risk or impediment to the planned work under this Remedial Action Work Plan is posed by utilities or easements on the Site.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and New York State Department of Transportation requirements (and all other applicable transportation requirements).

A truck tracking pad for soil removal and/or tire washing associated with construction activities will be operational during construction. The Remedial Engineer will be responsible for ensuring that all outbound trucks are not causing any off-Site tracking of contaminated soils.

Locations where vehicles enter or exit the Site will be inspected daily for evidence of off-Site sediment tracking.

The Remediation Engineer will ensure that all egress points for truck and equipment transported from the Site will be clean of dirt and other materials derived from the Site during Site

remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials.

The Volunteers and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as building foundations and bridge footings).

The Remedial Engineer will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this Remedial Action Work Plan.

5.9.4 MATERIALS TRANSPORT OFF SITE

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Truck transport routes will be included in the SOP. All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes.

Proposed inbound and outbound truck routes to the Site will take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; (f) overall safety in transport; and (g) community input through the CPP, included in **Appendix D**.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation and development.

Queuing of trucks will be performed in order to minimize off-Site disturbance.

Material transported by trucks exiting the Site will be secured with tight-fitting covers. Loosefitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used. A tracking pad will be installed at the Site egress to ensure clean-up of the soils from the truck tires before the trucks exit the Site. If needed, truck tires will be washed. Truck wash waters will be collected and disposed of off-Site in an appropriate manner.

5.9.5 MATERIAL DISPOSAL OFF-SITE

Approval from appropriate disposal facilities will be received prior to start of work. The total quantity of soil material anticipated to be removed for soil remediation off-Site disposal is approximately 19,000 CY but additional contaminated soil may require remediation disposal at special disposal facilities based on waste characterization data.

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be disposed in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site will not be undertaken without formal NYSDEC approval.

Material that does not meet Track 1 unrestricted SCOs is prohibited from being taken to a New York State recycling facility (6NYCRR Part 360-16 Registration Facility).

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a letter from the Remedial Engineer or Volunteer to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This letter will state that material to be disposed is contaminated material generated at an environmental remediation Site in New York State. The letter will provide the project identity and the name and phone number of the Remedial Engineer. The letter will include as an attachment a summary of all chemical data for the material being transported (including Site Characterization data); and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents will be included in the FER.

Non-hazardous historic fill and contaminated soils taken off-Site will be handled, at minimum, as a Municipal Solid Waste per 6NYCRR Part 360-1.2

Historical fill and contaminated soils from the Site are prohibited from being disposed at Part 360-16 Registration Facilities (also known as Soil Recycling Facilities).

The Final Engineering Report will include an accounting of the destination of all material removed from the Site during this Remedial Action, including excavated soil, weathered rock, contaminated soil, historic fill, solid waste, and hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. This information will also be presented in a tabular form in the FER.

Bill of Lading system or equivalent will be used for off-site movement of non-hazardous wastes and contaminated soils. This information will be reported in the FER.

Hazardous wastes, if any, derived from on-site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations.

Appropriately licensed haulers will be used for material removed from this Site and will be in full compliance with all applicable local, State and Federal regulations.

Waste characterization will be performed for off-site disposal in a manner suitable to the receiving facility and in conformance with applicable permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the FER. All data available for soil/material to be disposed at a given facility must be submitted to the disposal facility with suitable explanation prior to shipment and receipt.

5.9.6 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including dewatering fluids, will be handled, treated, and discharged in accordance with applicable local, State, and Federal regulations. If any liquids are needed to be discharged into the sewer system, permits will be obtained from the NYCDEP, and NYSDEC approval will be sought prior to the discharge. Dewatered fluids will not be recharged back to the land surface or subsurface of the Site without NYSDEC approval.

Water generated during remedial construction will not be discharged to surface waters (i.e. a local pond, stream or river) without a State Pollutant Discharge Elimination System permit.

5.9.7 DEMARCATION BARRIER

A land survey will be performed by a New York State licensed surveyor, of the Site if a Track 2 clean-up has been selected after the completion of related construction activities. The survey will define the top elevation of residual contaminated soils. This survey will constitute the written record of the upper surface of the 'Residuals Management Zone' in the SMP. A map showing the survey results will be included in the FER and the SMP.

5.9.8 BACKFILL FROM OFF-SITE SOURCES

All material imported to be used on-site as backfill will be sampled at a frequency of one (1) composite sample per 500 cubic yards of material from each off-Site borrow area. If more than 1,000 cubic yards of soil are needed from the same source area and both samples of the first 1,000 cubic yards meet the USCOs, the sample frequency will be reduced to one (1) composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one (1) sample per 5,000 cubic yards, provided all earlier samples met the USCOs. The samples will be analyzed for TCL VOCs, TCL SVOCs, pesticides, PCBs, PFAS and TAL metals, including cyanide. The soil may be used as cover material provided that all parameters meet the USCOs, per the NYSDEC regulatory requirements. The imported material, if needed, will be sampled in accordance with DER-10 Section 5.4 (e) and the latest June 2021 PFAS guidance document.

All materials proposed for import onto the Site will meet the USCOs or PFAS screening levels, will be approved by the Remedial Engineer, and will be in compliance with provisions in this RAWP prior to receipt at the Site. A "Soil Reuse/Import" form will be submitted to the NYSDEC for pre-approval prior to importing any soils on -Site. Bills of Lading or equivalent documentation will be obtained to track the amount soil arriving onto the Site and verify the source of soil being imported.

Material from industrial sites, spill sites, other environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all import of soils from off-Site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan".

All imported soils will meet NYSDEC approved backfill or cover soil quality objectives for this Site. Non-compliant soils will not be imported onto the Site without prior approval by NYSDEC. Nothing in the approved RAWP or its approval by NYSDEC will be construed as an approval for this purpose.

Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Nothing in this Remedial Action Work Plan will be construed as an approval for this purpose.

Solid waste will not be imported onto the Site.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers.

5.9.9 CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during on-Site remedial excavation or development related construction, sampling will be performed on product, sediment and surrounding soils, etc. Procedures for removal and sampling/closure of underground tanks will be in accordance with DER-10. Chemical analytical work for other contaminant sources will be for full scan parameters (TAL metals; TCL volatiles and semivolatiles, TCL pesticides and PCBs). These analyses will not be limited to STARS parameters where tanks are identified without prior approval by NYSDEC. Analyses will not be otherwise limited without NYSDEC approval.

Identification of unknown or unexpected contaminated media identified by screening during invasive Site work will be promptly communicated by phone to NYSDEC's Project Manager. These findings will be also included in daily and periodic electronic media reports.

5.9.10 COMMUNITY AIR MONITORING PLAN

A copy of the CAMP for the Site is included as **Appendix B.** Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers and included in the Daily CAMP Report.

5.9.11 ODOR, DUST, AND NUISANCE CONTROL

Odor, dust and nuisance control will be in accordance with the site-specific Health and Safety Plan included as **Appendix C**. The NYSDEC and NYSDOH project managers will be notified of an odor, dust, or health-related public complaint within 24 hours of the occurrence, or sooner, depending on the severity of the complaint.

The Final Engineering Report will include the following certification by the Remedial Engineer: "I certify that all invasive work during the remediation and all invasive development work were conducted in accordance with dust and odor suppression methodology defined in the Remedial Action Work Plan."

Odor Control Plan

This odor control plan is designed to control emissions of nuisance odors off-Site. 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. NYSDEC and NYSDOH will be notified of all odor events and of all other complaints about the project. Implementation of all odor controls, including the halt of work, will be the responsibility of the Applicant's Remediation Engineer, who is responsible for certifying the Final Engineering Report.

All necessary means will be employed to prevent on- and off-Site 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) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; (e) use of chemical deodorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved, as appropriate, by a combination of work stoppages, or sheltering the excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

Dust Control Plan

A dust suppression plan that addresses dust management during invasive on-Site work, will include, at a minimum, the items listed below:

- Dust suppression will be achieved through the use of a dedicated on-Site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles.
- Clearing and grubbing will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-Site roads will be limited in total area to minimize the area required for water truck sprinkling.

Other Nuisances

A plan for rodent control will be developed and utilized by the contractor prior to and during Site clearing and Site grubbing, and during all remedial work.

A plan will be developed and utilized by the contractor for all remedial work and will conform, at a minimum, to local noise control standards.

6.0 ENGINEERING CONTROLS

After the remedy is complete, no soil contamination is anticipated to remain in place. The SVE system will be an environmental controls (ECs) and if the SSDS was determined to be needed then it will function as an EC as well. The SVE and SSDS systems will function as ECs within the five-year post-COC period that is allowable under a Conditional Track 1. These systems will continue to function until it is demonstrated to the satisfaction of the NYSDEC and NYSDOH that their existence is no longer necessary, at which point they will cease to function as ECs. If this is accomplished for both ECs at any point within the five-year post-COC period, an unconditional Track 1 will be achieved for the Site.

7.0 INSTITUTIONAL CONTROLS

After the remedy is complete, the Site may have residual soil vapor contamination remaining in place. If no residual contamination is determined to be present, then Sections 7.1 and 7.2 below will not be applicable to this Site.

7.1 ENVIRONMENTAL EASEMENT

An IC for a Soil Vapor Intrusion Evaluation and ECs for soil vapor will be incorporated into a Site Management Plan and will be enforceable through an Environmental Easement. An Environmental Easement, as defined in Article 71 Title 36 of the Environmental Conservation Law, is required when residual contamination is left on-Site after the Remedial Action is complete. Because the ECs for soil vapor are expected to function for less than five years, this IC is allowed as part of a Track 1 remedy. If a Track 2 remedy is achieved for soils, any areas of residual soil contamination will be included in the Easement.

The Environmental Easement approved by NYSDEC will be filed and recorded with the New York City Office of the City Register. The Environmental Easement will be submitted as part of the FER.

The Environmental Easement renders the Site a temporarily Controlled Property. The Environmental Easement will be filed and recorded before the COC is issued by NYSDEC. A Soil Vapor Intrusion Evaluation would be performed as defined in the SMP, but there are no engineering controls anticipated.

7.2 SITE MANAGEMENT PLAN

Site Management is the last phase of remediation and begins with the approval of the FER and issuance of the Certificate of Completion for the Remedial Action. The SMP will be submitted as part of the FER but will be written in a manner that allows its removal and use as a complete and independent document. Site Management may continue in perpetuity or until released in writing by NYSDEC. The property owner is responsible to ensure that all Site Management responsibilities defined in the Environmental Easement and the Site Management Plan are performed.

The SMP is intended to provide a detailed description of the procedures required to manage residual contamination left in place at the Site following completion of the Remedial Action in accordance with the BCA with the NYSDEC, particularly as they pertain to the future phases of development construction proposed for the Site. This includes: (1) development, implementation, and management of all Engineering and Institutional Controls; (2) development and implementation of a Monitoring Plan; (3) submittal of Site Management Reports, performance of inspections and certification of results, and demonstration of proper communication of Site information to NYSDEC; and (4) defining criteria for termination of monitoring. The SMP for this Site will require the development of a plan to operate and maintain the proposed SVE system.

To address these needs, this SMP will include four (4) plans as applicable: (1) an Engineering and Institutional Control Plan for implementation and management of EC/ICs; (2) a Monitoring Plan for implementation of Site Monitoring; (3) an Operation and Maintenance Plan for implementation of remedial collection, containment, treatment, and recovery systems; and (4) a Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC. The SMP will be prepared in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 2010, and the guidelines provided by NYSDEC.

Site management activities, reporting, and EC/IC certification will be scheduled on a certification period basis. The certification period will be annually. The Site Management Plan will be based on a calendar year and will be due for submission to NYSDEC by March 1 of the year following the reporting period.

No exclusions for handling of residual contaminated soils will be provided in the Site SMP unless Track 1 USCOs are met. All handling of residual contaminated material will be subject to provisions contained in the SMP for soils left in place above the USCOs.

8.0 FINAL ENGINEERING REPORT

A FER and Site Management Plan will be submitted to NYSDEC following implementation of the Conditional Track 1 Remedial Action defined in this RAWP. The FER provides the documentation that the Track 1 remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The FER will provide a comprehensive account of the locations and characteristics of the site preparation demolition activities, SOE installation and all material removed from the Site including the surveyed map(s) of all sources. The FER will include as-built drawings for all constructed elements, certifications, manifests, bills of lading as well as the complete Site Management Plan. The FER will provide a description of the changes in the Remedial Action from the elements provided in the RAWP and associated design documents. The FER will provide a tabular summary of all performance evaluation sampling results and all material characterization results and other sampling and chemical analysis performed as part of the Remedial Action. The FER will be prepared in conformance with DER-10.

Where determined to be necessary by NYSDEC, a Financial Assurance Plan will be required to ensure the sufficiency of revenue to perform long-term operations, maintenance and monitoring tasks defined in the Site Management Plan and Environmental Easement. This determination will be made by NYSDEC in the context of the FER review.

The FER will include written and photographic documentation of all remedial work performed under this remedy.

The FER will include an itemized tabular description of actual costs incurred during all aspects of the Remedial Action.

The FER will provide a thorough summary of any residual contamination left on the Site after the remedy is complete. Residual contamination includes all contamination that exceeds the Track 1 USCO in 6NYCRR Part 375-6.8(a). A table that shows exceedances of Track 1 USCOs for any soil/fill remaining at the Site after the Remedial Action will be included in the FER, if Track 1 is not achieved. A map that shows the location and summarizes exceedances of Track 1 USCOs for any soil/fill remaining at the Site after the Remedial Action will be included in the FER, if Track 1 is not achieved. A map that shows the location and summarizes exceedances of Track 1 USCOs for any soil/fill remaining at the Site after the Remedial Action will be included in the FER if Track 1 is not achieved. The FER will provide a thorough summary of any residual contamination that exceeds the SCOs defined for the Site in the RAWP, if present, and must provide an explanation for why the material was not removed as part of the Remedial Action.

The FER will include an accounting of the destination of all material removed from the Site, including excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material and fluids. Documentation associated with disposal of all material must also include records and approvals for receipt of the material. It will provide an accounting of the origin and chemical quality of all material imported onto the Site.

Before approval of a FER and issuance of a Certificate of Completion, all project reports must be submitted in digital form on electronic media (PDF).

8.1 CERTIFICATIONS

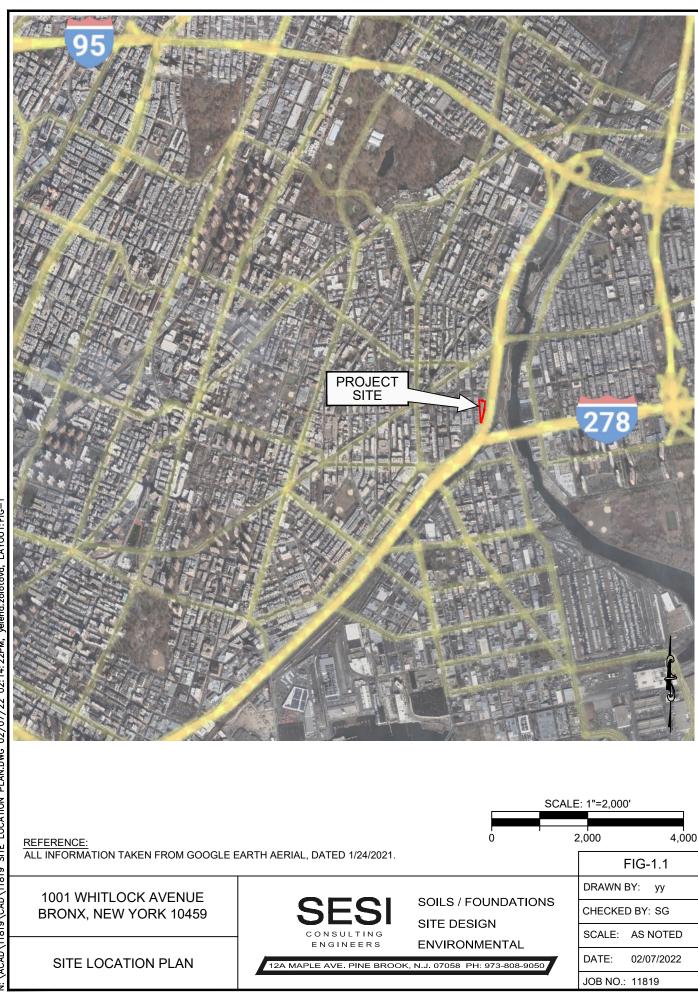
The following certification will appear in front of the Executive Summary of the Final Engineering Report. The certification will be signed by the Remedial Engineer Fuad Dahan who is a Professional Engineer registered in New York State. This certification will be appropriately signed and stamped. The certification will include the following statements:

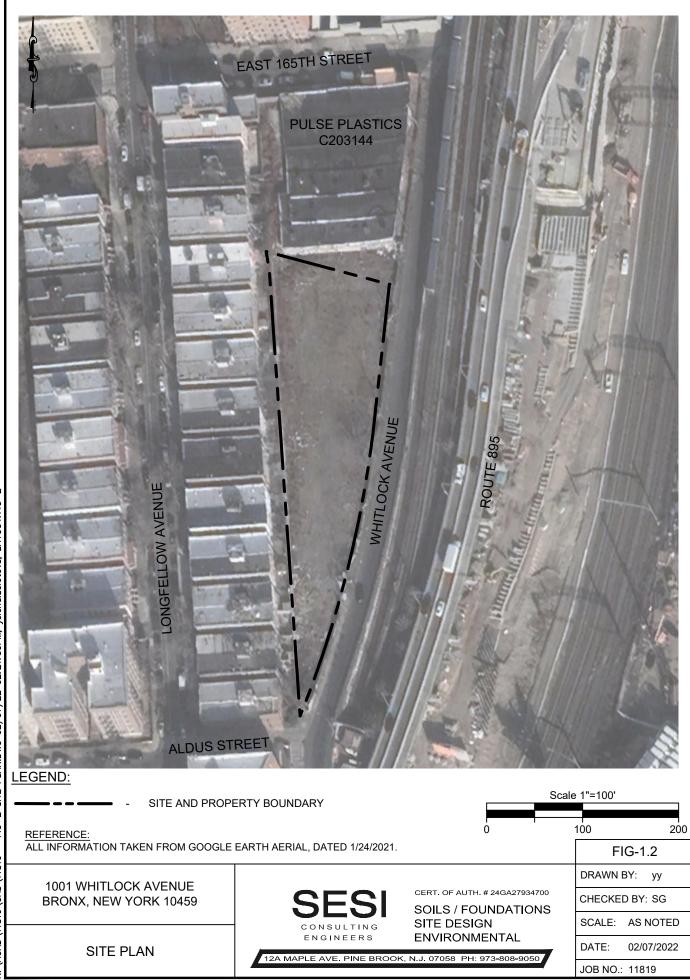
I ______certify that I am currently a NYS registered professional engineer, I had primary direct responsibility for the implementation of the subject construction program, and I certify that the Remedial Work Plan was implemented and that all construction activities were completed in substantial conformance with the DER-approved Remedial Work Plan.

I certify that all use restrictions, institutional controls, engineering controls and/or any operation and maintenance requirements applicable to the site are contained in an environmental easement created and recorded pursuant to ECL 71-3605 and that any affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of any engineering controls employed at the site including the proper maintenance of any remaining monitoring wells, and that such plan has been approved by DER.

Figures





N: \ACAD\11819\CAD\11819 - FIG-2 SITE PLAN.DWG 02/07/22 02:21:59PM, yelena.zolotova, LAYOUT:FIG-2

Sample Depth 4.5-5.0 9.5-10.0 MS Volatiles (\$W346 82600 [mg/kg]) Acetore ND(0.01) 0.0123 Acetore ND(0.01) 0.0123 I Perfluorocctanesulfonic 0.38 J ND(0.58) I MS Sem-volatiles (\$W346 82:00E [mg/kg]) Benzo(a)pryreine 0.133 0.0255 J Benzo(a)pryreine 0.133 0.0225 J ND D0.96 N Drycene 0.036 J ND (0.036) N Provanthene 0.133 0.0225 J ND Dbenzo(a), portine 0.036 J ND (0.036) N Chromotocilla ND (0.026) ND D0.96 N Dr-butyl phthalae ND (0.026) ND D0.96 N Drenzol(k)fluoranthene 0.256 0.038 J N MI and trop (Drenzola) and trocong/k <t< th=""><th></th></t<>	
Inits compound using due to control limits braced tow in the associated bits. I Elevated detection limit due to dilution required for high interfering element. Associated CCV outside of control limits low. Low-level verification was analyzed to demonstrate system suitability to o This compound in blank spike is outside in house QC limits bias high. Associated CCV outside of control limits high, i More than 40 % RPD for detected concentrations between the two GC columns. Associated ID Standard outside control limits, Confirmed byre-analysis. I = Elevated detection limit due to dilution required for high interfering element. USCO = NY Unrestricted Use Soil Cleanup Objectives (6 NYCRR 375-6 12/06). RRSCO = NY Restricted Residential Use Soil Cleanup Objectives w/CP-51 (10/10) (6 NYCRR 375-6 12/06). Concentration exceeds USCO. Concentration exceeds RRSCO. SESI CONSULTING ENGINEERS 2022 This drawing and all information contained here on is proprietary information of SESI CONSULTING ENGINEERS. REFERENCE: ALL INFORMATION TAKEN FROM GOOGLE EARTH AERIAL, DATED 1/24/2021.	Antimony 2.5 Arsenic 3.1 Barium 152



Same Carrie	1210102		CALCULATE.
Client Sample ID:	RI-SB4 (4.5-5')	RI-SB4 (9.5-10')	RI-SB4 (14.5-15')
Date Sam ple d:	2/15/2022	2/15/2022	2/15/2022
Sam ple Depth	4.5-5.0	9.5-10.0	14.5-15.0
MS Volatiles (SW846 8260D	mg/kg])		
Acetone	ND (0.01)	ND (0.01)	0.057
2-Butanone (MEK)	ND (0.01)	ND (0.01)	0.009 J
Carbon disulfide	ND (0.0021)	ND (0.002)	0.00076 J
PFAS Compounds (EPA 537)	VIBYID [ug/kg])		
Perfluorooctanesulfonic acid	0.56 J	0.27 J	ND (0.53)
MS Sem i-volatiles (SW846 8	270E [mg/kg])		
Benzo(a)anthracene	0.0147 J	0.0579	ND (0.032)
Benzo(a)pyrene	0.0324 J	0.0795	ND (0.032)
Benzo(b)fluoranthene	ND (0.039)	0.0785	ND (0.032)
Benzo(g,h,i)perylene	ND (0.039)	0.0446	ND (0.032)
Benzo(k)fluoranthene	ND (0.039)	0.0295 J	ND (0.032)
Carbazole	ND (0.077)	0.0051 J	ND (0.064)
Chrysene	ND (0.039)	0.0576	ND (0.032)
Dibenzo(a,h)anthracene	ND (0.039)	0.0286 J	ND (0.032)
Di-n-butyl phthalate	0.102 B	ND (0.068)	ND (0.032)
Fluoranthene	ND (0.039)	0.116	ND (0.032)
Indeno(1,2,3-cd)pyrene	0.0332 J	0.0705	ND (0.032)
Phenanthrene	ND (0.039)	0.0453	ND (0.032)
Pyrene	ND (0.039)	0.112	ND (0.032)
MS Sem i-volatile TIC (mg/kg	a)		
Total TIC, Semi-Volatile	0	0.2 J	4.5 J
Metals Analysis (mg/kg)			
Aluminum	22100	11500	24600
Antimony	ND (12) f	ND (2.3)	10.7 ^f
Arsenic	ND (12) ^f	2.4	ND (10) f
Barium	404	73.5	220
Beryllium	1.3 f	ND (0.23)	1.1 ^f
Cadmium	0.83	ND (0.56)	ND (0.51)
Calcium	1940	1360	1110
Chromium	39.7	22.9	42.4
Cobalt	18.4	9.4	23.3
Copper	52.2 f	26.9	26.7 f
Iron	35900	18800	40000
Lead	63.8	12.8	5.4
Magnesium	9560	3130	12000
Manganese	751	562	399
Mercury	ND (0.037)	0.16	0.052
Nickel	34.1	19.4	49.4
Potassium	11000	2800	15600
Silver	ND (3.0) f	0.64	ND (2.5) f
Vanadium	50.1	29.1	63.6
Zinc	285	37.9	112

2-Butanone (MEK) ND (0.011) 0.003 J ND (0.0088) 0.0132 PFAS Com pounds (EPA 537M BY ID [ug/kg]) Perfluoronex anesulfonic acid 0.61 ND (0.55) ND (0.52) ND (0.61) Perfluorooctanesulfonic acid 10.9 ND (0.036) ND (0.034) ND (0.61) Perfluorootanesulfonic acid 10.9 ND (0.036) ND (0.034) ND (0.041) Benzo(a)prene 0.0489 ND (0.036) ND (0.034) ND (0.041) Benzo(b)fluoranthene 0.0421 ND (0.036) ND (0.034) ND (0.041) Chrysene 0.0421 ND (0.036) ND (0.034) ND (0.041) Dienzo(a, h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Dienzo(a, h)anthracene 0.0577 ND (0.036) ND (0.034) ND (0.041) Dienzo(a, h)anthracene 0.0577 ND (0.036) ND (0.034) ND (0.041) Dienzo(a, h)anthracene 0.0577 ND (0.036) ND (0.034) ND (0.041) Bariuonthene 0.0117 J ND (TOTAL LONG	1.20			
Sam ple Depth 4.5-5.0 9.5-10.0 14.5-15.0 19.5-20.0 MS Volatiles (SW846 8260D [m g/kg])	Client Sample ID:	RI-SB5 (4.5-5')	RI-SB5 (9.5-10')	RI-SB5 (14.5-15')	RI-SB5 (19.5-20')
MS Volatiles (SW846 8260D [m g/kg]) Output Acetone 0.02 0.0229 ND (0.0088) 0.0471 2-Butanone (MEK) ND (0.011) 0.003 J ND (0.0088) 0.0132 PFAS Compounds (EPA 537M BY ID [ug/kg]) Derfluorohexanesulfonic acid 0.61 ND (0.55) ND (0.52) ND (0.61) Perfluorohexanesulfonic acid 0.61 ND (0.55) ND (0.52) ND (0.61) Perfluorohexanesulfonic acid 0.0351 J ND (0.036) ND (0.034) ND (0.041) Benzo(a)anthracene 0.0351 J ND (0.036) ND (0.034) ND (0.041) Benzo(a)pyrene 0.0467 ND (0.036) ND (0.034) ND (0.041) Senzo(a,h)iperylene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Chrysene 0.0471 J ND (0.036) ND (0.034) ND (0.041) Din-butyl phthalate ND (0.076) 0.0988 B 0.0394 J ND (0.041) Piloranthene 0.0577 ND (0.036) ND (0.034) ND (0.041) Pienanthrene 0.0373 J ND (0.036) ND (0.0	Date Sam pled:	2/15/2022	2/15/2022	2/15/2022	2/15/2022
Acetone 0.02 0.0229 ND (0.0088) 0.0471 2-Butanone (MEK) ND (0.011) 0.003 J ND (0.0088) 0.0132 PFAS Compounds (EPA 537M BY ID [ug/kg]) Perfluorhexanesulfonic acid 0.61 ND (0.55) ND (0.52) ND (0.61) Perfluorbexanesulfonic acid 0.61 ND (0.55) ND (0.52) ND (0.61) MS Sem i-volatiles (SW846 8270E [mg/kg]) Serial (0.036) ND (0.034) ND (0.041) Benzo(a)pyrene 0.0489 ND (0.036) ND (0.034) ND (0.041) Benzo(a)pyrene 0.0467 ND (0.036) ND (0.034) ND (0.041) Benzo(a,h)iprene 0.0252 J ND (0.036) ND (0.034) ND (0.041) Benzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Dibenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Dir-butyl phthalate ND (0.076) ND (0.036) ND (0.034) ND (0.041) Dideno(1,2,3-cd)pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) Yerene	· · · · · · · · · · · · · · · · · · ·		9.5-10.0	14.5-15.0	19.5-20.0
2-Butanone (MEK) ND (0.011) 0.003 J ND (0.0088) 0.0132 PFAS Com pounds (EPA 537M BY ID [ug/kg]) Perfluoronex anesulfonic acid 0.61 ND (0.55) ND (0.52) ND (0.61) Perfluorooctanesulfonic acid 10.9 ND (0.036) ND (0.034) ND (0.61) Perfluorootanesulfonic acid 10.9 ND (0.036) ND (0.034) ND (0.041) Benzo(a)prene 0.0489 ND (0.036) ND (0.034) ND (0.041) Benzo(b)fluoranthene 0.0421 ND (0.036) ND (0.034) ND (0.041) Chrysene 0.0421 ND (0.036) ND (0.034) ND (0.041) Dienzo(a, h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Dienzo(a, h)anthracene 0.0577 ND (0.036) ND (0.034) ND (0.041) Dienzo(a, h)anthracene 0.0577 ND (0.036) ND (0.034) ND (0.041) Dienzo(a, h)anthracene 0.0577 ND (0.036) ND (0.034) ND (0.041) Bariuonthene 0.0117 J ND (MS Volatiles (SW846 8260D [mg/kg])			
PFAS Compounds (EPA 537M BY ID [ug/kg]) ND Perfluorochex anes ulfonic acid 0.61 ND (0.55) ND (0.52) ND (0.61) Perfluoroctanesulfonic acid 10.9 ND (0.55) ND (0.52) ND (0.61) MS Sem i-volatiles (SW846 8270E [mg/kg])	Acetone			ND (0.0088)	
Derfluorohexanesulfonic acid 0.81 ND (0.55) ND (0.52) ND (0.61) Verfluorooctanesulfonic acid 10.9 ND (0.55) ND (0.52) ND (0.61) VMS Sem i-volatiles (SW846 8270E [mg/kg]) Benzo (a) anthracene 0.0351 J ND (0.036) ND (0.034) ND (0.041) Benzo (a) pyrene 0.0467 ND (0.036) ND (0.034) ND (0.041) Benzo (a), injerviene 0.0421 ND (0.036) ND (0.034) ND (0.041) Benzo (a, h) anthracene 0.0427 J ND (0.036) ND (0.034) ND (0.041) Dien-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Diuoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) Metanothene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Vaphthalene 0.0577 ND (0.036) ND (0.034) ND (0.041) Yaphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Yaphthalene 0.017 J 0 0.39 J			0.003 J	ND (0.0088)	0.0132
Derfluorooctanesulfonic acid 10.9 ND (0.55) ND (0.52) ND (0.61) MS Sem i-volatiles (SW846 8270E [mg/kg]) ND ND ND (0.034) ND (0.041) Benzo (a) anthracene 0.0351 J ND (0.036) ND (0.034) ND (0.041) Benzo (a) pyrene 0.0467 ND (0.036) ND (0.034) ND (0.041) Benzo (b) fluoranthene 0.0421 ND (0.036) ND (0.034) ND (0.041) Characteria 0.0421 ND (0.036) ND (0.034) ND (0.041) Cheros (a, h) anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Di-n-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Cluoranthene 0.07711 ND (0.036) ND (0.034) ND (0.041) Di-n-butyl phthalate 0.0117 J ND (0.036) ND (0.034) ND (0.041) Aphthalene 0.0177 J ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) Strenitvolatile 0.17 J 0 <td>PFAS Compounds (EPA 537)</td> <td>MBYID[ug/kg]</td> <td></td> <td></td> <td></td>	PFAS Compounds (EPA 537)	MBYID[ug/kg]			
MS Semi-volatiles (SW846 8270E [mg/kg]) Image: Constraint of the second se	Perfluorohex anes ulfonic acid	0.61	ND (0.55)	ND (0.52)	ND (0.61)
Benzo(a)anthracene 0.0351 J ND (0.036) ND (0.034) ND (0.041) Benzo(a)pyrene 0.0489 ND (0.036) ND (0.034) ND (0.041) Benzo(a)pyrene 0.0467 ND (0.036) ND (0.034) ND (0.041) Benzo(g,h,i)perylene 0.0252 J ND (0.036) ND (0.034) ND (0.041) Chrysene 0.0421 ND (0.036) ND (0.034) ND (0.041) Dibenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Din-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Fluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) Nadeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Adentintene 0.0317 J ND (0.036) ND (0.034) ND (0.041) Aphthalene 0.0672 ND (0.036) ND (0.034) ND (0.041) Yeree 0.0672 ND (0.036) ND (0.034) ND (0.041) Mctal Knautyre 0.0672 ND (0.036) ND (0.034)			ND (0.55)	ND (0.52)	ND (0.61)
Benzo(a)pyrene 0.0489 ND (0.036) ND (0.034) ND (0.041) Benzo(b)fluoranthene 0.0467 ND (0.036) ND (0.034) ND (0.041) Benzo(g,h,i)perylene 0.0252 J ND (0.036) ND (0.034) ND (0.041) Chrysene 0.0421 ND (0.036) ND (0.034) ND (0.041) Dihenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Dihenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Dihenzo(a,h)anthracene 0.0711 ND (0.036) ND (0.034) ND (0.041) Din-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Fluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) Aphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Aphthalene 0.0672 ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) Mtatis Analysis (mg/kg) Mtatis Analysis Mtatis Analysis<	MS Sem i-volatiles (SW846 82	270E[mg/kg])			
Benzo(b)fluoranthene 0.0467 ND (0.036) ND (0.034) ND (0.041) Benzo(g,h,i)perylene 0.0252 J ND (0.036) ND (0.034) ND (0.041) Chrysene 0.0421 ND (0.036) ND (0.034) ND (0.041) Dibenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Din-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Fluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) Indeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Valanthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Valanthalene 0.0373 J ND (0.036) ND (0.034) ND (0.041) Varene 0.0672 ND (0.036) ND (0.034) ND (0.041) VB Semi-volatile 0.17 J 0 0.39 J 0.18 J Metals Analysis (mg/kg) Metals Analysis (mg/kg) Metals Analysis (mg/kg) Metals Analysis (mg/kg) ND (1.1) f ND (1.0) f 0.73 Calcium	Benzo(a)anthracene	0.0351 J	ND (0.036)	ND (0.034)	ND (0.041)
Benzo(g,h,i)perylene 0.0252 J ND (0.036) ND (0.034) ND (0.041) Chrysene 0.0421 ND (0.036) ND (0.034) ND (0.041) Dibenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Dib-n-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Fluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) ndeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Naphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Yerne 0.0672 ND (0.036) ND (0.034) ND (0.041) Metals Analysis (mg/kg) Metals Analysis (mg/kg) Metals Analysis (mg/kg) Metals Analysis (mg/kg) ND (1.1) f ND (1.0) f 0.73 Calcium N	Benzo(a)pyrene	0.0489	ND (0.036)	ND (0.034)	ND (0.041)
Chrysene 0.0421 ND (0.036) ND (0.034) ND (0.041) Dibenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Din-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Pluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) ndeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Aphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Appthalene 0.0177 J ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) Mstass f(mg/kg) Metals Analysis (mg/kg) ND (1.1) f ND (10) f 3.1 Barium 96.5 135 198 98.2 3.1 Barium 96.5 135 198 98.2 3.1 </td <td>Benzo(b)fluoranthene</td> <td>0.0467</td> <td>ND (0.036)</td> <td>ND (0.034)</td> <td>ND (0.041)</td>	Benzo(b)fluoranthene	0.0467	ND (0.036)	ND (0.034)	ND (0.041)
Chrysene 0.0421 ND (0.036) ND (0.034) ND (0.041) Dibenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Dien-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Fluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) ndeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Aphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Prene 0.0672 ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) MS Semi-volatile 0.17 J 0 0.39 J 0.18 J Metals Analysis (mg/kg) Metals Analysis (mg/kg) Metals Analysis (mg/kg) Marsenic ND (12) f ND (11) f ND (10) f 3.1 Barium 96.5 135 198 98.2 3.1 Barium 96.5 135 198 98.2 Chromium 36.8 27.8	Benzo(g,h,i)perylene	0.0252 J	ND (0.036)	ND (0.034)	ND (0.041)
Dibenzo(a,h)anthracene 0.0277 J ND (0.036) ND (0.034) ND (0.041) Din-butyl phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Fluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) ndeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Naphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Appendent 0.0373 J ND (0.036) ND (0.034) ND (0.041) Prenanthrene 0.0373 J ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) MS Sem i-volatile 0.17 J 0 0.39 J 0.18 J Metals Analysis (mg/kg) Metals Analysis (mg/kg) Metals Analysis (mg/kg) Mo (101) ^f ND (101) ^f Arsenic ND (12) ^f ND (111) ^f ND (101) ^f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7	Chrysene	0.0421		ND (0.034)	ND (0.041)
Din-buty phthalate ND (0.076) 0.0988 B 0.0394 JB 0.0817 JB Fluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) Indeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Value 0.0117 J ND (0.036) ND (0.034) ND (0.041) Phenanthrene 0.0373 J ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) MS Semi-volatile 0.17 J 0 0.39 J 0.18 J Metals Analysis (mg/kg) Mo (1.1) f ND (10) f 3.1 Baryllium 18200 16400 19500 16700 Arsenic Aluminum 18200 16400 19500 16700 Arsenic ND (1.2) f ND (1.1) f ND (10.0) f	Dibenzo(a,h)anthracene	0.0277 J		ND (0.034)	ND (0.041)
Fluoranthene 0.0711 ND (0.036) ND (0.034) ND (0.041) Indeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Naphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Yhenanthrene 0.0373 J ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) Sem i-volatile TIC (mg/kg) Fotal TC, Semi-Volatile 0.17 J 0 0.39 J 0.18 J Metals Analysis (mg/kg) Aluminum 18200 16400 19500 16700 Arsenic ND (12) f ND (11) f ND (10) f 3.1 Barium 96.5 135 198 98.2 Beryllium ND (1.2) f ND (1.1) f ND (1.0) f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7 <tr< td=""><td></td><td>ND (0.076)</td><td></td><td></td><td></td></tr<>		ND (0.076)			
Indeno(1,2,3-cd)pyrene 0.0507 ND (0.036) ND (0.034) ND (0.041) Vaphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Phenanthrene 0.0373 J ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) MS Sem i-volatile TIC (mg/kg) Total TC, Semi-Volatile 0.17 J 0 0.39 J 0.18 J Metals Analysis (mg/kg) Metals Analysis (mg/kg) Mathematica MD (12) f ND (11) f ND (10) f 3.1 Barium 96.5 135 198 98.2 98.2 Beryllium ND (1.2) f ND (1.1) f ND (1.0) f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7 Cobalt 16.8 15.4 16.1 10.3 Capper 47.3 f 32.1 f 33.0 f 19 ron 32000 33400 36600 20300	Fluoranthene	0.0711	ND (0.036)	ND (0.034)	ND (0.041)
Naphthalene 0.0117 J ND (0.036) ND (0.034) ND (0.041) Phenanthrene 0.0373 J ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) MS Sem i-volatile 0.17 J 0 0.39 J 0.18 J Metals Analysis (mg/kg) Metals Analysis (mg/kg) ND (12) f ND (11) f ND (10) f 3.1 Auminum 18200 16400 19500 16700 Arsenic ND (12) f ND (11) f ND (10) f 3.1 Barium 96.5 135 198 98.2 Beryllium ND (1.2) f ND (1.1) f ND (1.0) f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7 Cobalt 16.8 15.4 16.1 10.3 Copper 47.3 f 32.1 f 33.0 f 19<	ndeno(1,2,3-cd)pyrene	0.0507	ND (0.036)	ND (0.034)	
Define anthrene 0.0373 J ND (0.036) ND (0.034) ND (0.041) Pyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) MS Sem i-volatile TIC (m g/kg) 0 0.39 J 0.18 J Metals Analysis (mg/kg) 0 0.39 J 0.18 J Metals Analysis (mg/kg) 0 0.39 J 0.18 J Auminum 18200 16400 19500 16700 Arsenic ND (12) f ND (11) f ND (10) f 3.1 Barium 96.5 135 198 98.2 Beryllium ND (1.2) f ND (1.1) f ND (1.0) f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7 Cobalt 16.8 15.4 16.1 10.3 Copper 47.3 f 32.1 f 33.0 f 19 ron 32000 33400 36000 20300 .ead 36 5.8 5.6 25.2	Naphthalene	0.0117 J	ND (0.036)	ND (0.034)	ND (0.041)
Dyrene 0.0672 ND (0.036) ND (0.034) ND (0.041) MS Sem i-volatile TIC (m g/kg) 0 0.39 J 0.18 J Metals Analysis (m g/kg) 0 0.39 J 0.18 J Metals Analysis (m g/kg) 0 0.39 J 0.18 J Metals Analysis (m g/kg) 0 0.39 J 0.18 J Aluminum 18200 16400 19500 16700 Arsenic ND (12) f ND (11) f ND (10) f 3.1 Barium 96.5 135 198 98.2 Beryllium ND (1.2) f ND (1.1) f ND (1.0) f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7 Cobalt 16.8 15.4 16.1 10.3 Copper 47.3 f 32.1 f 33.0 f 19 ron 32000 33400 36600 20300 ead 566 628.2 8500 3650 V	Phenanthrene	0.0373 J	ND (0.036)	ND (0.034)	ND (0.041)
MS Sem i-volatile TIC (m g/kg) 0 0.39 J 0.18 J Fotal TIC, Semi-Volatile 0.17 J 0 0.39 J 0.18 J Metals Analysis (m g/kg) 0 0.39 J 0.18 J Aluminum 18200 16400 19500 16700 Arsenic ND (12) f ND (11) f ND (10) f 3.1 Barium 96.5 135 198 98.2 Beryllium ND (1.2) f ND (1.1) f ND (1.0) f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7 Cobalt 16.8 15.4 16.1 10.3 Copper 47.3 f 32.1 f 33.0 f 19 ron 32000 33400 36000 20300 .ead 36 5.8 5.6 25.2 Vagnesium 5660 6280 8500 3650 Vagnese 410 527 263 458 <	Pyrene	0.0672			
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ND (12) f ND (11) f ND (10) f 3.1 Barium 96.5 135 198 98.2 Beryllium ND (1.2) f ND (1.1) f ND (1.0) f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7 Cobalt 16.8 15.4 16.1 10.3 Copper 47.3 f 32.1 f 33.0 f 19 ron 32000 33400 36000 20300 Lead 36 5.8 5.6 25.2 Wagnesium 5660 6280 8500 3650 Vanganese 410 527 263 458 Vercury 0.075 ND (0.035) ND (0.034) ND (0.036) Vickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200)	Metals Analysis (mg/kg)				
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Barium 96.5 135 198 98.2 Beryllium ND (1.2) f ND (1.1) f ND (1.0) f 0.73 Calcium 2840 1530 1040 1850 Chromium 36.8 27.8 43 23.7 Cobalt 16.8 15.4 16.1 10.3 Copper 47.3 f 32.1 f 33.0 f 19 ron 32000 33400 36000 20300 Lead 36 5.8 5.6 25.2 Wagnesium 5660 6280 8500 3650 Vanganese 410 527 263 458 Vercury 0.075 ND (0.035) ND (0.034) ND (0.036) vickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4	Arsenic	ND (12) f	ND (11) f	ND (10) f	3.1
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Chromium 36.8 27.8 43 23.7 Cobalt 16.8 15.4 16.1 10.3 Copper 47.3 f 32.1 f 33.0 f 19 ron 32000 33400 36000 20300 .ead 36 5.8 5.6 25.2 Vlagnesium 5660 6280 8500 3650 Varganese 410 527 263 458 Vercury 0.075 ND (0.035) ND (0.034) ND (0.036) vickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4	Calcium	2840	· /		1850
Copper 47.3 f 32.1 f 33.0 f 19 ron 32000 33400 36000 20300 ead 36 5.8 5.6 25.2 vlagnesium 5660 6280 8500 3650 vlanganese 410 527 263 458 vlercury 0.075 ND (0.035) ND (0.034) ND (0.036) vlickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4	Chromium				
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State 32000 33400 36000 20300 Lead 36 5.8 5.6 25.2 Vlagnesium 5660 6280 8500 3650 Vlaganese 410 527 263 458 Vlercury 0.075 ND (0.035) ND (0.034) ND (0.036) Vickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4	Copper	47.3 f	32.1 f	33.0 f	19
Vlagnesium 5660 6280 8500 3650 Vlanganese 410 527 263 458 Vlercury 0.075 ND (0.035) ND (0.034) ND (0.036) Vickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4	ron	I BESAN	SCILICANU.	LC WORKLY	100/00
Vlagnesium 5660 6280 8500 3650 Vlanganese 410 527 263 458 Vlercury 0.075 ND (0.035) ND (0.034) ND (0.036) Vickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4	Lead	36	5.8	5.6	25.2
Vanganese 410 527 263 458 Viercury 0.075 ND (0.035) ND (0.034) ND (0.036) vickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4			2020/09/	22408-240	10-20-20-20-20
Vercury 0.075 ND (0.035) ND (0.034) ND (0.036) vickel 31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4			100 P. 21 1975 1000	and the second sec	
31.3 28.1 27.6 20.3 Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4					
Potassium 3140 6420 12600 ND (1200) /anadium 54.3 44.4 55.3 38.4	Nickel			, , ,	
/anadium 54.3 44.4 55.3 38.4					
Zinc 753 832 922 559	Zinc	75.3	83.2	92.2	55.8

Client Sample ID:	RI-SB8 (4.5-5')	RI-SB8 (9.5-10')	RI-SB8 (12.5-13		
Date Sampled:	2/16/2022	2/16/2022	2/16/2022		
Sam ple Depth	4.5-5.0	9.5-10.0	12.5-13.0		
MS Volatiles (SW846 8260D [n	ng/kg])				
Acetone	ND (0.011)	0.0443	ND (0.011)		
2-Butanone (MEK)	ND (0.011)	0.0097 J	ND (0.011)		
MS Volatile TIC (mg/kg)					
Total TIC, Volatile	0.0054 J	0	0		
PFAS Compounds (EPA 537M	BY ID [ug/kg])				
Perfluorooctanesulfonic acid	0.29 J	ND (0.60)	ND (0.55)		
MS Semi-volatiles (SW846 82	70E [m g/k g])				
Benzo(a)anthracene	0.0756	0.0268 J	ND (0.036)		
Benzo(a)pyrene	0.0782	0.019 J	ND (0.036)		
Benzo(b)fluoranthene	0.0972	0.0234 J	ND (0.036)		
Benzo(g,h,i)perylene	0.0557	ND (0.039)	ND (0.036)		
Benzo(k)fluoranthene	0.0365 J	ND (0.039)	ND (0.036)		
Chrysene	0.0872	0.0231 J	ND (0.036)		
Fluoranthene	0.135	0.0498	ND (0.036)		
hdeno(1,2,3-cd)pyrene	0.0655	ND (0.039)	ND (0.036)		
Phenanthrene	0.0718	0.0385 J	ND (0.036)		
Pyrene	0.13	0.0412	ND (0.036)		
MS Semi-volatile TIC (mg/kg)			, , , ,		
Total TIC, Semi-Volatile	0	3.360 J	0		
Metals Analysis (mg/kg)					
Aluminum	23300	17700	24400		
Antimony	3	ND (2.3)	3.7		
Barium	107	117	160		
Beryllium	0.70 f	0.62 f	ND (1.1) ^f		
Cadmium	0.6	ND (0.57)	ND (0.56)		
Calcium	1910	1380	1570		
Chromium	37	28.1	36.7		
Cobalt	19.6	13.4	24.4		
Copper	78.0 f	24.6 f	21.9 f		
Iron	37800	28400	48000		
Lead	25.5	33.6	6.5		
Magnesium	7870	5440	11100		
Manganese	558 f	269 f	286 f		
Mercury	0.1	0.12	ND (0.033)		
Nickel	41.1	24.6	46.1		
Potassium	4680	2290	11600		
Vanadium	54.2	39	48.4		
Zinc	424	80.1	117		

AND PROPERTY BOUNDARY

ORING NUMBER & APPROX. LOCATION

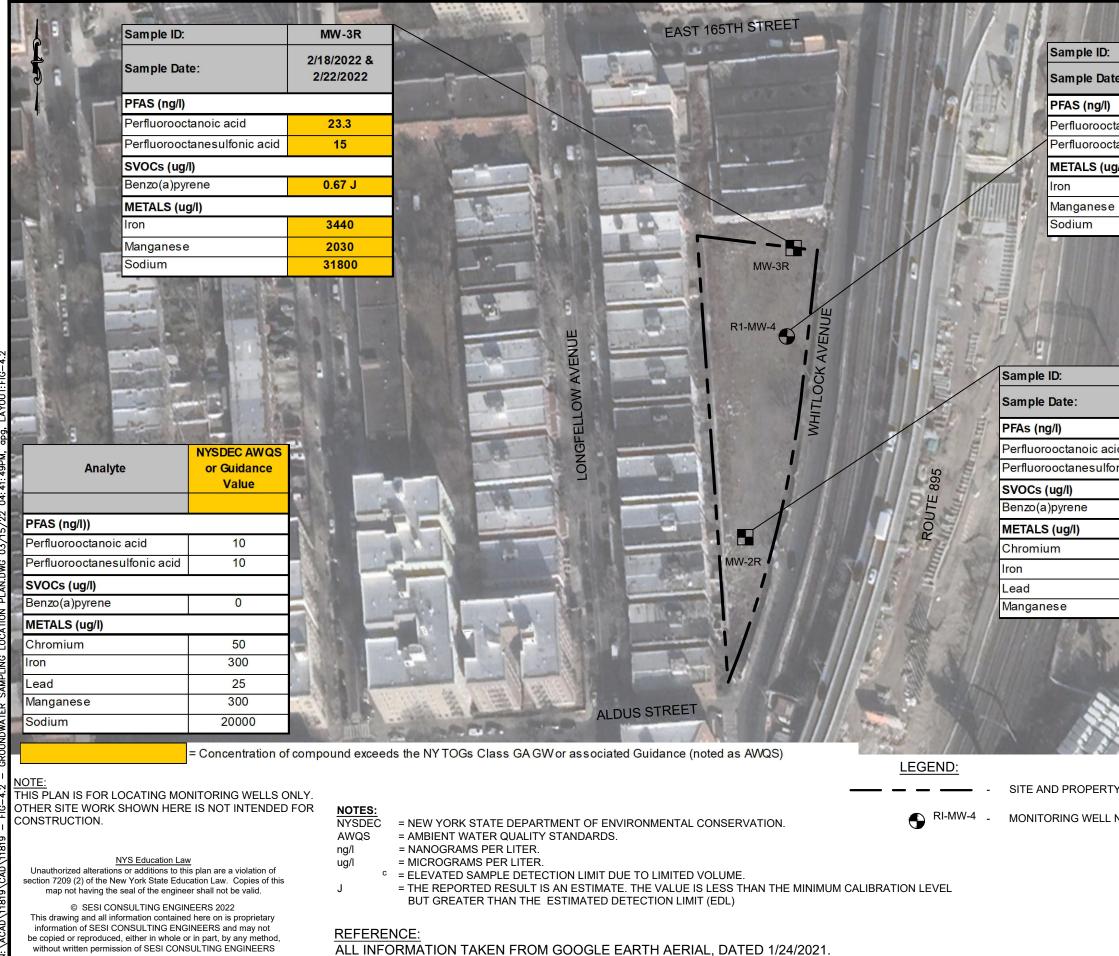
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Scale: 1"= 50'

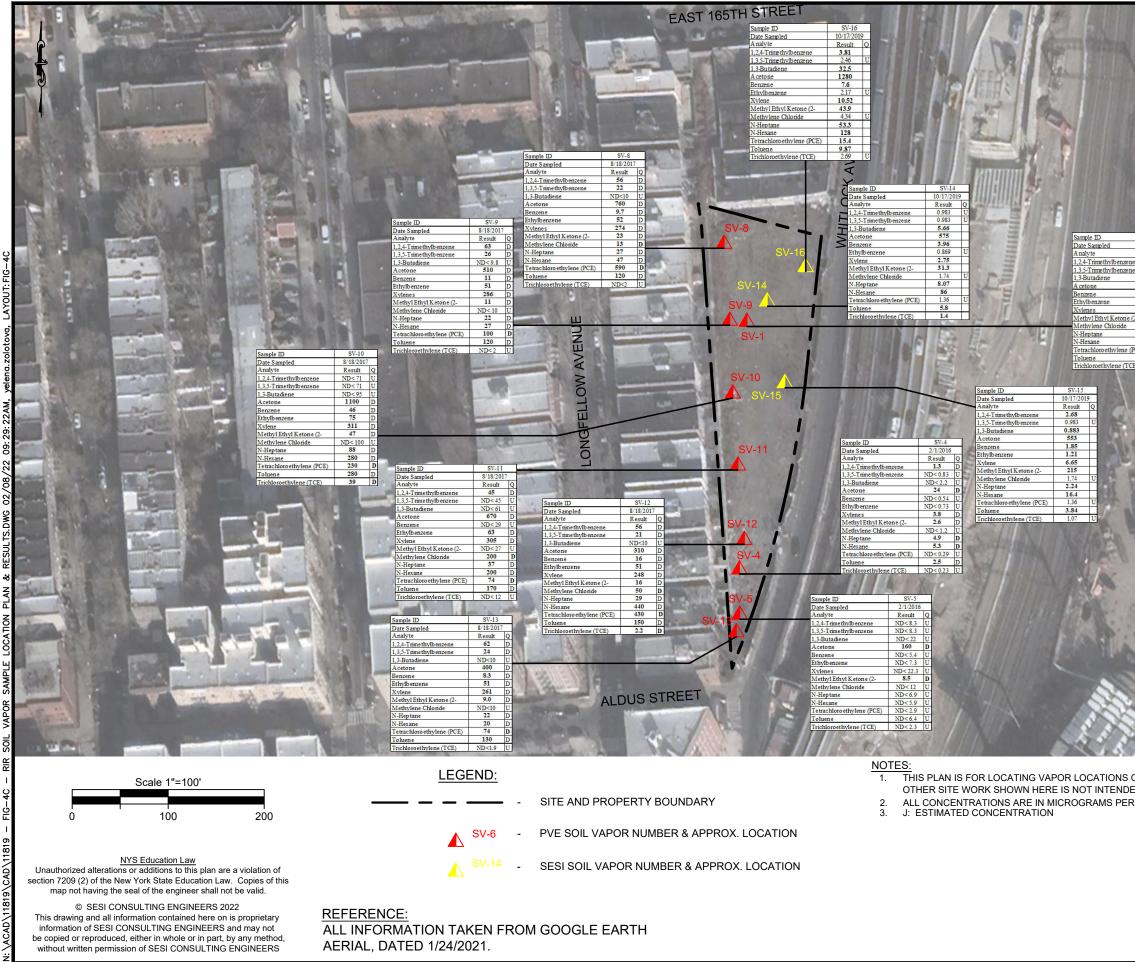
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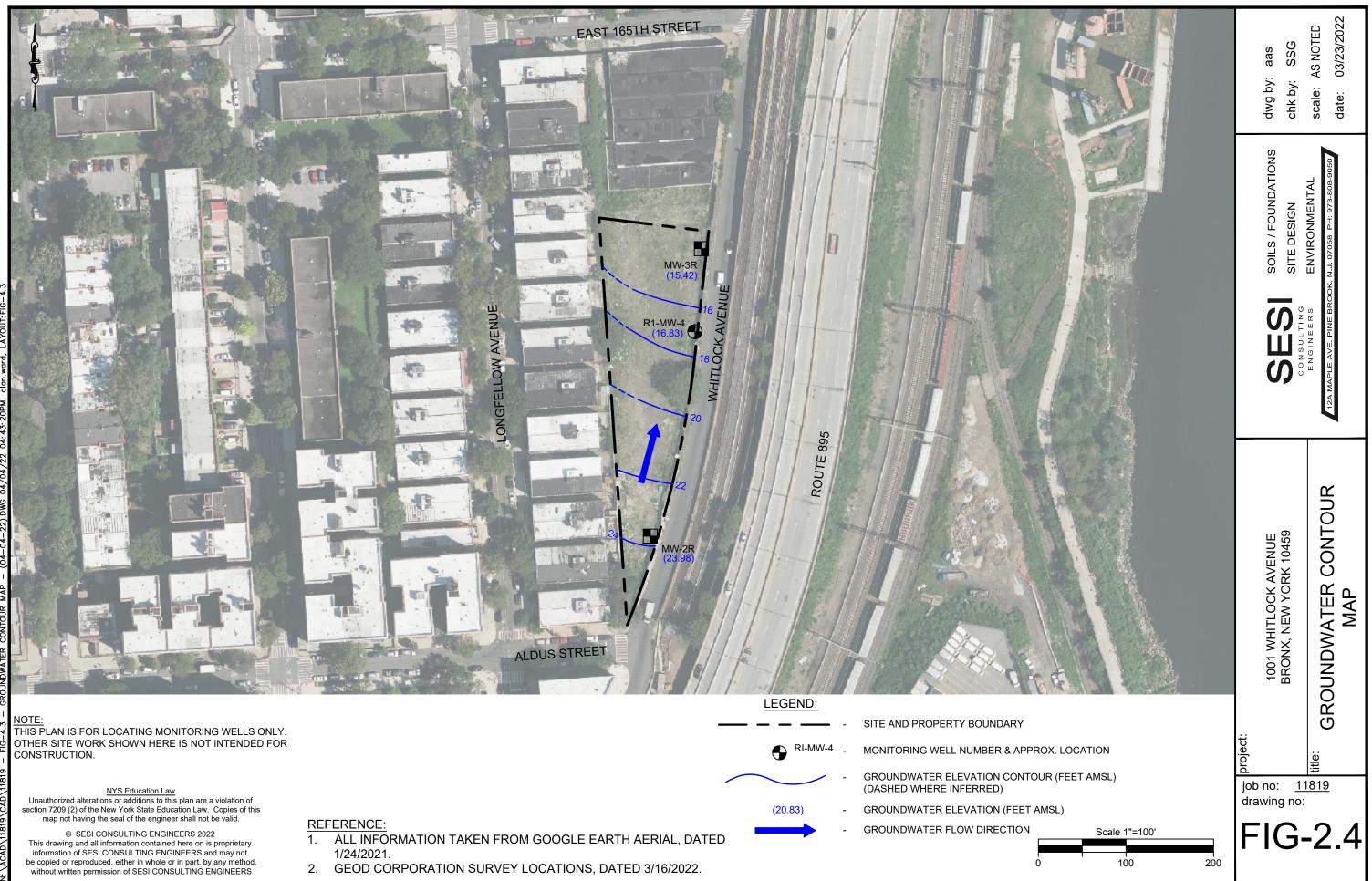
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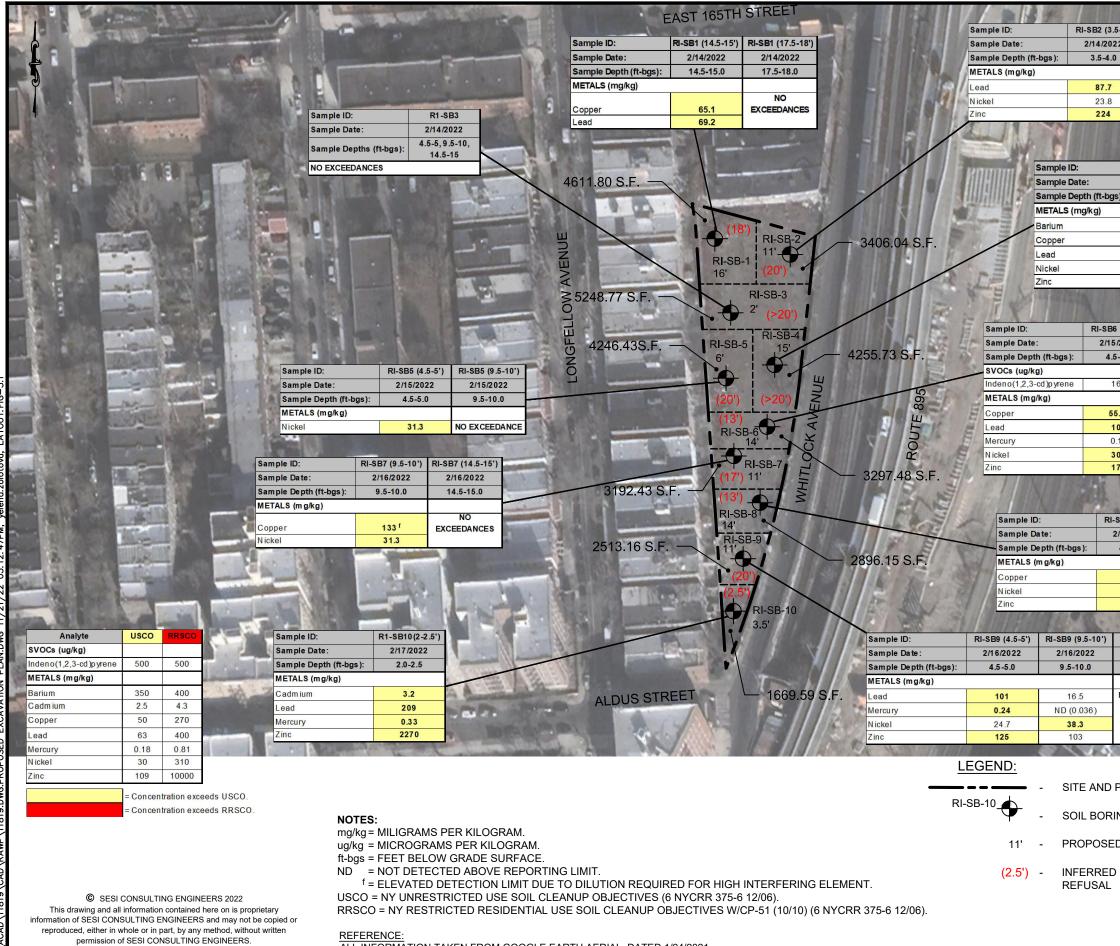
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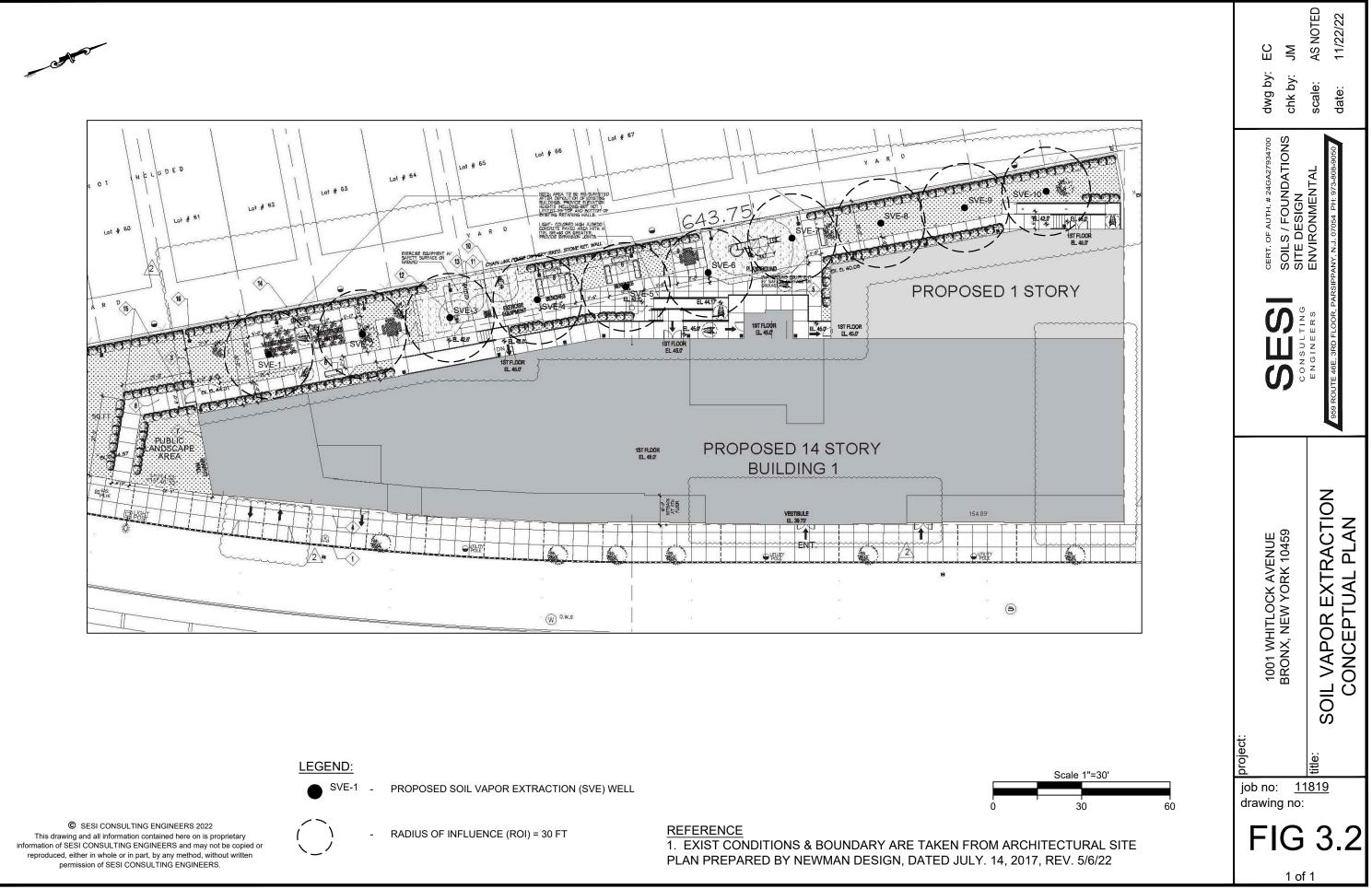






ALL INFORMATION TAKEN FROM GOOGLE EARTH AERIAL, DATED 1/24/2021.

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Appendix A: Site Development Plan

ARCHITEC	TURAL DRAWINGS	ARCHI	TECTURAL DRAWINGS CONTINUED	<u>STRUC</u>	TURAL DRAWINGS	MECHA	ANICAL DRAWINGS	FIRE F	PROTECTION DRAWINGS
EQ-101 FE	OVER SHEET- DRAWING LIST NCE PLAN, DETAILS AND NOTES	A-201 A-202	FRONT ELEVATION REAR ELEVATION	S-001 FO-101	STRUCTURAL DRAWING LIST AND NOTES\ FOUNDATION PLAN	M-001 M-002	MECHANICAL NOTES, SYMBOLS & ABBREVIATIONS MECHANICAL GENERAL NOTES	FP-001 FP-002	FIRE PROTECTION NOTES, SYMBOLS, & ABBREVIATION FIRE PROTECTION DETAILS
Z-002 UN -Z-003 ME	NING ANALYSIS IIT COUNT & DISTRIBUTION, FLOOR AREAS CHANICAL AND QUALITY HOUSING DEDUCTIONS	A-203 A-204 A-205	SIDE ELEVATIONS TYPICAL CROSS SECTION TYPICAL LONGITUDINAL SECTION	FO-102 FO-103 FO-201	PILE LOCATION PLAN PLOT PLAN FOUNDATION DETAILS AND NOTES	M-102 M-103	MECHANICAL 1ST FLOOR PLAN MECHANICAL 2ND FLOOR PLAN	FP-101 FP-102	FIRE PROTECTION 1ST FLOOR PLAN FIRE PROTECTION 2ND FLOOR PLAN
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G-002 SP G-003 ML	ECIAL INSPECT., PROGRESS INSPECT., ENERGY CODE JLTIPLE DWELLING NOTES	A-303 A-304	STAIR B PLANS AND SECTION STAIR DETAILS	FO-205 FO-206	FOUNDATION DETAILS AND NOTES FOUNDATION DETAILS AND NOTES	M-107 M-108	MECHANICAL 13TH AND 14TH FLOOR PLAN MECHANICAL ROOF PLAN	FP-106 FP-107	FIRE PROTECTION 13TH AND 14TH FLOOR PLAN FIRE PROTECTION ROOF FLOOR PLAN
G-005 ML	ISI HANDICAP STANDARDS JLTIFAMILY PERFORMANCE PROGRAM GENERAL NOTES R SEALING GUIDE MULTIFAMILY MASONRY CONSTRUCTION	A-401 A-402	MISCDETAILS TYPICAL WALL SECTION	S-101 S-102 S-103	1ST FLOOR FRAMING- CELLAR PLAN 2ND FLOOR FRAMING- FIRST FLOOR PLAN 3RD THRU 8TH FLOOR FRAMING	M-201 M-202 M-203	MECHANICAL EXHAUST RISER MECHANICAL EXHAUST RISER MECH CONDENSER WATER PIPING RISER DIAGRAM	FP-200 FP-201	FIRE PROTECTION RISER DIAGRAM FIRE PROTECTION SITE PLAN
G-007 BU	ILDING CODE ANALYSIS	A-403 A-404	TYPICAL WALL SECTION TYPICAL WALL SECTION	S-104 S-105	9TH FLOOR FRAMING- 8TH FL PLAN 10TH FLOOR FRAMING- 9TH FL PLAN	M-301 M-302	MECHANICAL SCHEDULE AND DETAIL MECHANICAL DETAIL SHEET		
A-002 SIT	RCHITECTURAL SITE PLAN TE DETAILS IILDING INFORMATION- OCCUPANT LOAD AND EGRESS	A-405 A-406 A-407	TYPICAL WALL SECTION TYPICAL WALL SECTION TYPICAL WALL SECTION	S-106 S-107 S-108	11TH FLOOR FRAMING-10TH FL PLAN 12TH FLOOR FRAMING- 11TH FL PLAN 13TH FLOOR FRAMING- 12TH FL PLAN	M-303 M-304 M-305	MECHANICAL DETAIL SHEET MECHANICAL DETAIL SHEET MECHANICAL SCHEDULE & DETAIL SHEET		
A-005 ER	ILDING INFORMATION- OCCUPANT LOAD AND EGRESS OSION CONTROL PLAN. RIGATION CONTROL PLAN	A-408 A-409 A-410	TYPICAL WALL SECTION TYPICAL WALL SECTION EXPANSION JOINT DETAILS	S-109 S-110 S-111	14TH FLOOR FRAMING- 13TH FL PLAN ROOF FRAMING- 14TH FL PLAN BULKHEAD FRAMING- ROOF PLAN	M-306	MECHANICAL CONTROL SHEET		
	NDSCAPE PLAN	A-501	WALL TYPES	S-201 S-202	STEEL COLUMN SCHEDULE DETAILS AND NOTES GENERAL COLD FORMED STEEL DETAILS	P-001	BING DRAWINGS PLUMBING GENERAL INFORMATION	E-001	RICAL DRAWINGS ELECTRICAL SYMBOLS, ABBREVIATIONS & NOTES
	RST FLOOR PLAN D THRU 3RD FLOOR PLAN	A-502 A-503 A-504	TYPICAL UNIT ENLARGED WINDOW AND DOOR SCHEDULE DOOR JAMB TYPES AND DETAILS	S-301 S-302 S-401	PLANK DETAILS AND NOTES PLANK DETAILS AND NOTES MASONRY DETAILS AND NOTES	P-002 P-003 P-100	PLUMBING SCHEDULE AND DETAILS PLUMBING DETAILS PLUMBING PLAN UNDERGROUND	E-102 E-103	ELECTRICAL 1ST FLOOR PLAN POWER ELECTRICAL 2ND FLOOR PLAN POWER
A-105 9T	H THRU 8TH FLOOR PLAN H THRU10TH FLOOR PLAN TH THRU 12THFLOOR PLAN	A-505 A-506 A-507	H.C. KITCHEN LAYOUT ADAPTABLE KITCHEN LAYOUTS ADAPTABLE KITCHEN LAYOUTS	S-402 S-403	MASONRY SCHEDULE AND KEY MAPS MASONRY SCHEDULE AND KEY MAPS	P-102 P-103	PLUMBING 1ST FLOOR PLAN PLUMBING 2ND FLOOR PLAN	E-104 E-105 E-106	ELECTRICAL 3RD THRU 8TH FLOOR PLAN POWER ELECTRICAL 9TH AND 10TH FLOOR PLAN POWER ELECTRICAL 11TH AND 12TH FLOOR PLAN POWER
A-108 RC	TH THRU 14THFLOOR PLAN OOF PLAN, DETAILS AND NOTES RTIAL 2ND-3RD FLOOR- ENLARGED UNIT PLANS	A-508 A-509 A-510	H.C. BATHROOM LAYOUTS ADAPT, BATHROOM LAYOUTS AND MISC. DETAILS MAILBOX ROOM PLAN, ELEV. & SECTION			P-104 P-105 P-106	PLUMBING 3RD THRU 8TH FLOOR PLAN PLUMBING 9TH AND 10TH FLOOR PLAN PLUMBING 11TH AND 12TH FLOOR PLAN	E-107 E-108	ELECTRICAL 13TH AND 14TH FLOOR PLAN POWER ELECTRICAL ROOF FLOOR PLAN POWER
A-110 PA A-111 PA	RTIAL 2ND-3RD FLOOR- ENLARGED UNIT PLANS RTIAL 4TH THRU 8TH FLOOR ENLARGED UNIT PLANS	A-510 A-511 A-512	TRASH COMPACTOR ROOM AND DETAILS SECURITY DESK PLAN, ELEV. & SECTION	ENERC EN-002	BY CODE DRAWINGS NYC ENERGY CODE ANALYSIS NOTES, SPECIAL	P-107 P-108	PLUMBING 13TH AND 14TH FLOOR PLAN PLUMBING ROOF FLOOR PLAN	E-202 E-203	ELECTRICAL 1ST FLOOR PLAN LIGHTING ELECTRICAL 2ND FLOOR PLAN LIGHTING
A-113 PA	RTIAL 4TH THRU 8TH FLOOR ENLARGED UNIT PLANS RTIAL 9TH THRU 10TH FLOOR ENLARGED UNIT PLANS RTIAL 9TH THRU 10TH FLOOR ENLARGED UNIT PLANS	A-513	FINISH SCHEDULE	EN-005 EN-006	INSPECTIONS, PROGRESS INSPECTIONS NYCECC NOTES AIR SEALING DETAILS	P-200 P-201 P-202	PLUMBING STORM RISER DIAGRAM PLUMBING SANITARY RISER DIAGRAM PLUMBING SANITARY RISER DIAGRAM 2	E-204 E-205 E-206	ELECTRICAL 3RD THRU 8TH FLOOR PLAN LIGHTING ELECTRICAL 9TH AND 10TH FLOOR PLAN LIGHTING ELECTRICAL 11TH AND 12TH FLOOR PLAN LIGHTING
A-115 PA A-116 PA	RTIAL 11TH THRU 12TH ENLARGED UNIT PLANS RTIAL 11TH THRU 12TH ENLARGED UNIT PLANS			EN-100 EN-101	ENVELOPE COMPLIANCE CERTIFICATE - COMcheck FLOOR PLANS- THERMAL BOUNDARY	P-203 P-204	PLUMBING STORM RISER DIAGRAM 3 PLUMBING STORM RISER DIAGRAM 4	E-207 E-208 E-301	ELECTRICAL 13TH AND 14TH FLOOR PLAN LIGHTING ELECTRICAL ROOF FLOOR PLAN LIGHTING ELECTRICAL TYPICAL UNIT PLANS
	RTIAL 13TH THRU 14TH ENLARGED UNIT PLANS RTIAL 13TH THRU 14TH ENLARGED UNIT PLANS			EN-102 EN-401 EN-402	ELEVATION DIAGRAMS, NOTES WALL SECTIONS WALL SECTIONS	P-205 P-206 P-207	PLUMBING STORM RISER DIAGRAM 5 PLUMBING STORM RISER DIAGRAM 6 PLUMBING STORM RISER DIAGRAM 7	E-301 E-302 E-303	ELECTRICAL TYPICAL UNIT PLANS ELECTRICAL TYPICAL UNIT PLANS ELECTRICAL TYPICAL UNIT PLANS
A-121 2N	RST FLOOR RCP D THRU 3RD FLOOR RCP H THRU 8TH FLOOR RCP			EN-403 EN-404	WALL SECTIONS WALL SECTIONS	P-208 P-209 P-210	PLUMBING GAS RISER DIAGRAM 1 PLUMBING GAS RISER DIAGRAM 2 PLUMBING DOMESTIC WATER DIAGRAM 1	E-401 E-401 E-402	ELECTRICAL ONE LINE DIAGRAM & PANEL SCHEDULES ELECTRICAL ONE LINE DIAGRAM & PANEL SCHEDULES ELECTRICAL PANEL SCHEDULES
A-123 9T A-124 11 ⁻	H AND 10TH FLOOR RCP TH AND 12TH FLOOR RCP			EN-405 EN-406 EN-407	WALL SECTIONS WALL SECTIONS WALL SECTIONS	P-211 P-212	PLUMBING DOMESTIC WATER DIAGRAM 2 PLUMBING DOMESTIC WATER DIAGRAM 3	E-403 E-404	ELECTRICAL PANEL SCHEDULES ELECTRICAL PANEL SCHEDULES
A-125 13 ⁻	TH THRU 14TH FLOOR RCP			EN-501 EN-503	TYPICAL WALL DETAILS WINDOW / DOOR SCHEDULE	P-213	PLUMBING DOMESTIC WATER DIAGRAM 4	E-501 E-502 E-503	ELECTRICAL DETAILS ELECTRICAL DETAILS ELECTRICAL DETAILS

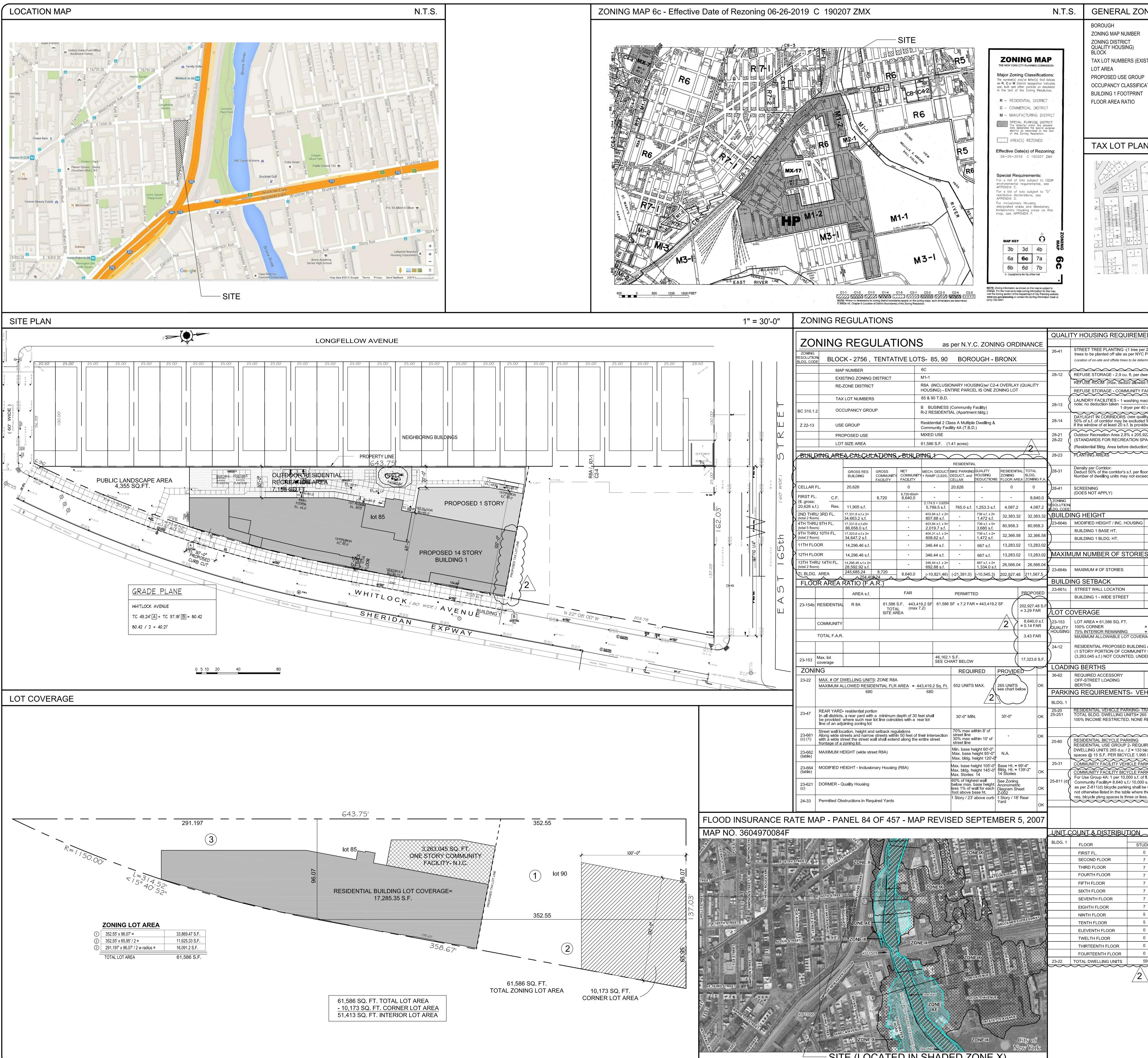


# WHITLOCK APARTMENTS BUILDING 1



ARCHITECTURE • URBAN PLANNING NEWMAN DESIGN ARCHITECTS PLLC 210 West Rogues Path • Cold Spring Hills, NY 11743 TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031 www.ndarchitects.com 

TURAL ENGINEER PE ENGINEERING, PLLC /enue n, NY 11050 SP. FA. ENGINEER	
ONSULTANT BILITY SERVICES, A PROGRAM D SPINAL ASSOCIATION	2 05/06/22 ISSUED TO DOB - PAA ADDED CELLAR 10/05/21 HPD PAA RESUBMISSION
TOW t 11743-6998	4/30/21HPD SUBMISSION2/12/21ISSUED TO DOB - PAA REMOVED CELLAR1/17/19REMOVED AD, TEMP SD, FA & ARC, ADDED ENERG1/15/19HPD RESUBMISSION8/23/18HPD RESUBMISSION5/18/18ADDED A410
	2/20/18       ADDED A513         1/11/18       ADDED A006         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE       DESCRIPTION
	REVISIONS:
DOB APPROVAL STAMP:	STAMP: DATE: 7-14-17 JOB #: 15-36 DRAWN BY: RT, SC SCALE: NONE DRAWING NO: T-0001.02
	FILE No. : SHEET: 1 of 74 © 2017 NEWMAN DESIGN ARCHITECTS PLLC



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										3110•TEL	h ● Cold Spring I .: 631.673.3111 ● F/ darchitects.com	Hills, NY 11743 AX:631.673.2031
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FL	UNIT #	TYPE	(S.F.)	FL	UNIT #	TYPE	(S.F.)	FL	UNIT #	TYPE	(S.F.)
				/ FL)	#901-1001	STUDIO	354 S.F	/ FL)	#1301-1401	TWO BDRM	725 S.F
	N/A	STUDIO	353 S.F	UNITS/	#902-1002	STUDIO THREE BDRM	354 S.F	UNITS/	#1302-1402	THREE BDRM	985 SF
(<u>)</u>	#201-301 #202-302	STUDIO	353 S.F 353 S.F	(23	#903-1003 #904-1004	TWO BDRM	985 SF 718 S.F	(14	#1303-1403 #1304-1404		725 S.F 563 S.F
	#203-303	THREE BDRM	985 SF	FLOOR	#905-1005	ONE BDRM	592 S.F	FLOOR	#1305-1405	TWO BDRM	808 S.F
	#204-304	TWO BDRM	713 S.F	9ТН-10ТН	#906-1006	ONE BDRM	575 S.F	13TH-14TH	#1306-1406	ONE BDRM	543 S.F
ן ר ן ר	#205-305	ONE BDRM	592 S.F	9ТН.	#907-1007	ONE BDRM	509 S.F	13TH	#1307-1407	TWO BDRM	750 S.F
ZIND-3KU FLUUK (24 UNI 13)	#206-306	ONE BDRM	505 S.F		#908-1008	ONE BDRM	509 S.F		#1308-1408	TWO BDRM	803 S.F
	#207-307	ONE BDRM	504 S.F		#909-1009	ONE BDRM	523 S.F		#1309-1409	ONE BDRM	586 S.F
	#208-308	ONE BDRM	507 S.F		#910-1010	ONE BDRM	526 S.F		#1310-1410	ONE BDRM	600 S.F
	#209-309	ONE BDRM	515 S.F		#911-1011	ONE BDRM	526 S.F		#1311-1411	ONE BDRM	510 S.F
	#210-310	ONE BDRM	518 S.F		#912-1012	STUDIO	425 S.F		#1312-1412	ONE BDRM	501 S.F
-	#211-311 #212-312	ONE BDRM	518 S.F 425 S.F		#913-1013 #914-1014	TWO BDRM	722 S.F 368 S.F		#1313-1413 #1314-1414	TWO BDRM	742 S.F 746 S.F
_	#212-312	STUDIO	354 S.F		#915-1015	TWO BDRM	705 S.F		#1315-1415	ONE BDRM	512 S.F
	#214-314	STUDIO	354 S.F		#916-1016	STUDIO	402 S.F				
	#215-315	STUDIO	364 S.F		#917-1017	TWO BDRM	704 S.F				
	#216-316	TWO BDRM	700 S.F		#918-1018	ONE BDRM	500 S.F				
	#217-317	STUDIO	402 S.F		#919-1019	TWO BDRM	694 S.F				
	#218-318	TWO BDRM	690 S.F		#920-1020	TWO BDRM	729 S.F				
-	#219-319	ONE BDRM	501 S.F		#921-1021		736 S.F				
-	#220-320		685 S.F		#922-1022	ONE BDRM	507 S.F				
+	#221-321 #222-322	TWO BDRM	724 S.F 721 S.F		шира 105 г		705 0 5				
$\left \right $	#223-323	ONE BDRM	500 S.F	FL)	#1101-1201 #1102-1202	TWO BDRM	725 S.F 985 SF				
-				UNITS/ F	#1102-1202 #1103-1203	THREE BDRM	985 SF 725 S.F				
	#401-801	STUDIO	353 S.F	(15	#1103-1203	ONE BDRM	563 S.F				
	#402-802	STUDIO	353 S.F	LOOR	#1105-1205	TWO BDRM	808 S.F				
	#403-803	THREE BDRM	985 SF	2TH FL	#1106-1206	ONE BDRM	543 S.F				
7	#404-804	TWO BDRM	713 S.F	1ТН-12ТН	#1107-1207	TWO BDRM	750 S.F				
	#405-805	ONE BDRM	592 S.F	-	#1108-1208	TWO BDRM	803 S.F				
	#406-806	ONE BDRM	505 S.F		#1109-1209	ONE BDRM	586 S.F				
	#407-807	ONE BDRM	504 S.F		#1110-1210	ONE BDRM	600 S.F				
	#408-808	ONE BDRM	507 S.F		#1111-1211	ONE BDRM	510 S.F				
_	#409-809		515 S.F		#1112-1212		501 S.F				
_	#410-810 #411-811	ONE BDRM	518 S.F 518 S.F		#1113-1213 #1114-1214	TWO BDRM	742 S.F 746 S.F				
	#412-812	STUDIO	425 S.F		#1115-1215	ONE BDRM	512 S.F				
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	#417-817	STUDIO	402 S.F								
-	#418-818	TWO BDRM	690 S.F								
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		PARAPET	-				STAIR A		11'-5/2"		
		TOP OF PARAPET 200F H.P +184.62' 	- - 				STAIR A				
	-\$F	TOP OF PARAPET 200F H.P	- - 				STAIR A				
		TOP OF PARAPET +184.62' +184.62' +184.62' -0 FOURTEENTH FL. +174.29' -0 	-				STAIR A				
		TOP OF PARAPET 200F H.P. 74 +184.62' +184.62' 	-				STAIR A		1 ¹ -8 ¹ / ₂ "		
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		TOP OF PARAPET 200F H.P. 74 +184.62' +184.62' -01 FL. +174.29' 	- - - - - - - - - - - - - - - - - - -				STAIR A				
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		TOP OF PARAPET 200F H.P. 74 +184.62' 	- - - - - - - - - - - - - - - - - - -						1'-8 ¹ /2"		
		TOP OF PARAPET PARAPET SOOF H.P. +184.62' PO FOURTEENTH FL. +174.29' OIB FHIRTEENTH FL. +164.46' IOIB FWELFTH FL. +154.63' IOIB FWELFTH FL. +154.63' IOIB FWELFTH FL. +154.63' IOIB FWELFTH FL. +154.63' INFTH FL. -B INFTH FL. -B INFTH FL.							1'-8 ¹ /2"		
	Roposed Building Height Building Height (Per Zr 23-664b)	TOP OF PARAPET "I" "I" *184.62' "F" *100 COURTEENTH *174.29' OI "B *174.29' OI *174.29' OI *174.29' OI "B HIRTEENTH *164.46' "SOURTEENTH *164.46' "SOURTEENTH *164.46' "SOURTEENTH *164.46' SOURTEENTH *164.46' SOURTEENTH *164.46' SOURTEENTH *154.63' SOURTEENTH *154.63' SOURTEENTH *154.63' SOURTEENTH *14.8' "SOURTEENTH *14.8' "SOURTEENTH *135.14' "F" *135.8' "F" *125.8'							1'-8 ¹ /2"		
	Roposed Building Height Building Height (Per Zr 23-664b)	$\begin{array}{c} \hline \mbox{OP OF} \\ \hline \mbox{PARAPET} \\ \hline $	23-664b	 FL. - -					1'-8 ¹ /2"		
	Roposed Building Height Building Height (Per Zr 23-664b)	TOP OF PARAPET PARAPET	R 23-6646	 FL. 					1'-8 ¹ /2"		
	144'-5 1/2" PROPOSED BUILDING HEIGHT MAXIMUM ALLOWABLE BUILDING HEIGHT (PER ZR 23-664b)	TOP OF PARAPET PARAPET P-10 ROOF H.P. P-10 +184.62' P-10 FOURTEENTH FL. +174.29' IOI-16 FUNCTION	IGHT PER ZR 23-6646	 					1'-8 ¹ /2"		
	144'-5 1/2" PROPOSED BUILDING HEIGHT 45'-0" MAXIMUM ALLOWABLE BUILDING HEIGHT (PER ZR 23-664b)	TOP OF PARAPET E-17 +184.62' +174.29' OL FHIRTEENTH FL. +174.29' OL FURTEENTH FL. +164.46' INETH FL. +154.63' INETH FL. +135.14' P-io HIRTEENTH FL. +135.14' P-io HINETH FL. +125.81' P-io SEVENTH FL. +107.15' P-io SEVENTH FL. +107.15' P-io SIXTH FL. +107.82'	IGHT PER ZR 23-6646	FL.					1'-8 ¹ /2"		
	144'-5 1/2" PROPOSED BUILDING HEIGHT 45'-0" MAXIMUM ALLOWABLE BUILDING HEIGHT (PER ZR 23-664b)	TOP OF PARAPET P-10 SOOF H.P. +184.62' +10 F-10							1'-8 ¹ /2"		
		TOP OF PARAPET Image: First state s		FL.					1'-8 ¹ /2"		
		TOP OF PARAPET PARAPET F-14 SQOF H.P. F-14 +184.62' F-00 FL FL +184.62' FL +174.29' IOI-16 FL FL +174.29' IOI-16 FL FL +174.29' IOI-16 FL FL +164.46' IOI-16 FL FL +164.48' IFL +135.14' IF-16 H IFL +107.15' IF-16 FOURTH FL IFL +107.15' IF-16 IFTH FL IFL +107.15' IF-16 IFTH FL IFL +107.15' IFTH FL IFTH FL IFL H		FL.					1'-8 ¹ /2"		
		TOP OF PARAPET PARAPET Image: Second structure SOOF H.P. Image: Second structure P-10 Image: Second structure SOURTEENTH Image: Second structure FURTEENTH Image: Second structure FURTEENTH Image: Second structure FURTEENTH Image: Second structure FURTEENTH Image: Second structure FURTH Image: Second structure FURTH Image: Second structure FURTH Image: Second structure FURTH FL H107.15' Image: Second structure Image: FURTH FL FURTH FL H107.15' Image: Flore FURTH FL H107.15' Image: Flore FURTH FL H25.81' Image: Flore H25.81' Image: Flore H107.15' Image: Flore FOURTH FL H25.81' Image: Flore H2000000000000000000000000000000000000		FL.					1'-8 ¹ /2"		

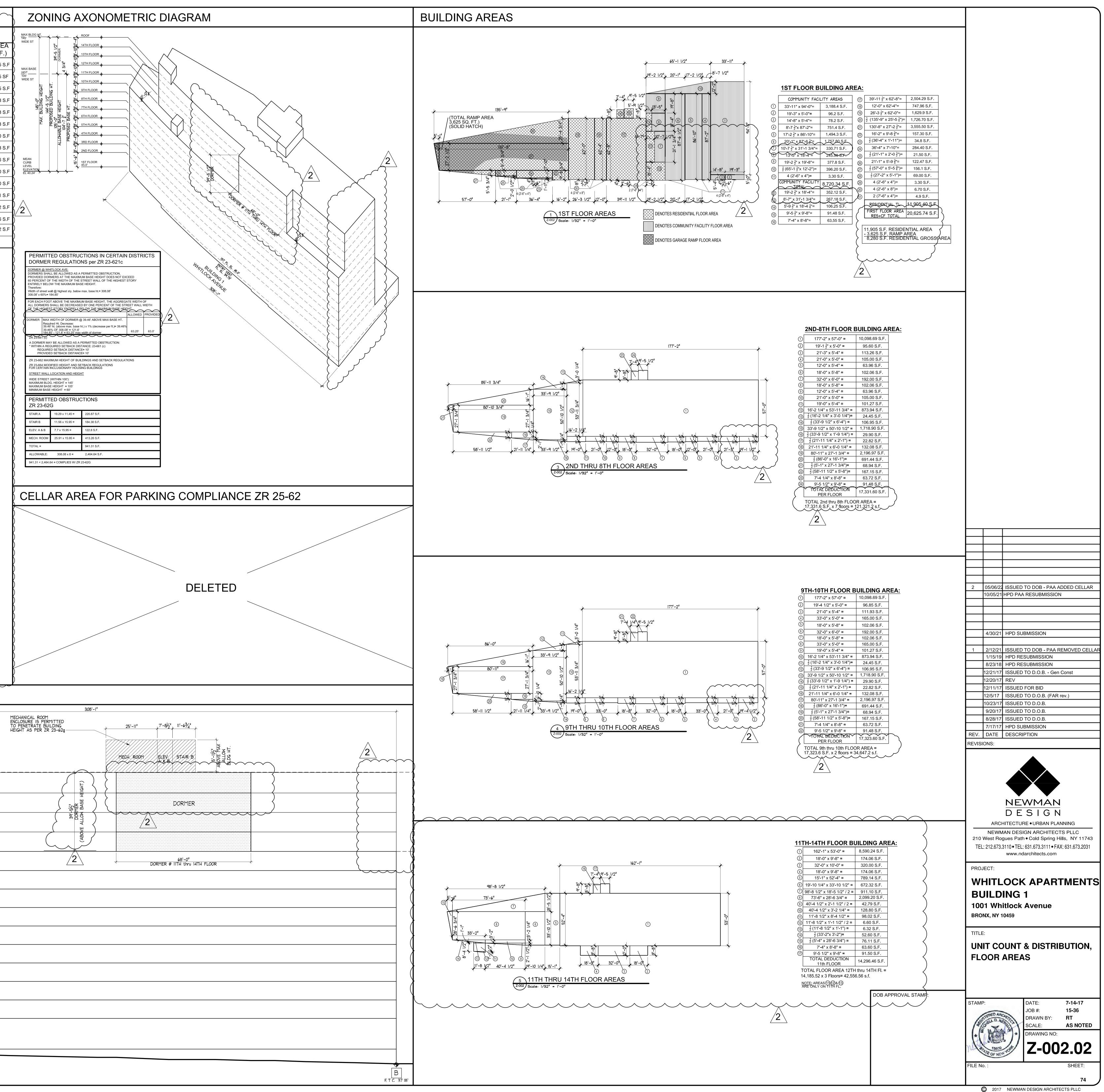
FIRST FL

CELLAR +34.0'

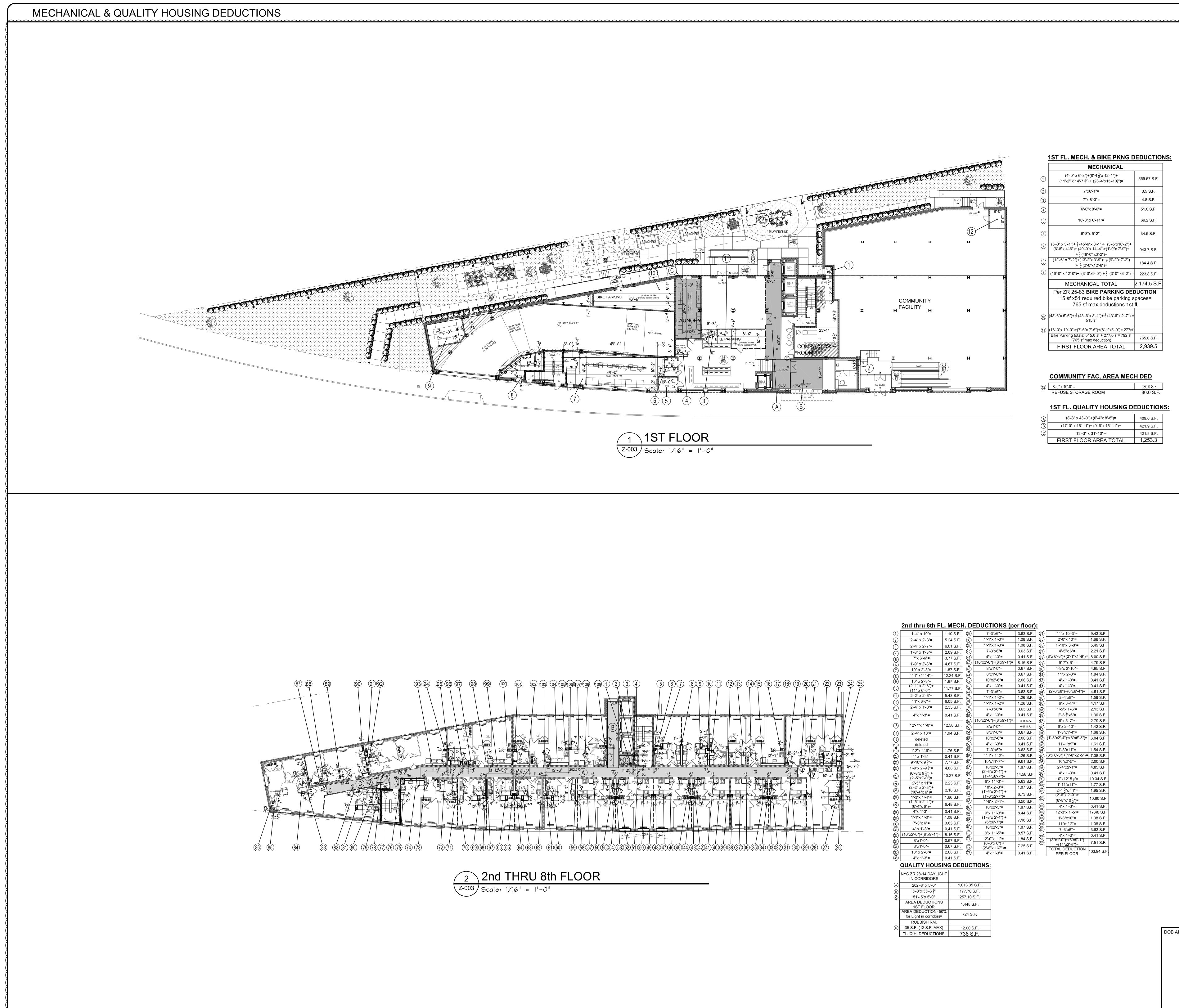
A E.T.C. 43.24'

C CRADE

WHITLOCK BLDG. \+45.0' EL. 40.24'



MECHANICAL ROOM ENCLOSURE IS PERMITTED TO PENETRATE BUILDING 25'-11" 7'-8½" 11'-6¾" HEIGHT AS PER ZR 23-62g	
MECH. ROOM ELEV. STAIR B	2
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$\left(= \bigcup_{e \in \mathcal{A}} \bigcup_{e \in \mathcal{A}$	
	<u>}</u>
	<u>}</u>
2 DORMER @ 11TH thru 14TH FLOOR	



6		<u>.</u>		60	9 X	11-3
	1'-1"x 1'-0"=	1.	08 S.F.	68	(1'-8"	x 2'-4
29 30	7'-3"x 6"=	3.	63 S.F.	-		(6'-7")
) (31)	4" x 1'-3"=	0.	41 S.F.	69		x2'-3"
31 32	(10"x2'-6")+(8"x9'-1")=	8.	16 S.F.	$\boxed{0}$	9"x	11'-5'
33	8"x1'-0"=	0.	67 S.F.	(71)		"x 11'
33 34	8"x1'-0"=	0.	67 S.F.	$\overline{(72)}$	· ·	5"x 6") 'x 1'-7
35	10" x 2'-6"=	2.	08 S.F.	72 73		<u>, 1'-7</u> 1'-3"
36	4"x 1'-3"=	0.	41 S.F.			
	NYC ZR 28-14 DAYLIG	HT				
\bigcirc	202'-8" x 5'-0"		1,0	13.35	S.F.	
B	5'-0"x 35'-6 ¹ / ₂ "		17	7.70 \$	S.F.	
Õ	51'- 5"x 5'-0"		25	57.10	S.F.	
0	AREA DEDUCTIONS 1ST FLOOR	5	1	,448 S	S.F.	
	AREA DEDUCTION- 50 for Light in corridors=			724 S.	.F.	
	RUBBISH RM.					
D	35 S.F. (12 S.F. MAX)	1	2.00 S	3.F.	

	2nd thru 8th Fl	MECH	1. D	EDUCTIONS (pe	er floo
1	1'-4" x 10"=	1.10 S.F.	37	7'-3"x6"=	3.63 S.F
2	2'-4" x 2'-3"=	5.24 S.F.	38	1'-1"x 1'-0"=	1.08 S.F
3	2'-4" x 2'-7"=	6.01 S.F.	39	1'-1"x 1'-0"=	1.08 S.F
	1'-8" x 1'-3"=	2.09 S.F.	40	7'-3"x6"=	3.63 S.F
4	7"x 6'-6"=	3.77 S.F.	41	4"x 1'-3"=	0.41 S.F
()	1'-9" x 2'-8"=	4.67 S.F.	42	(10"x2'-6")+(8"x9'-1")=	8.16 S.F
	10" x 2'-3"=	1.87 S.F.	43	8"x1'-0"=	0.67 S.F
\bigcirc	1'-1" x11'-4"=	12.24 S.F.		8"x1'-0"=	0.67 S.F
×	10" x 2'-3"=	1.87 S.F.	(44) (45)	10"x2'-6"=	2.08 S.F
	(2'-1" x 2'-8")+		$\widetilde{46}$	4"x 1'-3"=	0.41 S.F
(10)	(11" x 6'-6")=	11.77 S.F.	(46) (47)	7'-3"x6"=	3.63 S.F
(11)	2'-2" x 2'-6"=	5.43 S.F.	48	1'-1"x 1'-2"=	1.26 S.F
	11"x 6'-7"=	6.05 S.F.	49	1'-1"x 1'-2"=	1.26 S.F
(12) (13)	2'-4" x 1'-0"=	2.33 S.F.		7'-3"x6"=	3.63 S.F
	4"x 1'-3"=	0.41 S.F.	50	4"x 1'-3"=	0.41 S.F
(14)	4 x 1-3 -	0.41 S.F.		(10"x2'-6")+(8"x9'-1")=	8.16 S.F.
(15)	12'-7"x 1'-0"=	12.58 S.F.	52 (53)	8"x1'-0"=	0.67 S.F.
	2'-4" x 10"=	1.94 S.F.	54	8"x1'-0"=	0.67 S.F
	deleted	1.34 0.1 .		10"x2'-6"=	2.08 S.F
	deleted		55 56	4"x 1'-3"=	0.41 S.F
	1'-2"x 1'-6"=	1.76 S.F.	5	7'-3"x6"=	3.63 S.F
	4" x 1'-3"=	0.41 S.F.	58	1'-1"x 1'-2"=	1.26 S.F
6	9'-10"x 9 ¹ / ₂ "=	7.77 S.F.	59	10"x11'-7"=	9.61 S.F
	1'-9"x 2'-9 ¹ / ₂ "=	4.88 S.F.		10"x2'-3"=	1.87 S.F
22 23	(6'-8"x 9 ¹ / ₂ ") +	10.27 S.F.	61	(2'-6"x 2'-4") + (1'-4"x6'-7")=	14.58 S.I
	(2'-5"x2'-0")= 2'-5" x 11"=	2.23 S.F.	62	6"x 11'-3"=	5.63 S.F
24	(2'-2" x 2'-3")+		63	10"x 2'-3"=	1.87 S.F
25)	(10'-4"x 6")=	2.18 S.F.	64	(1'-6"x 2'-4") +	6.73 S.F
26)	1'-3"x 1'-4"=	1.66 S.F.	1	(1'-3"x2'-7")=	
(27)	(1'-5" x 2'-4")+	6.48 S.F.	65	1'-6"x 2'-4"=	3.50 S.F
Ŭ	(6'-4"x 6")= 4"x 1'-3"=	0.41 S.F.	66	10"x2'-3"=	1.87 S.F
	1'-1"x 1'-0"=	1.08 S.F.	67	9"x 11'-3"= (1'-8"x 2'-4") +	8.44 S.F
29	7'-3"x 6"=	3.63 S.F.	68	(1-0 x 2 - 4) (6"x6'-7")=	7.18 S.F
30	4" x 1'-3"=	0.41 S.F.	69	10"x2'-3"=	1.87 S.F
(31)	(10"x2'-6")+(8"x9'-1")=		(70)	9"x 11'-5"=	8.57 S.F
(32)		8.16 S.F.	70 71	2'-0"x 11"=	1.84 S.F
<u>8888888888</u>	8"x1'-0"= 8"x1'-0"=	0.67 S.F.		(6'-6"x 6") +	7.25 S.F
34) 65		0.67 S.F.	(72) (73)	(2'-6"x 1'-7")=	
5	10" x 2'-6"= 4"x 1'-3"=	2.08 S.F.		4"x 1'-3"=	0.41 S.F
(.36)	L 4°X 1'=3°≡	1 U 41 S F	1		

floor)	<u> </u>		
63 S.F.	(74)	11"x 10'-3"=	9
)8 S.F.	(75)	2'-0"x 10"=	1
)8 S.F.	(76)	1'-10"x 3'-0"=	5
63 S.F.	$(\overline{7})$	4'-5"x 6"=	2
41 S.F.	(78)	(8"x 6'-6")+(2'-1"x1'-9")=	8
16 S.F.	(79)	9'-7"x 6"=	4
67 S.F.	(80)	1-9"x 2'-10"=	4
67 S.F.	81	11"x 2'-0"=	1
08 S.F.	82	4"x 1'-3"=	0
41 S.F.	(83)	4"x 1'-3"=	0
63 S.F.	(84)	(2'-0"x8")+(6"x6'-4")=	4
26 S.F.	(85)	2'-4"x8"=	1
26 S.F.	86	6"x 8'-4"=	4
63 S.F.	(87)	1'-5"x 1'-6"=	2
41 S.F.	88	2'-8 ¹ / ₂ "x6"=	1
.16 S.F.	89	6"x 5'-7"=	2
.67 S.F.	<u>(</u> 90)	6"x 2'-10"=	1
67 S.F.	91	1'-3"x1'-4"=	1
08 S.F.	(92)	(1'-3"x2'-4")+(6"x6'-3")=	6
41 S.F.	93	11'-1"x9"=	1
63 S.F.	(94)	1'-8"x11"=	1
26 S.F.	(95)	(6"x 6'-8")+(1'-8"x2'-5")=	7
61 S.F.	96	10"x2'-5"=	2
37 S.F.	(97)	2'-4"x2'-1"=	4
58 S.F.	98	4"x 1'-3"=	0
63 S.F.	99	10"x12'-5 ½"=	10
37 S.F.	(100)	1'-11"x11"=	1
	(101)	2'-1 <u>1</u> "x 11"=	1
73 S.F.	(102)	(2'-6"x 2'-0")+	1(
50 S.F.		(6'-8"x10 ¹ / ₂ ")=	
37 S.F.	(103)	4"x 1'-3"=	0

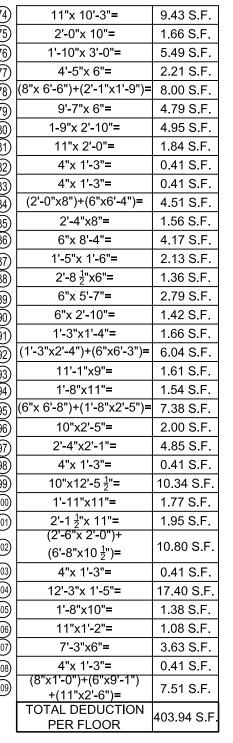


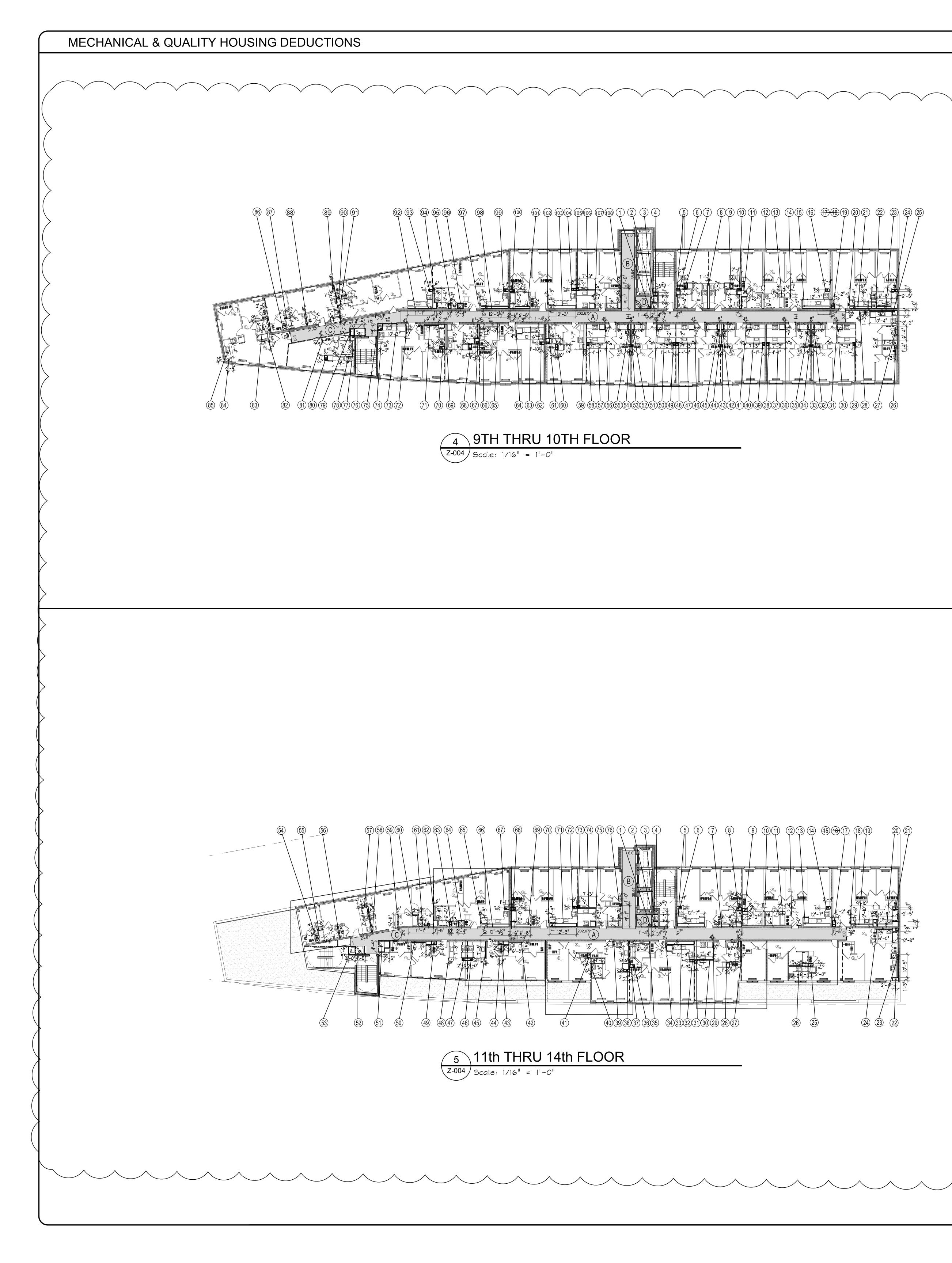
MECHANICAL	
(4'-0" x 6'-3")+(8'-4 ½"x 12'-1")+ (11'-2" x 14'-7 ½") + (23'-4"x15'-10½")=	659.67 S.F.
7"x6'-1"=	3.5 S.F.
7"x 8'-3"=	4.8 S.F.
6'-0"× 8'-6"=	51.0 S.F.
10'-0" x 6'-11"=	69.2 S.F.
6'-8"x 5'-2"=	34.5 S.F.
$\begin{array}{l} (5'-0"\times 3'-1")+\frac{1}{2} (45'-6"x 3'-1")+ \ (3'-5"x10'-2")+\\ (6'-8"x 4'-6")+ \ (49'-0"x 14'-4")+(1'-9"x 7'-9")+\\ &+\frac{1}{2} (49'-0" x3'-2")= \end{array}$	943.7 S.F.
$(12'-6" \times 7'-2")+(13'-2"\times 3'-9")+\frac{1}{2}(9'-2"\times 7'-2")$	
$(12 - 6 \times 7 - 2) + (13 - 2 \times 3 - 9) + \frac{1}{2} (9 - 2 \times 7 - 2) + \frac{1}{2} (2' - 0'' \times 12' - 6'') =$	184.4 S.F.
, , , , , , , , , , , , , , , , , , ,	184.4 S.F. 223.8 S.F.
$+ \frac{1}{2} (2'-0"x12'-6")=$ (16'-0" x 12'-0")+ (3'-0"x9'-0") + $\frac{1}{2}$ (3'-0" x3'-2")=	223.8 S.F.
$+ \frac{1}{2} (2'-0"x12'-6")=$ (16'-0" x 12'-0")+ (3'-0"x9'-0") + $\frac{1}{2}$ (3'-0" x3'-2")=	223.8 S.F. 2,174.5 S.F DUCTION: paces=
+ ¹ / ₂ (2'-0"x12'-6")= (16'-0" x 12'-0")+ (3'-0"x9'-0") + ¹ / ₂ (3'-0" x3'-2")= MECHANICAL TOTAL Per ZR 25-83 BIKE PARKING DEE 15 sf x51 required bike parking s	223.8 S.F. 2,174.5 S.F DUCTION: paces=
$+ \frac{1}{2} (2'-0"x12'-6")=$ (16'-0" x 12'-0")+ (3'-0"x9'-0") + $\frac{1}{2}$ (3'-0" x3'-2")= MECHANICAL TOTAL Per ZR 25-83 BIKE PARKING DEE 15 sf x51 required bike parking s 765 sf max deductions 1st (43'-6"x 6'-6")+ $\frac{1}{2}$ (43'-6"x 8'-1")+ $\frac{1}{2}$ (43'-6"x 2'-7") = 515 sf (18'-0"x 10'-0")+(7'-6"x 7'-6")+(8'-1"x5'-0")= 277sf	223.8 S.F. 2,174.5 S.F DUCTION: paces=
$+ \frac{1}{2} (2'-0"x12'-6")=$ (16'-0" x 12'-0")+ (3'-0"x9'-0") + $\frac{1}{2}$ (3'-0" x3'-2")= MECHANICAL TOTAL Per ZR 25-83 BIKE PARKING DEE 15 sf x51 required bike parking s 765 sf max deductions 1st (43'-6"x 6'-6")+ $\frac{1}{2}$ (43'-6"x 8'-1")+ $\frac{1}{2}$ (43'-6"x 2'-7") = 515 sf	223.8 S.F. 2,174.5 S.F DUCTION: paces=

1ST FL. MECH. & BIKE PKNG DEDUCTIONS:

	8'-0" x 10'-0" =	80.0 S.F.	
	REFUSE STORAGE ROOM	80.0 S.F.	
	1ST FL. QUALITY HOUSING D		10.
	IST FE. QUALITY HOUSING DI		13.
)[(8'-3" x 43'-0")+(6'-4"x 8'-8")=	409.6 S.F.	
0[(17'-0" x 15'-11")+ (9'-6"x 15'-11")=	421.9 S.F.	
$\mathbb{D}[$	13'-3" x 31'-10"=	421.8 S.F.	
[FIRST FLOOR AREA TOTAL	1,253.3	

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IONS: F. 							
		2			TO DOB - PAA RESUBMISS	A ADDED CELL	.AR
			4/30/21	HPD SU	BMISSION		
		1	1/15/19	HPD RE	TO DOB - PA SUBMISSION SUBMISSION		ELLAF
	<pre>}</pre>			ISSUED	TO D.O.B G FOR BID TO D.O.B. (F/		
	$\left\{ \right\}$		10/23/17 9/20/17	ISSUED ISSUED	TO D.O.B. TO D.O.B. TO D.O.B.		
· · · · · · · · · · · · · · · · · · ·		REV.	7/17/17 DATE		BMISSION		
		TEL PROJ WI BL 100 BROI TITLE	NEWM West Rog 212.673. JECT: HITL JILD 01 Wh NX, NY 1	DE HITECTUI IAN DES gues Path 3110 • TEL www.nc .OCF ING itlock 10459	: 631.673.3111• darchitects.co	N PLANNING ECTS PLLC g Hills, NY 11 FAX: 631.673.20 m	031
DOB APPROVAL STAMP:		STAMF	STERED AR	CHEFTCON MARKEN	DATE: JOB #: DRAWN BY: SCALE: DRAWING N	AS NOT	
		FILE NO	15609 47E OF NE	NYON	<b>Z-0</b>	03.0	
	<pre>}</pre>		D. : D 2017	NEWMA	N DESIGN ARCI	SHEET: 74 HITECTS PLLC	





	9th thru 10th FL	MECH	. DE	DUCTIC	ONS (per	floor):
$\bigcirc$	1'-4" x 10"=	1.10 S.F.	37	7'-3	8"x6"=	3.63 S.F.
2	2'-4" x 2'-3"=	5.24 S.F.	38	1'-1":	x 1'-0"=	1.08 S.F.
3	2'-4" x 2'-7"=	6.01 S.F.	39	1'-1":	x 1'-0"=	1.08 S.F.
	1'-8" x 1'-3"=	2.09 S.F.	40	7'-3	3"x6" <b>=</b>	3.63 S.F.
	7"x 6'-6"=	3.77 S.F.	( <u>41</u> )	4"x	1'-3"=	0.41 S.F.
$\bigotimes$	1'-9" x 2'-8"=	4.67 S.F.	42	(10"x2'-6")	)+(8"x9'-1")=	8.16 S.F.
$\mathbb{O}$	10" x 2'-3"=	1.87 S.F.	(43)	8"x	1'-0"=	0.67 S.F.
(4) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	1'-1" x11'-4"=	12.24 S.F.		8"x	1'-0"=	0.67 S.F.
K	10" x 2'-3"=	1.87 S.F.	44 45	10">	(2'-6"=	2.08 S.F.
10	(2'-1" x 2'-8")+	11.77 S.F.	46	4"x	1'-3"=	0.41 S.F.
	(11" x 6'-6")=		(47)	7'-3	3"x6"=	3.63 S.F.
11)	2'-2" x 2'-6"=	5.43 S.F.	48	1'-1":	x 1'-2"=	1.26 S.F.
12 13	11"x 6'-7"=	6.05 S.F.	(49)	1'-1":	x 1'-2"=	1.26 S.F.
13	2'-4" x 1'-0"=	2.33 S.F.	50	7'-3	3"x6"=	3.63 S.F.
14)	4"x 1'-3"=	0.41 S.F.	50 51	4"x	1'-3"=	0.41 S.F.
-			52	(10"x2'-6")	)+(8"x9'-1")=	8.16 S.F.
15	12'-7"x 1'-0"=	12.58 S.F.	53	8"x	1'-0"=	0.67 S.F.
16)	2'-4" x 10"=	1.94 S.F.	54	8"x	1'-0"=	0.67 S.F.
m	deleted		(55)	10">	(2'-6"=	2.08 S.F.
18	deleted		55 56	4"x	1'-3"=	0.41 S.F.
(19)	1'-2"x 1'-6"=	1.76 S.F.	57	7'-3	3"x6"=	3.63 S.F.
$\widetilde{20}$	4" x 1'-3"=	0.41 S.F.	58	1'-1":	x 1'-2"=	1.26 S.F.
(21)	9'-10"x 9 ½"=	7.77 S.F.	59	10"x	11'-7"=	9.61 S.F.
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	1'-9"x 2'-9 ¹ / ₂ "=	4.88 S.F.	60		(2'-3"=	1.87 S.F.
23	(6'-8"x 9 ½") + (2'-5"x2'-0")=	10.27 S.F.	61	· ·	< 2'-4") + x6'-7")=	14.58 S.F.
24)	2'-5" x 11"=	2.23 S.F.	62		"x 11"=	1.68 S.F.
	(2'-2" x 2'-3")+	2.18 S.F.		12'-6"	'x 1'-5"=	17.75 S.F.
25	(10'-4"x 6")=		63 64		1'-3"=	0.41 S.F.
26)	1'-3"x 1'-4"= (1'-5" x 2'-4")+	1.66 S.F.	65	· ·	(2'-4") + (2'-7")-	6.73 S.F.
27)	(6'-4"x 6")=	6.48 S.F.	66		<u>x2'-7")=</u> 'x 11"=	1.84 S.F.
	4"x 1'-3"=	0.41 S.F.	-		(2'-4") +	
$\tilde{\mathfrak{M}}$	1'-1"x 1'-0"=	1.08 S.F.	67		6'-7")=	7.18 S.F.
3	7'-3"x 6"=	3.63 S.F.			(2'-3"=	1.87 S.F.
<u>8888888888888888888888888888888888888</u>	4" x 1'-3"=	0.41 S.F.	69		11'-5"=	8.57 S.F.
(32)	(10"x2'-6")+(8"x9'-1")=	8.16 S.F.			'x 11"= "x 6"\	1.84 S.F.
33	8"x1'-0"=	0.67 S.F.	71	1	"x 6") + x 1'-7")=	7.25 S.F.
(34)	8"x1'-0"=	0.67 S.F.		· · · · · · · · · · · · · · · · · · ·	<u></u> 1'-3"=	0.41 S.F.
(35)	10" x 2'-6"=	2.08 S.F.	(72) (73)	11"x	10'-3"=	9.43 S.F.
36	4"x 1'-3"=	0.41 S.F.				1
	QUALITY HOUS	ING DEC	DUC	TIONS:		
	NYC ZR 28-14 DAYL CORRIDORS					
A	202'-8" x 5'-0'	n	1,01	3.35 S.F.	1	
B	5'-0"x 35'-6 ½	1	177	7.70 S.F.	1	
Õ	51'- 5"x 5'-0"		257	7.10 S.F.		
	AREA DEDUCTIONS 1	ST FLOOR	1,4	448 S.F.		

7'-3"x6"= 3.63 S.F. 1'-1"x 1'-0"= 1.08 S.F. 
 1'-1"x 1'-0"=
 1.08 S.F.

 7'-3"x6"=
 3.63 S.F.

 4"x 1'-3"=
 0.41 S.F.
 (10"x2'-6")+(8"x9'-1")= 8.16 S.F. 8"x1'-0"= 0.67 S.F. 0.67 S.F. 8"x1'-0"=0.67 S.F.10"x2'-6"=2.08 S.F.4"x 1'-3"=0.41 S.F. 7'-3"x6"= 3.63 S.F. 8"x1'-0"= 
 8"x1'-0"=
 0.67 S.F.

 10"x2'-6"=
 2.08 S.F.

 4"x 1'-3"=
 0.41 S.F.
 3.63 S.F.

] (74		1.66 S.F.
75		5.49 S.F.
76		2.21 S.F.
	, , ,	8.00 S.F.
(78		4.79 S.F.
] (79		4.95 S.F.
	11720	1.84 S.F.
81		0.41 S.F.
] (82		0.41 S.F.
83	) (2'-0"x8")+(6"x6'-4")=	4.51 S.F.
84	) 2'-4"x8"=	1.56 S.F.
85	) 6"x 8'-4"=	4.17 S.F.
86	) 1'-5"x 1'-6"=	2.13 S.F.
87	) 2'-8 ¹ / ₂ "x6"=	1.36 S.F.
	) 6"x 5'-7"=	2.79 S.F.
89	) 6"x 2'-10"=	1.42 S.F.
0	) 1'-3"x1'-4"=	1.66 S.F.
91	) (1'-3"x2'-4")+(6"x6'-3")=	6.04 S.F.
02	) 11'-1"x9"=	1.61 S.F.
93	) 1'-8"x11"=	1.54 S.F.
@4	) (6"x 6'-8")+(1'-8"x2'-5")=	7.38 S.F.
95	) 10"x2'-5"=	2.00 S.F.
@	) 2'-4"x2'-1"=	4.85 S.F.
97	) 4"x 1'-3"=	0.41 S.F.
(98	) 10"x12'-5 ¹ / ₂ "=	10.34 S.F.
99	) 1'-11"x11"=	1.77 S.F.
100		1.95 S.F.
	(2'-6"x 2'-0")+	10.80 S.F.
	(******2)	
		0.41 S.F.
		17.40 S.F.
	1 0 / 10	1.38 S.F.
(105		1.08 S.F.
	) 7'-3"x6"=	3.63 S.F.
1 (107		0.41 S.F.
108	) (8"x1'-0")+(6"x9'-1")+	7.51 S.F.
	(11"x2'-6")= TOTAL DEDUCTION	
	PER FLOOR	404.31 S.F.
]		
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	CORRIDORS	
A	202'-8" x 5'-0"	1,013.35 S.F.
B	5'-0"x 35'-6 <del>1</del> "	177.70 S.F.
$\odot$	51'- 5"x 5'-0"	257.10 S.F.
	AREA DEDUCTIONS 1ST FLOOR	1,448 S.F.
	AREA DEDUCTION- 50% for Light in corridors=	724 S.F.
	RUBBISH RM.	
$\bigcirc$	35 S.F. (12 S.F. MAX)	12.00 S.F.
	TL. Q.H. DEDUCTIONS:	736 S.F.

# 11th thru 14th FL. MECH. DEDUCTIONS (per floor):

	DEDUCTIONS ()		<u>/·</u>		
$\bigcirc$	1'-4" x 10"=	1.10 S.F.	39	4" x 1'-3"=	0.41 S.F.
2	2'-4" x 2'-3"=	5.24 S.F.	(40)	(6"x 6'-5")+(1'-6"x2'-4")=	6.71 S.F.
3	2'-4" x 2'-7"=	6.01 S.F.	<u>(41)</u>	10"x 2'-0"=	1.66 S.F.
~	1'-8" x 1'-3"=	2.09 S.F.	42	(6'-8"x6")+(2'-6"x1'-6")=	3.75 S.F.
	1'-5"x 12'-7"=	17.86 S.F.	(43)	2'-0"x1'-6"=	3.00 S.F.
	1'-9" x 10"=	1.45 S.F.	(44)	1'-3" x4" =	0.41 S.F.
(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	(6'-8"x 10") +	10.54 S.F.	(45) (46)	7'-8"x6"=	3.84 S.F.
	(2'-5"x 2'-0")=		<b>(</b> 46 <b>)</b>	2'-0"x 10"=	1.66 S.F.
( ( ( ( (	2'-0"x 11"=	1.84 S.F.	<b>(</b> 47)	2'-0"x 10"=	1.66 S.F.
9	2'-2" x 2'-6"=	5.43 S.F.	(48)	6"x 7'-8"=	3.84 S.F.
10	11"x 6'-7"=	6.05 S.F.	(48) (49)	2'-0"x 1'-6"=	3.00 S.F.
(1)	2'-4" x 1'-0"=	2.33 S.F.	50	(6'-7"x6")+(2'-4"x1'-6")=	6.79 S.F.
(12)	4"x 1'-3"=	0.41 S.F.	51	(2'-6"x4'-9")+ (2'-5"x2'-9")=	18.76 S.F.
(13)	12'-7"x 1'-0"=	12.58 S.F.	52	4'-5"x6"=	2.21 S.F.
(14)	2'-4" x 10"=	1.94 S.F.		3'-0"x3'-6"=	10.50 S.F.
(15)	deleted		53 54 55	1'-6"x1'-10"=	2.75 S.F.
(16)	deleted		(55)	2'-8"x6"=	1.34 S.F.
(16) (17)	1'-2"x 2'-5"=	2.83 S.F.	56	6"x 5'-7" <b>=</b>	2.79 S.F.
(18)	4" x 1'-3"=	0.41 S.F.	(57)	2'-1"x10"=	1.73 S.F.
	(9 ¹ / ₂ " x9'-10")+	12.65 S.F.	(58)	6'-0"x11'-10"=	5.92 S.F.
(19)	(1'-9"x2'-9 ¹ / ₂ ")=	12.00 S.F.	59	6"x5'-11"=	2.96 S.F.
20	(6'-8"x 10") + (2'-5"x 2'-0")=	10.54 S.F.	60	2'-8"x6"=	1.34 S.F.
21	2'-5" x 11"=	2.23 S.F.	61	1'-8"x 1'-5"=	2.37 S.F.
22	2'-4" x 1'-3"=	2.91 S.F.		(6"x 6'-8") +	7.38 S.F.
	6"x 10'-5"=	5.21 S.F.	62	(1'-8"x 2'-5")= 10"x 2'-5"=	2.01 S.F.
3 3 3 3	(8'-0"x 6")+(2'-8"x1'-6")=	8.00 S.F.	63	2'-4"x 2'-1"=	4.85 S.F.
	2'-0" x 1'-2"=	2.34 S.F.	64 65	4" x 1'-3"=	4.85 S.F. 0.41 S.F.
	(6'-5"x 6") +		65	12'-5 ¹ / ₂ " x 10"=	10.34 S.F.
26	(2'-4"x 1'-5")=	6.52 S.F.	66	12-3 2 x 10 - 1'-11"x 11"=	10.34 S.F. 1.77 S.F.
9	(6" x 9'-3")+(10"x 2'-8")=	6.85 S.F.	67	2'-1 ¹ / ₂ "x 11"=	1.95 S.F.
28	1'-2"x 2'-0"=	2.34 S.F.	68	$(6'-8''x \ 10\frac{1}{2}'') +$	1.90 S.F.
29	4" x 1'-3"=	0.41 S.F.	69	(2'-6"x 2'-0")=	10.80 S.F.
30	7'-4"x 6"=	3.67 S.F.		4" x 1'-3"=	0.41 S.F.
31	1'-0" x 1'-2"=	1.17 S.F.	$\widetilde{m}$	12'-3"x 1'-5"=	17.40 S.F.
32	1'-9"x 11"=	1.61 S.F.	$\widetilde{n}$	1'-8"x10"=	1.39 S.F.
(33)	12'-3"x1'-5"=	17.40 S.F.		11"x 1'-2"=	1.08 S.F.
ଞ୍ଚଞ୍ଚଞ୍ଚଞ୍ଚ	4" x 1'-3"=	0.41 S.F.		7'-3"x 6"=	3.63 S.F.
35	(6'-8"x11")+	12.38 S.F.	@1@?? @1@?? @	4" x 1'-3"=	0.41 S.F.
66 66	(3'-0"x2'-1")= 2'-0"x 11"=	1.84 S.F.	(76)	(8"x1'-0")+(6"x9'-1")	
36 37	(6"x10'-6")+(2'-4"x10")=	7.18 S.F.	$\odot$	+(11"x2'-6")=	7.51 S.F.
5					346.44 S.F.
38	2'-4"x 10"=	1.93 S.F.		PER FLOOR	

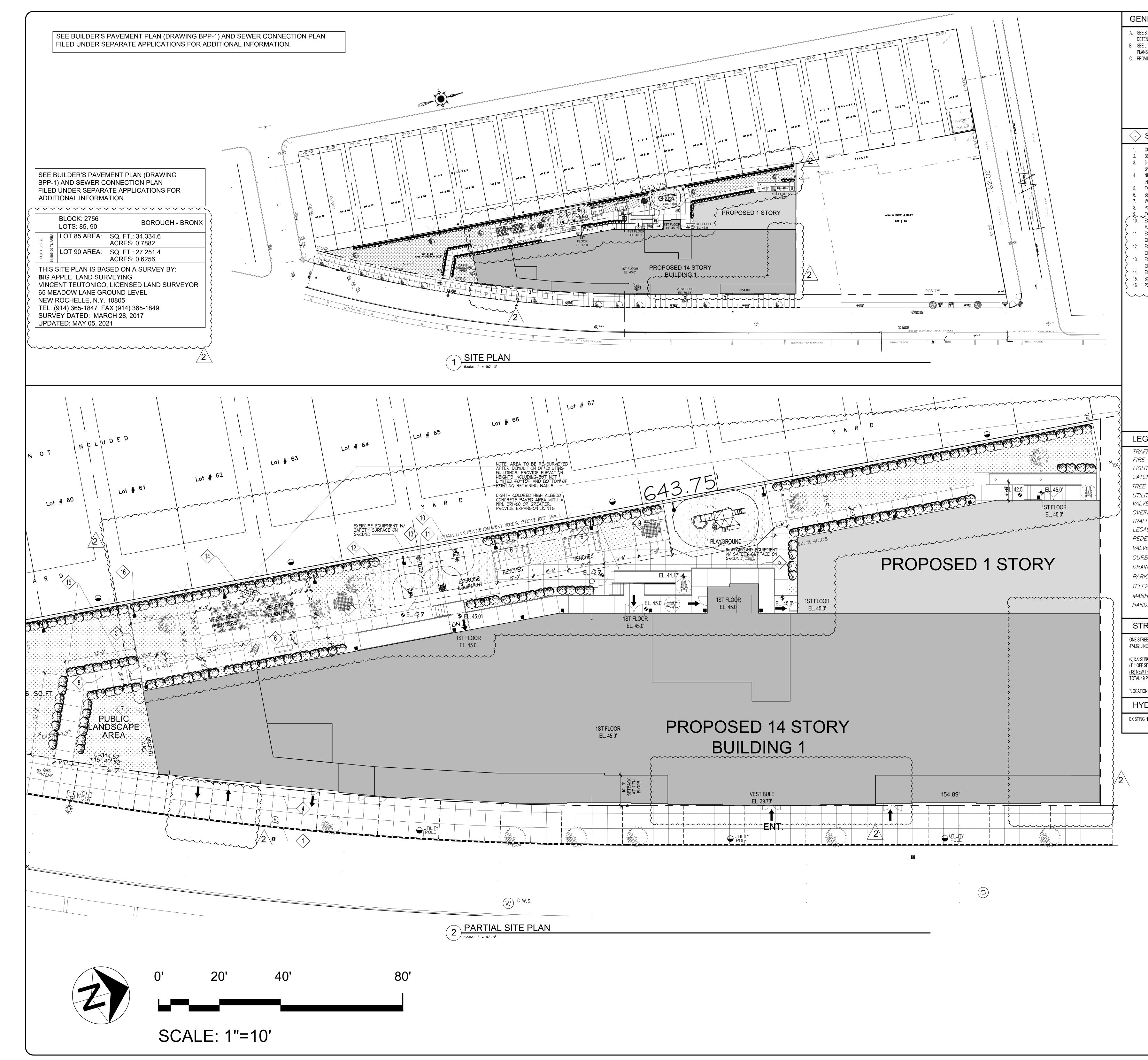
## **QUALITY HOUSING DEDUCTIONS:**

IN CORRIDORS	
NYC ZR 28-14 DAYLIGHT	

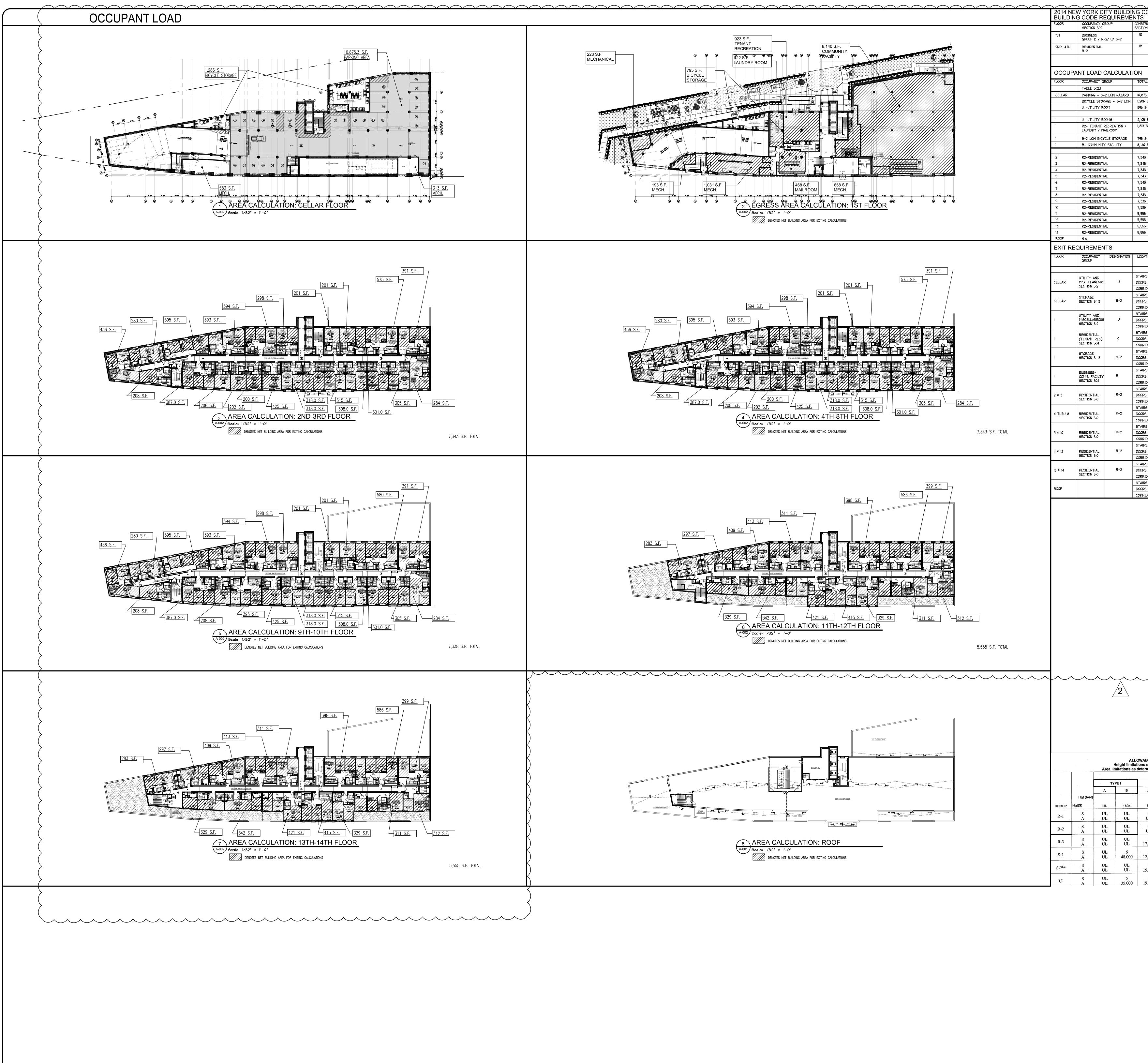
	IN CORRIDORS	
(A)	202'-8" x 5'-0"	1,013.35 S.F.
B C	5'-0"x 35'-6 <u>1</u> "	177.70 S.F.
	23'- 8"x 5'-0"	118.35 S.F.
	AREA DEDUCTIONS 1ST FLOOR	1,309 S.F.
	AREA DEDUCTION- 50% for Light in corridors=	655 S.F.
	RUBBISH RM.	
D	35 S.F. (12 S.F. MAX)	12.00 S.F.
	TL. Q.H. DEDUCTIONS:	667 S.F.

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	2 05/06/22 ISSUED TO DOB - PAA ADDED CELLAR 10/05/21 HPD PAA RESUBMISSION
	4/30/21 HPD SUBMISSION
	12/12/21ISSUED TO DOB - PAA REMOVED CELLAR1/15/19HPD RESUBMISSION8/23/18HPD RESUBMISSION
	12/21/17         ISSUED TO D.O.B Gen Const           12/11/17         ISSUED FOR BID
	12/5/17         ISSUED TO D.O.B. (FAR rev.)           10/23/17         ISSUED TO D.O.B.           9/20/17         ISSUED TO D.O.B.
	8/28/17ISSUED TO D.O.B.7/17/17HPD SUBMISSIONREV.DATEDESCRIPTION
	REVISIONS:
$\langle \rangle$	NEWMAN
	DESIGN ARCHITECTURE • URBAN PLANNING
	NEWMAN DESIGN ARCHITECTS PLLC 210 West Rogues Path • Cold Spring Hills, NY 11743 TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031
	PROJECT:
	WHITLOCK APARTMENTS BUILDING 1
/	BUILDING I 1001 Whitlock Avenue BRONX, NY 10459
	TITLE:
	MECHANICAL & QUALITY HOUSING DEDUCTIONS
DOB APPROVAL STAMP:	STAMP: DATE: <b>4-5-21</b>
/	JOB #: 15-36 DRAWN BY: SC SCALE: AS NOTED
	DRAWING NO: <b>Z-004.01</b>
	FILE No. : SHEET:
	C 2017 NEWMAN DESIGN ARCHITECTS PLLC

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NERAL SHEET NOTES			
TENTION AND SANITARY SYSTEMS. E L-1XXX SERIES DRAWINGS FOR LANDSCAPE GRADING PLAN, PLANTING PLAN, ENLARGED INS AND DETAILS.			
DVIDE 2'-0" MIN CLEAN FILL COVER IN ALL LANDSCAPE AREAS.			
SHEET KEYNOTES			
CONCRETE CURB BELOW GRADE DETENTION SYSTEM, SEE SITE CONNECTION PLAN 6'-0" HIGH SECURITY FENCE AND 3'-6"W SELF CLOSING / LOCKING GATE AS MANUFACTURED BY AMERISTAR, ECHELON OR APPROVED EQUAL. NEW CAST IN PLACE SIDEWALK; SEE BPP (BUILDERS PAVEMENT PLAN) FOR ADDITIONAL INFORMATION. TABLE AND SEATING WITH WHEELCHAIR ACCESSIBILITY, SEE SPECIFICATIONS. BENCH SEATING, SEE SPECIFICATIONS. WALL AREA RESERVED FOR GRAFFITI ARTIST TO BE CHOSEN BY OWNER. POURED CONCRETE SIDEWALK, SEE DETAILS SHEET A-002.			
TABLE AND SEATING, SEE SPECIFICATIONS         EXERCISE EQUIPMENT - ACCESSIBLE ADJUSTABLE LEG PRESS - MODEL NO. UBX-215         MANUFACTURED BY GREENFIELDS (OUTDOOR FITNESS) OR APPROVED EQUAL         EXERCISE EQUIPMENT - ACCESSIBLE STEPPER - MODEL NO. UBX-292 AS MANUFACTURED BY         GREENFIELDS (OUTDOOR FITNESS) OR APPROVED EQUAL         EXERCISE EQUIPMENT - CHEST PRESS - MODEL NO. UBX-246 AS MANUFACTURED BY         GREENFIELDS (OUTDOOR FITNESS) OR APPROVED EQUAL         EXERCISE EQUIPMENT - SIT-UP BENCH - MODEL NO. UBX-223 AS MANUFACTURED BY         GREENFIELDS (OUTDOOR FITNESS) OR APPROVED EQUAL         EXERCISE EQUIPMENT - SIT-UP BENCH - MODEL NO. UBX-223 AS MANUFACTURED BY         GREENFIELDS (OUTDOOR FITNESS) OR APPROVED EQUAL         EXERCISE EQUIPMENT - SIT-UP BENCH - MODEL NO. UBX-223 AS MANUFACTURED BY         GREENFIELDS (OUTDOOR FITNESS) OR APPROVED EQUAL         EXISTING IRREGULAR STONE RETAINING WALL, V.I.F.         BOLLARD LIGHT FIXTURE, SEE ELECTRICAL PLANS         POST MOUNTED LIGHT FIXTURE, SEE ELECTRICAL PLANS			
GEND			
FFIC LIGHT — T.L.			
E HYDRANT — Y HYD. HT POLE — Y — O			
CH BASIN C.B.			
ITY POLE U.P.			
RHEAD SERVICE WIRES   0.H.S.W.     FFIC SIGN   D T.S.			
AL GRADES—L.G. DESTRIAN RAMP—P.R.			
VE COVERV.C. RB AND CURB CUTC.C.			
NIN	2		ISSUED TO DOB - PAA ADDED CELLAR
EPHONE T NHOLES MH		10/05/21	HPD PAA RESUBMISSION
IDICAP SPACE			
REET TREE CALCULATION		4/30/21	HPD SUBMISSION
REET TREE REQUIRED FOR EVERY 25 LINEAR FEET OF STREET FRONTAGE. INEAR FEET OF FRONTAGE / 25' = 19 STREET TREES REQUIRED	1	1/15/19	ISSUED TO DOB - PAA REMOVED CELLAR HPD RESUBMISSION HPD RESUBMISSION
TING TREES SITE TREE		0/23/10	
9 PROVIDED		12/21/17 12/11/17	ISSUED FOR BID
ON TO BE DETERMINED AS DIRECTED BY NYC PARKS DEPARTMENT		10/23/17 9/20/17 8/28/17	ISSUED TO D.O.B.
<b>DRANTS</b> GAS-G.V. WATER-W.V.	REV.	7/17/17 DATE	
G HYDRANTS ARE LOCATED WITHIN 250 FEET OF ENTRANCES OF PROPOSED BUILDING		SIONS:	
	TE	NEWN West Ro	NEWMAN         NEWMAN         DESIGN         HITECTURE • URBAN PLANNING         MAN DESIGN ARCHITECTS PLLC         gues Path • Cold Spring Hills, NY 11743         3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com
	W B 10 BRC	HITL UILD 01 Wh DNX, NY 1	OCK APARTMENTS ING 1 itlock Avenue
	AF		ECTURAL SITE PLAN
DOB APPROVAL STAMP:	STAN	IP:	DATE: 7/14/17 JOB #: 15-36 DRAWN BY: RT, SC SCALE: AS NOTED DRAWING NO:
	FILE N	ATE OF NE	A-001.02 SHEET:
		<b>©</b> 2017	of 74



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ONSTRUCTION CLASSIFICATIO	'n				
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TOTAL NET FLOOR AREA	FLOOR AREA PER	OCCUPANT	TOTAL OCCUPA	NTS PER FLOOR	1
	TABLE 1004.1.1				
10,875.3 S.F.	200 GROSS AREA		54 OCCUPANTS	<b>)</b>	∔
1,286 S.F. 896 S.F.	300 GROSS AREA 300 GROSS AREA		4 OCCUPANTS 3 OCCUPANTS		-
			61 TOTAL OCCI	JPANTS	ł
2,105 S.F.	300 GROSS AREA		7 OCCUPANTS		]
1,813 S.F.	200 GROSS AREA		9 OCCUPANTS		
705 6 5	300 CROSS AREA				ł
795 S.F. 8,140 S.F.	300 GROSS AREA		3 OCCUPANTS 81 OCCUPANTS		ľ
· ····	TOTAL IST FL. 00	CUPANTS:	100 OCCUPANTS		ľ
7,343 S.F.	200 GROSS WITHIN		37 OCCUPANTS		1
7,343 S.F.	200 GROSS WITHIN		37 OCCUPANTS		1
7,343 S.F.	200 GROSS WITHIN		37 OCCUPANTS		┦
7,343 S.F. 7,343 S.F.	200 GROSS WITHIN 200 GROSS WITHIN		37 OCCUPANTS 37 OCCUPANTS		ł
7,343 S.F.	200 GROSS WITHIN 200 GROSS WITHIN		37 OCCUPANTS 37 OCCUPANTS		┨
7,343 S.F.	200 GROSS WITHIN		37 OCCUPANTS		1
7,338 S.F.	200 GROSS WITHIN		37 OCCUPANTS		1
7,338 S.F.	200 GROSS WITHIN		37 OCCUPANTS		_
5,555 S.F.	200 GROSS WITHIN		28 OCCUPANTS		⋠
5,555 S.F. 5,555 S.F.	200 GROSS WITHIN 200 GROSS WITHIN		28 OCCUPANTS 28 OCCUPANTS		┨
5,555 S.F.	200 GROSS WITHIN 200 GROSS WITHIN		28 OCCUPANTS 28 OCCUPANTS		4
LOCATION	PERSONS PER	TOTAL	INCHES	INCHES	┥
	UNIT WIDTH	OCCUPANTS	REQUIRED	PROVIDED	Ĩ
	SECTION 1005.1	SECTION 1005.1			◀
TAIRS	0.3	58	17.4"	(2) 54"	1
DOORS	0.2	58	11.6"	(2) 36"	₹
CORRIDOR	0.2	58	11.6"	50"	┛
TAIRS	0.3	3	.9"	(2) 54"	1
DOORS CORRIDOR	0.2	3	.6" .6"	(2) 36"	┨
TAIRS	0.3	7	<u>م.</u>		┨
DOORS TO GRADE	0.2	7	1.4"	144"	∛
CORRIDOR	0.2	7			
STAIRS					4
DOORS TO GRADE	0.2	9	1.8"	144"	-)
				· · · ·	4
DOORS TO GRADE	0.2	3	.6"	144"	┦
CORRIDOR					1
TAIRS					Į
DOORS TO GRADE	0.2	81	16.2	144"	
					ł
DOORS	0.3	37 37	11.1" 7.4"	108"	-
CORRIDOR	0.2	37	7.4	60"	1
STAIRS	0.3	37	11.1"	(2) 54"	J
DOORS	0.2	37	7.4"	(2) 36"	1
CORRIDOR	0.2	37	7.4"	60"	ļ
	0.3	37	11.1" 7 4"	(2) 54"	ł
DOORS CORRIDOR	0.2	37 37	7.4" 7.4"	(2) 36" 60" <	ł
TAIRS	0.3	28	8.4"	(2) 54"	ł
DOORS	0.2	28	5.6"	(2) 36" <	
CORRIDOR	0.2	28	5.6"	60"	
TAIRS	0.3	28	8.4"	(2) 54" <	1
OORS	0.2	28	5.6"	(2) 36"	┦
ORRIDOR	0.2	28 0	5.6" 0"	60" <	ł
DOORS	0.2	0	0"	0"	ł
CORRIDOR					7
					1
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				<	1
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				<	Į
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2	05/06/22	ISSUED TO DOB - PAA ADDED CELLAR
	10/05/21	HPD PAA RESUBMISSION
	4/30/21	HPD SUBMISSION
	2/12/21	ISSUED TO DOB - PAA REMOVED CELLAR
	1/15/19	HPD RESUBMISSION
	8/23/18	HPD RESUBMISSION
	12/21/17	ISSUED TO D.O.B Gen Const
	12/11/17	ISSUED FOR BID
	10/23/17	ISSUED TO D.O.B.
	9/20/17	ISSUED TO D.O.B.
	8/28/17	ISSUED TO D.O.B.
	7/17/17	HPD SUBMISSION
REV.	DATE	DESCRIPTION
REVISI	ONS:	

	TYPE	OF CONSTRUC	CTION	2	к К	
түр	PE II	ТҮР	E III	TYPE IV	TYP	EV
A	В	Α	В	НТ	Α	В
65	55	65	55	65	50	40
6	NP	6	NP	6	NP	NP
UL	NP	24,000	NP	20,500	NP	NP
6	NP	6	3	6	NP	NP
UL	NP	24,000	5,600	20,500	NP	NP
6	3	6	3-	6	3	3
7,500	10,500	14,700	5,600	30,000	8,400	5,500
5	3-	4	3	4	3	2
2,000	7.500	7,500	7,500	7,500	5,000	1,000
6	3	6	4	6	3	2
5,000	10,000	10,000	8,500	10,000	8,400	5,500
4	2	3	2	4	2	1
9,000	8,500	14,000	8,500	18,000	9,000	5,500

DOB APPROVAL STAMP:

NEWMAN DESIGN

ARCHITECTURE • URBAN PLANNING NEWMAN DESIGN ARCHITECTS PLLC 210 West Rogues Path • Cold Spring Hills, NY 11743 TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031 www.ndarchitects.com

PROJECT:

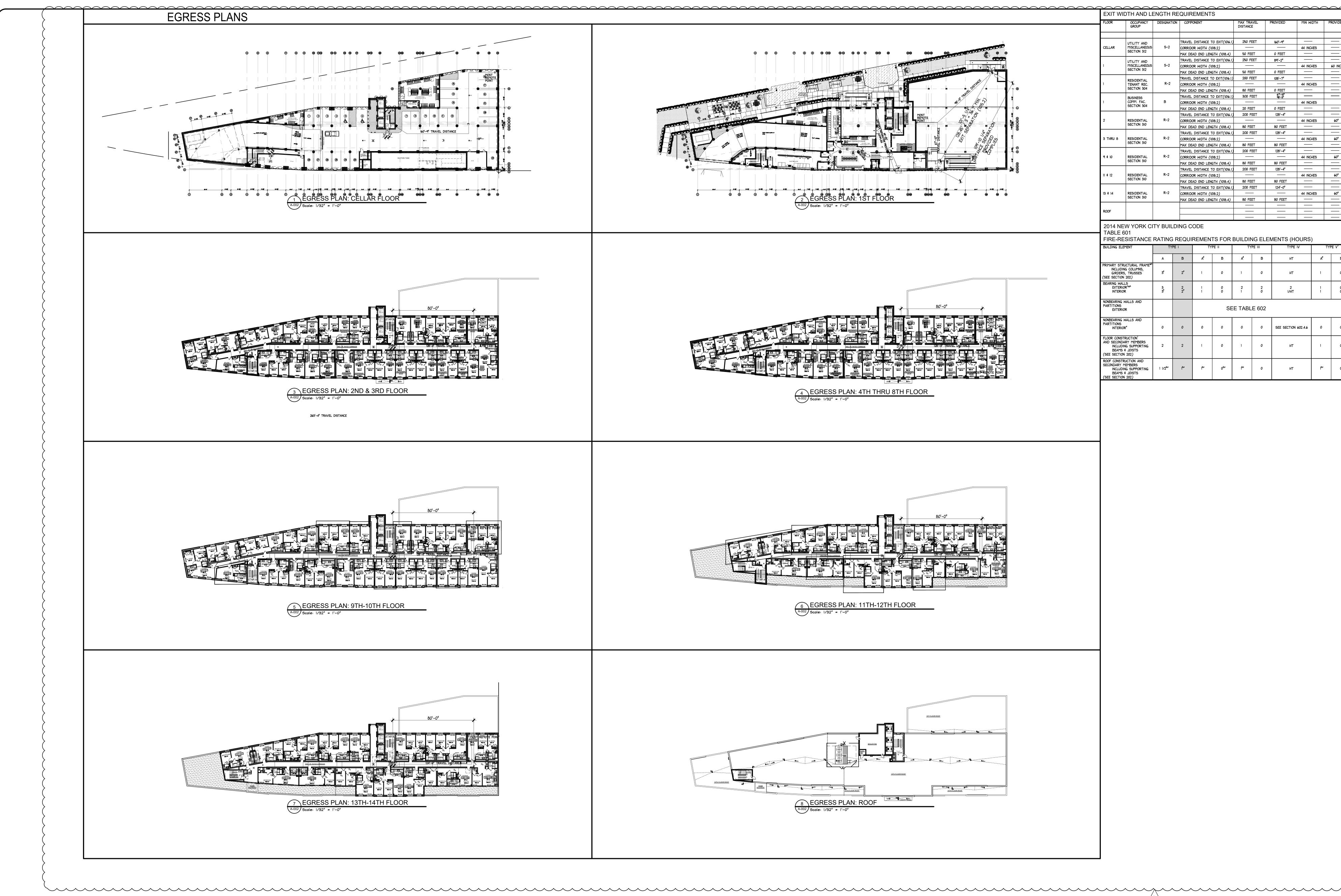
WHITLOCK APARTMENTS BUILDING 1 1001 Whitlock Avenue

BRONX, NY 10459 TITLE:

**BUILDING INFORMATION -OCCUPANT LOAD & EGRESS** 

STAMP: DATE: 7/24/17 JOB #: 15-36 DRAWN BY: RT SCALE: AS NOTED DRAWING NO: A-OO3.02 FILE No. : SHEET:

16 of 74



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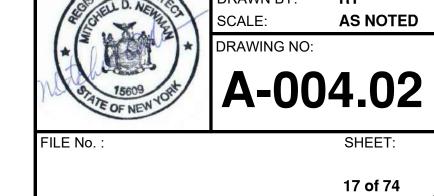
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QUIREMENTS				
COMPONENT	MAX TRAVEL DISTANCE	PROVIDED	MIN WIDTH	PROVIDED
RAVEL DISTANCE TO EXIT(1016.1)	250 FEET	160'-9"		<u> </u>
ORRIDOR WIDTH (1018.2)			44 INCHES	
IAX DEAD END LENGTH (1018.4)	50 FEET	0 FEET		
RAVEL DISTANCE TO EXIT(1016.1)	250 FEET	89'-2"		
ORRIDOR WIDTH (1018.2)			44 INCHES	60 INCHES
IAX DEAD END LENGTH (1018.4)	50 FEET	0 FEET		
RAVEL DISTANCE TO EXIT(1016.1)	200 FEET	108'-7"		
ORRIDOR WIDTH (1018.2)			44 INCHES	
IAX DEAD END LENGTH (1018.4)	80 FEET	0 FEET		
RAVEL DISTANCE TO EXIT(1016.1)	300 FEET	67'-10" 98'-3"		
ORRIDOR WIDTH (1018.2)			44 INCHES	
IAX DEAD END LENGTH (1018.4)	20 FEET	0 FEET		
RAVEL DISTANCE TO EXIT(1016.1)	200 FEET	128'-4"		
ORRIDOR WIDTH (1018.2)			44 INCHES	60"
IAX DEAD END LENGTH (1018.4)	80 FEET	80 FEET		
RAVEL DISTANCE TO EXIT(1016.1)	200 FEET	128'-4"		
ORRIDOR WIDTH (1018.2)			44 INCHES	60"
IAX DEAD END LENGTH (1018.4)	80 FEET	80 FEET		
RAVEL DISTANCE TO EXIT(1016.1)	200 FEET	128'-4"		
ORRIDOR WIDTH (1018.2)			44 INCHES	60"
IAX DEAD END LENGTH (1018.4)	80 FEET	80 FEET	<u> </u>	
RAVEL DISTANCE TO EXIT(1016.1)	200 FEET	128'-4"		
ORRIDOR WIDTH (1018.2)			44 INCHES	60"
IAX DEAD END LENGTH (1018.4)	80 FEET	80 FEET		
RAVEL DISTANCE TO EXIT(1016.1)	200 FEET	124'-0"		
ORRIDOR WIDTH (1018.2)			44 INCHES	60"
IAX DEAD END LENGTH (1018.4)	80 FEET	80 FEET		

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

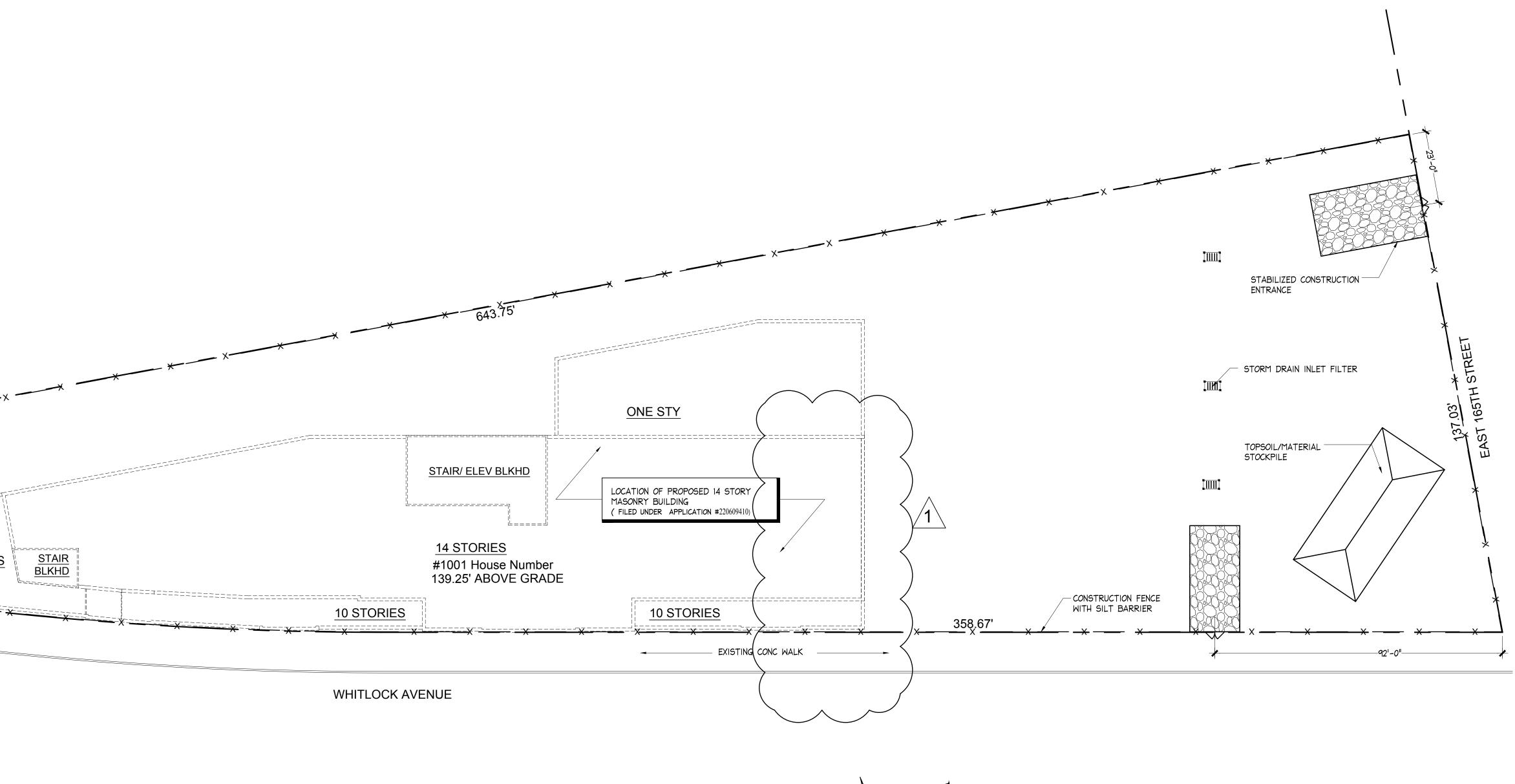
I	TYPE II		TY	PE III	TYPE IV	TYF	PE V'
в	Ą	В	A	В	ΗT	Ą	В
2ª	1	0	1	о	ΗT	1	о
2 2"	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
	SEE TABLE 602						
0	о	о	0	o	SEE SECTION 602.4.6	о	о
2	1	0	1	0	ΗT	1	0
l ^{b,c}	l _{p'e}	0 ^{6,c}	l _{p'e}	0	нт	l _{p'e}	о

2 05/06/22 ISSUED TO DOB - PAA ADDED CELLAR 10/05/21 HPD PAA RESUBMISSION 1 2/12/21 ISSUED TO DOB - PAA REMOVED CELLAR 10/05/21 HPD PAA RESUBMISSION 4/30/21 HPD SUBMISSION 1 2/12/21 ISSUED TO DOB - PAA REMOVED CELL 1 2/12/21 ISSUED TO DOB - PAA REMOVED CELL 1 2/12/21 ISSUED TO DOB - PAA REMOVED CELL 1 2/12/21 ISSUED TO DOB - PAA REMOVED CELL 1/15/19 HPD RESUBMISSION 1/15/19 HPD RESUBMISSION 1/17/17 ISSUED TO D.O.B Gen Const 1/2/21/17 ISSUED TO D.O.B. 9/20/17 ISSUED TO D.O.B. 9/20/17 ISSUED TO D.O.B. 9/20/17 ISSUED TO D.O.B. 10/23/17 ISS	10/05/21 HPD PAA RESUBMISSION 10/05/21 HPD PAA RESUBMISSION 12/12/21 ISSUED TO DOB - PAA REMOVED CELL 4/30/21 HPD SUBMISSION 1/15/19 HPD RESUBMISSION 8/23/18 HPD RESUBMISSION 12/21/17 ISSUED TO D.O.B Gen Const 12/11/17 ISSUED TO D.O.B. 9/20/17 ISSUED TO D.O.B. 9/20/17 ISSUED TO D.O.B. 8/28/17 ISSUED TO D.O.B. 7/17/17 HPD SUBMISSION REV. DATE DESCRIPTION REVISIONS: NEVMAN DESCRIPTION REVISIONS: ARCHITECTURE • URBAN PLANNING NEWMAN DESIGN ARCHITECTS PLLC 210 West Rogues Path • Cold Spring Hills, NY 11743 TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	6		
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1       2/12/21       ISSUED TO DOB - PAA REMOVED CELL         4/30/21       HPD SUBMISSION         4/30/21       HPD RESUBMISSION         1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN DESIGN ARCHITECTS PLLC         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	1       2/12/21       ISSUED TO DOB - PAA REMOVED CELL         4/30/21       HPD SUBMISSION         1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         NEV       DATE         0       DE SIGN         REV.       DATE         0       DE SIGN         ARCHITECTURE • URBAN PLANNING <th></th> <td></td> <td></td>			
4/30/21       HPD SUBMISSION         4/30/21       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED TO D.O.B Gen Const         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	4/30/21       HPD SUBMISSION         4/30/21       HPD RESUBMISSION         1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         NEV.       DATE         DESCRIPTION       ISSUED TO D.O.B.         REVISIONS:       NEWMAN DESIGN ARCHITECTS PLLC         NEWMAN DESIGN ARCHITECTS PLLC       IN West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031       www.ndarchitects.com         PROJECT:       WHITLOCK APARTMENT         BUILDING 1       IN INCONCL	<u>}</u>	10/05/21	HED FAA RESUBINISSION
4/30/21       HPD SUBMISSION         4/30/21       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED TO D.O.B Gen Const         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	4/30/21       HPD SUBMISSION         4/30/21       HPD RESUBMISSION         1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         NEV.       DATE         DESCRIPTION       ISSUED TO D.O.B.         REVISIONS:       NEWMAN DESIGN ARCHITECTS PLLC         NEWMAN DESIGN ARCHITECTS PLLC       IN West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031       www.ndarchitects.com         PROJECT:       WHITLOCK APARTMENT         BUILDING 1       IN INCONCL	<u>}</u>		
1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         ARCHITECTURE • URBAN PLANNING         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN         DESIGN         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com         PROJECT:         WHITLOCK APARTMENT         BUILDING 1	1	2/12/21	ISSUED TO DOB - PAA REMOVED CELL
1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/21/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         ARCHITECTURE • URBAN PLANNING         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN         DESIGN         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com         PROJECT:         WHITLOCK APARTMENT         BUILDING 1	)		
8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         ARCHITECTURE • URBAN PLANNING         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN D E S I G N         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com         PROJECT:         WHITLOCK APARTMENT         BUILDING 1	)	4/30/21	HPD SUBMISSION
8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         ARCHITECTURE • URBAN PLANNING         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN D E S I G N         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com         PROJECT:         WHITLOCK APARTMENT         BUILDING 1	)		
8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         ARCHITECTURE • URBAN PLANNING         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	8/23/18       HPD RESUBMISSION         12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN D E S I G N         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com         PROJECT:         WHITLOCK APARTMENT         BUILDING 1	)		
12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN         DESCRIPTION         REVISIONS:         NEWMAN         NEWMAN         DESIGN ARCHITECTS PLLC         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110• TEL: 631.673.3111• FAX: 631.673.2031	12/21/17       ISSUED TO D.O.B Gen Const         12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com         PROJECT:         WHITLOCK APARTMENT BUILDING 1	)		
12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         Image: Construct of the system of the sys	12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN D E S I G N         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com         PROJECT:         WHITLOCK APARTMENT BUILDING 1	<u>,</u>	0/23/10	HE RESUBINISSION
12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         Image: Construct of the system of the sys	12/11/17       ISSUED FOR BID         10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN D E S I G N         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031         www.ndarchitects.com	)		
10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         NEWMAN         DESTIGN         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	10/23/17       ISSUED TO D.O.B.         9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DATE       DESCRIPTION         REVISIONS:       Image: Construct of the system of the syste		12/21/17	ISSUED TO D.O.B Gen Const
9/20/17 ISSUED TO D.O.B. 8/28/17 ISSUED TO D.O.B. 7/17/17 HPD SUBMISSION REV. DATE DESCRIPTION REVISIONS: NEWMAN DESIGN ARCHITECTS PLLC 210 West Rogues Path • Cold Spring Hills, NY 11743 TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	9/20/17 ISSUED TO D.O.B. 8/28/17 ISSUED TO D.O.B. 7/17/17 HPD SUBMISSION REV. DATE DESCRIPTION REVISIONS:	$\overline{)}$	12/11/17	ISSUED FOR BID
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7/17/17       HPD SUBMISSION         REV.       DATE       DESCRIPTION         REVISIONS:       Image: Constraint of the second	7/17/17       HPD SUBMISSION         REV.       DATE       DESCRIPTION         REVISIONS:       Image: Constraint of the second	<u>{                                    </u>	9/20/17	ISSUED TO D.O.B.
REV. DATE DESCRIPTION REVISIONS:	REV.       DATE       DESCRIPTION         REVISIONS:       Image: Constraint of the second se	/		
REVISIONS:	REVISIONS:			
NEWMAN         DESIGN         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031	Image: New Manage of the state of the s	)REV.	DATE	DESCRIPTION
	WHITLOCK APARTMENT BUILDING 1	)	NEWM West Ro	DESIGN ARCHITECTURE • URBAN PLANNING IAN DESIGN ARCHITECTS PLLC gues Path • Cold Spring Hills, NY 11743 3110 • TEL: 631.673.3111 • FAX: 631.673.2031
BRONX, NY 10459		BU	ILDIN	
		STAM	DERED AR	DATE: 7/24/17 JOB #: 15-36

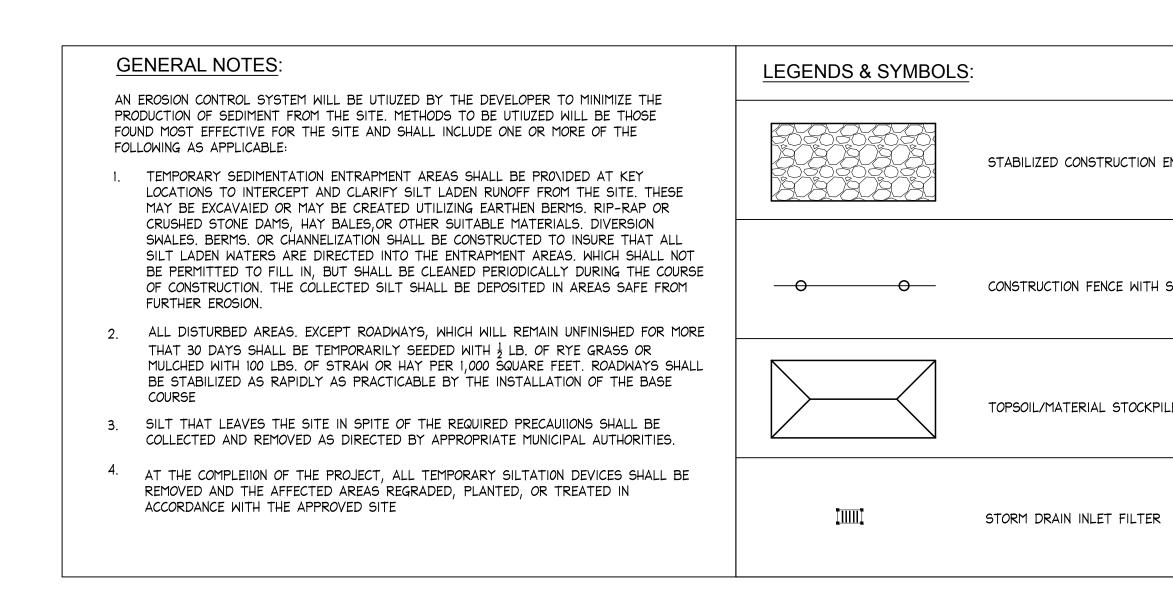


DOB APPROVAL STAMP:

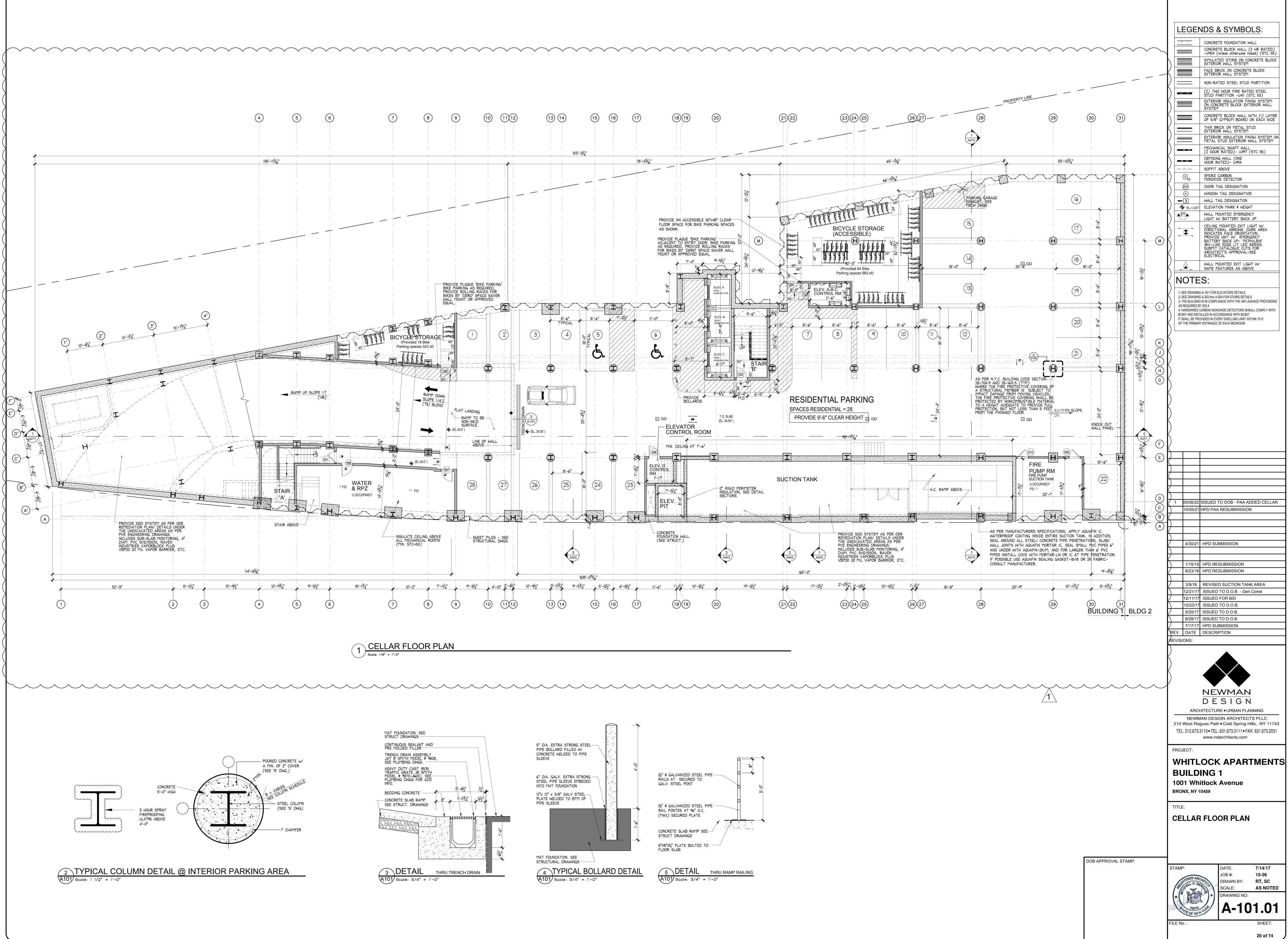
	PROVIDE TEMPORARY CONSTRUCTION FENCE ALONG ENTIRE SITE PROPERTY. FENCE WORK TO COMPLY WITH N.Y.C. BUILDING CODE SECTION 3307.7. FENCE TO BE A MIN. OF 8'-0" HIGH AND SHALL BE BUILT SOLID FOR THEIR ENTIRE LENGTH, EXCEPT FOR OPENINGS WITH SOLID SLIDING OR IN-SWINGING GATES AS ARE REQUIRED FOR THE PROPER PROSECUTION OF WORK, AND FOR VIEWING PANELS, WHICH SHALL BE	
ALDUS AVE.	BLOCKED WITH PLEXIGLASS OR EQUIVALENT NON-FRANGIBLE MATERIAL. THE FENCE SHALL BE CONSTRUCTED ALONG THE INSIDE EDGE OF THE SIDEWALK , WALKWAY OR TEMPORARY WALKWAY.	<u> </u>
	× R=1150.00'	:======================================
	$x - x - x - \frac{L=314.52'}{\times - \frac{15^{\circ} 40' 52''}{\times - \frac{15^{\circ} 40' 50''}{\times - \frac{15^{\circ} 40' 50''}{\times - \frac{15^{\circ} 40' 50''}{\times - \frac{15^{\circ} 40' 50''}{\times - \frac{15^{\circ} 40''}{\times - \frac{15^{\circ} 40''}{\times -$	<u>10 STOR</u>



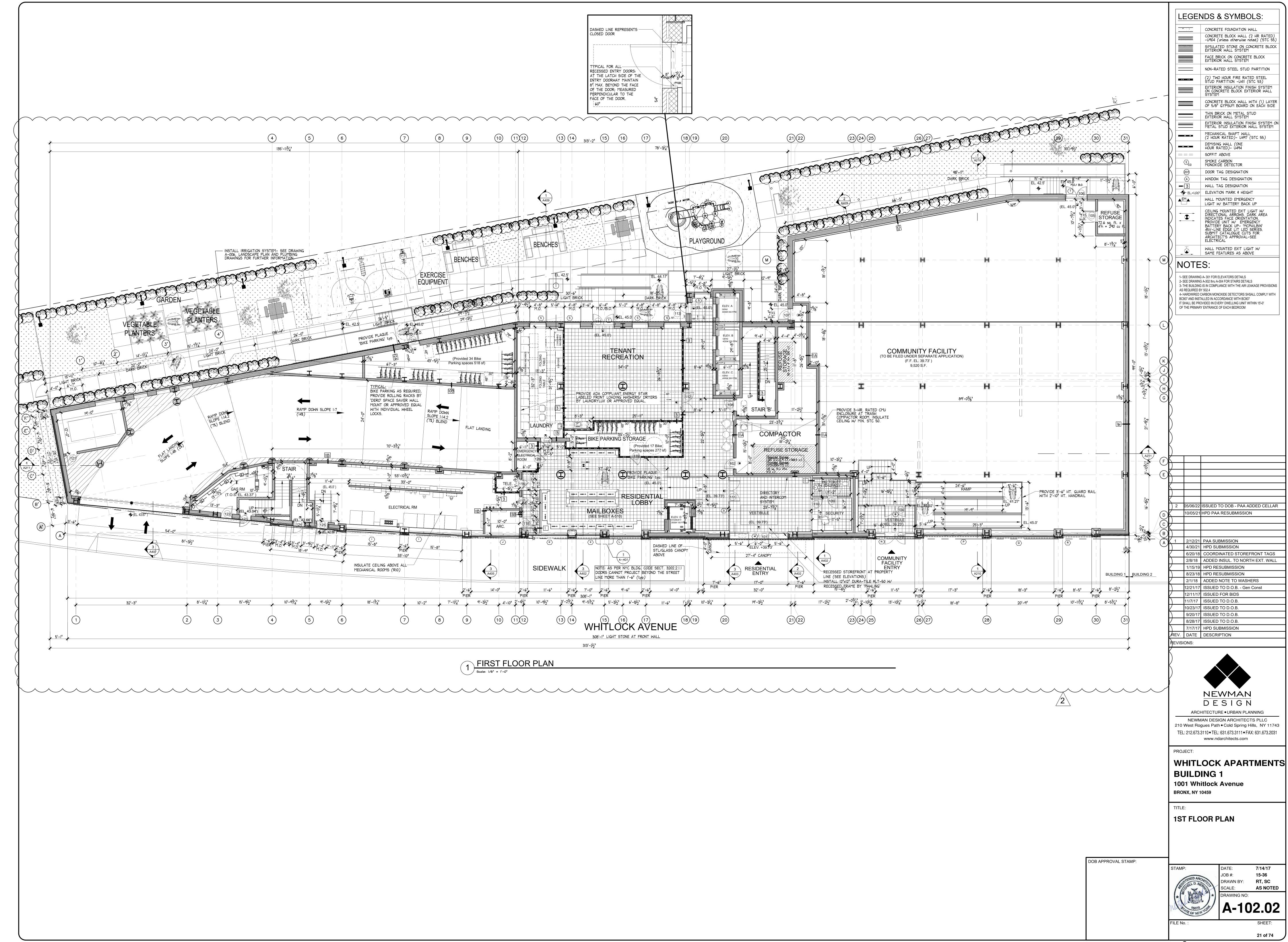




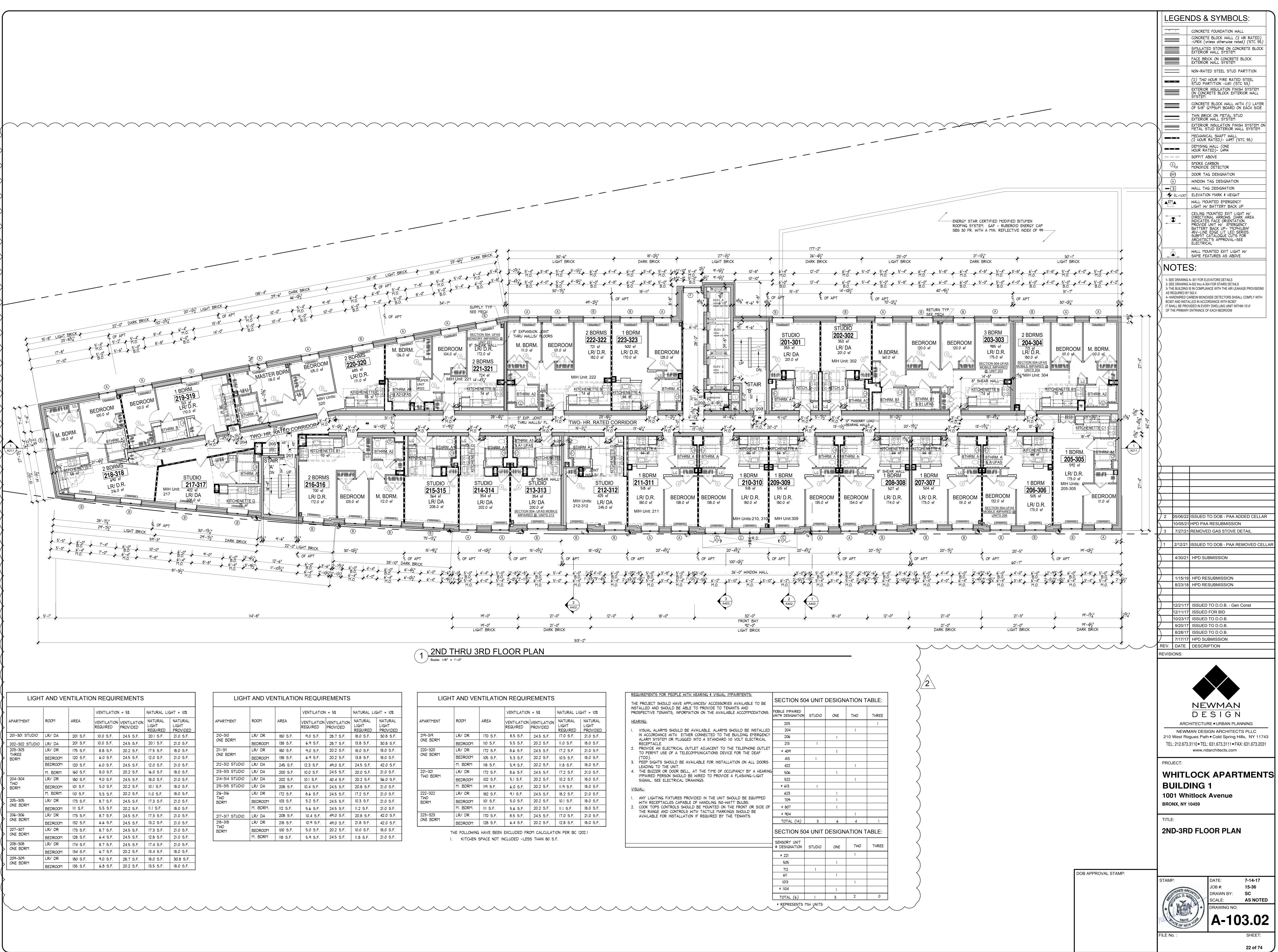
	1 05/06/22 ISSUED TO DOB - PAA ADDED CELLA 10/05/21 HPD PAA RESUBMISSION	R
	4/30/21 HPD SUBMISSION	
	1/15/19       HPD RESUBMISSION         8/23/18       HPD RESUBMISSION	
	12/21/17         ISSUED TO D.O.B Gen Const           12/11/17         ISSUED FOR BID           9/20/17         ISSUED TO D.O.B.	
	8/28/17ISSUED TO D.O.B.7/17/17HPD SUBMISSIONREV.DATEDESCRIPTION	
STABILIZED CONSTRUCTION ENTRANCE	REVISIONS:	
CONSTRUCTION FENCE WITH SILT BARRIER	NEWMAN DESIGN	
TOPSOIL/MATERIAL STOCKPILE	ARCHITECTURE • URBAN PLANNING NEWMAN DESIGN ARCHITECTS PLLC 210 West Rogues Path • Cold Spring Hills, NY 117 TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.203 www.ndarchitects.com	
STORM DRAIN INLET FILTER	PROJECT: WHITLOCK APARTMEN BUILDING 1	TS
	1001 Whitlock Avenue BRONX, NY 10459	
	TITLE:	
	EROSION CONTROL PLAN	
DOB APPROVAL STAMP:		
	STAMP:       DATE:       7-14-17         JOB #:       15-36         DRAWN BY:       SC         SCALE:       1"= 20'-0"	
	DRAWING NO: A-005.0	1
	FILE No. : SHEET: 18 of 74	
	© 2017 NEWMAN DESIGN ARCHITECTS PLLC	



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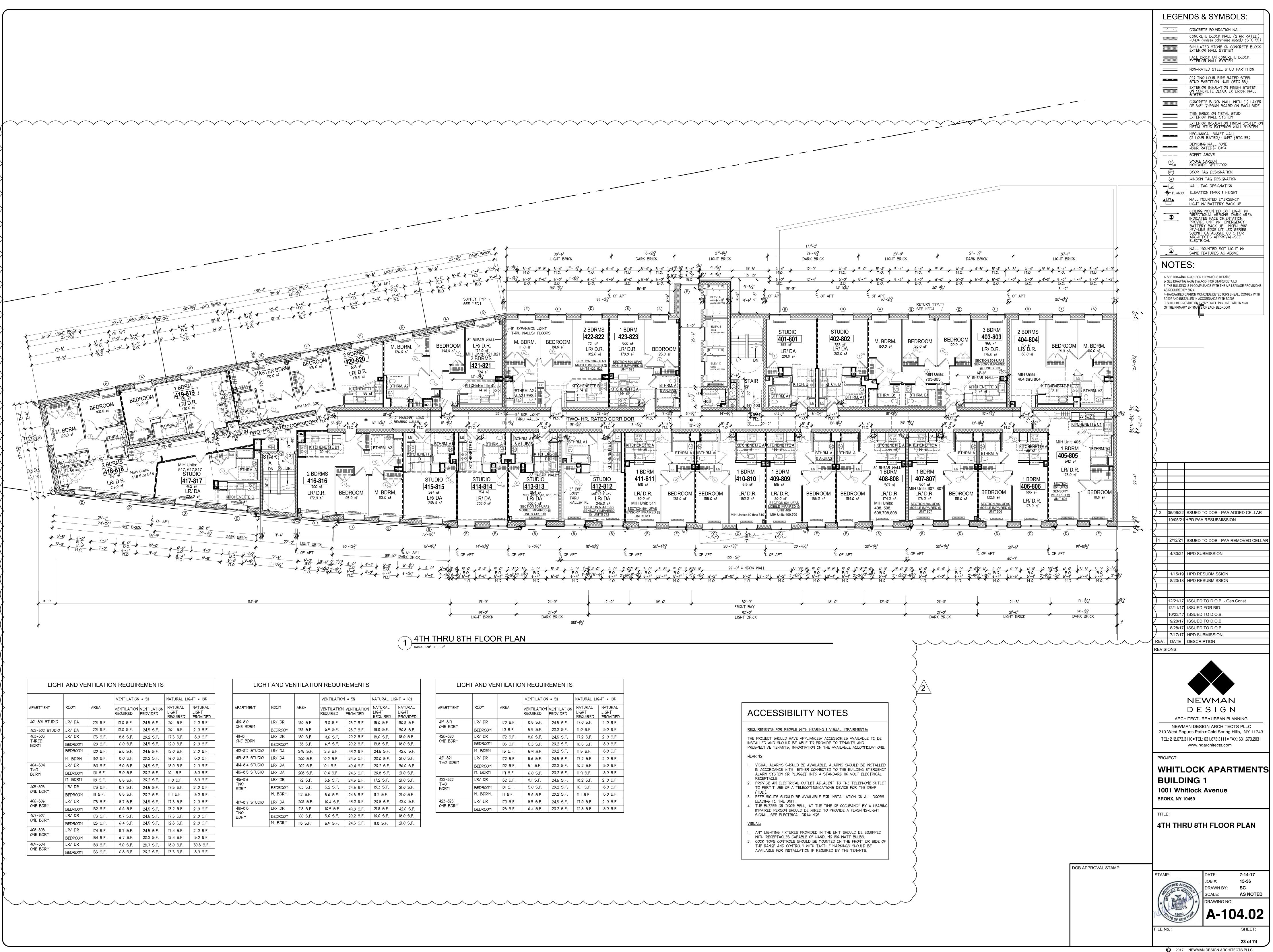


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			VENTILATION	= 5%	NATURAL LIGHT = 10%		
APARTMENT	R <i>00</i> M	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED	
201-301 STUDIO	LR/ DA	201 S.F.	10.0 S.F.	24.5 S.F.	20.1 S.F.	21.0 S.F.	
202-302 STUDIO	LR/ DA	201 S.F.	10.0 S.F.	24.5 S.F.	20.1 S.F.	21.0 S.F.	
203-303	LR/ DR	175 S.F.	8.8 S.F.	20.2 S.F.	17.5 S.F.	18.0 S.F.	
THREE BDRM	BEDROOM	120 S.F.	6.0 S.F.	24.5 S.F.	12.0 S.F.	21.0 S.F.	
	BEDROOM	120 S.F.	6.0 S.F.	24.5 S.F.	12.0 S.F.	21.0 S.F.	
	M. BDRM	160 S.F.	8.0 S.F.	20.2 S.F.	16.0 S.F.	18.0 S.F.	
204-304 TWO BDRM	LR/ DR	180 S.F.	9.0 S.F.	24.5 S.F.	18.0 S.F.	21.0 S.F.	
	BEDROOM	101 S.F.	5.0 S.F.	20.2 S.F.	10.1 S.F.	18.0 S.F.	
	M. BDRM	110 S.F.	5.5 S.F.	20.2 S.F.	11.0 S.F.	18.0 S.F.	
205-305	LR/ DR	173 S.F.	8.7 S.F.	24.5 S.F.	17.3 S.F.	21.0 S.F.	
ONE BDRM	BEDROOM	111 S.F.	5.5 S.F.	20.2 S.F.	11.1 S.F.	18.0 S.F.	
206-306	LR/ DR	173 S.F.	8.7 S.F.	24.5 S.F.	17.3 S.F.	21.0 S.F.	
ONE BDRM	BEDROOM	132 S.F.	6.6 S.F.	24.5 S.F.	13.2 S.F.	21.0 S.F.	
207-307	LR/ DR	173 S.F.	8.7 S.F.	24.5 S.F.	17.3 S.F.	21.0 S.F.	
ONE BDRM	BEDROOM	128 S.F.	6.4 S.F.	24.5 S.F.	12.8 S.F.	21.0 S.F.	
208-308	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.	
ONE BDRM	BEDR <i>OO</i> M	134 S.F.	6.7 S.F.	20.2 S.F.	13.4 S.F.	18.0 S.F.	
209-309	LR/ DR	180 S.F.	9.0 S.F.	28.7 S.F.	18.0 S.F.	30.8 S.F.	
ONE BDRM	BEDROOM	135 S.F.	6.8 S.F.	20.2 S.F.	13.5 S.F.	18.0 S.F.	

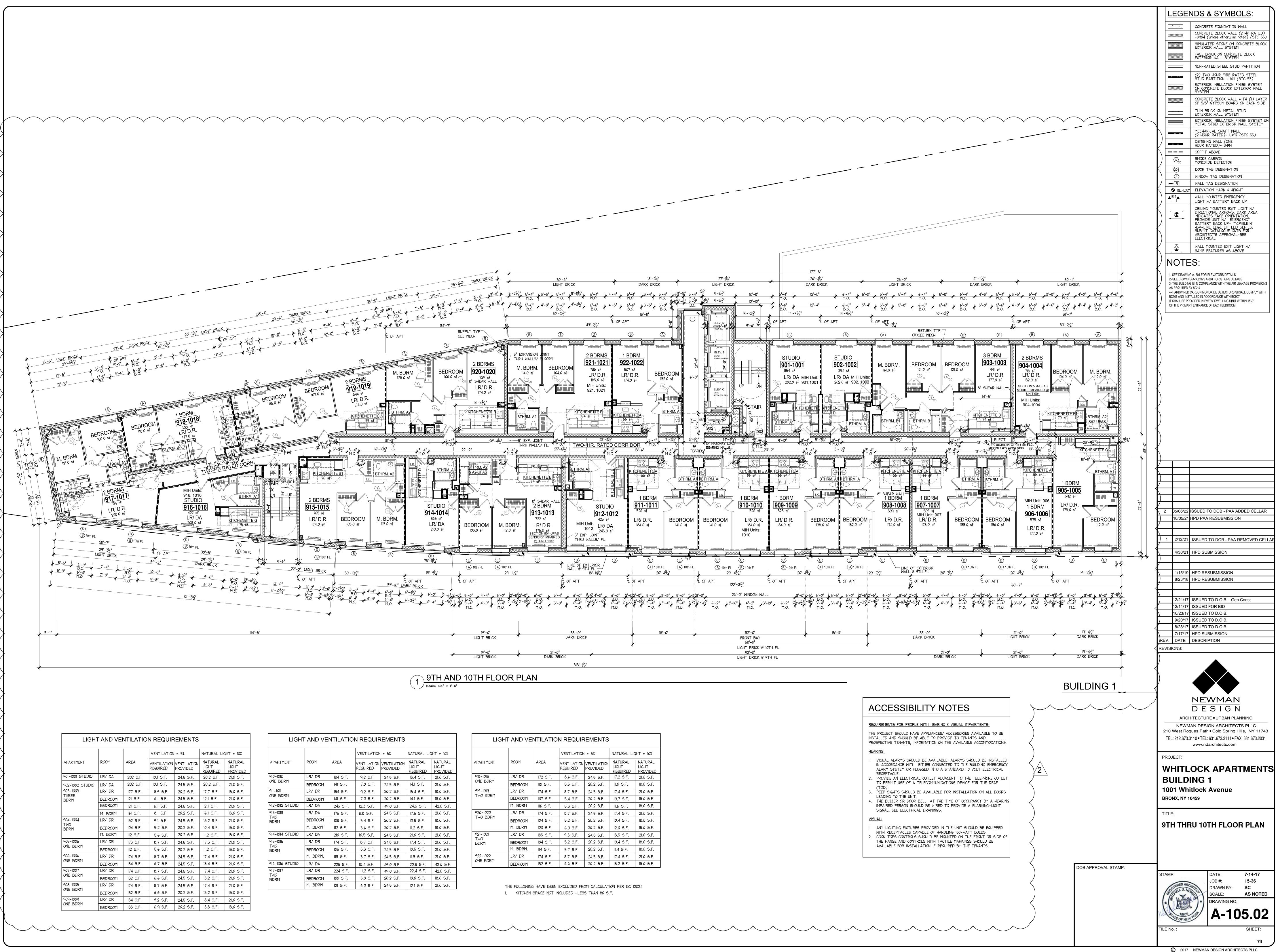
LIGH	T AND VE	NTILATIO	ON REQUIF	REMENTS			LIGI	HT AND VE	NTILATIC	ON REQUIP	REMENTS		
			VENTILATION	l = 5%	NATURAL L	GHT = 10%				VENTILATION	N = 5%	NATURAL LI	GHT = 10%
APARTMENT	ROOM	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED	APARTMENT		AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED
210-310	LR/ DR	180 S.F.	9.0 S.F.	28.7 S.F.	18.0 S.F.	30.8 S.F.	219-319	LR/ DR	170 S.F.	8.5 S.F.	24.5 S.F.	17.0 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	138 S.F.	6.9 S.F.	28.7 S.F.	13.8 S.F.	30.8 S.F.	ONE BDRM	BEDROOM	110 S.F.	5.5 S.F.	20.2 S.F.	11.0 S.F.	18.0 S.F.
211-311	LR/ DR	180 S.F.	9.0 S.F.	20.2 S.F.	18.0 S.F.	18.0 S.F.	220-320	LR/ DR	172 S.F.	8.6 S.F.	24.5 S.F.	17.2 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	138 S.F.	6.9 S.F.	20.2 S.F.	13.8 S.F.	18.0 S.F.	ONE BDRM	BEDROOM	105 S.F.	5.3 S.F.	20.2 S.F.	10.5 S.F.	18.0 S.F.
212-312 STUDIO	LR/ DA	245 S.F.	12.3 S.F.	49.0 S.F.	24.5 S.F.	42.0 S.F.		M. BDRM	118 S.F.	5.9 S.F.	20.2 S.F.	11.8 S.F.	18.0 S.F.
213-313 STUDIO	LR/ DA	200 S.F.	10.0 S.F.	24.5 S.F.	20.0 S.F.	21.0 S.F.	221-321	LR/ DR	172 S.F.	8.6 S.F.	24.5 S.F.	17.2 S.F.	21.0 S.F.
214-314 STUDIO	LR/ DA	202 S.F.	10.1 S.F.	40.4 S.F.	20.2 S.F.	36.0 S.F.	TWO BDRM	BEDROOM	102 S.F.	5.1 S.F.	20.2 S.F.	10.2 S.F.	18.0 S.F.
215-315 STUDIO	LR/ DA	208 S.F.	10.4 S.F.	24.5 S.F.	20.8 S.F.	21.0 S.F.		M. BDRM	119 S.F.	6.0 S.F.	20.2 S.F.	11.9 S.F.	18.0 S.F.
216-316	LR/ DR	172 S.F.	8.6 S.F.	24.5 S.F.	17.2 S.F.	21.0 S.F.	222-322	LR/ DR	182 S.F.	9.1 S.F.	24.5 S.F.	18.2 S.F.	21.0 S.F.
TWO BDRM	BEDROOM	103 S.F.	5.2 S.F.	24.5 S.F.	10.3 S.F.	21.0 S.F.	TWO BDRM	BEDROOM	101 S.F.	5.0 S.F.	20.2 S.F.	10.1 S.F.	18.0 S.F.
	M. BDRM.	112 S.F.	5.6 S.F.	24.5 S.F.	11.2 S.F.	21.0 S.F.		M. BDRM.	111 S.F.	5.6 S.F.	20.2 S.F.	11.1 S.F.	18.0 S.F.
217-317 STUDIO	LR/ DA	208 S.F.	10.4 S.F.	49.0 S.F.	20.8 S.F.	42.0 S.F.	223-323	LR/ DR	170 S.F.	8.5 S.F.	24.5 S.F.	17.0 S.F.	21.0 S.F.
218-318	LR/ DR	218 S.F.	10.9 S.F.	49.0 S.F.	21.8 S.F.	42.0 S.F.	ONE BDRM	BEDROOM	128 S.F.	6.4 S.F.	20.2 S.F.	12.8 S.F.	18.0 S.F.
TWO BDRM	BEDROOM	100 S.F.	5.0 S.F.	20.2 S.F.	10.0 S.F.	18.0 S.F.	L	THE FOLLOWING					2021
	M. BDRM	118 S.F.	5.9 S.F.	24.5 S.F.	11.8 S.F.	21.0 S.F.				I EXCLUDED FR			202.1



LIGH	I AND VE	NTILATIO	N REQUIF	REMENTS		
			VENTILATION	= 5%	NATURAL LIC	GHT = 10%
APARTMENT	R <i>00</i> M	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED
401-801 STUDIO	LR/ DA	201 S.F.	10.0 S.F.	24.5 S.F.	20.1 S.F.	21.0 S.F.
402-802 STUDIO	LR/ DA	201 S.F.	10.0 S.F.	24.5 S.F.	20.1 S.F.	21.0 S.F.
403-803	LR/ DR	175 S.F.	8.8 S.F.	20.2 S.F.	17.5 S.F.	18.0 S.F.
THREE BDRM	BEDROOM	120 S.F.	6.0 S.F.	24.5 S.F.	12.0 S.F.	21.0 S.F.
	BEDROOM	120 S.F.	6.0 S.F.	24.5 S.F.	12.0 S.F.	21.0 S.F.
	M. BDRM	160 S.F.	8.0 S.F.	20.2 S.F.	16.0 S.F.	18.0 S.F.
404-804	LR/ DR	180 S.F.	9.0 S.F.	24.5 S.F.	18.0 S.F.	21.0 S.F.
TWO BDRM	BEDROOM	101 S.F.	5.0 S.F.	20.2 S.F.	10.1 S.F.	18.0 S.F.
	M. BDRM	110 S.F.	5.5 S.F.	20.2 S.F.	11.0 S.F.	18.0 S.F.
405-805	LR/ DR	173 S.F.	8.7 S.F.	24.5 S.F.	17.3 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	111 S.F.	5.5 S.F.	20.2 S.F.	11.1 S.F.	18.0 S.F.
406-806	LR/ DR	173 S.F.	8.7 S.F.	24.5 S.F.	17.3 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	132 S.F.	6.6 S.F.	24.5 S.F.	13.2 S.F.	21.0 S.F.
407-807	LR/ DR	173 S.F.	8.7 S.F.	24.5 S.F.	17.3 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	128 S.F.	6.4 S.F.	24.5 S.F.	12.8 S.F.	21.0 S.F.
408-808	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	134 S.F.	6.7 S.F.	20.2 S.F.	13.4 S.F.	18.0 S.F.
409-809	LR/ DR	180 S.F.	9.0 S.F.	28.7 S.F.	18.0 S.F.	30.8 S.F.
ONE BDRM	BEDROOM	135 S.F.	6.8 S.F.	20.2 S.F.	13.5 S.F.	18.0 S.F.

			VENTILATION	= 5%	NATURAL LIC	GHT = 10%
APARTMENT	ROOM	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED
410-810	LR/ DR	180 S.F.	9.0 S.F.	28.7 S.F.	18.0 S.F.	30.8 S.F.
ONE BDRM	BEDROOM	138 S.F.	6.9 S.F.	28.7 S.F.	13.8 S.F.	30.8 S.F.
411-811 ONE BDRM	LR/ DR	180 S.F.	9.0 S.F.	20.2 S.F.	18.0 S.F.	18.0 S.F.
	BEDROOM	138 S.F.	6.9 S.F.	20.2 S.F.	13.8 S.F.	18.0 S.F.
412-812 STUDIO	LR/ DA	245 S.F.	12.3 S.F.	49.0 S.F.	24.5 S.F.	42.0 S.F.
413-813 STUDIO	LR/ DA	200 S.F.	10.0 S.F.	24.5 S.F.	20.0 S.F.	21.0 S.F.
414-814 STUDIO	LR/ DA	202 S.F.	10.1 S.F.	40.4 S.F.	20.2 S.F.	36.0 S.F.
415-815 STUDIO	LR/ DA	208 S.F.	10.4 S.F.	24.5 S.F.	20.8 S.F.	21.0 S.F.
416-816	LR/ DR	172 S.F.	8.6 S.F.	24.5 S.F.	17.2 S.F.	21.0 S.F.
TWO BDRM	BEDROOM	103 S.F.	5.2 S.F.	24.5 S.F.	10.3 S.F.	21.0 S.F.
	M. BDRM.	112 S.F.	5.6 S.F.	24.5 S.F.	11.2 S.F.	21.0 S.F.
417-817 STUDIO	LR/ DA	208 S.F.	10.4 S.F.	49.0 S.F.	20.8 S.F.	42.0 S.F.
418-818	LR/ DR	218 S.F.	10.9 S.F.	49.0 S.F.	21.8 S.F.	42.0 S.F.
TWO BDRM	BEDROOM	100 S.F.	5.0 S.F.	20.2 S.F.	10.0 S.F.	18.0 S.F.
	M. BDRM	118 S.F.	5.9 S.F.	24.5 S.F.	11.8 S.F.	21.0 S.F.

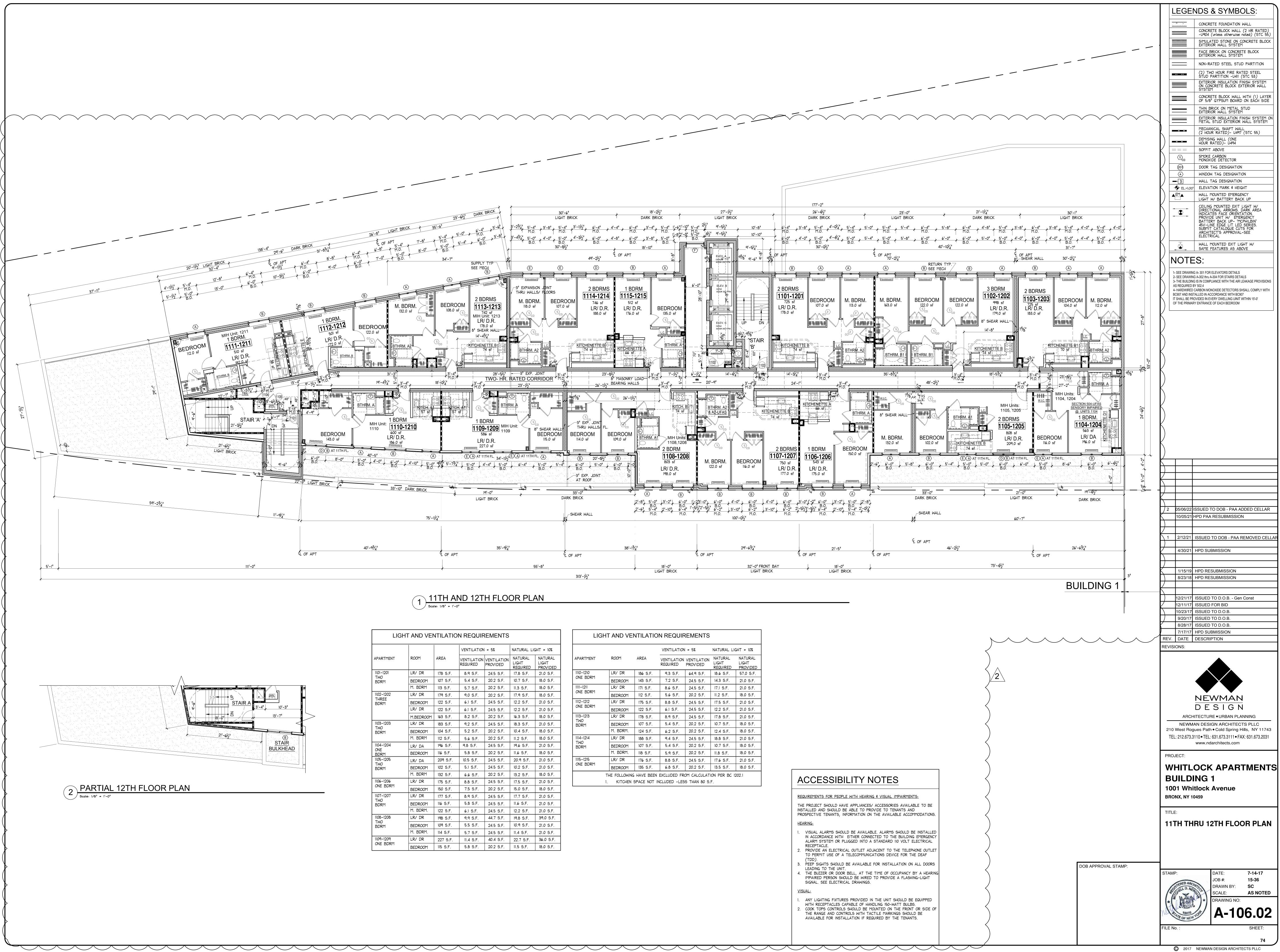
LIGHT AND VENTILATION REQUIREMENTS									
			VENTILATION	= 5%	NATURAL LIGHT = 10%				
APARTMENT	R <i>00</i> M	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED			
419-819	LR/ DR	170 S.F.	8.5 S.F.	24.5 S.F.	17.0 S.F.	21.0 S.F.			
ONE BDRM	BEDROOM	110 S.F.	5.5 S.F.	20.2 S.F.	11.0 S.F.	18.0 S.F.			
420-820 ONE BDRM	LR/ DR	172 S.F.	8.6 S.F.	24.5 S.F.	17.2 S.F.	21.0 S.F.			
	BEDROOM	105 S.F.	5.3 S.F.	20.2 S.F.	10.5 S.F.	18.0 S.F.			
	M. BDRM	118 S.F.	5.9 S.F.	20.2 S.F.	11.8 S.F.	18.0 S.F.			
421-821	LR/ DR	172 S.F.	8.6 S.F.	24.5 S.F.	17.2 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	102 S.F.	5.1 S.F.	20.2 S.F.	10.2 S.F.	18.0 S.F.			
	M. BDRM	119 S.F.	6.0 S.F.	20.2 S.F.	11.9 S.F.	18.0 S.F.			
422-822	LR/ DR	182 S.F.	9.1 S.F.	24.5 S.F.	18.2 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	101 S.F.	5.0 S.F.	20.2 S.F.	10.1 S.F.	18.0 S.F.			
	M. BDRM.	111 S.F.	5.6 S.F.	20.2 S.F.	11.1 S.F.	18.0 S.F.			
423-823	LR/ DR	170 S.F.	8.5 S.F.	24.5 S.F.	17.0 S.F.	21.0 S.F.			
ONE BDRM	BEDROOM	128 S.F.	6.4 S.F.	20.2 S.F.	12.8 S.F.	18.0 S.F.			



LIGH	LIGHT AND VENTILATION REQUIREMENTS										
			VENTILATION	= 5%	NATURAL LIC	NATURAL LIGHT = 10%					
APARTMENT	ROOM	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED					
901-1001 STUDIO	LR/ DA	202 S.F.	10.1 S.F.	24.5 S.F.	20.2 S.F.	21.0 S.F.					
902-1002 STUDIO	LR/ DA	202 S.F.	10.1 S.F.	24.5 S.F.	20.2 S.F.	21.0 S.F.					
903-1003	LR/ DR	177 S.F.	8.9 S.F.	20.2 S.F.	17.7 S.F.	18.0 S.F.					
THREE BDRM	BEDROOM	121 S.F.	6.1 S.F.	24.5 S.F.	12.1 S.F.	21.0 S.F.					
	BEDROOM	121 S.F.	6.1 S.F.	24.5 S.F.	12.1 S.F.	21.0 S.F.					
	M. BDRM	161 S.F.	8.1 S.F.	20.2 S.F.	16.1 S.F.	18.0 S.F.					
904-1004	LR/ DR	182 S.F.	9.1 S.F.	24.5 S.F.	18.2 S.F.	21.0 S.F.					
TWO BDRM	BEDROOM	104 S.F.	5.2 S.F.	20.2 S.F.	10.4 S.F.	18.0 S.F.					
	M. BDRM	112 S.F.	5.6 S.F.	20.2 S.F.	11.2 S.F.	18.0 S.F.					
905-1005	LR/ DR	173 S.F.	8.7 S.F.	24.5 S.F.	17.3 S.F.	21.0 S.F.					
ONE BDRM	BEDROOM	112 S.F.	5.6 S.F.	20.2 S.F.	11.2 S.F.	18.0 S.F.					
906-1006	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.					
ONE BDRM	BEDROOM	134 S.F.	6.7 S.F.	24.5 S.F.	13.4 S.F.	21.0 S.F.					
907-1007	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.					
ONE BDRM	BEDROOM	132 S.F.	6.6 S.F.	24.5 S.F.	13.2 S.F.	21.0 S.F.					
908-1008	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.					
ONE BDRM	BEDROOM	132 S.F.	6.6 S.F.	20.2 S.F.	13.2 S.F.	18.0 S.F.					
909-1009	LR/ DR	184 S.F.	9.2 S.F.	24.5 S.F.	18.4 S.F.	21.0 S.F.					
ONE BDRM	BEDROOM	138 S.F.	6.9 S.F.	20.2 S.F.	13.8 S.F.	18.0 S.F.					

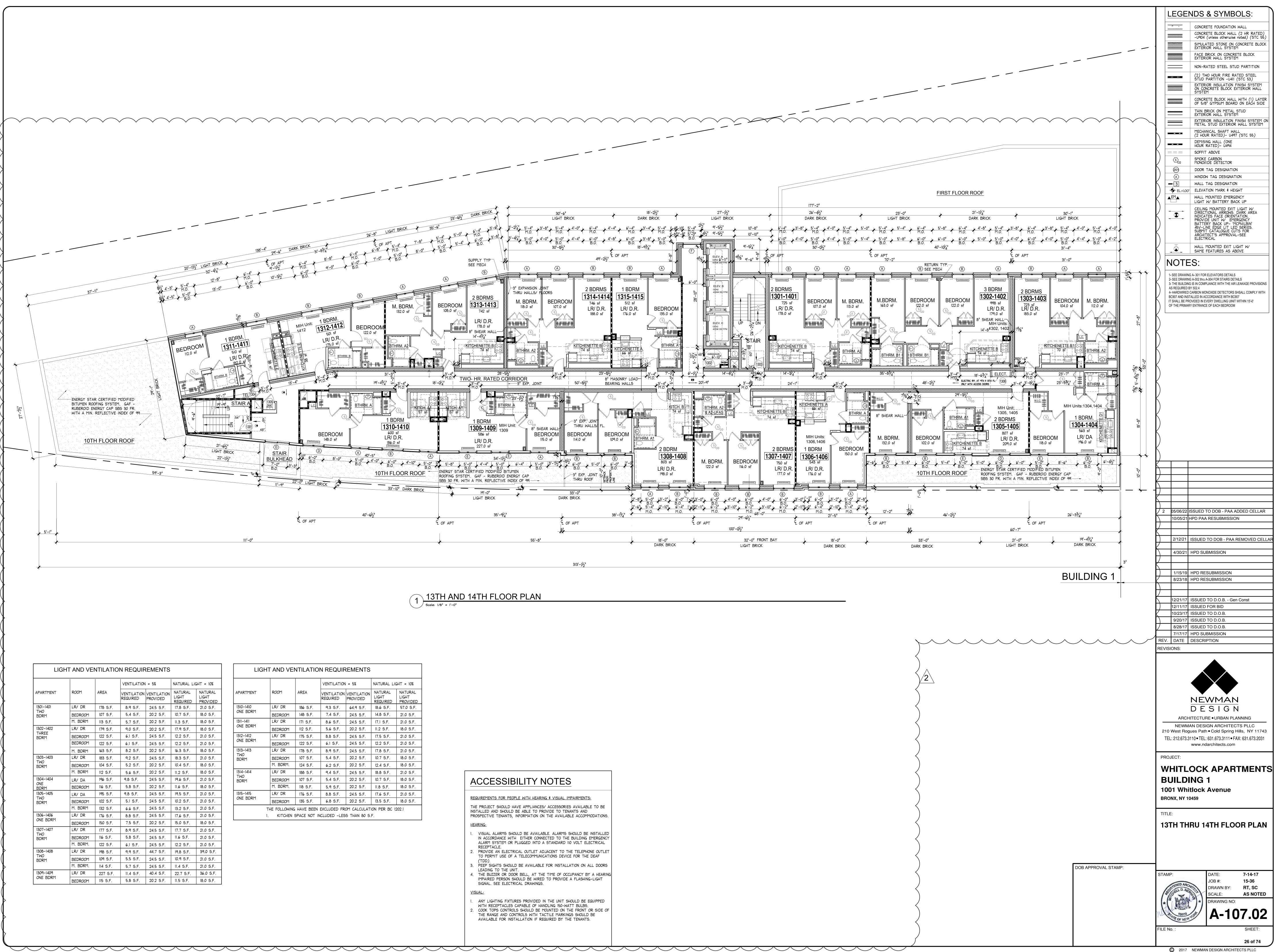
LIGHT AND VENTILATION REQUIREMENTS									
			VENTILATION	= 5%	NATURAL LIGHT = 10%				
APARTMENT	ROOM	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED			
910-1010 ONE BDRM	LR/ DR	184 S.F.	9.2 S.F.	24.5 S.F.	18.4 S.F.	21.0 S.F.			
	BEDROOM	141 S.F.	7.0 S.F.	24.5 S.F.	14.1 S.F.	21.0 S.F.			
911-1011 ONE BDRM	LR/ DR	184 S.F.	9.2 S.F.	20.2 S.F.	18.4 S.F.	18.0 S.F.			
	BEDROOM	141 S.F.	7.0 S.F.	20.2 S.F.	14.1 S.F.	18.0 S.F.			
912-1012 STUDIO	LR/ DA	245 S.F.	12.3 S.F.	49.0 S.F.	24.5 S.F.	42.0 S.F.			
913-1013	LR/ DA	175 S.F.	8.8 S.F.	24.5 S.F.	17.5 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	108 S.F.	5.4 S.F.	20.2 S.F.	10.8 S.F.	18.0 S.F.			
	M. BDRM	112 S.F.	5.6 S.F.	20.2 S.F.	11.2 S.F.	18.0 S.F.			
914-1014 STUDIO	LR/ DA	210 S.F.	10.5 S.F.	24.5 S.F.	21.0 S.F.	21.0 S.F.			
915-1015	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	105 S.F.	5.3 S.F.	24.5 S.F.	10.5 S.F.	21.0 S.F.			
	M. BDRM.	113 S.F.	5.7 S.F.	24.5 S.F.	11.3 S.F.	21.0 S.F.			
916-1016 STUDIO	LR/ DA	208 S.F.	10.4 S.F.	49.0 S.F.	20.8 S.F.	42.0 S.F.			
917-1017	LR/ DR	224 S.F.	11.2 S.F.	49.0 S.F.	22.4 S.F.	42.0 S.F.			
TWO BDRM	BEDROOM	100 S.F.	5.0 S.F.	20.2 S.F.	10.0 S.F.	18.0 S.F.			
	M. BDRM	121 S.F.	6.0 S.F.	24.5 S.F.	12.1 S.F.	21.0 S.F.			

LIGHT AND VENTILATION REQUIREMENTS									
			VENTILATION	= 5%	NATURAL LIG	HT = 10%			
APARTMENT	ROOM	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED			
918-1018	LR/ DR	172 S.F.	8.6 S.F.	24.5 S.F.	17.2 S.F.	21.0 S.F.			
ONE BDRM	BEDROOM	110 S.F.	5.5 S.F.	20.2 S.F.	11.0 S.F.	18.0 S.F.			
919-1019 TWO BDRM	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.			
	BEDROOM	107 S.F.	5.4 S.F.	20.2 S.F.	10.7 S.F.	18.0 S.F.			
	M. BDRM	116 S.F.	5.8 S.F.	20.2 S.F.	11.6 S.F.	18.0 S.F.			
920-1020	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	104 S.F.	5.2 S.F.	20.2 S.F.	10.4 S.F.	18.0 S.F.			
	M. BDRM	120 S.F.	6.0 S.F.	20.2 S.F.	12.0 S.F.	18.0 S.F.			
921-1021	LR/ DR	185 S.F.	9.3 S.F.	24.5 S.F.	18.5 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	104 S.F.	5.2 S.F.	20.2 S.F.	10.4 S.F.	18.0 S.F.			
	M. BDRM.	114 S.F.	5.7 S.F.	20.2 S.F.	11.4 S.F.	18.0 S.F.			
922-1022	LR/ DR	174 S.F.	8.7 S.F.	24.5 S.F.	17.4 S.F.	21.0 S.F.			
ONE BDRM	BEDROOM	132 S.F.	6.6 S.F.	20.2 S.F.	13.2 S.F.	18.0 S.F.			



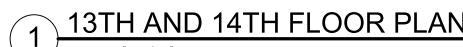
LIGH	T AND VE	NTILATIO	N REQUIF	REMENTS					
			VENTILATION	= 5%	NATURAL LIGHT = 10%				
APARTMENT	ROOM	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED			
1101-1201	LR/ DR	178 S.F.	8.9 S.F.	24.5 S.F.	17.8 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	107 S.F.	5.4 S.F.	20.2 S.F.	10.7 S.F.	18.0 S.F.			
	M. BDRM	113 S.F.	5.7 S.F.	20.2 S.F.	11.3 S.F.	18.0 S.F.			
1102-1202	LR/ DR	179 S.F.	9.0 S.F.	20.2 S.F.	17.9 S.F.	18.0 S.F.			
THREE BDRM	BEDROOM	122 S.F.	6.1 S.F.	24.5 S.F.	12.2 S.F.	21.0 S.F.			
	LR/ DR	122 S.F.	6.1 S.F.	24.5 S.F.	12.2 S.F.	21.0 S.F.			
	M.BEDROOM	163 S.F.	8.2 S.F.	20.2 S.F.	16.3 S.F.	18.0 S.F.			
1103-1203	LR/ DR	183 S.F.	9.2 S.F.	24.5 S.F.	18.3 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	104 S.F.	5.2 S.F.	20.2 S.F.	10.4 S.F.	18.0 S.F.			
	M. BDRM	112 S.F.	5.6 S.F.	20.2 S.F.	11.2 S.F.	18.0 S.F.			
1104-1204	LR/ DA	196 S.F.	9.8 S.F.	24.5 S.F.	19.6 S.F.	21.0 S.F.			
ONE BDRM	BEDROOM	116 S.F.	5.8 S.F.	20.2 S.F.	11.6 S.F.	18.0 S.F.			
1105-1205	LR/ DA	209 S.F.	10.5 S.F.	24.5 S.F.	20.9 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	102 S.F.	5.1 S.F.	24.5 S.F.	10.2 S.F.	21.0 S.F.			
	M. BDRM	132 S.F.	6.6 S.F.	20.2 S.F.	13.2 S.F.	18.0 S.F.			
1106-1206	LR/ DR	175 S.F.	8.8 S.F.	24.5 S.F.	17.5 S.F.	21.0 S.F.			
ONE BDRM	BEDROOM	150 S.F.	7.5 S.F.	20.2 S.F.	15.0 S.F.	18.0 S.F.			
1107-1207	LR/ DR	177 S.F.	8.9 S.F.	24.5 S.F.	17.7 S.F.	21.0 S.F.			
TWO BDRM	BEDROOM	116 S.F.	5.8 S.F.	24.5 S.F.	11.6 S.F.	21.0 S.F.			
	M. BDRM.	122 S.F.	6.1 S.F.	24.5 S.F.	12.2 S.F.	21.0 S.F.			
1108-1208	LR/ DR	198 S.F.	9.9 S.F.	44.7 S.F.	19.8 S.F.	39.0 S.F.			
TWO BDRM	BEDROOM	109 S.F.	5.5 S.F.	24.5 S.F.	10.9 S.F.	21.0 S.F.			
	M. BDRM.	114 S.F.	5.7 S.F.	24.5 S.F.	11.4 S.F.	21.0 S.F.			
1109-1209	LR/ DR	227 S.F.	11.4 S.F.	40.4 S.F.	22.7 S.F.	36.0 S.F.			
ONE BDRM	BEDROOM	115 S.F.	5.8 S.F.	20.2 S.F.	11.5 S.F.	18.0 S.F.			

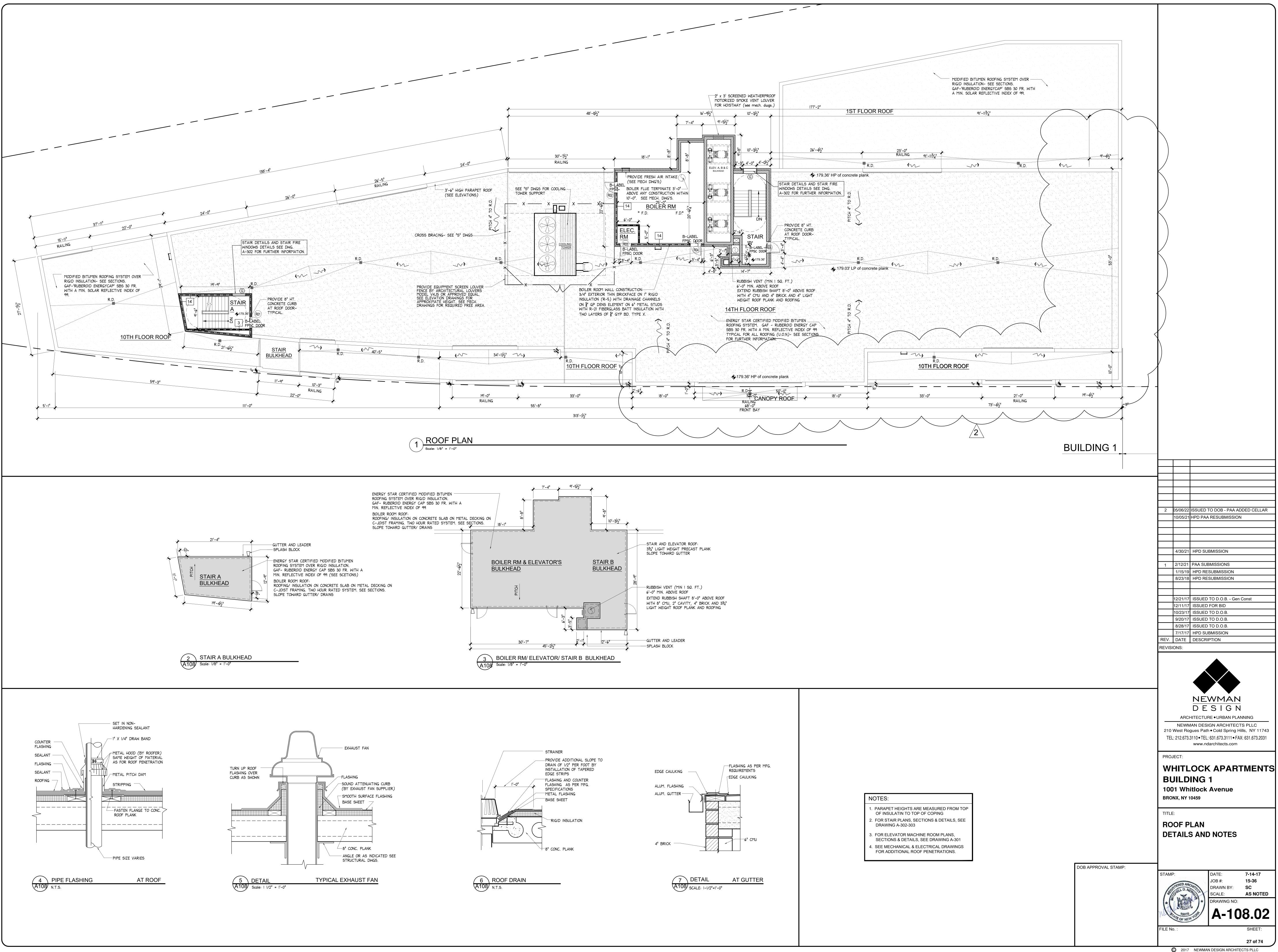
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LIGH	T AND VE	NTILATIO	N REQUIR	REMENTS		
			VENTILATION = 5%			GHT = 10%
APARTMENT	ROOM	AREA	VENTILATION REQUIRED	VENTILATION PROVIDED	NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED
1110-1210	LR/ DR	186 S.F.	9.3 S.F.	64.9 S.F.	18.6 S.F.	57.0 S.F.
ONE BDRM	BEDROOM	143 S.F.	7.2 S.F.	24.5 S.F.	14.3 S.F.	21.0 S.F.
1111-1211	LR/ DR	171 S.F.	8.6 S.F.	24.5 S.F.	17.1 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	112 S.F.	5.6 S.F.	20.2 S.F.	11.2 S.F.	18.0 S.F.
1112-1212	LR/ DR	175 S.F.	8.8 S.F.	24.5 S.F.	17.5 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	122 S.F.	6.1 S.F.	24.5 S.F.	12.2 S.F.	21.0 S.F.
1113-1213	LR/ DR	178 S.F.	8.9 S.F.	24.5 S.F.	17.8 S.F.	21.0 S.F.
TWO BDRM	BEDROOM	107 S.F.	5.4 S.F.	20.2 S.F.	10.7 S.F.	18.0 S.F.
	M. BDRM.	124 S.F.	6.2 S.F.	20.2 S.F.	12.4 S.F.	18.0 S.F.
1114-1214	LR/ DR	188 S.F.	9.4 S.F.	24.5 S.F.	18.8 S.F.	21.0 S.F.
TWO BDRM	BEDROOM	107 S.F.	5.4 S.F.	20.2 S.F.	10.7 S.F.	18.0 S.F.
	M. BDRM.	118 S.F.	5.9 S.F.	20.2 S.F.	11.8 S.F.	18.0 S.F.
1115-1215	LR/ DR	176 S.F.	8.8 S.F.	24.5 S.F.	17.6 S.F.	21.0 S.F.
ONE BDRM	BEDROOM	135 S.F.	6.8 S.F.	20.2 S.F.	13.5 S.F.	18.0 S.F.
T 1.	HE FOLLOWING KITCHEN S		EXCLUDED FRO			202.1

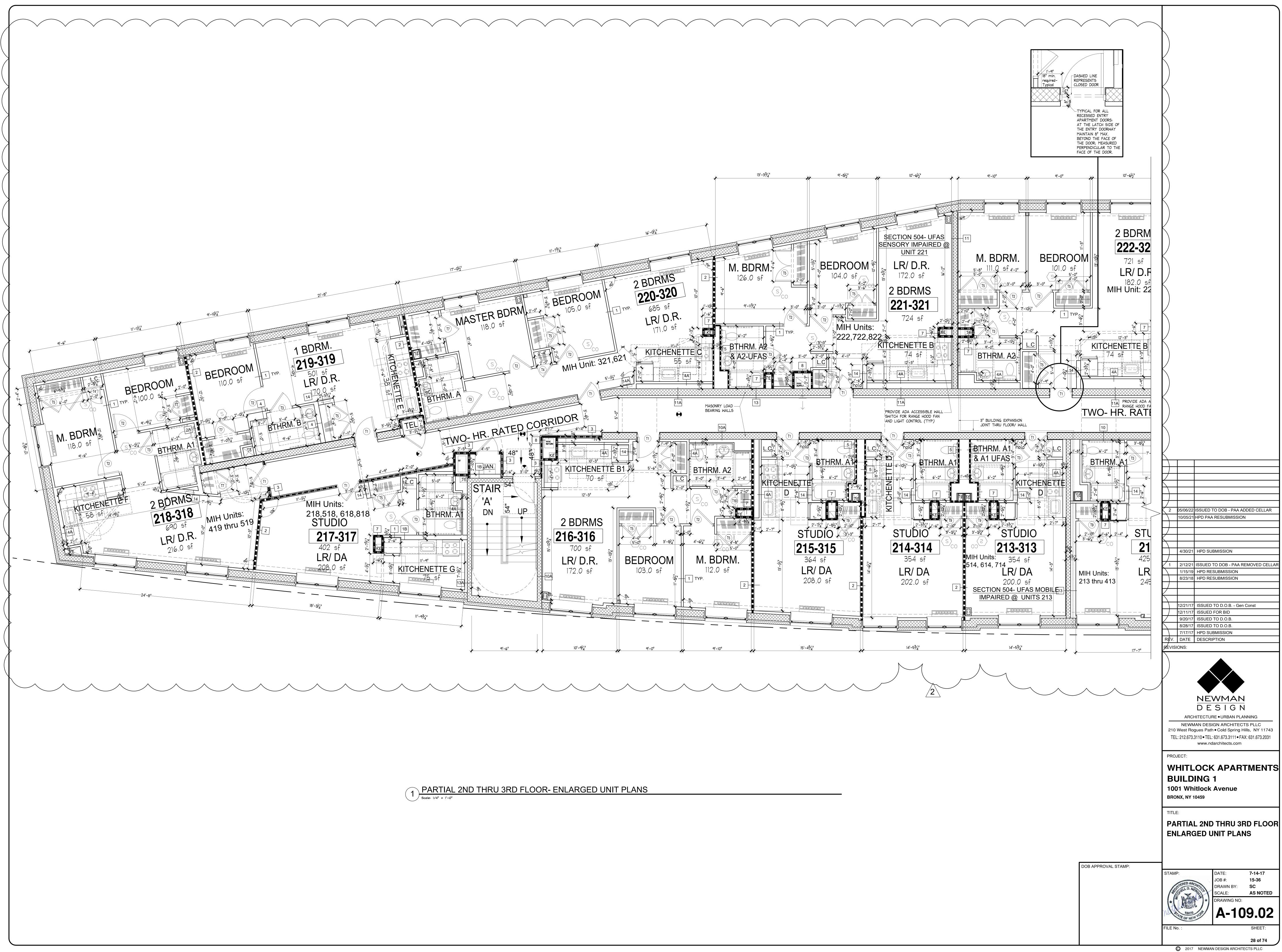


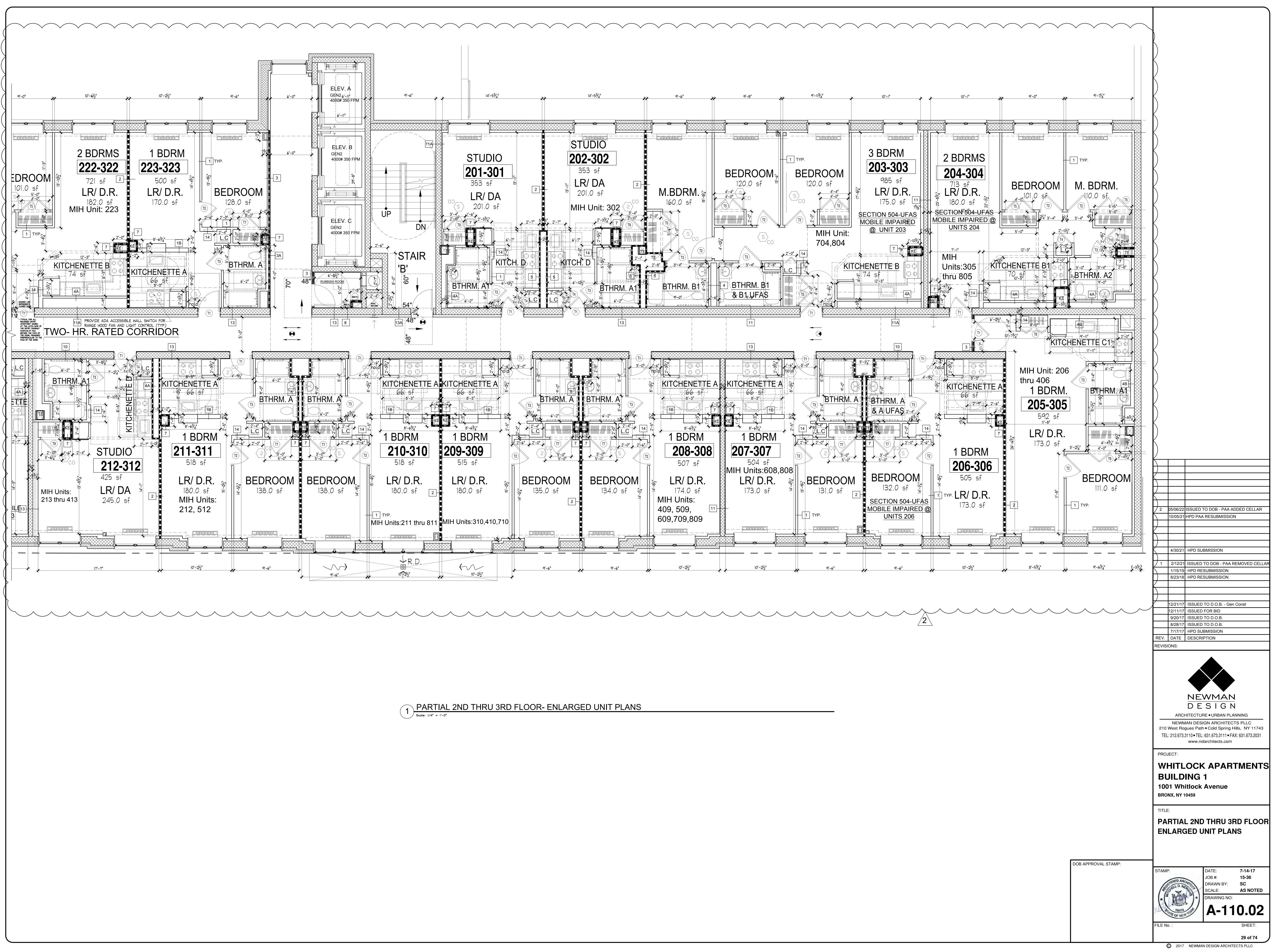
2.0			N REQUIF					
			VENTILATION	l = 5%	NATURAL LIGHT = 10%			
APARTMENT	ROOM	AREA	VENTILATION VENTILATION REQUIRED PROVIDED		NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED		
1301-1401	LR/ DR	178 S.F.	8.9 S.F.	24.5 S.F.	17.8 S.F.	21.0 S.F.		
TWO BDRM	BEDROOM	107 S.F.	5.4 S.F.	20.2 S.F.	10.7 S.F.	18.0 S.F.		
	M. BDRM	113 S.F.	5.7 S.F.	20.2 S.F.	11.3 S.F.	18.0 S.F.		
1302-1402	LR/ DR	179 S.F.	9.0 S.F.	20.2 S.F.	17.9 S.F.	18.0 S.F.		
THREE BDRM	BEDROOM	122 S.F.	6.1 S.F.	24.5 S.F.	12.2 S.F.	21.0 S.F.		
	BEDROOM	122 S.F.	6.1 S.F.	24.5 S.F.	12.2 S.F.	21.0 S.F.		
	M. BDRM	163 S.F.	8.2 S.F.	20.2 S.F.	16.3 S.F.	18.0 S.F.		
1303-1403 TWO BDRM	LR/ DR	183 S.F.	9.2 S.F.	24.5 S.F.	18.3 S.F.	21.0 S.F.		
	BEDROOM	104 S.F.	5.2 S.F.	20.2 S.F.	10.4 S.F.	18.0 S.F.		
	M. BDRM	112 S.F.	5.6 S.F.	20.2 S.F.	11.2 S.F.	18.0 S.F.		
1304-1404	LR/ DA	196 S.F.	9.8 S.F.	24.5 S.F.	19.6 S.F.	21.0 S.F.		
ONE BDRM	BEDROOM	116 S.F.	5.8 S.F.	20.2 S.F.	11.6 S.F.	18.0 S.F.		
1305-1405	LR/ DA	195 S.F.	9.8 S.F.	24.5 S.F.	19.5 S.F.	21.0 S.F.		
TWO BDRM	BEDROOM	102 S.F.	5.1 S.F.	24.5 S.F.	10.2 S.F.	21.0 S.F.		
	M. BDRM	132 S.F.	6.6 S.F.	24.5 S.F.	13.2 S.F.	21.0 S.F.		
1306-1406	LR/ DR	176 S.F.	8.8 S.F.	24.5 S.F.	17.6 S.F.	21.0 S.F.		
ONE BDRM	BEDROOM	150 S.F.	7.5 S.F.	20.2 S.F.	15.0 S.F.	18.0 S.F.		
1307-1407	LR/ DR	177 S.F.	8.9 S.F.	24.5 S.F.	17.7 S.F.	21.0 S.F.		
TWO BDRM	BEDROOM	116 S.F.	5.8 S.F.	24.5 S.F.	11.6 S.F.	21.0 S.F.		
	M. BDRM.	122 S.F.	6.1 S.F.	24.5 S.F.	12.2 S.F.	21.0 S.F.		
1308-1408	LR/ DR	198 S.F.	9.9 S.F.	44.7 S.F.	19.8 S.F.	39.0 S.F.		
TWO BDRM	BEDROOM	109 S.F.	5.5 S.F.	24.5 S.F.	10.9 S.F.	21.0 S.F.		
	M. BDRM.	114 S.F.	5.7 S.F.	24.5 S.F.	11.4 S.F.	21.0 S.F.		
1309-1409	LR/ DR	227 S.F.	11.4 S.F.	40.4 S.F.	22.7 S.F.	36.0 S.F.		
ONE BDRM	BEDROOM	115 S.F.	5.8 S.F.	20.2 S.F.	11.5 S.F.	18.0 S.F.		

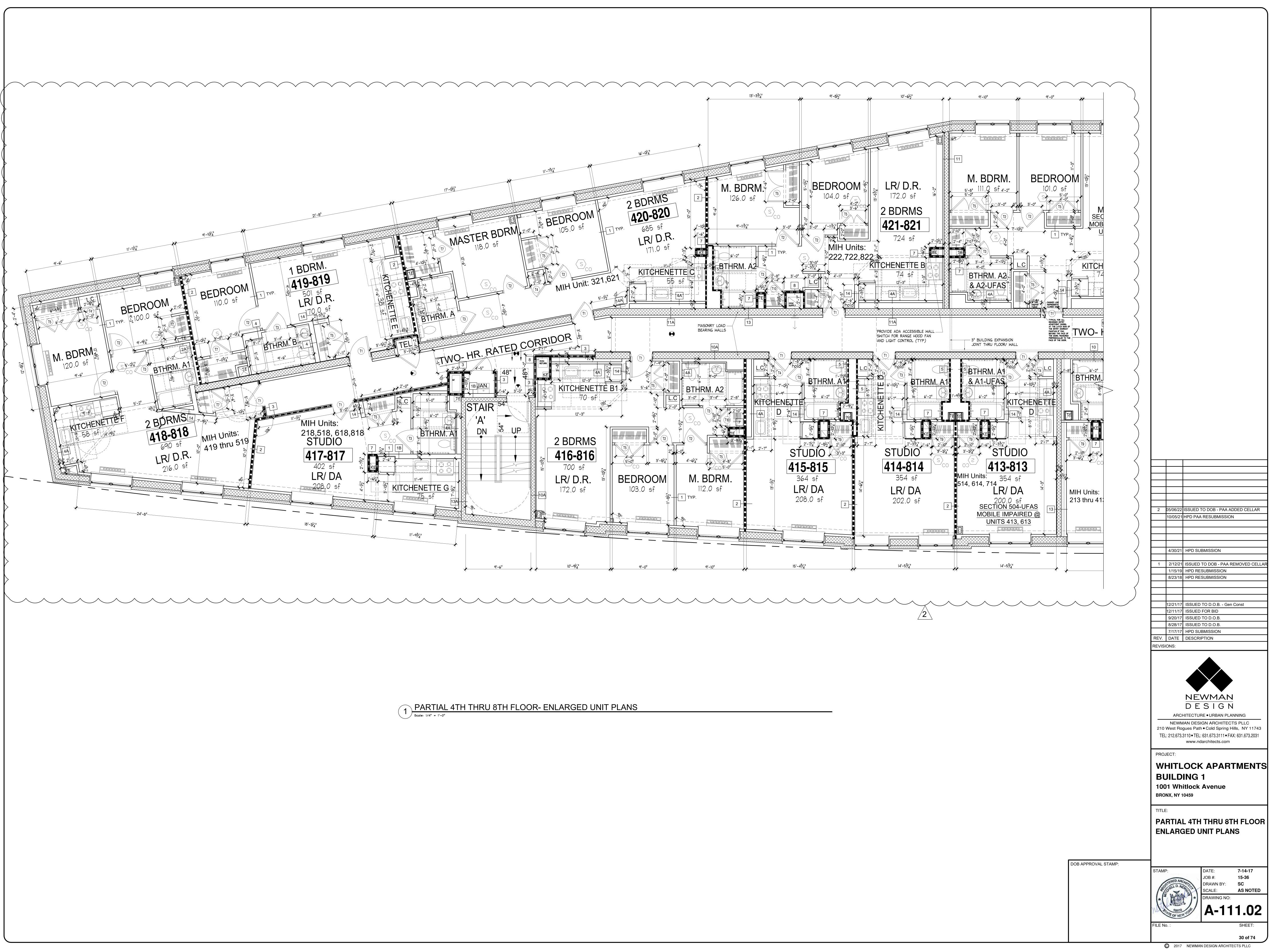
			VENTILATION	= 5%	NATURAL LIGHT = 10%		
APARTMENT	ROOM	AREA VENTILATION VENTILATION REQUIRED PROVIDED		NATURAL LIGHT REQUIRED	NATURAL LIGHT PROVIDED		
1310-1410 ONE BDRM	LR/ DR	186 S.F.	9.3 S.F.	64.9 S.F.	18.6 S.F.	57.0 S.F.	
	BEDROOM	148 S.F.	7.4 S.F.	24.5 S.F.	14.8 S.F.	21.0 S.F.	
1311-1411 ONE BDRM	LR/ DR	171 S.F.	8.6 S.F.	24.5 S.F.	17.1 S.F.	21.0 S.F.	
	BEDROOM	112 S.F.	5.6 S.F.	20.2 S.F.	11.2 S.F.	18.0 S.F.	
1312-1412 ONE BDRM	LR/ DR	175 S.F.	8.8 S.F.	24.5 S.F.	17.5 S.F.	21.0 S.F.	
	BEDROOM	122 S.F.	6.1 S.F.	24.5 S.F.	12.2 S.F.	21.0 S.F.	
1313-1413 TWO BDRM	LR/ DR	178 S.F.	8.9 S.F.	24.5 S.F.	17.8 S.F.	21.0 S.F.	
	BEDROOM	107 S.F.	5.4 S.F.	20.2 S.F.	10.7 S.F.	18.0 S.F.	
	M. BDRM.	124 S.F.	6.2 S.F.	20.2 S.F.	12.4 S.F.	18.0 S.F.	
1314-1414	LR/ DR	188 S.F.	9.4 S.F.	24.5 S.F.	18.8 S.F.	21.0 S.F.	
TWO BDRM	BEDROOM	107 S.F.	5.4 S.F.	20.2 S.F.	10.7 S.F.	18.0 S.F.	
	M. BDRM.	118 S.F.	5.9 S.F.	20.2 S.F.	11.8 S.F.	18.0 S.F.	
1315-1415	LR/ DR	176 S.F.	8.8 S.F.	24.5 S.F.	17.6 S.F.	21.0 S.F.	
ONE BDRM	BEDROOM	135 S.F.	6.8 S.F.	20.2 S.F.	13.5 S.F.	18.0 S.F.	

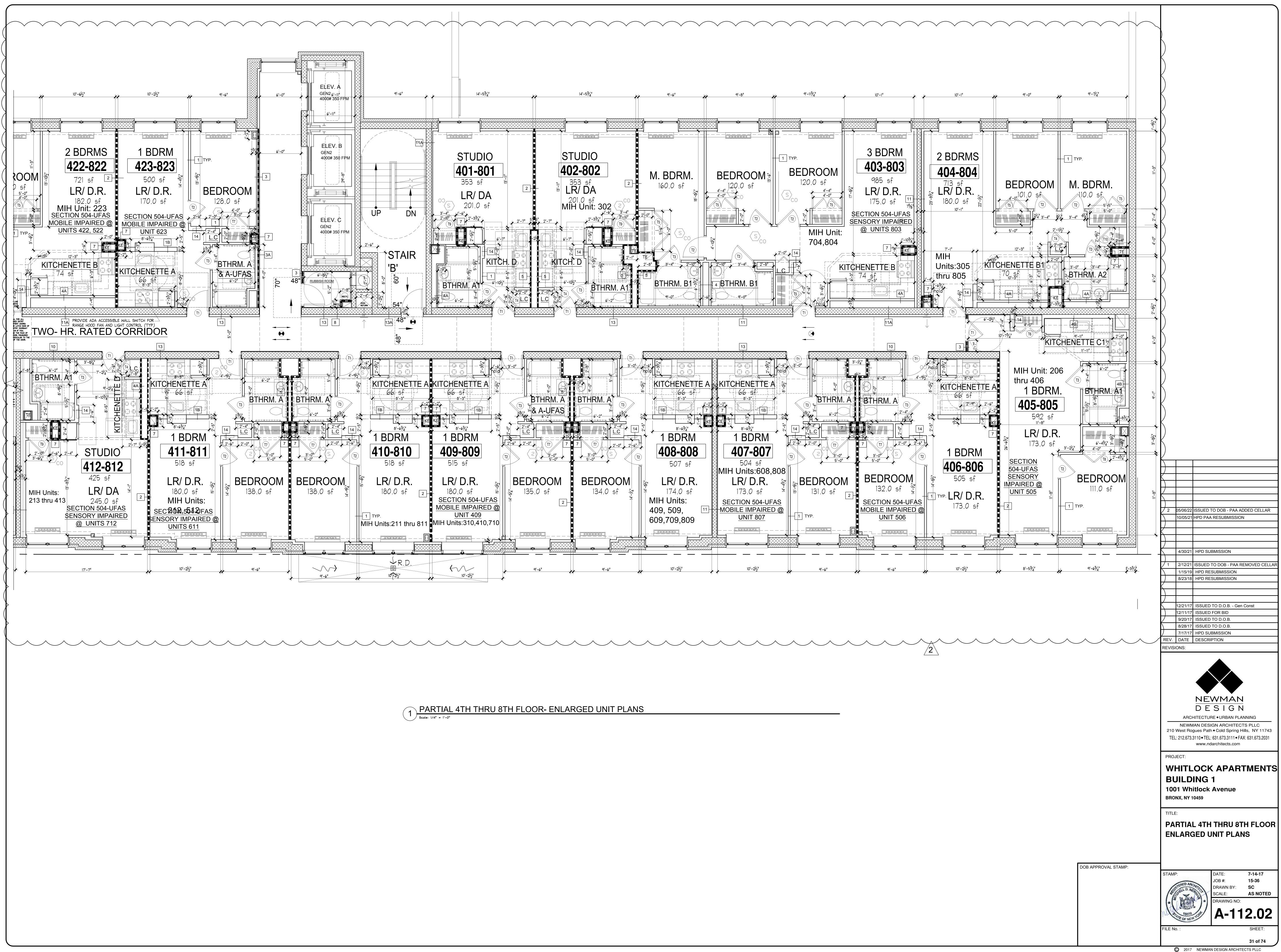


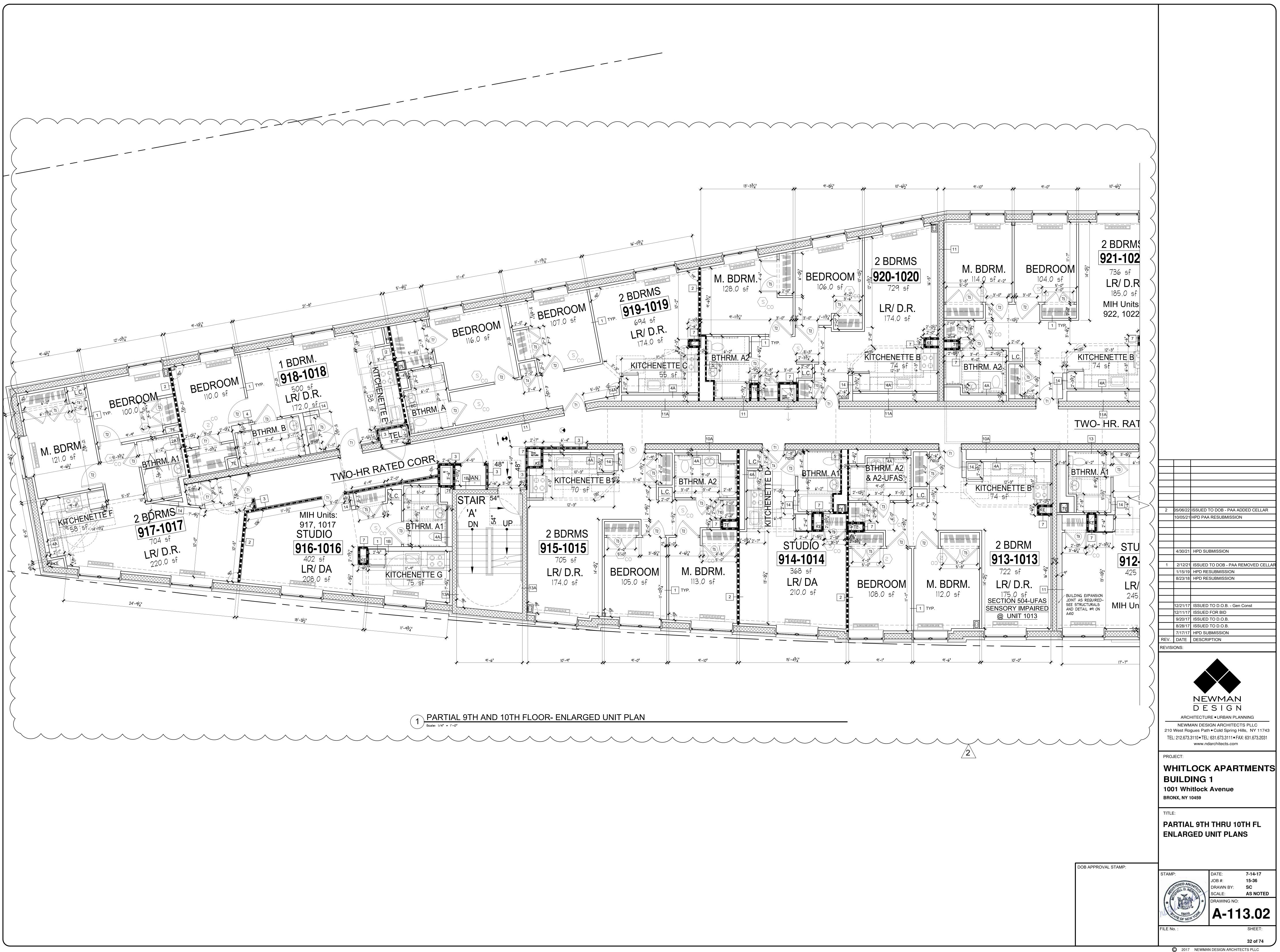




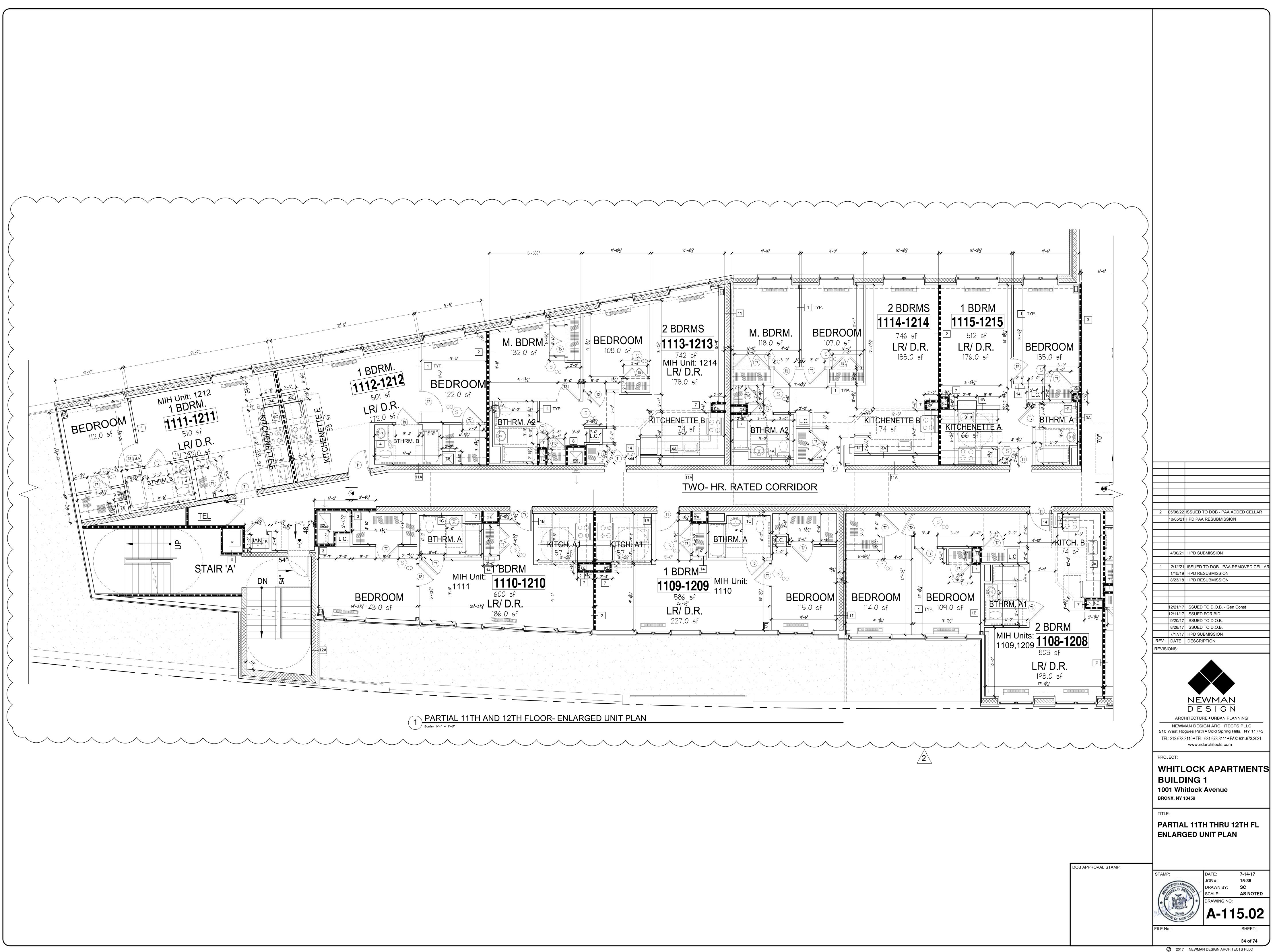


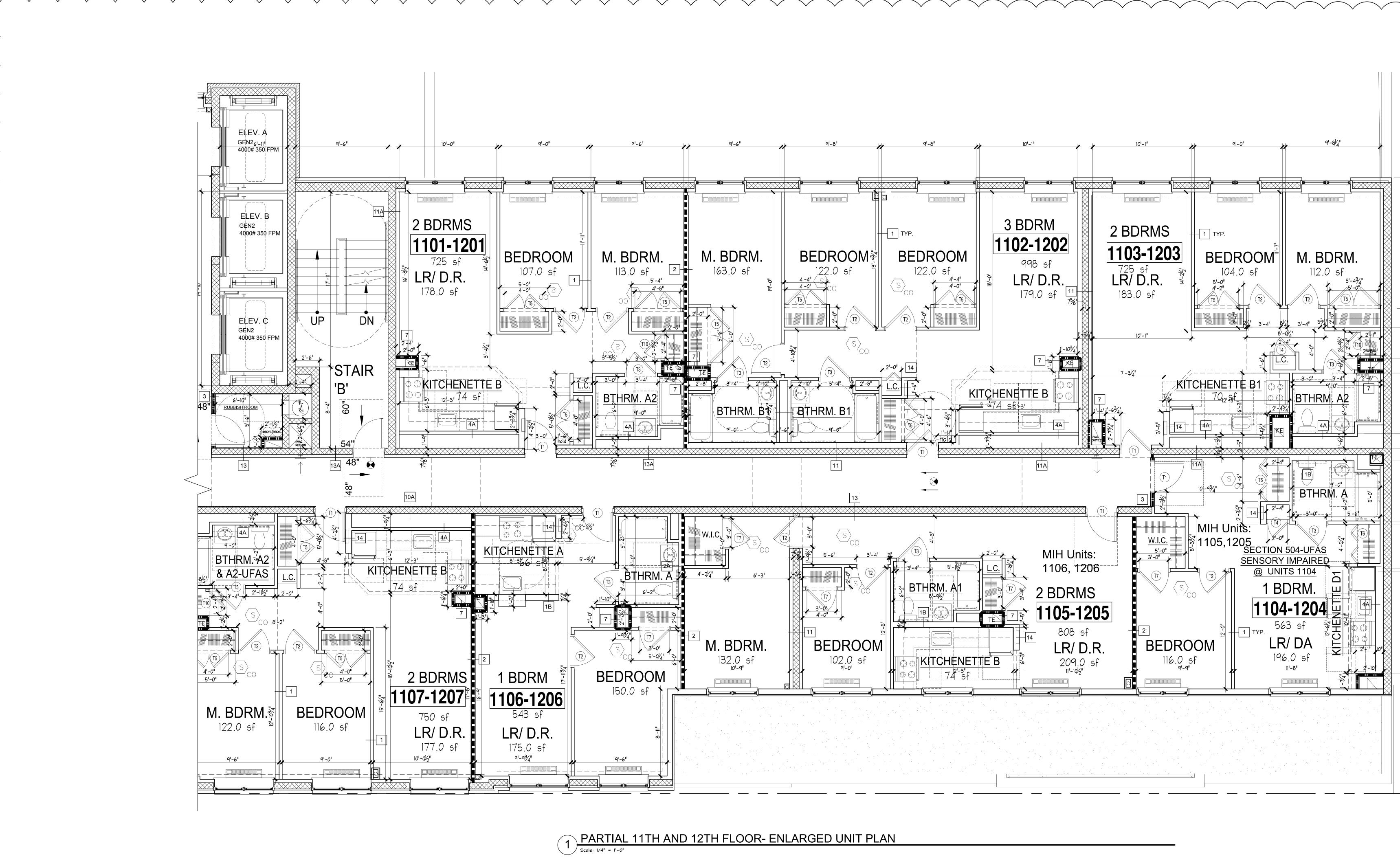


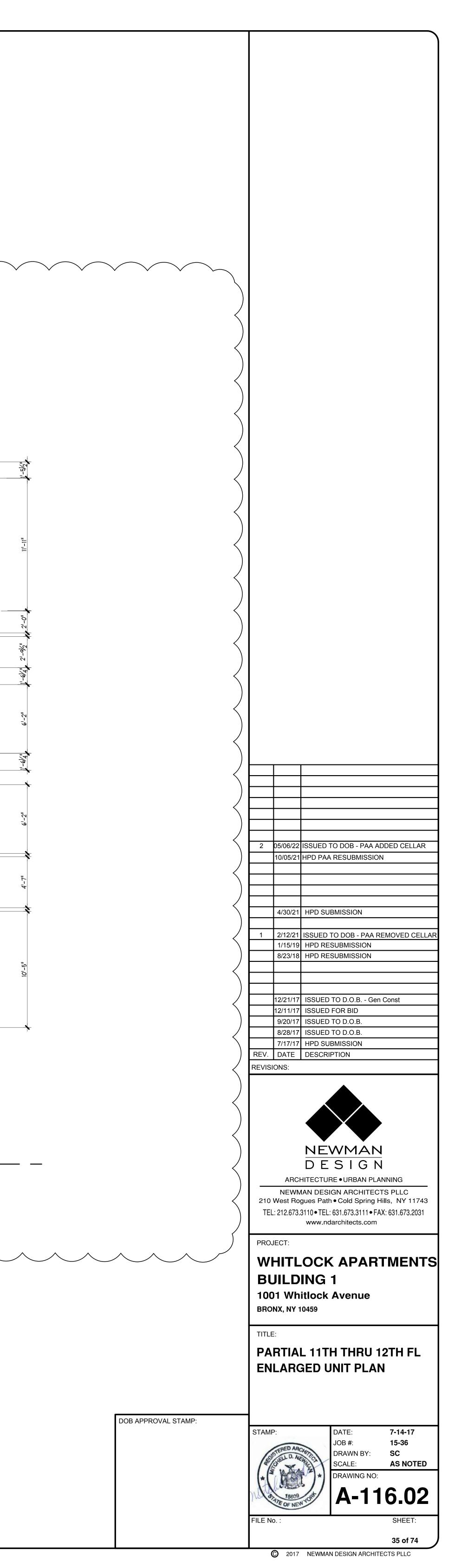




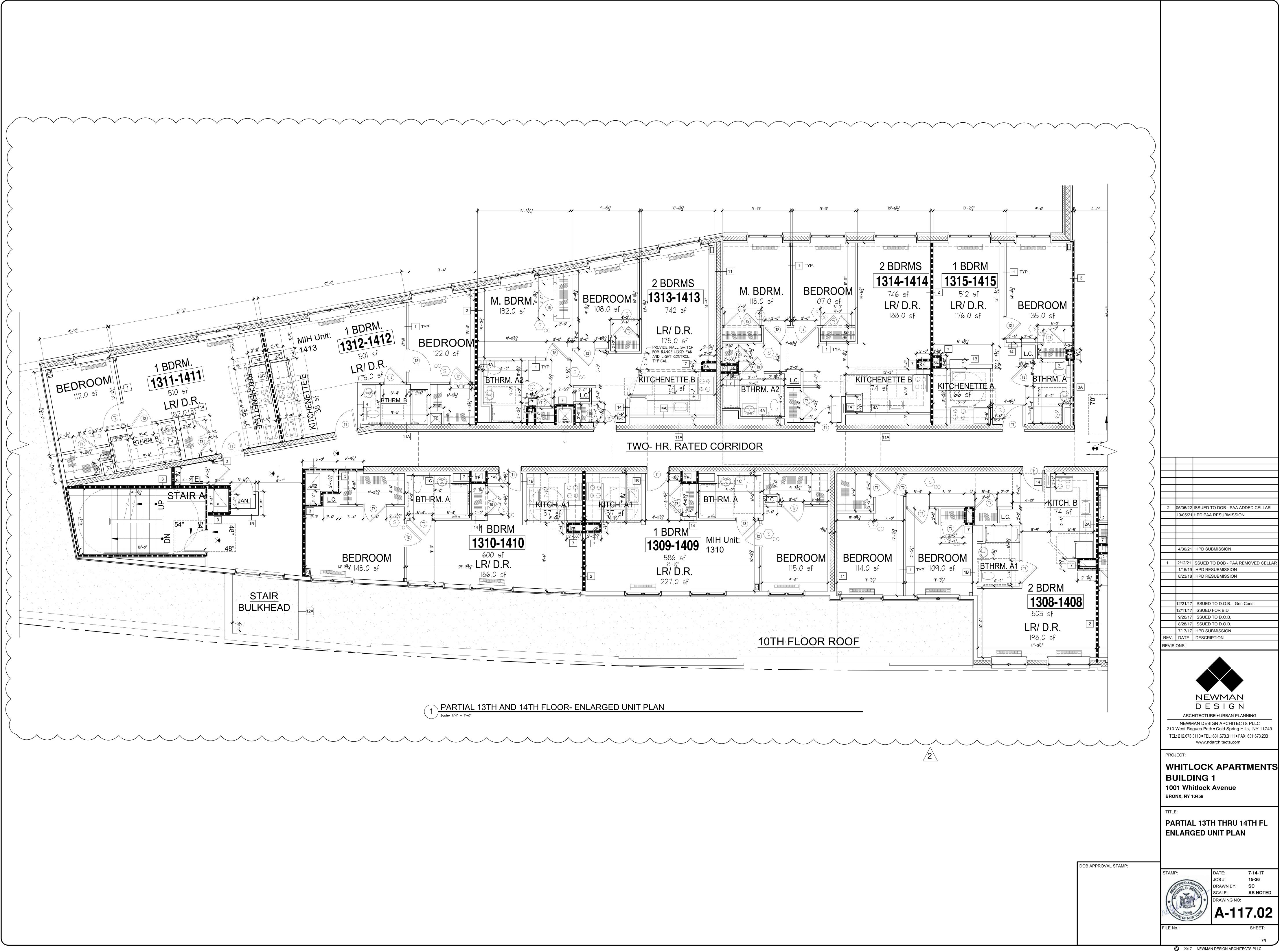


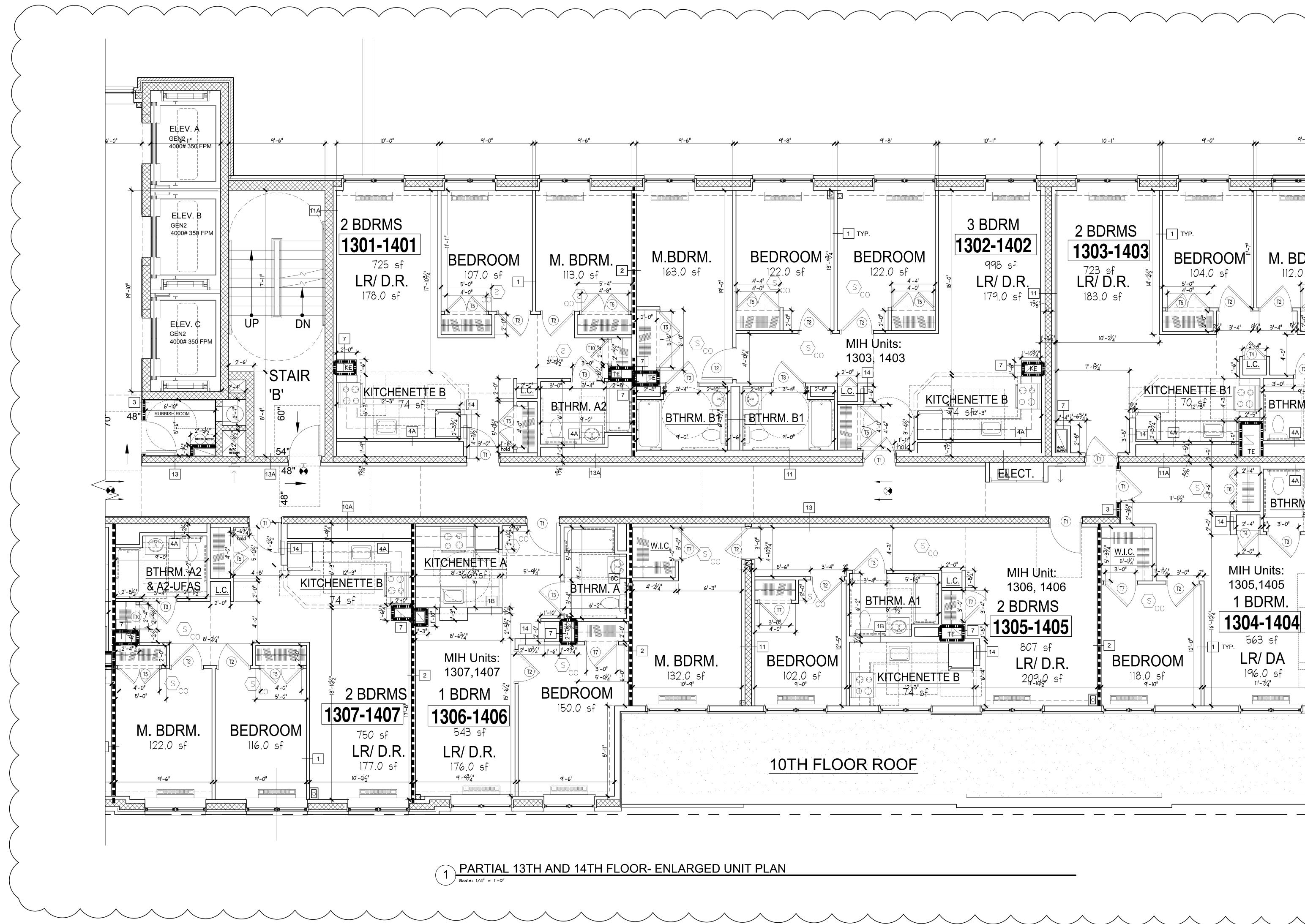




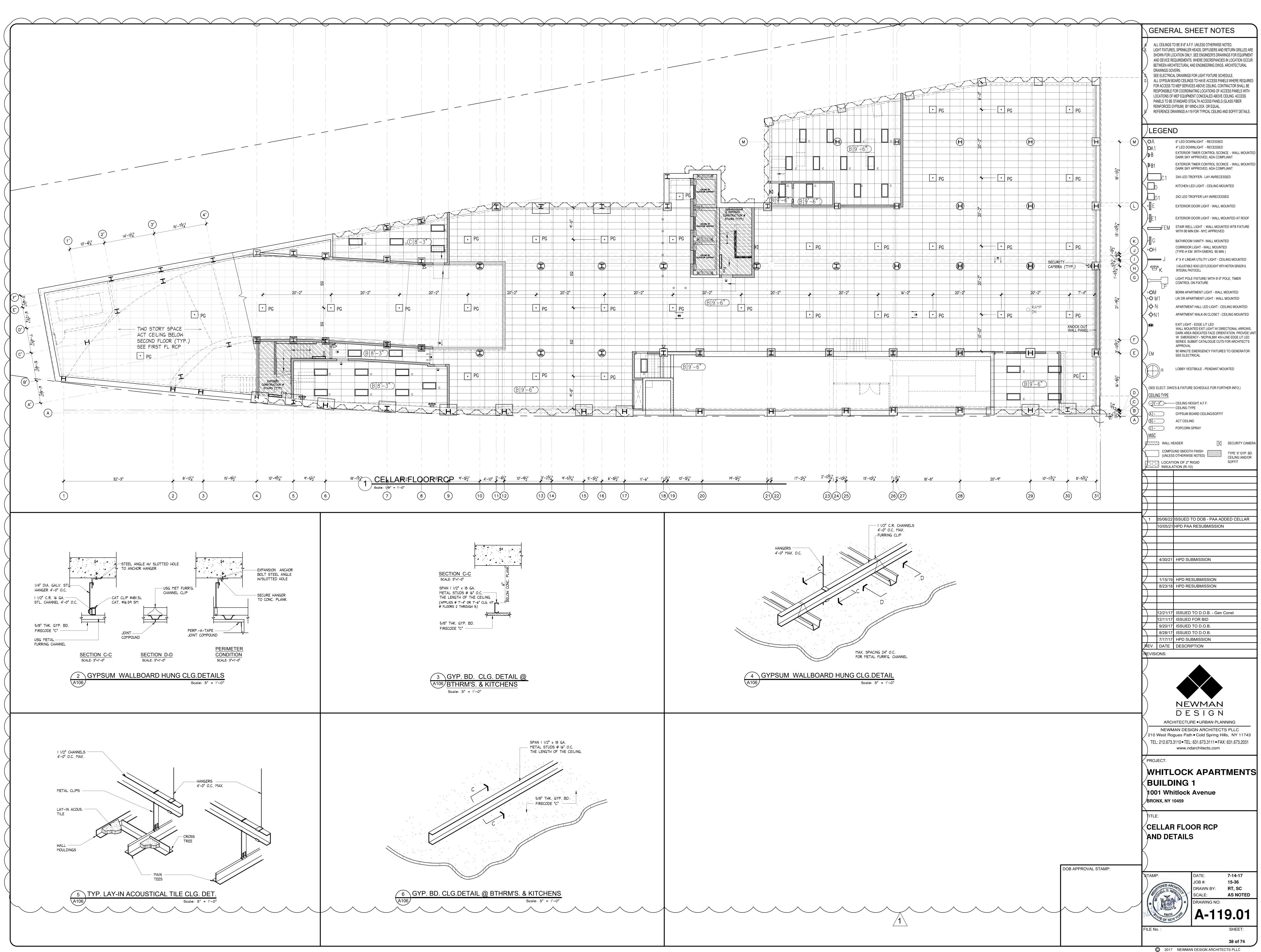


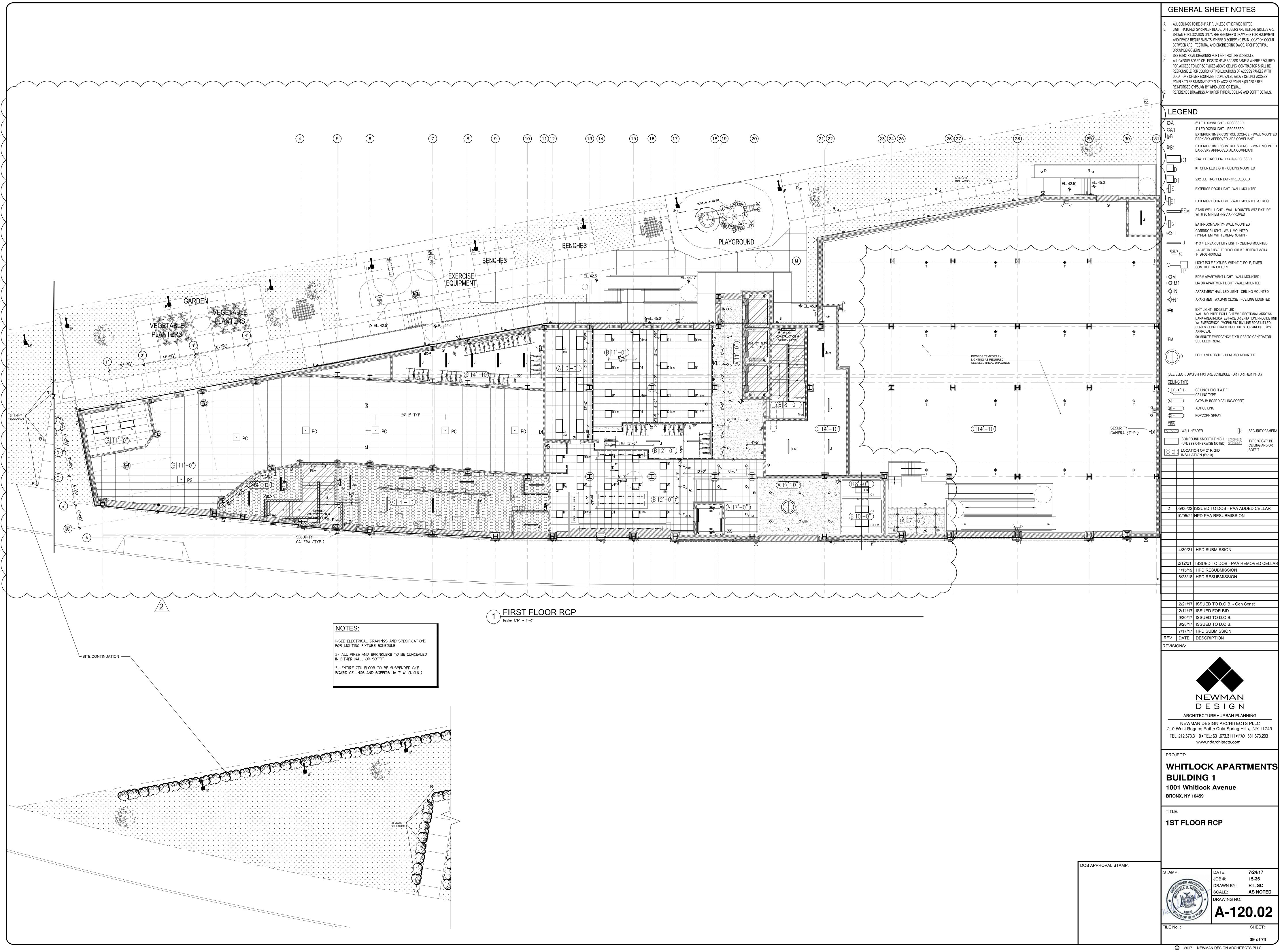
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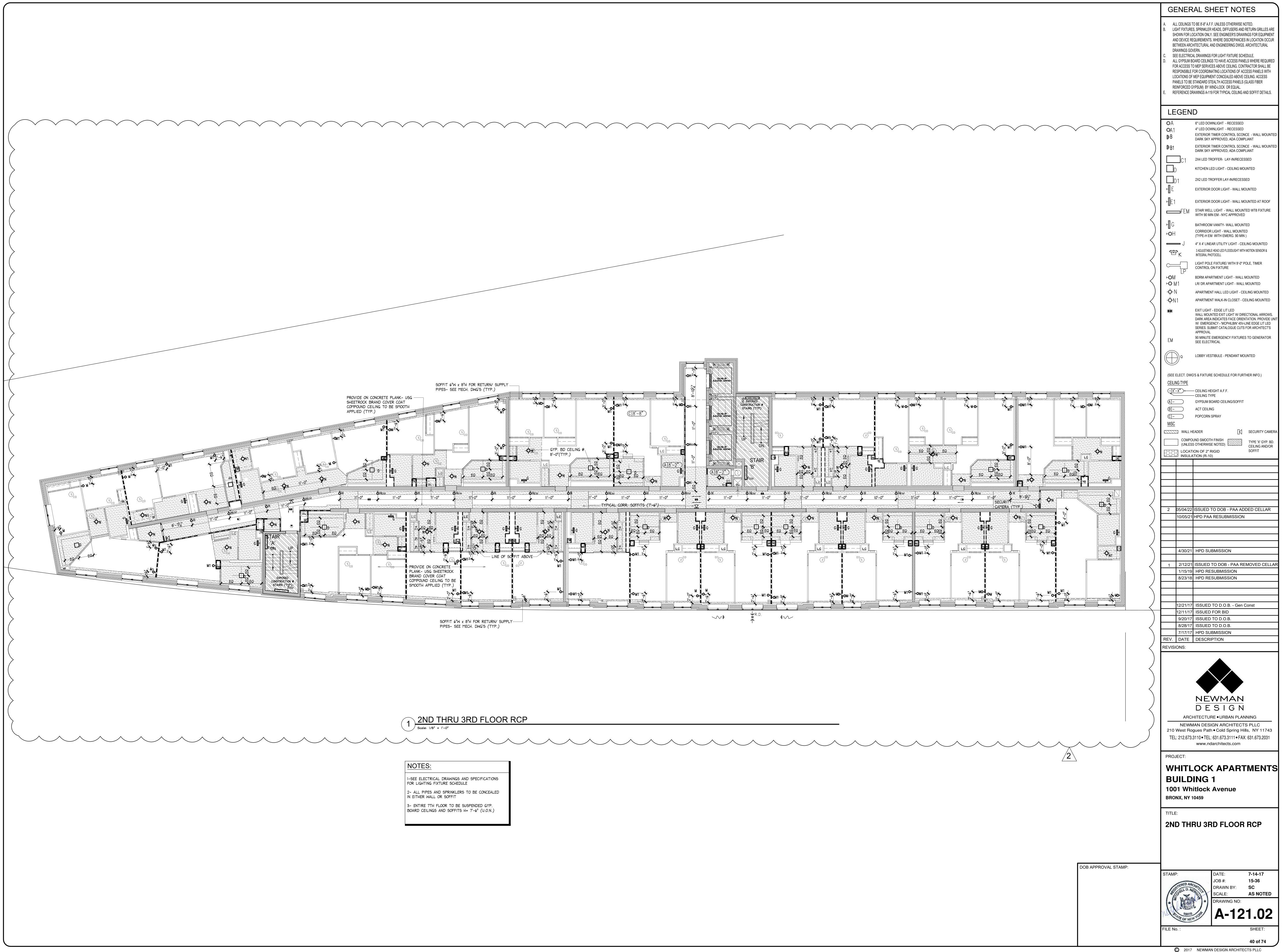


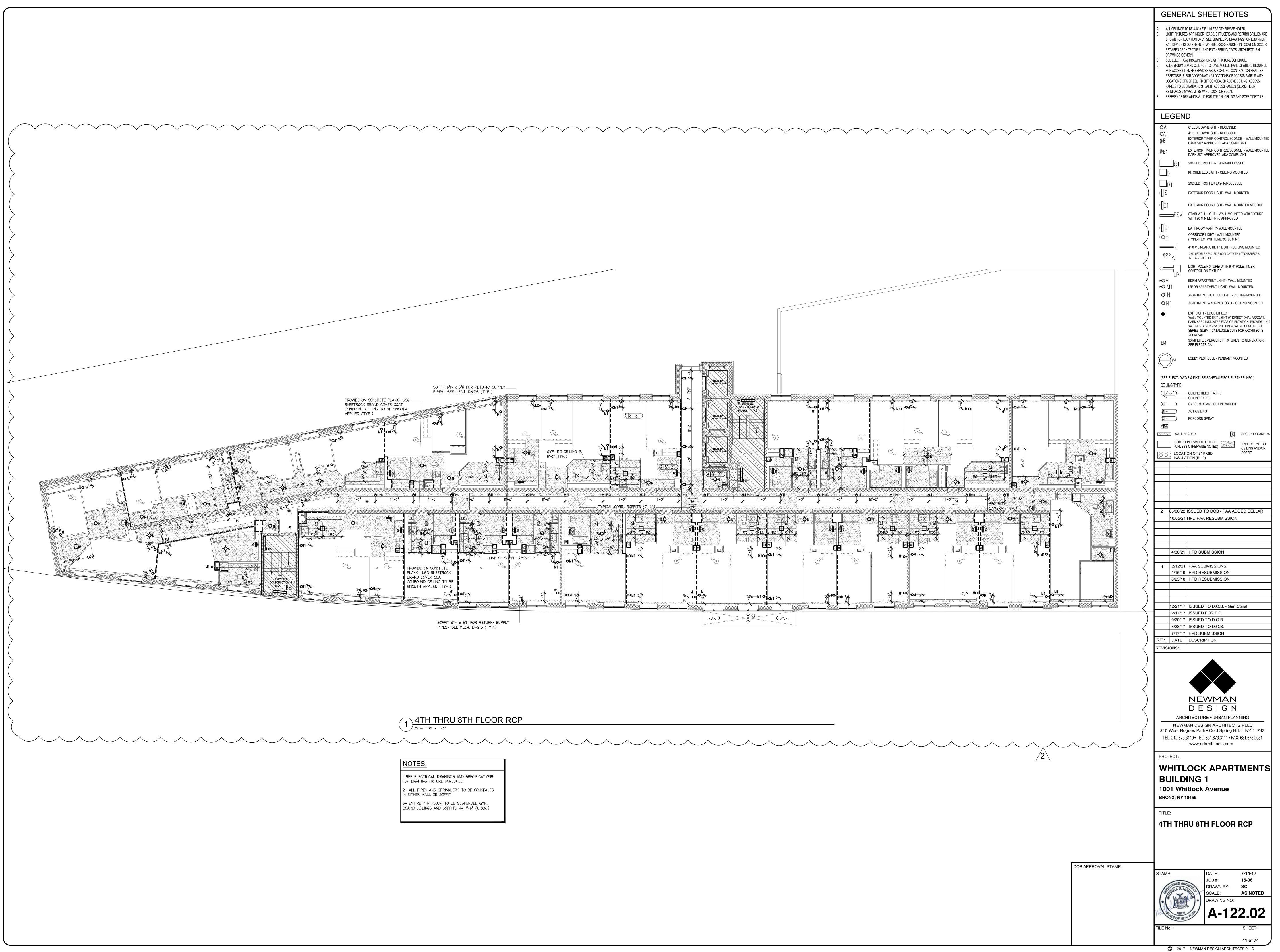


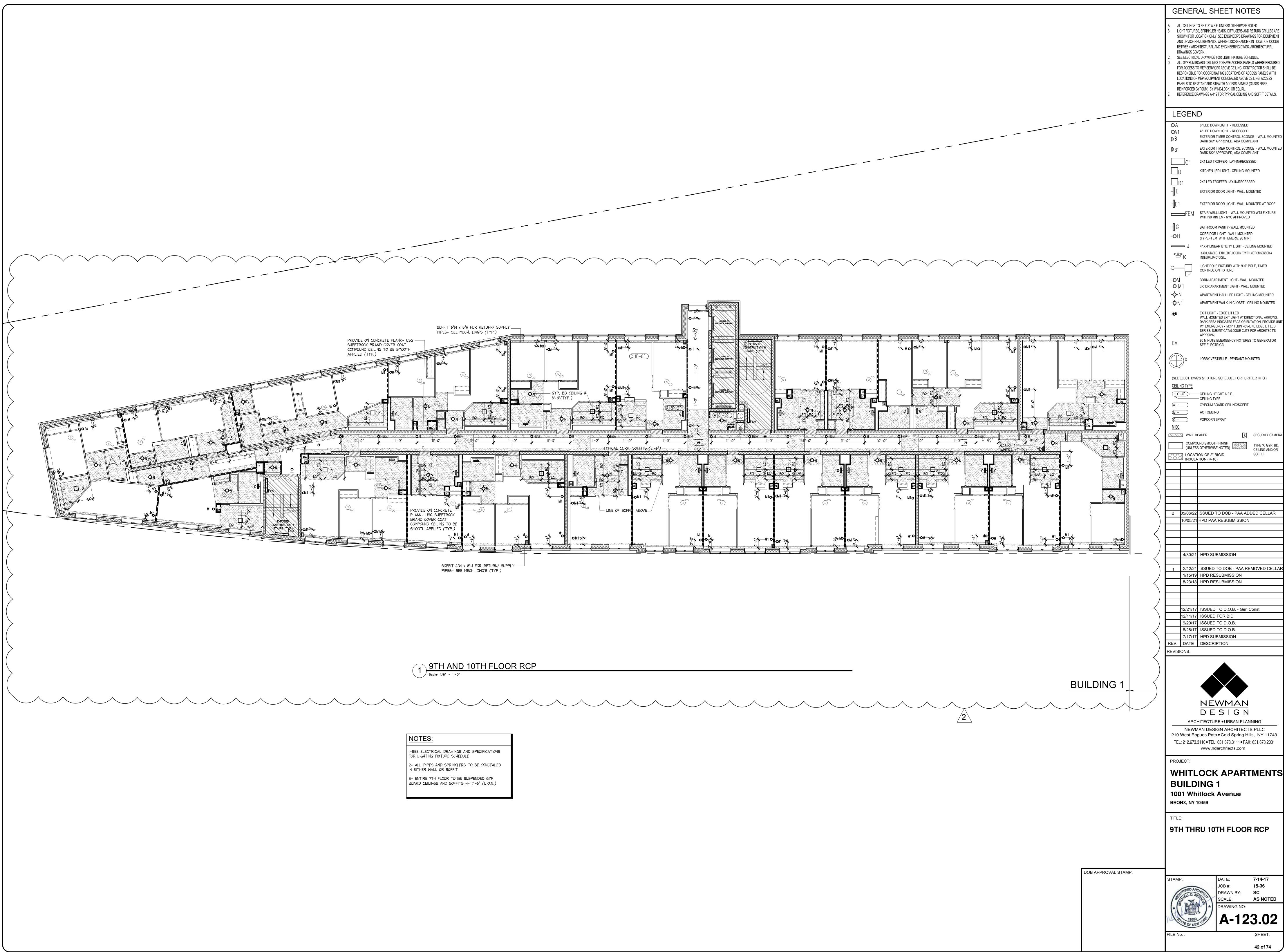
PROJECT: WHITLOCK APARTMENTS	2       5906/22       ISSUED TO DOB - PAA ADDED CELLAR         1       1005/21       IPD SUBMISSION         2       1006/21       IPD SUBMISSION         1       2/12/27       ISSUED TO DOB - PAA REMOVED CELLAR         1       1005/21       IPD SUBMISSION         1       2/12/27       ISSUED TO DOB - PAA REMOVED CELLAR         1       11/15/19       IPD RESUBMISSION         1       2/12/27       ISSUED TO DOB - PAA REMOVED CELLAR         1       11/15/19       IPD RESUBMISSION         1       2/12/27       ISSUED TO DOB - PAA REMOVED CELLAR         1       11/15/19       IPD RESUBMISSION         1       2/12/27       ISSUED TO DOB - PAA REMOVED CELLAR         1       11/15/19       IPD RESUBMISSION         1       2/12/27       ISSUED TO DOB - PAA REMOVED CELLAR         1       11/15/19       IPD RESUBMISSION         1       2/12/27       ISSUED TO DOB - Cent Const         1       2/12/27       ISSUED TO DOB - CENT CONT         1       DISCRIPTI
BUILDING 1 1001 Whitlock Avenue BRONX, NY 10459	REVISIONS:



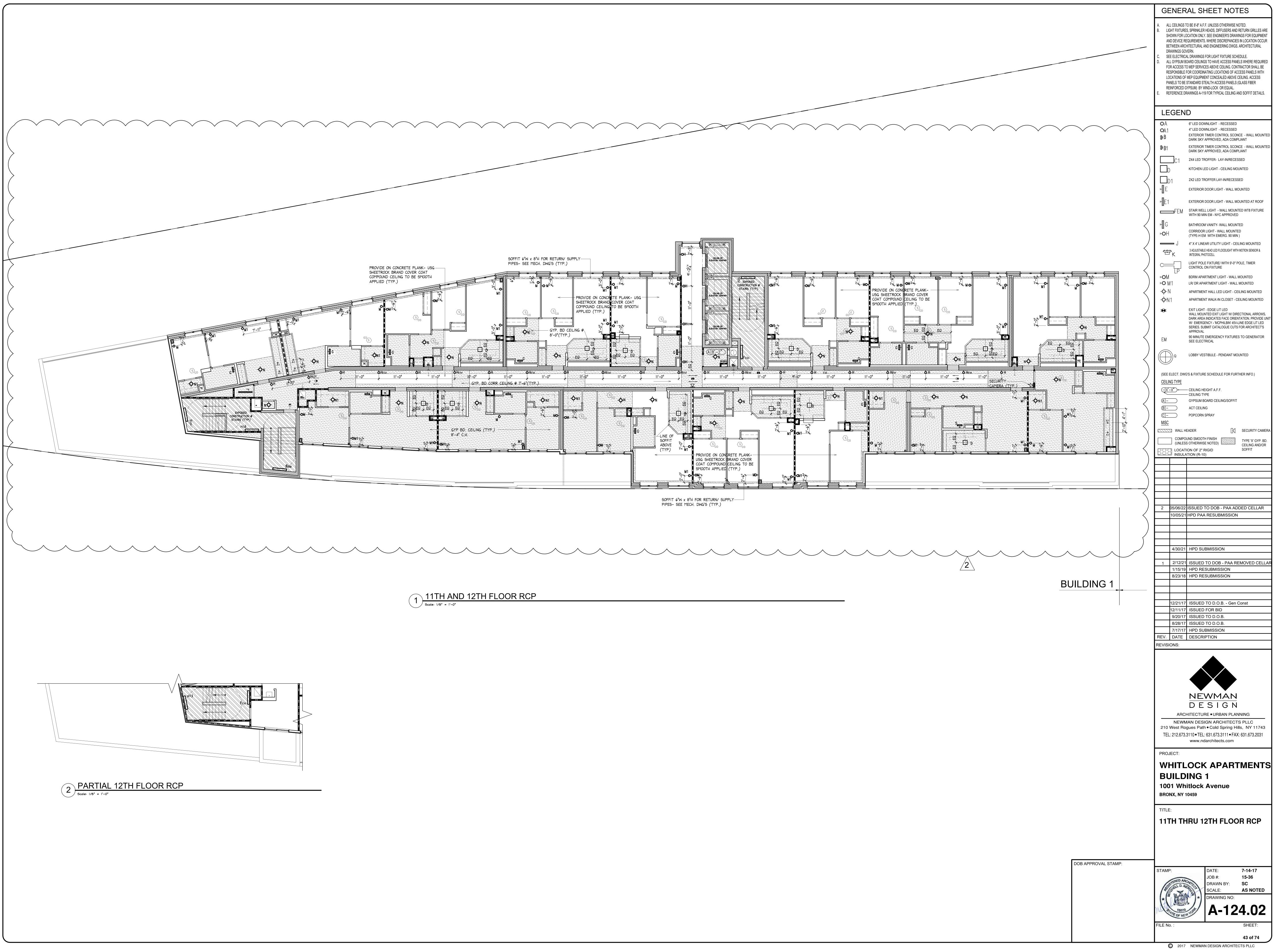


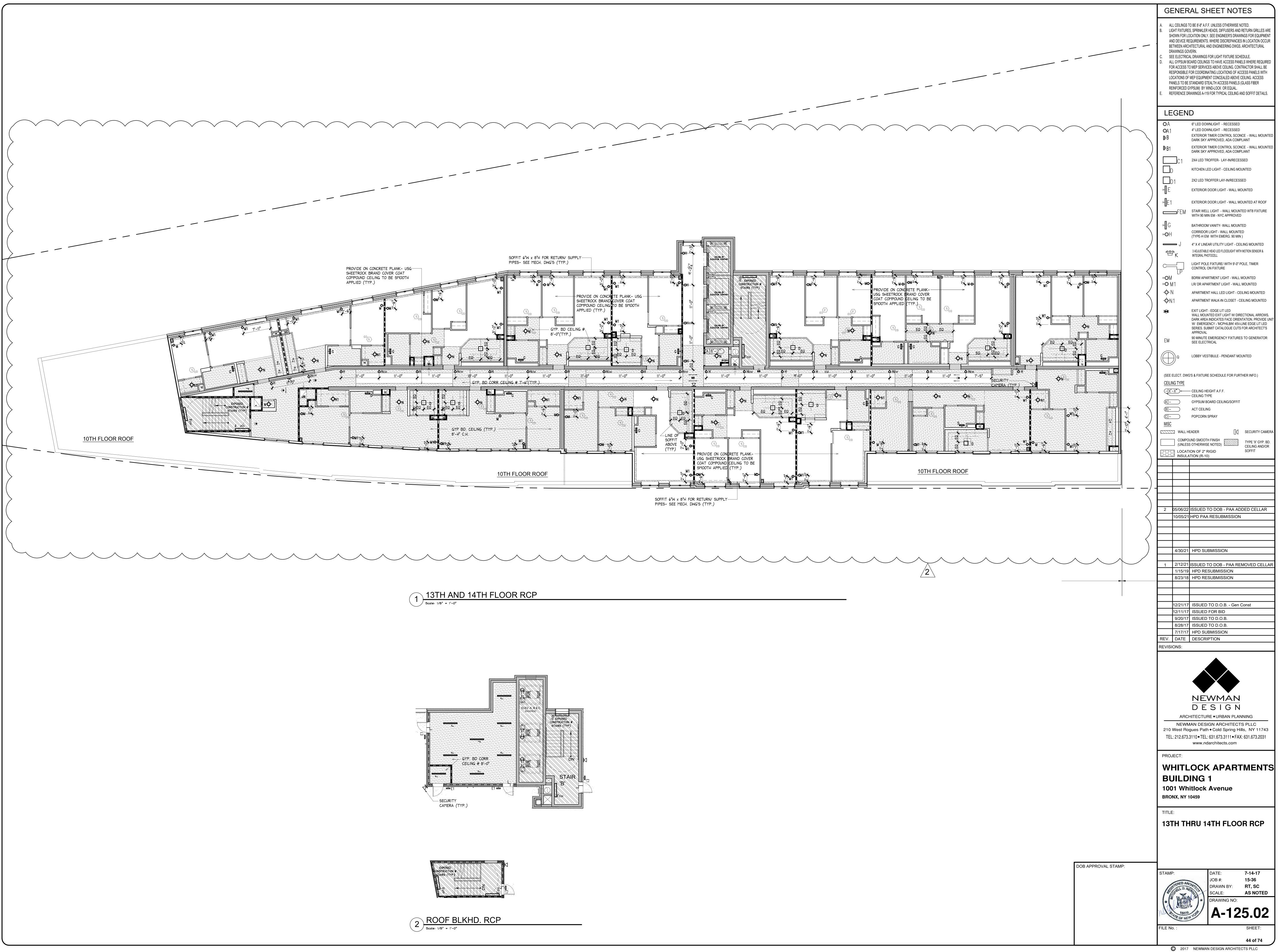


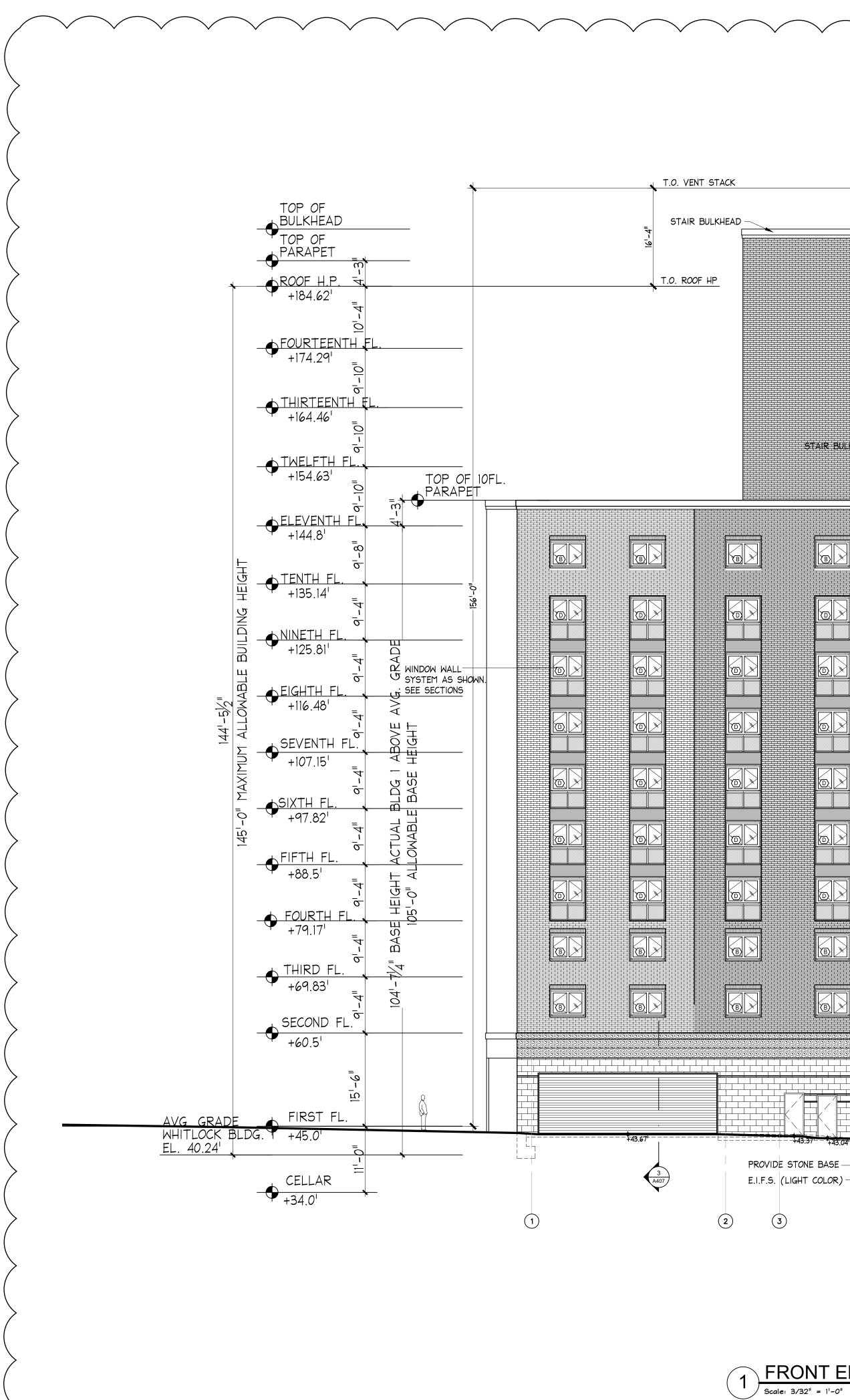




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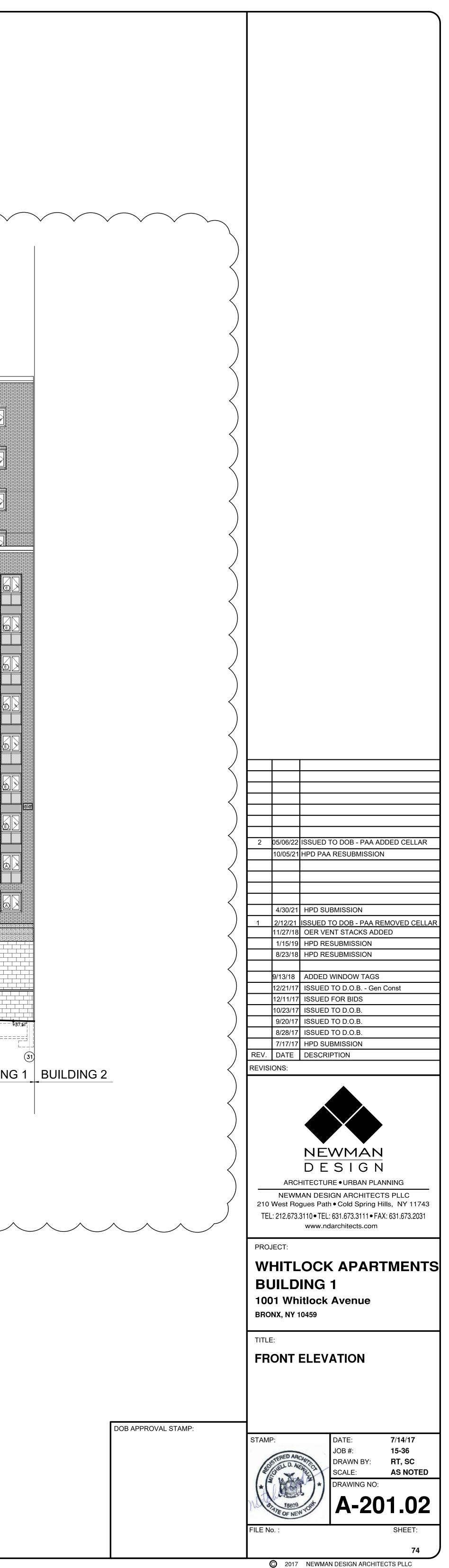




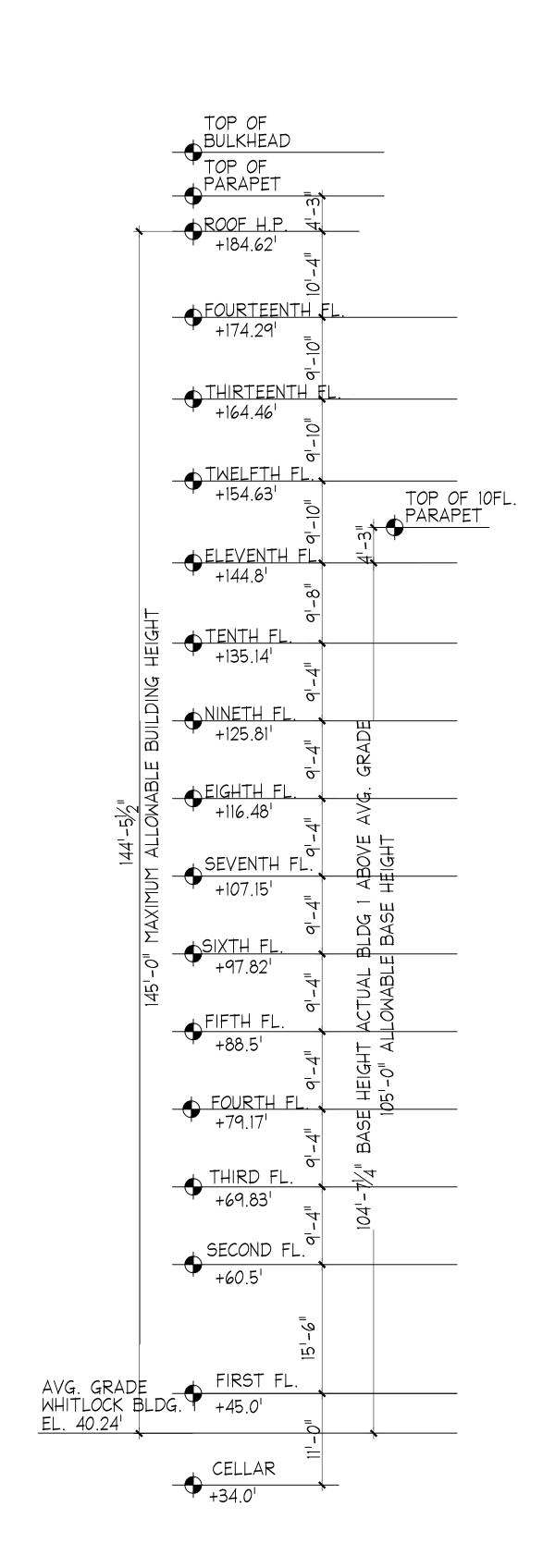
N( * A * S 4" as +2"

											1				DORMER 'A' ¢ 'E	3'			*						
ГАСК		SCREEN ENCLOSURE A SEE ROOF PLANS ANI	AROUND MECH D SPECIFICATI	ANICAL COOLING ONS.	TOWER, ——										3 A403					ROOF. M. FLOOR (1	FLUES TO TERMINA AINTAIN THE REQU ELEVATION 45.0') VENT (MIN 1 SQ. VE ROOF	IRED 156'-0" MINII TO TOP OF VENT	MUM ABOVE FIR		
KHEAD		PROVIDE BRICK CONT IN BRICK COLOR (AS FILLED W/ BACKER R	ROL JOINTS ( SHOWN) TO OD AND ELAS	) EVERY 25'-0" BE COMPRESSIE ,TOMERIC SEALA	AND CHANGE— BLE JOINT NT		1							R –			1 A402	)		PROVIDE BRICK (/	LIGHT COLOR - AS SHOWN)			3	
	STAIR BULK																								
																					Image: Constraint of the second sec				
			+42.66'												+39.73'				+39.23'						
E.I.F.S.	(LIGHT COLOR) -	4 5	6		7	8	9	12)			6) (17)		18 19	20		21 (22) (21) (22) (2) (2) (2) (2) (2) (2) (2) (2) (		23 24 25	 5)	26 27		28		9 BIII	30 LDING
				57 (9	TEP CONCRETE SEE STRUCT. D	FOUNDATION M WGS.)	NALL/		CANOPY	PIPE W/ 5/8" G 1/2" STL PLATE (ERED CANOPY (TYP.) (SEE S W/ E.I.F.S. FINIS	GALV. STL TI ES ANCHORED & MASONRY STRUCT. DWG SH (SEE DET.	E D TO GS.) AIL)			A403	Y	A402								
	RONT EL	LEVATION (	EAST)						WALL SCO																

NOTES:	Brick & Stone Color Specifications:					
All brick veneer is 4" x 12" severe weather utility brick. Simulated Stone cornices, bands and veneer are 4" thick x 24" long (u.o.n.) simulated stone mas. units	Dark Brick	'Watsontown'- Manhattan Series, Broadway KT- Type 8				
as manufactured by 'Continental Cast Stone'. 2" — This number indicates face of brick veneer or stone	Light Brick	'Watsontown'- Manhattan Series, Madison KT- Type 8				
projection measured from predominant 'building line' (see floor plans and sections)	Simul. Stone	'Continental Cast Stone'- St. Thomas Tan				



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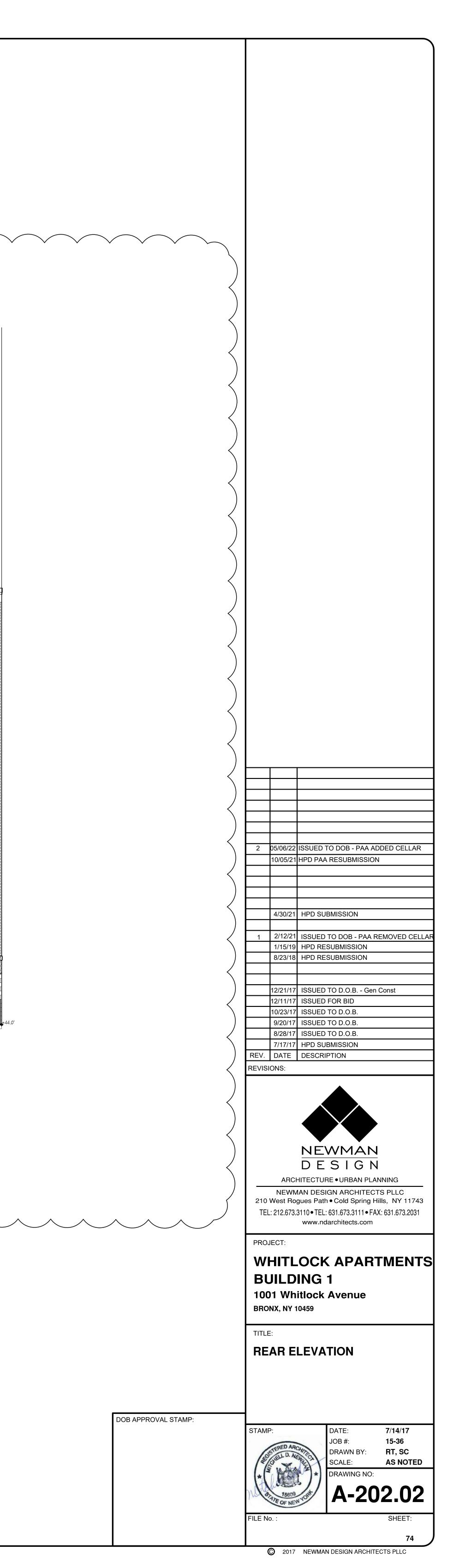


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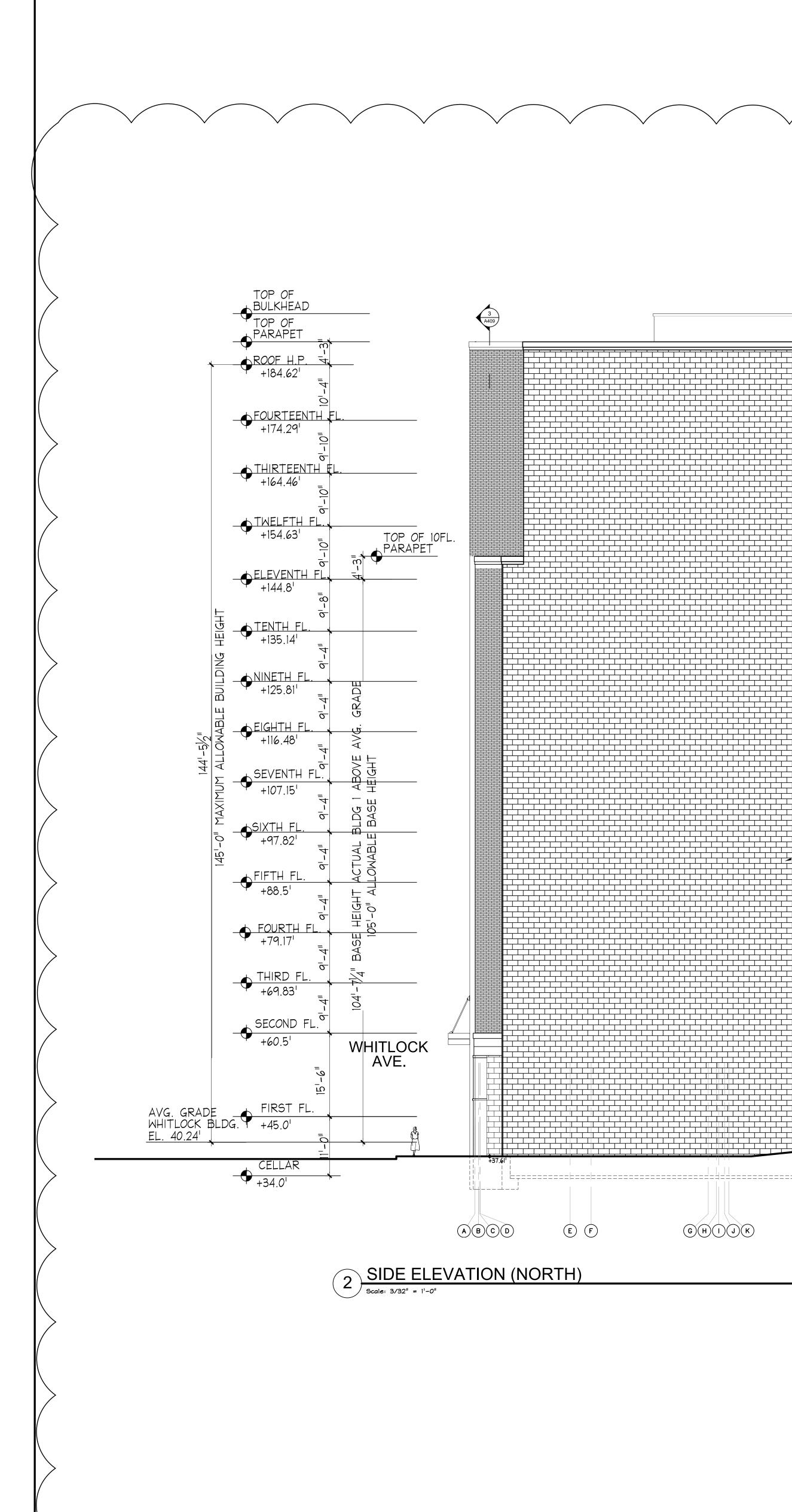
BUILDING 1

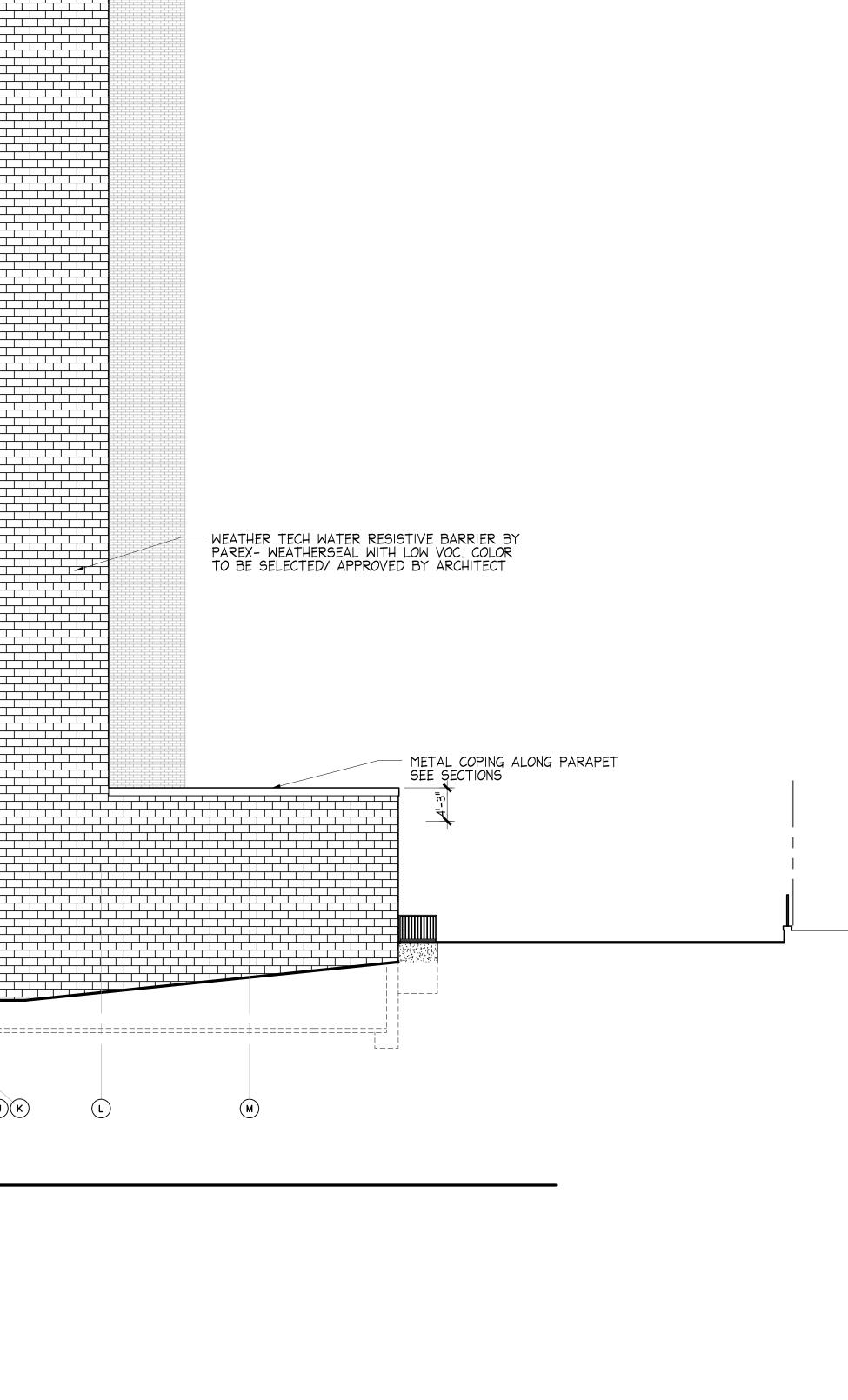
1 REAR ELEVATION (WEST) Scale: 3/32" = 1'-0"

		IDE BRICK CONTROL JOINTS @ EVERY CHANGE IN C COLOR (25'-0" MAX) TO BE COMPRESSIBLE JOINT D W/ BACKER ROD AND ELASTOMERIC SEALANT.		
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	ROVIDE INSWING         ASEMENT AT THIS         DCATION ONLY         20       19(18)         17       16         15       14         13       12(1)			



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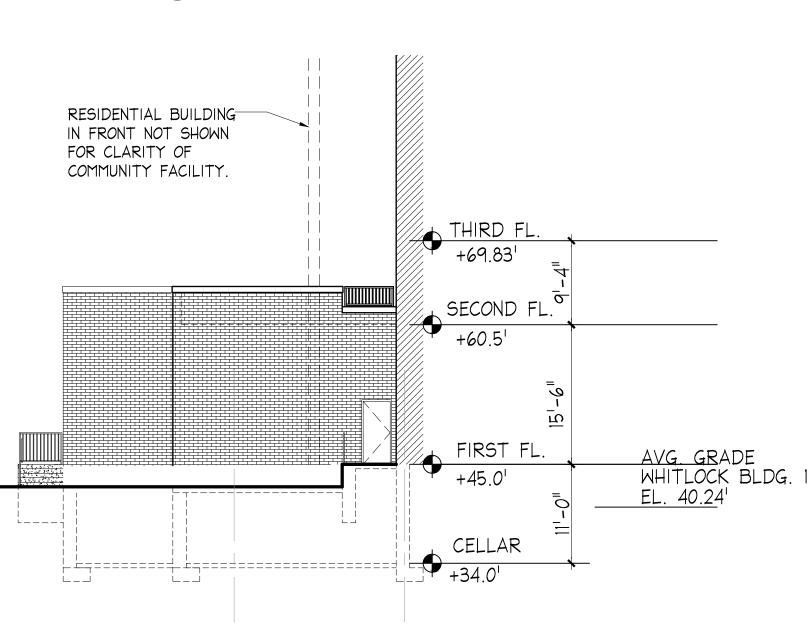


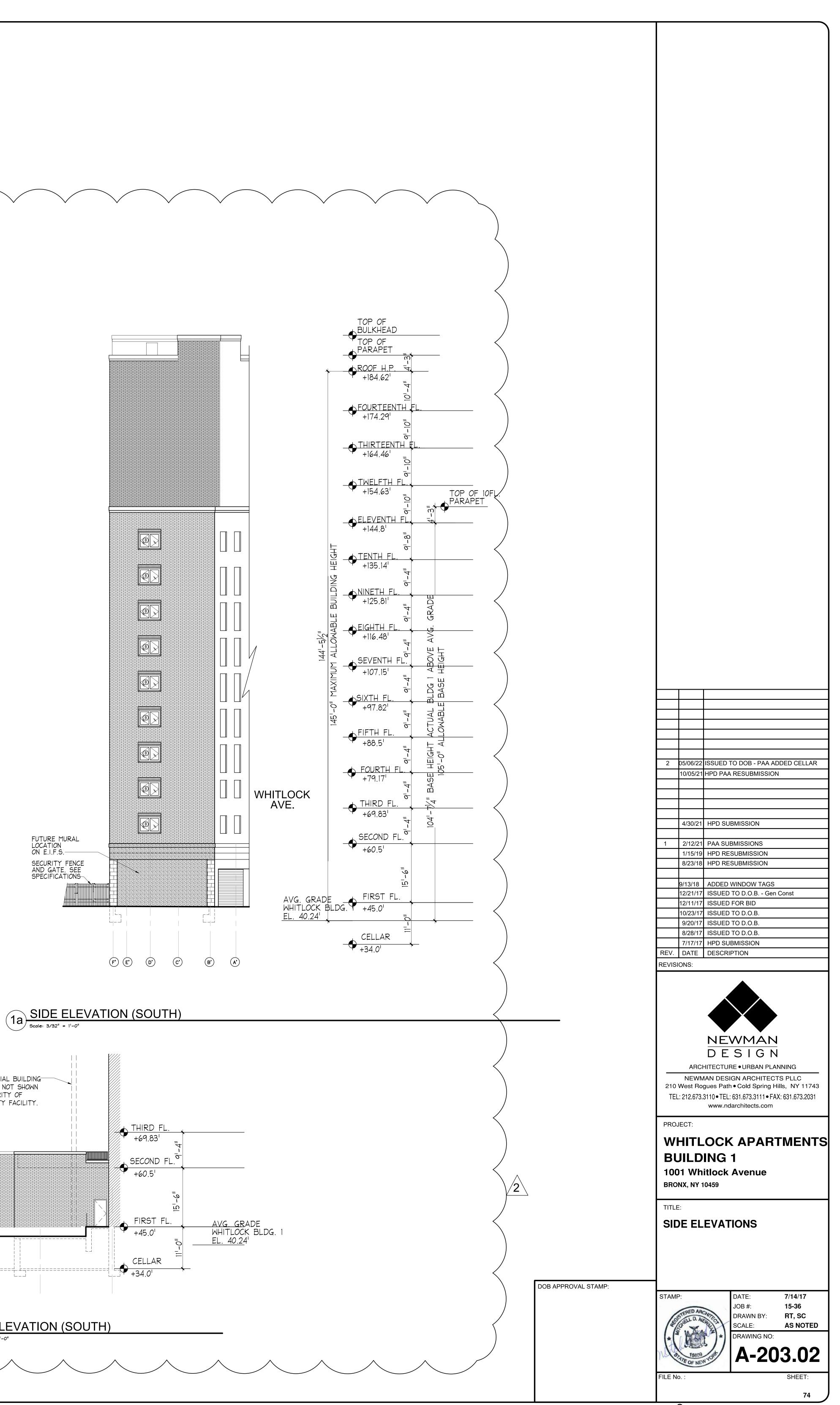


-EXSTING FENCE TO BE FIELD VERIFIED 

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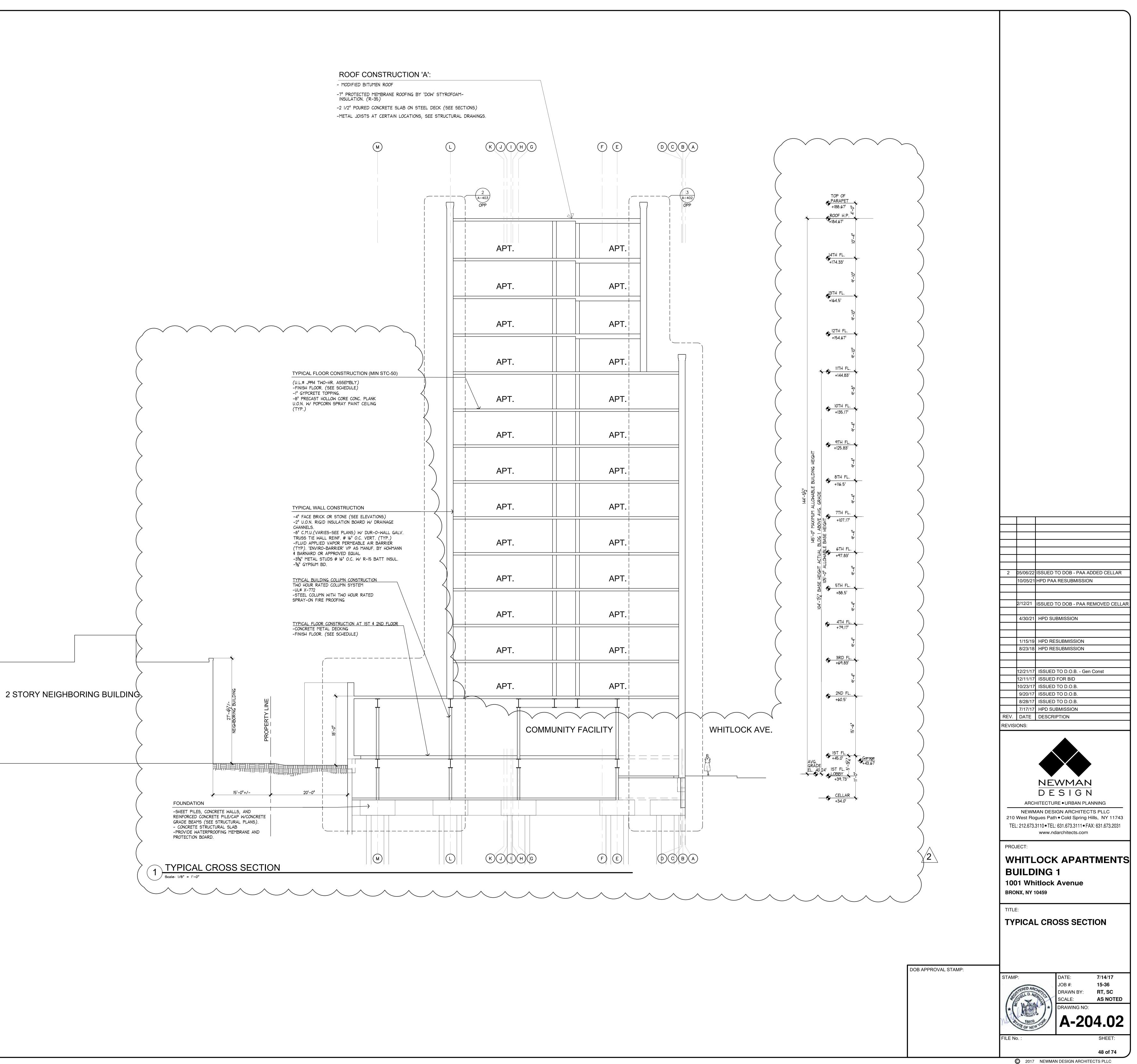
# 1b SIDE ELEVATION (SOUTH) Scale: 3/32" = 1'-0"

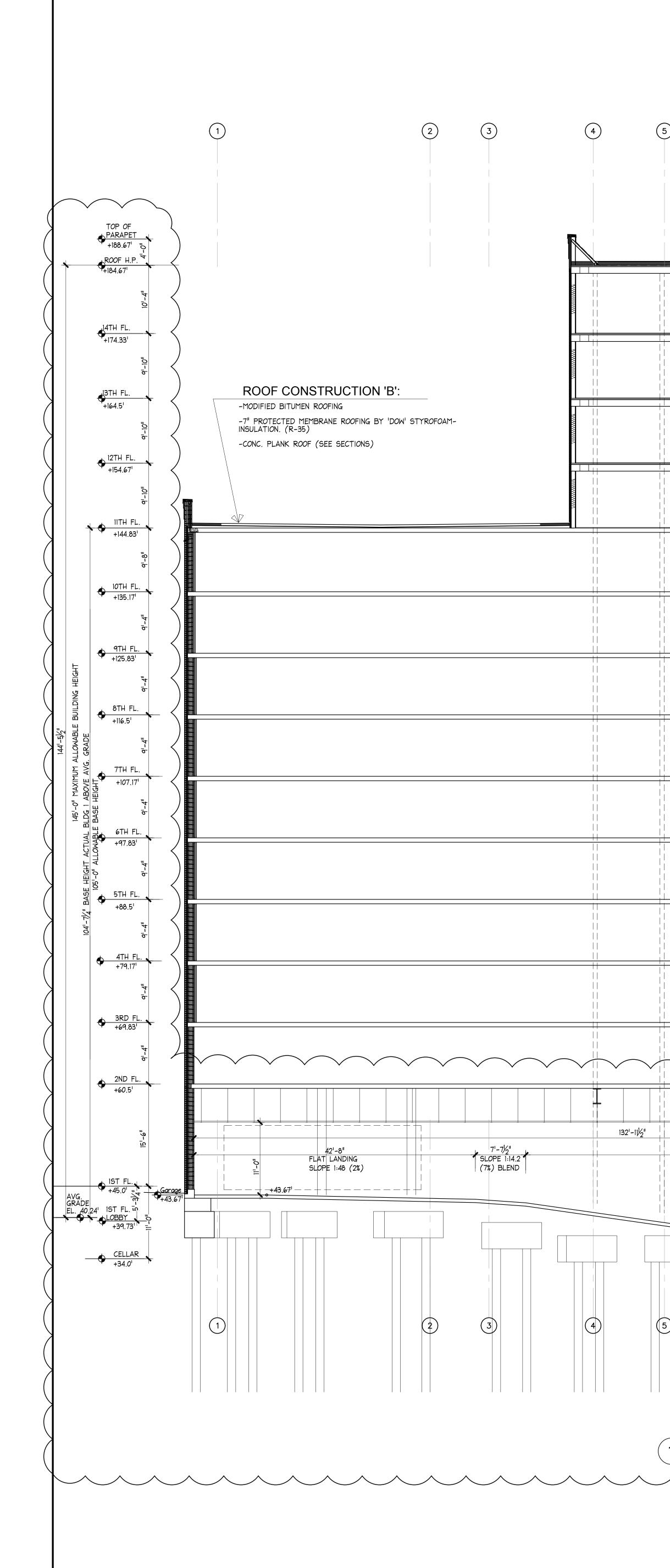




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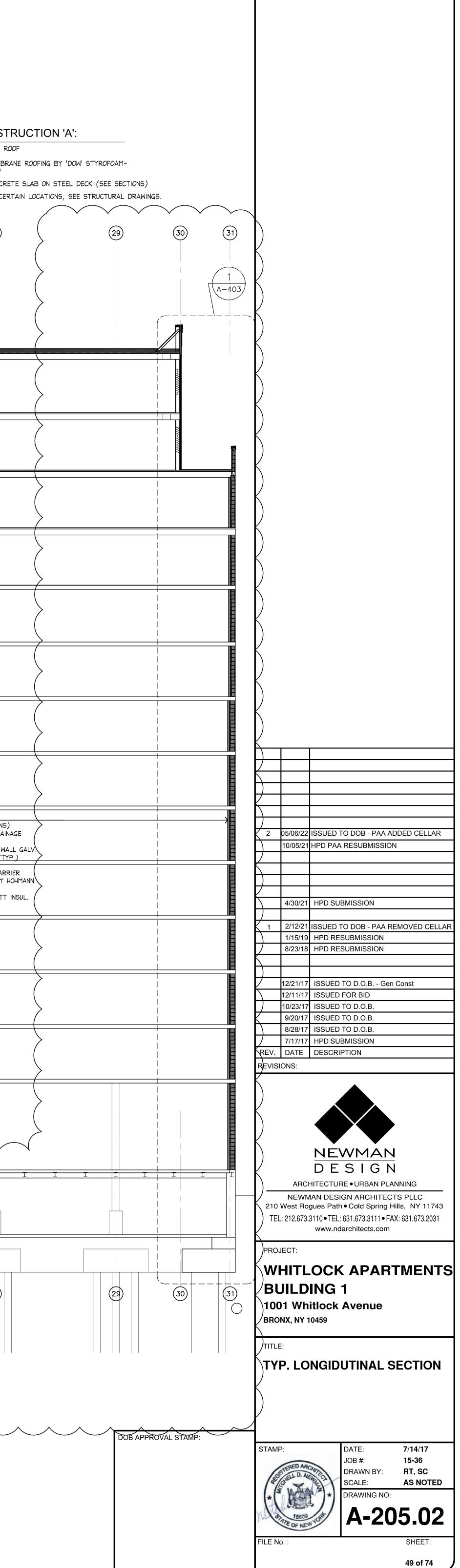
LONGFELLOW AVE.



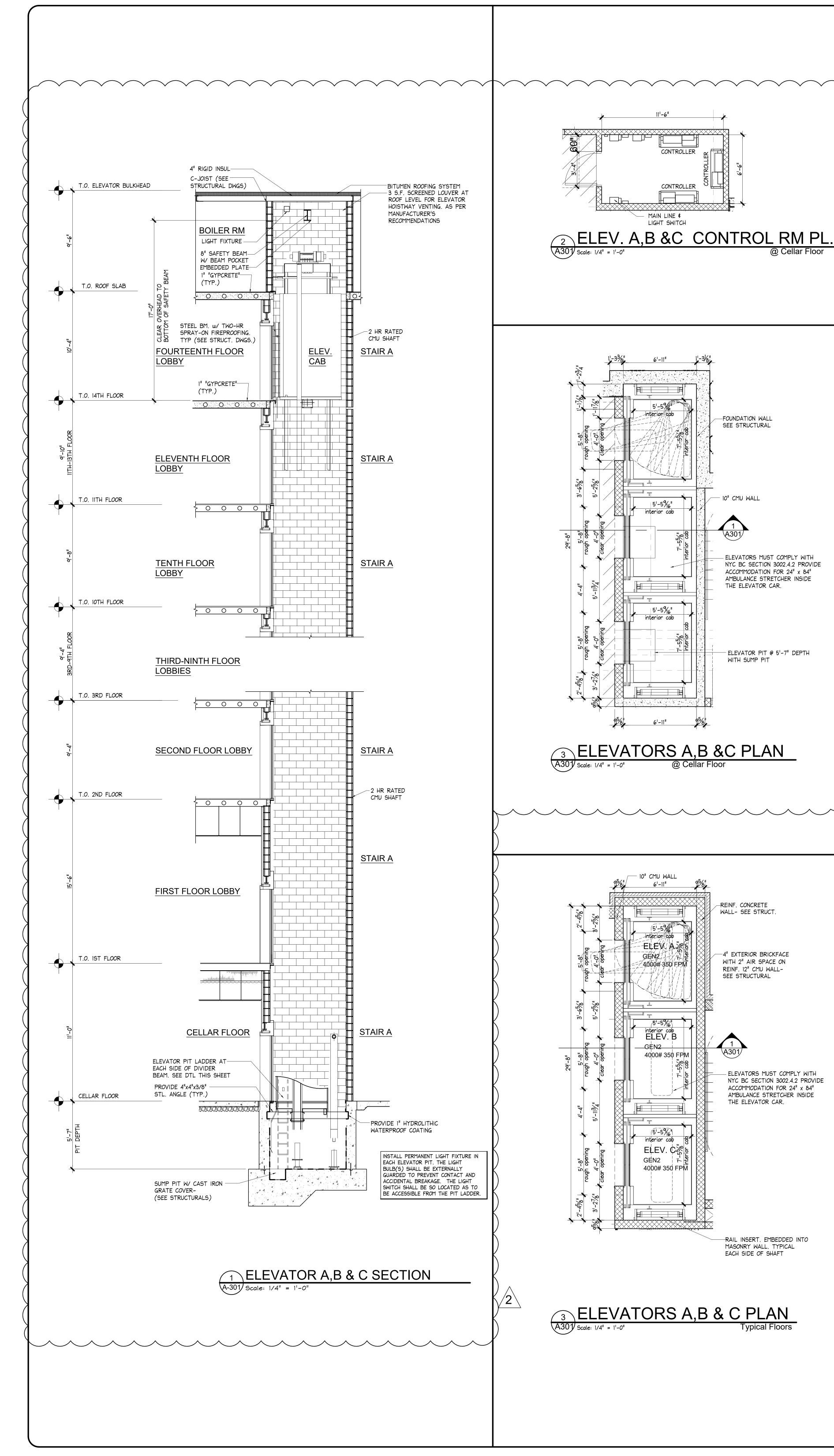


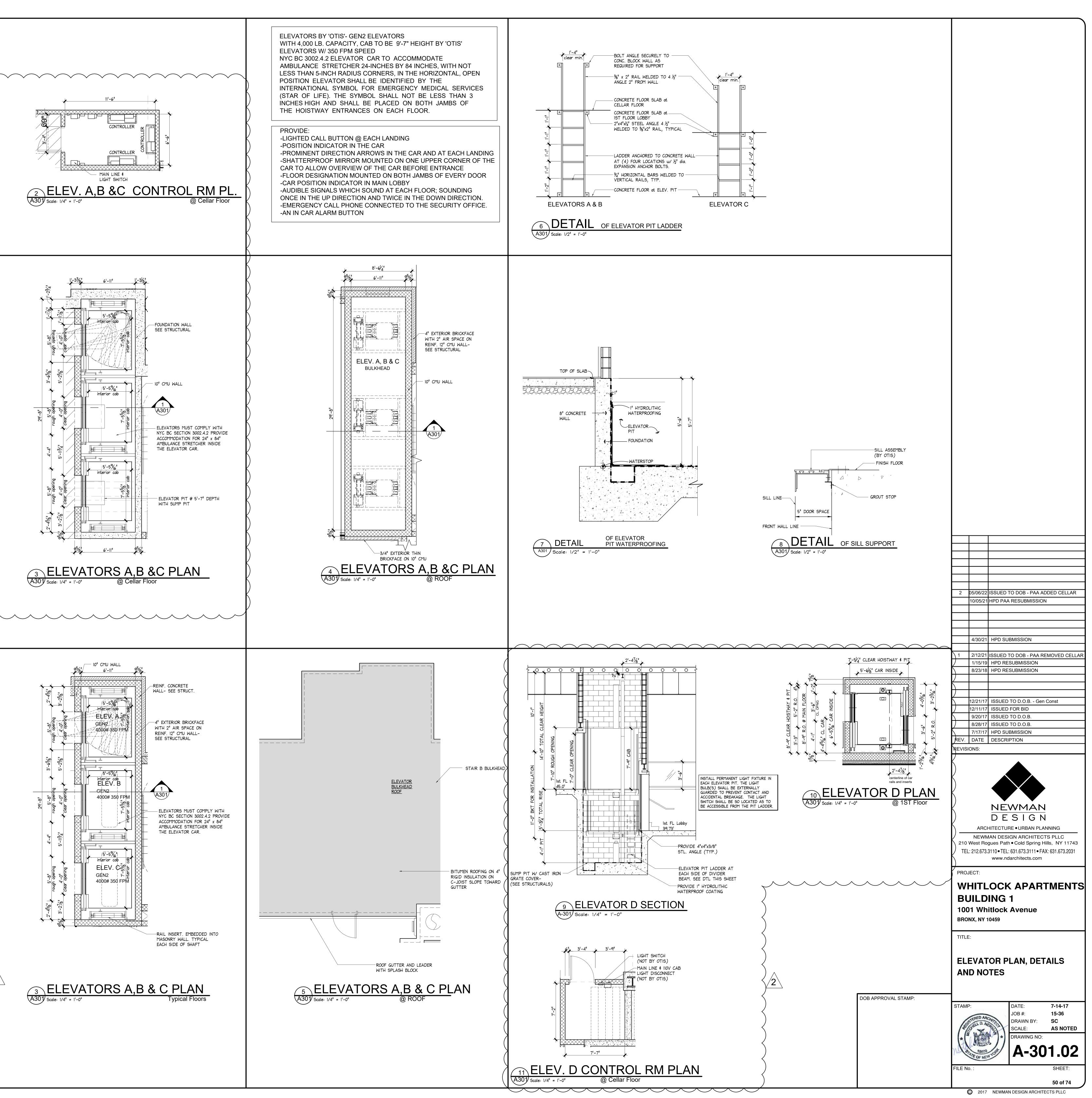
				- MODIF -7" PRO INSULA -2 1/2" 1	POURED CONCRETE SLAI	<b>TION 'A':</b> DFING BY 'DOW' STYROFOAM B ON STEEL DECK (SEE SE DCATIONS, SEE STRUCTURAI	ECTIONS)		-MODIFIED BITUMEN R	BRANE ROOFING BY 'DOW' ST	 YROFOAM			ROOF CONST - MODIFIED BITUMEN RO -7" PROTECTED MEMBR INSULATION. (R-35) -2 1/2" POURED CONCRE -METAL JOISTS AT CER
5	6	7	8	9	10 (11)12	(13) (14)	(15) (16)	(17)	(18)(19)	20	21)22)	23 24 25	26 27	(28)
					APARTI	MENT								
					APARTI	MENT								
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					APARTI	MENT					(U.L.# J994 TWO-+ -FINISH FLOOR. (9 -1" GYPCRETE TOF -8" PRECAST HOLI	EE SCHEDULE)		Y
         					APARTI	MENT								
       					APARTI	MENT								
					APARTI	MENT							TYPICAL WALL C	ONSTRUCTION
         					APARTI	MENT							-4" FACE BRICK O -2" U.O.N. RIGID II CHANNELS. -8" C.M.U.(VARIES TRUSS TIE WALL	R STONE (SEE ELEVATIONS) NSULATION BOARD W/ DRAIN -SEE PLANS) W/ DUR-O-WA REINF. @ 16" O.C. VERT. (TY APOR PERMEABLE AIR BARR
       					APARTI	MENT						COLUMN CONSTRUCTION	(TYP). 'ENVIRO-B∕ ∉ BARNARD OR AF	ARRIER' VP AS MANUF. BY H
           					APARTI						TWO HOUR RATED -UL# X-772 -STEEL COLUMN WI SPRAY-ON FIRE PR	COLUMN SYSTEM TH TWO HOUR RATED OOFING NSTRUCTION AT IST \$ 2ND FLOOR DECKING		
					APARTI									
54'-4" SLOPE 1:	T             7 (14%)		10'-2" SLOPE 1:14 (7%) BLEN			IRST FL. IIIIII	CLEAR-HT. AT H CLEAR-HT. AT H DRIVING AISLE # HC PARKING							
5	6		8	9				17		20		23 24 25	26 27	28
1 TYP Scale: 1/8		<u>GITUDINAL</u>	<u>SECTIO</u>	N										

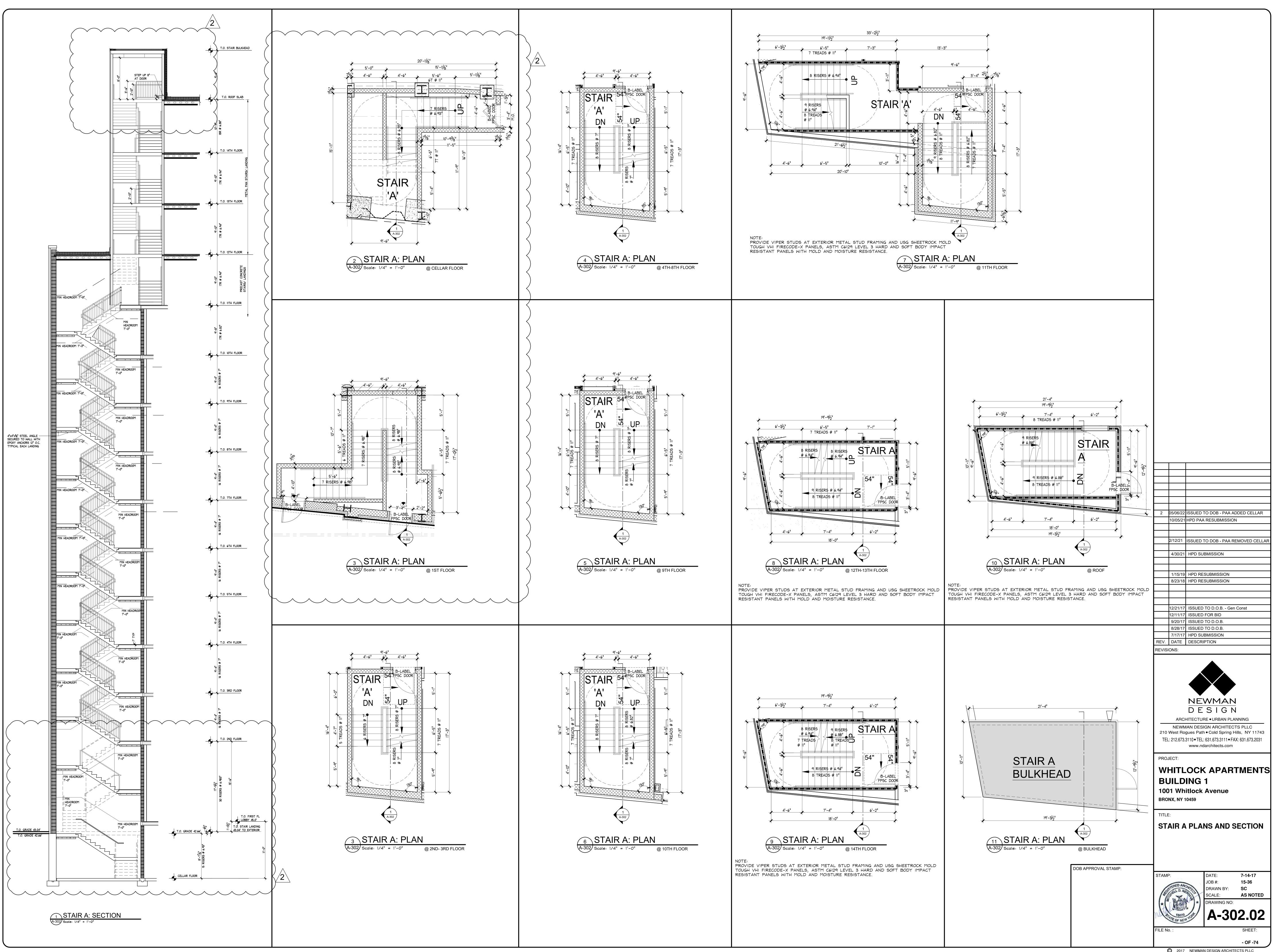
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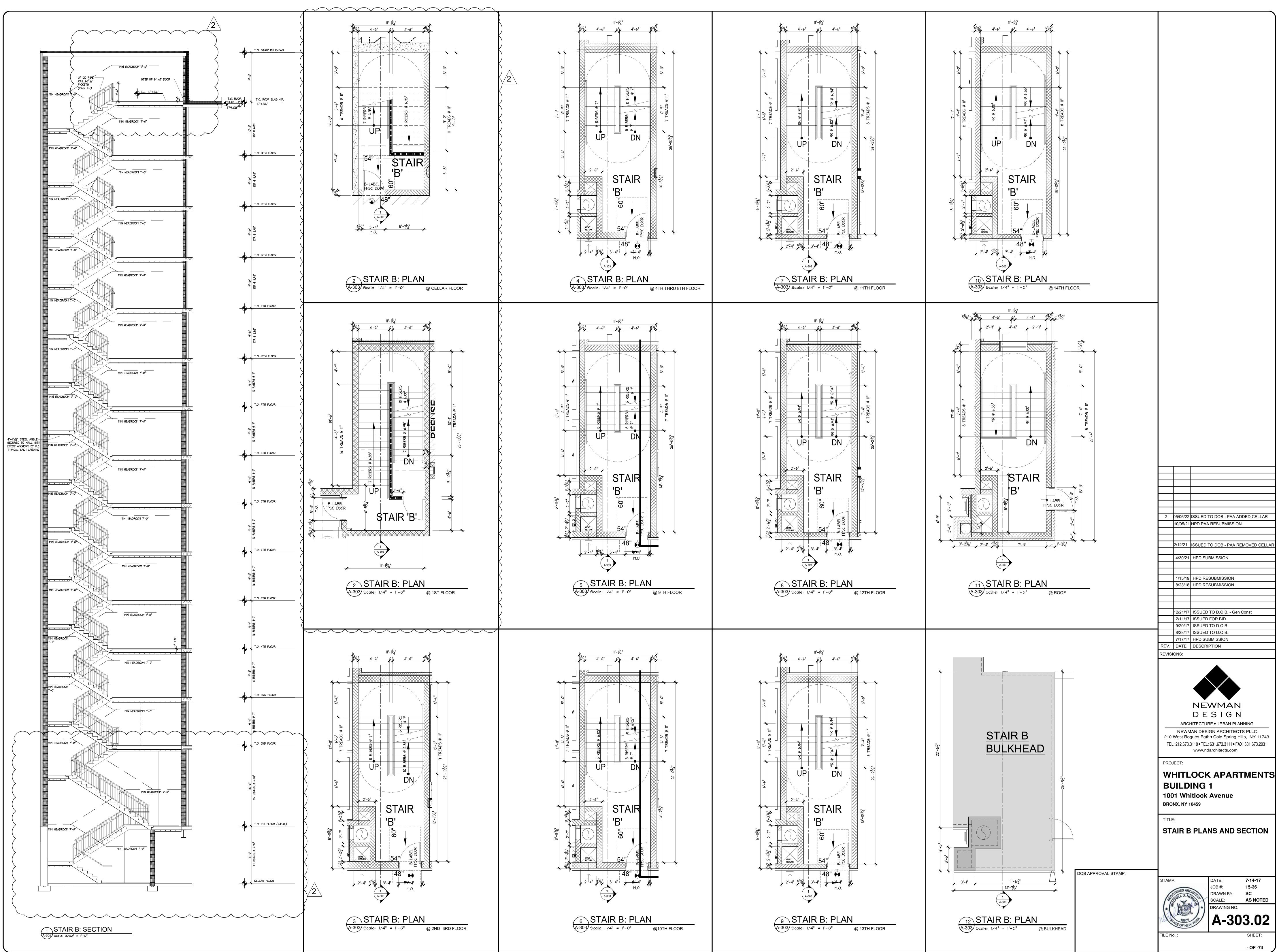
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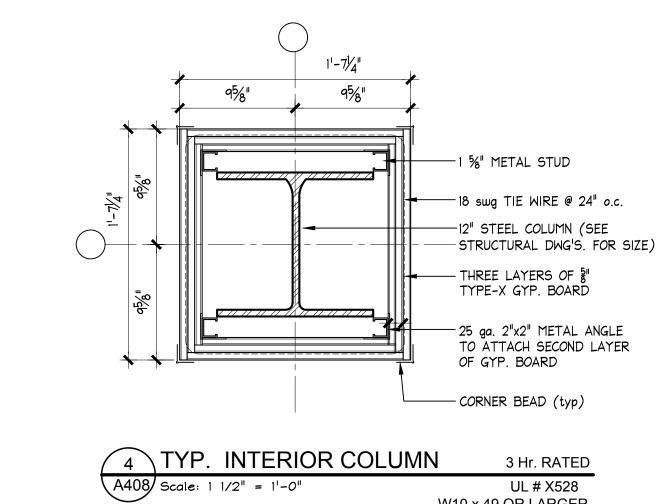




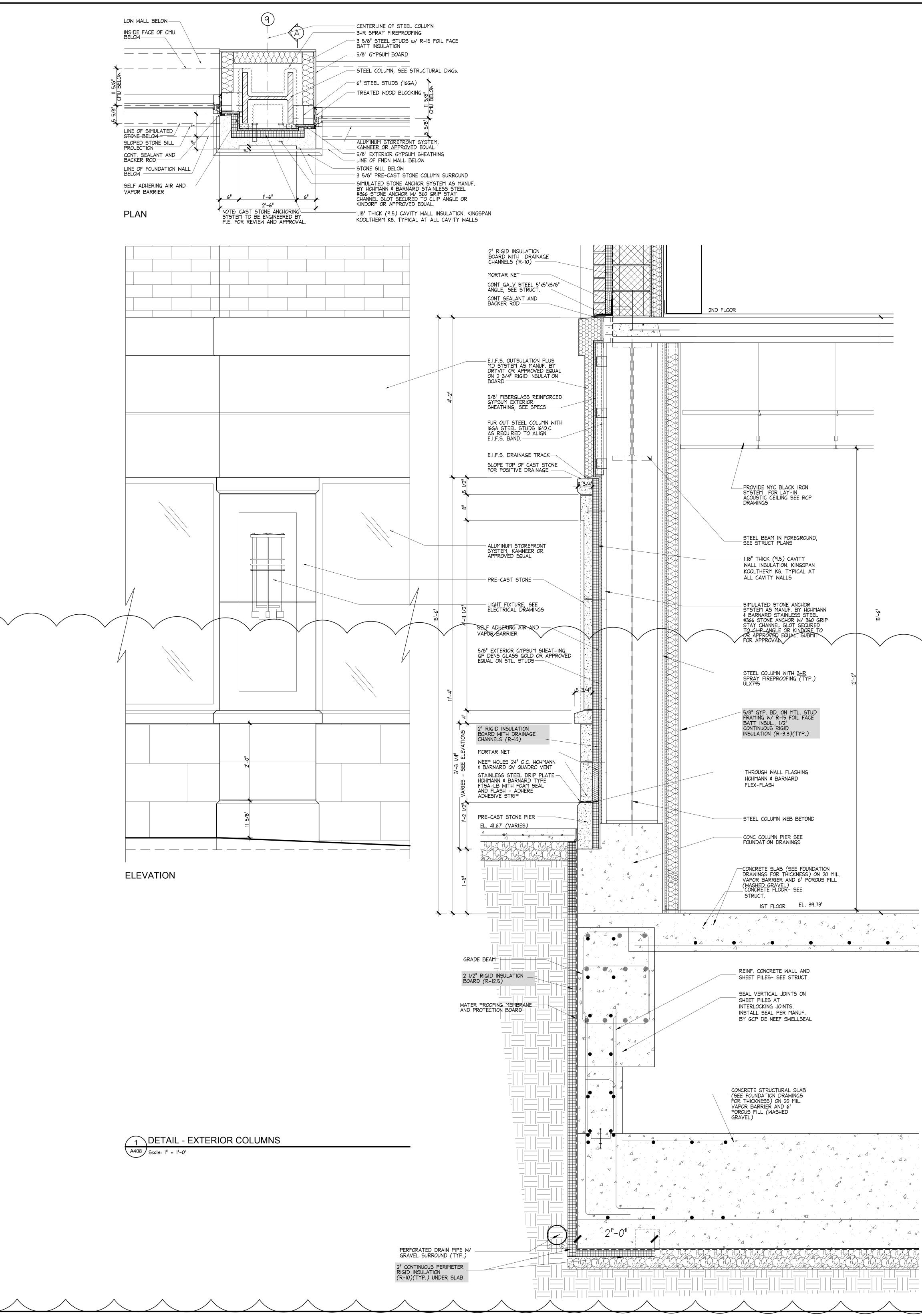
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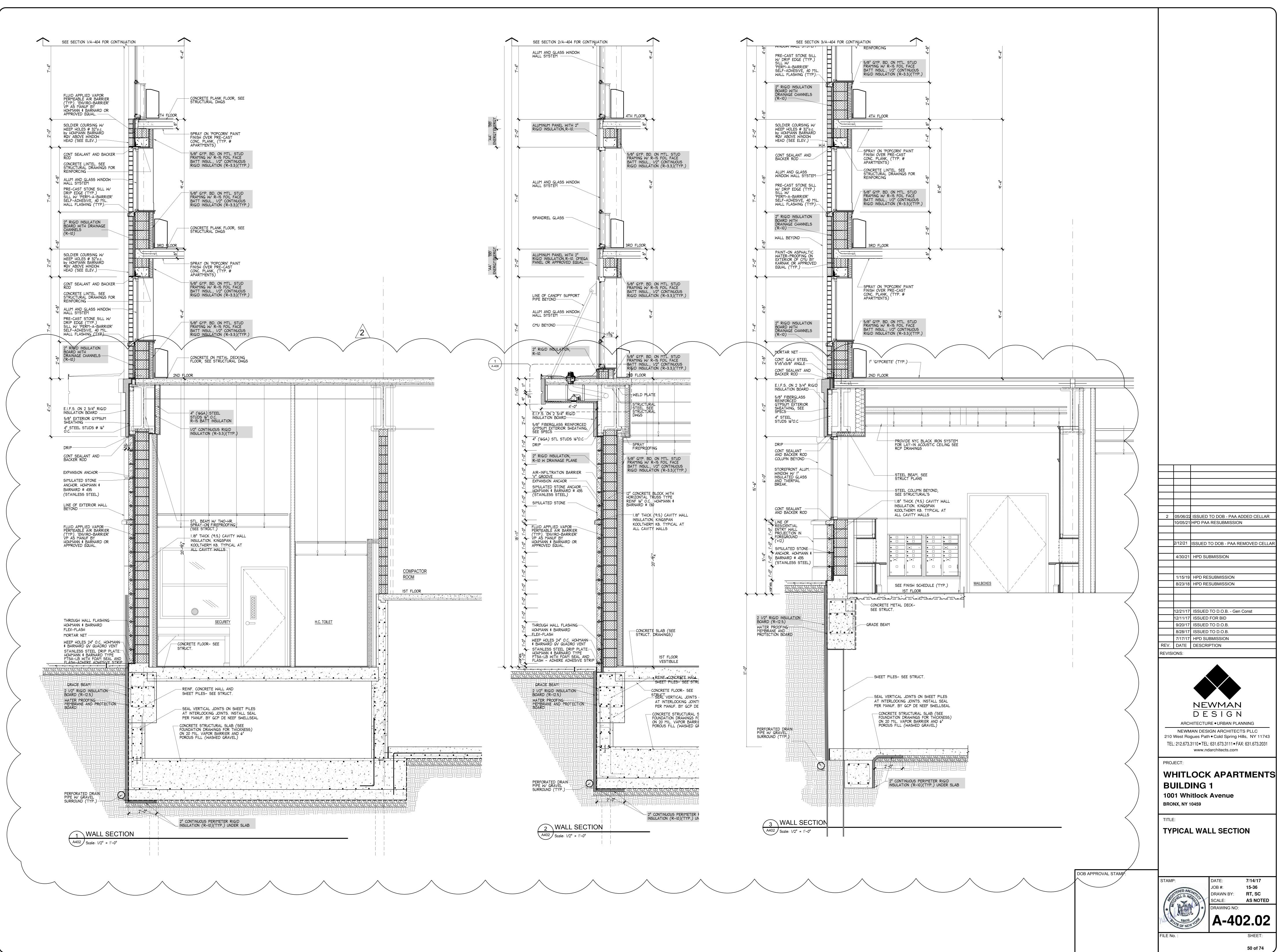


UL # X528 W10 x 49 OR LARGER

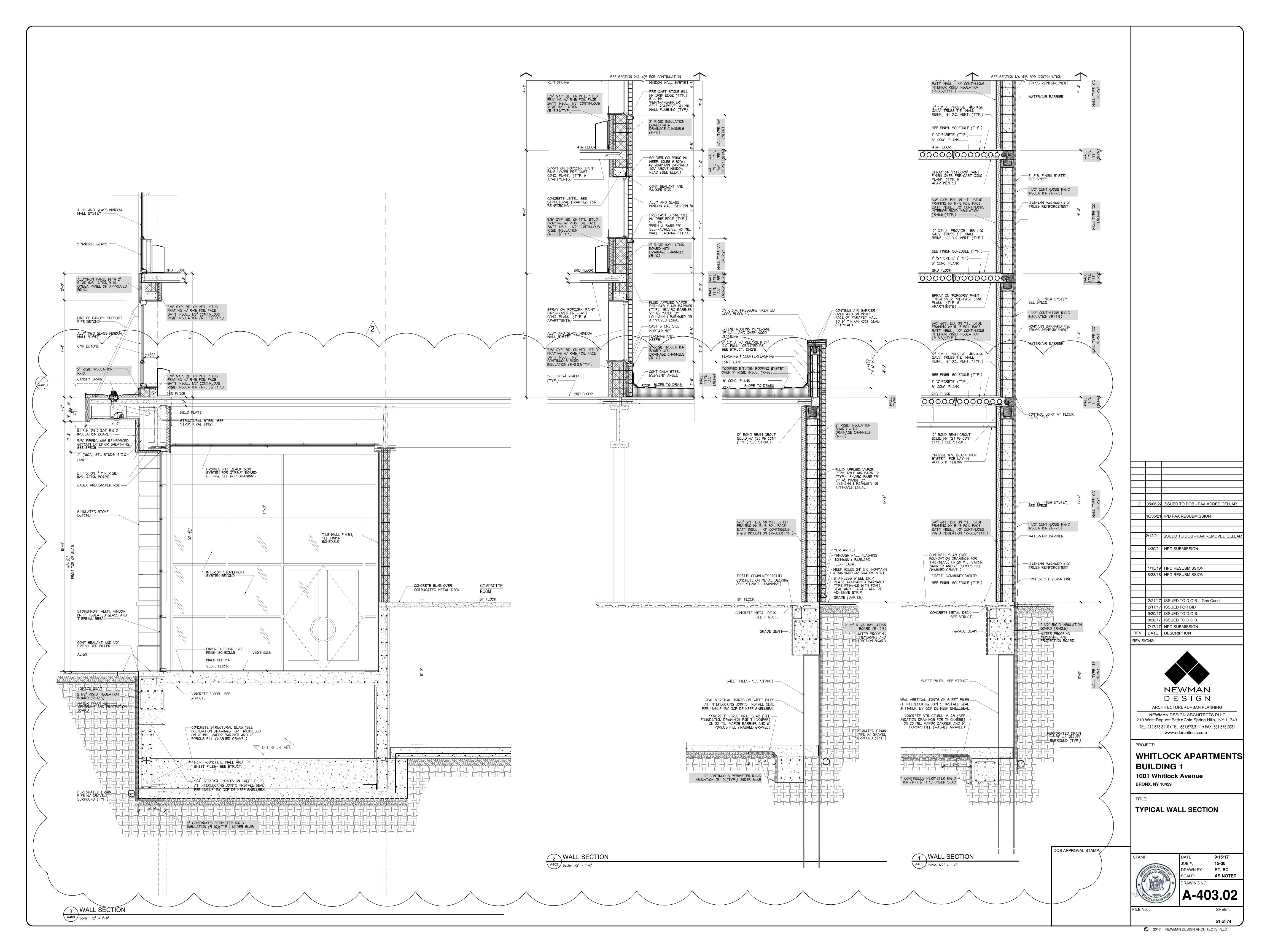


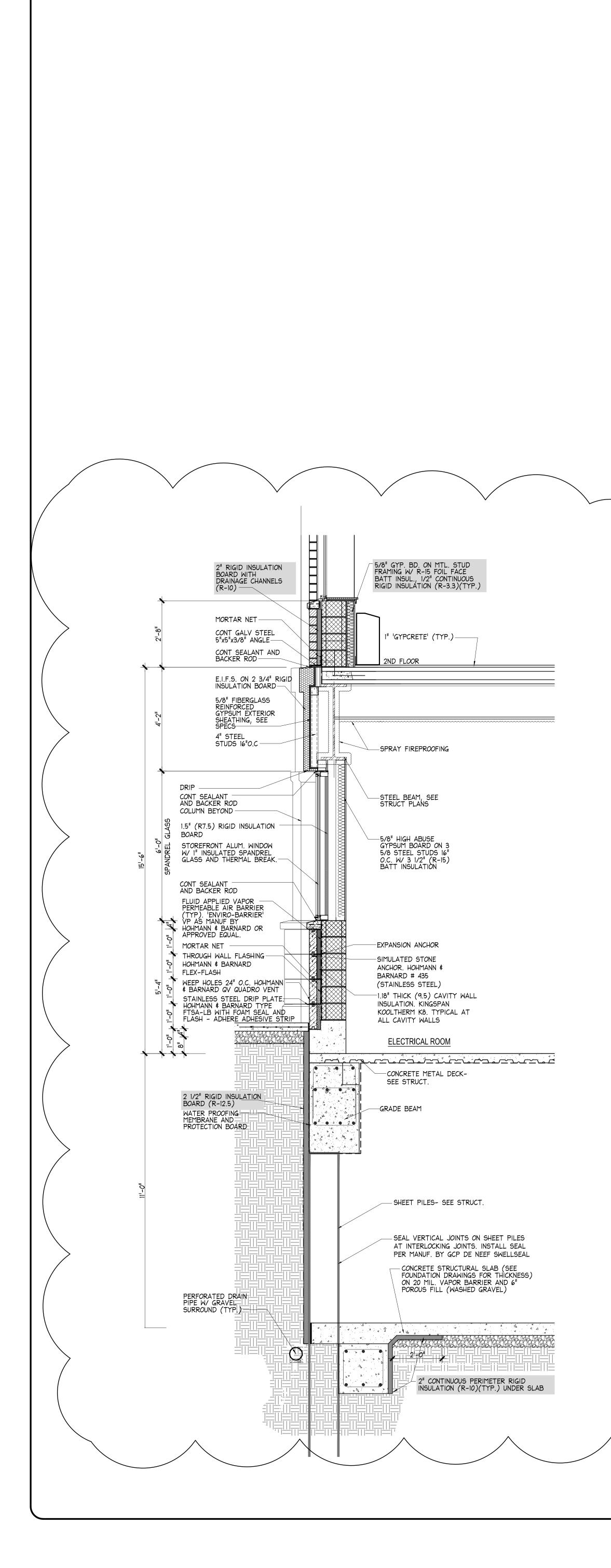
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		8/23/18		SUBMISSION	
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		9/20/17 8/28/17 7/17/17	ISSUED HPD SU	TO D.O.B. TO D.O.B. BMISSION	
	REV. REVISI	DATE ONS:	DESCRI	PTION	
		ARCI	DE	SIGI RE•URBAN PL	Ň
		West Ro	gues Path		CTS PLLC Hills, NY 11743 AX: 631.673.2031
	PROJ			larchitects.com	
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DOB APPROVAL STAMP:					
	STAMF	STERED ARC	HITE	DATE: JOB #: DRAWN BY:	7/14/17 15-36 RT
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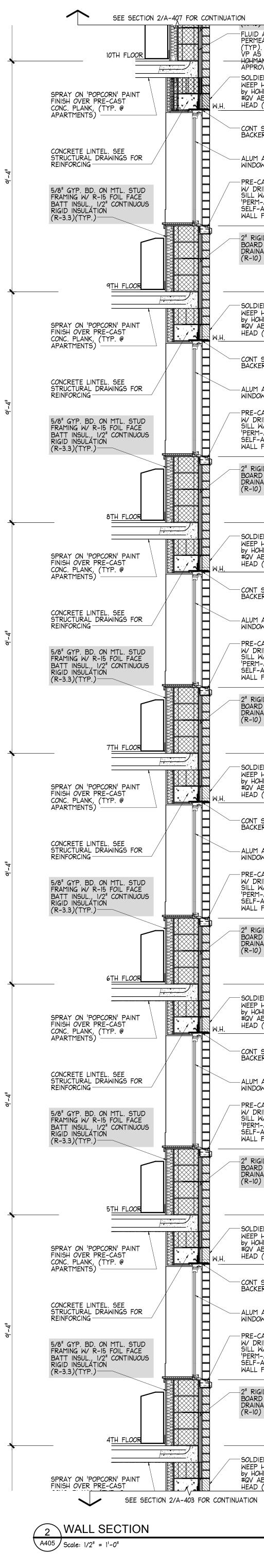
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$\bigcirc$	2017	NEWMAN DESIGN ARCHITECTS PLLC



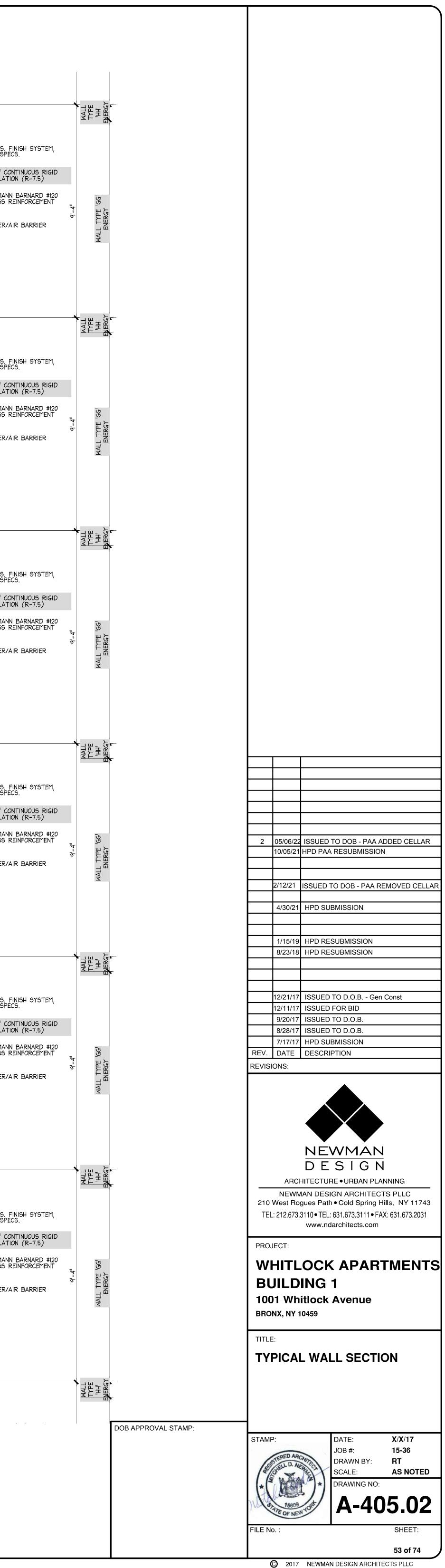
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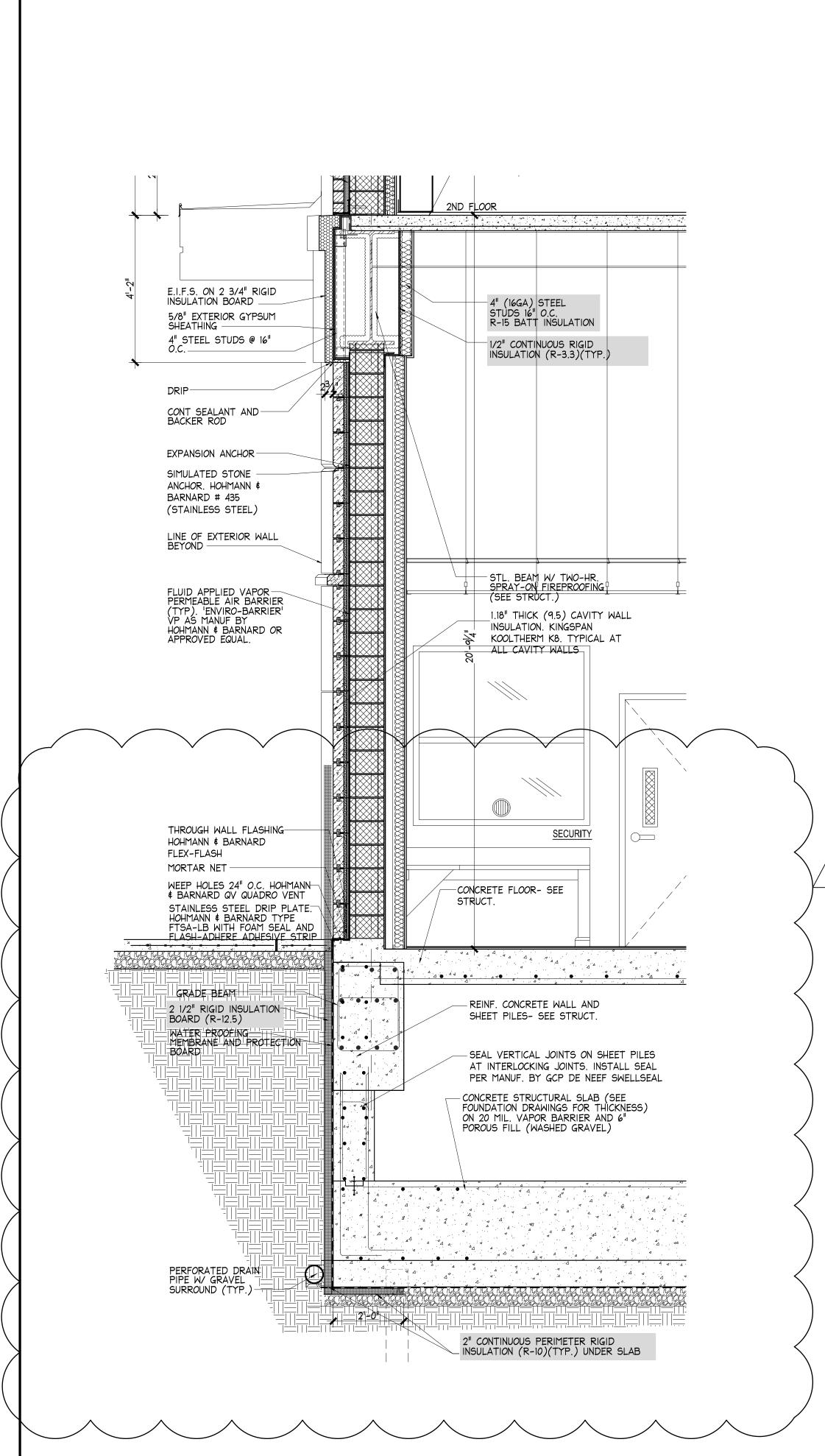


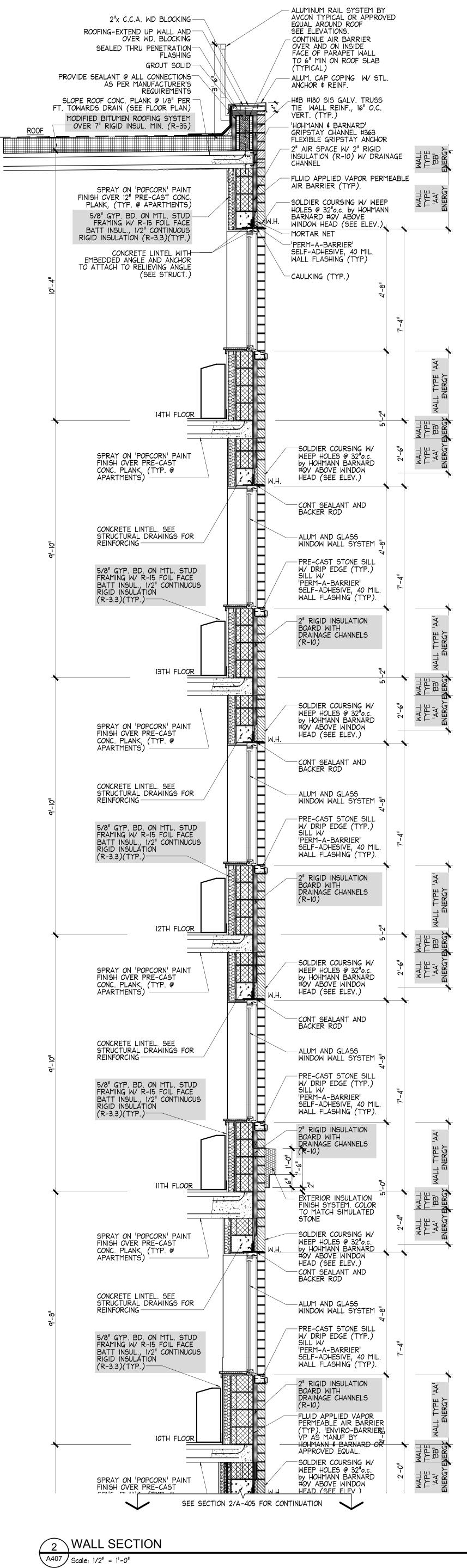




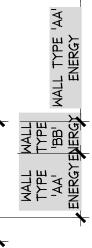
ID APPLIED VAPOR MEABLE AIR BARRIER P). 'ENVIRO-BARRIER' AS MANUF BY MANN & BARNARD OR ROVED EQUAL.		PE BE WALL TY GG ENER		SEE SECTION 1/A-407 FOR CONTINUATION 1" 'GYPCRETE' (TYP.) 8" CONC. PLANK 10TH FLOOR			
DIER COURSING W/ P HOLES @ 32"o.c. HOHMANN BARNARD / ABOVE WINDOW ND (SEE ELEV.)	2'-0"	MALL MALL TYPE TYPE 'AA' 'BB' ENERGYENERGY		SPRAY ON 'POPCORN' PAINT FINISH OVER PRE-CAST CONC.		∕ E.I.F.S.	F
IT SEALANT AND CKER ROD		r		PLANK, (TYP. @ APARTMENTS)		E.I.F.S. SEE SP 1 1/2" C INSULAT	:01
IM AND GLASS DOW WALL SYSTEM $\stackrel{-}{\sim}$ T E-CAST STONE SILL DRIP EDGE (TYP.) W/	=+			5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE BATT INSUL., 1/2" CONTINUOUS INTERIOR RIGID INSULATION (R-3.3)(TYP.)		HOHMAN TRUSS	R
RM-A-BARRIER' F-ADHESIVE, 40 MIL. L FLASHING (TYP).	7'-4"			10" C.M.U PROVIDE H&B #120 GALV. TRUSS TIE WALL REINF., 16" O.C. VERT. (TYP.)			
ARD WITH AINAGE CHANNELS 10) -89 -14		WALL TYPE ENERGY		SEE FINISH SCHEDULE (TYP.) 1" 'GYPCRETE' (TYP.) 8" CONC. PLANK 9TH FLOOR			
DIER COURSING W/ P HOLES @ 32"0.c. HOHMANN BARNARD ABOVE WINDOW D (SEE ELEV.)	2'-0"	MALL MALL TYPE TYPE 'AA' 'BB' ENERGYENERGY					_
IT SEALANT AND CKER ROD	,	<b>\</b>		FINISH OVER PRE-CAST CONC. PLANK, (TYP. @ APARTMENTS)		E.I.F.S. SEE SP 1 1/2" C INSULAT	:01
IM AND GLASS DOW WALL SYSTEM E-CAST STONE SILL DRIP EDGE (TYP.) W/ RM-A-BARRIER' .F-ADHESIVE, 40 MIL. .L FLASHING (TYP).	7'-4"			5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE BATT INSUL., 1/2" CONTINUOUS INTERIOR RIGID INSULATION (R-3.3)(TYP.) 12" C.M.U PROVIDE H&B #120 GALV. TRUSS TIE WALL		HOHMAN TRUSS	R
RIGID INSULATION ARD WITH AINAGE CHANNELS 10)	•	WALL TYPE 'AA' ENERGY		GALV. TRUSS THE WALL REINF., 16" O.C. VERT. (TYP.) SEE FINISH SCHEDULE (TYP.) 1" 'GYPCRETE' (TYP.)			
DIER COURSING W/	21-0"	HALL BB- BB-		8" CONC. PLANK			
HOHMANN BARNARD / ABOVE WINDOW AD (SEE ELEV.) IT SEALANT AND	2-	MALL TYPE 'AA' ENERGY		SPRAY ON 'POPCORN' PAINT FINISH OVER PRE-CAST CONC. PLANK, (TYP. @ APARTMENTS)		∕── E.I.F.S. SEE SP	
KER ROD IM AND GLASS DOW WALL SYSTEM TO T				5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE BATT INSUL., 1/2" CONTINUOUS INTERIOR RIGID INSULATION		HOHMAN TRUSS	
E-CAST STONE SILL DRIP EDGE (TYP.) L W/ RM-A-BARRIER' F-ADHESIVE, 40 MIL. LL FLASHING (TYP).	7'-4"	<b>\</b>		(R-3.3)(TYP.) 12" C.M.U PROVIDE H&B #120 GALV. TRUSS TIE WALL REINF., 16" O.C. VERT. (TYP.)		∕─── WATER/	'AI
RIGID INSULATION ARD WITH AINAGE CHANNELS 10)		MALL TYPE 'AA' ENERGY		SEE FINISH SCHEDULE (TYP.) 1" 'GYPCRETE' (TYP.) 8" CONC. PLANK			
DIER COURSING W/ P HOLES @ 32"o.c. HOHMANN BARNARD ABOVE WINDOW	2'-0"	MALL MALL TYPE TYPE 'AA' 'BB' W ENERGYENERGY					
AD (SEE ELEV.) IT SEALANT AND KER ROD				SPRAY ON 'POPCORN' PAINT FINISH OVER PRE-CAST CONC. PLANK, (TYP. @ APARTMENTS)		E.I.F.S. SEE SP	:01
IM AND GLASS DOW WALL SYSTEM T E-CAST STONE SILL DRIP EDGE (TYP.) L W/ RM-A-BARRIER'	7'-4"			5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE BATT INSUL., 1/2" CONTINUOUS INTERIOR RIGID INSULATION (R-3.3)(TYP.)		HOHMAN TRUSS	N R
F-ADHESIVE, 40 MIL. L FLASHING (TYP). RIGID INSULATION ARD WITH		×		12" C.M.U PROVIDE H&B #120 GALV. TRUSS TIE WALL REINF., 16" O.C. VERT. (TYP.) SEE FINISH SCHEDULE (TYP.)			
AINAGE CHANNELS 10) =0 -7		PE WALL TYPE		1" 'GYPCRETE' (TYP.) 8" CONC. PLANK 6TH FLOOR			
DIER COURSING W/ EP HOLES @ 32"0.c. HOHMANN BARNARD / ABOVE WINDOW AD (SEE ELEV.)	2'-0"	MALL MALL TYPE TYPE 'AA' 'BB' ENERGYENERGY		SPRAY ON 'POPCORN' PAINT FINISH OVER PRE-CAST CONC.		E.I.F.S. SEE SP	F
IT SEALANT AND CKER ROD				PLANK, (TYP. @ APARTMENTS)		1 1/2" C INSULAT	:01
IM AND GLASS DOW WALL SYSTEM F-CAST STONE SILL DRIP EDGE (TYP.) W A BADDIED	7'-4"			5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE BATT INSUL., 1/2" CONTINUOUS INTERIOR RIGID INSULATION (R-3.3)(TYP.)		HOHMAN TRUSS	R
RM-A-BARRIER' F-ADHESIVE, 40 MIL. LL FLASHING (TYP). RIGID INSULATION ARD WITH				12" C.M.U PROVIDE H&B #120 GALV. TRUSS TIE WALL REINF., 16" O.C. VERT. (TYP.)			
DIER COURSING W/		WALL TYPE 'BB' WALL TYPE ENERGY ENERGY	2	SEE FINISH SCHEDULE (TYP.) 1" 'GYPCRETE' (TYP.) 8" CONC. PLANK 5TH FLOOR 00000000000000000000000000000000000			
P HOLES @ 32 ¹¹ o.c. HOHMANN BARNARD ABOVE WINDOW AD (SEE ELEV.)	2'-0"			SPRAY ON 'POPCORN' PAINT FINISH OVER PRE-CAST CONC. PLANK, (TYP. @ APARTMENTS)		∕ E.I.F.S. SEE SP	F
IT SEALANT AND CKER ROD IM AND GLASS _				5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE		1 1/2" C INSULAT	ΓIC
DOW WALL SYSTEM TO E-CAST STONE SILL DRIP EDGE (TYP.) L W/ RM-A-BARRIER' .F-ADHESIVE, 40 MIL. L FLASHING (TYP).	7'-4"			12" C.M.U PROVIDE H&B #120 GALV. TRUSS TIE WALL			R
RIGID INSULATION ARD WITH AINAGE CHANNELS 10)	•	L TYPE 'AA' ENERGY		REINF., 16" O.C. VERT. (TYP.) SEE FINISH SCHEDULE (TYP.) 1" 'GYPCRETE' (TYP.)			
DIER COURSING W/	0=	MALL TYPE "BB" WAL	<u>.</u>	8" CONC. PLANK 4TH FLOOR			
HOHES & 32'0.C. HOHMANN BARNARD ABOVE WINDOW AD (SEE ELEV.)	2'-0"	MALL TYPE 'AA' ENERGY	$\checkmark$	SEE SECTION 1/A-403 FOR CONTINUATION	N •	$\rightarrow$	
			<u> </u>	05 Scale: 1/2" = 1'-0"			





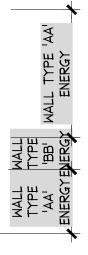










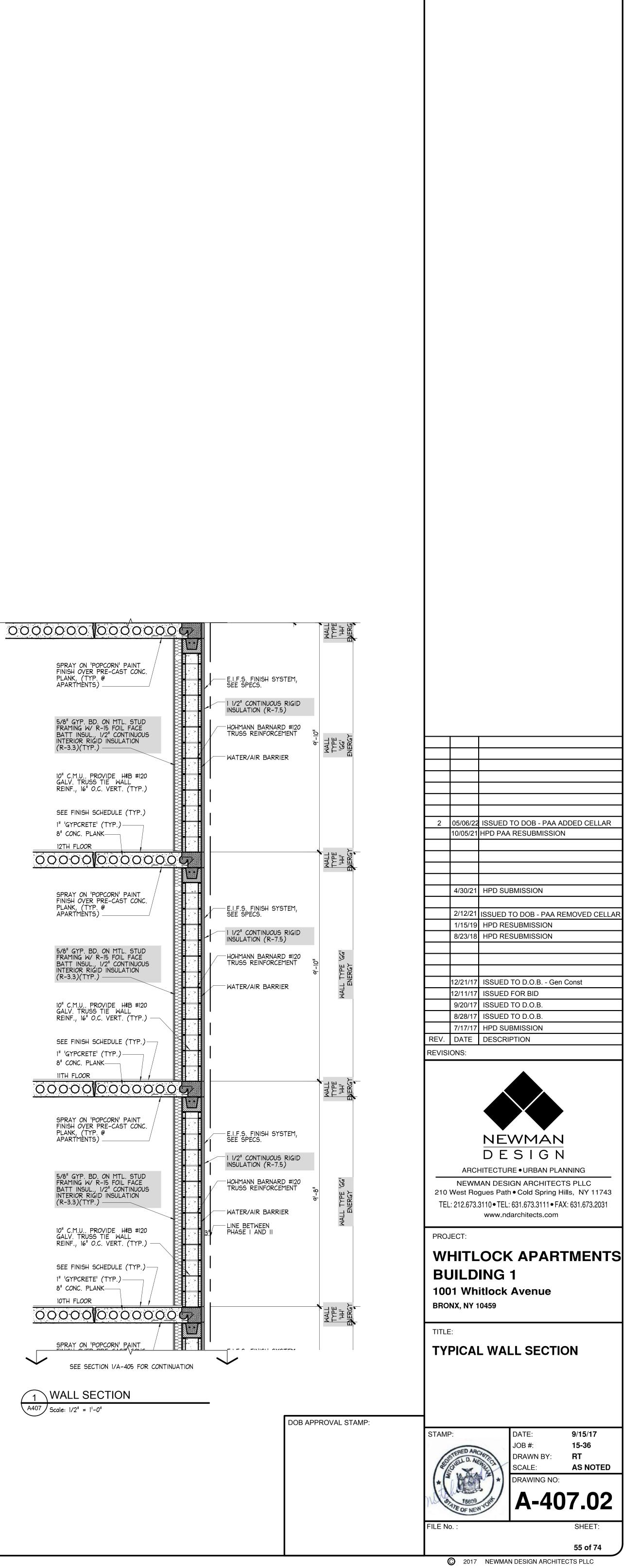


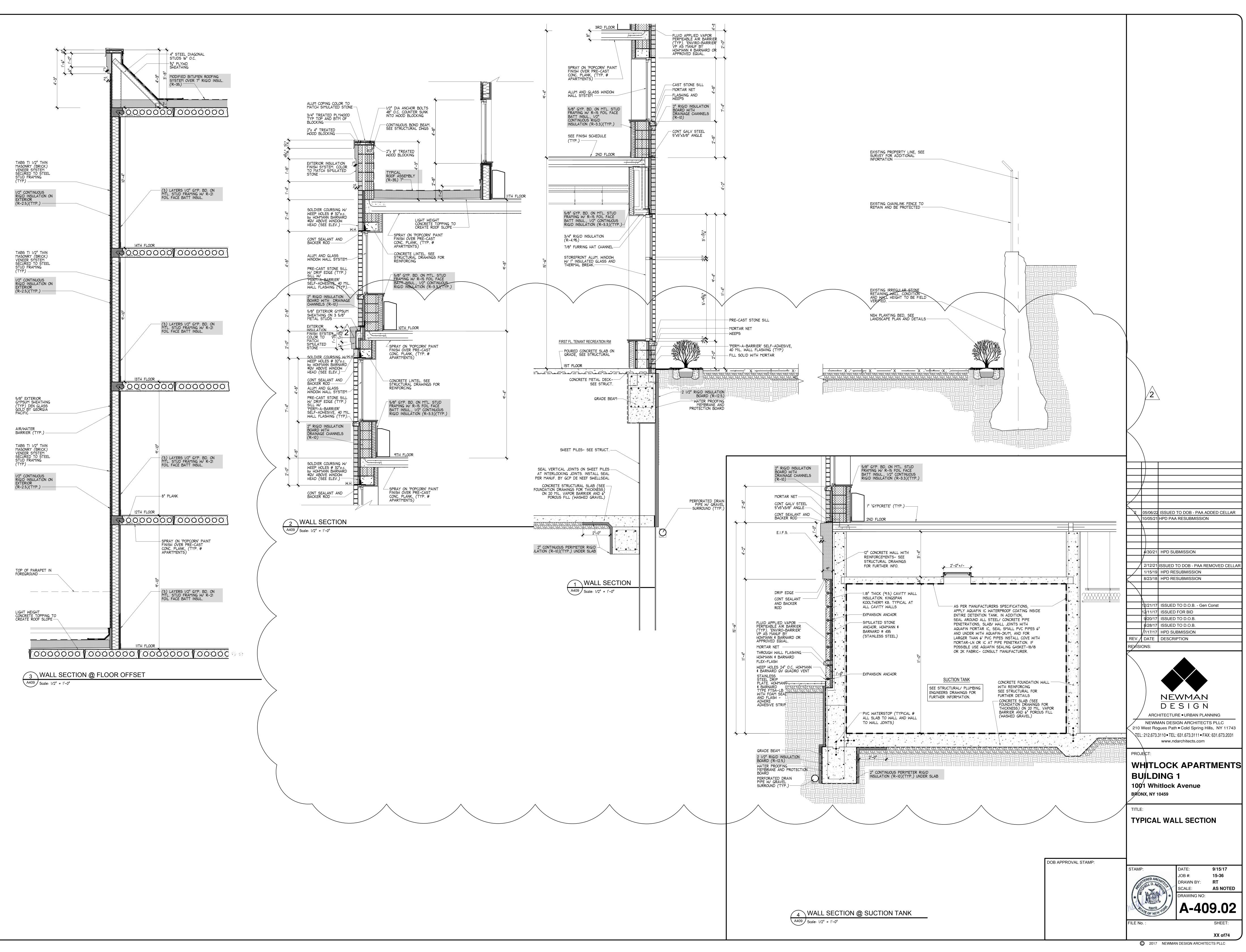


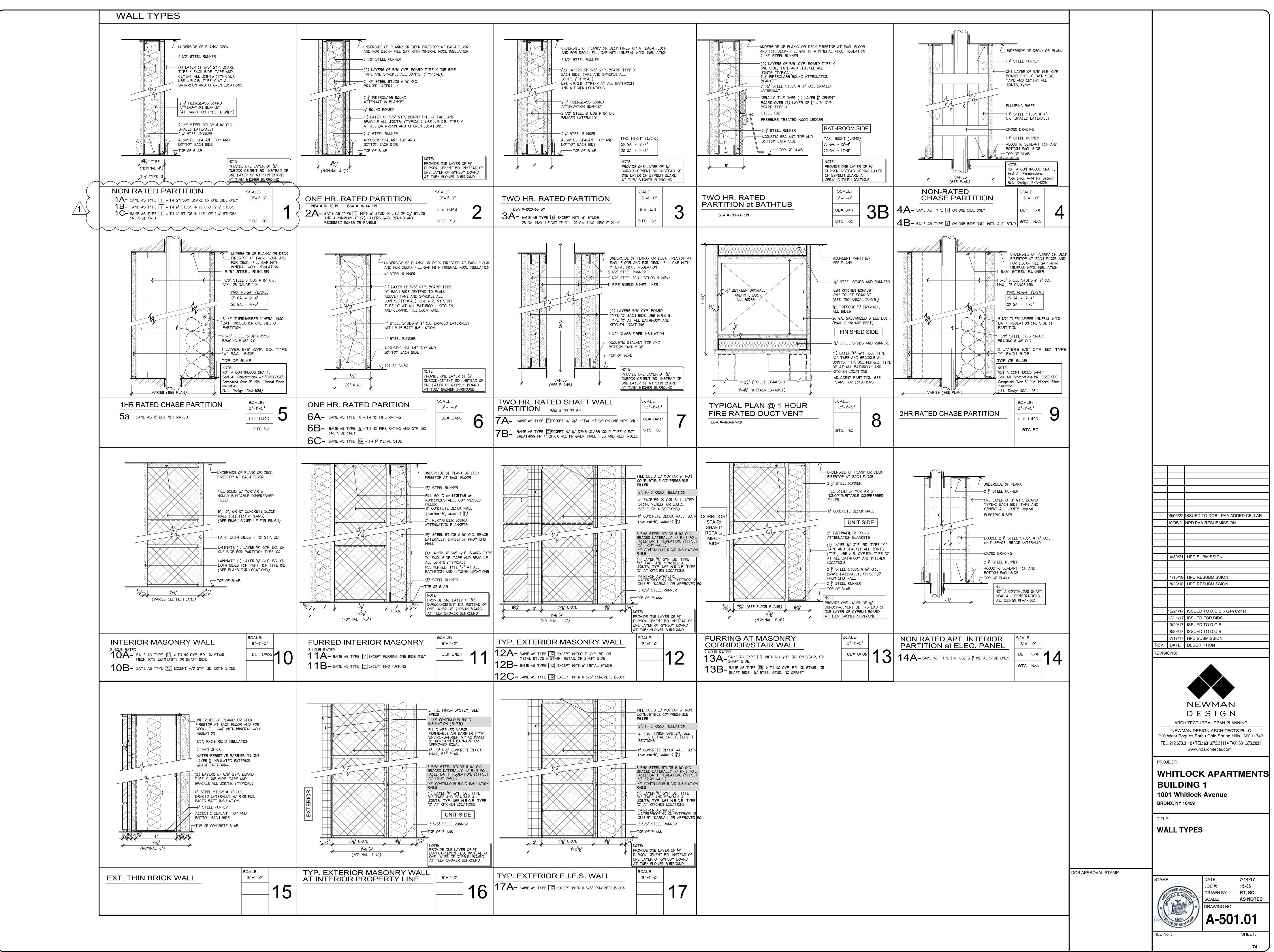
SPRAY ON 'POPCORN' PAINT FINISH OVER PRE-CAST CONC. PLANK, (TYP. @ APARTMENTS) 5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE BATT INSUL., 1/2" CONTINUOUS INTERIOR RIGID INSULATION (R-3.3)(TYP.) 10" C.M.U.. PROVIDE H¢B #120 GALV. TRUSS TIE WALL REINF., 16" O.C. VERT. (TYP.) SEE FINISH SCHEDULE (TYP.) 1" 'GYPCRETE' (TYP.)— SPRAY ON 'POPCORN' PAINT FINISH OVER PRE-CAST CONC. PLANK, (TYP. @ APARTMENTS) _____ 5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE BATT INSUL., 1/2" CONTINUOUS INTERIOR RIGID INSULATION (R-3.3)(TYP.) 10" C.M.U.. PROVIDE H&B #120 GALV. TRUSS TIE WALL REINF., 16" O.C. VERT. (TYP.) -SEE FINISH SCHEDULE (TYP.)-1" 'GYPCRETE' (TYP.)— 8" CONC. PLANK-11TH FLOOR 0000000000 SPRAY ON 'POPCORN' PAINT FINISH OVER PRE-CAST CONC. PLANK, (TYP. @ APARTMENTS) _____ 5/8" GYP. BD. ON MTL. STUD FRAMING W/ R-15 FOIL FACE BATT INSUL., 1/2" CONTINUOUS INTERIOR RIGID INSULATION (R-3.3)(TYP.) 10" C.M.U.. PROVIDE H\$B #120 GALV. TRUSS TIE WALL REINF., 16" O.C. VERT. (TYP.) — SEE FINISH SCHEDULE (TYP.)-1" 'GYPCRETE' (TYP.)----8" CONC. PLANK-10TH FLOOR 0000000000000000

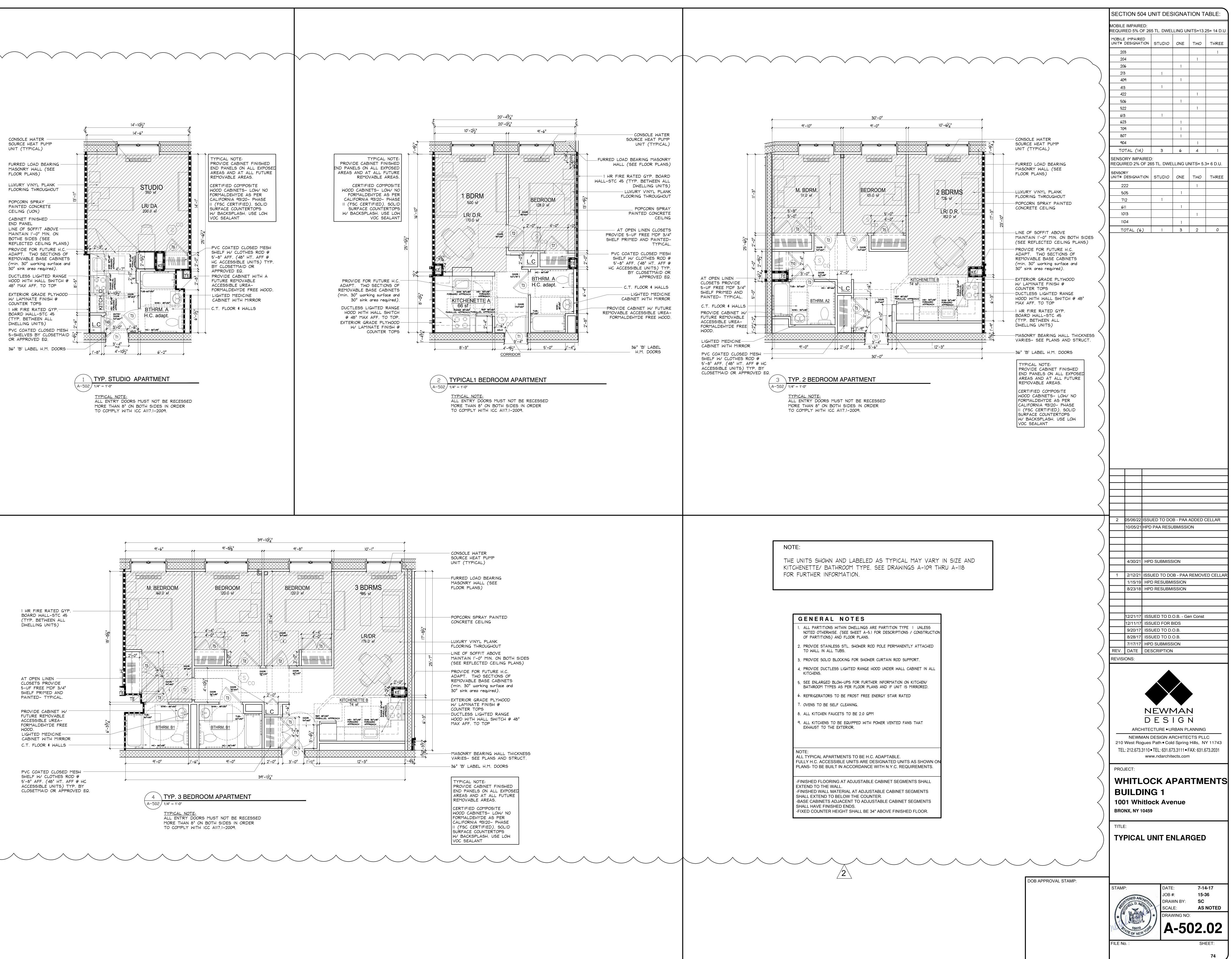
SPRAY ON 'POPCORN' PAINT  $\checkmark$ SEE SECTION 1/A-405 FOR CONTINUATION

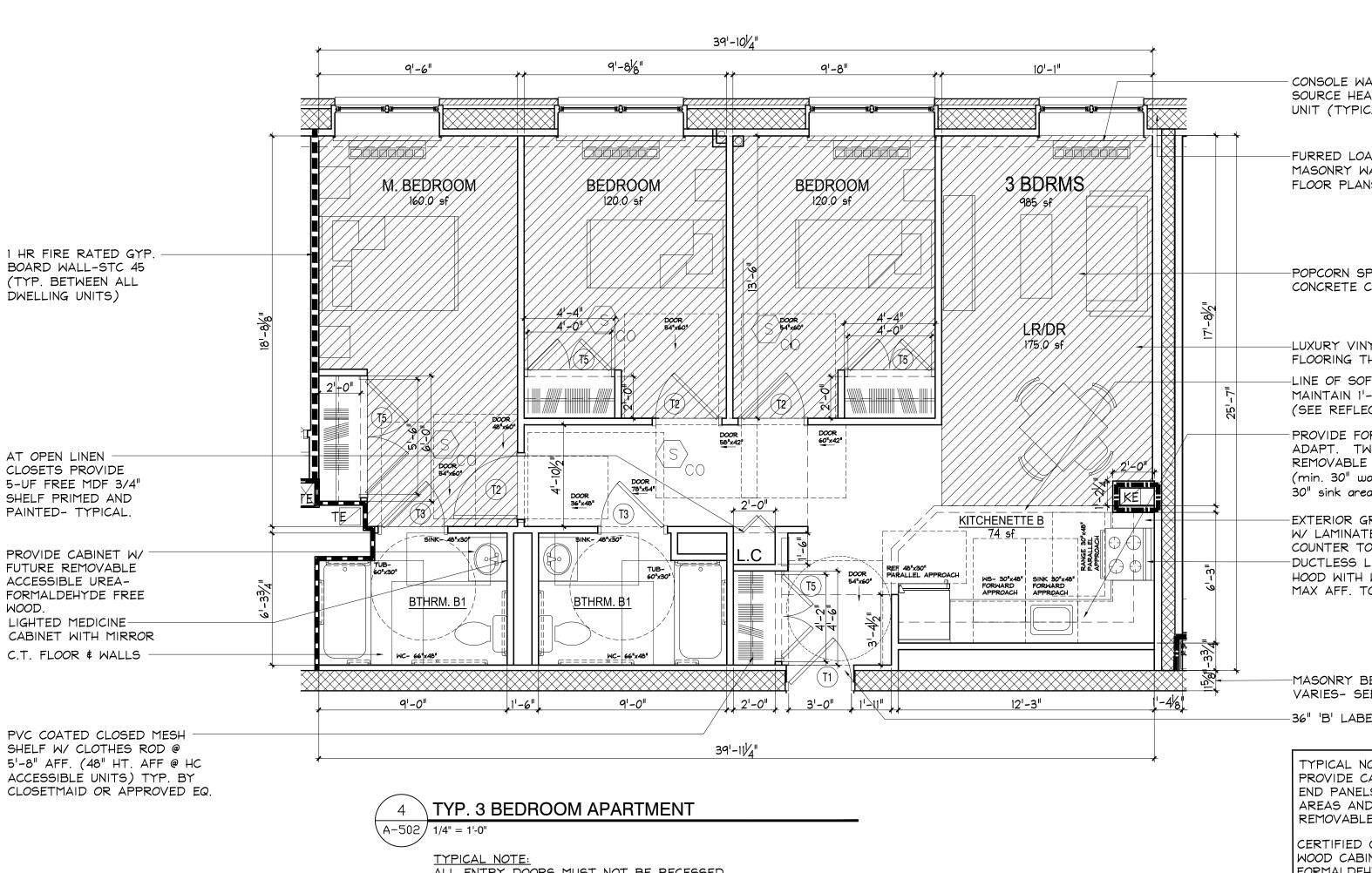
1 WALL SECTION A407 Scale: 1/2" = 1'-0"











-FURRED LOAD BEARING MASONRY WALL (SEE FLOOR PLANS)
 -POPCORN SPRAY PAINTED CONCRETE CEILING
 -LUXURY VINYL PLANK FLOORING THROUGHOUT
 -LINE OF SOFFIT ABOVE MAINTAIN 1'-0" MIN. ON BOTH SIDE (SEE REFLECTED CEILING PLANS)
 PROVIDE FOR FUTURE H.C. ADAPT. TWO SECTIONS OF REMOVABLE BASE CABINETS (min. 30" working surface and 30" sink area required).
EXTERIOR GRADE PLYWOOD

CELLA	AR FLOOR		D	OOR		FR	AME					
NO.	LOCATION	SIZE	TYPE	THK.	MAT.	JAMB	MAT.	CNST.	F.R.	HDWF	SADDLE	REMARKS
001	STAIR A	3'-0" x 7'-0"	В	1 3/4"	ΗM	4B	НM	WELD	В		TI	FPSC, 90 MINUTE 'B'
002	BIKE STORAGE	3'-0" x 7'-0"	A	1 3/4"	ΗM	4B	HM	WELD	В		TI	FPSC, 90 MINUTE 'B'
003 004	STAIR B BIKE ST <i>O</i> RAGE	3'-0" x 7'-0" 3'-0" x 7'-0"	B	1 3/4" 1 3/4"	HM HM	4B 4B	HM HM	WELD WELD	B B	RE SP	T1 T1	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
005	ELEVATOR A, B, C CONTROL ROOM	3'-0" x 7'-0"	A	1 3/4"	HM	4B	HM	WELD	B	L L HARDWARE	T1	FPSC, 90 MINUTE 'B'
006	ELEVATOR D CONTROL ROOM	3'-0" x 7'-0"	A	1 3/4"	ΗM	4B	НМ	WELD	В		TI	FPSC, 90 MINUTE 'B'
007-008	WATER RPZ ROOM	3'-0" x 7'-0"	A	1 3/4"	HM	4B	HM	WELD	B		T1	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
009-010	FIRE PUMP ROOM	3'-0" x 7'-0"	A	1 3/4"	HM	4B	HM	WELD	B		<u> </u>	FPSC, 40 MINUTE 'B'
	FLOOR	CIZE			MAT		AME		ED			DEMARKO
NO.	LOCATION RESIDENTIAL ENTRANCE (from exterior)	SIZE	M	- IHN.	AL/GL		AL		г. <b>к</b> . -		SADDLE	REMARKS W/ ELEC. STRIKE RE
101	COMPACTOR ROOM	3'-0" x 7'-0"	A	1 3/4"	HM	- 5A		WELD	A		T1	FPSC, 120 MINUTE 'A
103	COMMUNITY FACILITY ENTRANCE	STOREFRONT	N	-	AL/GL	-	AL	-	-		T2	W/ ELEC. STRIKE RE
104	COMMUNITY FACILITY VESTIBULE	STOREFRONT	W	-	AL/GL	-	AL	-	-		T2	W/ ELEC. STRIKE RE
105	COMMUNITY FACILITY REFUSE ROOM COMMUNITY FACILITY TO REAR EXTERIOR	3'-0" x 7'-0" STOREFRONT	A T	1 3/4" 1 3/4"	HM HM	4B -	HM um	WELD WELD	с -		T1 T2	FPSC, 120 MINUTE 'C' SELF CLOSING
107	COMPACTOR ROOM TO EXTERIOR	3'-0" x 7'-0"	A	1 3/4"	HM	ЗA	HM	WELD	А		T2	FPSC, 120 MINUTE 'A
108	STAIR B (TO LOBBY)	3'-0" x 7'-0"	В	1 3/4"	HM	4A	HM	WELD	В		TI	FPSC, 90 MINUTE 'B
109 110	HC TOILET SECURITY OFFICE	3'-0" x 7'-0" 3'-0" x 7'-0"	A B	1 3/4" 1 3/4"	HM HM	1	HM HM	WELD WELD	-	SPEC'S	T3 T2	-
110	VESTIBULE	STOREFRONT	B V	- 5/4	HM AL/GL	-	AL	-	-		T2	- W/ ELEC. STRIKE RE
112	TENANT RECREATION TO LOBBY	(2) 3'-0" x 7'-0"		1 3/4"	HM	2	HM	WELD	В	HARDWARE	T1	FPSC, 90 MINUTE 'B'
113	RESIDENTIAL LOBBY TO REAR EXTERIOR	3'-0" x 7'-0"	A	1 3/4"	HM	6	HM	WELD	В		T2	FPSC, 120 MINUTE C
114 115	TENANT RECREATION(TO REAR EXTERIOR)	STOREFRONT 3'-0" x 7'-0"	T B	-	AL/GL	- E	AL	-	-		T2	SELF CLOSING
115	TELECOM	3'-0" x 7'-0" 3'-0" x 7'-0"	A	1 3/4" 1 3/4"	HM HM	5 4A	HM HM	WELD WELD	B B		T1 T1	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
117	ELECTRICAL ROOM	3'-0" x 7'-0"	A	1 3/4"	HM	4A	HM	WELD	B		T1	FPSC, 90 MINUTE 'B'
118	ARC ROOM	3'-0" x 7'-0"	A	1 3/4"	HM	4A	НМ	WELD	В		TI	FPSC, 90 MINUTE 'B'
119 120	BIKE PARKING STORAGE BIKE PARKING STORAGE TO EXTERIOR	3'-0" x 7'-0" 3'-0" x 7'-0"	A A	1 3/4" 1 3/4"	HM HM	2 3A	HM HM	WELD WELD	В -		T1 T2	FPSC, 90 MINUTE 'B' FPSC, 120 MINUTE 'C'
120	GENERATOR ROOM	3'-0" x 7'-0"	A	1 3/4"	HM	4B	HM	WELD	В		T1	FPSC, 90 MINUTE 'B'
122	GAS ROOM	3'-0" x 7'-0"	A	1 3/4"	ΗM	ЗA	HM	WELD	В		T1	FPSC, 90 MINUTE 'B'
123 124	STAIR A (from exterior to res.) STAIR A (to exterior)	3'-0" x 7'-0"	A A	1 3/4"	HM	3A 24	HM	WELD	B		T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
124	ELECTRICAL ROOM (TO EXTERIOR)	3'-0" x 7'-0" 3'-0" x 7'-0"		1 3/4" 1 3/4"	HM HM	3A 3A	HM HM	WELD WELD	B B		T2 T2	FPSC, 90 MINUTE 'B'
126	EMERGENCY ELECTRICAL ROOM	3'-0" x 7'-0"	A	1 3/4"	HM	2	НM	WELD	B	v	T2	FPSC, 90 MINUTE 'B'
TYPIC	AL FLOORS (2ND THRO	JGH 8TH)	l	00R			AME					1
NO.	LOCATION	SIZE	TYPE	THK.	MAT.	JAMB	MAT.	CNST.	F.R.	HDWF	SADDLE	REMARKS
201 - 801	STAIR A	3'-0" x 7'-0"	В	1 3/4"	HM	5A	НМ	WELD	В		TI	FPSC, 90 MINUTE 'B'
02 - 802	RUBBISH ROOM STAIR B	3'-0" x 7'-0" 3'-0" x 7'-0"	A B	1 3/4" 1 3/4"	HM HM	2 5A	HM HM	WELD WELD	B B	DWRE	- T1	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
204-804	TELE. CLOSET	3'-0" x 7'-0"	A	1 3/4"	HM	2	нм	WELD	В	SPEC'S	-	FPSC, 90 MINUTE 'B'
205 805	JANITORS CLOSET	3'-0" x 7'-0"	А	1 3/4"	ΗM	2	HM	WELD	В		-	FPSC, 90 MINUTE 'B'
	CAL FLOORS (9TH- 10TH	/		OOR			AME					1
NO.	LOCATION	SIZE	TYPE	THK.	MAT.	JAMB	MAT.	CNST.	F.R.	HDWF	SADDLE	REMARKS
901-1001	STAIR A	3'-0" x 7'-0"	В	1 3/4"	HM	5A	HM	WELD	В	- <u>u</u>	TI	FPSC, 90 MINUTE 'B'
02-1002 03-1003	RUBBISH ROOM STAIR B	3'-0" x 7'-0" 3'-0" x 7'-0"	A B	1 3/4" 1 3/4"	HM HM	2 5A	HM HM	WELD WELD	B B	SEE HDWRE	- 	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
04-1004	TELE. CLOSET	3'-0" x 7'-0"	A	1 3/4"	HM	2	HM	WELD	В	SEE 1	-	FPSC, 90 MINUTE 'B'
05-1005	JANITORS CLOSET	3'-0" x 7'-0"	A	1 3/4"	ΗM	2	HM	WELD	В		-	FPSC, 90 MINUTE 'B'
	ELECTRICAL CLOSET @ 9TH FLOOR	(2) 2'-6" x 7'-0"	F	1 3/4" OOR	ΗM		<u>  нм</u> .AME	WELD	-		-	-
<u>1 T PIC</u> NO.	CAL FLOORS (11TH- 12TH LOCATION	) SIZE			MAT				<u> </u>		SADDLE	REMARKS
		3'-0" x 7'-0"	В									
101-1201 02-1202	STAIR A RUBBISH ROOM	3'-0" x 7'-0"	A	1 3/4" 1 3/4"	HM HM	5A 2	HM HM	WELD WELD	B B	RE	-	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
03-1203	STAIR B	3'-0" x 7'-0"	В	1 3/4"	ΗM	- 5A	НМ	WELD	В	SEE HDWRE	T1	FPSC, 90 MINUTE 'B'
04-1204	TELE. CLOSET	3'-0" x 7'-0"	A	1 3/4"	HM	2	HM	WELD	В		-	FPSC, 90 MINUTE 'B'
		3'-0" x 7'-0"		ا سن ج ا ب	ΗM	2	HM	WELD	В		-	FPSC, 90 MINUTE 'B'
	JANITORS CLOSET			1 3/4"	FIL I	ЦD	AME					
	AL FLOORS (13TH- 14TH	1)	D	<i>00</i> R			AME Mat	1	F₽			REMARKE
TYPIC NO.	AL FLOORS (13TH- 14TH LOCATION	I) SIZE	D TYPE	OOR THK.	MAT.	JAMB	MAT.	CNST.				
TYPIC NO. 801-1401	AL FLOORS (13TH- 14TH	1)	D	<i>00</i> R				1	F.R. B B	1	T1	FPSC, 90 MINUTE 'B'
TYPIC NO. 301-1401 02-1402	AL FLOORS (13TH- 14TH LOCATION STAIR A	SIZE 3'-0" x 7'-0"	D TYPE B	OOR THK. 1 3/4"	MAT. HM	JAMB 2	MAT. HM	CNST. WELD	В	1	T1	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
TYPIC NO. 301-1401 02-1402 03-1403 604-1404	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET	$SIZE$ $3'-0'' \times 7'-0''$	D TYPE B A B A	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4"	MAT. HM HM HM HM	JAMB 2 2 5A 2	МАТ. HM HM HM HM	CNST. WELD WELD WELD WELD	B B B B	SPEC'S	T1	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
<b>TYPIC</b> <b>NO.</b> 301-1401 02-1402 03-1403 04-1404 05-1405	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET	$SIZE$ $3'-0'' \times 7'-0''$	D TYPE B A B A A	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	MAT. HM HM HM HM HM	JAMB 2 2 5A	MAT. Η Η Η Η Η Η Η Η Η Η Η Η Η	CNST. WELD WELD WELD WELD	B B B	E HDWRE	T1 - T1 - - -	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
TTPIC NO. 301-1401 02-1402 03-1403 04-1404 05-1405 306	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL	$SIZE$ $3'-0'' \times 7'-0''$	D TYPE B A B A F	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4"	$ \begin{array}{c}                                     $	JAMB 2 2 5A 2 2 1	$\begin{array}{c} MAT.\\ HM\\ HM\\ HM\\ HM\\ HM\\ HM\\ HM\\ HM \end{array}$	CNST. WELD WELD WELD WELD WELD	B B B B	E HDWRE	T1	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
<b>TYPIC</b> <b>NO.</b> 301-1401 02-1402 03-1403 04-1404 05-1405 506	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET	$SIZE$ $3'-0'' \times 7'-0''$	D TYPE B A B A F D	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR	<b>ΜΑΤ.</b> ΗΣ ΗΣ ΗΣ ΗΣ ΗΣ ΗΣ	JAMB 2 2 5A 2 2 1 FR	$\begin{array}{c} MAT.\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	CNST. WELD WELD WELD WELD WELD	B B B B -	SEE HDWRE SPEC'S	T1 - T1 - - -	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' -
TYPIC NO. 301-1401 602-1402 603-1403 304-1404 605-1405 306 ROOF	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL	$SIZE$ $3'-0'' \times 7'-0''$ $(2) 2'-6'' \times 7'-0''$	D TYPE B A B A F D	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR	<b>ΜΑΤ.</b> ΗΣ ΗΣ ΗΣ ΗΣ ΗΣ ΗΣ	JAMB 2 2 5A 2 2 1 FR	$\begin{array}{c} MAT.\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	CNST. WELD WELD WELD WELD WELD	B B B B -	SPEC'S SPEC'S	T1 - T1 - - - - SADDLE	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' -
TYPIC NO. 301-1401 02-1402 03-1403 04-1404 05-1405 306 ROOF NO.	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION	SIZE $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $(2) 2^{1}-6^{11} \times 7^{1}-0^{11}$ SIZE	D TYPE B A B A F TYPE	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR THK.	MAT. HM HM HM HM HM HM HM HM	JAMB 2 5A 2 1 FR JAMB	MAT. HM HM HM HM HM AME MAT.	CNST. WELD WELD WELD WELD WELD	B B B - F.R.	SPEC'S SPEC'S	T1 - T1 - - -	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' -
TYPIC NO. 601-1401 02-1402 03-1403 04-1404 05-1405 06 ROOF NO. RO1 R02 R03	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM	SIZE $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $(2) 2^{1}-6^{1} \times 7^{1}-0^{1}$ SIZE $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$	D TYPE B A B A F TYPE A C A	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0OR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4"	$ \begin{array}{c}                                     $	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B - F.R. B B B	SPEC'S SPEC'S	T1 - T1 - - - - - R SADDLE T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' -
TYPIC NO. 301-1401 02-1402 03-1403 04-1404 05-1405 306 ROOF NO. RO1 R01 R02 R03 R04	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM	SIZE $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $(2) 2^{1}-6^{11} \times 7^{1}-0^{11}$ (2) $2^{1}-6^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$	D TYPE B A B A F TYPE A C A C	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	$ \begin{array}{c}                                     $	JAMB 2 2 5A 2 2 1 FR JAMB 2A 2A 2A 2A 2A	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B - F.R. B B B B B	SEE HDWRE SPEC'S	T1 - T1 - T1 - - SADDLE T2 T2 T2 T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
TYPIC NO. 301-1401 02-1402 03-1403 304-1404 05-1405 306 ROOF NO. RO1 R01 R02 R03 R04 R05	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B	SIZE $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $(2) 2^{1}-6^{1} \times 7^{1}-0^{1}$ SIZE $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$ $3^{1}-0^{1} \times 7^{1}-0^{1}$	D TYPE B A B A F D TYPE A C A C A	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	$ \begin{array}{c}                                     $	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A 2A 3A	$\begin{array}{c} \begin{tabular}{cccccccccccccccccccccccccccccccccccc$	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B - F.R. B B B	SPEC'S SPEC'S	T1 - T1 - - - - - R SADDLE T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
TYPIC NO. 301-1401 02-1402 03-1403 304-1404 05-1405 306 ROOF NO. RO1 RO2 RO3 RO4 RO3 RO4 RO5 TYPIC	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS	SIZE $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ (2) $2^{1}-6^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$	D TYPE B A B A F TYPE A C A C A C A D	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	$     \begin{array}{c}                                     $	JAMB 2 2 5A 2 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B - F.R. B B B B B B B	SPEC'S SPEC'S SPEC'S	T1 - T1 - - - - SADDLE T2 T2 T2 T2 T2 T2 T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' - FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
TYPIC NO. 301-1401 02-1402 03-1403 004-1404 05-1405 306 ROOF NO. RO1 R02 R03 R04 R05 TYPIC NO.	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS LOCATION	SIZE $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $(2) 2^{1}-6^{11} \times 7^{1}-0^{11}$ $(2) 2^{1}-6^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$	D TYPE B A B A F TYPE A C A C A C TYPE	OOR THK. 1 3/4" 1 3/4" 0 OR THK. 1 3/4" 1 3/4"	$ \begin{array}{c}             \mathbb{M} \stackrel{\text{A}}{T}.\\             \mathbb{H} \stackrel{\text{M}}{T} \stackrel{\text{M}}{T}\\             \mathbb{H} \stackrel{\text{M}}{T} \stackrel{\text{M}}{T}             \mathbb{H} \stackrel{\text{M}}{T}\\             \mathbb{H} \stackrel{\text{M}}{T} \stackrel{\text{M}}{T} \stackrel{\text{M}}{T}             \mathbb{H} \stackrel{\text{M}}{T}                  \mathbb{H} \stackrel{\text{M}}{T}             \mathbb{H} \stackrel{\text{M}}{T}             \mathbb{H} \stackrel{\text{M}}{T}             \mathbb{H} \stackrel{\text{M}}{T}             \mathbb{H} \stackrel{\text{M}}{T}                   \mathbb{H} \stackrel{\text{M}}{T}                                    $	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR JAMB	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B - F.R. B B B B B B B B B B B	SPEC'S SPEC'S SPEC'S	T1 - T1 - T1 - - SADDLE T2 T2 T2 T2 T2 T2 T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' - FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' REMARKS
TYPIC NO. 301-1401 02-1402 03-1403 04-1404 05-1405 306 ROOF NO. RO1 R01 R02 R03 R04 R05 TYPIC	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS	SIZE $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ (2) $2^{1}-6^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$	D TYPE B A B A F TYPE A C A C A C A D	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4"	$     \begin{array}{c}                                     $	JAMB 2 2 5A 2 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B - F.R. B B B B B B B	SPEC'S SPEC'S SPEC'S	T1 - T1 - - - - SADDLE T2 T2 T2 T2 T2 T2 T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' - FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' REMARKS
TYPIC NO. 301-1401 02-1402 03-1403 04-1404 05-1405 306 ROOF NO. RO1 R02 R03 R04 R05 TYPIC NO. TI	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS LOCATION APARTMENT ENTRANCE	SIZE $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ (2) $2^{1}-6^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$	D TYPE B A B A F D TYPE A C A C A C TYPE D	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR THK. 1 3/4" 1 3/4"	$\begin{array}{c} \begin{tabular}{c} \begin$	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR JAMB	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B - F.R. B B B B B B B B B B B	T   E   HDWRE   E     T   SEE HDWRE   T   SEE HDWRE     SPEC'S   S   S	T1 - T1 - T1 - - SADDLE T2 T2 T2 T2 T2 T2 T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' - FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' REMARKS
TYPIC NO. 501-1401 02-1402 03-1403 04-1404 05-1405 06 ROOF NO. R01 R02 R03 R04 R03 R04 R05 TYPIC NO. T1 T2 T3 T4	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS LOCATION APARTMENT ENTRANCE BEDROOM H.C. ADAPTABLE BATHROOM LINEN CLOSET	SIZE $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ (2) $2^{1}-6^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$	D TYPE B A B A F D TYPE A C A C A C A C A C TYPE D A A A A A	OOR THK. 1 3/4" 1 3/8" 1 3/8" 1 3/8"	$\begin{array}{c} \begin{tabular}{c} \begin$	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR JAMB	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B B - F.R. B B B B B B B F.R. B C T C	SPEC'S THE SPEC'S SPEC'	T1 - T1 - T1 - - SADDLE T2 T2 T2 T2 T2 T2 T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' - FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
TYPIC NO. 301-1401 02-1402 03-1403 04-1404 05-1405 06 ROOF NO. R01 R02 R03 R04 R05 TYPIC NO. T1 T2 T3 T4 T5	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS LOCATION APARTMENT ENTRANCE BEDROOM H.C. ADAPTABLE BATHROOM LINEN CLOSET CLOSET	SIZE $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ (2) $2^{1}-6^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$	D TYPE B A B A F D TYPE A C A C A C A C A C A C A C A C A C A	OOR THK. 1 3/4" 1 3/8" 1 3/8" 1 3/8" 1 3/8"	$\begin{array}{c} \begin{tabular}{c} \begin$	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR JAMB	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B - F.R. B B B B B B B B B B B	SPEC'S THE SPEC'S SPEC'	T1         -         T1         -         T1         -         T1         -         T2         T3         -         -         -	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
TYPIC NO. 301-1401 02-1402 03-1403 04-1404 05-1405 306 ROOF NO. R01 R02 R03 R04 R05 TYPIC NO. T1 T2 T3 T4 T5 T6	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS LOCATION APARTMENT ENTRANCE BEDROOM H.C. ADAPTABLE BATHROOM LINEN CLOSET CLOSET CLOSET	SIZE $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $(2) 2^{i}-6^{iii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$	D TYPE B A B A F D TYPE A C A C A C A C A C A C A C A C A C A	OOR THK. 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 1 3/4" 0 OR THK. 1 3/4" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8"	$\begin{array}{c} \begin{tabular}{c} \begin$	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR JAMB	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B B - F.R. B B B B B B B F.R. B C T C	SPEC'S THE SPEC'S SPEC'	T1 - T1 - T1 - - SADDLE T2 T2 T2 T2 T2 T2 T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B'
TYPIC NO. 301-1401 302-1402 303-1403 304-1404 305-1405 306 ROOF NO. R01 R02 R03 R04 R03 R04 R05 TYPIC NO. T1 T2 T3 T4 T5	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS LOCATION APARTMENT ENTRANCE BEDROOM H.C. ADAPTABLE BATHROOM LINEN CLOSET CLOSET	SIZE $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$ (2) $2^{1}-6^{11} \times 7^{1}-0^{11}$ $3^{1}-0^{11} \times 7^{1}-0^{11}$	D TYPE B A B A F D TYPE A C A C A C A C A C A C A C A C A C A	OOR THK. 1 3/4" 1 3/8" 1 3/8" 1 3/8" 1 3/8"	$\begin{array}{c} \begin{tabular}{c} \begin$	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR JAMB	$\begin{array}{c} MAT.\\ \pm M\\ \pm $	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B B - F.R. B B B B B B B F.R. B C T C	HARDWARE SPEC'S THARDWARE SPEC'S SPEC	T1 - T1 - T1 - - SADDLE T2 T2 T2 T2 T2 T2 T2 T2 T2 T2	FPSC, 90 MINUTE 'B' FPSC, 90 MINUTE 'B' REMARKS FPSC, 90 MINUTE 'B -
TYPIC NO. 301-1401 02-1402 03-1403 004-1404 05-1405 306 ROOF NO. R01 R02 R03 R04 R05 TYPIC NO. T1 T2 T3 T4 T5 T6 T7	AL FLOORS (13TH- 14TH LOCATION STAIR A RUBBISH ROOM STAIR B TELE. CLOSET JANITORS CLOSET ELECTRICAL CLOSET @ 13TH FL LEVEL LOCATION STAIR A BOILER ROOM ELECTRIC ROOM BOILER ROOM STAIR B CAL APARTMENTS LOCATION APARTMENT ENTRANCE BEDROOM H.C. ADAPTABLE BATHROOM LINEN CLOSET CLOSET WALK IN CLOSET	SIZE $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ $(2) 2^{i}-6^{ii} \times 7^{i}-0^{ii}$ $3^{i}-0^{ii} \times 7^{i}-0^{ii}$ SEE PLANS SEE PLANS $3^{i}-0^{ii} \times 7^{i}-0^{ii}$	D TYPE B A B A F D TYPE A C A C A C A C A C A C A C A C A C A	OOR THK. 1 3/4" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8" 1 3/8"	$\begin{array}{c} \begin{tabular}{c} \begin{tabular}{c} \label{eq:product} \end{tabular} \\ \end{tabular} \end{tabular} \\ \end{tabular} \end{tabular} \\ \end{tabular} \end{tabular} \\ \end{tabular} \\ \end{tabular} \end{tabular} \\ t$	JAMB 2 2 5A 2 1 FR JAMB 2A 2A 2A 2A 2A 3A FR JAMB	$\begin{array}{c} MAT.\\ HM\\ H$	CNST. WELD WELD WELD WELD WELD WELD WELD WELD	B B B B - F.R. B B B B B B B F.R. B C T C	SPEC'S THE SPEC'S SPEC'	T1         -         T1         -         -         -         -         SADDLE         T2         T3         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         - <tr td="">     &lt;</tr>	FPSC, 90 MINUTE 'B'         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -           -

-PROVIDE REDUCER STRIP @ ALL DISSIMILIAR FLOOR MATERIALS. -ALL DOORS @ ROOF LEVEL TO BE HEAVY GAUGE (12 GA. FRAMES \$ 14 GA. DOORS) W/ 'SUPER HEAVY DUTY' HINGES AND CHAINS. PROVIDE ALARMS AT DOORS. -ALL EXTERIOR DOORS TO HAVE 4" HIGH FRAMES @ HEAD TO WORK W/ MASONRY DIMENSION. -ALL EXTERIOR DOORS AND FRAMES SHOULD BE GALVANIZED AND SHOP PRIMED.

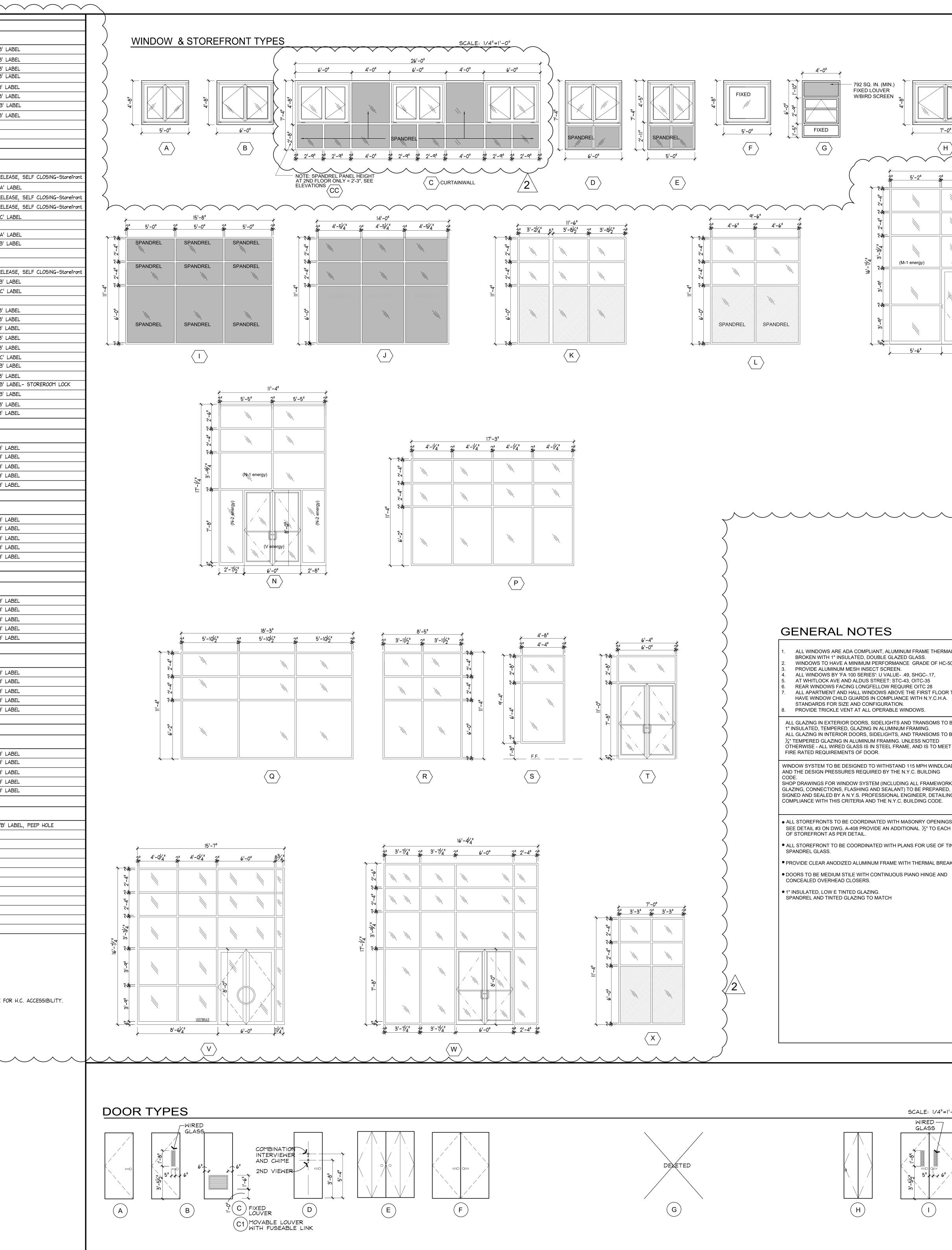
-ALL EXIT DOORS AT COMMUNITY FACILITY SPACES TO HAVE PANIC BAR RELEASES (UON). -ALL WOOD DOORS (WD) TO BE MOLDED HARDBOARD. -ALL DOORS TO BE 7'-0" HT., UNLES OTHERWISE NOTED.

-FOR ALL FUTURE OUTWARD DOOR SWINGS- PROVIDE DOOR BUCK TO ALLOW REMOUNTING OF DOOR ON SAME FRAME. -PROVIDE MARBLE SADDLES FOR ALL APARTMENT ENTRANCE DOORS. SADDLE TO BE DOMESTIC GRADE 'WHITE DANBY' WITH A HONED FINISH, HOLLYWOOD TYPE FOR H.C. ACCESSIBILITY. -INTERIOR FRAMES SHALL BE 16 GA. COLD ROLLED STEEL (U.O.N. SEE SPECIFICATIONS). -EXTERIOR FRAMES SHALL BE 14 GA. COLD ROLLED STEEL (U.O.N. SEE SPECIFICATIONS). -INTERIOR DOORS TO BE 18 GA

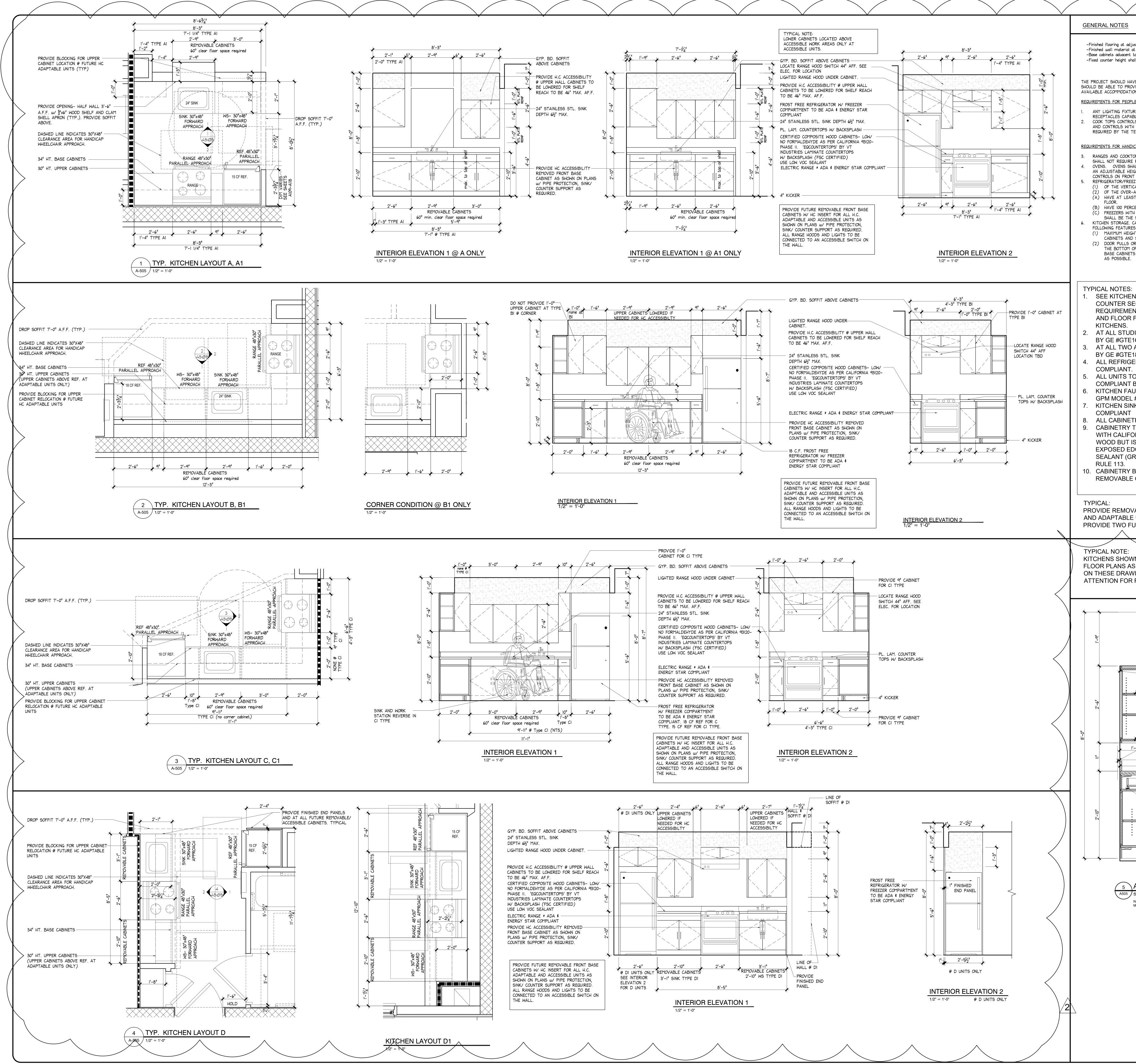
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-INTERIOR DOORS TO BE 18 GA. -EXTERIOR DOORS TO BE 16 GA.

NOTE :



		LEGEND		
		-DE	NOTES SPANDREL GLASS	
<u>)</u>		$\frown$		
	'-0" '-0" 2"	5'-2" 2		
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(M-2 end	ergy)	(M-1 energy)		
Г	<u>−−0"</u> M	5'-6"	」 ★ }	
			$\sum_{i=1}^{n}$	
			$\left\{ \right\}$	
<u> </u>		$\sim$		
ALLY 50.	MINIMUM WINDOWS- ( DOUBLE GLA U FACTOR:	CASEMENTS -GLASS	TYPE 1	
то	SHGC: DOUBLE PAN	0.17 NE HIGH PERFORMA BROKEN FRAMES.	NCE INSULATED GLAZING,	
BE	(OITC RATIN <u>GLAZING</u> 1-3/8" INSUL/	G 32 AT FLOORS 11th ATED GLASS- 5/16" L	AMINATED EXTERIOR, 15/16"	2 05/06/22 ISSUED TO DOB - PAA ADDED CELLAR 10/05/21 HPD PAA RESUBMISSION
BE T		IT -GLASS TYPE 1a	LAMINATED INTERIOR.	
AD, K,		BROKEN FRAMES.	<pre></pre>	4/30/21       HPD SUBMISSION         1       2/12/21         ISSUED TO DOB - PAA REMOVED CELLAR
r, , IG	<u>GLAZING</u> 1-1/16" IGU L		AR, 1/2" AIR ALUMIN. SPACE,	1/15/19HPD RESUBMISSION8/23/18HPD RESUBMISSION6/20/18ADDED STOREFRONT INFORMATION
S- I END	DOUBLE GLA U FACTOR:	CASEMENTS -GLASS AZED LOW-E 0.49	TYPE 2 (A-2) (B-2) (D-2) (E-2)	3/9/18ADDED DOORS AT FIRE PUMP RM.2/1/18ADDED WINDOW INFORMATION12/21/17ISSUED TO D.O.B Gen Const
INTED		BROKEN FRAMES.	NCE INSULATED GLAZING,	12/11/17         ISSUED FOR BID           9/20/17         ISSUED TO D.O.B.
К.	<u>GLAZING</u> 1" INSULATE	D GLASS- 3/8" ANNE	ALED EXTERIOR, 7/16" AIR	8/28/17ISSUED TO D.O.B.7/17/17HPD SUBMISSIONREV.DATEDESCRIPTION
	WINDOWS- ( DOUBLE GLA U FACTOR:	CASEMENTS -GLASS AZED LOW-E 0.49	<u>TYPE 3</u> (A-3) (B-3) (D-3) (E-3) (F-3)	REVISIONS:
	SHGC: DOUBLE PAN THERMALLY	0.34 NE HIGH PERFORMA BROKEN FRAMES.	NCE INSULATED GLAZING,	
		ATED GLASS- 5/16" L/	AMINATED EXTERIOR, 15/16" AIR	NEWMAN
		ON FILLED), 1/4" LAN TAL INSULATED 0.45		DESIGN ARCHITECTURE • URBAN PLANNING
		O BE MANUFACTURE NERS USA, LLLP, SEF		NEWMAN DESIGN ARCHITECTS PLLC 210 West Rogues Path • Cold Spring Hills, NY 11743 TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031
		PROVED EQUAL.	RIES/MODEL:	www.ndarchitects.com PROJECT:
				BUILDING 1 1001 Whitlock Avenue BRONX, NY 10459
'-0"				TITLE:
				WINDOW & DOOR SCHEDULE
/		DOB	APPROVAL STAMP:	
				STAMP:         DATE:         7-14-17           JOB #:         15-36           DRAWN BY:         SC
				SCALE: AS NOTED DRAWING NO:
				A-503.02
				FILE No. : SHEET: 41 OF74



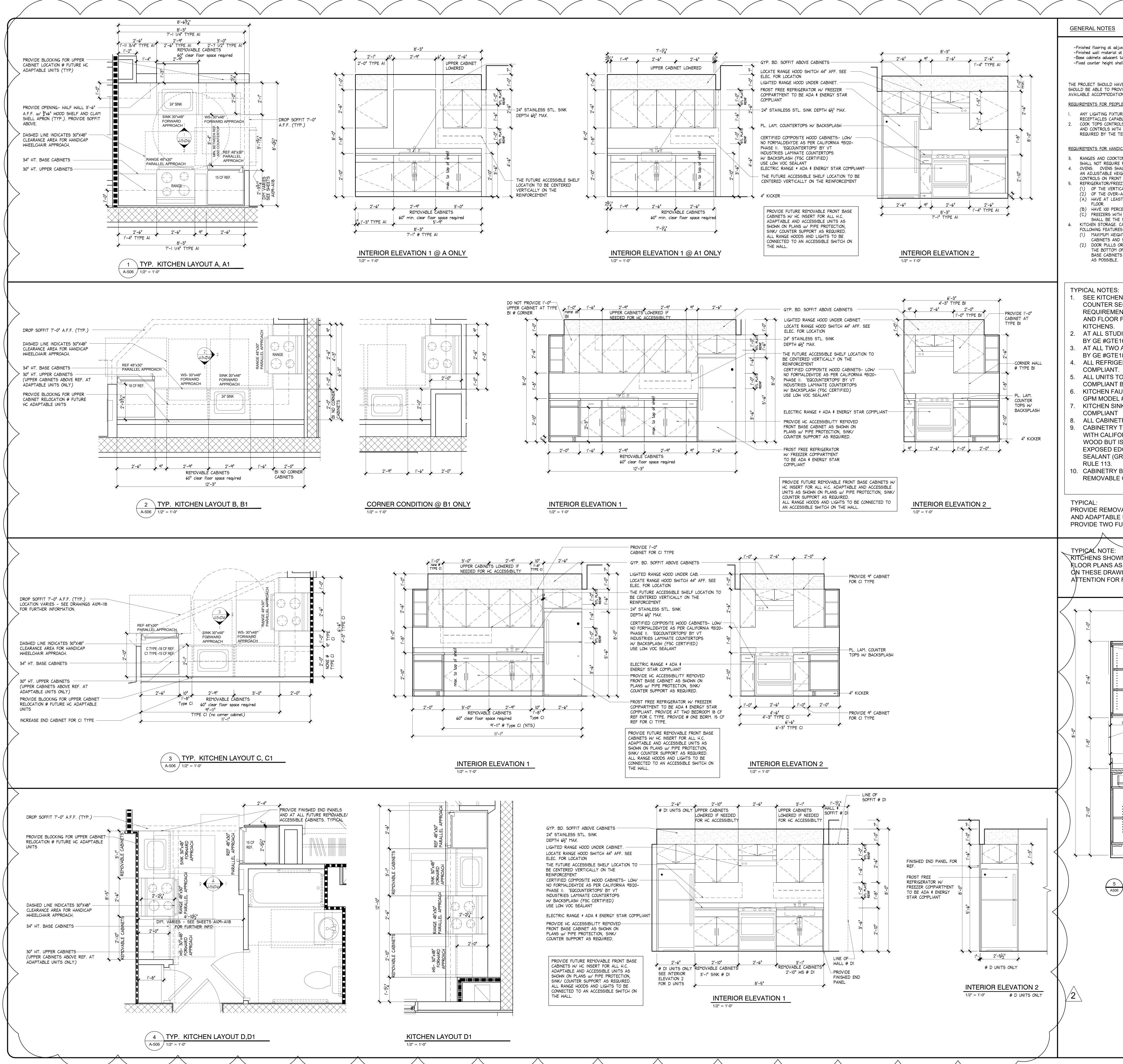
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			MOBILITY IMPAIRED KITCHEN UNITS: 203,204,206,213,409,413,422,506,522,613,
	shall extend to the wall.		623,709,807,904
	ments shall extend to belo ments shall have finished floor.		SENSORY IMPAIRED KITCHEN UNITS: 221,505,712,611,1013,1104
			KITCHEN UNIT TYPES: (265 units)
	SORIES AVAILABLE TO BE PROSPECTIVE TENANTS,		A- 206 thru 1006 (9 units)
RES PROVIDED IN THE	<u>MENTS:</u> UNIT SHOULD BE EQUIPPI		207 thru 1007 (9 units) 208 thru 1008 (9 units) 209 thru 1009 (9 units)
BLE OF HANDLING 150-M DLS SHOULD BE MOUNTE		DE OF THE RANGE	210 thru 1010 (9 units) 211 thru 1011 (9 units)
TENANTS.	HOULD DE AVAILADEL TO	X INSTALLATION II	223 thru 823 (7 units) 922 thru 1022 (2 units)
DICAPPED PEOPLE:	CONTROLS FOR RANGES	AND COOK-TOPS	1106 thru 1406 (4 units) 1115 thru 1415 (4 units)
E REACHING ACROSS BUT IALL BE OF THE SELF-C		CATED ADJACENT TO	<b>Type A total= 71 units</b> A1- 1109 thru 1409 (4 units)
IT PANELS; THEY MAY B EZER. PROVISION SHALL	BE LOCATED ON EITHER S BE MADE FOR REFRIGE RIGERATOR/FREEZER TYP	BIDE OF THE DOOR. RATORS WHICH ARE:	1110 thru 1410 (4 units) <b>Type A total= 8 units</b>
-AND-UNDER TYPE AND	MEET THE FOLLOWING R FREEZER SPACE BELOW	EQUIREMENTS:	B- 203 thru 1003 (9 units) 221 thru 821 (7 units)
	ATOR SPACE AND CONTR ENT OF THE STORAGE VO		222 thru 822 (7 units) 913 thru 1013 (2 units)
CABINETS, DRAWERS, A ES:	ND SHELF AREAS SHALL 20 MM) FOR AT LEAST C		920 thru 1020 (2 units) 921 thru 1021 (2 units)
D STORAGE SHELVES MC OR HANDLES FOR WALL	CABINETS SHALL BE MOL POSSIBLE. DOOR PULLS	JNTERS. JNTED AS CL <i>O</i> SE TO	1101 thru 1401 (4 units) 1102 thru 1402 (4 units) 1105 thru 1405 (4 units)
	AS CLOSE TO THE TOP C		1105 thru 1405 (4 units) 1107 thru 1407 (4 units) 1108 thru 1408 (4 units)
			1113 thru 1413 (4 units) 1114 thru 1414 (4 units)
			<b>Type B total= 57 units</b> <b>B1-</b> 204 thru 1004 (9 units)
EGMENTS TO ME	EET ADAPTABLE		216 thru 816 (7 units) 915 thru 1015 (2 units)
	ESE AREAS. TYPI	OR CABINET, WALL	<u>1103 thru 1403 (4 units)</u> Type B1 total= 22 units
		CF REFRIGERATOR	C- 220 thru 820 (7 units) 919 thru 1019 (2 units)
16DTH OR APPR AND THREE BD 18ETH OR APPR	RM'S INSTALL 18	CF REFRIGERATOR	Type C total= 9 units           C1-         205 thru 1005 (9 units)
	BE ENERGY STA	R AND ADA	Type C1 total= 9 units           D-         201 thru 1001 (9 units)
	LEANING ELECTR	RIC RANGE AND ADA	202 thru 1002 (9 units) 212 thru 1012 (9 units)
UCET BY AMERI		COLONY SOFT- 1.5	213 thru 813 (7 units) 214 thru 1014 (9 units)
		RIES #CR2521, ADA	215 thru 815 (7 units) <b>Type D total= 50 units</b>
	VOC/ NO FORMA	ALDEHYDE. FIED AS COMPLIANT	D1- <u>1104 thru 1404 (4 units)</u> <b>Type D1 total= 4 units</b>
ORNIA 93120 PHA		G A COMPOSITE	E- 219 thru 819 (7 units) 918 thru 1018 (2 units)
DGES AND SIDES	S MUST BE SEAL	ED WITH A LOW VOC	1112 thru 1412 (4 units)
BY RYNONE FLE	EXLINE, MUST INC		Type E total= 17 units           F-         218 thru 818 (7 units)           917 thru 1017 (2 units)
E CABINET WITH	HC INSERT.		G- 217 thru 817 (7 units)
			<u>916 thru 1016 (2 units)</u> Type G total= 9 units
	BINETS FOR ALL ( NS FOR LOCATIO	@ H.C. ACCESSIBLE NS. ALL UNITS	
	BLE CABINETS- S		
		PICAL LAYOUTS- SEE	
VINGS TO BE BR	OUGHT TO THE A	ARCHITECT'S	2 05/06/22 ISSUED TO DOB - PAA ADDED CELLAR
			10/05/21 HPD PAA RESUBMISSION
	GYP. BD. CEILIN	G	37/27/21REMOVED GAS RANGE4/30/21HPD SUBMISSION
			1/15/19HPD RESUBMISSION8/23/18HPD RESUBMISSION
• • • • • • • • • • • • • • • • • • •			
	WITH NAILED AN	ADJUSTABLE SHELVES ID GLUED EDGE BAND MINATED FINISH	9/20/17 ISSUED TO D.O.B.
		BINETS TO BE I.C ADAPTABLE UNITS.	8/28/17         ISSUED TO D.O.B.           7/17/17         HPD SUBMISSION
	REACH TO BE 48 1/2" PLYWOOD TO PROVIDE BLOCKI	OPS & BOTTOMS NG FOR UPPER	REV.DATEDESCRIPTIONREVISIONS:
1'-0"	CABINET RELOCA H.C. ADAPTABLE PL. LAM. COUNTI	UNITS ER	
2'-1" 2'-0"	TOPS W/ BACKS WOOD PRODUCTS COMPLIANT WITH	PLASH - ALL COMPOSITE 5 MUST BE CERTIFIED AS 1 CALIFORNIA 93120	
	PHASE 2 OR, IF       Hood products       COMPLY WITH CA	USING A COMPOSITE 5 THAT DOES NOT ALIFORNIA 93120 PHASE	
	2, ALL EXPOSED	DEDGES AND SIDES DWITH LOW-VOC	NEWMAN
	3/4" X 2 1/2" HA SIDE MOUNTED N	RDWOOD WEB FRAME 1ETAL DRAWER GUIDE	DESIGN ARCHITECTURE • URBAN PLANNING
	I/2" FINISHED PL BOTTOM I/2" HARDWOOD I		NEWMAN DESIGN ARCHITECTS PLLC 210 West Rogues Path • Cold Spring Hills, NY 11743
	3/4" PLYWOOD A	DJUSTABLE SHELVES D GLUED EDGE BAND	TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031 www.ndarchitects.com
		TH VENEER FINISH	PROJECT:
	VENEER FINISH 1	TO MATCH CABINET R TO RUN UNDER	WHITLOCK APARTMENTS
	CABINET TYPICA		BUILDING 1
ADA TYPICAL Scale: 1" = 1'-0"			1001 Whitlock Avenue BRONX, NY 10459
NOTE: PROVIDE SOLID BLOG MILLWORK AND AS NOTED (			TITLE:
			SECTION 504/ UFAS MOBILITY
			IMPAIRED KITCHENETTE
		ROVAL STAMP:	_
			STAMP: DATE: <b>7-14-17</b> JOB #: <b>15-36</b>
			DRAWN BY: SC/AG SCALE: AS_NOTED
			DRAWING NO:
			Δ-505 02

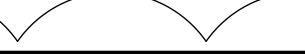
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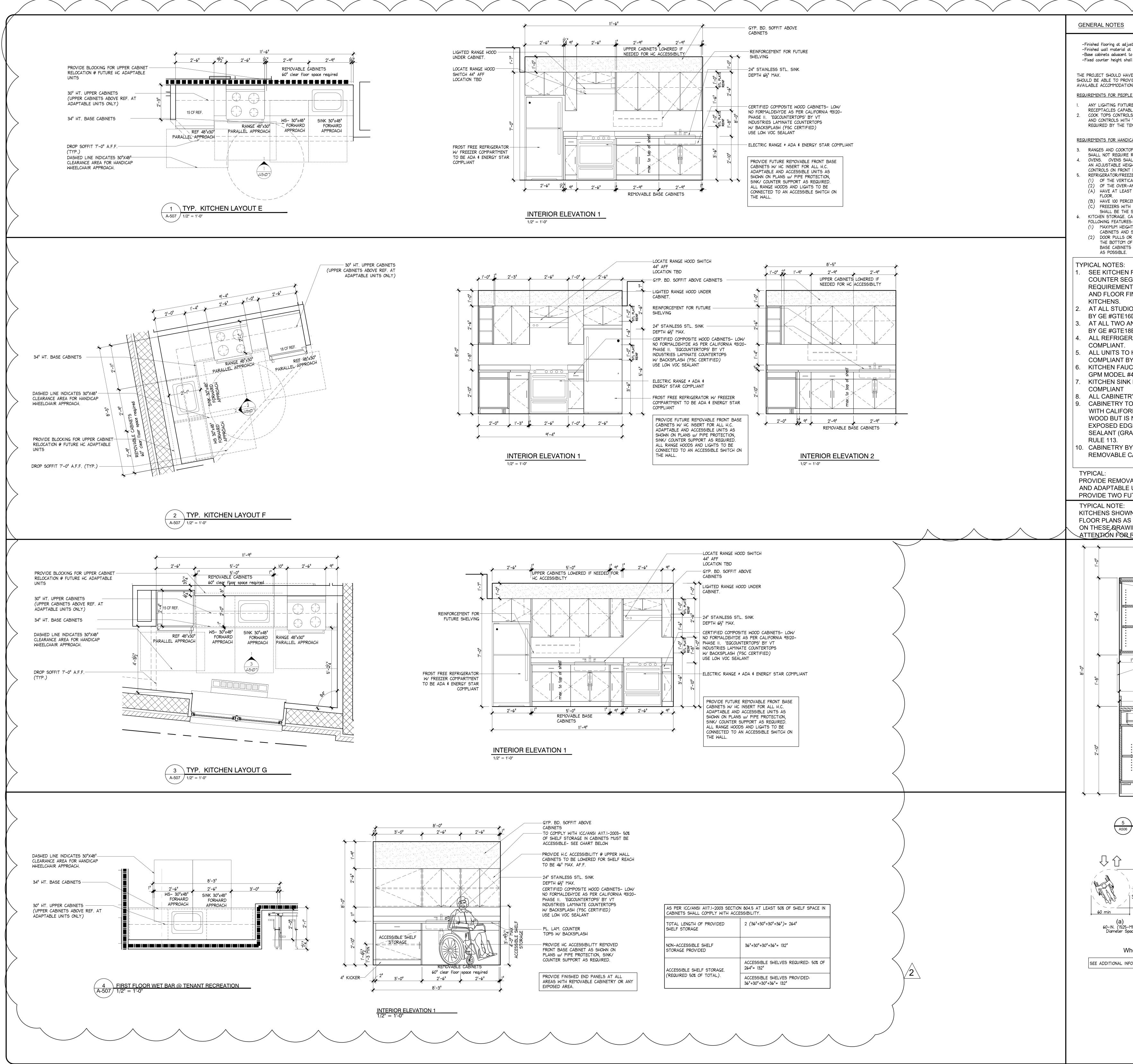




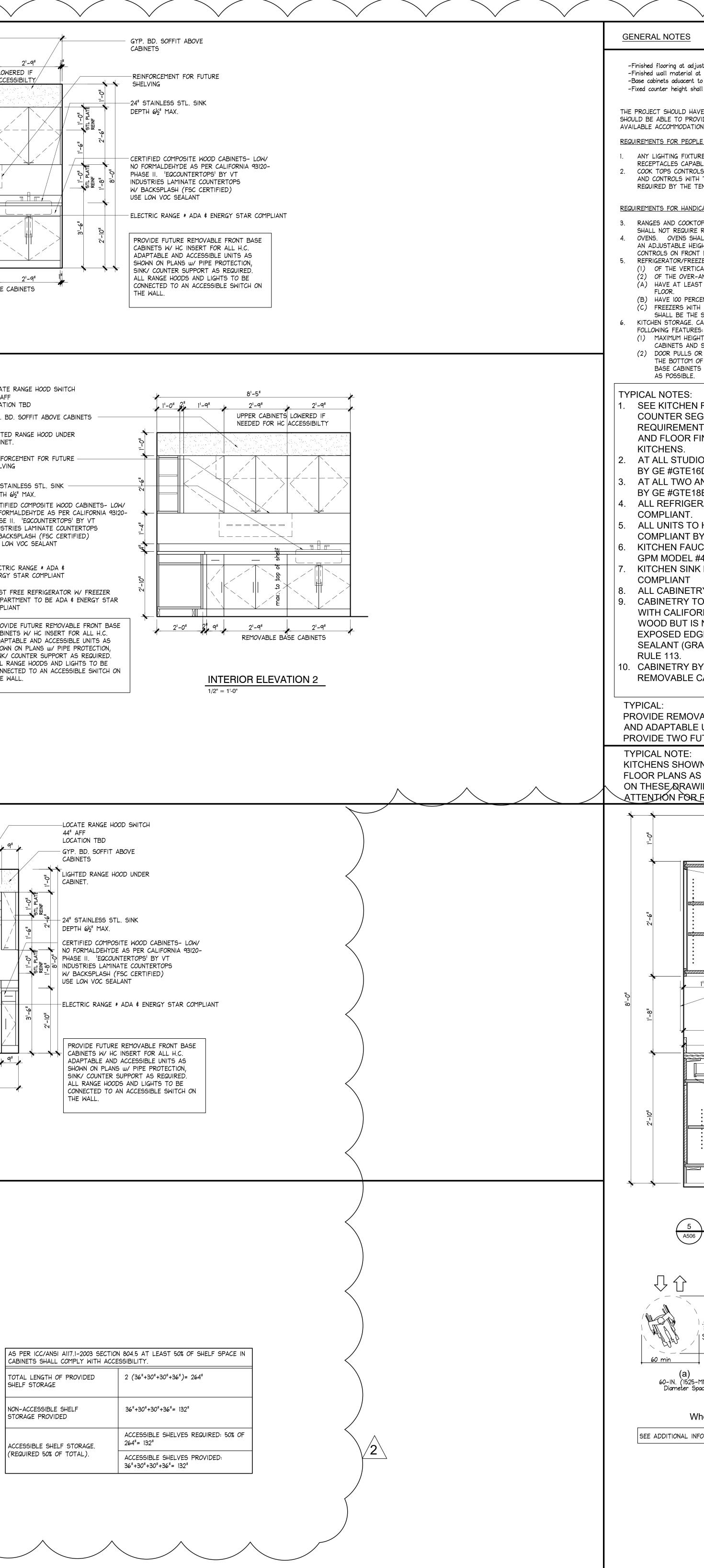
v V V	MOBILITY IMPAIRED KITCHEN UNITS: 203,204,206,213,409,413,422,506,522,613, 622,700,807,004
ustable counter segments shall extend to the wall. at adjustable counter segments shall extend to below the counter. to adjustable counter segments shall have finished ends.	623,709,807,904 SENSORY IMPAIRED KITCHEN UNITS: 221,505,712,611,1013,1104
to adjustable conter segments shall have finished erds. all be 3d" dowe finished floor. WE APPLIANCES/ ACCESSORIES AVAILABLE TO BE INSTALLED AND WIDE TO TEMANTS AND PROSPECTIVE TEMANTS, INFORMATION ON THE ORS. LE WITH VISUAL IPPAREMENTS: RESPERVINED IN THE UNIT SHOULD BE EQUIPPED WITH BLE OF HANDLING SO-WATT BUBG: LS SHOULD BE MOWTED ON THE FRONT OR SIDE OF THE RANCE H TACTLE MORNING SHOULD BE AVAILABLE FOR INSTALLATION IF FEANTS. NEAPPED PEOPLE: TOPS. THE LOCATION OF CONTROLS FOR RANGES AND COOK-TOPS IF EACURE MORNERS AND EXPORTED AND CONK-TOPS IF EACURE ACROSS BURGE SHOLE FOR THEREGATIONS SHALL BE OT THE SELF-CLEANING TYPE OR BE LOCATED ADJACENT TO GAT COUNTER WITH INSE SPACE LEAD. ONDER SHALL HAVE TO PERCENT OF THE STREAMENTS: AND-UNDER TYPE AND MEET THE FOLDING REQUIREMENTS. ST 50 FERCENT OF THE FREEZER SPACE BELOW 54 IN ABOVE THE CERT OF THE REFRIGERATOR SPACE AND CONTROLS BELOW 54 IN. HESS THAN 100 FERCENT OF THE STORAGE VOLIME BELOW 54 IN. 1 EUSS THAN 100 FERCENT OF THE STORAGE VOLIME BELOW 54 IN. 1 EUSS THAN 100 FERCENT OF THE STORAGE VOLIME BELOW 54 IN. 1 EUSS THAN 100 FERCENT OF THE STORAGE VOLIME BELOW 54 IN. 1 EUSS THAN 100 FERCENT OF THE STORAGE VOLIME BELOW 54 IN. 1 EUSS THAN 100 FERCENT OF THE STORAGE VOLIME BELOW 54 IN. 1 EUSS THAN 100 FOR STATE SHALL BE HOUNTED AS LODED TO 3 EVALUE BE NULL CARENTS SHALL BE HOUNTED AS LODED TO 3 EVALUE BE NULL CARENTS SHALL BE HOUNTED AS LODED TO 3 EVALUE BE NULL CARENTS SHALL BE HOUNTED AS LODED TO 3 EVALUE BE MOUNTED AS LODED TO THE TOP OF CABINET DOORS N REQUIREMENTS ON SHEET HR-1 FOR ADJUSTABLE ECOMENTS TO MEET ADAPTABLE ACCESSIBILITY NTS. ALSO SEE THIS SECTION FOR CABINET, WALL 5 INTHESE IN THESE AREAS. TYPICAL FOR ALL DID AND ONE BDRM'S.INSTALL 18 CF REFRIGERATOR 10DTH OR APPROVED EQUAL. AND THREE BDRM'S INSTALL 18 CF REFRIGERATOR 10DTH OR APPROVED EQUAL. WE YELKAY SINGLE BOWL C-SERIES #CR2521, ADA IN THESE HANNES THE AND RECUTINE CAUGE AND ADA IN COMPLIANT WITH CALIFORNIA 33120, ALLOW VOC RAMS/LITER), LESS THAN O	221,505,712,611,1013,1104 KITCHEN UNIT TYPES: (265 units) A- 206 thru 1006 (9 units) 207 thru 1007 (9 units) 208 thru 1008 (9 units) 209 thru 1009 (9 units) 210 thru 1010 (9 units) 223 thru 823 (7 units) 922 thru 1022 (2 units) 1106 thru 1406 (4 units) 1115 thru 1415 (4 units) 1110 thru 1409 (4 units) 1110 thru 1409 (4 units) 1110 thru 1409 (4 units) 221 thru 822 (7 units) 920 thru 1003 (9 units) 221 thru 822 (7 units) 920 thru 1023 (2 units) 920 thru 1024 (4 units) 1100 thru 1401 (4 units) 1100 thru 1401 (4 units) 1100 thru 1401 (4 units) 1100 thru 1401 (4 units) 1100 thru 1405 (4 units) 1100 thru 1405 (4 units) 1100 thru 1404 (4 units) 1105 thru 1408 (4 units) 1108 thru 1408 (4 units) 1113 thru 1414 (4 units) 1108 thru 1408 (4 units) 1113 thru 1414 (4 units) Type B total= 57 units B1- 204 thru 1004 (9 units) 216 thru 816 (7 units) 915 thru 1015 (2 units) 915 thru 1015 (2 units) 915 thru 1015 (2 units) 915 thru 1015 (2 units) 915 thru 1015 (9 units) 1103 thru 1403 (4 units) 1103 thru 1403 (4 units) 1104 thru 1404 (4 units) Type C total= 9 units C- 220 thru 820 (7 units) 915 thru 1019 (2 units) 215 thru 813 (7 units) 915 thru 815 (7 units) 915 thru 815 (7 units) 916 thru 1404 (9 units) 215 thru 818 (7 units) 917 thru 819 (7 units) 918 thru 1018 (2 units) 1111 thru 1411 (4 units) 1112 thru 1412 (4 units) Type C total= 9 units D- 201 thru 101 (9 units) 215 thru 818 (7 units) 917 thru 817 (7 units) 918 thru 1018 (2 units) 1111 thru 1411 (4 units) 1112 thru 1417 (4 units) 917 thru 817 (7 units) 916 thru 1016 (2 units) 917 thru 817 (7 units) 916 thru 1017 (2 units) 917 thru 817 (7 units) 916 thru 1016 (2 units) 117 thru 817 (7 units) 916 thru 1016 (2 units) 917 thru 817 (7 units) 916 thru 1016 (2 units) 117 thru 817 (7 units) 916 thru 1016 (
VN ARE FOR REFERENCE OF TYPICAL LAYOUTS- SEE S NOTED AND MIRROR IMAGES. ANY DISCREPANCY VINGS TO BE BROUGHT TO THE ARCHITECT'S REVIEW PRIOR TO CONSTRUCTION.	2 05/06/22 ISSUED TO DOB - PAA ADDED CELLAR 10/05/21 HPD PAA RESUBMISSION
GYP. BD. CEILING	3         7/26/21         REMOVED GAS RANGE           4/30/21         HPD SUBMISSION           1         1           1         1
3/4" X 2 1/2" HARDWOOD CLEAT FASTENED TO STUDS	1/15/19     HPD RESUBMISSION       8/23/18     HPD RESUBMISSION
2'-1" 2'-0" 2'-1" 2'-0" 2'-0" 2'-1" 2'-0" 2'-1" 2'-0" 2'-1" 2'-0" 2'-1" 2'-0" 2'-1" 2'-0" 3/4" X 2 1/2" HARDWOOD DRAWER SIDE MOUNTED METAL D	9/20/17       ISSUED TO D.O.B.         8/28/17       ISSUED TO D.O.B.         7/17/17       HPD SUBMISSION         REV.       DATE         DESCRIPTION         REVISIONS:         MEWMAN         D E S I G N         ARCHITECTURE • URBAN PLANNING         NEWMAN DESIGN ARCHITECTS PLLC         210 West Rogues Path • Cold Spring Hills, NY 11743         TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031
WITH NAILED AND GLUED EDGE BAND ON FRONT & LAMINATED FINISH ALL EXPOSED SURFACES VENEER FINISH TO MATCH CABINET FINISHED FLOOR TO RUN UNDER CABINET TYPICAL Scale: 1" = 1'-0" NOTE: PROVIDE SOLID BLOCKING FOR ALL MILLWORK AND AS NOTED ON THIS SHEET	TEL: 01.01.01.01.01.01.01.01.01.01.01.01.01.0

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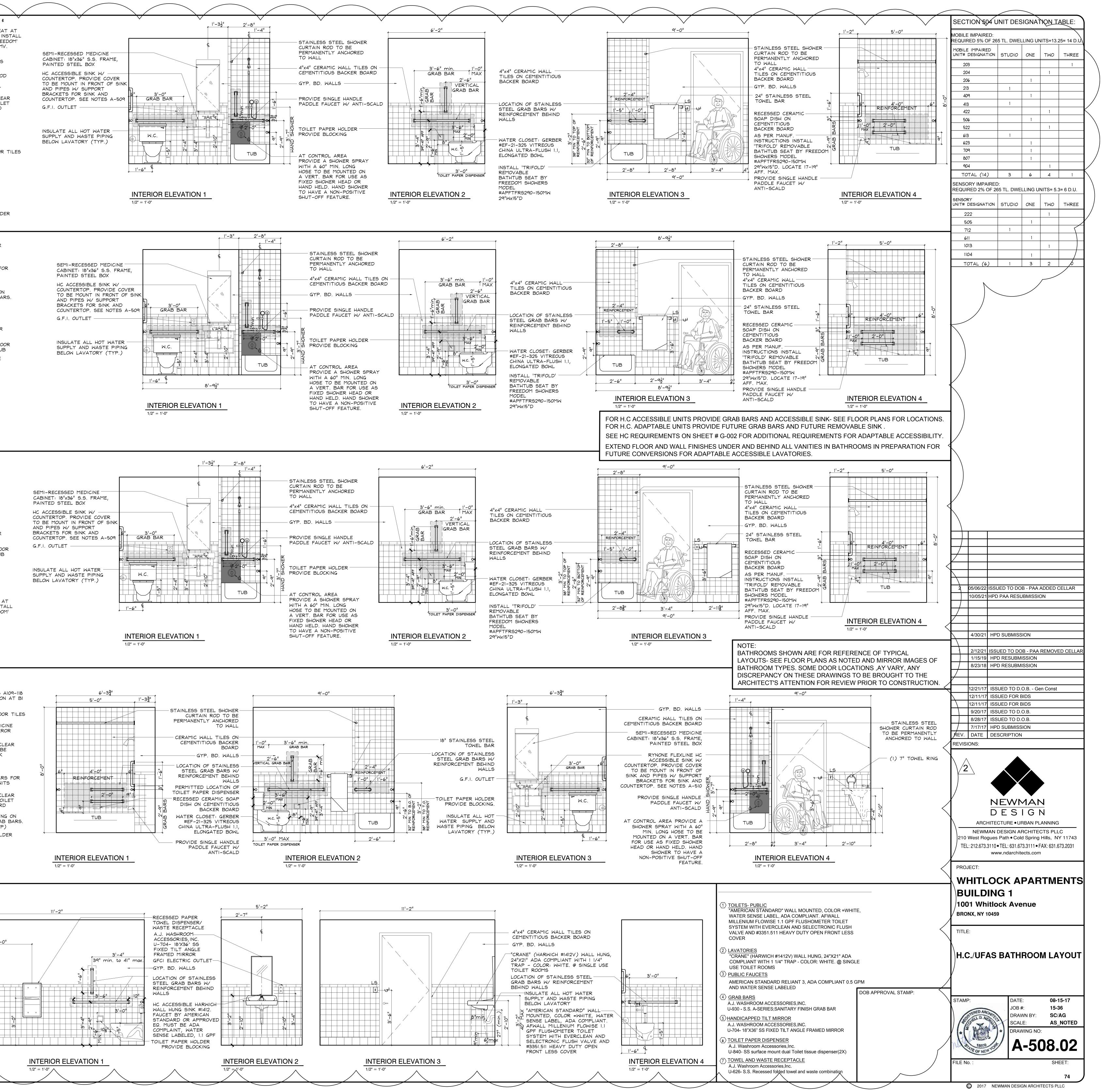


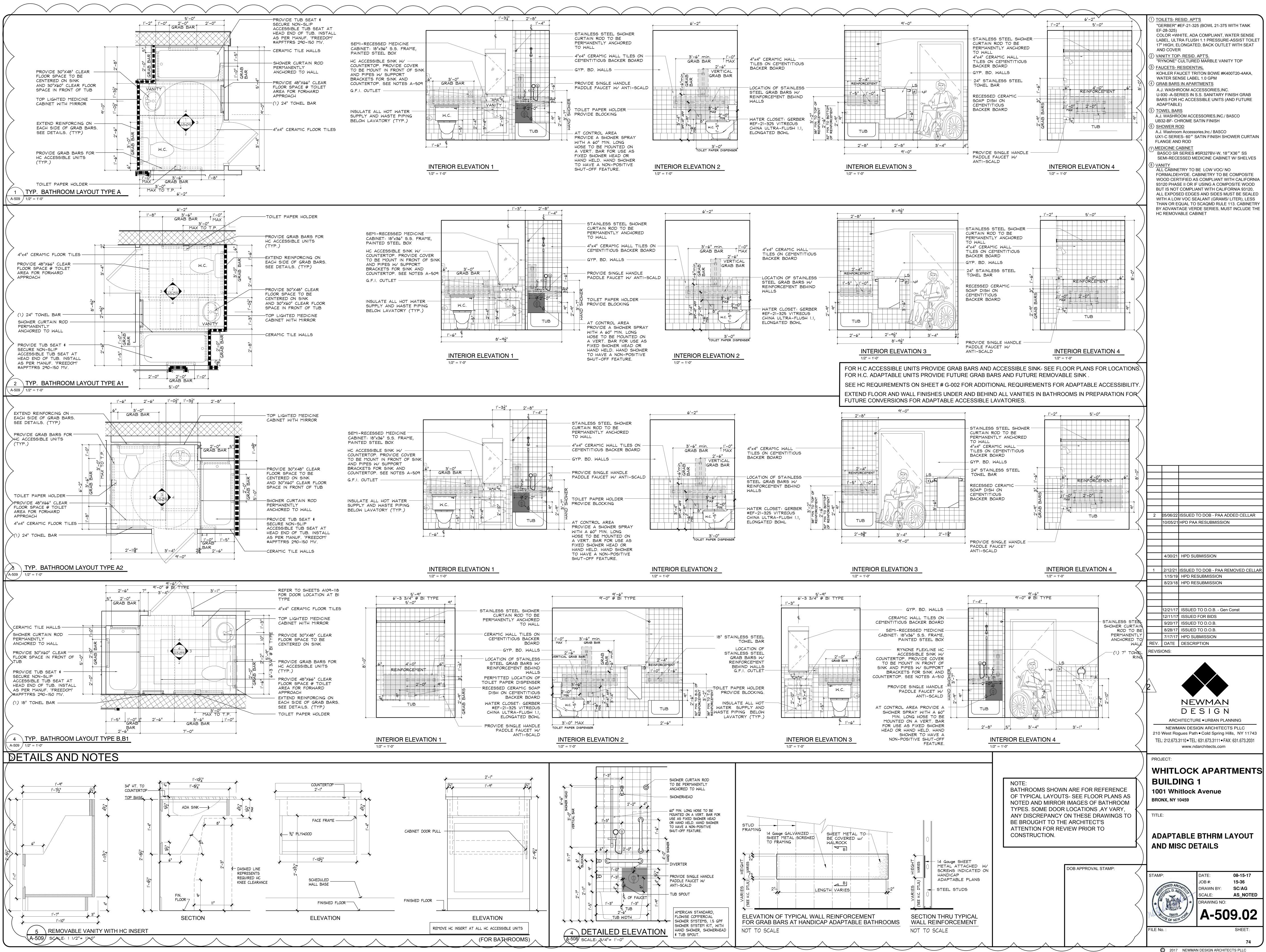


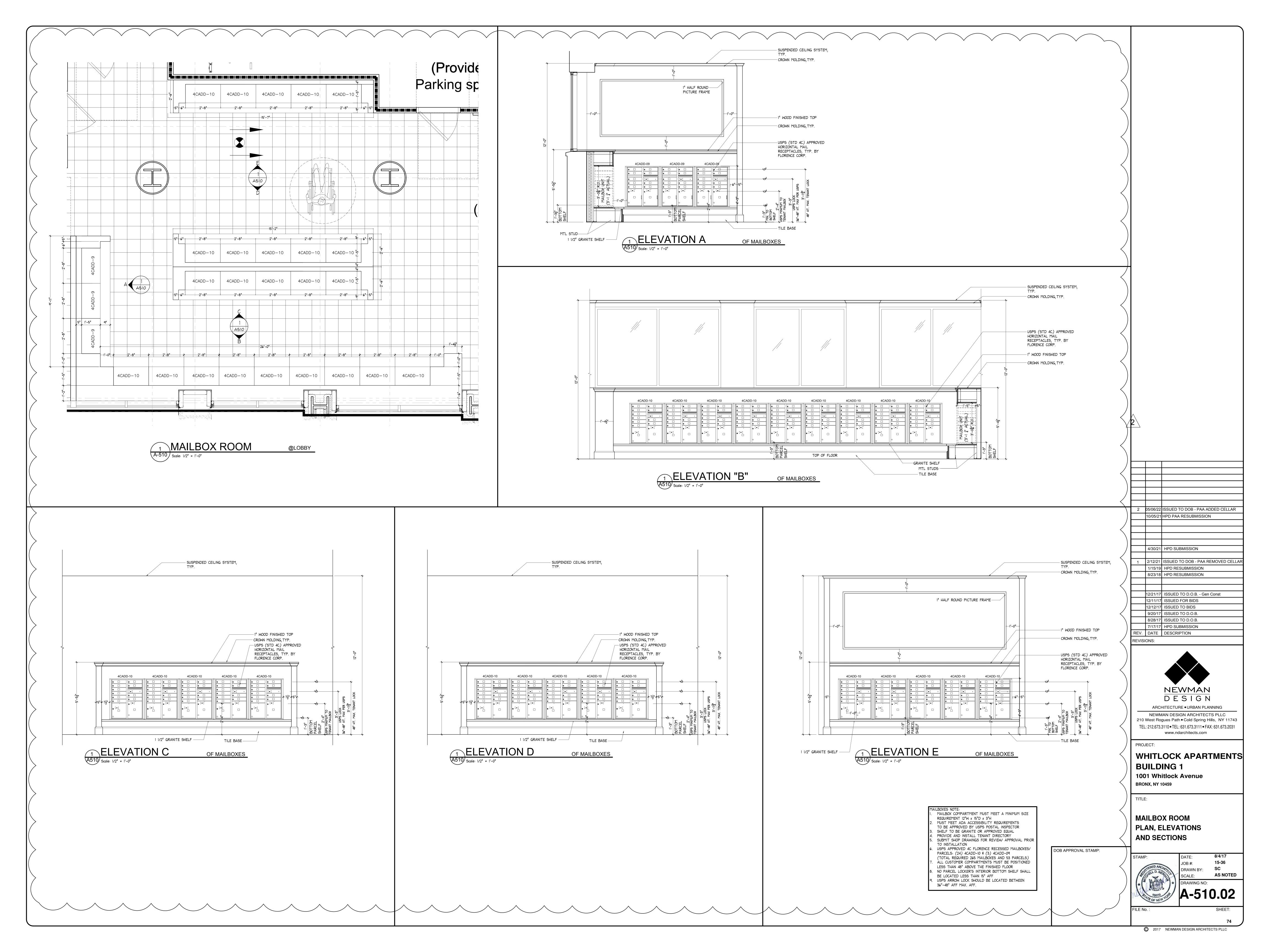


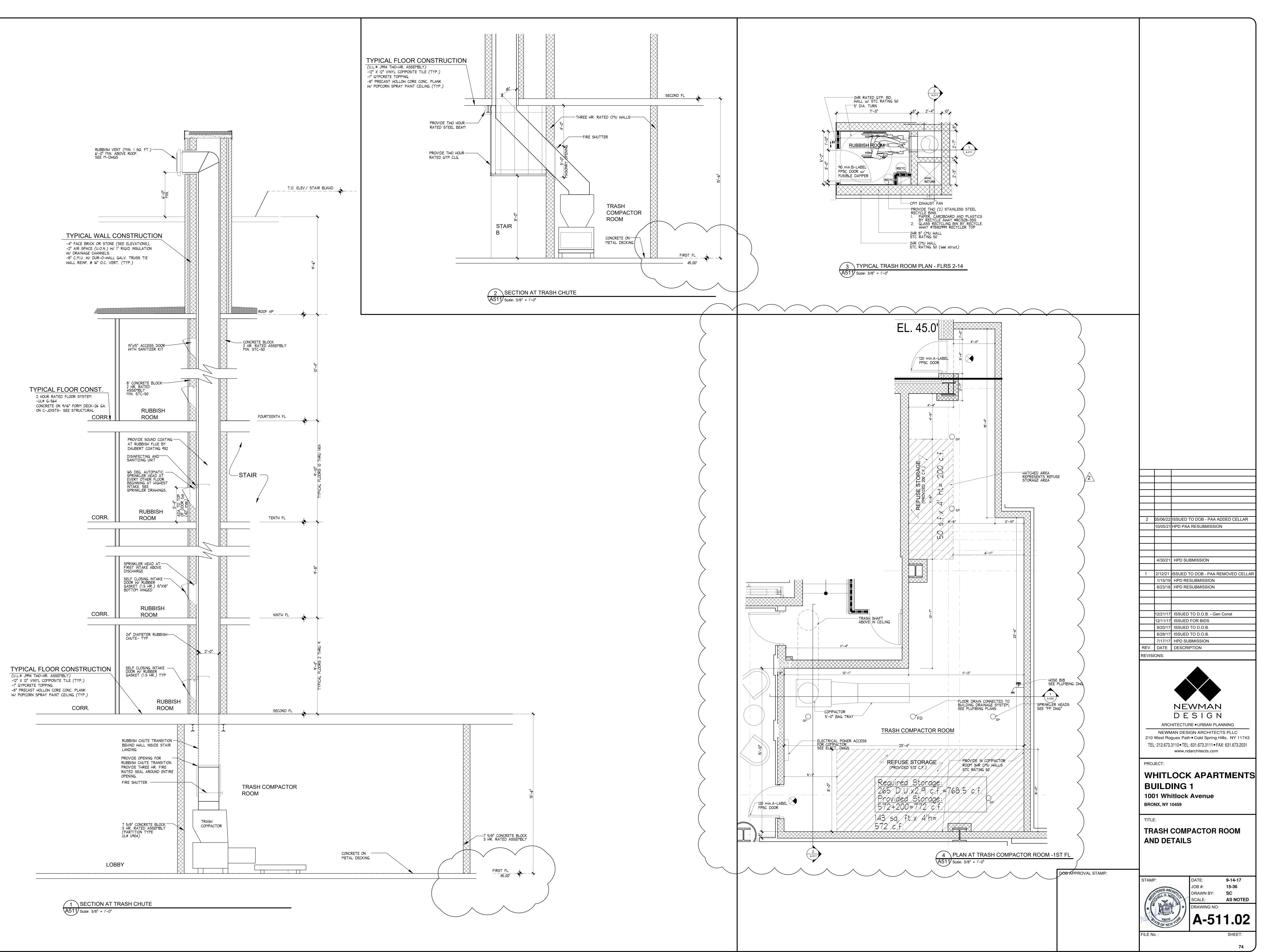
<ul> <li>Dia And Provide State State</li></ul>		MOBILITY IMPAIRED KITCHEN UNITS: 203 204 206 213 400 413 422 506 522 613
<text></text>		
	to adjustable counter segments shall have finished ends.	
	VIDE TO TENANTS AND PROSPECTIVE TENANTS, INFORMATION ON THE	
	JRES PROVIDED IN THE UNIT SHOULD BE EQUIPPED WITH BLE OF HANDLING 150-WATT BULBS.	207 thru 1007 (9 units) 208 thru 1008 (9 units) 209 thru 1009 (9 units)
<ul> <li>The Landscher Production of the Section of the Sectin of the Section of the Section of the Section of the Section</li></ul>	H TACTILE MARKINGS SHOULD BE AVAILABLE FOR INSTALLATION IF	211 thru 1011 (9 units) 223 thru 823 (7 units)
<ul> <li>The set of the set</li></ul>	OPS. THE LOCATION OF CONTROLS FOR RANGES AND COOK-TOPS	1106 thru 1406 (4 units)
<ul> <li>Type A holder B under Ansatz der An</li></ul>	IALL BE OF THE SELF-CLEANING TYPE OR BE LOCATED ADJACENT TO IGHT COUNTER WITH KNEE SPACE BELOW. OVENS SHALL HAVE T PANELS; THEY MAY BE LOCATED ON EITHER SIDE OF THE DOOR.	Type A total= 71 units           A1-         1109 thru 1409 (4 units)
	CAL SIDE-BY-SIDE REFRIGERATOR/FREEZER TYPE; OR -AND-UNDER TYPE AND MEET THE FOLLOWING REQUIREMENTS:	Type A total= 8 units
	H LESS THAN 100 PERCENT OF THE STORAGE VOLUME BELOW 54IN.	222 thru 822 (7 units)
	CABINETS, DRAWERS, AND SHELF AREAS SHALL HAVE THE ES: HT SHALL BE 48 IN (1220 MM) FOR AT LEAST ONE SHELF OF ALL	920 thru 1020 (2 units) 921 thru 1021 (2 units)
<ul> <li>The second second</li></ul>	OR HANDLES FOR WALL CABINETS SHALL BE MOUNTED AS CLOSE TO OF CABINET DOORS AS POSSIBLE. DOOR PULLS OR HANDLES FOR	1102 thru 1402 (4 units)
EVENTS TO MET ADAPTANELT ADOPTSHILL TYPE ALL TORALL NINSHES NO MET ADAPTANEL ADOPTSHILL TYPE ALL TORALL NINSHES NO THE SECTION FOR ALL SCHEET WORK INTO SECTION ADAPTANEL SCHEET TORALL NINSHES NO THE SECTION FOR ALL SCHEET WORK INTO SECTION ADAPTANEL DE LACE SERVICE SECTION ADAPTANEL SECTION CONCERNICE SECTION CONCERNICE SECTION ADAPTANEL SECTION CONCERNICE SECTION CONCERNICE SECTI		1107 thru 1407 (4 units) 1108 thru 1408 (4 units)
PLANE THE THE AREAS THE CALL OF CREATER GENATION AND CALL OF CREATER GE	GMENTS TO MEET ADAPTABLE ACCESSIBILITY	<u>1114 thru 1414 (4 units)</u> <b>Type B total= 57 units</b>
DDTH OR APPROVED EQUAL     III (3) the 1402 (4 units)       TYPE ELEMANN SINTAL LIS CPREPRIGERATOR       BEH H OK APPROVED EQUAL       UP CELVANSKOM DE CONCLUSION	FINISHES IN THESE AREAS. TYPICAL FOR ALL	216 thru 816 (7 units)
RATCES BUILST BE EVERCY STAR AND ADA HAVE SELF CLEANING ELECTRIC RANGE AND ADA NO CELL ALLEANING HELECONIC SCIENCE TYPE OF LIGHTS HOW CELL ALLEANING HELECONIC NO CELL ALLEANING HELECONIC SCIENCE TYPE OF LIGHTS FOR ALLE ALLEANING NARE FOR REFERENCE OF TYPICAL LAVOUTD SEED NO TOTOD ADARDES FOR LIGHT AND ACCOUNTS SEED NO TOTOD ADARDES FOR LIGHT AND ALLEANING NO TOTOD ADARDES FOR	6DTH OR APPROVED EQUAL	<u>1103 thru 1403 (4 units)</u> <b>Type B1 total= 22 units</b>
<ul> <li>PAVE SELF CIEADING PLECTING LANGE AND ADA (C) THE ADARGE APPROVED EQUAL (C) THE ADARGE APPROVED APPROVED</li></ul>	8ETH OR APPROVED EQUAL.	<u>919 thru 1019 (2 units)</u>
Bit 200 DRAPERCYCED EDUAL.       202 min 1012 (9 mins)         CYPE LOX SINGLE FOND. CARRIES SCREEDT, ADD         RY TO DE LOW VOC'NO PORMALDEHYDE         RY TO DE LOW STREET, SEE PLANS.         RY TO DE LOW VOC'NO PORMALDEHYDE         RY TO DE LOW VOC'NO PORMALDEHYDE         RY TO DE LOW VOC'NO PORMALDEHYDE         RY TO DE REFERENCE OF YPOCAL LAVOCHYDE         RY TO DE REFERENCE OF YPOC	BY GE #JB480SMOR APPROVED EQUAL	C1- <u>205 thru 1005 (9 units)</u> Type C1 total= 9 units
Private Low Voci No PORMALDEHYDE 0 de Cowhosite Wood Celtri HED AS COMPARIANT MARKENDER LOW FUSIONS COMPOSITE 213 Hud 813 (2 mils) 214 Hud 104 (2 mils) 215 Hud 315 (2 mils	#4275.5 OR APPROVED EQUAL.	202 thru 1002 (9 units)
TABLE STATE PLACE TO SHITE ALL OWER STREET. TO TO COMPLAND WITH CALLPOOR STREET. TYPE D TO BE STATE OR STREET. TYPE D TO BE STATE OF STREET. TYPE D TO STREET. THE STATE OF STREET. TYPE D TO STREET. THE STATE OF STREET. THE STATE OF STREET. TYPE D TO STREET. THE STATE OF S	RY TO BE LOW VOC/ NO FORMALDEHYDE.	213 thru 813 (7 units) 214 thru 1014 (9 units)
GES AND SIDES MUST BE STAND OF BUDAL TO SCAMOD         WARNUTTER), LEWEST HAND GEDUAL TO SCAMOD         YPRONE FLEXLINE, MUST INCLUDE THE         CABINET WITH HCHNERT.         WARLE BASE CABINETS FOR ALL & H.C. ACCESSIBLE         TYPE BE TO DESTINATIONE OF LEWEST STORAL DUAL TO SCAMOD         YPRONE FLEXLINE, MUST INCLUDE THE         LINE BE PLANS FOR IDCATTORS ALL DUATS         TYPE E TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL AND UTS.         TYPE OF TO DESTINATION OF LEWEST STORAL DUAL DUAL AND UTS.         TYPE OF TO DESTINAT	RNIA 93120 PHASE II OR IF USING A COMPOSITE	Type D total= 50 units           D1-         1104 thru 1404 (4 units)
Y PYNONE FLEXINE, MUST INCLUDE THE DABINE FLEXA INTO A DATA ALLONG THE DABINE FLEXA INTO A DATA ALLONG THE DABINE TO UNDER THE DABINE FLEXA INTO A DATA ALLONG THE DABINE TO UNDER THE DABINE FOR REFERENCE OF TYPICAL LAYOUTS SEEF INTO A DATA ALLONG THE DABINETS SEE PLANS. INTER ENDOVIDE CARDINETS SEE PLANS. INTER ENDOVED DO THE ARCHITECTS SEE PLANS. INTER ENDOVED DO THE DATA ALLONG THE DABINETS SEE PLANS. INTER ENDOVED DO THE ARCHITECTS SEE PLANS. INTER EN	GES AND SIDES MUST BE SEALED WITH A LOW VOC	E- 219 thru 819 (7 units)
ABLE BASE CABINETS FOR ALL (a) H.C. ACCESSIBLE Type Fotal=9 units Typ	,	1111 thru 1411 (4 units) <u>1112 thru 1412 (4 units)</u>
ABLE BASE CABINETS FOR ALL QH ACACCESSIBLE UTURE REMOVABLE CABINETS SEE PLANS. IN ARE FOR REFERENCE OF TYPICAL LAYOUTS SEE NOTED ADD MEROR MAGES ANY DISCREPANCE REVIEW PRICE COMPARISON IN COMPARISON IN COMPARISON IN COMPARI		F- 218 thru 818 (7 units)
NARE FOR REFERENCE OF TYPICAL LAYOUTS-SEE       NARE FOR REFERENCE OF TYPICAL LAYOUTS-SEE       NOTES TO BE REQUERT TO THE RACHTECTS       REVIEW PRIDE TO CONSTRUCTION       Image: State of the second	UNIT -SEE PLANS FOR LOCATIONS. ALL UNITS	Type F total= 9 unitsG-217 thru 817 (7 units)
SNOTED AND MIRROR MAGES ANY DISCREPANCY INVESTORE RECOGNET TO THE ARCHITECTS         are to call t		Type G total= 9 units
OPP. BE. GBL/4       PART & 2.17: INDEXECTION CLAST       PART & 1.10: DATA ADDITION CLAST </td <td>S NOTED AND MIRROR IMAGES. ANY DISCREPANCY</td> <td></td>	S NOTED AND MIRROR IMAGES. ANY DISCREPANCY	
M ⁴ X 2 M ² HARRODD CLAF         Aff PL-NOD DO STUG         M ⁴ PL-NOD		
Ministrate Status         Ministrate Status <t< td=""><td></td><td></td></t<>		
Wit Purpose ADLATASE S-BILLIS         Wit Purpose ADLATASE STATE         Under ALL CARLSTS TO ALL         Under ALL CARLSTS TO ALL CARLSTS TO ALL         Under ALL CARLSTS TO AL	3/4" X 2 1/2" HARDWOOD CLEAT	
OH HART 1 - JANATE PINAL         UPPER ALL CAPIES DISK A ADMPHARE AND DESCENDENT CAS ADMPHARE AND PARTIES DISK ADMPHARE AND PARTIES DISK ADMPHARE AND PARTIES DISK ADMPHARE ADMPHARE CASENTRALE DIST         UPPER DISCRAMENTARY ALL ADMENT AND CARPENT COMPARISON THAT BE CHEMPER CASENTRALE DIST         UPPER DISCRAMENTARY ALL ADMENT ADMENTARY CASENTRALE DIST         UPPER DISCRAMENTARY ALL ADMENT ADMENTARY CASENTRALE DIST         UPPER DISCRAMENTARY ALL ADMENT ADMENTARY CASENTRALE DIST         UPPER DIST	3/4" PLYWOOD ADJUSTABLE SHELVES	
1/2 PLYNOD DR94 BOTTONS         1/2 PLYNOD T094 BOTTONS         1/2 PLYNOD	ON FRONT & LAMINATED FINISH	
10       CANTER TREACTORY & FUTURE H CANTER TREACTORY & FUTURE PLUE // CANTER PLUE //	: 1/2" PLYWOOD TOPS & BOTTOMS	
2.4       Hood Products Plust Be Certific As         2.4       Product Reprint Action Construction         2.4       Product Reprint Plust Be Certific Action Plust Action Plant Plust Construction         2.4       Product Reprint Plust Construction         2.5       Product Reprint Plust Construction         2.6       Product Reprint Plust Construction         2.7       Product Reprint Plust Construction         2.7       Product Reprint Plust Construction         2.8       Product Reprint Plust Construction         2.9       Product Reprint Plust Construction         2.9       Product Reprint Plust Construction         2.9       Product Reprint Plust Construction         2.1       Product Reprint Plust Construction         2.1       Product Reprint Plust Construction         2.1       Product Reproduct Reproduct Reproduct Reprint Plust Construction </td <td>1'-0"       CABINET RELOCATION @ FUTURE         H.C. ADAPTABLE UNITS         PL. LAM. COUNTER</td> <td></td>	1'-0"       CABINET RELOCATION @ FUTURE         H.C. ADAPTABLE UNITS         PL. LAM. COUNTER	
2-2       COMPLY MITH CAL-RONA BIOS PLASS INTO 15 SPALLED ATTAL CAL-YOX SPALLED ATTAL CAL-Y	WOOD PRODUCTS MUST BE CERTIFIED AS COMPLIANT WITH CALIFORNIA 93120	
SELANTS, PER CALTER OF 52 SELANTS, PER CALTER O	2'-0" WOOD PRODUCTS THAT DOES NOT COMPLY WITH CALIFORNIA 93120 PHASE 2, ALL EXPOSED EDGES AND SIDES	
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Of FERRIT & LAMARTED FINSH         ALL DPOSED SURFACES         VENEER FINSH TO MATCH CABINET FINSHED FLOOR TO RUN UNDER         Sediet 1* = 1'-0''         Nett Provide And AR MOTED ON THIS BLET         Off FERRIT & LOW STORALL         Note Provide And AR MOTED ON THIS BLET         Off FERRIT & LAMARTED FINSH         State of Finsh Construct on the state of the sta	1/2" HARDWOOD DRAWER BACK 3/4" PLYWOOD ADJUSTABLE SHELVES	
Image: State in the initial calinet interval       Image: State interval	ON FRONT & LAMINATED FINISH	
ARCHTECTURE • URBAN PLANNING Secter 1" = 1-0" NOTE: PROVED ROCKING FOR ALL WILLWORK AND AS NOTED ON THIS SHEET	VENEER FINISH TO MATCH CABINET	
Socie: 1" = 1'-0'       To the provide solub blocking for ALL         MILWORK AND AS NOTED ON THIS SHEET       If it is it it is it it is it it is it it it is it	CABINET TYPICAL	NEWMAN DESIGN ARCHITECTS PLLC
Fig 3 heelchair Turning Space Fig 3 heelchair Turning Space Fig 3 heelchair Turning Space $Fig 3 heelchair Turning Space$ $Fig 4 heelchair Turning Space$ $Fig 3 heelchair Turning Space$ $Fig 4 heelchair Turning Space$ $Fig 3 heelchair Turning Space$ $Fig 3 heelchair Turning Space$ $Fig 3 heelchair Turning Space$ $Fig 4 heelchair Turning Sp$	Scale: 1" = 1'-0" NOTE: PROVIDE SOLID BLOCKING FOR ALL	TEL: 212.673.3110 • TEL: 631.673.3111 • FAX: 631.673.2031
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Image: Spece for 180° turns       1001 Whitlock Avenue         Fig 3       Theelchair Turning Space         FORMATION ON HANDICAP REQUIREMENTS ON SHEET HR-I       ADAPTABLE KITCHEN LAYOUT         DOB APPROVAL STAMP:       DATE: 7:14-17         JD B APPROVAL STAMP:       STAMP:         DATE: 7:14-17       JD B #: 15-36         DATE: Asymptotic for 180°       STAMP:         DATE: 7:14-17       JD B #: 15-36         DATE: 15-36       DRAWN BY: SC/AG         SCALE: Asymptote       DRAWING NO:         A-5007.02       FILE No. :         FILE No. :       SHEET:         74		WHITLOCK APARTMENTS BUILDING 1
Implement		1001 Whitlock Avenue
(b)       T-Shoped Space         Fig 3       Fig 3         /heelchair Turning Space       ADAPTABLE KITCHEN LAYOUT         FORMATION ON HANDICAP REQUIREMENTS ON SHEET HR-I       DOB APPROVAL STAMP:         DOB APPROVAL STAMP:       STAMP:         DOB APPROVAL STAMP:       DATE: 7:14-17         JOB #:       15-36         DRAWN BY:       SC/AG         SCALE:       AS_NOTED         DRAWING NO:       A-5007.002         FILE No. :       SHEET:         74		
Fig 3         /heelchair Turning Space         FORMATION ON HANDICAP REQUIREMENTS ON SHEET HR-I         DOB APPROVAL STAMP:         DOB APPROVAL STAMP:         STAMP:         JATE:         TOB APPROVAL STAMP:         DATE:         THE STAMP:		
DOB APPROVAL STAMP: STAMP: STAMP: STAMP: DATE: 7-14-17 JOB #: 15-36 DRAWN BY: SC/AG SCALE: AS_NOTED DRAWING NO: A-507.02 FILE No. : SHEET: 74		ADAPTABLE KITCHEN LAYOUT
STAMP:       DATE:       7-14-17         JOB #:       15-36         DRAWN BY:       SC/AG         SCALE:       AS_NOTED         DRAWING NO:       A-507.02         FILE No. :       SHEET:         74		_
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20	DBILITY IMPAIRED BATHROOM: 3,204,206,213,409,413,422,506,5 3,709,807,904		5' 1'-2" 1'-0" 2'-0" GRAB B	-0" AR	/	PROVIDE TUB SEAT & SECURE NON-SLIP ACCESSIBLE TUB SEA HEAD END OF TUB. II AS PER MANUF. 'FREI #APFTFRS 290-150 M
	PROVIDE 30"X48" CLEAR FLOOR SPACE TO BE CENTERED ON SINK AND 30"X60" CLEAR FLOOR SPACE IN FRONT OF TUB TOP LIGHTED MEDICINE CABINET WITH MIRROR	13]=			54"	<ul> <li>CERAMIC TILE WALLS</li> <li>SHOWER CURTAIN RO PERMANENTLY ANCHORED TO WALL</li> <li>PROVIDE 48"X66" CLE FLOOR SPACE @ TOIL AREA FOR FORWARD APPROACH</li> <li>(1) 24" TOWEL BAR</li> </ul>
	EXTEND REINFORCING ON EACH SIDE OF GRAB BARS. SEE DETAILS. (TYP) PROVIDE GRAB BARS FOR HC ACCESSIBLE UNITS (TYP.)	1'-6" 2'-6" 1'-0 <u>1</u> " 3'-0" 3'-0" 3'-0"	H.C.		3 ¹ -4 ¹¹	
1 (A-50	UFAS BATHROOM LAYOU		1'-0" MAX GRAB BAR 3'-0" MAX TO T.P. 6'-2"			— TOILET PAPER HOLD
	-		6'-2" 1'-8" 3'- GRAB	6" , 1'-0"		TOILET PAPER HOLDER PROVIDE GRAB BARS FO IC ACCESSIBLE UNITS TYP.)
	APPROACH (1) 24" TOWEL BAR SHOWER CURTAIN ROD PERMANENTLY ANCHORED TO WALL PROVIDE TUB SEAT & SECURE NON-SLIP ACCESSIBLE TUB SEAT AT HEAD END OF TUB. INSTALL AS PER MANUF. 'FREEDOM' #APFTFRS 290-150 MV.				1'-3" 1'-0 ¹ " 2'-4" GRAB BAR	EXTEND REINFORCING ON EACH SIDE OF GRAB BA BEE DETAILS. (TYP) PROVIDE 30"X48" CLEAR FLOOR SPACE TO BE CENTERED ON SINK AND 30"X60" CLEAR FLO SPACE IN FRONT OF TU FOP LIGHTED MEDICINE CABINET WITH MIRROR
EXAC SEI PROT T T PRO T T PRO FLO AP 4"x	08       1/2" = 1'-0"         TEND REINFORCING ON         CH SIDE OF GRAB BARS.         E DETAILS. (TYP)         OVIDE GRAB BARS FOR         ACCESSIBLE UNITS         TP.)		5'-0" <u>2'-6" 1'-0</u> 1' 1'-3		Т – – – – – – – – – – – – – – – – – – –	OP LIGHTED MEDICINE ABINET WITH MIRROR ROVIDE 30"X48" CLEAR LOOR SPACE TO BE ENTERED ON SINK ND 30"X60" CLEAR FLOO PACE IN FRONT OF TUE HOWER CURTAIN ROD ERMANENTLY NCHORED TO WALL ROVIDE TUB SEAT & ECURE NON-SLIP CCESSIBLE TUB SEAT A EAD END OF TUB. INST S PER MANUF. 'FREEDO APFTFRS 290-150 MV. ERAMIC TILE WALLS
A-50	8 1/2" = 1'-0"		9'-0" 4" 3'-4"	2'-10"		
PRC PER ANC PRC FLC TUE PRC SEC ACC AS #AF	RAMIC TILE WALLS	5" 2'-0" GRAB BAR			6"         3'-0"           6RAB BAR         1'-0"           1'-6"         2'-33"           1'-6"         2'-33"	PROVIDE 30"X48" CL FLOOR SPACE TO B CENTERED ON SINK
WIT	DVIDE GRAB BARS @ HC TOILET	1'-5" 1'-0" 1 GRAB BAR 2'-6"	"G G  	1       MAX       TO       T.P.         3"-6"       1'-0"         RAB       BAR         0"       1'-0"	* • • • • • • •	
WAS PRO PRO ARE APF PRO FLO CEN 4"x FLO SIN FLC BE	PER TOWEL DISPENSER/ DVIDE 60"X56" CLEAR OR SPACE @ TOILET EA FOR FORWARD PROACH DVIDE 30"X48" CLEAR OR SPACE TO BE ITERED ON SINK 4" CERAMIC DOR TILES GLE USE TOILET ROOM TH CLEAR 30"x48" CLEAR OR SPACE PROVIDED TOND ARC OF DOOR ING.		508 4 FD 3	GRAB BAR $2^{1}-11^{11}$ $3^{-0^{1}}$ MAX to T.P. W.C. $=$ W.C. $=$ 1 1 1 1 1 1 1 1		4'-( 
	5 HC TOILET RM SINGLE	USER LAYOU				

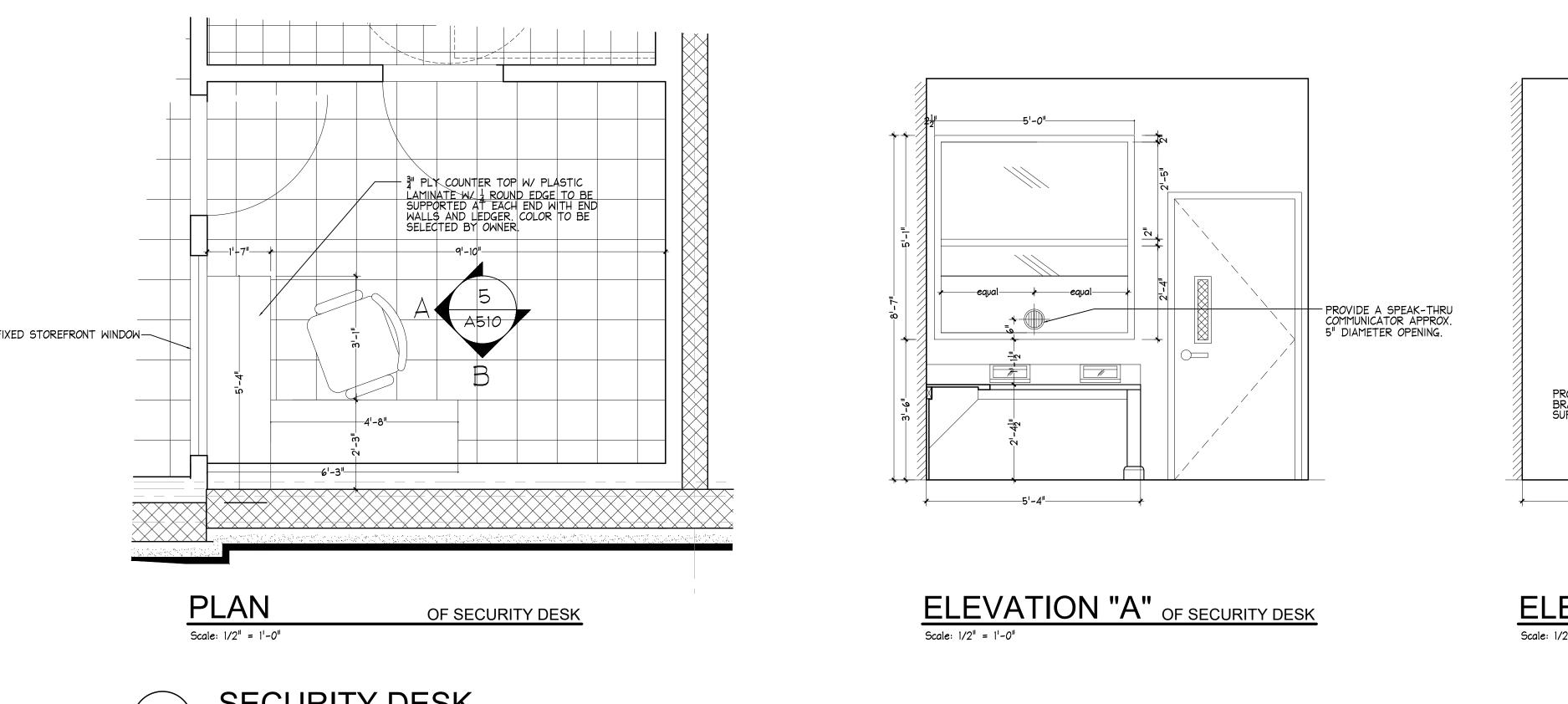


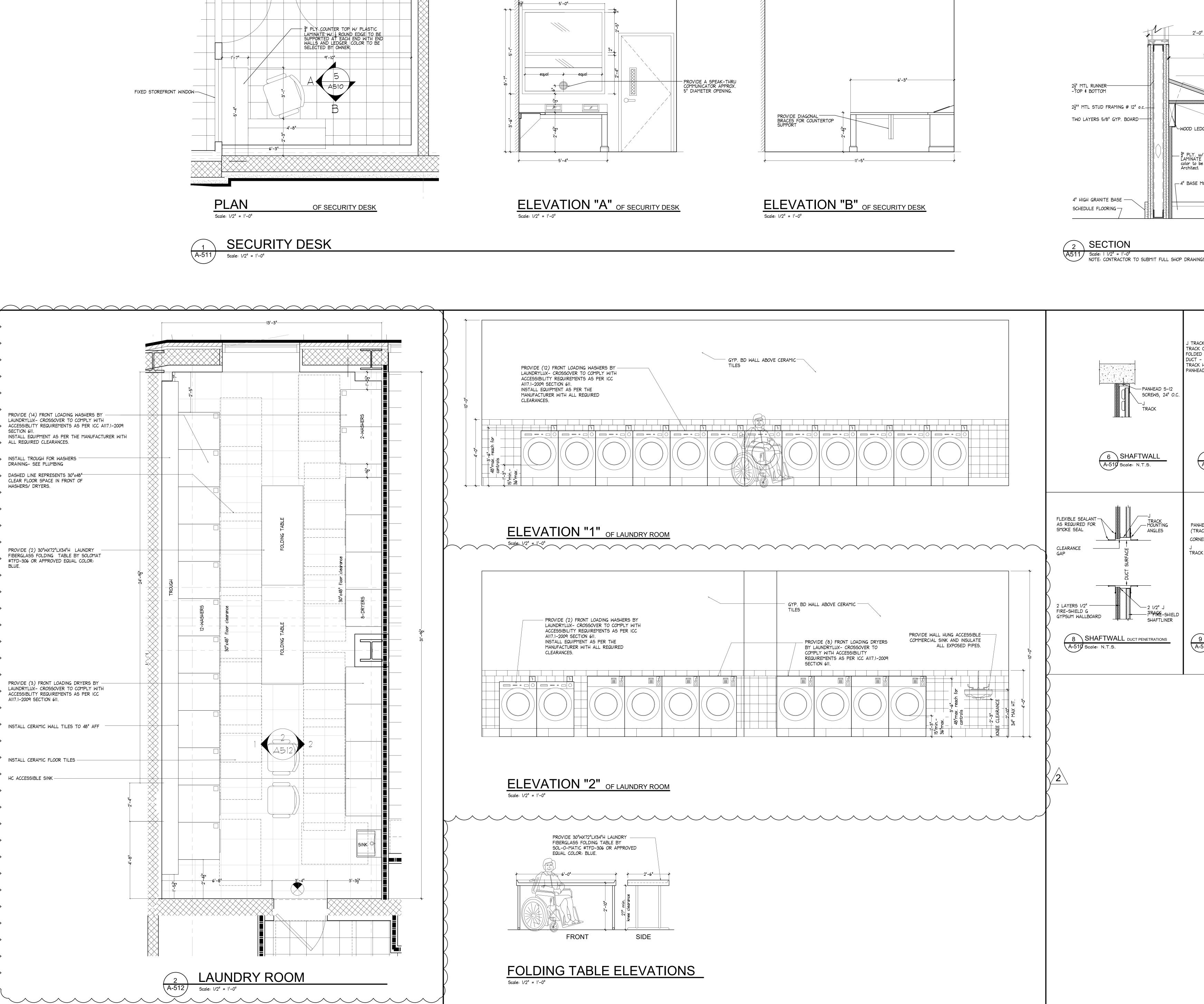






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		NEWM West Ro	NEWMAN DESIGN ARCHITECTS PLLC gues Path • Cold Spring Hills, NY 11743 3110 • TEL: 631.673.3111 • FAX: 631.673.2031 www.ndarchitects.com
Note: Type S screws for .020" studs, S-12 screws for .0329" and .040" studs. 9 SHAFTWALL typical outside conner A-510 Scale: N.T.S.	REV.	12/11/17 12/12/17 9/20/17 8/28/17 7/17/17	ISSUED TO D.O.B Gen Const ISSUED FOR BIDS ISSUED TO BIDS ISSUED TO D.O.B. ISSUED TO D.O.B. HPD SUBMISSION DESCRIPTION
7       SHAFTWALL ELEVATION AT DUCT OPENING         A-510       Scale: N.T.S.         NHEAD SCREWS RACK TO TRACK)       I/2" FIRE-SHIELD G GYPSUM WALLBOARD         RNER BEAD       II" FIRE-SHIELD SHAFTLINER SHAFTLINER         ACK       III FIRE-SHIELD SHAFTLINER SHAFTLINER         III FIRE-SHIELD SHAFTLINER SHAFTLINER         III FIRE-SHIELD SHAFTLINER         III FIRE-SHIELD SHAFTLINER         III SCREWS III SCREWS III CO.	2	10/05/21 10/05/21 4/30/21 2/12/21 1/15/19	ISSUED TO DOB - PAA ADDED CELLAR HPD PAA RESUBMISSION HPD SUBMISSION ISSUED TO DOB - PAA REMOVED CELLAR HPD RESUBMISSION HPD RESUBMISSION
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NO. CELLAR	STAIR A & B WATER & RPZ ROOM	FLOOF MATERIAL	3	WALLS				
	FLOOR STAIR A & B WATER & RPZ ROOM		3	W/ALLS				
	FLOOR STAIR A & B WATER & RPZ ROOM	MATERIAL		WALLS		CEILING		NOTES
CELLAR	STAIR A & B WATER & RPZ ROOM		BASE	MATERIAL	FINISH	MATERIAL	FINISH	
	WATER & RPZ ROOM							
		PAINTED CONC.	_	MASONRY/CONCRETE	Pt.	CONC. ON MTL. DECK	PT.	Pt. BOTTOM OF LANDING. PROVIDE BLOCK FILLER ON CMU AND STAIR
		PAINT CONCRETE	-	MASONRY/MTL. SHEET PILE	PT.	CONC. ON MTL. DECK	ACT	
	ELEVATOR CONTROL ROOM A-B-C	PAINT CONCRETE	-	MASONRY	PT.	CONC. ON MTL. DECK	ACT	-
	ELEVATOR CONTROL ROOM D	PAINT CONCRETE	-	MASONRY	PT.	CONC. ON MTL. DECK	ACT	-
	BICYCLE STORAGE	PAINTED CONC.	-	MASONRY/MTL. SHEET PILE	Pt.	CONC. ON MTL. DECK	ACT	-
	FIRE PUMP RM	PAINTED CONC.	-	MASONRY	Pt.	CONC. ON MTL. DECK	ACT	-
	RESIDENTIAL PARKING/ RAMP	PT. CONC. SEALED	-	MASONRY	Pt.	CONC. ON MTL. DECK	ACT	AUTOGARD
FIRST F	LOOR							_
	BICYCLE STORAGE	PAINTED CONC.	-	MASONRY	Pt.	CONC. ON MTL. DECK	-	-
	RESIDENTIAL PARKING/ RAMP	PT. CONC. SEALED	-	MASONRY	Pt.	CONC. ON MTL. DECK	ACT	AUTOGARD
	GENERATOR	PAINT CONCRETE	-	MASONRY	Pt.	CONC. ON MTL. DECK	SEE RCP	INSULATION AT MECH ROOMS CEILING.
	GAS ROOM	PAINT CONCRETE	-	MASONRY	Pt.	CONC. ON MTL. DECK	SEE RCP	INSULATION AT MECH ROOMS CEILING.
	ELECTRIC/ ARC ROOM	PAINT CONCRETE	-	MASONRY/ GYP. BD	Pt.	CONC. ON MTL. DECK	SEE RCP	INSULATION AT MECH ROOMS CEILING.
	TELE ROOM	PAINT CONCRETE	-	MASONRY/ GYP. BD.	Pt.	CONC. ON MTL. DECK	SEE RCP	INSULATION AT MECH ROOMS CEILING.
	MAILBOXES	PORCELAIN PAVERS	8" PAVERS	GYP. BD.	Pt.	CONC. ON MTL. DECK	A.C.T./ GYP. BD	C.T. WAINSCOTE @ 48"A.F.F. / PAINT ABOVE
	LOBBY	PORCELAIN PAVERS	8" PAVERS	GYP. BD.	Pt.	CONC. ON MTL. DECK	A.C.T./ GYP. BD	C.T. WAINSCOTE @ 48"A.F.F. / PAINT ABOVE
	VESTIBULE	PORCELAIN PAVERS	8" PAVERS	GYP. BD.	Pt	CONC. ON MTL. DECK	GYP. BD	INSTALL 12"x12" DURA-TILE #LT-50 W/ RECESSED FRAME BY 'PAWLING'
	SECURITY	PORCELAIN PAVERS	8" PAVERS	GYP. BD.	Pt.	CONC. ON MTL. DECK	A.C.T.	C.T. WAINSCOTE @ 48"A.F.F. / PAINT ABOVE
	COMMUNITY FACILITY- PER TENANT	-	-	GYP. BD.	-	CONC. ON MTL. DECK	-	AS PER TENANT
	H.C. TOILET ROOM	C.T.	6" C.T. COVE BASE	GYP. BD./ CEMENT BD.	C.T./ Pt.	CONC. ON MTL. DECK	A.C.T.	C.T. WAINSCOTE @ 48"A.F.F. / PAINT ABOVE
	COMPACTOR ROOM	PAINT CONCRETE	-	MASONRY	PT.	CONC. ON MTL. DECK	-	-
	LAUNDRY ROOM	C.T.	6" C.T. COVE BASE	GYP. BD.	PT.	CONC. ON MTL. DECK	A.C.T.	C.T. WAINSCOTE @ 48"A.F.F. / PAINT ABOVE
	TENANT RECREATION	6"x48" VINYL PLANK	4" VINYL BASE	GYP. BD.	Pt.	CONC. ON MTL. DECK	A.C.T.	- Pt. BOTTOM OF LANDING. PROVIDE BLOCK FILLER
	STAIR A, B AND MISC	PAINTED CONC.	-	MASONRY	Pt	CONC. ON MTL. DECK	Pt.	ON CMU AND STAIR
	BIKE STORAGE	PAINTED CONC. C.T.		GYP. BD. MASONRY/ GYP. BD	Pt. C.T./ Pt.	CONC. ON MTL. DECK	PT.	- C.T. WAINSCOTE @ 48"A.F.F. / PAINT ABOVE
	REFUSE ROOM (COMMUNITY FACILITY)	C.1.	6" C.T. COVE BASE		C.T.7 Ft.	CONC. ON MTL. DECK	-	C.I. MAINSCUTE @ 40 A.F.F. / FAINT ADOVE
						CONC. ON THE DECK		
	. FLOORS (2ND THROUGH 14T							
	STAIR A \$ B	PAINTED CONC.		MASONRY	Pt.	CONCRETE PLANK	Pt.	Pt. BOTTOM OF LANDING. PROVIDE BLOCK FILLER
	CORRIDOR	12"x12" V.C.T.	- 4" VINYL BASE	GYP. BD.	Pt.	CONC PLANK-GYP BD	Pt.	ON CMU AND STAIR PROVIDE BORDER AND FIELD TILES
	RUBBISH ROOM	12x24 PORCELAIN	12" PORCELAIN	GYP. BD./ CEMENT BD.	C.T./ Pt.	CONC PLANK-GYP BD	Pt.	C.T. WAINSCOTE @ 48"A.F.F. / PAINT ABOVE
	TEL.	PAINTED CONC.	-	GYP. BD./ CEMENT BD.	Pt.	CONC PLANK-GYP BD	Pt.	
	JAN. CL.	С.Т.	12" C.T.	GYP. BD./ CEMENT BD.	с.т.	CONC PLANK-GYP BD	Pt.	C.T. FULL WALL
	ELECTRIC CLOSET (9TH AND 13TH FL)	PAINTED CONC.	-	GYP. BD./ CEMENT BD.	Pt.	CONC PLANK-GYP BD	Pt.	
							1 0.	
TYPICAL	APARTMENT							
	HALLWAY	6"X48" viny1 wd p1ank.	4" VINYL BASE	GYP. BD.	Pt.	GYP. BD.	Pt.	-
	LINEN CLOSET	6"X48" vinyl wd plank		GYP. BD.	Pt.	CONC PLANK-GYP BD	COVER COMPOUND/ PT.	-
	COAT CLOSET	6"X48" vinyl wd plank		GYP. BD.	Pt.	GYP. BD.	Pt.	-
	KITCHEN	6"X48" viny1 wd p1ank	4" VINYL BASE	GYP. BD.	Pt.	GYP. BD.	Pt.	-
	LIVING RM./ DINING RM.	6"X48" viny1 wd p1ank	4" VINYL BASE	GYP. BD.	Pt.	CONC PLANK-GYP BD	COVER COMPOUND / PT.	-
	BEDROOM / MASTER BEDROOM	6"X48" viny1 wd p1ank	4" VINYL BASE	GYP. BD.	Pt.	CONC PLANK-GYP BD	COVER COMPOUND /PT.	-
	BEDROOM CLOSET	6"X48" viny! wd plank	4" VINYL BASE	GYP. BD.	Pt.	CONC PLANK-GYP BD	COVER COMPOUND /PT.	-
	BATHROOM (INCL. H.C.)	С.Т.	C.T.	GYP. BD./CEMENT BD./ MRBD	C.T./ Pt.	GYP. BD.	Pt.	42" HIGH C.T. WAINSCOTE
ROOF LE	EVEL							
	STAIR A	PAINTED CONC.	-	MASONRY	Pt.	CONCRETE PLANK	Pt.	Pt. BOTTOM OF LANDING. PROVIDE BLOCK FILLER ON CMU AND STAIR
	STAIR B	PAINTED CONC.	-	MASONRY	Pt.	CONCRETE PLANK	Pt.	Pt. BOTTOM OF LANDING. PROVIDE BLOCK FILLER ON CMU AND STAIR
	BOILER ROOM	PAINT CONCRETE	-	MASONRY/ GYP BD	Pt.	CONCRETE PLANK	-	-
	ELECTRICAL ROOM	PAINT CONCRETE	-	MASONRY/ GYP BD	Pt.	CONCRETE PLANK	-	-

GENERAL NOTES: See Reflected Ceiling Plans

) FOR ALL APARTMENT BATHROOMS- PROVIDE C.T. WAINSCOTE @ 48"A.F.F. WITH A 4" BULLNOSE EDGE N ALL WALLS AS SHOWN ON INTERIOR ELEV., AT TUB AREA C.T. IS TO BE PROVIDED FULL HEIGHT.

) PROVIDE I" THICK LATICRETE SETTING BED UNDER ALL CERAMIC TILE FLOORS.

) PROVIDE  $\frac{1}{2}$  THICK GYPCRETE UNDER ALL PORCELAIN PAVERS. ) PROVIDE 🖞 THICK GYPCRETE UNDER ALL OTHER FINISHED FLOOR SURFACES THROUGHOUT THE BUILDING. (15) ALL SOFFITS TO BE PAINTED WITH LOW OR NO VOC'S ) SEE SPECIFICATIONS FOR MILLWORK. ) PROVIDE SOUND INSULATION AT CEILING AND WALLS OF MECH. \$ BOILER ROOM, MIN. STC RATING =53 ) PROVIDE BLOCK FILLER ON ALL MASONRY WALLS TO BE PAINTED.

8) A.C.T. IN KITCHEN AND LAUNDRY ROOM TO BE VINYL FACED WITH WASHABLE FINISH. 9) PROVIDE MOISTURE RESISTANT BACKING CEMENTIOUS UNDERLAYMENT PER ASTM

03273 BEHIND CERAMIC TILE WITHIN THE TUB SURROUND

10) ALL ADHESIVES, CAULKS AND SEALANTS MUST COMPLY WITH HAVING LOW/ NO VOC. ALL ADHESIVES MUST COMPLY WITH RULE 1168 OF THE SOUTH COAST AIR QUALITY MANAGEMNT DISTRICT. ALL CAULKS AND SEALANTS MUST COMPLY WITH REGULATION 8, RULE 51 OF THE BAY AREA QUALITY MANAGEMENT DISTRICT.

(12) ALL PARTICLEBOARD AND MDF WILL BE CERTIFIED COMPLIANT WITH ANSI A208.1 OR A208.2 (13) ALL WALL, FLOOR AND JOINT PENETRATIONS WILL BE SEALED WITH A LOW- NO VOC CAULK ALONG WITH RODENT AND CORROSION PROOF SCREENS FOR LARGE OPENINGS. (14) ALL WET AREAS WILL HAVE SMOOTH, DURABLE, AND CLEANABLE SURFACES. NOT VINYL WALLPAPER OR UNSEALED GROUT TO BE USED. (16) WATERPROOF PLANTERS- PROVIDE LOW OR NO VOC'S. (17) THIS PROJECT IS DESIGNED TO COMPLY WITH ENTERPRISE GREEN COMMUNITIES. (18) AT ALL APARTMENTS KITCHENS OR AREAS WITH DIFFERENT COLORS PROVIDE ADA COMPLIANT TRANSITION STRIP TO MATCH VINYL PLANK COLOR FROM SAME MANUFACTURER. (19) AT ALL APARTMENTS 6"X48" VINYL WD PLANK- BY JOHNSONITE ID FREEDOM OR APPROVED EQUAL. COLOR TO BE SELECTED BY THE ARCHITECT.

(11) ALL INTERIOR PAINTS AND PRIMERS MUST MEET GREEN SEAL LIMITS FOR VOC'S

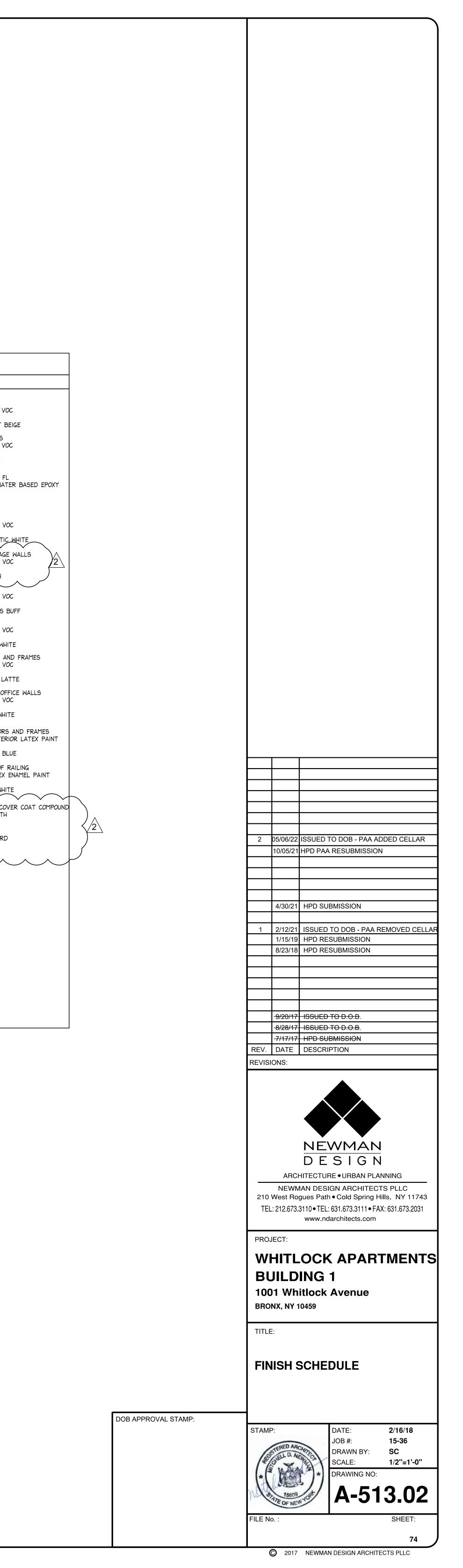
PAINT SCHEDUL	FINISH	NOTES	PAIN	SPECIFICATION MANUFACTURER SHER	WIN WILLIAMS !!	NI ESS NOTED OTHERWISE
LIVING RM./ DINING RM.	P-1	<b>_</b>				NELOO NOTED OTHERMOL
KITCHEN	P-1		- P-1	LOCATION: LIVING/DINING/KITCHEN	P-15	LOCATION: LAUNDRY
BEDROOM / MASTER BEDROOM	P-1		-	MFR.: PROMAR 200 ZERO VOC FINISH: EGG SHELL		MFR.: PROMAR 200 ZERO VOC FINISH: SEMI GLOSS
BATHROOM	P-2		-	COLOR: SW 6385 DOVER WHITE		COLOR: SW 6078 REALIST BE
CLOSETS	P-1		- P-2	LOCATION: BATHROOMS	P-16	LOCATION: UTILITY ROOMS
INTERIOR DOORS AND FRAMES	P-4		-	MFR.: PROMAR 200 ZERO VOC FINISH: EGG SHELL		MFR.: PROMAR 200 ZERO VOC FINISH: SEMI GLOSS
ENTRY DOORS AND FRAMES	P-3		-	COLOR: SW 7551 GREEK VILLA		COLOR: SW 6001 GRAYISH
GYPSUM BOARD CEILINGS/SOFFITS	P-5		P-3	LOCATION: ENTRY DOORS MFR.: PROMAR 200 ZERO VOC	P-17	LOCATION: UTILITY ROOM FL
EXPOSED PLANK	COVER COMPOUND			FINISH: SEMI GLOSS	F-1/	MFR .: ARMORSEAL 8100 WATE
TYP COMMON AREAS	FINISH	NOTES		COLOR: SW 6006 BLACK BEAN		FINISH: SEMI GLOSS COLOR: HAZE GRAY
STAIR WALLS	P-6		P-4	LOCATION: INTERIOR DOORS		
STAIR RAILINGS	P-7			MFR.: PROMAR 200 ZERO VOC FINISH: SEMI GLOSS	P-18	LOCATION:TOILET MFR.: PROMAR 200 ZERO VOC
STAIR FLOOR	P-8			COLOR: SW 7005 EXTRA WHITE		FINISH: SEMI GLOSS
CORRIDOR WALLS	P-9		P-5	LOCATION: GYP CEILING	$\frown$	COLOR: SW 7035 AESTHETIC
DOORS AND FRAMES	P-10		]	MFR.: PROMAR 200 ZERO VOC FINISH: EGG SHELL	P-19	LOCATION: PARKING GARAGE
RUBBISH & REFUSE ROOM	P-11			COLOR: SW 7005 EXTRA WHITE		MFR.: PROMAR 200 ZERO VOO FINISH: SEMI GLOSS
JAN. CL./ TEL CLOSET	P-11		P-6	LOCATION: STAIRS MFR.: PROMAR 200 ZERO VOC	$\searrow$	COLOR: SW 6001 GRAYISH
GYPSUM BOARD CEILINGS/SOFFITS	P-5		_	FINISH: EGG SHELL	P-20	LOCATION: LOBBY WALLS
EXPOSED PLANK	COVER COMPOUND		_	COLOR: SW 6238 ICICLE		MFR.: PROMAR 200 ZERO VOO FINISH: SEMI GLOSS
ROOF WALLS	P-9		P-7	LOCATION: STAIR RAILINGS MFR.: PROMAR 200 ZERO VOC		COLOR: SW 7552 BAUHAUS BI
ROOF DOORS AND FRAMES	P-10		_	FINISH: EGG SHELL	P-21	LOCATION: LOBBY TRIM
	_			COLOR: SW 9162 AFRICAN GREY		MFR.: PROMAR 200 ZERO VOO FINISH: SEMI GLOSS
UTILITY ROOM WALLS	P-16		P-8	LOCATION: STAIR FLOOR MFR.: ARMORSEAL 8100 WATER BASED EPOXY		COLOR: SW 7005 EXTRA WHIT
UTILITY ROOM FLOORS TOILET ROOM WALLS	P-17		-	FINISH: SEMI GLOSS	P-22	LOCATION: LOBBY DOORS AND MFR.: PROMAR 200 ZERO VOO
TENANT RECREATION ROOM	P-18 P-14		 P_9	COLOR: HAZE GRAY LOCATION: CORRIDOR WALLS		FINISH: SEMI GLOSS
CORRIDOR WALLS (MECHANICAL AREAS)			-	MFR.: PROMAR 200 ZERO VOC		COLOR: SW 9108 DOUBLE LAT
DOORS AND FRAMES (MECHANICAL AREAS)	P-12		-	FINISH: SEMI GLOSS COLOR: SW 7516 KESTREL WHITE	P-23	LOCATION: MANAGEMENT OFF MFR.: PROMAR 200 ZERO VOC
	FINISH	NOTES	P-10	LOCATION: DOORS AND TRIM		FINISH: SEMI GLOSS
CELLAR		NOTES		MFR.: PROMAR 200 ZERO VOC		COLOR: SW 6105 DIVINE WHIT
STAIR WALLS	P-6			FINISH: SEMI GLOSS COLOR: SW 6006 BLACK BEAN	P-24	LOCATION: EXTERIOR DOORS
STAIR RAILINGS	P-7		- )P-11	LOCATION: TRASH/JAN CL		MFR.: SOLO ACRYLIC EXTERIO FINISH: SEMI GLOSS
STAIR FLOOR CORRIDOR WALLS	P-8		$\left\{ \right\}$	MFR.: PROMAR 200 ZERO VOC FINISH: EGG SHELL		COLOR: SW 6515 LEISURE BLU
DOORS AND FRAMES	P-12		$\left\{ \right\}$	COLOR: SW 7531 CANVAS TAN	P-25	LOCATION: EXTERIOR ROOF R
	P-13 P-14		P-12	LOCATION: CORRIDOR WALLS		MFR .: ALL SURFACE LATEX E
TENANT RECREATION ROOM BICYCLE ROOMS	P-16		1/	MFR.: PROMAR 200 ZERO VOC FINISH: SEMI GLOSS		FINISH: HIGH GLOSS COLOR: SW 6105 DIVINE WHIT!
UTILITY ROOM WALLS	P-16		+	COLOR: SW 7516 KESTREL WHITE	$\frown$	$\checkmark \checkmark \checkmark \checkmark$
UTILITY ROOM FLOORS	P-17		P-13	LOCATION: DOORS AND TRIM		USG SHEETROCK BRAND COVI D TEXTURE: APPLIED SMOOTH
TOILET ROOM WALLS	P-18		$\left( \right)$	MFR.: PROMAR 200 ZERO VOC FINISH: SEMI GLOSS		
PARKING WALLS	P-19		17	COLOR: SW 6006 BLACK BEAN		AUTOGARD FC BY NEOGARD
PARKING FLOOR	AUTOGARD		) P-14	LOCATION: MEETING ROOM	AUTOGARD	AUTOGRADIC DI NLUGAND
FIRST FLOOR	FINISH	NOTES	$\mathbf{Y}$	MFR.: PROMAR 200 ZERO VOC FINISH: SEMI GLOSS	$\langle \rangle$	$\land$ $\land$ $\land$ $\land$
STAIR WALLS	P-6		1	COLOR: SW 7572 LOTUS POD	$\sim$ $\sim$	
STAIR RAILINGS	P-7		1			
STAIR FLOOR	P-8		1			
VESTIBULE	P-20		1			
LOBBY- MAILBOX WALLS	P-20		1			
	P-21		1			
DOORS AND FRAMES	P-22		1			
TOILET ROOM WALLS	P-18		1			
SECURITY WALLS	P-23		1			
BICYCLE ROOMS	P-16		1			
LAUNDRY	P-15		1			
MISC	FINISH	NOTES	1			
EXTERIOR DOORS AND FRAMES			-			
	P-24		4			

LOCATION	TILE	SIZE	COLOR	GROUT
LOBBY	MARAZZI PORCELAIN SILK	20" X 20" SEE NOTE 1	SOPHISTICATED BEIGE	LATICRETE 40 LATTE
APARTMENT BATHROOM WALLS	DALTILE- GLOSS ANNAPOLIS	6" X 16" SEE NOTE 2	WHITE GLOSS AP06	LATICRETE 44 BRIGHT WHITE
APARTMENT BATHROOM FLOOR	DALTILE PORCELAIN MOSAIC BEVALO	3" X3" SEE NOTE 2	DOVE BV95	LATICRETE 88 SILVER SHADO
JANITOR CLOSET FLOOR	DALTILE SALERNO	6" X 6" SEE NOTE 2	MARR <i>O</i> NE CHIARO SL83	LATICRETE 56 DERSERT KHAKI
JANITOR CLOSET WALL	DALTILE SALERNO	6" X 6" SEE NOTE 2	MARR <i>O</i> NE CHIARO SL83	LATICRETE 56 DERSERT KHAKI
TRASH ROOM FLOOR	DALTILE MATTE PORCELAIN ARTICULO	12" X 24" SEE NOTE 2	COLUMN GREY AR09	LATICRETE 89 SMOKE GREY
TRASH ROOM WALL	DALTILE MATTE PORCELAIN ARTICULO	6" X 18" SEE NOTE 2	EDITORIAL WHITE AR06	LATICRETE 90 LIGHT PEWTER
LAUNDRY ROOM FLOOR	DALTILE SALERNO	6" X 6" SEE NOTE 2	GRIGIO PERLA SL84	LATICRETE 89 SMOKE GREY
LAUNDRY ROOM WALL	DALTILE SALERNO	6" X 6" SEE NOTE 2	GRIGIO PERLA SL84	LATICRETE 89 SMOKE GREY
PUBLIC TOILET WALL	DALTILE SEMI-GLOSS GROUP 1	$4 \frac{1}{4} \times 4 \frac{1}{4}$ SEE NOTE 2	URBAN PUTTY 0161	LATICRETE 17 MARBLE BEIGE
PUBLIC TOILET FLOOR	DALTILE MOSAIC COLORBODY PORCELAIN KEYSTONES GROUP 2	1" X 1" SEE NOTE 2	URBAN PUTTY SPECKLE D201	LATICRETE 17 MARBLE BEIGE

P-25

EXTERIOR ROOF RAILINGS

1. PROVIDE 4" HIGH MATCHING TILE BASE 2. PROVIDE MATCHING TRIM UNITS - COVE BASE, BULLNOSE AND CORNERS



# **Appendix B:** Community Air Monitoring Plan

Sonero Metro City Auto 1001 Whitlock Avenue Bronx, Bronx County, New York (BCP# C203148)

# COMMUNITY AIR MONITORING PLAN (CAMP)

**Prepared for:** 

Whitlock Point LLC and Whitlock Point Services LLC 5959 Broadway, Suite 3 Bronx, NY 10459

> Prepared by: SESI CONSULTING ENGINEERS, D.P.C. 12A Maple Avenue Pine Brook, NJ 07058

> > MAY 2022

# TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	OBJECTIVES	1
3.0	METHODS	1
3.1	CONTINUOUS MONITORNG	2
3.2	PERIODIC MONITORNG	2
4.0	VOC MONITORNG, RESPONSE LEVELS, AND ACTIONS	2
5.0	PARTICULATE MONITORING, RESPONSE LEVELS, AND ACTIONS	.3
6.0	SPECIAL REQUIREMENTS FOR WORK WITHIN 20 FEET OF POTENTIALLY	,
EXPO	SED INDIVIDUAL STRUCTURES	4

# LIST OF TABLES

TABLE 3.1NYSDEC AND NYSDOH CONTACT INFORMATION

### 1.0 INTRODUCTION

This document presents a Community Air Monitoring Plan (CAMP) for the remedial investigation (RI) at 1001 Whitlock Avenue in Bronx, New York (the "Site").

The Site consists of approximately 0.788-acres. The Site is identified on the tax map as tax parcel Block 2756, Lot 85. The Site is currently vacant with no structures.

The Site is surrounded by the North America/Pulse Plastics BCP Site to the north, Whitlock Avenue to the east, residential buildings to the west and Aldus Street/Whitlock Avenue to the south. The closest surface water body is the Bronx River, located approximately 600 feet to the east of the Site. The Site topography is generally flat and regionally slopes gently downward to the east. This Supplemental Remedial Investigation Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) Appendix 1A (Generic CAMP, attached) and Appendix 1B (Fugitive Dust and Particulate Monitoring, attached).

## 2.0 OBJECTIVES

The objective of the CAMP is to provide a measure of protection for the downwind community from potential airborne contaminant releases that may arise during all ground intrusive activities, and potentially contaminated soil and material handling and staging. In addition, the CAMP is intended to ensure that dust and contaminants are not leaving the work zone.

### 3.0 METHODS

The CAMP will include continuous monitoring for particulate matter (e.g., airborne "dust") and volatile organic compounds (VOCs) during the planned remedial investigation activities. Any CAMP exceedances will be reported to the NYSDEC and NYSDOH on the same business day and as soon as possible. Notification of the exceedance will be sent via email along with the reason for the exceedance, the measure(s) taken to address the exceedance, and if the exceedance was resolved. In addition, the following NYSDEC and NYSDOH personnel will be provided weekly CAMP data summaries for review.

### TABLE 3.1 NYSDEC AND NYSDOH CONTACT INFORMATION

1

Name	Contact Information
Michael MacCabe	michael.maccabe@dec.ny.gov 518.402.9687
Angela Martin NYSDOH	Angela.Martin@health.ny.gov 518.402.7860

# 3.1 CONTINUOUS MONITORNG

Continuous monitoring for particulates and VOCs will be conducted during all ground intrusive activities including soil excavation and loading.

# 3.2 PERIODIC MONITORNG

Periodic monitoring for VOCs will be conducted 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 consists 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. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required 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.

# 4.0 VOC MONITORNG, RESPONSE LEVELS, AND ACTIONS

VOC Monitoring, Response Levels, and Actions Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using a photoionization detector (PID) equipped with a 10.6 ev lamp. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment

should 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 must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can 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 must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can 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 must be shutdown.

All 15-minute readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

## 5.0 PARTICULATE MONITORING, RESPONSE LEVELS, AND ACTIONS

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should 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 must 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/m³) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m³ 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 mcg/m³ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m³ of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

# 6.0 SPECIAL REQUIREMENTS FOR WORK WITHIN 20 FEET OF POTENTIALLY EXPOSED INDIVIDUAL STRUCTURES

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

 If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Depending upon the nature of contamination, chemical-specific colorimetric tubes of sufficient sensitivity may be necessary for comparing the exposure point concentrations with appropriate pre-determined response levels (response actions should also be pre-determined). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.

- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m³, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m³ or less at the monitoring point.
- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be predetermined, as necessary, for each site.

Appendix C: Health and Safety Plan

# SITE-SPECIFIC HEALTH AND SAFETY PLAN

# Sonero Metro City Auto Site 1001 Whitlock Avenue Bronx, Bronx County, New York BCP# C203148

**Prepared For:** 

# Whitlock Point LLC and Whitlock Point Services LLC 5959 Broadway, Suite 3 Bronx, NY 10459

**Prepared By:** 

# SESI CONSULTING ENGINEERS 12A Maple Avenue Pine Brook, NJ 07058

# Project No.: 11819

# MAY 2022

**Disclaimer:** This Health and Safety Plan (HASP) is based upon information provided [and, if applicable, conditions discovered during a site visit], and is limited by the project scope.

The HASP should be periodically reviewed and updated based on a number of factors, including but not limited to: (1) changes in applicable governmental requirements; (2) changes in procedures at the site; and (3) site conditions which were unknown to SESI Consulting Engineers (SESI) as of the time the HASP was prepared.

This HASP has been prepared for the sole and exclusive use of 90Ninety LLC, and may not be relied upon by any other person without the express written consent and authorization of SESI.

SITE-SPECIFIC HEALTH AND SAFETY PLAN

For

Sonero Metro City Auto Site 1001 Whitlock Avenue Bronx, New York 10459 BCP# C203148

one M augro

Prepared by:

Date: 04/06/22

Jesse Mausner SESI- Project Manager

Approved by:

Date: 04/06/22

Fuad Dahan SESI-Principal

HEALTH AND SAFETY PLAN SUMMARY	1
1.0 INTRODUCTION	2
<ul> <li>1.1 OBJECTIVE</li> <li>1.2 SITE AND FACILITY DESCRIPTION</li></ul>	2 2 3
2.0 PROJECT SCOPE OF WORK	4
3.0 ROLES AND RESPONSIBILITIES	4
<ul> <li>3.1 ALL PERSONNEL</li> <li>3.2 KEY SAFETY PERSONNEL</li> <li>3.2.1 Project Officer (PO).</li> <li>3.2.2 Project Manager (PM).</li> <li>3.2.3 Health and Safety Manager (HSM).</li> <li>3.2.4 Site Safety Officer (SSO).</li> <li>3.2.5 Field Supervisor (FS).</li> <li>3.2.6 Field Personnel (FP).</li> <li>3.3 SUBCONTRACTORS</li> <li>3.4 STOP WORK AUTHORITY</li> <li>3.5 ALL ON-SITE PERSONNEL.</li> <li>3.6 VISITORS.</li> </ul>	4 4 5 5 6 6 6
4.0 PERSONAL PROTECTIVE EQUIPMENT	7
<ul> <li>4.1 LEVELS OF PROTECTION</li></ul>	8 8 9 9 9 9 9 9
5.0 AIR AND NOISE MONITORING	.11
<ul> <li>5.1 AIR MONITORING</li> <li>5.2 NOISE MONITORING</li> <li>5.3 MONITORING EQUIPMENT MAINTENANCE AND CALIBRATION</li> <li>5.4 ACTION LEVELS</li> </ul>	.11 .11 .12
6.0 WORK ZONES AND DECONTAMINATION	.13

# TABLE OF CONTENTS

6.1 Work Zones	
6.1.1 Authorization to Enter	13
6.1.2 Site Orientation and Hazard Briefing	13
6.1.3 Certification Documents	13
6.1.4 Entry Log	13
6.1.5 Entry Requirements	13
6.1.6 Emergency Entry and Exit	
6.1.7 Contamination Control Zones	13
6.1.8 Exclusion Zone (EZ)	
6.1.9 Contamination Reduction Zone	
6.1.10 Support Zone (SZ)	
6.1.11 Posting	
6.1.12 Site Inspections	
6.2 DECONTAMINATION	
6.2.1 Personnel Decontamination	
6.2.2 Equipment Decontamination	14
6.2.3 Personal Protective Equipment Decontamination	15
7.0 TRAINING AND MEDICAL SURVEILLANCE	15
7.1 TRAINING	15
7.1 TRAINING	
7.1.2 Basic 40-Hour Course	
7.1.2 Dasic 40-riour course	
7.1.4 Site-Specific Training	
7.1.5 Daily Safety Meetings	
7.1.6 First Aid and CPR	
7.2 MEDICAL SURVEILLANCE	
7.2.1 Medical Examination	
7.2.2 Pre-placement Medical Examination	
7.2.3 Other Medical Examinations	
7.2.4 Periodic Exam	
7.2.5 Medical Restriction	
8.0 GENERAL SAFETY PRACTICES	
8.1 GENERAL SAFETY RULES	
8.2 BUDDY SYSTEM	
8.3 HEAT STRESS	
8.4 HEAT STRESS SAFETY PRECAUTIONS	
8.5 COLD STRESS	
8.6 SAFETY PRECAUTIONS FOR COLD STRESS PREVENTION	
8.7 SAFE WORK PRACTICES	
8.8 BIOLOGICAL HAZARDS	
8.8.1 Tick Borne Diseases	
8.8.2 Poisonous Plants	
8.8.3 Snakes	
8.8.4 Spiders	
8.9 Noise	26

8.10 Spill Control	.26
8.11 SANITATION	.26
8.11.1 Break Area	.26
8.11.2 Potable Water	.26
8.11.3 Sanitary Facilities	.27
8.11.4 Lavatory	.27
8.12 EMERGENCY EQUIPMENT	.27
8.13 LOCKOUT/TAGOUT PROCEDURES	.27
8.14 ELECTRICAL SAFETY	.27
8.15 LIFTING SAFETY	.28
8.16 LADDER SAFETY	.29
8.17 TRAFFIC SAFETY	.30
9.0 SITE-SPECIFIC HAZARDS AND CONTROL MEASURES	.30
9.1 EVALUATION OF HAZARDS	.30
9.1.1 Hazard Characteristics	
9.1.2 Potential Health and Safety Hazards	
9.2 FIELD ACTIVITIES, HAZARDS, AND CONTROL PROCEDURES	
9.2.1 Mobilization/Construction Stakeout	.31
9.2.2 Demolition/Site Clearing	
9.2.3 Excavation and Cut/Fill Operations	
9.2.4 Drilling/Subsurface Intrusion Activities	
9.2.5 Subsurface Chemical Sample Collection/Analysis	
9.2.6 UST Closure	
9.2.7 Decontamination	
9.2.8 Demobilization	
9.3 Chemical Hazards	
10.0 EMERGENCY PROCEDURES	13
10.1 General	
10.2 Emergency Response	
10.2.1 Fire	
10.2.2 Contaminant Release	
10.3 Medical Emergency	
10.3.1 Emergency Care Steps	
10.4 FIRST AID - GENERAL	
10.4.1 First Aid - Inhalation	
10.4.2 First Aid - Ingestion	
10.4.3 First Aid - Skin Contact	
10.4.4 First Aid - Eye Contact	
10.5 REPORTING INJURIES, ILLNESSES, AND SAFETY INCIDENTS	
10.6 Emergency Information	
10.6.1 Directions to Hospital	.45
11.0 LOGS, REPORTS, AND RECORD KEEPING	.46
11.1 HASP FIELD CHANGE REQUEST	.46
11.2 MEDICAL AND TRAINING RECORDS	.47

11.3	B Exposure Records	47
11.4	ACCIDENT/INCIDENT REPORT	47
11.5	5 OSHA Form 200	47
11.6	ON-SITE HEALTH AND SAFETY FIELD LOGBOOKS	47
11.7	7 MATERIAL SAFETY DATA SHEETS	47
12.0	COVID-19 RESPONSE ACTION PLAN	47

# LIST OF FIGURES

# Figure No. Title

Fig-1 New York Health Hospital Queens

# LIST OF EMBEDDED TABLES

<u>Table</u>	Title	Page	
1.	Key Safety Personnel	7	
2.	PPE Selection Matrix	10	
3.	Airborne Contaminant Action Levels	12	
4.	Work/Rest Schedule	21	
5.	Wind Chill Temperature Chart	22	
6	List of Primary Contaminants	43	
7	Emergency Contacts	46	

# LIST OF ATTACHMENTS

- Attachment 1 Air Monitoring Log
- Attachment 2 OSHA Poster

Attachment 3 HASP Field Change Request Form

- Attachment 4 Accident/Incident Report
- Attachment 5 Signatory Page
- Attachment 6 Material Safety Data Sheets

# LIST OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
COC	Constituent(s) of Concern
CRZ	Contamination Reduction Zone
EZ	Exclusion Zone
FS	Field Supervisor
GFCI	Ground Fault Circuit Interrupter
HASP	Health and Safety Plan
HSM	Health and Safety Manager
LEL	Lower Explosive Limit
MSDS	Material Safety Data Sheet
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyls
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PM	Project Manager
PO	Project Officer
PPE	Personal Protective Equipment
SESI	SESI Consulting Engineers
SSO	Site Safety Officer
SVOC	Semi-Volatile Organic Compound
SZ	Support Zone
TLV	Threshold Limit Value
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

# HEALTH AND SAFETY PLAN SUMMARY

The chemical hazards associated with site operations are related to inhalation, ingestion, and skin exposure to site Chemicals of Concern (COCs). COCs at the site include metals, some VOC compounds, some SVOC compounds and some pesticides. Concentrations of airborne COCs during site tasks may be measurable and will require air monitoring during certain operations.

The potential for inhalation of site COCs is low. The potential for dermal contact with soils containing site COCs during remedial operations is moderate.

The following table summarizes airborne contaminant action levels that will be used to determine the procedures and protective equipment necessary based on conditions as measured at the site.

Parameter	Reading	Action
Dust	0 to .5 mg/m ³	Normal operations
	0.5 to 1 mg/m ³	Begin soil wetting procedure (Level C protection would be needed beyond this point)
	> 1 mg/m ³	Stop work, fully implement dust control plan
Oxygen	<u>&lt;</u> 19.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
	> 19.5% to < 23.5%	Normal operations
	<u>≥</u> 23.5%	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area
Carbon Monoxide	0 ppm to <u>&lt;</u> 20 ppm	Normal operations
	> 20 ppm	Stop work, evacuate confined spaces/work area, investigate cause of reading, and ventilate area

The level of personal protection selected will be based on air monitoring of the work environment and an assessment by the Field Supervisor and Site Safety Officer. The following table presents a selection matrix to determine appropriate Personal Protective Equipment.

Task	Anticipated Level of Protection
Mobilization	Level D
Subsurface Intrusive Activities (Mass	Modified Level D/Level C
Excavation, Drilling, Soil Grouting)	
Earthwork/Grading	Level D
Additional Chemical Sampling / Delineation	Modified Level D/Level C
Decontamination	Modified Level D
Demobilization	Level D

## 1.0 INTRODUCTION

### 1.1 Objective

The objective of this Health and Safety Plan (HASP) is to provide a mechanism for establishing safe working conditions during activities at the Sonero Metro City Auto Site located at 1001 Whitlock Avenue, Bronx, Bronx County, New York (the Site). The safety organization, procedures, and protective equipment have been established based on an analysis of potential physical, chemical, and biological hazards. Specific hazard control methodologies have been evaluated and selected to minimize the potential of injury, illness, or other hazardous incidents.

The HASP was written to meet the requirements of all applicable Federal, State, and local health and safety regulations, including 29 CFR 1910.120. The HASP is based on current knowledge regarding the specific chemical and physical hazards that are known or anticipated at the Site. This HASP is a dynamic document, for which changes and/or revisions may be realized as changes in scope and/or site conditions are encountered. Should revised documents be produced, said revised documents will refer to the specific changes and why they were made.

## 1.2 Site and Facility Description

The Site is located at 1001 Whitlock Avenue, Bronx, New York (the "Site"). The Site consists of approximately 0.788-acres. The Site is identified on the tax map as tax parcel Block 2756, Lot 85.

The Site is an area characterized by a mix of residential, commercial, industrial, and manufacturing developments. The Site is bounded by an industrial building to the north, Aldus Street to the south, Whitlock Avenue to the east, and Longfellow Avenue to the west. There are no surface water bodies or streams on or directly adjacent to the Site. SESI did not observe any areas suspected to be wetlands on the Site. Storm water drainage patterns are generally consistent with the surrounding topography and primarily flow to the north. The topographic map indicates that the topography at the Site is in a northerly direction.

# 1.3 Policy Statement

The policy of SESI Consulting Engineers (SESI) is to provide a safe and healthful work environment. No aspect of operations is of greater importance than injury and illness prevention. A fundamental principle of safety management is that all injuries, illnesses, and incidents are preventable. SESI will take every reasonable step to eliminate or control hazards in order to minimize the possibility of injury, illness, or incident.

This HASP prescribes the procedures that must be followed by SESI personnel during activities at the site. Operational changes that could affect the health and safety of personnel, the community, or the environment will not be made without the prior approval of the Project Manager (PM) and the Health and Safety Manager (HSM). This document will be reviewed periodically by the HSM to ensure that it is current and technically correct. Any changes in site conditions and/or the scope of work will require a review and modification to this HASP. Such changes will be completed in the form of an addendum or a revision to the plan.

The provisions of this plan are mandatory for all SESI personnel and are advisory for all contractors, and subcontractors assigned to the project. **Subcontractors will be responsible for preparing their own site-specific HASPs that meet the basic requirements outlined in this HASP.** All visitors to SESI work areas at the site must abide by the requirements of this plan.

# 1.4 References

This HASP complies with applicable Occupational Safety and Health Administration (OSHA) regulations, United States Environmental Protection Agency (USEPA) regulations, and SESI health and safety policies and procedures. This plan follows the guidelines established in the following:

- Standard Operating Safety Guides, USEPA (Publication 9285.1-03, June 1992).
- Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH, OSHA, USCG, USEPA (86116, October 1985).
- Title 29 of the Code of Federal Regulations (CFR), Part 1910.
- Title 29 of the Code of Federal Regulations (CFR), Part 1926.
- Pocket Guide to Chemical Hazards, DHHS, PHS, CDC, NIOSH (2004).
- Threshold Limit Values, ACGIH (2005).
- Guide to Occupational Exposure Values, ACGIH (2005).
- *Quick Selection Guide to Chemical Protective Clothing*, Forsberg, K. and S.Z. Mansdorf, 2nd Ed. (1993).

# 1.5 Definitions

The following definitions (listed alphabetically) are applicable to this HASP:

- Contamination Reduction Zone (CRZ) Area between the exclusion zone and support zone that provides a transition between contaminated and clean areas. Decontamination stations are located in this zone.
- *Exclusion Zone (EZ)* Any portions of the site where hazardous substances are, or are reasonably suspected to be present, and pose an exposure hazard to on-site personnel.
- *Incident* All losses, including first aid cases, injuries, illnesses, spills/leaks, equipment and property damage, motor vehicle accidents, regulatory violations, fires, and business interruptions.
- On-Site Personnel All SESI and subcontractors involved with the project.
- *Project* All on-site work performed under the scope of work.
- *Site* The area described in Section 1.2, Site and Facility Description, where the work is to be performed by SESI personnel and subcontractors.
- Support Zone (SZ) All areas of the site except the EZ and CRZ. The SZ surrounds the CRZ and EZ. Support equipment and break areas are located in this zone.
- Subcontractor Includes contractor personnel hired by SESI.
- *Visitor* All other personnel, except the on-site personnel.
- *Work Area* The portion of the site where work activities are actively being performed. This area may change daily as work progresses and includes the SZ, CRZ, and EZ. If the work area is located in an area on the site that is not contaminated, or suspected of being contaminated, the entire work area may be a SZ.

# 2.0 PROJECT SCOPE OF WORK

This HASP contains information for the following tasks that SESI is anticipated to conduct at the Site. Should additional and/or different tasks be identified, amendments to this HASP will be required to address these changed items.

- Mobilization;
- Excavation of Contaminated Soil;
- End Point Chemical Sampling of Soil;
- Installation of a Vapor Barrier for Buildings;
- Groundwater Sampling;
- Decontamination and Demobilization.

# 3.0 ROLES AND RESPONSIBILITIES

# 3.1 All Personnel

All SESI project personnel must adhere to the procedures outlined in this HASP during the performance of their work. Each person is responsible for completing tasks safely and reporting any unsafe acts or conditions to their supervisor. No person may work in a manner that conflicts with these procedures. After due warnings, the PM will dismiss from the site any SESI employee or subcontractor who violates safety procedures.

All SESI project personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. In addition, all SESI personnel will attend an initial hazard briefing prior to beginning work at the site.

The roles of key safety personnel and subcontractors are outlined in the following sections. Key project personnel and contacts are summarized in **Table 1** on page 7.

# 3.2 Key Safety Personnel

# 3.2.1 Project Officer (PO)

The PO is responsible for providing resources to assure project activities are completed in accordance with this HASP, and for meeting all regulatory and contractual requirements.

# 3.2.2 Project Manager (PM)

The PM is responsible for verifying that project activities are completed in accordance with the requirements of this HASP. The PM is responsible for confirming that the Field Supervisor (FS) has the equipment, materials, and qualified personnel to fully implement the safety requirements of this HASP, and/or that subcontractors assigned to this project meet the requirements established by SESI. It is also the responsibility of the PM to:

- Consult with the HSM on site health and safety issues;
- Verify that subcontractors meet health and safety requirements prior to commencing work;
- Verify that all incidents are thoroughly investigated;

- Approve, in writing, addenda or modifications of this HASP; and
- Suspend work or modify work practices, as necessary, for personal safety, protection of property, and regulatory compliance.

## 3.2.3 Health and Safety Manager (HSM)

The HSM or his designee, the health and safety manager (HSM), has overall responsibility for the technical health and safety aspects of the project, including review and approval of this HASP. Inquiries regarding health and safety procedures, project procedures, and other technical or regulatory issues should be addressed to this individual. The HSM or his designee must approve changes or addenda to this HASP.

## 3.2.4 Site Safety Officer (SSO)

The SSO is responsible for field health and safety issues, including the execution of this HASP. Questions in the field regarding health and safety procedures, project procedures, and other technical or regulatory issues should be addressed to this individual. The SSO will advise the PM on health and safety issues and will establish and coordinate the project air-monitoring program if one is deemed necessary (see Section 5.1, Air Monitoring). The SSO is the primary site contact on health and safety matters. It is the responsibility of the SSO to:

- Provide on-site technical assistance, if necessary;
- Participate in all accident/incident reports and ensure that they are reported to the HSM, client, and PM within 24 hours;
- Coordinate site and personal air monitoring as required, including equipment maintenance and calibration;
- Conduct site safety orientation training and safety meetings;
- Verify that project personnel have received the required physical examinations and medical certifications;
- Review site activities with respect to compliance with this HASP;
- Maintain required health and safety documents and records; and
- Assist the FS in instructing field personnel on project hazards and protective procedures.

## 3.2.5 Field Supervisor (FS)

The FS is responsible for implementing this HASP, including communicating requirements to on-site personnel and subcontractors. The FS will be responsible for informing the PM of changes in the work plan, procedures, or site conditions so that those changes may be addressed in this HASP. Other responsibilities are to:

- Consult with the SSO on site health and safety issues;
- Stop work, as necessary, for personal safety, protection of property, and regulatory compliance;
- Obtain a site map and determine and post routes to medical facilities and emergency telephone numbers;
- Notify local public emergency representatives (as appropriate) of the nature of the site operations, and post their telephone numbers (i.e., local fire department personnel who would respond for a confined space rescue);
- Observe on-site project personnel for signs of ill health effects;
- Investigate and report any incidents to the SSO;

- Verify that all on-site personnel have had applicable training;
- Verify that on-site personnel are informed of the physical, chemical, and biological hazards associated with the site activities, and the procedures and protective equipment necessary to control the hazards; and
- Issue/obtain any required work permits (hot work, confined space, etc.).

### 3.2.6 Field Personnel (FP)

All SESI field personnel are responsible for following the Health and Safety procedures specified in this HASP and work practices specified in applicable operation procedures. Some specific responsibilities include, but are not limited to:

- Reading and understanding the HASP;
- Reporting all accidents, incidents, injuries, or illnesses to the FS;
- Complying with the requests of the SSO;
- Immediately communicating newly identified hazards or noncompliance issues to the FS or SSO; and
- Stopping work in cases of immediate danger.

### 3.3 Subcontractors

Subcontractors and their personnel must understand and comply with applicable regulations and site requirements established in this HASP. Subcontractors will prepare their own site-specific HASP that must be consistent with the requirements of this HASP.

All subcontractor personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP prior to initiating site activities. All subcontractor personnel will attend an initial hazard briefing prior to beginning work at the site. Additionally, on-site subcontractor personnel must conduct daily site safety meetings.

Subcontractors must designate individuals to function as the PM, HSM, SSO, and FS. In some firms the HSM to be carried out by the PM. This is acceptable provided the PM has the required knowledge, training, and experience to properly address all hazards associated with the work, and to prepare, approve, and oversee the execution of the site-specific HASP. A subcontractor may designate the same person to perform the duties of both the SSO and the FS. However, depending on the level of complexity of a contractor's scope of work, it may be infeasible for one person to perform both functions satisfactorily.

### 3.4 Stop Work Authority

Every SESI employee and subcontractor is empowered, expected, and has the responsibility to stop the work of another co-worker if the working conditions or behaviors are considered unsafe.

#### 3.5 All On-Site Personnel

All on-site SESI personnel (including SESI subcontractors) must read and acknowledge their understanding of their respective HASPs before commencing work and abide by the requirements of the plans. All on-site SESI personnel shall sign their HASP Acknowledgement Form following their review of their HASP.

All SESI project personnel will receive training in accordance with applicable regulations and be familiar with the requirements and procedures contained in this HASP

prior to initiating site activities. In addition, all on-site personnel will attend an initial hazard briefing provided by the SSO prior to beginning work at the site and conduct daily safety meetings thereafter.

On-site personnel will immediately report the following to the FS or SSO:

- Personal injuries and illnesses no matter how minor;
- Unexpected or uncontrolled release of chemical substances;
- Symptoms of chemical exposure;
- Unsafe or hazardous situations;
- Unsafe or malfunctioning equipment;
- Changes in site conditions that may affect the health and safety of project personnel;
- Damage to equipment or property; and
- Situations or activities for which they are not properly trained.

#### 3.6 Visitors

All SESI personnel and subcontractors visiting the Site must check in with the FS. Visitors will be cautioned to avoid skin contact with surfaces, soils, groundwater, or other materials that may impacted or be suspected to be impacted by constituents of concern (COCs).

Visitors requesting to observe work at the site must don appropriate personal protective equipment (PPE) prior to entry to the work area and must have the appropriate training and medical clearances to do so. If respiratory protective devices are necessary, visitors who wish to enter the work area must have been respirator-trained and fit tested for a respirator within the past 12 months.

SESI Personnel					
Role	Name	Telephone No.			
Project Principal	Fuad Dahan, P.E., PhD	973-808-9050 x249			
Project Manager (PM)	Jesse Mausner, P.G.	973-808-9050 x282			
Principal Engineer	Fuad Dahan, P.E., PhD	973-808-9050 x249			
Remedial Investigation Project	Todd Kelly	973-808-9050 x238			
Manager	-				
Field Team Leader	Jon Stuart	973-600-7630			
Quality Assurance Officer	Joe Scardino	973-808-9050 x267			
Field Personnel	TBD				

#### Table 1 – Key Safety Personnel

## 4.0 PERSONAL PROTECTIVE EQUIPMENT

#### 4.1 Levels of Protection

PPE is required to safeguard site personnel from various hazards. Varying levels of protection may be required depending on the levels of COCs and the degree of physical hazard. This section presents the various levels of protection and defines the conditions of use for each level. A summary of the levels is presented in **Table 2** on page 10.

# 4.1.1 Level D Protection

The minimum level of protection that will be required of project personnel at the site will be Level D, which will be worn when site conditions or air monitoring indicates no inhalation hazard exists. The following equipment will be used:

- Work clothing as prescribed by weather;
- Steel toe work boots, meeting American National Standards Institute (ANSI) Z41;
- Safety glasses or goggles, meeting ANSI Z87;
- Leather work gloves and/or nitrile surgical gloves;
- Hard hat, meeting ANSI Z89, when falling object hazards are present;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used); and
- PFD if working on or near the water.

## 4.1.2 Modified Level D Protection

Modified Level D will be used when airborne contaminants are not present at levels of concern, but site activities present an increased potential for skin contact with contaminated materials. Modified Level D consists of:

- Nitrile gloves worn over nitrile surgical gloves;
- Latex/polyvinyl chloride (PVC) overboots when contact with COC-impacted media is anticipated;
- Steel toe work boots, meeting ANSI Z41;
- Safety glasses or goggles, meeting ANSI Z87;
- Face shield in addition to safety glasses or goggles when projectiles or splash hazards exist (e.g. during Power Washing activities);
- Hard hat, meeting ANSI Z89, when falling object hazards are present;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used);
- Tyvek[®] suit (polyethylene coated Tyvek[®] suits for handling liquids) when body contact with COC-impacted media is anticipated; and
- PFD if working on or near the water.

## 4.1.3 Level C Protection

Level C protection will be required when the airborne concentration of COC reaches one-half of the OSHA Permissible Exposure Limit or ACGIH TLV. The following equipment will be used for Level C protection:

- Full-face, air-purifying respirator with combination organic vapor/HEPA cartridges;
- Polyethylene-coated Tyvek[®] suit, with ankles and cuffs taped to boots and gloves;
- Nitrile gloves worn over nitrile surgical gloves;
- Steel toe work boots, meeting ANSI Z41;
- Chemical-resistant boots with steel toes or latex/PVC overboots over steel toe boots;
- Hard hat, meeting ANSI Z89;
- Hearing protection (if noise levels exceed 85 dBA, then hearing protection with a USEPA NRR of at least 20 dBA must be used); and
- PFD if working on or near the water.

## 4.2 Selection of PPE

Equipment for personal protection will be selected based on the potential for contact, site conditions, ambient air quality, and the judgment of supervising site personnel and health and safety professionals. The PPE used will be chosen to be effective against the COCs present on the site.

# 4.3 Site Respiratory Protection Program

Respiratory protection is an integral part of employee health and safety at the site due to potentially hazardous concentrations of airborne COCs. The site respiratory protection program will consist of the following (as a minimum):

- All on-site personnel who may use respiratory protection will have an assigned respirator.
- All on-site personnel who may use respiratory protection will have been fit tested and trained in the use of a full-face air-purifying respirator within the past 12 months. Documentation of the fit test must be provided to the SSO prior to commencement of work.
- All on-site personnel who may use respiratory protection must within the past year have been medically certified as being capable of wearing a respirator. Documentation of the medical certification must be provided to the SSO, prior to commencement of site work.
- Only cleaned, maintained, NIOSH-approved respirators will be used.
- If respirators are used, the respirator cartridge is to be properly disposed of at the end of each work shift, or when load-up or breakthrough occurs.
- Contact lenses are not to be worn when a respirator is worn.
- All on-site personnel who may use respiratory protection must be clean-shaven. Mustaches and sideburns are permitted, but they must not touch the sealing surface of the respirator.
- Respirators will be inspected, and a negative pressure test performed prior to each use.
- After each use, the respirator will be wiped with a disinfectant, cleansing wipe. When used, the respirator will be thoroughly cleaned at the end of the work shift. The respirator will be stored in a clean plastic bag, away from direct sunlight in a clean, dry location, in a manner that will not distort the face piece.

## 4.4 Using PPE

Depending upon the level of protection selected, specific donning and doffing procedures may be required. The procedures presented in this section are mandatory if Modified Level D or Level C PPE is used. All personnel entering the EZ must put on the required PPE in accordance with the requirements of this HASP. When leaving the EZ, PPE will be removed in accordance with the procedures listed, to minimize the spread of COCs.

## 4.4.1 Donning Procedures

These procedures are mandatory only if Modified Level D or Level C PPE is used on the site:

- Remove bulky outerwear. Remove street clothes and store in clean location;
- Put on work clothes or coveralls;

- Put on the required chemical protective coveralls;
- Put on the required chemical protective boots or boot covers;
- Tape the legs of the coveralls to the boots with duct tape;
- Put on the required chemical protective gloves;
- Tape the wrists of the protective coveralls to the gloves;
- Don the required respirator and perform appropriate fit check (Level C);
- Put hood or head covering over-head and respirator straps and tape hood to facepiece (Level C); and
- Don remaining PPE, such as safety glasses or goggles and hard hat.

When these procedures are instituted, one person must remain outside the work area to ensure that each person entering has the proper protective equipment.

## 4.4.2 Doffing Procedures

The following procedures are only mandatory if Modified Level D or Level C PPE is required for the site. Whenever a person leaves the work area, the following decontamination sequence will be followed:

- Upon entering the CRZ, rinse contaminated materials from the boots or remove contaminated boot covers;
- Clean reusable protective equipment;
- Remove protective garments, equipment, and respirator (Level C). All disposable clothing should be placed in plastic bags, which are labeled with contaminated waste labels;
- Wash hands, face, and neck (or shower if necessary);
- Proceed to clean area and dress in clean clothing; and
- Clean and disinfect respirator for next use.

All disposable equipment, garments, and PPE must be bagged in plastic bags, labeled for disposal. See Section 7, Decontamination, for detailed information on decontamination stations.

## 4.5 Selection Matrix

The level of personal protection selected will be based on air monitoring of the work environment and an assessment by the FS and SSO of the potential for skin contact with COCs. The PPE selection matrix is presented in **Table 2** below. This matrix is based on information available at the time this plan was written. The Airborne Contaminant Action Levels in **Table 3** on page 12, Airborne Contaminant Action Levels, should be used to verify that the PPE prescribed in these matrices is appropriate.

Task	Anticipated Level of Protection
Mobilization	Level D
Subsurface Intrusive Activities (Excavation,	Modified Level D/Level C
Drilling)	
Earthwork/Grading	Level D
Chemical Sampling / Delineation	Modified Level D/Level C
Decontamination	Modified Level D
Demobilization	Level D

#### Table 2 – PPE Selection Matrix

### 5.0 AIR AND NOISE MONITORING

#### 5.1 Air Monitoring

Air monitoring, sampling, and testing will be conducted to determine employee exposure to airborne constituents. The monitoring results will dictate work procedures and the selection of PPE. The SESI SSO will be responsible for defining appropriate air monitoring procedures and for utilizing the air monitoring results to determine appropriate procedures and PPE for project personnel. Air monitoring results should be recorded in field notebooks or on an air monitoring log (see Attachment 1 for a copy of the Air Monitoring Log). Any deviations from the procedures listed here should be documented and explained in the Air Monitoring Log.

The monitoring devices to be used are a PDR1000 particulate monitor (or equivalent) and a Rae Systems MultiRAE detector (PID with a 11.7 eV lamp/oxygen/LEL/hydrogen sulfide sensors). Colorimetric detector tubes may be utilized to estimate airborne concentrations of benzene and should be onsite during any activities that may result in elevated PID readings including drilling, excavating, and groundwater sampling.

Air monitoring will be conducted continuously with the LEL/Oxygen meter during drilling in areas where flammable vapors or gases are suspect. All work activity must stop where tests indicate the concentration of flammable vapors exceeds 10% of the LEL at a location with a potential ignition source. Such an area must be ventilated to reduce the concentration to an acceptable level.

## 5.2 Noise Monitoring

Noise monitoring may be conducted as required. Hearing protection is mandatory for all employees in noise hazardous areas, such as around heavy equipment. As a general rule, sound levels that cause speech interference at normal conversation distance should require the use of hearing protection.

## 5.3 Monitoring Equipment Maintenance and Calibration

All direct-reading instrumentation calibrations should be conducted under the approximate environmental conditions the instrument will be used. Instruments must be calibrated before and after use, noting the reading(s) and any adjustments that are necessary. All air monitoring equipment calibrations, including the standard used for calibration, must be documented on a calibration log or in the field notebook. All completed health and safety documentation/forms must be reviewed by the SSO and maintained by the FS.

All air monitoring equipment will be maintained and calibrated in accordance with the specific manufacturer's procedures. Preventive maintenance and repairs will be conducted in accordance with the respective manufacturer's procedures. When applicable, only manufacturer-trained and/or authorized personnel will be allowed to perform instrument repairs or preventive maintenance.

If an instrument is found to be inoperative or suspected of giving erroneous readings, the SSO must be responsible for immediately removing the instrument from

service and obtaining a replacement unit. If the instrument is essential for safe operation during a specific activity, that activity must cease until an appropriate replacement unit is obtained. The SSO will be responsible for ensuring a replacement unit is obtained and/or repairs are initiated on the defective equipment.

## 5.4 Action Levels

**Table 3** below presents airborne contaminant action levels that will be used to determine the procedures and protective equipment necessary based on conditions as measured at the site.

Parameter Reading		Action			
Total	0 ppm to <u>&lt;</u> 1 ppm	Normal operations; continue hourly breathing zone monitoring			
Hydrocarbons					
	> 1 ppm to 5 ppm	Increase monitoring frequency to every 15 minutes and use			
		benzene detector tube to screen for the presence of benzene			
	≥ 5 ppm to ≤ 50 ppm	Upgrade to Level C PPE; continue screening for benzene			
	> 50 ppm	Stop work; investigate cause of reading			
	At any reading > 5 ppm	Monitor perimeter per CAMP			
Benzene	<u>&gt;</u> 1 ppm to 5 ppm	Upgrade to Level C PPE			
	> 5 ppm	Stop work; investigate cause of reading			
Dust	0 to .05 mg/m ³	Normal operations			
Duot	6 to .00 mg/m				
	0.05 to 0.1 mg/m ³	Begin soil wetting procedure (Level C protection would be needed			
	-	beyond this point)			
	$> 0.15 \text{ mg/m}^3$	Stan work, fully implement dust central plan			
Ovurgon	> 0.15 mg/m ³ < 19.5%	Stop work, fully implement dust control plan Stop work, evacuate confined spaces/work area, investigate cause			
Oxygen	<u><u> </u></u>	of reading, and ventilate area			
	> 19.5% to < 23.5%	Normal operations			
	<u>&gt;</u> 23.5%	Stop work, evacuate confined spaces/work area, investigate cause			
Carban		of reading, and ventilate area			
Carbon Monoxide	0 ppm to <u>&lt;</u> 20 ppm	Normal operations			
Monoxido	> 20 ppm	Stop work, evacuate confined spaces/work area, investigate cause			
		of reading, and ventilate area			
Hydrogen	0 ppm to <u>&lt;</u> 5 ppm	Normal operations			
Sulfide					
	> 5 ppm	Stop work, evacuate confined spaces/work area, investigate cause			
		of reading, and ventilate area			
Flammable     < 10% LEL     Nor       Vapors (LEL)		Normal operations			
	> 10% LEL	Stop work, ventilate area, investigate source of vapors			
l					

 Table 3 – Airborne Contaminant Action Levels

## 6.0 WORK ZONES AND DECONTAMINATION

## 6.1 Work Zones

## 6.1.1 Authorization to Enter

Only personnel with the appropriate training and medical certifications (if respirators are required) will be allowed to work at the project site. The FS will maintain a list of authorized persons; only personnel on the authorized persons list will be allowed to enter the site work areas.

## 6.1.2 Site Orientation and Hazard Briefing

No person will be allowed in the work area during site operations without first being given a site orientation and hazard briefing. This orientation will be presented by the FS or SSO and will consist of a review of this HASP. This review must cover the chemical, physical, and biological hazards, protective equipment, safe work procedures, and emergency procedures for the project. Following this initial meeting, daily safety meetings will be held each day before work begins.

All people entering the site work areas, including visitors, must document their attendance at this briefing, as well as the daily safety meetings on the forms included with this plan.

## 6.1.3 Certification Documents

A training and medical file may be established for the project and kept on site during all site operations. Specialty training, such as first aid/cardiopulmonary resuscitation (CPR) certificates, as well as current medical clearances for all project field personnel required to wear respirators, will be maintained within that file. All project personnel must provide their training and medical documentation to the SSO prior to starting work.

# 6.1.4 Entry Log

A log-in/log-out sheet will be maintained at the site by the FS. Personnel must sign in and out on a log sheet as they enter and leave the work area, and the FS may document entry and exit in the field notebook.

## 6.1.5 Entry Requirements

In addition to the authorization, hazard briefing, and certification requirements listed above, no person will be allowed in any SESI work area unless they are wearing the minimum PPE as described in Section 4.0.

## 6.1.6 Emergency Entry and Exit

People who must enter the work area on an emergency basis will be briefed of the hazards by the FS or SSO. All activities will cease in the event of an emergency. People exiting the work area because of an emergency will gather in a designated safe area for a head count. The FS is responsible for ensuring that all people who entered the work area have exited in the event of an emergency.

## 6.1.7 Contamination Control Zones

Contamination control zones are maintained to prevent the spread of contamination and to prevent unauthorized people from entering hazardous areas.

### 6.1.8 Exclusion Zone (EZ)

An EZ may consist of a specific work area or may be the entire area of potential contamination. All employees entering an EZ must use the required PPE and must have the appropriate training and medical clearance for hazardous waste work. The EZ is the defined area where there is a possible respiratory and/or contact health hazard. Cones, caution tape, or a posted site diagram will identify the location of each EZ.

### 6.1.9 Contamination Reduction Zone

The CRZ or transition area will be established, if necessary, to perform decontamination of personnel and equipment. All personnel entering or leaving the EZ will pass through this area to prevent any cross-contamination. Tools, equipment, and machinery will be decontaminated in a specific location. The decontamination of all personnel will be performed on site adjacent to the EZ. Personal protective outer garments and respiratory protection will be removed in the CRZ and prepared for cleaning or disposal. This zone is the only appropriate corridor between the EZ and the support zone (SZ) discussed below.

### 6.1.10 Support Zone (SZ)

The SZ is a clean area outside the CRZ located to prevent employee exposure to hazardous substances. Eating and drinking will be permitted in the support area only after proper decontamination. Smoking may be permitted in the SZ, subject to site requirements.

### 6.1.11 Posting

Work areas will be prominently marked and delineated using cones, caution tape, or a posted site diagram.

#### 6.1.12 Site Inspections

The FS will conduct a daily inspection of site activities, equipment, and procedures to verify that the required elements are in place.

## 6.2 Decontamination

### 6.2.1 Personnel Decontamination

All personnel wearing Modified Level D or Level C protective equipment in the EZ must undergo personal decontamination prior to entering the SZ. The personnel decontamination area will consist of the following stations at a minimum:

- *Station 1*: Personnel leaving the contaminated zone will remove the gross contamination from their outer clothing and boots.
- *Station 2*: Personnel will remove their outer garment and gloves and dispose of it in properly labeled containers. Personnel will then decontaminate their hard hats, and boots with an aqueous solution of detergent or other appropriate cleaning solution. These items are then hand carried to the next station.
- *Station 3*: Personnel will thoroughly wash their hands and face before leaving the CRZ. Respirators will be sanitized and then placed in a clean plastic bag.

#### 6.2.2 Equipment Decontamination

All vehicles that have entered the EZ will be decontaminated at the decontamination pad prior to leaving the zone. If the level of vehicle contamination is low, decontamination

may be limited to rinsing of tires and wheel wells with water. If the vehicle is significantly contaminated, steam cleaning or pressure washing of vehicles and equipment may be required.

## 6.2.3 Personal Protective Equipment Decontamination

Where and whenever possible, single-use, external protective clothing must be used for work within the EZ or CRZ. This protective clothing must be disposed of in properly labeled containers. Reusable protective clothing will be rinsed at the site with detergent and water. The rinsate will be collected for disposal.

When removed from the CRZ, the respirator will be thoroughly cleaned with soap and water. The respirator face piece, straps, valves, and covers must be thoroughly cleaned at the end of each work shift, and ready for use prior to the next shift. Respirator parts may be disinfected with a solution of bleach and water (mixed at 2% bleach by volume), or by using a spray disinfectant

## 7.0 TRAINING AND MEDICAL SURVEILLANCE

### 7.1 Training

### 7.1.1 General

All on-site project personnel who work in areas where they may be exposed to site contaminants must be trained as required by OSHA Regulation 29 CFR 1910.120 (HAZWOPER). Field employees also must receive a minimum of three days of actual field experience under the direct supervision of a trained, experienced supervisor. Personnel who completed their initial training more than 12 months prior to the start of the project must have completed an eight-hour refresher course within the past 12 months. The FS must have completed an additional eight hours of supervisory training and must have a current first-aid/CPR certificate (See Attachment 2).

## 7.1.2 Basic 40-Hour Course

The following is a list of the topics typically covered in a 40-hour HAZWOPER training course:

- General safety procedures;
- Physical hazards (fall protection, noise, heat stress, cold stress);
- Names and job descriptions of key personnel responsible for site health and safety;
- Safety, health, and other hazards typically present at hazardous waste sites;
- Use, application, and limitations of PPE;
- Work practices by which employees can minimize risks from hazards;
- Safe use of engineering controls and equipment on site;
- Medical surveillance requirements;
- Recognition of symptoms and signs which might indicate overexposure to hazards;
- Worker right-to-know (Hazard Communication OSHA 1910.1200);
- Routes of exposure to contaminants;
- Engineering controls and safe work practices;
- Components of a health and safety program and a site-specific HASP;
- Decontamination practices for personnel and equipment;
- Confined-space entry procedures; and

• General emergency response procedures.

### 7.1.3 Supervisor Course

Management and supervisors must receive an additional eight hours of training, which typically includes:

- General site safety and health procedures;
- PPE programs; and
- Air monitoring techniques.

### 7.1.4 Site-Specific Training

Site-specific training will be accomplished by on-site personnel reading this HASP, and through a thorough site briefing by the PM, FS, or SSO on the contents of this HASP before work begins. The review must include a discussion of the chemical, physical, and biological hazards; the protective equipment and safety procedures; and emergency procedures.

### 7.1.5 Daily Safety Meetings

Daily safety meetings will be held to cover the work to be accomplished, the hazards anticipated, the PPE and procedures required to minimize site hazards, and emergency procedures. The FS or SSO should present these meetings prior to beginning the day's fieldwork. No work will be performed in an EZ before a daily safety meeting has been held. An additional safety meeting must also be held prior to new tasks, or if new hazards are encountered. The daily safety meetings will be logged in the field notebook.

## 7.1.6 First Aid and CPR

At least one employee current in first aid/CPR will be assigned to the work crew and will be on the site during operations. Site records will document the presence of this individual. Refresher training in first aid (triennially) and CPR (annually) is required to keep the certificate current. These individuals must also receive training regarding the precautions and protective equipment necessary to protect against exposure to blood-borne pathogens.

#### 7.2 Medical Surveillance

#### 7.2.1 Medical Examination

All personnel who are potentially exposed to site contaminants must participate in a medical surveillance program as defined by OSHA at 29 CFR 1910.120 (f).

## 7.2.2 Pre-placement Medical Examination

All potentially exposed personnel must have completed a comprehensive medical examination prior to assignment, and periodically thereafter as defined by applicable regulations. The pre-placement and periodic medical examinations typically include the following elements:

- Medical and occupational history questionnaire;
- Physical examination;
- Complete blood count, with differential;
- Liver enzyme profile;

- Chest X-ray, at a frequency determined by the physician;
- Pulmonary function test;
- Audiogram;
- Electrocardiogram for persons older than 45 years of age, or if indicated during the physical examination;
- Drug and alcohol screening, as required by job assignment;
- Visual acuity; and
- Follow-up examinations, at the discretion of the examining physician or the corporate medical director.

The examining physician provides the employee with a letter summarizing his findings and recommendations, confirming the worker's fitness for work and ability to wear a respirator. Documentation of medical clearance will be available for each employee during all project site work.

Subcontractors will certify that all their employees have successfully completed a physical examination by a qualified physician. The physical examinations must meet the requirements of 29 CFR 1910.120 and 29 CFR 1910.134. Subcontractors will supply copies of the medical examination certificate for each on-site employee.

## 7.2.3 Other Medical Examinations

In addition to pre-employment, annual, and exit physicals, personnel may be examined:

- At employee request after known or suspected exposure to toxic or hazardous materials; and
- At the discretion of the SSO, HSM, or occupational physician in anticipation of, or after known or suspected exposure to toxic or hazardous materials.

## 7.2.4 Periodic Exam

Following the placement examination, all employees must undergo a periodic examination, similar in scope to the placement examination. For employees potentially exposed over 30 days per year, the frequency of periodic examinations will be annual. For employees potentially exposed less than 30 days per year, the frequency for periodic examinations will be 24 months.

## 7.2.5 Medical Restriction

When the examining physician identifies a need to restrict work activity, the employee's supervisor must communicate the restriction to the employee and the SSO. The terms of the restriction will be discussed with the employee and the supervisor.

# 8.0 GENERAL SAFETY PRACTICES

## 8.1 General Safety Rules

General safety rules for site activities include, but are not limited to, the following:

- At least one copy of this HASP must be in a location at the site that is readily available to personnel, and all project personnel shall review the plan prior to starting work.
- Consume or use food, beverages, chewing gum, and tobacco products only in the SZ or other designated area outside the EZ and CRZ. Cosmetics shall not be applied in the EZ or CRZ.
- Wash hands before eating, drinking, smoking, or using toilet facilities.
- Wear all PPE as required and stop work and replace damaged PPE immediately.
- Secure disposable coveralls, boots, and gloves at the wrists and legs and ensure closure of the suit around the neck.
- Upon skin contact with materials that may be impacted by COCs, remove contaminated clothing and wash the affected area immediately. Contaminated clothing must be changed. Any skin contact with materials potentially impacted by COCs must be reported to the FS or SSO immediately. If needed, medical attention should be sought.
- Practice contamination avoidance. Avoid contact with surfaces either suspected or known to be impacted by COCs, such as standing water, mud, or discolored soil. Equipment must be stored on elevated or protected surfaces to reduce the potential for incidental contamination.
- Remove PPE as required in the CRZ to limit the spread of COC-containing materials.
- At the end of each shift or as required, dispose of all single-use coveralls, soiled gloves, and respirator cartridges in designated receptacles designated for this purpose.
- Removing soil containing site COCs from protective clothing or equipment with compressed air, shaking, or any other means that disperses contaminants into the air is prohibited.
- Inspect all non-disposable PPE for contamination in the CRZ. Any PPE found to be contaminated must be decontaminated or disposed of appropriately.
- Recognize emergency signals used for evacuation, injury, fire, etc.
- Report all injuries, illnesses, and unsafe conditions or work practices to the FS or SSO.
- Use the "buddy system" during all operations requiring Level C PPE, and when appropriate, during Modified Level D operations.
- Obey all warning signs, tags, and barriers. Do not remove any warnings unless authorized to do so.
- Use, adjust, alter, and repair equipment only if trained and authorized to do so, and in accordance with the manufacturer's directions.
- Personnel are to perform only tasks for which they have been properly trained and will advise their supervisor if they have been assigned a task for which they are not trained.
- The presence or consumption of alcoholic beverages or illicit drugs during the workday, including breaks, is strictly prohibited. Notify your supervisor if you must take prescription or over-the-counter drugs that indicate they may cause drowsiness or, that you should not operate heavy equipment.
- Remain upwind during site activities whenever possible.

## 8.2 Buddy System

On-site personnel must use the buddy system as required by operations. Use of the "buddy system" is required during all operations requiring Level C to Level A PPE, and when appropriate, during Level D operations. Crewmembers must observe each other for signs of chemical exposure, and heat or cold stress. Indications of adverse effects include, but are not limited to:

- Changes in complexion and skin coloration;
- Changes in coordination;
- Changes in demeanor;
- Excessive salivation and pupillary response; and
- Changes in speech pattern.

Crewmembers must also be aware of the potential exposure to possible safety hazards, unsafe acts, or non-compliance with safety procedures.

Field personnel must inform their partners or fellow crewmembers of non-visible effects of exposure to toxic materials that they may be experiencing. The symptoms of such exposure may include, but are not limited to:

- Headaches;
- Dizziness;
- Nausea;
- Blurred vision;
- Cramps; and
- Irritation of eyes, skin, or respiratory tract.

If protective equipment or noise levels impair communications, prearranged hand signals must be used for communication. Personnel must stay within line of sight of another team member.

#### 8.3 Heat Stress

Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, etc., as well as the physical and conditioning characteristics of the individual. Since heat stress is one of the most common illnesses associated with heavy outdoor work conducted with direct solar load and, in particular, because wearing PPE can increase the risk of developing heat stress, workers must be capable of recognizing the signs and symptoms of heat-related illnesses. Personnel must be aware of the types and causes of heat-related illnesses and be able to recognize the signs and symptoms of themselves and their co-workers.

*Heat rashes* are one of the most common problems in hot work environments. Commonly known as prickly heat, a heat rash is manifested as red papules and usually appears in areas where the clothing is restrictive. As sweating increases, these papules give rise to a prickling sensation. Prickly heat occurs in skin that is persistently wetted by unevaporated sweat, and heat rash papules may become infected if they are not treated. In most cases, heat rashes will disappear when the affected individual returns to a cool environment. *Heat cramps* are usually caused by performing hard physical labor in a hot environment. These cramps have been attributed to an electrolyte imbalance caused by sweating. It is important to understand that cramps can be caused both by too much or too little salt.

Cramps appear to be caused by the lack of water replenishment. Because sweat is a hypotonic solution (plus or minus 0.3% NaCl), excess salt can build up in the body if the water lost through sweating is not replaced. Thirst cannot be relied on as a guide to the need for water; instead, water must be taken every 15 to 20 minutes in hot environments.

Under extreme conditions, such as working for 6 to 8 hours in heavy protective gear, a loss of sodium may occur. Drinking commercially available carbohydrate electrolyte replacement liquids is effective in minimizing physiological disturbances during recovery.

*Heat exhaustion* occurs from increased stress on various body organs due to inadequate blood circulation, cardiovascular insufficiency, or dehydration. Signs and symptoms include pale, cool, moist skin; heavy sweating; dizziness; nausea; headache, vertigo, weakness, thirst, and giddiness. Fortunately, this condition responds readily to prompt treatment.

Heat exhaustion should not be dismissed lightly, however, for several reasons. One is that the fainting associated with heat exhaustion can be dangerous because the victim may be operating machinery or controlling an operation that should not be left unattended; moreover, the victim may be injured when he or she faints. Also, the signs and symptoms seen in heat exhaustion are similar to those of heat stroke, which is a medical emergency.

Workers suffering from heat exhaustion should be removed from the hot environment, be given fluid replacement, and be encouraged to get adequate rest.

*Heat stroke* is the most serious form of heat stress. Heat stroke occurs when the body's system of temperature regulation fails and the body's temperature rises to critical levels. This condition is caused by a combination of highly variable factors, and its occurrence is difficult to predict. Heat stroke is a medical emergency. The primary signs and symptoms of heat stroke are confusion; irrational behavior; loss of consciousness; convulsions; a lack of sweating (usually); hot, dry skin; and an abnormally high body temperature, e.g., a rectal temperature of 41°C (105.8°F). If body temperature is too high, it causes death. The elevated metabolic temperatures caused by a combination of workload and environmental heat load, both of which contribute to heat stroke, are also highly variable and difficult to predict.

If a worker shows signs of possible heat stroke, professional medical treatment should be obtained immediately. The worker should be placed in a shady area and the outer clothing should be removed. The worker's skin should be wetted and air movement around the worker should be increased to improve evaporative cooling until professional methods of cooling are initiated and the seriousness of the condition can be assessed. Fluids should be replaced as soon as possible. The medical outcome of an episode of heat stroke depends on the victim's physical fitness and the timing and effectiveness of first aid treatment. Regardless of the worker's protestations, no employee suspected of being ill from heat stroke should be sent home or left unattended unless a physician has specifically approved such an order.

Proper training and preventive measures will help avert serious illness and loss of work productivity. Preventing heat stress is particularly important because once someone suffers from heat stroke or exhaustion, that person may be predisposed to additional heat injuries.

### 8.4 Heat Stress Safety Precautions

Heat stress monitoring and work rest cycle implementation should commence when the ambient adjusted temperature exceeds 72°F. A minimum work rest regimen and procedures for calculating ambient adjusted temperature are described in **Table 4** below.

	Work/Rest Regimen	Work/Rest Regimen		
Adjusted Temperature ^b	Normal Work Ensemble ^c	Impermeable Ensemble		
90°F (32.2°C) or above	After each 45 minutes of work	After each 15 minutes of work		
87.5° - 90°F (30.8°-32.2°C)	After each 60 minutes of work	After each 30 minutes of work		
82.5° - 87.5°F (28.1° - 30.8°C)	After each 90 minutes of work	After each 60 minutes of work		
77.5° - 82.5°F (25.3° - 28.1°C)	After each 120 minutes of work	After each 90 minutes of work		
72.5° - 77.5°F (30.8° - 32.2°C)	After each 150 minutes of work	After each 120 minutes of work		

a. For work levels of 250 kilocalories/hour (Light-Moderate Type of Work)

 b. Calculate the adjusted air temperature (ta adj) by using this equation: ta adj °F = ta °F + (13 x % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)

c. A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

d. The information presented above was generated using the information provided in the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) Handbook.

In order to determine if the work rest cycles are adequate for the personnel and specific site conditions, additional monitoring of individual heart rates will be conducted during the rest cycle. To check the heart rate, count the radial pulse for 30 seconds at the beginning of the rest period. If the heart rate exceeds 110 beats per minute, shorten the next work period by one third and maintain the same rest period.

Additionally, one or more of the following control measures can be used to help control heat stress and are mandatory if any site worker has a heart rate (measure immediately prior to rest period) exceeding 115 beats per minute:

- Site workers will be encouraged to drink plenty of water and electrolyte replacement fluids throughout the day.
- On-site drinking water will be kept cool (50 to 60°F).
- A work regimen that will provide adequate rest periods for cooling down will be established, as required.
- All personnel will be advised of the dangers and symptoms of heat stroke, heat exhaustion, and heat cramps.
- Cooling devices, such as vortex tubes or cooling vests, should be used when personnel must wear impermeable clothing in conditions of extreme heat.

- Employees should be instructed to monitor themselves and co-workers for signs of heat stress and to take additional breaks as necessary.
- A shaded rest area must be provided. All breaks should take place in the shaded rest area.
- Employees must not be assigned to other tasks during breaks.
- Employees must remove impermeable garments during rest periods. This includes white Tyvek-type garments.

All employees must be informed of the importance of adequate rest, acclimation, and proper diet in the prevention of heat stress disorders.

### 8.5 Cold Stress

Cold stress normally occurs in temperatures at or below freezing, or under certain circumstances, in temperatures of 40°F. Extreme cold for a short time may cause severe injury to exposed body surfaces or result in profound generalized cooling, causing death. Areas of the body that have high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. Two factors influence the development of a cold weather injury: ambient temperature and the velocity of the wind. For instance, 10°F with a wind of 15 miles per hour (mph) is equivalent in chilling effect to still air at 18°F. An equivalent chill temperature chart relating the actual dry bulb temperature and wind velocity is presented in **Table 5** below.

	Actua	Actual Temperature Reading (°F)											
Estimated Wind	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60	
Speed (in mph)			<u> </u>										
	Equiv	valent Ch	ill Temp	perature (	°F)								
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60	
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68	
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95	
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112	
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121	
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133	
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140	
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145	
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148	
(Wind speeds	LITTL	LITTLE DANGER			INCR	INCREASING DANGER			GREAT DANGER				
greater than 40	Maximum danger of false			Dang	Danger from freezing of			Flesh may freeze within 30					
mph have little	sense	sense of security.			expos	exposed flesh within			seconds.				
additional effect.)				one minute									
	_					-							

# Table 5 – Wind Chill Temperature Chart

Trench foot and immersion foot may occur at any point on this chart.

[This chart was developed by the U.S. Army Research Institute of Environmental Medicine, Natick, MA (Source: ACGIH Threshold Limit Values for Chemical Substances and Physical Agents)].

Local injury resulting from cold is included in the generic term frostbite. There are several degrees of tissue damage associated with frostbite. Frostbite of the extremities can be categorized into:

- *Frost Nip or Incipient Frostbite* characterized by sudden blanching or whitening of skin.
- *Superficial Frostbite* skin has a waxy or white appearance and is firm to the touch, but tissue beneath is resilient.

• Deep Frostbite - tissues are cold, pale, and solid; extremely serious injury.

Systemic hypothermia is caused by exposure to freezing or rapidly dropping temperature. It can be fatal. Its symptoms are usually exhibited in five stages: 1) shivering; 2) apathy, listlessness, sleepiness, and (sometimes) rapid cooling of the body to less than 95°F; 3) unconsciousness, glassy stare, slow pulse, and slow respiratory rate; 4) freezing of the extremities; and 5) death. Trauma sustained in freezing or sub-zero conditions requires special attention because an injured worker is predisposed to secondary cold injury. Special provisions must be made to prevent hypothermia and secondary freezing of damaged tissues in addition to providing for first aid treatment. To avoid cold stress, site personnel must wear protective clothing appropriate for the level of cold and physical activity. In addition to protective clothing, preventive safe work practices, additional training, and warming regimens may be utilized to prevent cold stress.

### 8.6 Safety Precautions for Cold Stress Prevention

For air temperature of 0°F or less, mittens should be used to protect the hands. For exposed skin, continuous exposure should not be permitted when air speed and temperature results in a wind chill temperature of -25°F.

At air temperatures of 36°F or less, field personnel who become immersed in water or whose clothing becomes wet must be immediately provided with a change of clothing and be treated for hypothermia.

If work is done at normal temperature or in a hot environment before entering the cold, the field personnel must ensure that their clothing is not wet as a consequence of sweating. Wet field personnel must change into dry clothes prior to entering the cold area.

If the available clothing does not give adequate protection to prevent hypothermia or frostbite, work must be modified or suspended until adequate clothing is made available or until weather conditions improve.

Field personnel handling evaporative liquid (e.g., gasoline, alcohol, or cleaning fluids) at air temperatures below 40°F must take special precaution to avoid soaking of clothing or gloves with the liquids because of the added danger of cold injury due to evaporative cooling.

## 8.7 Safe Work Practices

Direct contact between bare skin and cold surfaces (< 20°F) should be avoided. Metal tool handles and/or equipment controls should be covered by thermal insulating material.

For work performed in a wind chill temperature at or below 10°F, workers should be under constant protective observation (buddy system). The work rate should be established to prevent heavy sweating that will result in wet clothing. For heavy work, rest periods must be taken in heated shelters and workers should be provided with an opportunity to change into dry clothing if needed.

Field personnel should be provided the opportunity to become accustomed to coldweather working conditions and required protective clothing. Work should be arranged in such a way that sitting or standing still for long periods is minimized. During the warming regimen (rest period), field personnel should be encouraged to remove outer clothing to permit sweat evaporation or to change into dry work clothing. Dehydration, or loss of body fluids, occurs insidiously in the cold environment and may increase susceptibility to cold injury due to a significant change in blood flow to the extremities. Fluid replacement with warm, sweet drinks and soups is recommended. The intake of coffee should be limited because of diuretic and circulatory effects.

### 8.8 Biological Hazards

Biological hazards may include poison ivy, snakes, thorny bushes and trees, ticks, mosquitoes, spiders, and other pests.

#### 8.8.1 Tick Borne Diseases

*Lyme Disease* - The disease commonly occurs in summer and is transmitted by the bite of infected ticks. "Hot spots" in the United States include New York, New Jersey, Pennsylvania, Massachusetts, Connecticut, Rhode Island, Minnesota, and Wisconsin.

*Erlichiosis* - The disease also commonly occurs in summer and is transmitted by the bite of infected ticks. "Hot spots" in the United States include New York, Massachusetts, Connecticut, Rhode Island, Minnesota, and Wisconsin.

These diseases are transmitted primarily by the deer tick, which is smaller and redder than the common wood tick. The disease may be transmitted by immature ticks, which are small and hard to see. The tick may be as small as a period on this page.

Symptoms of Lyme disease include a rash or a peculiar red spot, like a bull's eye, which expands outward in a circular manner. The victim may have headache, weakness, fever, a stiff neck, and swelling and pain in the joints, and eventually, arthritis. Symptoms of erlichiosis include muscle and joint aches, flu-like symptoms, but there is typically no skin rash.

Rocky Mountain Spotted Fever (RMSF) - This disease is transmitted via the bite of an infected tick. The tick must be attached 4 to 6 hours before the disease-causing organism (Rickettsia rickettsii) becomes reactivated and can infect humans. The primary symptom of RMSF is the sudden appearance of a moderate-to-high fever. The fever may persist for two to three weeks. The victim may also have a headache, deep muscle pain, and chills. A rash appears on the hands and feet on about the third day and eventually spreads to all parts of the body. For this reason, RMSF may be confused with measles or meningitis. The disease may cause death, if untreated, but if identified and treated promptly, death is uncommon.

*Control* - Tick repellant containing diethyltoluamide (DEET) should be used when working in tick-infested areas, and pant legs should be tucked into boots. In addition, workers should search the entire body every three or four hours for attached ticks. Ticks should be removed promptly and carefully without crushing, since crushing can squeeze the disease-causing organism into the skin. A gentle and steady pulling action should be used to avoid leaving the head or mouth parts in the skin. Hands should be protected with surgical gloves when removing ticks.

#### 8.8.2 Poisonous Plants

Poisonous plants may be present in the work area. Personnel should be alerted to its presence and instructed on methods to prevent exposure.

*Control* - The main control is to avoid contact with the plant, cover arms and hands, and frequently wash potentially exposed skin. Particular attention must be given to avoiding skin contact with objects or protective clothing that have touched the plants. Treat every surface that may have touched the plant as contaminated, and practice contamination avoidance. If skin contact is made, the area should be washed immediately with soap and water and observed for signs of reddening.

### 8.8.3 Snakes

The possibility of encountering snakes exists, specifically for personnel working in wooded/vegetated areas. Snake venoms are complex and include proteins, some of which have enzymatic activity. The effects produced by venoms include neurotoxic effects with sensory, motor, cardiac, and respiratory difficulties; cytotoxic effects on red blood cells, blood vessels, heart muscle, kidneys, and lungs; defects in coagulation; and effects from local release of substances by enzymatic actions. Other noticeable effects of venomous snakebites include swelling, edema, and pain around the bite, and the development of ecchymosis (the escape of blood into tissues from ruptured blood vessels).

*Control* - To minimize the threat of snakebites, all personnel walking through vegetated areas must be aware of the potential for encountering snakes, and the need to avoid actions potentiating encounters, such as turning over logs, etc. If a snakebite occurs, an attempt should be made to safely identify the snake via size and markings. The victim must be transported to the nearest hospital within 30 minutes; first aid consists of applying a constriction band and washing the area around the wound to remove any unabsorbed venom.

## 8.8.4 Spiders

Personnel may encounter spiders during work activities.

Two spiders are of concern, the black widow and the brown recluse. Both prefer dark sheltered areas such as basements, equipment sheds and enclosures, and around woodpiles or other scattered debris. The black widow is shiny black, approximately one inch long, and found throughout the United States. There is a distinctive red hourglass marking on the underside of the black widows body. The bite of a black widow is seldom fatal to healthy adults, but effects include respiratory distress, nausea, vomiting, and muscle spasms. The brown recluse is smaller than the black widow and gets its name from its brown coloring and behavior. The brown recluse is more prevalent in the southern United States. The brown recluse has a distinctive violin shape on the top of its body. The bite of the brown recluse is painful and the bite site ulcerates and takes many weeks to heal completely.

*Control* - To minimize the threat of spider bites, all personnel walking through vegetated areas must be aware of the potential for encountering these arachnids. Personnel need to avoid actions that may result in encounters, such as turning over logs, and placing hands in dark places such as behind equipment or in corners of equipment sheds or enclosures. If a spider bite occurs, the victim must be transported to the nearest

hospital as soon as possible; first aid consists of applying ice packs and washing the area around the wound to remove any unabsorbed venom.

### 8.9 Noise

Exposure to noise over the OSHA action level can cause temporary impairment of hearing; prolonged and repeated exposure can cause permanent damage to hearing. The risk and severity of hearing loss increases with the intensity and duration of exposure to noise. In addition to damaging hearing, noise can impair voice communication, thereby increasing the risk of accidents on site.

*Control* - All personnel must wear hearing protection, with a Noise Reduction Rating (NRR) of at least 20, when noise levels exceed 85 dBA. When it is difficult to hear a coworker at normal conversation distance, the noise level is approaching or exceeding 85 dBA, and hearing protection is necessary. All site personnel who may be exposed to noise must also receive baseline and annual audiograms and training as to the causes and prevention of hearing loss. Noise monitoring is discussed in Section 5.2, Noise Monitoring.

Whenever possible, equipment that does not generate excessive noise levels will be selected for this project. If the use of noisy equipment is unavoidable, barriers or increased distance will be used to minimize worker exposure to noise, if feasible.

## 8.10 Spill Control

All personnel must take every precaution to minimize the potential for spills during site operations. All on-site personnel shall immediately report any discharge, no matter how small, to the FS.

Spill control equipment and materials will be located on the site at locations that present the potential for discharge. All sorbent materials used for the cleanup of spills will be containerized and labeled appropriately. In the event of a spill, the FS will follow the provisions in Section 10.0, Emergency Procedures, to contain and control released materials and to prevent their spread to off-site areas.

## 8.11 Sanitation

Site sanitation will be maintained according to OSHA requirements.

## 8.11.1 Break Area

Breaks must be taken in the SZ, away from the active work area after site personnel go through decontamination procedures. There will be no smoking, eating, drinking, or chewing gum or tobacco in any area other than the SZ.

## 8.11.2 Potable Water

The following rules apply to all field operations:

- An adequate supply of potable water will be provided at each project site. Potable water must be kept away from hazardous materials or media, and contaminated clothing or equipment.
- Portable containers used to dispense drinking water must be capable of being tightly closed and must be equipped with a tap dispenser. Water must not be consumed directly from the container (drinking from the tap is prohibited) nor may it be removed from the container by dipping.

- Containers used for drinking water must be clearly marked and shall not be used for any other purpose.
- Disposable drinking cups must be provided. A sanitary container for dispensing cups and a receptacle for disposing of used cups is required.

## 8.11.3 Sanitary Facilities

Access to facilities for washing before eating, drinking, or smoking, or alternate methods such as waterless hand-cleaner and paper towels will be provided.

### 8.11.4 Lavatory

If permanent toilet facilities are not available, an appropriate number of portable chemical toilets will be provided. This requirement does not apply to mobile crews or to normally unattended site locations so long as employees at these locations have transportation immediately available to nearby toilet facilities.

## 8.12 Emergency Equipment

Adequate emergency equipment for the activities being conducted on site and as required by applicable sections of 29 CFR 1910 and 29 CFR 1926 will be on site prior to the commencement of project activities. Personnel will be provided with access to emergency equipment, including, but not limited to, the following:

- Fire extinguishers of adequate size, class, number, and location as required by applicable sections of 29 CFR 1910 and 1926;
- Industrial first aid kits of adequate size for the number of personnel on site; and
- Emergency eyewash and/or shower if required by operations being conducted on site.

#### 8.13 Lockout/Tagout Procedures

Only fully qualified and trained personnel will perform maintenance procedures. Before maintenance begins, lockout/tagout procedures per OSHA 29 CFR 1910.147 will be followed.

Lockout is the placement of a device that uses a positive means, such as lock, to hold an energy or material-isolating device such that the equipment cannot be operated until the lockout device is removed. If a device cannot be locked out, a tagout system shall be used. Tagout is the placement of a warning tag on an energy or material isolating device indicating that the equipment controls may not be operated until the personnel who attached the tag remove the tag.

## 8.14 Electrical Safety

Electricity may pose a particular hazard to site workers due to the use of portable electrical equipment. If wiring or other electrical work is needed, a qualified electrician must perform it.

General electrical safety requirements include:

• All electrical wiring and equipment must be a type listed by Underwriters Laboratories (UL), Factory Mutual Engineering Corporation (FM), or other recognized testing or listing agency.

- All installations must comply with the National Electrical Safety Code (NESC), the National Electrical Code (NEC), or USCG regulations.
- Portable and semi-portable tools and equipment must be grounded by a multiconductor cord having an identified grounding conductor and a multi-contact polarized plug-in receptacle.
- Tools protected by an approved system of double insulation, or its equivalent, need not be grounded. Double insulated tools must be distinctly marked and listed by UL or FM.
- Live parts of wiring or equipment must be guarded to prevent persons or objects from touching them.
- Electric wire or flexible cord passing through work areas must be covered or elevated to protect it from damage by foot traffic, vehicles, sharp corners, projections, or pinching.
- All circuits must be protected from overload.
- Temporary power lines, switchboxes, receptacle boxes, metal cabinets, and enclosures around equipment must be marked to indicate the maximum operating voltage.
- Plugs and receptacles must be kept out of water unless of an approved submersible construction.
- All extension cord outlets must be equipped with ground fault circuit interrupters (GFCI).
- Attachment plugs or other connectors must be equipped with a cord grip and be constructed to endure rough treatment.
- Extension cords or cables must be inspected prior to each use and replaced if worn or damaged. Cords and cables must not be fastened with staples, hung from nails, or suspended by bare wire.
- Flexible cords must be used only in continuous lengths without splice, with the exception of molded or vulcanized splices made by a qualified electrician.

# 8.15 Lifting Safety

Using proper lifting techniques may prevent back strain or injury. The fundamentals of proper lifting include:

- Consider the size, shape, and weight of the object to be lifted. A mechanical lifting device or additional persons must be used to lift an object if it cannot be lifted safely alone.
- The hands and the object should be free of dirt or grease that could prevent a firm grip.
- Gloves must be used, and the object inspected for metal slivers, jagged edges, burrs, or rough or slippery surfaces.
- Fingers must be kept away from points that could crush or pinch them, especially when putting an object down.
- Feet must be placed far enough apart for balance. The footing should be solid and the intended pathway should be clear.
- The load should be kept as low as possible, close to the body with the knees bent.
- To lift the load, grip firmly and lift with the legs, keeping the back as straight as possible.
- A worker should not carry a load that he or she cannot see around or over.

• When putting an object down, the stance and position are identical to that for lifting; the legs are bent at the knees, and the back is straight as the object is lowered.

## 8.16 Ladder Safety

When portable ladders are used for access to an upper landing surface, the ladder side rails shall extend at least 3 feet (9 m) above the upper landing surface to which the ladder is used to gain access; or, when such an extension is not possible because of the ladder's length, then the ladder shall be secured at its top to a rigid support that will not deflect, and a grasping device, such as a grabrail, shall be provided to assist employees in mounting and dismounting the ladder. In no case shall the extension be such that ladder deflection under a load would, by itself, cause the ladder to slip off its support.

- Ladders shall be maintained free of oil, grease, and other slipping hazards.
- Ladders shall not be loaded beyond the maximum intended load for which they were built, or beyond their manufacturer's rated capacity.
- Ladders shall be used only for the purpose for which they were designed.
- Non-self-supporting ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).
- Wood job-made ladders with spliced side rails shall be used at an angle such that the horizontal distance is one-eighth the working length of the ladder.
- Fixed ladders shall be used at a pitch no greater than 90 degrees from the horizontal, as measured to the back side of the ladder.
- Ladders shall be used only on stable and level surfaces unless secured to prevent accidental displacement.
- Ladders shall not be used on slippery surfaces unless secured or provided with slipresistant feet to prevent accidental displacement. Slip-resistant feet shall not be used as a substitute for care in placing, lashing, or holding a ladder that is used upon slippery surfaces, including, but not limited to, flat metal or concrete surfaces that are constructed so they cannot be prevented from becoming slippery.
- Ladders placed in any location where they can be displaced by workplace activities or traffic, such as in passageways, doorways, or driveways, shall be secured to prevent accidental displacement, or a barricade shall be used to keep the activities or traffic away from the ladder.
- The area around the top and bottom of ladders shall be kept clear.
- The top of a non-self-supporting ladder shall be placed with the two rails supported equally unless it is equipped with a single support attachment.
- Ladders shall not be moved, shifted, or extended while occupied.
- Ladders shall have non-conductive side rails if they are used where the employee or the ladder could contact exposed energized electrical equipment.
- The top, top step, or the step labeled that it or any step above it should not be used as a step.
- Cross-bracing on the rear section of stepladders shall not be used for climbing unless the ladders are designed and provided with steps for climbing on both front and rear sections.
- Ladders shall be inspected by the HSM for visible defects on a daily basis and after any occurrence that could affect their safe use.

- Portable ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps; broken or split rails; corroded components; or other faulty or defective components shall either be immediately marked in a manner that readily identifies them as defective or be tagged with "Do Not Use" or similar language and shall be withdrawn from service.
- Fixed ladders with structural defects, such as, but not limited to, broken or missing rungs, cleats, or steps; broken or split rails; or corroded components; shall be withdrawn from service.
- Ladder repairs shall restore the ladder to a condition meeting its original design criteria, before the ladder is returned to use.
- Single-rail ladders shall not be used.
- When ascending or descending a ladder, the user shall face the ladder.
- Each employee shall use at least one hand to grasp the ladder when progressing up and/or down the ladder.
- An employee shall not carry any object or load that could cause the employee to lose balance and fall.

#### 8.17 Traffic Safety

The project site may be located adjacent to a public roadway where exposure to vehicular traffic is likely. Traffic may also be encountered as vehicles enter and exit the area. To minimize the likelihood of project personnel and activities being affected by traffic, the following procedures will be implemented.

Cones must be placed along the shoulder of the roadway starting 100 feet from the work area to alert passing motorists to the presence of personnel and equipment. A "Slow" or "Men Working" sign must be placed at the first cone. Barricades with flashing lights should be placed between the roadway and the work area.

During activities along a roadway, equipment will be aligned parallel to the roadway to the extent feasible, facing into the oncoming traffic so as to place a barrier between the work crew and the oncoming traffic. All crewmembers must remain behind the equipment and the traffic barrier.

All site personnel who are potentially exposed to vehicular traffic must wear an outer layer of orange warning garments, such as vests, jackets, or shirts. If work is performed in hours of dusk or darkness, workers will be outfitted with reflective garments either orange, white (including silver-coated reflective coatings or elements that reflect white light), yellow, fluorescent red-orange, or fluorescent yellow-orange.

The flow of traffic into and out of the adjacent business must be assessed, and precautions taken to warn motorists of the presence of workers and equipment. Where possible, vehicles should be aligned to provide physical protection of people and equipment.

## 9.0 SITE-SPECIFIC HAZARDS AND CONTROL MEASURES

### 9.1 Evaluation of Hazards

The evaluation of hazards is provided as a quick reference as to the known conditions for the Site, wherein the level of detail for each of the subsections is identified.

## 9.1.1 Hazard Characteristics

Existing information for Site: X Detailed Preliminary	None	
Hazardous/Contaminated Material For X Solid X Liquid	m(s): Sludge	Gas <u>X</u> Vapor
Containment Type(s): Drum <u>X</u> Tank PondLagoon	Pit Other:	<u>X</u> Debris
Hazardous Material Characteristics:         X       Volatile          Corrosive          Ignitable       X	Reactive XUnknown	Radioactive
Routes of Exposure: <u>X</u> Oral <u>X</u> Dermal _	XEye	<u>X</u> Respiratory

## 9.1.2 Potential Health and Safety Hazards

X Heat	Congested areas
X Cold	X General Construction
Confined space entry	<u>X</u> Physical injury
Oxygen depletion	X Electrical hazards
Asphyxiation	X Handling and product transfer
X Excavation	X Fire
<u>X</u> Cave-ins	<u>X</u> Explosion
<u>X</u> Falls, slippage	<u>X</u> Biological Hazards
-	X Plants – Poison Ivy, Poison Oak
	X Insects – Ticks
	X Insects – Mosquitoes
	$\underline{X}$ Insects – Bees and Wasps
	X Rats and Mice
<u>X</u> Heavy equipment	Non-ionizing Radiation (i.e. UV, IR, etc.)
Other: Potential Ignition Haz	ard.

## 9.2 Field Activities, Hazards, and Control Procedures

The following task-specific safety analyses identify potential health, safety, and environmental hazards associated with each type of field activity. Because of the complex and changing nature of field projects, supervisors must continually inspect the site to identify hazards that may affect on-site personnel, the community, or the environment. The FS must be aware of these changing conditions and discuss them with the PM whenever these changes impact employee health, safety, the environment, or performance of the project. The FS will keep on-site personnel informed of the changing conditions, and the PM will write and/or approve addenda or revisions to this HASP as necessary.

## 9.2.1 Mobilization/Construction Stakeout

Description of Tasks

Site mobilization will include establishing excavation locations, determining the location of utilities and other installations, and establishing work areas. Mobilization will also include setting up equipment and establishing a temporary site office. A break area will be set up outside of regulated work areas. Mobilization may involve clearing areas for the SZ and CRZ. During this initial phase, project personnel will walk the site to confirm the existence of anticipated hazards and identify safety and health issues that may have arisen since the writing of this plan.

### Hazard Identification

The hazards of this phase of activity are associated with heavy equipment operation, manual materials handling, installation of temporary on-site facilities, and manual site preparation.

Manual materials handling and manual site preparation may cause blisters, sore muscles, and joint and skeletal injuries; and may present eye, contusion, and laceration hazards. Installation of temporary field office and support facilities may expose personnel to electrical hazards, underground and overhead utilities, and physical injury due to the manual lifting and moving of materials. The work area presents slip, trip, and fall hazards from scattered debris and irregular walking surfaces. Rainy weather may cause wet, muddy, slick walking surfaces, and unstable soil. Freezing weather hazards include frozen, slick, and irregular walking surfaces.

Environmental hazards include plants, such as poison ivy and poison oak; aggressive fauna, such as ticks, fleas, mosquitoes, wasps, spiders, and snakes; weather, such as sunburn, lightning, rain, and heat- or cold-related illnesses; and pathogens, such as rabies, Lyme disease, and blood-borne pathogens.

#### <u>Controls</u>

Control procedures for these hazards are discussed in Section 8.0, General Safety Practices.

## 9.2.2 Demolition/Site Clearing

#### Description of Tasks

Site clearance will involve manual or mechanical removal of objects impeding access to the construction footprint. These obstructions are both natural and man-made items and will include, but not be limited to, fabricated metal and concrete structures, trees, vegetation, rubble, and miscellaneous trash/debris.

#### Hazard Identification

Hazards associated with demolition and site clearance include personnel working in and around potentially unstable structures, or locations of potential contact with hazardous chemicals, utilities, and/or falling objects. This task will involve manual, as well as mechanical demolition/clearance efforts so exertion and equipment hazards exist.

#### Controls

*PPE* – Personnel shall be protected from hazards of irritant and toxic plants and suitably instructed in the first aid treatment available.

*Preparatory Operations* – Prior to permitting employees to start demolition operations, an engineering survey shall be made, by a licensed Professional Engineer, of the structure to

determine the stability of the structure. Any adjacent structure shall where personnel may be exposed shall also be similarly checked. The PO shall have in writing evidence that such a survey has been performed. All structural instabilities shall be shored or braced, under the supervision of a licensed Professional Engineer, prior to access by an FP.

*Utilities* – All electric, gas, water, steam, sewer, and other service lines shall be shut off, caped, or otherwise controlled, outside the building line before demolition work is started. In each case, any utility company that is involved shall be notified in advance. If it is necessary to maintain any power, water or other utilities during demolition, such lines shall be temporarily relocated, as necessary.

*Hazardous Substances* – It shall also be determined if any type of hazardous chemicals, gases, explosives, flammable materials, or similarly dangerous substances have been used in any pipes, tanks, or other equipment on the property. When the presence of any such substances is apparent or suspected, testing and purging shall be performed and the hazard eliminated before demolition is started.

*Falling Debris/Objects* – No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effective protected. Access to the area where falling objects/debris may be encountered must be gated and controlled.

*Structural Collapse* – Structural or load supporting members on any floor shall not be cut or removed until all stories above such a floor have been demolished and removed. Walls, which are to serve as retaining walls against which debris will be piled, shall not be so used unless capable of safely supporting the imposed load. Mechanical equipment shall not be used on floors or working surfaces unless such floors or surfaces are not of sufficient strength to support the imposed load.

*Rollover Guards* – All equipment used in site clearing operations shall be equipped with rollover guards meeting the applicable requirements. In addition, rider-operated equipment shall be equipped with an overhead and rear canopy guard meeting the applicable requirements.

*Inspections* – During demolition, continuing inspections by a licensed Professional Engineer shall be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, walls, or loosened material. No FP shall be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

## 9.2.3 Excavation and Cut/Fill Operations

### 9.2.3.1 Excavation/Trenching

#### Description of Tasks

This task includes the excavation of contaminated soils and superficial debris. Excavation depths vary across the site.

#### Hazard Identification

The hazards of this activity are associated with heavy equipment operation, subsurface intrusion, manual materials handling, stockpiling, and disposal. Subsurface intrusion presents hazards associated with negotiating buried utilities, cave-ins of the excavated areas, and regress methods for personnel working inside the excavated areas. Disruption of contaminated soil also presents a health hazard.

### **Controls**

Underground Utilities – The estimated locations of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during the excavation work, shall be determined prior to opening an excavation. Utility companies or owners shall be contacted ("Call Before You Dig") within established or customary local response times, advised of the proposed work, and asked to establish the location of the utility underground installations prior to the start of actual excavation.

When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by save and acceptable means. While the excavation is open, underground installations shall be protected, supported, or removed, as necessary, to safeguard site personnel.

*Cave-Ins* – Project personnel in an excavation shall be protected from cave-ins by an adequate protective system, except when:

- Excavations are made entirely in stable rock or excavations are less than five feet in depth and examination of the ground by the SSO provides no indication of a potential cave-in.
- Protective systems shall have the capacity to resist, without failure, all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

Project personnel shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least two feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

Daily inspections of excavations, the adjacent areas, and protective systems shall be made by the SSO for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the SSO prior to the start of work and as needed throughout operations. Inspections shall also be made after every rainstorm or other hazard-increasing occurrence. These inspections are only required when project personnel exposure can be reasonably anticipated.

Where the SSO finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed personnel shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

*Excavation Egress* – A stairway, ladder, ramp, or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25 feet or lateral travel for project personnel.

#### 9.2.3.2 Heavy Equipment Operation

Description of Tasks

Heavy equipment to be used for this task include, but are not limited to, excavators, dozers, dump trucks, and water sprayers (if required).

### Hazard Identification

The most common type of accident that occurs in material handling operations is the "caught between" situation when a load is being handled and an object gets caught between two moving parts of the equipment. Operation of the heavy construction equipment may produce harmful noise.

#### <u>Controls</u>

*Equipment Inspection* – All vehicles in use shall be checked prior to operation to ensure that all parts, equipment, and accessories that affect safe operations are in proper operating condition and free from defects. All defects shall be corrected before the vehicle is placed in service.

*Ground Guides* – No personnel shall use any motor vehicle, earthmoving, or compacting equipment having an obstructed view to the rear, unless:

- The vehicle has a reverse signal alarm distinguishable from the surrounding noise level; or
- The vehicle is backed up only when an observer signals that it is safe to do so.

*Blocking* – Heavy machinery, equipment, or parts thereof that are suspended or held aloft shall be substantially blocked to prevent falling or shifting before employees are permitted to work under or between them.

Noise – Control measures for noise are addressed in Section 4.9.

Traffic – Control measures for traffic are addressed in Section 8.17.

## 9.2.3.3 Disturbance/Handling of Contaminated Material

#### Description of Tasks

After the contaminated soil is excavated from below the Site's surface, the material will be stockpiled, dried, and either transported offsite or relocated and backfilled on site.

#### Hazard Identification

The hazards associated with materials handling include contact of the contaminated material with project personnel, or cross contamination with other site soil.

#### <u>Controls</u>

*Cross Contamination* – Following excavation, contaminated soil stockpiles will be placed on a structure constructed to separate the material from the site soil and collect any groundwater leachate. The material shall be covered to prevent storm water erosion or migration of contaminants through storm water.

*Air Monitoring* – Air and particulate monitoring will be conducted during soil excavation activities to assess the potential for exposure to airborne COCs. If the results of air monitoring indicate the presence of organic vapors or particulates in a concentration causing concern, personnel will upgrade to Level C protection. Refer to Section 5.1, Air Monitoring, for a description of air monitoring requirements and action levels. A description

of each level of personal protection is included in Section 4.0, Personal Protective Equipment.

*Traffic* – Control measures for traffic are addressed in Section 8.17.

## 9.2.4 Drilling/Subsurface Intrusion Activities

#### Description of Tasks

Site mobilization will include establishing excavation locations, determining the location of utilities and other installations, and establishing work areas. Mobilization will also include setting up equipment and establishing a temporary site office. A break area will be set up outside of regulated work areas. Mobilization may involve clearing areas for the SZ and CRZ. During this initial phase, project personnel will walk the site to confirm the existence of anticipated hazards and identify safety and health issues that may have arisen since the writing of this plan.

#### Hazard Identification

The primary physical hazards for this activity are associated with the use of soil boring and grouting equipment. The equipment is hydraulically powered and uses static force and dynamic percussion force to advance sampling and penetrating tubes.

Accidents can occur as a result of improperly placing the equipment on uneven or unstable terrain or failing to adequately secure the equipment prior to the start of operations. Overhead utility lines can create hazardous conditions if contacted by the equipment. Underground installations such as electrical lines, conduit, and product lines pose a significant hazard if contacted.

#### **Controls**

*Geoprobe and Drill Rig Safety Procedures* - The operator of the equipment must possess required state or local licenses to perform such work. All members of the crew shall receive site-specific training prior to beginning work.

The operator is responsible for the safe operation of the rig, as well as the crew's adherence to the requirements of this HASP. The operator must ensure that all safety equipment is in proper condition and is properly used. The members of the crew must follow all instructions of the operator, wear all personal protective equipment, and be aware of all hazards and control procedures. The operator and crew must participate in the Daily Safety Meetings and be aware of all emergency procedures.

*Equipment Inspection* - Each day, prior to the start of work, the rig and associated equipment must be inspected by the operator. The following items must be inspected:

- Vehicle condition;
- Proper storage of equipment;
- Condition of all hydraulic lines;
- Fire extinguisher; and
- First aid kit.

*Equipment Set Up* - The drill rig must be properly blocked and leveled prior to raising the derrick. The wheels which remain on the ground must be chocked. The leveling jacks shall

not be raised until the derrick is lowered. The rig shall be moved only after the derrick has been lowered.

All well sites will be inspected by the driller prior to the location of the rig to verify a stable surface exists. This is especially important in areas where soft, unstable terrain is common.

The drill rig must be properly blocked and leveled prior to raising the derrick. Blocking provides a more stable drilling structure by evenly distributing the weight of the rig. Proper blocking ensures that differential settling of the rig does not occur.

When the ground surface is soft or otherwise unstable, wooden blocks, at least 24" by 24" and 4" to 8" thick shall be placed between the jack swivels and the ground. The emergency brake shall be engaged, and the wheels that are on the ground shall be chocked.

*Rules for Intrusive Activity* - Before beginning any intrusive activity, the existence and location of underground pipe, conduit, electrical equipment, and other installations will be determined. This will be done, if possible, by contacting the appropriate client representative to mark the location of the lines. "Call Before You Dig" will verify the potential for encountering subsurface utilities. If the client's knowledge of the area is incomplete, an appropriate device, such as a magnetometer, will be used to locate the line.

Combustible gas readings of the general work area will be made regularly in areas where and/or during operations when the presence of flammable vapors or gases is suspected, such as during intrusive activities (see Section 5.1). Operations must be suspended and corrective action taken if the airborne flammable concentration reaches 10% of the LEL in the immediate area (a one-foot radius) of the point of drilling, or near any other ignition sources.

*Overhead Electrical Clearances* - If equipment is operated in the vicinity of overhead power lines, the power to the lines must be shut off or the equipment must be positioned and blocked such that no part, including cables, can come within the minimum clearances as follows:

Nominal System Voltage	Minimum Required Clearance
0-50kV	10 feet
51-100kV	12 feet
101-200kV	15 feet
201-300kV	20 feet
301-500kV	25 feet
501-750kV	35 feet
751-1,000kV	45 feet

When the drill rig is in transit, with the boom lowered and no load, the equipment clearance must be at least 4 feet for voltages less than 50kV, 10 feet for voltages of 50 kV to 345 kV, and 16 feet for voltages above 345 kV.

*Hoisting Operations* - Drillers should never engage the rotary clutch without watching the rotary table, and ensuring it is clear of personnel and equipment.

Unless the drawworks is equipped with an automatic feed control, the brake should not be left unattended without first being tied down.

Drill pipe, auger strings or casing should be picked up slowly. Drill pipe should not be hoisted until the driller is sure that the pipe is latched in the elevator, or the derrickman has signaled that he may safely hoist the pipe.

During instances of unusual loading of the derrick or mast, such as when making an unusually hard pull, only the driller should be on the rig floor; no one else should be on the rig or derrick.

The brakes on the drawworks of the drill rig should be tested by the driller each day. The brakes should be thoroughly inspected by a competent individual each week.

A hoisting line with a load imposed should not be permitted to be in direct contact with any derrick member or stationary equipment, unless it has been specifically designed for line contact.

Workers should never stand near the borehole whenever any wire line device is being run.

Hoisting control stations should be kept clean and controls labeled as to their functions.

*Catline Operations* - Only experienced workers will be allowed to operate the cathead controls. The kill switch must be clearly labeled and operational prior to operation of the catline. The cathead area must be kept free of obstructions and entanglements.

The operator should not use more wraps than necessary to pick up the load. More than one layer of wrapping is not permitted.

Personnel should not stand near, step over, or go under a cable or catline which is under tension.

Employees rigging loads on catlines shall:

- Keep out from under the load;
- Keep fingers and feet where they will not be crushed;
- Be sure to signal clearly when the load is being picked;
- Use standard visual signals only and not depend on shouting to coworkers; and
- Make sure the load is properly rigged, since a sudden jerk in the catline will shift or drop the load.

*Wire Rope* - When two wires are broken or rust or corrosion is found adjacent to a socket or end fitting, the wire rope shall be removed from service or re-socketed. Special attention shall be given to the inspection of end fittings on boom support, pendants, and guy ropes.

Wire rope removed from service due to defects shall be cut up or plainly marked as being unfit for further use as rigging.

Wire rope clips attached with U-bolts shall have the U-bolts on the dead or short end of the rope; the clip nuts shall be re-tightened immediately after initial load carrying use and at frequent intervals thereafter.

When a wedge socket fastening is used, the dead or short end of the wire rope shall have a clip attached to it or looped back and secured to itself by a clip; the clip shall not be attached directly to the live end.

Protruding ends of strands in splices on slings and bridles shall be covered or blunted.

Except for eye splices in the ends of wires and for endless wire rope slings, wire rope used in hoisting, lowering, or pulling loads, shall consist of one continuous piece without knot or splice.

An eye splice made in any wire rope shall have not less that five full tucks.

Wire rope shall not be secured by knots. Wire rope clips shall not be used to splice rope.

Eyes in wire rope bridles, slings, or bull wires shall not be formed by wire clips or knots.

*Pipe/Auger Handling* - Pipe and auger sections shall be transported by cart or carried by two persons. Individuals should not carry auger or pipe sections without assistance.

Workers should not be permitted on top of the load during loading, unloading, or transferring of pipe or rolling stock.

Employees should be instructed never to try to stop rolling pipe or casing; they should be instructed to stand clear of rolling pipe.

Slip handles should be used to lift and move slips. Employees are not permitted to kick slips into position.

When pipe is being hoisted, personnel should not stand where the bottom end of the pipe could whip and strike them.

Pipe and augers stored in racks, catwalks or on flatbed trucks should be secured to prevent rolling.

#### 9.2.5 Subsurface Chemical Sample Collection/Analysis

Description of Tasks

This sub-task consists of the collection of soil samples for subsequent field and laboratory analysis. The physical hazards of soil sampling are primarily associated with the sample collection methods, procedures utilized, and the environment itself.

#### Hazard Identification

Incidental contact with COCs is the primary hazard associated with sampling the stabilized material. This contact may occur through the manipulation of sample media and equipment, manual transfer of media into sample containers, and proximity of operations to the breathing zone. The primary hazards associated with these sampling procedures are not potentially serious; however, other operations in the area, or the conditions under which samples must be collected, may present chemical and physical hazards. The hazards directly associated with sampling procedures are generally limited to strains/sprains and potential eye hazards. Potential chemical hazards may include contact with media containing site COCs and potential contact with chemicals used for equipment decontamination.

### Controls

*PPE* – To control dermal exposure during sampling activities, a minimum of Level D protection will be worn. If necessary, based on field observations and site conditions, air monitoring may be conducted during sediment sampling activities. If the results of air monitoring indicate the presence of airborne contaminants in a concentration causing concern, personnel will upgrade to Level C protection. Refer to Section 5.1, Air Monitoring, for a description of air monitoring requirements and action levels. A description of each level of personal protection is included in Section 4.0, Personal Protective Equipment.

## 9.2.6 UST Closure

## 9.2.6.1 Working in Confined Spaces

### **Description of Tasks**

The project may involve the closure of USTs, if identified.

## Hazard Identification

Closure activities may require the entrance into confined spaces to facilitate cleaning and removal of the USTs.

## **Controls**

All personnel required to enter into confined or enclosed spaces must be instructed as to the nature of the hazards involved, the necessary precautions to be taken, and in the use of required protective and emergency equipment. The PO shall comply with all specific regulations that apply to work in dangerous or potentially dangerous areas.

## 9.2.6.2 Working with Compressed Air

#### **Description of Tasks**

The proposed method of purging the USTs includes the injection of compressed gas into the tank and attached piping network.

#### Hazard Identification

Uncontrolled release of the highly pressured air can cause injury to FP during this task. Cylinders must also be properly managed to ensure they are not compromised during storage and/or use.

#### **Controls**

*Pressure Regulation* – Compressed air used for cleaning purposes shall be reduced to less than 30 pounds per square inch and then only with effective chip guarding and personal protective equipment.

*Cylinder Storage* – Valve protection caps shall be in place and secured when compressed gas cylinders are transported, moved, or stored. Cylinder valves shall be closed when work is finished and when cylinders are empty or are moved. Compressed gas cylinders shall be secured in an upright position at all times, except if necessary for short periods of time when cylinders are actually being hoisted or carried. Cylinders shall be placed in a location where they cannot become part of an electrical circuit.

#### 9.2.7 Decontamination

All equipment will be decontaminated before leaving the site. Personnel involved in decontamination activities may be inadvertently exposed to skin contact with contaminated materials and chemicals brought from the EZ. Personnel involved in decontamination activities must wear PPE that is, at a minimum, one level below the level worn by personnel working in the EZ.

#### 9.2.8 Demobilization

Demobilization involves the removal of all tools, equipment, supplies, and vehicles brought to the site. The hazards of this phase of activity are associated with heavy equipment operation and manual materials handling.

Manual materials handling may cause blisters, sore muscles, and joint and skeletal injuries; and may present eye, contusion, and laceration hazards. Heavy equipment operation presents noise and vibration hazards, and hot surfaces, to operators. Personnel in the vicinity of heavy equipment operation may be exposed to physical hazards resulting in fractures, contusions, and lacerations and may be exposed to high noise levels. The work area presents slip, trip, and fall hazards from scattered debris and irregular walking surfaces. Rainy weather may cause wet, muddy, slick walking surfaces, and unstable soil. Freezing weather hazards include frozen, slick, and irregular walking surfaces.

Environmental hazards include plants, such as poison ivy and poison oak; aggressive fauna, such as ticks, fleas, mosquitoes, wasps, spiders, and snakes; weather, such as sunburn, lightning, rain, and heat-or cold-related illnesses; and pathogens, such as rabies, Lyme disease, and blood-borne pathogens.

Control procedures for these hazards are discussed in Section 8.0, General Safety Practices.

#### 9.3 Chemical Hazards

The chemical hazards associated with site operations are related to inhalation, ingestion, and skin exposure to site COCs. Concentrations of airborne COCs during site tasks may be measurable and will require air monitoring during certain operations. Air monitoring requirements for site tasks are outlined in Section 5.1.

COCs at the site include heavy metals, some VOC compounds, some SVOC compounds and potentially other industrial chemicals including PCBs and pesticides.

The potential for inhalation of site COCs is low. The potential for dermal contact with soils containing site COCs during remedial operations is moderate. Table 6 lists the primary contaminants that have been identified at the Site and the media in which they are present.

	Media: Soil	
SVOCs	Maximum Concentration (mg/kg)	Applicable Monitoring Instrument
Indeno(1,2,3-cd)pyrene	0.573	PID
Metals	Maximum Concentration (mg/kg)	Applicable Monitoring Instrument
Barium	404	Not Applicable
Cadmium	3.2	Not Applicable
Copper	133	Not Applicable
Lead	209	Not Applicable
Mercury	0.33	Not Applicable
Nickel	301	Not Applicable
Zinc	2,270	Not Applicable

### Table 6 – List of Primary Contaminants

Medi	a: Groundwater	
SVOCs	Maximum Concentration (ug/L)	Applicable Monitoring Instrument
Perfluorooctanoic acid	46.7	Not Applicable
Perfluoroctanesulfonic acid	52.8	Not Applicable
SVOCs	Maximum Concentration (ug/L)	Applicable Monitoring Instrument
Benzo(a)pyrene	1.2	PID
Metals	Maximum Concentration (ug/L)	Applicable Monitoring Instrument
Chromium	211	Not Applicable
Iron	98,200	Not Applicable
Lead	216	Not Applicable
Manganese	3,890	Not Applicable
Sodium	45,300	Not Applicable

#### Media: Soil Vapor

VOCs	Maximum Concentration (ug/m ³ )	Applicable Monitoring Instrument
Trichloroethene (TCE)	390	PID
Tetrachloroethene (PCE)	1,200	PID
Methylene Chloride	200	PID

#### 10.0 EMERGENCY PROCEDURES

#### 10.1 General

Prior to the start of operations, the work area will be evaluated for the potential for fire, contaminant release, or other catastrophic event. Unusual conditions or events, activities, chemicals, and conditions will be reported to the FS/SSO immediately.

The FS/SSO will establish evacuation routes and assembly areas for the site. All personnel entering the site will be informed of this route and the assembly area.

#### **10.2 Emergency Response**

If an incident occurs, the following steps will be taken:

- The FS/SSO will evaluate the incident and assess the need for assistance and/or evacuation;
- The FS/SSO will call for outside assistance as needed;
- The FS/SSO will ensure the PM is notified promptly of the incident; and
- The FS/SSO will take appropriate measures to stabilize the incident scene.

#### 10.2.1 Fire

In the case of a fire at the site, the FS/SSO will assess the situation and direct firefighting activities. The FS/SSO will ensure that the PM is immediately notified of any fires. Site personnel will attempt to extinguish the fire with available extinguishers, if safe to do so. In the event of a fire that site personnel are unable to safely extinguish with one fire extinguisher, the local fire department will be summoned.

#### **10.2.2 Contaminant Release**

In the event of a contaminant release, the following steps will be taken:

- Notify FS/SSO immediately;
- Evacuate immediate area of release;
- Conduct air monitoring to determine needed level of PPE; and
- Don required level of PPE and prepare to implement control procedures.

The FS/SSO has the authority to commit resources as needed to contain and control released material and to prevent its spread to off-site areas.

#### **10.3 Medical Emergency**

All employee injuries must be promptly reported to the SSO/FS, who will:

- Ensure that the injured employee receives prompt first aid and medical attention;
- In emergency situations, the worker is to be transported by appropriate means to the nearest urgent care facility (normally a hospital emergency room); and
- If the injured person is a SESI employee, notify SESI at 973-808-9050.

#### 10.3.1 Emergency Care Steps

Survey the scene. Determine if it is safe to proceed. Try to determine if the conditions that caused the incident are still a threat. Protect yourself from exposure before attempting to rescue the victim.

- Do a primary survey of the victim. Check for airway obstruction, breathing, and pulse. Assess likely routes of chemical exposure by examining the eyes, mouth, nose, and skin of the victim for symptoms.
- Phone Emergency Medical Services (EMS). Give the location, telephone number used, caller's name, what happened, number of victims, victim's condition, and help being given.
- Maintain airway and perform rescue breathing as necessary.
- Perform CPR as necessary.
- Do a secondary survey of the victim. Check vital signs and do a head-to-toe exam.

Treat other conditions as necessary. If the victim can be moved, take him/her to a location away from the work area where EMS can gain access.

#### 10.4 First Aid - General

All persons must report any injury or illness to their immediate supervisor or the FS. Trained personnel will provide first aid. Injuries and illnesses requiring medical treatment must be documented. The FS and SSO must fill out an accident/incident report as soon as emergency conditions no longer exist and first aid and/or medical treatment has been ensured. The report must be completed and submitted to the PM within 24 hours after the incident.

If first-aid treatment is required, first aid kits are kept at the CRZ. If treatment beyond first aid is required, the injured person(s) should be transported to the medical facility. If the injured person is not ambulatory or shows any sign of not being in a comfortable and stable condition for transport, then an ambulance/paramedics should be summoned. If there is any doubt as to the injured worker's condition, it is best to let the local paramedic or ambulance service examine and transport the worker.

#### 10.4.1 First Aid - Inhalation

Any employee complaining of symptoms of chemical overexposure as described in Section 4, General Site Safety Procedures, will be removed from the work area and transported to the designated medical facility for examination and treatment.

#### 10.4.2 First Aid - Ingestion

Call EMS and consult a poison control center for advice. If available, refer to the MSDS for treatment information. If the victim is unconscious, keep them on their side and clear the airway if vomiting occurs.

#### 10.4.3 First Aid - Skin Contact

Project personnel who have had skin contact with contaminants will, unless the contact is severe, proceed through the CRZ, to the wash area. Personnel will remove any contaminated clothing, and then flush the affected area with water for at least 15 minutes. The worker should be transported to the medical facility if he/she shows any sign of skin reddening, irritation, or if he/she requests a medical examination.

#### 10.4.4 First Aid - Eye Contact

Project personnel who have had contaminants splashed in their eyes or who have experienced eye irritation while in the EZ, must immediately proceed to the eyewash station in the CRZ. Do not decontaminate prior to using the eyewash. Remove whatever protective

clothing is necessary to use the eyewash. Flush the eye with clean running water for at least 15 minutes. Arrange prompt transport to the designated medical facility.

#### 10.5 Reporting Injuries, Illnesses, and Safety Incidents

Injuries and illnesses, however minor, will be reported to the FS immediately. The FS will complete an injury report and submit it to the HSM, and the PM by end of shift.

#### 10.6 Emergency Information

The means to summon local public response agencies such as police, fire, and ambulance will be reviewed in the daily safety meeting. These agencies are identified in **Table 7** below.

Local Emergency Contacts	Telephone No.
EMERGENCY	911
Westchester Square Medical Center	(718) 430-7300
Police Emergency	911
Fire Emergency	911
Rescue Squad	911
Ambulance	911
Miscellaneous Contacts	Telephone No.
N.Y. Poison Control Center	(800) 222-1222
National Response Center and Terrorist	(800) 424-8802
Hotline	
Center for Disease Control	(800) 311-3435
Utility Mark-Out	(800) 962-7962

#### Table 7 – Emergency Contacts

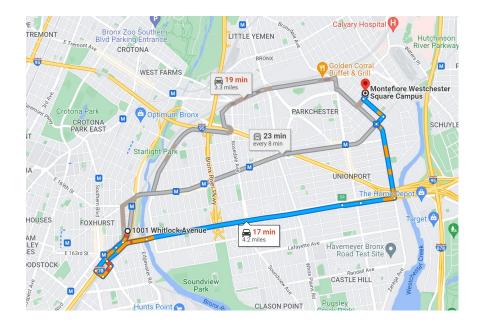
#### **10.6.1** Directions to Hospital

Westchester Square Medical Center 2475 St Raymond Ave, The Bronx, NY 10461

Directions to Hospital:

via l-	min (4.2 miles) 5 st 278 E est route, despite the usual traffic
	<b>1 Whitlock Ave</b> x, NY 10459
>	Take Bruckner Blvd, I-278 E and Zerega Ave to Rowland St
	14 min (4.0 mi)
>	Continue on Rowland St. Drive to Seddon St
	2 min (0.3 mi)
	stchester Square Medical Center 5 St Raymond Ave, Bronx, NY 10461

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.



#### 11.0 LOGS, REPORTS, AND RECORD KEEPING

The following is a summary of required health and safety logs, reports, and record keeping for the operations at the subject site.

#### 11.1 HASP Field Change Request

To be completed for initiating a change to the HASP. PM approval is required. The original will be kept in the project file (See Attachment 3).

#### 11.2 Medical and Training Records

The HSM must obtain and keep a log of personnel meeting appropriate training and medical qualifications for the site work. The log will be kept in the project file. Each company's Human Resources Department will maintain medical records, in accordance with 29 CFR 1910.1020.

#### 11.3 Exposure Records

Any personnel monitoring results, laboratory reports, calculations, and air sampling data sheets are part of an employee exposure record. These records will be kept in accordance with 29 CFR 1910.1020. For SESI employees, the originals will be sent to the Human Resources Manager. For subcontractor employees, the original file will be sent to the subcontractor employer with a copy maintained in the SESI project file.

#### 11.4 Accident/Incident Report

Any accident/incident reports must be completed following procedures given in Section 10.5 of this HASP. The originals will be sent to the HSM for maintenance. A copy of the forms will be kept in the project file. (See Attachment 4)

#### 11.5 OSHA Form 200

An OSHA Form 200 (Log of Occupational Injuries and Illnesses) will be kept at the project site. All recordable injuries or illnesses will be recorded on this form. At the end of the project, the original will be sent to the Human Resources Manager for maintenance. Subcontractor employees must also meet the requirements of maintaining an OSHA 200 Form. The accident/incident report meets the requirements of the OSHA Form 101 (Supplemental Record), which must be maintained with the OSHA Form 200 for all recordable injuries or illnesses.

#### 11.6 On-Site Health and Safety Field Logbooks

The HSM or designee will maintain an on-site health and safety log book in which daily Site conditions, activities, personnel, and significant events will be recorded. Calibration records and personnel monitoring results, if available, will also be recorded in the field logbook. The original logbook will be kept in the project file.

Whenever any personnel monitoring is conducted onsite, the monitoring results will be noted in the filed logbook. These will become part of the exposure records file and will be maintained by the HSM.

A signatory page is included (See Attachment 5) and is to be signed by those working on and/or visiting the site.

#### 11.7 Material Safety Data Sheets

Material Safety Data Sheets (MSDS) will be obtained and kept on file at the project site for each hazardous chemical brought to, use, or stored at the Site (See Attachment 6).

#### 12.0 COVID-19 RESPONSE ACTION PLAN

SESI is concerned with the safety and well-being of its employees, vendors, subcontractors, and others with access to its offices and job sites, with particular emphasis on the unique challenges posed by COVID-19.

SESI has established the following protocols in keeping with the recommendations of the CDC and other sources including State Governor Executive Orders for work taking place on construction sites.

We request that all SESI employees, vendors, and subcontractors help with our prevention efforts while at work.

In order to minimize the spread of COVID-19, we must all cooperate in doing the following:

- Frequently wash your hands with soap and water for at least 20 seconds. When soap and running water are unavailable, use an alcohol-based hand rub with at least 60% alcohol. Always wash hands that are visibly soiled.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow.
- Discourage handshaking, avoid touching your eyes, nose, or mouth with unwashed hands.
- Limit the sharing of tools, machinery, equipment, phones, desks, and computers.
- Wear cloth face coverings on all construction sites.
- Avoid close contact with people who are sick.
- Employees who have symptoms (i.e., fever, cough, or shortness of breath) should notify their supervisor and stay home—DO NOT GO TO WORK.
- Sick employees should follow CDC-recommended steps. Employees should not return to work until the criteria to discontinue home isolation are met, in consultation with healthcare providers and state and local health departments.

The following are the specific jobsite protocols and response actions to be taken in the event someone on site has been in contact with, or has themselves, the COVID-19 virus:

#### **OFFICE/JOBSITE PROTOCOL**

- If an employee/worker exhibits COVID-19 symptoms, the employee/worker must remain at home until he or she is symptom free for 72 hours (3 full days) without the use of fever-reducing or other symptom-altering medicines (e.g. acetaminophen, cough suppressants). SESI will similarly require an employee or worker that reports to work with symptoms to return home until they are symptom free for 72 hours (3 full days).
- Limit person to person contact, and when unavoidable, maintain CDC distancing guidelines.
- Avoid eating lunch in groups.
- Avoid in-person meetings if possible. If an in-person meeting is necessary, conduct it in a well-ventilated area with enough space for attendees to distance themselves from one another. Field jobsite meetings should be conducted in smaller group meetings (no more than 5 persons when possible) versus one large meeting.
- Only workers necessary to the execution of the work should be at the jobsites. No non-essential visitors should be permitted at the worksite.

#### **RESPONSE ACTION TRIGGER EVENTS:**

- an employee/worker at work has tested positive for COVID-19
- an employee/worker at work has suspected, but unconfirmed, case of COVID-19
- an employee/worker self-reported that they came in contact with someone who had a presumptive positive case of COVID-19
- an employee/worker has been exposed to the virus but only found out after they have interacted with others

#### **RESPONSE ACTIONS:**

- Upon occurrence of any of the Trigger Events above, employees/subcontractors shall notify SESI Management about the suspected employee/worker infected with, or exposed to, COVID-19.
- SESI Management will investigate the incident to confirm the report is valid.
- Employees/Subcontractors shall investigate their respective infected employee(s) and report the following to SESI Management and HR:
  - Identify all individuals who worked in proximity (six feet) of the infected employee/worker,
  - Employee(s)/Worker(s) infected with the COVID-19 virus, and employee(s)/worker(s) that came in contact with the infected employee/worker shall be sent home for a period of 14 days,
  - Do not identify the infected employee/worker by name to avoid violation of privacy/confidentiality laws, and,
  - Keep SESI Management informed of progress and updates.
- If an infected person was in the office, SESI will clean and disinfect common areas and surfaces, in accordance with CDC recommendations.
- SESI Management will notify affected employees/workers of the Trigger Event and instruct them to take the response actions above.

# • SESI Management policy requires written documentation from a health care professional, that confirmed infected employees can return to work.

Except for circumstances in which SESI is legally required to report workplace occurrences of communicable disease, the confidentiality of all medical conditions will be maintained in accordance with applicable law and to the extent practical under the circumstances. When required, the number of persons who will be informed of an employee's/worker's condition will be kept at the minimum needed to appropriately notify other potentially affected employees/workers of Trigger Events and to attempt to minimize the potential for transmission of the virus.

# ATTACHMENT 1 AIR MONITOR LOG

### Air Monitoring: Sample Collection and Analysis

Task / Operation Being	Substance(s)/ Hazard(s) Being	Monitoring Location	Type/Method of Monitoring	Monitoring Results	Exposure Limits	Required Action
	Operation	Task / Operation Being     Substance(s)/ Hazard(s) Being       Image: Constraint of the second	Task / Operation Being       Substance(s)/ Hazard(s) Being       Monitoring Location         Image: Substance (s)/ Hazard(s) Being       Image: Substance (s)/ Hazard(s) Being       Image: Substance (s)/ Location         Image: Substance (s)/ Hazard(s) Being       Image: Substance (s)/ Hazard(s) Being       Image: Substance (s)/ Location         Image: Substance (s)/ Hazard(s) Being       Image: Substance (s)/ Hazard(s) Being       Image: Substance (s)/ Hazard(s) Hazard(s			

ATTACHMENT 2 OSHA POSTER

# Job Safety and Health It's the law!

#### **EMPLOYEES:**

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the OSH Act.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposures to toxic and harmful substances or conditions.
- · Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the OSHAct that apply to your own actions and conduct on the job.

#### **EMPLOYERS:**

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the OSH Act.

This free poster available from OSHA – The Best Resource for Safety and Health





#### 1-800-321-OSHA (6742)

OSHA 3165-02 2012R

www.osha.gov



# ATTACHMENT 3 FILED CHANGE REQUEST FORM

### HEALTH & SAFETY PLAN CHANGE NOTICE

			Pages	of
Proje	ct:		H&S-C	CN
1)	HASP VERSION:	SECTION:	PAGE (s):	
	Addition	o existing HASP to existing HASP	Anticipated Revision Date:	
			CO	NT
2)	PROPOSED CHANGE:			
3)	REASON FOR PROPOSE		Other:	
	Change i	on of Deficiency n Regulatory or Other Requir nal Experience	ementsC	ONT
4)	EXHIBITS ATTACHED	NOYES (If YES	, describe)CON	
5)	PMK APPROVALS		Date:	
			Date: Date:	
	Client Approval Required:	NOYES (If Y	ES, date submitted)	
6)		APPROVED	REMANDEDREJECTI	ED
			CONT	
	Client Representative:		Date:	
7)	DISTRIBUTION AFTER	APPROVAL		
		LIST OTHER:		
	$     \underline{X}                                     $			

# ATTACHMENT 4 INJURY REPORT FORM

OSHA's Form 301 Injury and Illness Incident Report	Incident Report	Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.
This Injury and Illness Incident Report is one of the first forms you must fill out when a recordable work-	Information about the employee 1) Full name	Information about the case
related injury or illness has occurred. Together with the Log of Work-Related Injuries and Illnesses and the accompanying Summary, these forms help the employer and OSHA downloave forms of the output	2) StreetStateZtP	11) Date of injury or illness     / _ /       12) Time employee began work     _ / _ /       13) Time of event     _ / _ /
and severity of work-related incidents. Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable	3) Date of birth / / 4) Date hired / / 5) [] Male Female	14) What was the employee doing just before the incident occurred? Describe the activity, as well as the tools, equipment, or material the employee was using. Be specific. Examples: "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayee"; "daily computer key-entry."
substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form. According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to	Information about the physician or other health care professional ⁶⁾ Name of physician or other health care professional	Bre 15) What happened? Tell us how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."
which it pertains. If you need additional copies of this form, you may photocopy and use as many as you need.	<ul> <li>7) If treatment was given away from the worksite, where was it given?</li> <li>Facility</li></ul>	16) What was the injury or illness? Tell us the part of the body that was affected and how it was affected; be more specific than "hurt," "pain," or sore." <i>Examples</i> : "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."
Completed by	<ul> <li>⁸⁾ Was employee treated in an emergency room?</li> <li>2 Yes</li> <li>No</li> </ul>	17) What object or substance directly harmed the employee? Examples: "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, leave it blank.
Title Phone (	<ul> <li>⁹⁾ Was employee hospitalized overnight as an in-patient?</li> <li>Yes</li> <li>No</li> </ul>	18) If the employee died, when did death occur? Date of death

Washington, DC 20210. Do not send the completed forms to this office. LI, YC 1

Log of Work-Related Injuries and Illnesses	k-Relat	ed Inj	iuries and	<b>Illnesses</b>	protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.	onfidentia the information safety and	ality of em mation is d health p	protects the confidentiality of employees to the exten possible while the information is being used for occupational safety and health purposes.	the extent 1 for		Year 20
You must record information about ever days away from work, or medical treatm	ry work-related death au nent beyond first aid. Yo	nd about every worl ou must also recoro	crelated injury or illness that involved intervention of the second s	You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health	activity or job transfer sian or licensed healt	2.1		Angenera da Angenera da Ange	an in faith		Form approved OMB no. 1218-0176
care professional. You must also record work-related infurines and illnesses that meet any care professional. You must also record work-related infurines and illnesses that meet any use two lines for a single case if you need to. You must complete an injury and illness inc form. If you're not sure whether a case is recordable, call your local OSHA office for help.	work-related injuries and work-related injuries a sed to. You must compli- is recordable, call your	ind itness also record and illnesses that m lete an Injury and Illi local OSHA office I	significan work-telated injunes bet any of the specific recording ress Incident Report (OSHA For or help.	care professional, for incurse incurrent popularity and interests that maet any of the specific recording criteria and intersets that are originsed by a physician or located health care professional, four must also record work-related injuries and illnesses that maet any of the specific recording criteria licted in 29 CFR Part 1904, 8 through 1904, 12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.	tion or licensed neal 1904.12. Feel free to liness recorded on th	<u></u> б, ^о о				Establishment name	Slate
Identify the person		Describe the case	he case		Cl	Classify the case	e case				
(A) (B) Case Employee's name	(C) Job title	(D) Date of injury		(F) Describe injury or illness, parts of body affected,	flected,	CHECK ONLY based on the that case:	ONE box f most serio	CHECK ONLY ONE box for each case based on the most serious outcome for that case:	Q,	Enter the number of days the injured or ill worker was:	f Check the "Injury" column or choose one type of illness:
110.	(e.g., weider)	or onset of illness	(e.g., Loading dock north end)	and object/substance that directly injured or made person ill (e.g., Second degree burns on right forearm from acetylene torch)	ns on		1	12			disorder ratory tion
					Death (G)	) (H)		riction	ę	(K) (L)	<ul> <li>Kespi condi</li> <li>Poiso</li> </ul>
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Public reporting burden for this collection of information is estimated to a srage 14 minutes per response, including time to review the instructions, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments show these sections are not information unless it displays a currently valid OMB control number.	nformation is estimated to eeded, and complete and re less it displays a currently v	average 14 minutes pe eview the collection of J radid OMB control num	r response, including time to review information. Persons are not required ther. If you have any comments		Be sure to transfer these totals to the Summary page (Form 300A) before you post it.	als to the Surr	imary joage (F	orm 300A) beit	re , ou post it.		Injury in disorder Cespiratory condition Poisoning caring loss
Analysis, Room N-3614, 200 Constitution Avenue, NW, Washington, DC 20210. Do not send the completed forms to this office	nue, NW, Washington, DC	20210. Do not send th	e completed forms to this office.						Page	e of	(3) (4) (

All establishments covered by to verify that the entries are cc Using the Log, count the im	y Part 1904 must con omplete and accurate idividual entries you n	All establishments covered by Part 1904 must complete this Summary page, even if to verify that the entries are complete and accurate before completing this summary. Using the Log, count the individual entries you made for each category. Then write	f no work-related injuries or illne r, e the totals below, making sure	All establishments covered by Part 1904 must complete this Summary page, even if no work-related injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete and accurate before completing this summary. Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the Log.	Establishment information
Employees, former employe	ees, and their repress	entatives have the right to review	he OSHA Form 300 in its entire	Employees, mine on the second their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or	Your establishment name
its equivalent, see 29 UFK Pa	an 1904.35, in Usha	its equivalent. See 29 CFH ren 1904-35, in USFA's recordiceping rule, for further details on the access provisions for these forms.	etails on the access provisions	e lorms.	Street
Number of Cases	\$				City Sate ZIP
Total number of To deaths cas	Total number of cases with days	Total number of cases with iob	Total number of other recordable		Industry description (e.g., Manufacture of motor truck trailers)
	away from work	transfer or restriction	cases		Standard Industrial Classification (SIC), if known (e.g., $3715$ )
(G)	(H)	(1)	(r)		OR
Number of Days					North American Industrial Classification (NAICS), if known (e.g., 336212)
Total number of days away from work		Total number of days of job transfer or restriction			<b>Employment information</b> (If you don't have these figures, see the Worksheet on the back of this page to estimate.)
	1				Annual average number of employees
(K)		(L)			Total hours worked by all employees last year
Injury and Illness Types	s Types				Sign here
Total number of					Knowingly falsifying this document may result in a fine.
(1) Injuries	l	(4) Poisonings			
<ul><li>(2) Skin disorders</li><li>(3) Respiratory conditions</li></ul>	I	<ul><li>(5) Hearing loss</li><li>(6) All other illnesses</li></ul>			I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.
					Company encettive
This are for marking and for the second					

Labor Materia

ATTACHMENT 5 SIGNATORY PAGE

#### Attachment 4 – Site-Specific Health and Safety Orientation Signatory Page HEALTH AND SAFETY PLAN

Title	Name	Signature
Project Manager:	TBD	
Health and Safety Manager:	TBD	

I have read the attached Health and Safety Plan (HASP) and have received site-specific information and orientation regarding the identified physical, chemical, and biological hazards anticipated at this site. My signature certifies that I understand the procedures, equipment, and restrictions applicable to this project site and agree to abide by them.

Signature	Printed Name	Company	Date

### Attachment 4 – Health and Safety Orientation Signatory Page (continued)

Signature	Printed Name	Company	Date
	Health and Safety Orientation		

Health and Safety Orientation Signatory Page (2 of 2) Attachment 6 Material Safety Data Sheets

# SIGMA-ALDRICH

### SAFETY DATA SHEET

Version 5.8 Revision Date 02/02/2018 Print Date 10/19/2018

#### **1. PRODUCT AND COMPANY IDENTIFICATION**

1.1	Product identifiers Product name	:	Benzo[ <i>a</i> ]pyrene
	Product Number Brand Index-No.	: : :	48564 Supelco 601-032-00-3
	CAS-No.	:	50-32-8
1.2	Relevant identified uses	of the	substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

#### 1.3 Details of the supplier of the safety data sheet

Company		Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone Fax	-	+1 800-325-5832 +1 800-325-5052

#### 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

#### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Skin sensitisation (Category 1), H317 Germ cell mutagenicity (Category 1B), H340 Carcinogenicity (Category 1B), H350 Reproductive toxicity (Category 1B), H360 Acute aquatic toxicity (Category 1), H400 Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

Danger

#### 2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word



eignai nera	Danger
Hazard statement(s)	
H317	May cause an allergic skin reaction.
H340	May cause genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H410	Very toxic to aquatic life with long lasting effects.
Precautionary state	ement(s)
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and

	understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352	F ON SKIN: Wash with plenty of soap and water.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

#### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

#### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1 Substances

Synonyms	:	3,4-Benzpyrene 3,4-Benzopyrene Benzo[def]chrysene benzo[pqr]tetraphene
Formula	:	$C_{20}H_{12}$

Tonnua	•	C20112
Molecular weight	:	252.31 g/mol
CAS-No.	:	50-32-8
EC-No.	:	200-028-5
Index-No.	:	601-032-00-3

#### Hazardous components

Component	Classification	Concentration
Benzo[a]pyrene		
	Skin Sens. 1; Muta. 1B; Carc.	90 - 100 %
	1B; Repr. 1B; Aquatic Acute 1;	
	Aquatic Chronic 1; H317,	
	H340, H350, H360, H410	

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### **4.3 Indication of any immediate medical attention and special treatment needed** No data available

#### **5. FIREFIGHTING MEASURES**

#### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture No data available

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

#### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### 6.4 Reference to other sections

For disposal see section 13.

#### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

#### Store at room temperature.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control	Basis
			parameters	
	Remarks	(see BEI® (PAHs)	ection), see BEI	is a Biological Exposure Index or Indices ® for Polycyclic Aromatic Hydrocarbons Id be carefully controlled to levels as low

		as possible.				
		Suspected human carcinogen Cancer				
		Substances for which there is a Biological Exposure Index or India (see BEI® section), see BEI® for Polycyclic Aromatic Hydrocarbo (PAHs) Exposure by all routes should be carefully controlled to levels as le as possible.				
		Suspected h	numan carcinoge			
Benzo[a]pyrene	50-32-8	TWA	0.200000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants		
		TWA	0.200000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants		
		1910.1002				
		As used in § the fused po distillation re and other or 64742-93-4) standard	olycyclic hydroca esidues of coal, p ganic matter. As ) is not covered u	le Z-1), coal tar pitch volatiles include rbons which volatilize from the petroleum (excluding asphalt), wood, sphalt (CAS 8052-42-4, and CAS under the 'coal tar pitch volatiles'		
			ifically regulated			
		TWA	0.100000 mg/m3	USA. NIOSH Recommended Exposure Limits		
		Potential Oc	cupational Carci	inogen		
				oal tar pitch, and creosote to be coal tar		
		products.	,			
		cyclohexane-extractable fraction				
		See Append				
		See Append				
		TWA	0.2 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants		
		1910.1002	·			
		As used in §	31910.1000 (Tab	le Z-1), coal tar pitch volatiles include		
				rbons which volatilize from the		
				petroleum (excluding asphalt), wood,		
				sphalt (CAS 8052-42-4, and CAS		
				under the 'coal tar pitch volatiles'		
		standard		·		
		OSHA spec	ifically regulated	carcinogen		
		TWA	0.1 mg/m3	USA. NIOSH Recommended Exposure Limits		
		NIOSH cons products. cyclohexane See Append	e-extractable frac dix C	inogen oal tar pitch, and creosote to be coal tar		
		See Append	A xib			
		TWA	0.2 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000		
		PEL	0.2 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)		
		PEL	0.2 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)		

#### **Biological occupational exposure limits**

Component C/	AS-No.	Parameters	Value	Biological	Basis

			specimen	
-	1- Hydroxypyren e		Urine	ACGIH - Biological Exposure Indices (BEI)
Remarks	End of shift at e	end of workv	veek	
	1- Hydroxypyren e		Urine	ACGIH - Biological Exposure Indices (BEI)
	End of shift at end of workweek			

#### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

- a) Appearance Form: solid
- b) Odour No data available

c)	Odour Threshold	No data available
d)	рН	No data available
e)	Melting point/freezing point	Melting point/range: 177 - 180 °C (351 - 356 °F)
f)	Initial boiling point and boiling range	495 °C (923 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
I)	Vapour density	No data available
m)	Relative density	1.35 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n- octanol/water	log Pow: 5.97
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available
	r <b>safety information</b> ata available	

#### **10. STABILITY AND REACTIVITY**

10.1 Reactivity No data available

9.2

- **10.2 Chemical stability** Stable under recommended storage conditions.
- **10.3 Possibility of hazardous reactions** No data available
- **10.4 Conditions to avoid** No data available
- **10.5** Incompatible materials Strong oxidizing agents
- 10.6 Hazardous decomposition products Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - No data available In the event of fire: see section 5

#### **11. TOXICOLOGICAL INFORMATION**

#### 11.1 Information on toxicological effects

Acute toxicity No data available

#### Inhalation: No data available

#### Dermal: No data available

LD50 Subcutaneous - Rat - 50 mg/kg

#### Skin corrosion/irritation

Skin - Mouse Result: Mild skin irritation

Serious eye damage/eye irritation No data available

**Respiratory or skin sensitisation** Chronic exposure may cause dermatitis.

#### Germ cell mutagenicity

May alter genetic material. In vivo tests showed mutagenic effects

#### Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 1 - Group 1: Carcinogenic to humans (Benzo[a]pyrene)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (Benzo[a]pyrene)

OSHA: OSHA specifically regulated carcinogen (Benzo[a]pyrene)

#### **Reproductive toxicity**

May cause congenital malformation in the fetus. Presumed human reproductive toxicant

May cause reproductive disorders.

#### Specific target organ toxicity - single exposure No data available

Specific target organ toxicity - repeated exposure No data available

#### Aspiration hazard

No data available

#### **Additional Information**

RTECS: Not available

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

#### **12. ECOLOGICAL INFORMATION**

#### 12.1 Toxicity

Toxicity to daphnia and EC50 - Daphnia magna (Water flea) - 0.25 mg/l - 48 h other aquatic invertebrates

Toxicity to algae EC50 - Pseudokirchneriella subcapitata (green algae) - 0.02 mg/l - 72 h

#### 12.2 Persistence and degradability

#### 12.3 Bioaccumulative potential

Bioaccumulation

Lepomis macrochirus (Bluegill) - 48 h - 0.0005 mg/l

Bioconcentration factor (BCF): 3,208

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

#### **13. DISPOSAL CONSIDERATIONS**

#### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### **Contaminated packaging**

Dispose of as unused product.

#### **14. TRANSPORT INFORMATION**

#### DOT (US)

UN number: 3077 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Benzo[a]pyrene) Reportable Quantity (RQ): 1 lbs Poison Inhalation Hazard: No

#### IMDG

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Benzo[a]pyrene) Marine pollutant:yes

#### ΙΑΤΑ

UN number: 3077 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Benzo[a]pyrene)

#### **Further information**

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

#### **15. REGULATORY INFORMATION**

#### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

The following components are subject to reporting levels estab	lished by SARA Title III	, Section 313:
	CAS-No	Revision Date

Benzo[a]pyrene	50-32-8	2007-03-01
SARA 311/312 Hazards Acute Health Hazard, Chronic Health Hazard		
Massachusetts Right To Know Components		
	CAS-No.	Revision Date
Benzo[a]pyrene	50-32-8	2007-03-01
Pennsylvania Right To Know Components		
	CAS-No.	Revision Date
Benzo[a]pyrene	50-32-8	2007-03-01
	CAS-No.	Revision Date
Benzo[a]pyrene	50-32-8	2007-03-01
New Jersey Right To Know Components		
	CAS-No.	<b>Revision Date</b>

Benzo[a]pyrene	50-32-8	2007-03-01
<b>California Prop. 65 Components</b> WARNING! This product contains a chemical known to the State of California to cause cancer. Benzo[a]pyrene	CAS-No. 50-32-8	Revision Date 1990-01-01

#### **16. OTHER INFORMATION**

#### Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute Aquatic Chronic Carc.	Acute aquatic toxicity Chronic aquatic toxicity Carcinogenicity
H317	May cause an allergic skin reaction.
H340	May cause genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Muta.	Germ cell mutagenicity

#### **HMIS Rating**

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

#### **NFPA** Rating

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

#### **Further information**

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#### **Preparation Information**

Sigma-Aldrich Corporation Product Safety – Americas Region 1-800-521-8956

Version: 5.8

Revision Date: 02/02/2018

Print Date: 10/19/2018

sigma-aldrich.com

## SAFETY DATA SHEET

Version 6.1 Revision Date 07/17/2018 Print Date 01/21/2019

#### 1. PRODUCT AND COMPANY IDENTIFICATION 1.1 **Product identifiers** Product name Benzo[<l>b</>]fluoranthene Product Number ÷ 48490 Brand Supelco Index-No. 601-034-00-4 CAS-No. ÷ 205-99-2 1.2 Relevant identified uses of the substance or mixture and uses advised against Identified uses : Laboratory chemicals, Synthesis of substances 1.3 Details of the supplier of the safety data sheet Company : Sigma-Aldrich Inc. 3050 Spruce Street ST. LOUIS MO 63103 UNITED STATES : +1 314 771-5765 Telephone Fax +1 800 325-5052 :

#### 1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

#### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) Carcinogenicity (Category 1B), H350

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word
Hazard statement(s) H350
H410

Danger

May cause cancer. Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P273	Avoid release to the environment.
P281	Use personal protective equipment as required.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

#### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

## 3.1 Substances

>
2

#### Hazardous components

Component	Classification	Concentration
Benz[e]acephenanthrylene		
	Carc. 1B; Aquatic Acute 1; Aquatic Chronic 1; H350, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### **4.3 Indication of any immediate medical attention and special treatment needed** No data available

#### **5. FIREFIGHTING MEASURES**

#### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

# 5.2 Special hazards arising from the substance or mixture Carbon oxides

#### **5.3** Advice for firefighters Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

#### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 6.3 Methods and materials for containment and cleaning up Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### 6.4 Reference to other sections

For disposal see section 13.

#### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

#### Components with workplace control parameters

Remarks

components with workplace control parameters						
	Remarks	Cancer				
		Substances for which there is a Biological Exposure Index or Indices (see BEI® section), see BEI® for Polycyclic Aromatic Hydrocarbons (PAHs)				
		Exposure by all routes should be carefully controlled to levels as low as possible.				
		Suspected human carcinogen				
<b>Biological occupation</b>	Biological occupational exposure limits					
Component	CAS-No.	Parameters	Value	Biological	Basis	
				specimen		
Benz[e]acephenant hrylene	205-99-2	1- Hydroxypyren e		Urine	ACGIH - Biological Exposure Indices (BEI)	

End of shift at end of workweek

#### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

#### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Body Protection**

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	рН	No data available
e)	Melting point/freezing point	Melting point/range: 163 - 165 °C (325 - 329 °F) - lit.
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available

j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
I)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n- octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available
	ner safety information data available	

#### **10. STABILITY AND REACTIVITY**

10.1 Reactivity No data available

9.2

- **10.2 Chemical stability** Stable under recommended storage conditions.
- **10.3 Possibility of hazardous reactions** No data available
- **10.4 Conditions to avoid** No data available
- **10.5** Incompatible materials Strong oxidizing agents

Hazardous decomposition products
 Hazardous decomposition products formed under fire conditions. - Carbon oxides
 Other decomposition products - No data available
 In the event of fire: see section 5

#### **11. TOXICOLOGICAL INFORMATION**

#### 11.1 Information on toxicological effects

#### Acute toxicity

TDLo Oral - Mouse - 7.57 mg/kg Remarks: Liver:Changes in liver weight. Endocrine:Changes in thymus weight. Inhalation: No data available Dermal: No data available No data available

#### Skin corrosion/irritation

No data available

Serious eye damage/eye irritation No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

- IARC: 2B Group 2B: Possibly carcinogenic to humans (Benz[e]acephenanthrylene)
- NTP: RAHC Reasonably anticipated to be a human carcinogen (Benz[e]acephenanthrylene)
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **Reproductive toxicity**

No data available No data available

Specific target organ toxicity - single exposure No data available

Specific target organ toxicity - repeated exposure No data available

Aspiration hazard No data available

#### Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **12. ECOLOGICAL INFORMATION**

#### 12.1 Toxicity

Toxicity to daphnia and other aquatic h(Benz[e]acephenanthrylene) invertebrates

#### 12.2 Persistence and degradability

No data available

#### 12.3 Bioaccumulative potential

No data available

#### 12.4 Mobility in soil

No data available(Benz[e]acephenanthrylene)

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.

#### **13. DISPOSAL CONSIDERATIONS**

#### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

#### **14. TRANSPORT INFORMATION**

#### DOT (US)

Not dangerous goods **IMDG** UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Benz[e]acephenanthrylene) Marine pollutant : yes

#### ΙΑΤΑ

UN number: 3077 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Benz[e]acephenanthrylene)

#### **Further information**

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

#### **15. REGULATORY INFORMATION**

#### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

The following components are subject to reporting levels establis	•	
	CAS-No.	Revision Date
Benz[e]acephenanthrylene	205-99-2	2007-03-01
SARA 311/312 Hazards Chronic Health Hazard		
Massachusetts Right To Know Components		
	CAS-No.	Revision Date
Benz[e]acephenanthrylene	205-99-2	2007-03-01
Pennsylvania Right To Know Components		
	CAS-No.	Revision Date
Benz[e]acephenanthrylene	205-99-2	2007-03-01
California Prop. 65 Components		
, which is/are known to the State of California to cause cancer.	CAS-No.	Revision Date
For more information go to www.P65Warnings.ca.gov. Benz[e]acephenanthrylene	205-99-2	2007-09-28

#### **16. OTHER INFORMATION**

Full text of H-Statements referred to under sections 2 and 3.

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

#### Further information

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#### **Preparation Information**

Sigma-Aldrich Corporation Product Safety – Americas Region 1-800-521-8956 Version: 6.1

Revision Date: 07/17/2018

Print Date: 01/21/2019

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## SAFETY DATA SHEET

Version 6.1 Revision Date 07/16/2018 Print Date 01/21/2019

#### 1. PRODUCT AND COMPANY IDENTIFICATION 1.1 **Product identifiers** Product name Benzo[<l>k</>]fluoranthene Product Number ÷ 48492 Brand Supelco Index-No. 601-036-00-5 CAS-No. ÷ 207-08-9 1.2 Relevant identified uses of the substance or mixture and uses advised against Identified uses : Laboratory chemicals, Synthesis of substances 1.3 Details of the supplier of the safety data sheet Company : Sigma-Aldrich Inc. 3050 Spruce Street ST. LOUIS MO 63103 UNITED STATES Telephone : +1 314 771-5765 Fax +1 800 325-5052

#### 1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

#### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) Carcinogenicity (Category 1B), H350

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word
Hazard statement(s)
H350
H410

Danger

May cause cancer. Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P273	Avoid release to the environment.
P281	Use personal protective equipment as required.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

#### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1 Substances

Formula	: C <sb>20H<sb>12</sb></sb>
Molecular weight	: 252.31 g/mol
CAS-No.	: 207-08-9
EC-No.	: 205-916-6
Index-No.	: 601-036-00-5

#### Hazardous components

Component	Classification	Concentration
Benzo[k]fluoranthene		
	Carc. 1B; Aquatic Acute 1; Aquatic Chronic 1; H350, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

#### **General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

- **4.2** Most important symptoms and effects, both acute and delayed The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11
- **4.3 Indication of any immediate medical attention and special treatment needed** No data available

#### **5. FIREFIGHTING MEASURES**

#### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

# 5.2 Special hazards arising from the substance or mixture Carbon oxides

#### **5.3** Advice for firefighters Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

#### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 6.3 Methods and materials for containment and cleaning up Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed c

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### 6.4 Reference to other sections

For disposal see section 13.

#### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

#### Components with workplace control parameters Biological occupational exposure limits

Biological occupational exposure initia					
Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Benzo[k]fluoranthen e	207-08-9	1- Hydroxypyren e		Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift at	end of workv	veek	

#### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

#### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Body Protection**

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystalline Colour: yellow
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	рН	No data available
e)	Melting point/freezing point	Melting point/range: 215 - 217 °C (419 - 423 °F) - lit.
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
I)	Vapour density	No data available

m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n- octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available
<b>Other safety information</b> No data available		

#### **10. STABILITY AND REACTIVITY**

#### **10.1 Reactivity** No data available

9.2

- **10.2 Chemical stability** Stable under recommended storage conditions.
- **10.3 Possibility of hazardous reactions** No data available
- **10.4 Conditions to avoid** No data available
- **10.5** Incompatible materials Strong oxidizing agents
- Hazardous decomposition products
   Hazardous decomposition products formed under fire conditions. Carbon oxides
   Other decomposition products No data available
   In the event of fire: see section 5

#### **11. TOXICOLOGICAL INFORMATION**

#### 11.1 Information on toxicological effects

#### Acute toxicity

No data available Inhalation: No data available Dermal: No data available No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation No data available

**Respiratory or skin sensitisation** No data available

Germ cell mutagenicity No data available

Carcinogenicity Carcinogenicity- Rat- Implant This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

- IARC: 2B Group 2B: Possibly carcinogenic to humans (Benzo[k]fluoranthene)
- NTP: RAHC Reasonably anticipated to be a human carcinogen (Benzo[k]fluoranthene)
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

## Reproductive toxicity

No data available No data available

Specific target organ toxicity - single exposure No data available

#### Specific target organ toxicity - repeated exposure No data available

#### Aspiration hazard No data available

INO Uala avaliable

#### **Additional Information**

RTECS: DF6350000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **12. ECOLOGICAL INFORMATION**

12.1 Toxicity

No data available

- 12.2 Persistence and degradability No data available
- **12.3 Bioaccumulative potential** No data available
- **12.4 Mobility in soil** No data available(Benzo[k]fluoranthene)

#### 12.5 Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

#### **13. DISPOSAL CONSIDERATIONS**

#### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

#### 14. TRANSPORT INFORMATION

#### DOT (US)

UN number: 3077 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Benzo[k]fluoranthene) Supelco- 48492 no

Poison Inhalation Hazard: No

#### IMDG

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Benzo[k]fluoranthene) Marine pollutant : yes

#### ΙΑΤΑ

UN number: 3077 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Benzo[k]fluoranthene)

#### **Further information**

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

#### **15. REGULATORY INFORMATION**

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### **Massachusetts Right To Know Components**

	CAS-No.	Revision Date
Benzo[k]fluoranthene	207-08-9	1994-04-01
Pennsylvania Right To Know Components		
	CAS-No.	Revision Date
Benzo[k]fluoranthene	207-08-9	1994-04-01
California Prop. 65 Components		
, which is/are known to the State of California to cause cancer.	CAS-No.	Revision Date
For more information go to www.P65Warnings.ca.gov. Benzo[k]fluoranthene	207-08-9	2007-09-28

#### **16. OTHER INFORMATION**

#### Full text of H-Statements referred to under sections 2 and 3.

H350	May cause cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

#### Further information

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#### **Preparation Information**

Sigma-Aldrich Corporation Product Safety – Americas Region 1-800-521-8956 Version: 6.1

Revision Date: 07/16/2018

Print Date: 01/21/2019

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## SAFETY DATA SHEET

Version 6.1 Revision Date 07/17/2018 Print Date 01/21/2019

1. PF	1. PRODUCT AND COMPANY IDENTIFICATION			
1.1	Product identifiers Product name	:	Benz[a]anthracene	
	Product Number Brand Index-No.	:	48563 Supelco 601-033-00-9	
	CAS-No.	:	56-55-3	
1.2	2 Relevant identified uses of the substance or mixture and uses advised against		ne substance or mixture and uses advised against	
	Identified uses	:	Laboratory chemicals, Synthesis of substances	
1.3	Details of the supplier of the safety data sheet			
	Company	:	Sigma-Aldrich Inc. 3050 Spruce Street ST. LOUIS MO 63103 UNITED STATES	
	Telephone	:	+1 314 771-5765	

#### 1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

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#### 2. HAZARDS IDENTIFICATION

Fax

#### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS) Carcinogenicity (Category 1B), H350

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

+1 800 325-5052

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word
Hazard statement(s) H350
H410

Danger

May cause cancer. Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P273	Avoid release to the environment.
P281	Use personal protective equipment as required.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

#### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1 Substances

Synonyms	: 1,2-Benzanthracene Tetraphene
Formula	: C <sb>18H<sb>12</sb></sb>
Molecular weight	: 228.29 g/mol
CAS-No.	: 56-55-3
EC-No.	: 200-280-6
Index-No.	: 601-033-00-9

#### Hazardous components

Component	Classification	Concentration
Benz[a]anthracene		
	Carc. 1B; Aquatic Acute 1; Aquatic Chronic 1; H350, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### **4.3 Indication of any immediate medical attention and special treatment needed** No data available

#### **5. FIREFIGHTING MEASURES**

#### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture Carbon oxides

#### **5.3** Advice for firefighters Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information No data available

#### 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

#### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Store at room temperature.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

#### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

#### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### **Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Body Protection**

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	рН	No data available
e)	Melting point/freezing point	Melting point/range: 157 - 159 °C (315 - 318 °F)
f)	Initial boiling point and boiling range	437.6 °C (819.7 °F)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
I)	Vapour density	No data available
m)	Relative density	No data available

n)	Water solubility	No data available
o)	Partition coefficient: n- octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available
Other safety information No data available		

#### **10. STABILITY AND REACTIVITY**

10.1 Reactivity No data available

9.2

- **10.2 Chemical stability** Stable under recommended storage conditions.
- **10.3** Possibility of hazardous reactions No data available
- **10.4 Conditions to avoid** No data available
- **10.5 Incompatible materials** Strong oxidizing agents

# Hazardous decomposition products Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - No data available In the event of fire: see section 5

#### **11. TOXICOLOGICAL INFORMATION**

#### 11.1 Information on toxicological effects

#### Acute toxicity

No data available Inhalation: No data available Dermal: No data available LD50 Intravenous - Rat - > 200 mg/kg

## Skin corrosion/irritation

No data available

Serious eye damage/eye irritation No data available

#### **Respiratory or skin sensitisation** No data available

Germ cell mutagenicity No data available

#### Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Possible human carcinogen

- IARC: 2B Group 2B: Possibly carcinogenic to humans (Benz[a]anthracene)
- IARC: 2B Group 2B: Possibly carcinogenic to humans (Benz[a]anthracene)
- NTP: RAHC Reasonably anticipated to be a human carcinogen (Benz[a]anthracene)
- NTP: RAHC Reasonably anticipated to be a human carcinogen (Benz[a]anthracene)
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **Reproductive toxicity**

No data available No data available

#### Specific target organ toxicity - single exposure No data available

Specific target organ toxicity - repeated exposure No data available

Aspiration hazard

No data available

#### **Additional Information**

**RTECS:** Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **12. ECOLOGICAL INFORMATION**

- 12.1 Toxicity No data available
- 12.2 Persistence and degradability No data available
- **12.3 Bioaccumulative potential** No data available

#### 12.4 Mobility in soil No data available(Benz[a]anthracene)

12.5 Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

#### **13. DISPOSAL CONSIDERATIONS**

#### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

#### 14. TRANSPORT INFORMATION

#### DOT (US)

Not dangerous goods **IMDG** UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Benz[a]anthracene) Marine pollutant : yes

#### IATA

UN number: 3077 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Benz[a]anthracene)

#### **Further information**

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

#### **15. REGULATORY INFORMATION**

#### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 311/312 Hazards

Chronic Health Hazard

Massachusetts Right To Know Components		
	CAS-No.	Revision Date
Benz[a]anthracene	56-55-3	1993-04-24
Pennsylvania Right To Know Components		
	CAS-No.	Revision Date
Benz[a]anthracene	56-55-3	1993-04-24
	CAS-No.	Revision Date
Benz[a]anthracene	56-55-3	1993-04-24
New Jersey Right To Know Components		
	CAS-No.	Revision Date
Benz[a]anthracene	56-55-3	1993-04-24
California Prop. 65 Components		
WARNING! This product contains a chemical known to the	CAS-No.	Revision Date
State of California to cause cancer.	56-55-3	2007-09-28
Benz[a]anthracene		
WARNING! This product contains a chemical known to the	CAS-No.	Revision Date
State of California to cause cancer.	56-55-3	2007-09-28
Benz[a]anthracene		

#### **16. OTHER INFORMATION**

Full text of H-Statements referred to under sections 2 and 3.

H350	May cause cancer.
H400	Very toxic to aquatic life.
Supelco- 48563	

#### H410 Very toxic to aquatic life with long lasting effects.

#### Further information

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#### **Preparation Information**

Sigma-Aldrich Corporation Product Safety – Americas Region 1-800-521-8956 Version: 6.1

Revision Date: 07/17/2018

Print Date: 01/21/2019

SDS preview

LEAD 7439-92-1 by Fisher Scientific

Synonyms

C.I. 77575, C.I. Pigment Metal 4, EINECS 231-100-4, Glover, HSDB 231, Lead flake, Olow, Plumbum, CI 77575, Plumbum metallicum, Blei, CI pigment metal 4, EC 231-100-4, KS-4, Lead, Lead element, Lead S2, Olow [Polish], Omaha & grant, Pb-S 100, Rough lead bullion, CCRIS 1581, Lead metal, Lead S 2, SSO 1, UNII-2P299V784P

Hazard statements

Harmful if inhaled Harmful if swallowed May cause cancer May cause damage to organs through prolonged or repeated exposure May cause drowsiness or dizziness

Precautions

Obtain special instructions before use Do not handle until all safety precautions have been read and understood Use personal protective equipment as required Do not eat, drink or smoke when using this product Use only outdoors or in a well-ventilated area Rinse mouth Store locked up

Hazard category

DANGER

Acute toxicity, inhalation, Acute toxicity, oral, Carcinogenicity, Specific target organ toxicity, repeated exposure, Specific target organ toxicity, single exposure; Narcotic effects



## 200022000C2050C220208&param1=ZmRwLjFfNzE0NjEwMDNORQ==&unique=1525284976)

The information contained herein is based on data compiled from the chemical components of the (M)SDS and may not accurately represent the safety hazards for the product. Only the manufacturer of the product can make actual representations about the hazard profile of a chemical product. No warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

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# SIGMA-ALDRICH

1.

## SAFETY DATA SHEET

Version 3.15 Revision Date 03/05/2018 Print Date 11/10/2018

#### **1. PRODUCT AND COMPANY IDENTIFICATION**

1	Product identifiers Product name	:	Mercury
	Product Number Brand Index-No.	:	215457 Sigma-Aldrich 080-001-00-0
	CAS-No.	:	7439-97-6

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

#### 1.3 Details of the supplier of the safety data sheet

Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone Fax	-	+1 800-325-5832 +1 800-325-5052

#### 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

#### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Inhalation (Category 2), H330 Reproductive toxicity (Category 1B), H360 Specific target organ toxicity - repeated exposure (Category 1), H372 Acute aquatic toxicity (Category 1), H400 Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word Danger Hazard statement(s) Fatal if inhaled. H330 H360 May damage fertility or the unborn child. H372 Causes damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects. H410 Precautionary statement(s) Obtain special instructions before use. P201 P202 Do not handle until all safety precautions have been read and understood. Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P260

P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

#### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

#### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1 Substances

Formula	:	Hg
Molecular weight	:	200.59 g/mol
CAS-No.	:	7439-97-6
EC-No.	:	231-106-7
Index-No.	:	080-001-00-0

#### Hazardous components

Component	Classification	Concentration
Mercury		
	Acute Tox. 2; Repr. 1B; STO RE 1; Aquatic Acute 1; Aqu Chronic 1; H330, H360, H3 H410	atic

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### **4.2 Most important symptoms and effects, both acute and delayed** The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### **4.3 Indication of any immediate medical attention and special treatment needed** No data available

#### **5. FIREFIGHTING MEASURES**

#### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture No data available

## 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information No data available

#### 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. In some instances, a mercury spill kit may be used. Please consult with your site EHS representative to determine the most appropriate clean up method. Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

#### 6.4 Reference to other sections

For disposal see section 13.

#### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. For precautions see section 2.2.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

## Store under inert gas.

Storage class (TRGS 510): 6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

#### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control	Basis
			parameters	
Mercury	7439-97-6	С	0.1 mg/m3	USA. NIOSH Recommended
				Exposure Limits
	Remarks	Potential for	dermal absorption	
		CEIL	1.0mg/10m3	USA. Occupational Exposure Limits
				(OSHA) - Table Z-2
		TWA	0.05 mg/m3	USA. OSHA - TABLE Z-1 Limits for
				Air Contaminants - 1910.1000
		Skin notation	1	

TWA	0.025 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
Kidney dam Substances (see BEI® s Not classifia	for which there is	a Biological Exposure Index or Indices arcinogen
TWA	0.05 mg/m3	USA. NIOSH Recommended Exposure Limits
Potential for	dermal absorption	า

#### 8.2 Exposure controls

#### Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

#### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

a) Appearance

Form: liquid Colour: silver, white

	b)	Odour	odourless
	c)	Odour Threshold	No data available
	d)	рН	No data available
	e)	Melting point/freezing point	Melting point/range: -38.87 °C (-37.97 °F) - lit.
	f)	Initial boiling point and boiling range	356.6 °C (673.9 °F) - lit.
	g)	Flash point	Not applicable
	h)	Evaporation rate	No data available
	i)	Flammability (solid, gas)	No data available
	j)	Upper/lower flammability or explosive limits	No data available
	k)	Vapour pressure	< 0.01 hPa (< 0.01 mmHg) at 20 °C (68 °F) 1 hPa (1 mmHg) at 126 °C (259 °F)
	I)	Vapour density	6.93 - (Air = 1.0)
	m)	Relative density	13.55 g/cm3 at 25 °C (77 °F)
	n)	Water solubility	0.00006 g/l at 25 °C (77 °F)
	o)	Partition coefficient: n- octanol/water	No data available
	p)	Auto-ignition temperature	No data available
	q)	Decomposition temperature	No data available
	r)	Viscosity	No data available
	s)	Explosive properties	No data available
	t)	Oxidizing properties	No data available
9.2	Othe	r safety information	
		Relative vapour density	6.93 - (Air = 1.0)
10.	STAB	LITY AND REACTIVITY	
0.1	Reac	tivity	

#### 10.1 Reactivity No data available

9.2

## 10.2 Chemical stability

Stable under recommended storage conditions.

- 10.3 Possibility of hazardous reactions No data available
- 10.4 Conditions to avoid No data available

#### 10.5 Incompatible materials Strong oxidizing agents, Ammonia, Azides, Nitrates, Chlorates, Copper

## Hazardous decomposition products Hazardous decomposition products formed under fire conditions. - Mercury/mercury oxides. Other decomposition products - No data available 10.6 In the event of fire: see section 5

#### **11. TOXICOLOGICAL INFORMATION**

#### 11.1 Information on toxicological effects

Acute toxicity No data available

LC50 Inhalation - Rat - male - 2 h - < 27 mg/m3

Dermal: No data available

No data available

Skin corrosion/irritation No data available

Serious eye damage/eye irritation No data available

Respiratory or skin sensitisation No data available

Germ cell mutagenicity No data available

#### Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### Reproductive toxicity

Presumed human reproductive toxicant

Specific target organ toxicity - single exposure No data available

#### Specific target organ toxicity - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

#### Aspiration hazard No data available

## Additional Information

RTECS: OV4550000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence

#### **12. ECOLOGICAL INFORMATION**

#### 12.1 Toxicity

mortality LC50 - Cyprinus carpio (Carp) - 0.160 mg/l - 96 h

#### **12.2 Persistence and degradability** No data available

#### 12.3 Bioaccumulative potential

Toxicity to fish

Bioaccumulation

Carassius auratus (goldfish) - 1,789 d - 0.25 µg/l

#### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

#### **13. DISPOSAL CONSIDERATIONS**

#### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

#### **14. TRANSPORT INFORMATION**

#### DOT (US)

UN number: 2809 Class: 8 (6.1) Proper shipping name: A. W. Mercury Reportable Quantity (RQ): 1 lbs Poison Inhalation Hazard: No Packing group: III

#### IMDG

#### ΙΑΤΑ

UN number: 2809 Class: 8 (6.1) Proper shipping name: Mercury Packing group: III

#### **15. REGULATORY INFORMATION**

#### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

#### Massachusetts Right To Know Components

	CAS-No.	Revision Date
Mercury	7439-97-6	2015-11-23
Pennsylvania Right To Know Components		
	CAS-No.	Revision Date
Mercury	7439-97-6	2015-11-23
	CAS-No.	Revision Date
Mercury	7439-97-6	2015-11-23
New Jersey Right To Know Components		
	CAS-No.	Revision Date
Mercury	7439-97-6	2015-11-23
California Bron. 65 Componente		

#### California Prop. 65 Components

#### **16. OTHER INFORMATION**

#### Full text of H-Statements referred to under sections 2 and 3.

0

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H330	Fatal if inhaled.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Repr.	Reproductive toxicity

#### **HMIS** Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0
NFPA Rating	
Health hazard:	2
Fire Hazard:	0

Health hazard:	
Fire Hazard:	
Reactivity Hazard:	

#### **Further information**

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#### **Preparation Information**

Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

Version: 3.15

Revision Date: 03/05/2018

Print Date: 11/10/2018



## SAFETY DATA SHEET

Creation Date 24-Nov-2010

Revision Date 19-Jan-2018

**Revision Number** 3

1. Identification

**Product Name** 

AC317440000; AC317440010; AC317442500

Manganese, powder, -325 mesh

CAS-No Synonyms

Cat No. :

7439-96-5 No information available

Recommended UseLaboratory chemicals.Uses advised againstFood, drug, pesticide or biocidal product use.Details of the supplier of the safety data sheet

<u>Company</u> Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100

Acros Organics One Reagent Lane Fair Lawn, NJ 07410

#### **Emergency Telephone Number**

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11 Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99 **CHEMTREC** Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable solids Serious Eye Damage/Eye Irritation

Category 2 Category 2

#### Label Elements

Signal Word Warning

Hazard Statements Flammable solid Causes serious eye irritation



### **Precautionary Statements**

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting/equipment

Wear protective gloves/protective clothing/eye protection/face protection

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

Fire

In case of fire: Use CO2, dry chemical, or foam for extinction Hazards not otherwise classified (HNOC) None identified

## 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Manganese	7439-96-5	>95

4. First-aid measures		
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.	
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.	
Inhalation	Remove from exposure, lie down. Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.	
Ingestion	Clean mouth with water. Get medical attention.	
Most important symptoms and effects	No information available.	
Notes to Physician	Treat symptomatically	

5. Fire-fighting measures

Suitable Extinguishing Media	Dry chemical.
Unsuitable Extinguishing Media	No information available
Flash Point Method -	No information available No information available
Autoignition Temperature Explosion Limits	No information available

Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

## Specific Hazards Arising from the Chemical Combustible material.

#### Hazardous Combustion Products

None known.

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

<u>NFPA</u>	Health 2	Flammability 2	Instability 0	Physical hazards N/A
		6. Accidental re	lease measures	
	Precautions nental Precautions	Ensure adequate ventilation See Section 12 for addition	on. Use personal protective equ nal Ecological Information.	ipment as required.
Methods for Containment and Clean Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.UpSweep up and shovel into suitable containers for disposal.				
		7. Handling	and storage	
Handling         Avoid contact with skin and eyes. Do not breathe dust. Use spark-proof to explosion-proof equipment. Use only non-sparking tools.			se spark-proof tools and	
Storage	StorageKeep in a dry, cool and well-ventilated place. Refer product specification and/or prlabel for specific storage temperature requirement. Keep container tightly closed. away from heat, sparks and flame. Keep under nitrogen.			

#### 8. Exposure controls / personal protection

#### Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Manganese	TWA: 0.02 mg/m ³	(Vacated) TWA: 1 mg/m ³	IDLH: 500 mg/m ³	TWA: 0.2 mg/m ³
_	TWA: 0.1 mg/m ³	Ceiling: 5 mg/m ³	TWA: 1 mg/m ³	TWA: 1 mg/m ³
	_	(Vacated) STEL: 3 mg/m ³	STEL: 3 mg/m ³	_
		(Vacated) Ceiling: 5 mg/m ³	_	

#### <u>Legend</u>

ACGIH - American Conference of Governmental Industrial Hygienists OSHA - Occupational Safety and Health Administration NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures	Ensure adequate ventilation, especially in confined areas.
Personal Protective Equipment	

Personal	Protective	Equipment	

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.

#### **Respiratory Protection**

No protective equipment is needed under normal use conditions.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties			
Physical State	Powder Solid		
Appearance	Dark brown		
Odor	No information available		
Odor Threshold	No information available		
рН	No information available		
Melting Point/Range	1260 °C / 2300 °F		
Boiling Point/Range	1900 °C / 3452 °F		
Flash Point	No information available		
Evaporation Rate	Not applicable		
Flammability (solid,gas)	No information available		
Flammability or explosive limits			
Upper	No data available		
Lower	No data available		
Vapor Pressure	No information available		
Vapor Density	Not applicable		
Specific Gravity	No information available		
Solubility	No information available		
Partition coefficient; n-octanol/water	No data available		
Autoignition Temperature	No information available		
Decomposition Temperature	No information available		
Viscosity	Not applicable		
Molecular Formula	Mn		
Molecular Weight	54.94		

#### 10. Stability and reactivity

Reactive Hazard	None known, based on information available		
Stability	Moisture sensitive.		
Conditions to Avoid	Incompatible products. Exposure to moisture.		
Incompatible Materials	Acids, Bases, Halogens		
Hazardous Decomposition Products None under normal use conditions			
Hazardous Polymerization	Hazardous polymerization does not occur.		
Hazardous Reactions	None under normal processing.		

11. Toxicological information

#### Acute Toxicity

## Product Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Manganese	LD50 = 9 g/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic No information available

Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation

No information available

#### Sensitization

No information available

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Manganese	7439-96-5	Not listed	Not listed	Not listed	Not listed	Not listed
Mutagenic Effects		No information ava	ailable			
Reproductive Effec	ts	No information available.				
Developmental Effe	cts	No information available.				
Teratogenicity		No information available.				
STOT - single expo STOT - repeated ex		None known None known				
Aspiration hazard		No information available				
Symptoms / effects delayed	,both acute and	and No information available				
Endocrine Disrupto	r Information	on No information available				
Other Adverse Effe	cts	The toxicological properties have not been fully investigated. See actual entry in RTE complete information.			ntry in RTECS f	

12. Ecological information

Ecotoxicity Do not empty into drains.

Component	Freshwater Alga	e Freshwater Fish	Microtox	Water Flea
Manganese	Not listed	LC50: > 3.6 mg/L, 96h semi-static (Oncorhynchus mykiss)	Not listed	Not listed
Persistence and Degradab	ility Insolub	le in water		•
Bioaccumulation/ Accumu	Ilation No info	rmation available.		
Mobility	Is not li	kely mobile in the environment d	lue its low water solubility	
	13	. Disposal considera	ations	
Waste Disposal Methods         Chemical waste generators must determine whether a discarded c hazardous waste. Chemical waste generators must also consult lo national hazardous waste regulations to ensure complete and accurate		local, regional, and		
	1	4. Transport informa	ation	
DOT				
<b>UN-No</b> UN3089				
Proper Shipping Name Metal powder, flammable, n.o.s.				
Technical Name Manganese				
Hazard Class				
Packing Group	Packing Group III			

III
UN3089
Metal powder, flammable, n.o.s.
4.1
III

IATA_	
UN-No	UN3089
Proper Shipping Name	Metal powder, flammable, n.o.s.
Hazard Class	4.1
Packing Group	III
IMDG/IMO	
UN-No	UN3089
Proper Shipping Name	Metal powder, flammable, n.o.s.
Hazard Class	4.1
Packing Group	
	15. Regulatory information

#### United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Manganese	7439-96-5	Х	ACTIVE	-

#### Legend:

TSCA - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed '-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

#### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
Manganese	7439-96-5	Х	-	231-105-1	Х	Х	Х	Х	KE-22999

#### U.S. Federal Regulations

#### **SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Manganese	7439-96-5	>95	1.0

#### SARA 311/312 Hazard Categories See section 2 for more information

**CWA (Clean Water Act)** Not applicable

#### **Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors			
Manganese	X		-			
<b>OSHA</b> - Occupational Safety and Health Administration	Not applicable					
CERCLA	Not applicable					
California Proposition 65	This product does not contain any Proposition 65 chemicals.					
U.S. State Right-to-Know Regulations						

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Manganese	Х	Х	Х	Х	Х

#### **U.S.** Department of Transportation

Reportable Quantity (RQ): DOT Marine Pollutant DOT Severe Marine Pollutant U.S. Department of Homeland	N N N This product does not contain any DHS chemicals.
Security Other International Regulations	
Mexico - Grade	No information available

16. Other information		
Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com	
Creation Date Revision Date Print Date Revision Summary	24-Nov-2010 19-Jan-2018 19-Jan-2018 This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).	

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

# **End of SDS**

# **Appendix D:** Citizens Participation Plan



Department of Environmental Conservation

# **Brownfield Cleanup Program**

Citizen Participation Plan for Sonero Metro City Auto Site

May 2022

BCP Site No. C203148 Portion of 1001 Whitlock Avenue Bronx, New York Bronx County

www.dec.ny.gov

# Contents

Section	Page Number
1. What is New York's Brownfield Cleanup Program?	3
2. Citizen Participation Activities	3
3. Major Issues of Public Concern	9
4. Site Information	9
5. Investigation and Cleanup Process	11
Appendix A - Project Contacts and Locations of Reports and Information	14
Appendix B - Site Contact List	16
Appendix C - Site Location Map	19
Appendix D - Brownfield Cleanup Program Process	20

* * * * *

**Note:** The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: Whitlock Point LLC and Whitlock Point Services LLC ("Applicant") Site Name: Sonero Metro City Auto Site ("Site") Site Address: Portion of 1125 Whitlock Avenue Site County: Bronx Site Number: {To be Inserted}

# 1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at: <u>http://www.dec.ny.gov/chemical/8450.html</u>.

# 2. Citizen Participation Activities

### Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment
- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process
- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process
- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community
- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

# **Project Contacts**

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

# Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

# Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods. The site contact list includes, at a minimum:

- Chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- Residents, owners, and occupants of the site and properties adjacent to the site;
- The public water supplier which services the area in which the site is located;
- Any person who has requested to be placed on the site contact list;
- The administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- Location(s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

**Note:** The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site. See <a href="http://www.dec.ny.gov/chemical/61092.html">http://www.dec.ny.gov/chemical/61092.html</a>.

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

#### **CP** Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- Notices and fact sheets help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.
- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

### Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, it has been determined that the site does not pose a significant threat.

To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at http://www.dec.ny.gov/regulations/2590.html

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

Citizen Participation Activities	Timing of CP Activity(ies)	
Application Process:		
<ul><li> Prepare site contact list</li><li> Establish document repository(ies)</li></ul>	At time of preparation of application to participate in the BCP.	
<ul> <li>Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period</li> <li>Publish above ENB content in local newspaper</li> <li>Mail above ENB content to site contact list</li> <li>Conduct 30-day public comment period</li> </ul>	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.	
After Execution of Brownfield Site Cleanup Agreement (BCA):		
Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation <b>Note:</b> Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.	
Before NYSDEC Approves Reme	dial Investigation (RI) Work Plan:	
<ul> <li>Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan</li> <li>Conduct 30-day public comment period</li> </ul>	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.	
After Applicant Complete	s Remedial Investigation:	
Distribute fact sheet to site contact list that describes     RI results	Before NYSDEC approves RI Report	
Before NYSDEC Approves Remedial Work Plan (RWP):		
<ul> <li>Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period</li> <li>Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager)</li> <li>Conduct 45-day public comment period</li> </ul>	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45- day public comment period.	
Before Applicant Starts Cleanup Action:		

Citizen Participation Activities	Timing of CP Activity(ies)
Distribute fact sheet to site contact list that describes     upcoming cleanup action	Before the start of cleanup action.
After Applicant Compl	etes Cleanup Action:
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final Engineering Report	At the time the cleanup action has been completed. <b>Note:</b> The two fact sheets are combined when possible if there is not a delay in issuing the COC.
• Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	

# 3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

There will be areas on the Site where soil excavation is necessary. Therefore, once the remediation commences, there may be concerns regarding odors, noise or truck traffic coming from the Site. However, these impacts will be mitigated through implementation of a Health and Safety Plan and Soil Management Plan approved by the Department, which will be designed to minimize these impacts. A Community Air Monitoring Plan will also be implemented to monitor dust and vapors to ensure the community is not impacted. CAMP implementation involves the placement of air monitoring stations downwind and upwind of where work is occurring to capture both dust and vapor emissions. If dust or emissions exceed a set threshold established by DEC and the Department of Health, then work must cease and the cause of the issue must be corrected before work can proceed.

The site is located in an Environmental Justice Area. Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Environmental justice efforts focus on improving the environment in communities, specifically minority and low-income communities, and addressing disproportionate adverse environmental impacts that may exist in those communities.

The site includes a community with a sizable Hispanic-American population, therefore, all future fact sheets will be translated into Spanish.

# 4. Site Information

Appendix C contains a map identifying the location of the site.

### Site Description

- Portion of Lot 85 -1001 Whitlock Avenue, Bronx, NY, Bronx County
- Setting Urban
- Site size 0.788 Acres
- Adjacent properties Commercial, residential

#### History of Site Use, Investigation, and Cleanup

In the late 1800s, the Site was a part of a larger parcel of land. The Site remained undeveloped until approximately 1947. In 1950, several structures occupied the Site. The structures were used for "auto sales" and as garages. The southernmost portion of the Site was occupied by a gas filling station in 1950 maps. The filling station may have contributed to the contamination on the Site because petroleum related contaminants were detected in on-Site investigations. A certificate of occupancy was issued for an automotive repair shop in 1958. Jay-Dee Service Station occupied the Site in 1961.

In July of 1967, William B. Falow purchased the Site from Sherry Joseph. William B. and Marilyn Falow took title to the Site in December 1971. Maps from 1977 show that the gas station is no longer present on the Site. There are multiple rectangular structures on the Site labeled as "auto sales" or dwellings in 1977 maps. Title to the property was transferred from the Commissioner of Finance of the City of New York to the City of New York through a foreclosure action in September 1981. The Site was purchased by Ernest Bauer in July of 1983. Sonero Auto Repair occupied the Site from approximately 1999 until 2012.

In June 2001, Whitlock Avenue LLC purchased the Site. It then sold the Site to 1125 Whitlock Garages in June of 2002. All Star Auto Glass, Auto Glass, Caceres Pedro, and Olympic Alarm Systems were listed as occupants of the Site in 2005. The Site was purchased by Moving Upwards NC, LLC in September 2016. Whitlock Plaza Housing, LLC purchased the Site in April 2017 and then sold it to the current title owner - HP Whitlock Housing Development Fund Company, Inc. in June 2017. The former on-site structures were demolished between December 2018 and May 2019.

### 5. Investigation and Cleanup Process

#### Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site. The Applicant in its Application proposes that the site will be used for restricted residential purposes.

To achieve this goal, the Applicant will conduct cleanup activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

The Applicant has submitted a draft "Remedial Investigation Report" and "Remedial Action Work Plan" to NYSDEC for review and approval. NYSDEC makes these draft plans available to the public review during a 45-day public comment period in conjunction with the application. The documents will be revised pursuant to any comments from the public and the NYSDEC and NYSDOH.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a "significant threat," it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

# Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

### Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a "Certificate of Completion" (described below) to the Applicant.

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a "Remedial Work Plan". The Remedial Work Plan describes the Applicant's proposed remedy for addressing contamination related to the site.

Here, the Applicant has already acknowledged that remediation is required and has submitted a draft Remedial Work Plan for approval and for public review during the 45-day public comment period with the application.

#### Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a final engineering report that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

#### Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the final engineering report. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

#### Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An *engineering control* is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

# Appendix A -Project Contacts and Locations of Reports and Information

# **Project Contacts**

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

# New York State Department of Environmental Conservation (NYSDEC):

Michael MacCabe Project Manager NYSDEC Region 2 Division of Environmental Remediation 625 Broadway, Albany, NY 12233 518-402-9687

New York State Department of Health (NYSDOH): Angela Martin Project Manager NYSDOH Empire State Plaza, Corning Tower Room 1787 518-402-7860

### Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Hunts Point Library NY Public Library 877 Southern Boulevard Bronx, NY 10459 Attn: Pamela Cora Phone: (718) 617-0338

Bronx Community Board 2 Ralph Acevedo, District Manager 1029 East 163rd Street Bronx, NY 10459 (718) 328-9125 Repositories are temporarily unavailable due to COVID-19 precautions. You can get information about this Site at <u>https://www.dec.ny.gov/cfmx/extapps/derexternal/inde</u> <u>x.cfm/.</u> If you cannot access the online repository at <u>https://gisservices.dec.ny.gov/gis/dil/</u>, and specifically the link to the documents in relation to this site at <u>https://www.dec.ny.gov/data/DecDocs/C/</u> please contact the NYSDEC project manager listed above for assistance. Type in the site address when accessing this website and then click on DEC Information Layers link. In this link, click "Environmental Cleanup" and check all of the boxes. Then zoom in to see the documents of this site.

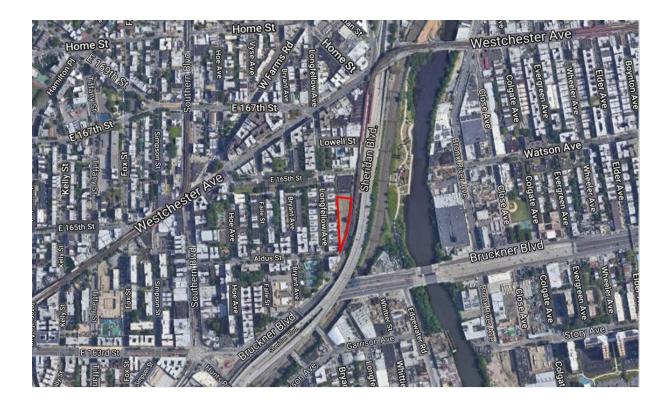
# Appendix B - Site Contact List

Federal and State Officials		
Chuck E. Schumer	Kirsten Gillibrand	Jose E. Serrano
U.S. Senate	U.S. Senate	U.S. House of
780 Third Avenue, Suite	780 Third Avenue, Suite	Representatives, 15th
2301	2601	District
New York, NY 10017	New York, NY 10017	1231 Lafayette Avenue,
		4th Floor
		Bronx, NY 10474
Luis R. Sepulveda	Ruben Diaz, Jr.	Luis M. Diaz
New York State Senator,	County Executive (Bronx	Borough of the Bronx
32th District	Borough President)	County Clerk
900 Rogers Place	851 Grand Concourse, 3rd	851 Grand Concourse,
Bronx, NY 10459	Floor	Room 118
	Bronx, NY 10451	Bronx, NY 10451
James Rausse	Bill de Blasio	Marisa Lago
Bronx Borough Planning	Mayor of New York City	New York City Planning
and Development, Director	City Hall	Commission, Chair
851 Grand Concourse, 3rd	New York, NY 10007	1775 Grand Concourse,
Floor		Suite 503
Bronx, NY 10451		Bronx, NY 10453
	Media Outlets	
New York Daily News		
Media Outlet		
4 New York Plaza		
New York, NY 10004		
Vincent Conjenze	Public Water Supplier	
Vincent Sapienza		
NYC Public Water Supply		
System Department, Commissioner		
59-17 Junction Boulevard,		
13th Floor		
Flushing, NY 11373		
Schools and Daycare Centers		
	_	
• •	•	
	5	
5		
Jonea Thomas Principal, Bronx Charter School for the Arts 950 Longfellow Avenue Bronx, NY 10474	Marines Arrieta Cruz Principal, P.S. 75 School of Research and Discovery 984 Faile Street Bronx, NY 10459	Dawn Verhille Principal, Bronx Studio School for Writers and Artists 928 Simpson Street

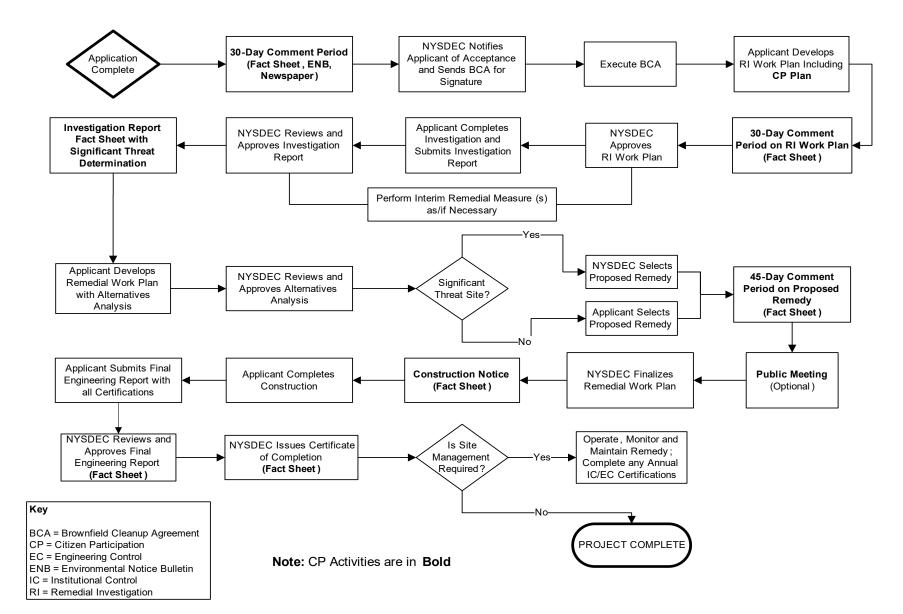
		Bronx, NY 10459
Lester Long Executive Director, Classical Charter School 977 Fox Street Bronx, NY 10459	Norma Sanchez Principal, P.S. 150 Charles James Fox 920 East 167 Street Bronx, NY 10459	Madeline Alcantara The Three Little Princess Daycare 1014 Hoe Avenue, Apartment 1C Bronx, NY 10459
Vivian Rosario Little Munchkins Daycare 1155 Vyse Avenue Bronx, NY 10459	Arlene Rodriguez AR Learning Tree WeeCare 1320 West Farms Road #1-I Bronx, NY 10459	Leydilin Calderon-Mejia Leydilin's Group Family Daycare 1107 Bryant Avenue Bronx, NY 10459
Jack Safer Brightside Academy 1093 Southern Blvd Bronx, NY 10459		
	<b>Adjacent Property Owners</b>	
Aldus Green Corporation Adjacent Property Owner of 1032 Aldus Street 33-01 Vernon Blvd. Long Island City, NY 11106 Steven Westreich Adjacent Property Owner/Operator of 1006 Longfellow Avenue 1006 Longfellow Avenue Bronx, NY 10459	Ramon and Felicita Hernandez Adjacent Property Owner of 1002 Longfellow Avenue 920 Avenue St John Bronx, NY 10455 1010 Longfellow Ave LLC Adjacent Property Owner of 1010 Longfellow Avenue 5308 13th Ave, Suite 293 Brooklyn, NY 11219	Jacqueline Rosa Adjacent Property Owner/Operator of 1004 Longfellow Avenue 1004 Longfellow Avenue Bronx, NY 10459 1012 Longfellow Avenue Housing Development Fund Corporation Adjacent Property Owner/Operator of 1012 Longfellow Avenue 1012 Longfellow Avenue Bronx, NY 10459
Vivian Chen Adjacent Property Owner of 1014 Longfellow Avenue 221 East 106th Street, Apt. 16B New York, NY 10029	Evelyn Montanez Adjacent Property Owner of 1016 Longfellow Avenue 7 Logwynn Lane Cortlandt Manor, NY 10567	Manraj Dhanraj Adjacent Property Owner of 1020 Longfellow Avenue 4442 Matilda Avenue Bronx, NY 10467
Sonia, Pharoah, Tarik and Maeemah Cranston Adjacent Property Owner of 1022 Longfellow Avenue	Lionel Volny Adjacent Property Owner/Operator of 1024 Longfellow Avenue	Renaldo Ferreira Adjacent Property Owner/Operator of 1026 Longfellow Avenue

1845 7th Avenue, Apt. 6A	1024 Longfellow Avenue	1026 Longfellow Avenue
New York, NY 10026	Bronx, NY 10459	Bronx, NY 10459
Megan Y. Cheung	Luis N. Diaz, Jr.	1034 Longfellow LLC
Adjacent Property Owner	Adjacent Property	Adjacent Property Owner
of 1030 Longfellow Avenue	Owner/Operator of 1032	of 1034 Longfellow Avenue
133-14 114th Place	Longfellow Avenue	2618 Davidson Avenue
South Ozone Park, NY	1032 Longfellow Avenue	Bronx, NY 10468
11420	Bronx, NY 10459	-
1036 Longfellow LLC	Dhanraj Rajkumar	Restoring Communities
Adjacent Property	Adjacent Property	Housing Development
Owner/Operator of 1036	Owner/Operator of 1040	Fund Corporation
Longfellow Avenue	Longfellow Avenue	Adjacent Property Owner
1036 Longfellow Avenue	1040 Longfellow Avenue	of 1042 Longfellow Avenue
Bronx, NY 10459	Bronx, NY 10459	150 Broadway, Suite 2101
Formando D. Tracho	John and Manigura	New York, NY 10038
Fernando P. Troche	John and Monique	Isabel Diaz
Adjacent Property Owner/Operator of 1044	Anthony Adjacent Property Owner	Adjacent Property Owner/Operator of 1050
Longfellow Avenue	of 1046 Longfellow Avenue	Longfellow Avenue
1044 Longfellow Avenue	186-23 Henley Road	1050 Longfellow Avenue
Bronx, NY 10459	Jamaica, NY 11432	Bronx, NY 10459
HP Whitlock Housing	Penn Central Company	
Development Fund	Adjacent Property Owner	
Company, Inc.	of Sheridan Expressway,	
Adjacent Property Owner	1324 Westchester Avenue,	
of 1156 East 165 Street	Sheridan Expressway, and	
253 West 35th Street 3rd	Bruckner Boulevard	
FI.	6 Penn Center Plaza	
New York, NY 10001	Philadelphia, PA 19102	

Appendix C - Site Location Map



# **Appendix D– Brownfield Cleanup Program Process**





**Division of Environmental Remediation** 

# Remedial Programs Scoping Sheet for Major Issues of Public Concern (see instructions)

Site Name: Sonero Metro City Auto Site

Site Number: C203148

Site Address and County: Portion of Lot 85 -1001 Whitlock Avenue, Bronx, NY, Bronx County

Remedial Party(ies): Whitlock Point LLC and Whitlock Point Services LLC

Note: For Parts 1. – 3. the individuals, groups, organizations, businesses and units of government identified should be added to the site contact list as appropriate.

**Part 1.** List major issues of public concern and information the community wants. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and information needs. Use this information as an aid to prepare or update the Major Issues of Public Concern section of the site Citizen Participation Plan.

The list of potential impacts contained in the CPP are typical impacts of remediation on brownfield sites

How were these issues and/or information needs identified? See response above.

**Part 2.** List important information needed **from** the community, if applicable. Identify individuals, groups, organizations, businesses and/or units of government related to the information needed. Nothing is needed from the community at this time

How were these information needs identified? NA

**Part 3.** List major issues and information that need to be communicated **to** the community. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and/or information.

Communication of each step in the BCP process must be communicated in Fact Sheets and public hearings if required.

How were these issues and/or information needs identified? This is part of the CPP process

**Part 4.** Identify the following characteristics of the affected/interested community. This knowledge will help to identify and understand issues and information important to the community, and ways to effectively develop and implement the site citizen participation plan (mark all that apply):

a. Land use/zoni	ng at and around sit	e:		
⊠ Residential	Agricultural	Recreational	Commercial	Industrial
	•			
<b>b.</b> Residential ty	pe around site:			
🛛 Urban 🛛	Suburban 🛛 🗆 Ru	ural		

c. Population density around site:

 $\boxtimes$  High  $\square$  Medium  $\square$  Low

**d.** Water supply of nearby residences:

☑ Public □ Private Wells □ Mixed

**e.** Is part or all of the water supply of the affected/interested community currently impacted by the site?  $\Box$  Yes  $\boxtimes$  No

Provide details if appropriate:

Click here to enter text.

f. Other environmental issues significantly impacted/impacting the affected community?  $\Box$  Yes  $\boxtimes$  No

Provide details if appropriate: Click here to enter text.

**g.** Is the site and/or the affected/interested community wholly or partly in an Environmental Justice Area? ⊠ Yes □ No

h. Special considerations:

☑ Language □ Age □ Transportation □ Other

Explain any marked categories in **h**: Primarily Spanish Speaking Community

**Part 5.** The site contact list must include, at a minimum, the individuals, groups, and organizations identified in Part 2. of the Citizen Participation Plan under 'Site Contact List'. Are *other* individuals, groups, organizations, and units of government affected by, or interested in, the site, or its remedial program? (Mark and identify all that apply, then adjust the site contact list as appropriate.)

□ Non-Adjacent Residents/Property Owners: Click here to enter text.

- □ Local Officials: Click here to enter text.
- □ **Media:** Click here to enter text.
- □ Business/Commercial Interests: Click here to enter text.
- □ Labor Group(s)/Employees: Click here to enter text.
- □ Indian Nation: Click here to enter text.
- □ Citizens/Community Group(s): Click here to enter text.
- □ Environmental Justice Group(s): Click here to enter text.
- **Environmental Group(s):** Click here to enter text.
- □ Civic Group(s): Click here to enter text.
- **Recreational Group(s):** Click here to enter text.
- **Other(s):** Click here to enter text.

Prepared/Updated By: Linda R. Shaw, Esq.

Reviewed Approved By: Click here to enter text.

**Date:** Click here to enter text.

# **Appendix E:** Quality Assurance Project Plan

Sonero Metro City Auto Site NYS BCP Site No. C203148 1001 Whitlock Avenue BRONX, NEW YORK

# Quality Assurance Project Plan (QAPP)

**Prepared for:** 

Whitlock Point LLC and Whitlock Point Services LLC 5959 Broadway, Suite 3 Bronx, NY 10459

> Prepared by: SESI CONSULTING ENGINEERS, D.P.C. 12A Maple Avenue Pine Brook, NJ 07058

> > MAY 2022

# TABLE OF CONTENTS

1.0	PRO	OJECT DESCRIPTION	1
2.0	PR	OJECT ORGANIZATION	1
	2.1	PROJECT PRINCIPAL	2
	2.2	PRINCIPAL ENGINEER	2
2	2.3	PROJECT MANAGER	2
	2.4	REMEDIAL ACTION WORK PLAN MANAGER	2
	2.5	FIELD TEAM LEADER	2
	2.6	QUALITY ASSURANCE OFFICER	2
3.0	QA	QC OBJECTIVES FOR MEASUREMENT OF DATA	2
3.1	С	OMPLETENESS	3
3.2	2 R	EPRESENTATIVENESS	3
3.3	C C	OMPARABILITY	4
3.4	P	RECISION AND ACCURACY	4
4.0	SAI	MPLING PROCEDURES	5
4.1	S	AMPLING PROGRAM	5
4	4.1.1	DRILLING/SAMPLING PROCEDURES	5
4	4.1.2	MONITORING WELL COMPLETION	6
4	4.1.3	WELL DEVELOPMENT	7
4	4.1.4	DECONTAMINATION	7
4	4.1.5	PFAS SAMPLING CONSIDERATIONS	8
4.2	G G	ROUNDWATER SAMPLING PROGRAM	9
4	4.2.1	WELL PURGING	9
4	4.2.2	SAMPLING PROCEDURE	9
4.3	s s	OIL VAPOR SAMPLING10	0
4.4	S	AMPLE PRESERVATION AND SHIPMENT1	1
5.0	SAI	MPLE CUSTODY1	1
5.1	F	IELD SAMPLE CUSTODY1	1
5.2	2 L	ABORATORY SAMPLE CUSTODY12	2
5.3	6 F	INAL EVIDENCE FILES	3
6.0	CAI	LIBRATION PROCEDURES1	3
7.0	AN	ALYTICAL PROCEDURES	3

7.1	VOLATILE ORGANICS	.14
7.2	SEMI-VOLATILE ORGANIC COMPOUNDS	.14
7.3	PESTICIDE AND PCB COMPOUNDS	.14
7.4	METALS	.14
7.5	PER- AND POLYFLUOROALKYL SUBSTANCES	.15
7.6	SITE SPECIFICITY OF ANALYSES	.15

# LIST OF TABLES

TABLE 4.1	SAMPLING PROCEDURE FOR MONITORING WELLS USING LOW-
	STESS (LOW-FLOW) METHODS

- TABLE 4.2 SAMPLE CONTAINERIZATION
- TABLE 7.1CONTRACT-REQUIRED QUANTITATION LEVELS AND ANALYTICAL<br/>METHODS FOR ASP INORGANICS, ASP VOLATILES, ASP SEMI-<br/>VOLATILES, ASP PESTICIDES, AND PCBS

### 1.0 **PROJECT DESCRIPTION**

This document presents the Quality Assurance Project Plan (QAPP) for the Remedial Action Work Plan (RAWP) for the proposed development at 1001 Whitlock Avenue, Bronx, New York (the "Site"). The Site consists of approximately 0.788-acres. The Site is identified on the tax map as tax parcel Block 2756, Lot 85.

The Site is an area characterized by a mix of residential, commercial, industrial, and manufacturing developments. The Site is bounded by a vacant industrial building to the north, Aldus Street to the south, Whitlock Avenue to the east, and Longfellow Avenue to the west. There are no surface water bodies or streams on or directly adjacent to the Site. SESI did not observe any areas suspected to be wetlands on the Site. Storm water drainage patterns are generally consistent with the surrounding topography and primarily flow to the north. The topographic map indicates that the topography at the Site slopes in a northerly direction.

# 2.0 PROJECT ORGANIZATION

The RAWP activities will be conducted by SESI Consulting Engineers DPC (SESI) and their qualified subcontractors, on behalf of Whitlock Point LLC and Whitlock Point Services LLC. The organization of SESI's key project management and field staff, and respective areas of responsibility, is presented below along with the names of subcontractors

SESI Personnel and Subcontractors		
Role	Name	Telephone No.
Project Principal	Fuad Dahan, P.E., PhD	973-808-9050 x249
Project Manager (PM)	Jesse Mausner, P.G.	973-808-9050 x282
Principal Engineer	Fuad Dahan, P.E., PhD	973-808-9050 x249
Remedial Action Work Plan Project	Todd Kelly	973-808-9050 x238
Manager		
Field Team Leader	Jon Stuart	973-600-7630
Quality Assurance Officer	Joe Scardino	973-808-9050 x267
Field Personnel	TBD	
Analytical Laboratory	Alpha Analytical	201-972-6356
Data Validator	Laboratory Data Consultants	760-827-1100
Driller	Coastal Environmental	631-942-9209

## 2.1 PROJECT PRINCIPAL

Provide technical and administrative oversight and guidance throughout the project, assist in securing company resources, participate in technical review of deliverables, and attend key meetings as needed.

# 2.2 PRINCIPAL ENGINEER

Provide technical guidance and review of reports, analytical data. Will have key involvement in screening and development of remedial alternatives.

# 2.3 PROJECT MANAGER

Responsible for maintaining the day-to-day schedule for completing the fieldwork and deliverables according to BCP program requirements and client expectations.

# 2.4 REMEDIAL ACTION WORK PLAN MANAGER

Responsible for coordinating and directing field efforts of SESI staff and subcontractors, and for maintaining that work is done according to QAPP specifications.

# 2.5 FIELD TEAM LEADER

Responsible for overseeing field work during the implementation of the RAWP, including observing subcontractors, maintaining field notes, and collecting samples of various environmental media, in accordance with the NYSDEC-approved Work Plan.

# 2.6 QUALITY ASSURANCE OFFICER

Responsible for reviewing sampling procedures and certify that the data was collected and analyzed using the appropriate procedures.

# 3.0 QA/QC OBJECTIVES FOR MEASUREMENT OF DATA

In cases where NYSDOH ELAP Certification exists for a specific group or category of parameters, the laboratory performing analysis in connection with this project will have appropriate NYSDOH ELAP Certification. Alpha Analytical Laboratories of Westborough, MA, an ELAP-certified lab, will be performing the sample analyses for the project. Analytical Service Protocol (ASP, June 2000) Category B deliverables are required for all samples. All data will be sent to a third party, Laboratory Data Consultants of Carlsbad, CA, for validation in accordance with NYSDEC BCP requirements. Resumes and Qualifications from LDC are included in Appendix I of the RIWP.

Detection limits set by NYSDEC-ASP will be used for all sample analyses unless otherwise noted. If NYSDEC-ASP-dictated detection limits prove insufficient to assess project goals (i.e., comparison to drinking water standards or attainment of Applicable or Relevant and Appropriate Requirements [ARARs]), then ASP Special Analytical Services (SAS) or other appropriate methods will be utilized.

The quality assurance/quality control objectives for all measurement data include completeness, representativeness, comparability, precision and accuracy.

#### 3.1 COMPLETENESS

The analyses performed must be appropriate and inclusive. The parameters selected for analysis are chosen to meet the objectives of the study.

Completeness of the analyses will be assessed by comparing the number of parameters intended to be analyzed with the number of parameters successfully determined and validated. Data must meet QC acceptance criteria for 100 percent or more of requested determinations.

#### 3.2 **REPRESENTATIVENESS**

Samples must be taken of the population and, where appropriate, the population will be characterized statistically to express the degree to which the data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process, or environmental condition.

Non-dedicated sampling devices will be cleaned between sampling points by washing and rinsing with pesticide-grade methanol, followed by a thorough rinse with distilled water. Specific cleaning techniques are described in the Field Sampling Procedure. Two types of blank samples will accompany each sample set where Target Compound List (TCL) volatiles are to be analyzed (water matrix only). A trip blank, consisting of a 40 ml VOA vial of organic-free water prepared by the laboratory, will accompany each set of sample bottles from the laboratory to the field and back. This bottle will remain sealed throughout the shipment and sampling process. This blank will be analyzed for TCL volatile organic compounds along with the groundwater samples to ensure that contamination with TCL volatile compounds has not occurred during the bottle preparation, shipment and sampling phase of the project. In order to check for contaminant carryover when non-dedicated sampling equipment is used, a rinsate blank

will be submitted to the laboratory. This blank will also be analyzed for TCL volatile organic compounds. The TCL compounds are identified in the United States Environmental Protection Agency (USEPA) Contract Laboratory Program dated 10/2016 or as periodically updated.

The analysis results obtained from the determination of identical parameters in field duplicate samples can be used to further assess the representativeness of the sample data.

#### 3.3 COMPARABILITY

Consistency in the acquisition, preparation, handling and analysis of samples is necessary in order for the results to be compared where appropriate. Additionally, the results obtained from analyses of the samples will be compared with the results obtained in previous studies, if available.

To ensure the comparability of analytical results with those obtained in previous or future testing, all samples will be analyzed by NYSDEC-approved methods. The NYSDEC-ASP mandated holding times for various analyses will be strictly adhered to.

#### 3.4 PRECISION AND ACCURACY

The validity of the data produced will be assessed for precision and accuracy. Analytical methods which will be used include gas chromatography/mass spectrometry (GC/MS), gas chromatography (GC), colorimetry, atomic spectroscopy, gravimetric and titrametric techniques. The following outlines the procedures for evaluating precision and accuracy, routine monitoring procedures, and corrective actions to maintain analytical quality control. All data evaluations will be consistent with NYSDEC-ASP procedures (June 2000). Data will be 100 percent compliant with NYSDEC-ASP requirements.

The number of duplicate, spiked and blank samples analyzed will a minimum of 1 duplicate for every 20 samples per each medium of groundwater and soil. The inclusion and frequency of analysis of field blanks will be on the order of one per every 20 samples (soil) for the aqueous matrix field blanks will be collected at a frequency of one per day. Samples to be analyzed for volatile organic compounds will be accompanied by a trip blank for each shipment and field blanks (water matrix) or field blanks (soil). An

equipment blank for PFAS will be collected once per day per matrix, regardless of whether equipment being used is disposable.

Quality assurance audit samples will be prepared and submitted by the laboratory QA manager for each analytical procedure used. The degree of accuracy and the recovery of analyte to be expected for the analysis of QA samples and spiked samples is dependent upon the matrix, method of analysis, and compound or element being determined. The concentration of the analyte relative to the detection limit is also a major factor in determining the accuracy of the measurement. The lower end of the analytical range for most analyses is generally accepted to be five times the detection limit. At or above this level, the determination and spike recoveries for metals in water samples will be expected to range from 75 to 125 percent. The recovery of organic surrogate compounds and matrix spiking compounds determined by GC/MS will be compared to the guidelines for recovery of individual compounds as established by the United States Environmental Protection Agency Contract Laboratory Program dated 7/85 or as periodically updated.

The quality of results obtained for inorganic ion and demand parameters will be assessed by comparison of QC data with laboratory control charts for each test.

#### 4.0 SAMPLING PROCEDURES

#### 4.1 SAMPLING PROGRAM

The sampling program for this project will include soil, groundwater and soil vapor. Soil samples will be collected from macrocore liners retrieved from soil borings or from an excavator bucket or grabbed directly from an excavation. Groundwater samples will be collected from groundwater monitoring wells using low flow purging techniques. Soil vapor samples, if required, will be collected from vapor points screened in the vadose zone using Summa Canisters.

#### 4.1.1 DRILLING/SAMPLING PROCEDURES

Soil samples will be collected by means of a soil boring program or from remedial excavations. Soil borings shall be completed using direct push methods, or rotary drilling methods, whichever methods are determined to be best suited to site conditions by the SESI project manager and SESI field team leader.

Soil samples will be collected from soil borings and analyzed in accordance with the NYSDEC-approved Work Plan. Groundwater samples will be collected from existing or newly installed monitoring wells. Either hollow stem auger (HSA) or direct push drilling methods may be utilized for monitoring well completion, if applicable.

Soil cores from borings shall be collected continuously during drilling so that a complete soil profile is examined and described by the SESI field geologist. Upon retrieval of the sample core or remedial endpoint sample, the collected sample shall be placed in glass jars and labeled, stored on site (on ice in a cooler if necessary), and transmitted to the appropriate testing laboratory or storage facility. Chain-of-custody procedures will be practiced following Section 15, EPA-600/4-82-029, Handbook for Sampling and Sample Preservation of Water and Waste Waters.

A geologist or engineer will be on site during the drilling or excavation operations to fully describe each soil sample, following the New York State Soil Description Procedure, and to retain representative portions of each sample.

The drilling contractor will be responsible for obtaining accurate and representative samples, informing the geologist of changes in drilling pressure, keeping a separate general log of soils encountered and installing monitoring wells to levels directed by the supervising geologist following specifications further outlined in this protocol if/as required to complete the remedial action.

#### 4.1.2 MONITORING WELL COMPLETION

Monitoring wells will be constructed of 0.010-inch slot size PVC well screen and riser casing. Other materials utilized for completion will be washed silica sand (Q-Rock No. 4 or approved equivalent) bentonite grout, Portland cement, and a protective steel locking well casing and cap with locks. The depth of the wells will be determined based on the depth to water and field conditions encountered.

The monitoring well installation method for wells installed within unconsolidated sediments shall be to place the screen and riser assembly into the casing once the screen interval has been selected. At that time, a washed silica sand pack will be placed around the well screen if required to prevent screen plugging. If a sand pack is not warranted, the auger string will be pulled back to allow the native aquifer material to

collapse 2 to 3 feet above the top of the screen. Bentonite pellets will then be added to the annulus between the casing and the inside auger to insure proper sealing. Cement/bentonite grout will continue to be added during the extraction of the augers until the entire aquifer thickness has been sufficiently sealed off from horizontal and/or vertical flow above the screened interval. During placement of sand and bentonite pellets, frequent measurements will be made to check the height of the sand pack and thickness of bentonite layers by a weighted drop tape measure.

A bolt-down protective curb box will be installed, flush with the ground, or steel "stick-up" protective casing and secured by a Portland cement seal. The cement seal shall extend laterally at least 1 foot in all directions from the protective casing and shall slope gently away to drain water away from the well.

#### 4.1.3 WELL DEVELOPMENT

All monitoring wells will be developed or cleared of all fine-grained materials and sediments that have settled in or around the well during installation so that the screen is transmitting representative portions of the groundwater. The development will be by one of two methods, pumping or bailing groundwater from the well until it yields relatively sediment-free water.

A decontaminated pump or bailer will be used and subsequently decontaminated after each use following procedures outlined in the Decontamination Protocol. Pumping or bailing will cease when the turbidity falls below 50 NTUs or until specific conductivity, pH, and temperature are stable (i.e., consecutive readings are within 10 percent with no overall upward or downward trends in measurements). Well development water will be disposed of on the ground surface at each well location.

### 4.1.4 DECONTAMINATION

All drilling and sampling equipment and associated tools including augers, drill rods, sampling equipment, wrenches and any other equipment or tools that have come in contact with contaminated materials will be decontaminated before any drilling or sampling on site begins, between each well, and prior to removing any equipment from the site. The preferred decontamination procedure will be to scrape the equipment from any residual soils and then rinse with water and Alconox®. Every effort will be made to minimize the generation of contaminated water. Any contaminated water generated will

be drummed. The contaminated water drums will be disposed of at an appropriate facility after approval and sampling in accordance with the specific facility requirements.

#### 4.1.5 PFAS SAMPLING CONSIDERATIONS

This section contains the materials limitations for Per- and polyfluoroalkyl substances (PFAS) sampling in accordance with the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoralkyl Substances (October 2020).

The groundwater samples will be analyzed for PFAS using Modified USEPA Method 537. Reporting limits for PFOA and PFOS will not exceed 2 nanogram per liter (ng/L). Category B deliverables and an electronic data deliverable will be completed.

PFAS are very persistent in the environment and in the human body. Due to their presence in a variety of products, persistence in the environment and very low drinking water standards, care must be used when groundwater sampling for PFAS to avoid cross contamination from the sampling equipment and personal protective equipment (PPE).

No fabric softener will be used on clothing to be worn in field. Cosmetics, moisturizers, hand cream, unauthorized sunscreen, insect repellant or other related products will not be used the morning of sampling. The field samplers will wear powder-free nitrile gloves while filling and sealing the sample bottles. The sampling equipment components and sample containers will not come in contact with material that may potentially contain PFAS such as aluminum foil, low density polyethylene (LDPE), glass or polytetrafluoroethylene (PTFE, Teflon[™]) materials including sample bottle cap liners with a PTFE layer. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials will be avoided. Food and drink packaging materials will be avoided, as well.

Sampling will be performed using certified PFAS-free sampling materials such as stainless steel, high density polyethylene (HDPE), PVC, silicone, acetate or polypropylene pump and tubing. Rinse water must be laboratory-provided certified PFAS-free distilled or de-ionized water. Standard two step decontamination using Alconox® detergent and clean certified PFAS-free water rinse will be performed for equipment that does come in contact with PFAS materials.

No waterproof field books, plastic clipboards, binders, or spiral hard cover will be used for PFAS containers. No adhesives (i.e. Post-It® Notes), sharpies, or permanent markers will be used for PFAS containers. The PFAS containers will be labeled with ball point pens. PFAS samples will be stored in separate cooler filled with regular ice only with no chemical (blue) ice packs.

Pre-cleaned sample bottles with closures, coolers, sample labels and a chain of custody form will be provided by the laboratory.

#### 4.2 GROUNDWATER SAMPLING PROGRAM

#### 4.2.1 WELL PURGING

Prior to sampling a monitoring well, the static water level will be recorded. All well data will be recorded on a field sampling record. The wells will be sampled in accordance with the USEPA guidelines for the Low Flow Purging Sampling (LFPS). The purpose of LFPS is to collect groundwater samples from monitoring wells that are representative of ambient groundwater conditions in the aquifer. The LFPS method reduces turbidity which is needed particularly when sampling for metals.

#### 4.2.2 SAMPLING PROCEDURE

The wells will be sampled using the USEPA LFPS technique, when possible. Alternatively, each well will be purged between 3 and 5 well volumes prior to sampling. A flow rate of 100 ml to 250 ml per minute is used to purge the wells. Drawdown should not exceed 0.3 feet. The pump intake is lowered to the mid-point of the water column or as subsurface features such as bedrock fractures or more permeable zones warrant. At the initiation of low flow purging a water level is recorded as well as field parameters. Field parameters are then monitored every five minutes during low flow purging using a flow through cell. When three consecutive measurements of pH differ by 0.1 units or less, with ORP within 10 mv or less, turbidity varies 10 percent or less, conductivity differs by 3 percent or less and dissolved oxygen by 10 percent or less, sampling may begin. Flow through cells are used so continuous real time readings are made. When the parameters stabilize the flow through cell is disconnected and sample bottles are filled directly from the tubing. Low-flow sampling procedures are summarized on Table 4.1.

#### 4.3 SOIL VAPOR SAMPLING

Soil vapor sampling, if required, will be conducted in accordance with NYSDOH Guidance for Evaluating Soil Vapor Intrusion in New York State (October 2006). Soil vapor samples will be collected in the vadose zone from shallow (5 feet maximum) vapor points. Each vapor point will be installed in a shallow boring drilled either by handoperated equipment (e.g. hand auger or percussion hammer drill), or by a small truckmounted drill rig. Drilling equipment used shall be based on soil or concrete surface conditions, and the method that provides the most practical approach.

Each vapor point will consist of an inert sampling tube (polyethylene, stainless steel, or Teflon®) with a 6-inch screened section at the bottom through which soil vapors can be sampled. The screen slot size will be 0.0075 inches. A sampling zone will be created around the screened section by backfilling with 1 to 2 feet of porous coarse sand or glass beads, and at least three feet of bentonite will be placed above the porous sampling zone to form a seal from the surface. Native clean soil will be packed around the remaining annulus to the ground surface.

The regulator will be set to collect a soil vapor sample at a flow rate of less than 0.2 liters per minute. After the summa canister is filled, the valve will be closed.

Each canister will be listed according to a specific sample I.D. on a chain of custody form. Sample canisters will be delivered to the laboratory within 24 hours and analyzed for VOCs by method TO-15. The detection limit for VOCs will be 1  $\mu$ g/m³ or less.

The soil vapor sampling effort will include the use of inert helium tracer gas to verify that the soil vapor samples are not diluted by ambient air. The atmosphere around the sampling tube will be enriched with the tracer gas, and the soil vapor sample will be collected in the presence of the enriched tracer atmosphere. This will be accomplished by placing an inverted plastic pail over the sampling point and filling the pail with the tracer gas via a small tube penetrating the site of the pail. Refer to NYSDOH Guidance for Evaluating Indoor Air Intrusion in New York State (October 2006).

Weather conditions in the 48 hours prior to the test, and during the test, will be noted, including average wind speed, precipitation, temperature, and barometric pressure.

#### 4.4 SAMPLE PRESERVATION AND SHIPMENT

Since all bottles will contain the necessary preservatives as shown in Table 4.2, they need only be filled. The 40 ml VOA vials must be filled brim full with no air bubbles. The other bottles should be filled to within about 1 inch from the top.

The bottles will be sent from the laboratory in coolers which will be organized on a per site basis. Following sample collection, the bottles should be placed on ice in the shipping cooler. The samples will be cooled to 4°C, but not frozen.

Final packing and shipment of coolers will be performed in accordance with guidelines outlined in the ASP.

#### 5.0 SAMPLE CUSTODY

The program for sample custody and sample transfer is in compliance with the NYSDEC-ASP, as periodically updated. If samples may be needed for legal purposes, chain-of-custody procedures, as defined by NEIC Policies and Procedures (USEPA-330/9-78-001-R, Revised June 1988) will be used. Sample chain-of-custody is initiated by the laboratory with selection and preparation of the sample containers. To reduce the chance for error, the number of personnel handling the samples should be minimized.

#### 5.1 FIELD SAMPLE CUSTODY

A chain-of-custody record accompanies the samples from initial sample container selection and preparation at the laboratory, shipment to the field for sample containment and preservation, and return to the laboratory. Two copies of this record follow the samples to the laboratory. The laboratory maintains one file copy and the completed original is returned to the site inspection team. Individual sample containers provided by the laboratory are used for shipping samples. The shipping containers are insulated, and ice is used to maintain samples at approximately 4°C until samples are returned and in the custody of the laboratory. All sample bottles within each shipping container are individually labeled and controlled. Samples are to be shipped to the laboratory within 24-48 hours of the day of collection depending on parameter holding times.

Each sample shipping container is assigned a unique identification number by the laboratory. This number is recorded on the chain-of-custody record and is marked with indelible ink on the outside of the shipping container. The field sampler will indicate the sample designation/location number in the space provided on the appropriate chainof-custody form for each sample collected. The shipping container is closed, and a seal provided by the laboratory is affixed to the latch. This seal must be broken to open the container, and this indicates possible tampering if the seal is broken before receipt at the laboratory. The laboratory will contact the site investigation team leader and the sample will not be analyzed if tampering is apparent.

#### 5.2 LABORATORY SAMPLE CUSTODY

The site investigation team leader or Project Quality Assurance Officer notifies the laboratory of upcoming field sampling activities and the subsequent transfer of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The laboratory sample program meets the following criteria:

The laboratory has designated a sample custodian who is responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.

Upon receipt of the samples, the custodian will check the original chain-ofcustody documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian signs the chain-ofcustody record and records the date and time received.

Care is exercised to annotate any labeling or descriptive errors. In the event of discrepant documentation, the laboratory will immediately contact the site investigation team leader as part of the corrective action process. A qualitative assessment of each sample container is performed to note any anomalies, such as broken or leaking bottles. This assessment is recorded as part of the incoming chain-of-custody procedure.

- 1. The samples are stored in a secured area at a temperature of approximately 4°C until analyses are to commence.
- 2. A laboratory chain-of-custody record accompanies the sample or sample fraction through final analysis for control.
- 3. A copy of the chain-of-custody form will accompany the laboratory report and will become a permanent part of the project records.

#### 5.3 FINAL EVIDENCE FILES

Final evidence files include all originals of laboratory reports and are maintained under documented control in a secure area.

A sample or an evidence file is under custody if:

- It is in your possession; it is in your view, after being in your possession.
- It was in your possession, and you placed it in a secure area.
- It is in a designated secure area.

#### 6.0 CALIBRATION PROCEDURES

Instruments and equipment used to gather, generate or measure environmental data will be calibrated with sufficient frequency and in such a manner that accuracy and reproducibility of results are consistent with the appropriate manufacturer's specifications or project specific requirements. The procedures for instrument calibration, calibration verification, and the frequency of calibrations are described in the ASP. The calibration of instruments used for the determination of metals will be as described in the appropriate CLP standard operating procedures.

Calibration of other instruments required for measurements associated with these analyses will be in accordance with the manufacturer's recommendations and the standard operating procedures of the laboratory.

#### 7.0 ANALYTICAL PROCEDURES

Analytical procedures shall conform to the most recent revision of the NYSDEC-ASP (June 2005) and are summarized on Table 7.1. In the absence of USEPA or NYSDEC guidelines, appropriate procedures shall be submitted for approval by NYSDEC prior to use.

The procedures for the sample preparation and analysis for organic compounds are as specified in the NYSDEC-ASP. Analytical cleanups are mandatory where matrix interferences are noted. No sample shall be diluted any more than a factor of five. The sample shall be either re-extracted, re-sonicated, re-stream distilled, etc. or be subjected to any one analytical cleanup noted in SW846 or a combination thereof. The analytical laboratory shall expend such effort and discretion to demonstrate good laboratory practice and demonstrate an attempt to best achieve the method detection limit.

#### 7.1 VOLATILE ORGANICS

For the analysis of water samples for Target Compound List (TCL), volatile organic compounds (VOCs), no sample preparation is required. The analytical procedure for volatiles is detailed in NYSDEC-ASP (Volume I, Section D-I). A measured portion of the sample is placed in the purge and trap apparatus and the sample analysis is performed by gas chromatography/mass spectrometry for the first round. USEPA Method 8260 will be used, plus tentatively identified compounds (TICs). USEPA Methods 8010 or 8020 (gas chromatography with different detectors) will be used if subsequent rounds with lower limits of detection are warranted.

#### 7.2 SEMI-VOLATILE ORGANIC COMPOUNDS

The extraction and analytical procedures used for preparation of water, soil and sediment samples for the analysis of the TCL semi-volatile organic compounds are described in NYSDEC-ASP Volume I, Section D-III. USEPA Method 8270 will be used, plus tentatively identified compounds (TICs).

Instrument calibration, compound identification, and quantitation are performed as described in Section 6 of this document and in the NYSDEC-ASP.

#### 7.3 PESTICIDE AND PCB COMPOUNDS

The sample preservation procedures for gas chromatography for pesticides and PCB's will be as described in the NYSDEC-ASP methods (Section D-IV). The analysis of standard mixes, blanks and spiked samples will be performed at the prescribed frequency with adherence to the 72-hour requirement described in the method.

#### 7.4 METALS

Water, soil and waste samples will be analyzed for the metals listed in Table 7.1. The detection limits for these metals are as specified in the NYSDEC-ASP, Section D-V. The instrument detection limits will be determined using calibration standards and procedures specified in the NYSDEC-ASP. The detection limits for individual samples may be higher due to the sample matrix. The procedures for these analyses will be as described in the NYSDEC-ASP.

The analyses for metals will be performed by atomic absorption spectroscopy (AAS) or inductively-coupled plasma emission spectroscopy (ICPES), as specified in the ASP with regard to AAS flame analysis.

#### 7.5 PER- AND POLYFLUOROALKYL SUBSTANCES

The NYSDEC has developed a list of 21 PFAS Analytes List on Table 7.1 for remedial programs. Currently, ELAP does not offer certification for Per- and polyfluoroalkyl substances (PFAS) compounds in matrices other than finished drinking water. Per the NYSDEC January 2021 guidance on emergent contaminant sampling, the analytical procedure for soil and groundwater sampling of PFAS is Modified EPA Method 537. Reporting limits for PFOA and PFOS in groundwater should not exceed 2 ng/L.

#### 7.6 SITE SPECIFICITY OF ANALYSES

Work plans prepared for remedial actions for sites contain recommendations for the chemical parameters to be determined for each site. Thus, some or all of the referenced methods will apply to the analysis of samples collected at the individual waste sites. Analyses of Target Compound List (TCL) analytes will be performed on all samples. TABLES

# TABLE 4.1 SAMPLING PROCEDURE FOR MONITORING WELLS USING LOW-STESS (LOW-FLOW) METHODS

- 1. Initial static water level recorded with an electric contact probe accurate to the nearest 0.1 foot.
- 2. Sampling device is lowered into well. Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified for that well. Pump intake must be no less than 2 feet from the bottom of the well to prevent disturbance and resuspension of sediments which may be at the bottom of the well.
- 3. Measure water level again: Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.
- 4. Purge Well: Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 ft or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.
- 5. Monitor Indicator Parameters: During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, Eh, and DO) approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows (Puls and Barcelona, 1996):
  - a. 0.1 for pH
  - b. 3% for specific conductance (conductivity)
  - c. 10 mv for redox potential
  - d. 10% for DO and turbidity
- Dissolved oxygen and turbidity usually require the longest time to achieve stabilization. The pump must not be removed from the well between purging and sampling.
- 7. Collect Samples: Collect samples at a flow rate between 100 and 250 ml/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft. VOC samples must be collected first and directly into sample containers. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.
- 8. Ground water samples to be analyzed for volatile organic compounds (VOCs) require pH adjustment. The appropriate EPA Program Guidance should be consulted to determine whether pH adjustment is necessary. If pH adjustment is necessary for VOC sample preservation, the amount of acid to be added to each sample vial prior to sampling should be determined, drop by drop, on a separate and

equal volume of water (e.g., 40 ml). Groundwater purged from the well prior to sampling can be used for this purpose.

- 9. Remove Pump and Tubing: After collection of the samples, the tubing, unless permanently installed, must be properly discarded or dedicated to the well for resampling by hanging the tubing inside the well.
- 10. Measure and record well depth.
- 11. Close and lock the well.
- 12. Samples are capped, labeled and placed in laboratory coolers with ice packs or bagged ice.
- 13. All equipment is cleaned with successive rinses of pesticide-grade methanol and distilled water.
  - a. Dedicated line is disposed of or left at well site.
- 14. Equipment/wash blanks are collected when non-dedicated sampling equipment is used.
- 15. Chain-of-custody forms are completed in triplicate.
  - a. The original and one carbon copy are put into a zip-lock bag and placed into the cooler. The original will be returned following sample analysis.
  - b. A second carbon copy is kept on file.
- 16. Cooler is sealed with strapping tape and chain-of-custody seals to assure integrity and to prevent tampering of sample.

PARAMETER & ANALYTICAL METHOD	NO.	BOTTLE TYPE	PRESERVATIVE ⁽¹⁾	HOLDING TIME
Aqueous Samples				
VOCs – USEPA 8260C	2	40 mL, glass vial with septum cap	Hydrochloric Acid to pH <2	14 days
SVOCs (BNAs) and 1,4- Dioxane – USEPA 8270D	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)
Pesticides – USEPA 8081B	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)

#### **TABLE 4.2 SAMPLE CONTAINERIZATION**

PARAMETER & ANALYTICAL METHOD	NO.	BOTTLE TYPE	PRESERVATIVE ⁽¹⁾	HOLDING TIME
PCBs – USEPA 8082A	2	1-liter amber glass bottle	None	7 days (until extraction) 40 days (extracted)
Metals ⁽²⁾	1	1-liter, plastic bottle	Nitric acid to pH <2 NaOH for cyanide	180 days Cyanide: 14 days Mercury: 28 days
Cyanide – SM 4500- CN-E	1	1-liter, plastic	Sodium Hydroxide to pH >12	14 days
PFAS Compounds – USEPA 537	2	500 ml HDPE or Polypropylene with non-Teflon lid	None	14 days
Soil, Sediment, Solid Wa	aste Sam	ples		
VOCs – USEPA 8260C	3	15-gram EnCore samplers	Chilled to 0 - 6°C	14 days
SVOCs (BNAs) and 1,4- Dioxane – USEPA 8270D or E	1	4-oz. glass jar with Teflon lid	Chilled to 0 - 6°C	14 days (until extraction, 40 days extracted)
Pesticides – USEPA 8081B	1	4-oz. glass jar with Teflon lid	Chilled to 0 - 6°C	14 days (until extraction) 40 days (extracted)
PCBs – USEPA 8082A	1	4-oz. glass jar with Teflon lid	Chilled to 0 - 6°C	None
Metals ⁽²⁾	1	4-oz. glass jar with Teflon lid	Chilled to 0 - 6°C	180 days Cyanide: 14 days Mercury: 28 days
PFAS Compounds – USEPA 537	2	500 ml HDPE or Polypropylene with non-Teflon lid	None	28 days
Soil Vapor / Indoor Air S	amples	-		
VOCs – USEPA TO-15	1	Summa Canister	None	30 days

(1) All samples will be preserved with ice during collection and shipment.
(2) Metals refers to the 24 metals and cyanide in the Target Compound List (NYSDEC-CLP 11/87). Metals will be analyzed by Method 6010D, 7470A for mercury, and 9012B for cyanide (3) A complete list of compounds is provided on Table 7.1.

# TABLE 7.1 – CONTRACT-REQUIRED QUANTITATION LEVELS AND ANALYTICAL METHODS FOR ASP INORGANICS, ASP VOLATILES, ASP SEMI-VOLATILES, ASP PESTICIDES, AND PCBS

	SECTION	1 - ASP INORGANIC	S Met	hod: NYSDEC-ASP-91-4	
	PARAMETER CONTRACT- PARAMETER DETECTION LEVEL* (µg/L)		PARAMETER		CONTRACT- REQUIRED DETECTION LEVEL* (µg/L)
1.	Aluminum	200	13.	Magnesium	5,000
2.	Antimony	60	14.	Manganese	15
3.	Arsenic	15	15.	Mercury	0.2
4.	Barium	200	16.	Nickel	40
5.	Beryllium	5	17.	Potassium	5,000
6.	Cadmium	5	18.	Selenium	35
7.	Calcium	5,000	19.	Silver	10
8.	Chromium	10	20.	Sodium	5,000
9.	Cobalt	50	21.	Thallium	25
10.	Copper	25	22.	Vanadium	50
11.	Iron	100	23.	Zinc	60
12.	Lead	10	24.	Cyanide	10

Target Compound List (TCL) and Contract-Required Quantitation Limit

	SECTION 2 – AS	P ORGANICS (VOL	ATILES	) Method: NYSDEC-ASP	-91-1
	VOLATILE	CONTRACT- REQUIRED QUANTITATION LIMIT** (µg/L)		VOLATILE	CONTRACT- REQUIRED QUANTITATION LIMIT** (µg/L)
1.	Chloromethane	5.0	18.	1,2-Dichloropropane	5.0
2.	Bromomethane	5.0	19.	cis-1,3- Dichloropropene	5.0
3.	Vinyl Chloride	5.0	20.	Trichloroethene	5.0
4.	Chloroethane	5.0	21.	Dibromochloromethane	5.0
5.	Methylene Chloride	5.0	22.	1,1,2-Trichloroethane	5.0
6.	Acetone	10.0	23.	Benzene	5.0
7.	Carbon Disulfide	5.0	24.	Trans-1.3- Dichloropropene	5.0
8.	1,1-Dichloroethylene	5.0	25.	Bromoform	5.0
9.	1,1-Dichloroethane	5.0	26.	2-Hexanone	10.0
10.	1,2-Dichloroethylene (total)	5.0	27.	4-Methyl, 1,2- Pentanone	10.0
11.	Chloroform	5.0	28.	Tetrachloroethylene	5.0
12.	1,2-Dichloroethane	5.0	29.	Toluene	5.0
13.	2-Butanone	10.0	30.	Chlorobenzene	5.0
14.	1,1,1-Trichloroethane	5.0	31.	Ethylbenzene	5.0
15.	Carbon Tetrachloride	5.0	32.	Styrene	5.0
16.	Bromodichloromethane	5.0	33.	Total Xylenes	5.0
17.	1,1,2,2- Tetrachloroethane	5.0			

SEMI-VOLATILE         CONTRACT- REQUIRED QUANTITATION LIMIT (µg/l)         SEMI-VOLATILE         CONTRACT- REQUIRED QUANTITATION LIMIT (µg/l)           1.         Phenol         5.0         33.         Acenaphthene         5.0           2.         Bis(2-chloroethyl)ether         5.0         34.         2,4-Dinitrophenol         10.0           3.         2.Chlorophenol         5.0         35.         4-Nitrophenol         10.0           4.         1,3-Dichlorobenzene         5.0         37.         Dinitrotoluene         5.0           6.         1,2-Dichlorobenzene         5.0         38.         Diethylphinalate         5.0           7.         2-Methylphenol         5.0         40.         Fluorene         5.0           8.         2,2'oxybis(1-         5.0         40.         Fluorene         5.0           9.         4-Methylphenol         5.0         41.         4-Nitrosoliphenyl amine         10.0           10.         N-Nitroso-dipropylamine         5.0         43.         N-nitrosodiphenyl         5.0           11.         Hexachloroethane         5.0         44.         4-Bromophenyl         5.0           12.         Nitrobenzene         5.0         45.         Hexachlorophenol         10.0		SECTION 3 - ASP ORGANICS (SEMI-VOLATILES) Method: NYSDEC-ASP-91-2						
2.         Bis(2-chloroethyl)ether         5.0         34.         2,4-Dinitrophenol         10.0           3.         2-Chlorophenol         5.0         35.         4-Nitrophenol         10.0           4.         1,3-Dichlorobenzene         5.0         36.         Dibenzofuran         5.0           5.         1,4-Dichlorobenzene         5.0         37.         Dinitrotoluene         5.0           6.         1,2-Dichlorobenzene         5.0         38.         Diethylphthalate         5.0           7.         2-Methylphenol         5.0         39.         4-Chlorophenyl         5.0           8.         2,2'oxybis(1-         5.0         40.         Fluorene         5.0           9.         4-Methylphenol         5.0         41.         4-Nitroanile         10.0           10.         N-Nitroso-dipropylamine         5.0         42.         4,6-Dinitro-2-         10.0           11.         Hexachloroethane         5.0         43.         N-nitrosodiphenyl         5.0           12.         Nitrobenzene         5.0         44.         4-Bromophenyl         5.0           13.         Isophorone         5.0         46.         Pentachlorophenol         10.0		SEMI-VOLATILE	REQUIRED QUANTITATION LIMIT (µg/l)			REQUIRED QUANTITATION LIMIT (µg/l)		
3.         2-Chlorophenol         5.0         35.         4-Nitrophenol         10.0           4.         1,3-Dichlorobenzene         5.0         37.         Dinitroluene         5.0           5.         1,4-Dichlorobenzene         5.0         38.         Dietnylphthalate         5.0           6.         1,2-Dichlorobenzene         5.0         38.         Dietnylphthalate         5.0           7.         2-Methylphenol         5.0         39.         4-Chlorophenyl         5.0           8.         2,2'oxybis(1-         5.0         40.         Fluorene         5.0           9.         4-Methylphenol         5.0         41.         4-Nitrosodipropylamine         5.0           9.         4-Methylphenol         5.0         42.         4,6-Dinitro-2-         10.0           10.         N-Nitrosodipropylamine         5.0         43.         N-nitrosodiphenyl         5.0           11.         Hexachloroethane         5.0         44.         4-Bromophenyl         5.0           12.         Nitrobenzene         5.0         45.         Hexachloroophenol         10.0           15.         2,4-Direthylphenol         5.0         47.         Phenanthrene         5.0								
4.         1,3-Dichlorobenzene         5.0         36.         Dibenzofuran         5.0           5.         1,4-Dichlorobenzene         5.0         37.         Dinitrotoluene         5.0           6.         1,2-Dichlorobenzene         5.0         38.         Diethylphthalate         5.0           7.         2-Methylphenol         5.0         39.         4-Chlorophenyl ether         5.0           8.         2,2'oxybis(1-         5.0         40.         Fluorene         5.0           9.         4-Methylphenol         5.0         41.         4-Nitroanile         10.0           10.         N-Nitroso-dipropylamine         5.0         41.         4-Nitrosoliphenyl amine         5.0           11.         Hexachloroethane         5.0         43.         N-nitrosodiphenyl amine         5.0           12.         Nitrobenzene         5.0         44.         4-Bromophenyl phenyl ether         5.0           13.         Isophorone         5.0         45.         Hexachlorobenzene         5.0           14.         2-Nitrophenol         5.0         46.         Pentachlorophenol         10.0           15.         2,4-Dimethylphenol         5.0         47.         Phenanthrene         5.0				-	2,4-Dinitrophenol			
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6.         1,2-Dichlorobenzene         5.0         38.         Diethylphthalate         5.0           7.         2-Methylphenol         5.0         39.         4-Chlorophenyl phenyl ether         5.0           8.         2,2'oxybis(1- Chloropropane)         5.0         40.         Fluorene         5.0           9.         4-Methylphenol         5.0         41.         4-Nitrosanile         10.0           10.         N-Nitroso-dipropylamine         5.0         42.         4,6-Dinitro-2- methylphenol         10.0           11.         Hexachloroethane         5.0         43.         N-nitrosodiphenyl amine         5.0           12.         Nitrobenzene         5.0         44.         4-Bromophenyl phenyl ether         5.0           13.         Isophorone         5.0         45.         Hexachlorobenzene         5.0           14.         2-Nitrophenol         5.0         46.         Pentachlorophenol         10.0           15.         2,4-Dinthylphenol         5.0         47.         Phenanthrene         5.0           16.         Bis(2-Chloroethoxy) methane         5.0         49.         Carbazole         5.0           17.         2,4-Dichlorophenzene         5.0         50.         51. <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
7.2-Methylphenol5.039.4-Chlorophenyl phenyl ether5.08.2,2'oxybis(1- Chloropropane)5.040.Fluorene5.09.4-Methylphenol5.041.4-Nitroanile10.010.N-Nitroso-dipropylamine5.042.4,6-Dinitro-2- methylphenol10.011.Hexachloroethane5.043.N-nitrosodiphenyl amine5.012.Nitrobenzene5.045.Hexachlorobenzene5.014.2-Nitrophenol5.046.Pentachlorophenol10.015.2,4-Dimethylphenol5.048.Anthracene5.016.Bis(2-Chloroethoxy) methane5.050.48.Anthracene5.017.2,4-Dichlorophenol5.050.Di-n-butyl phthalate5.018.1,2,4-Trichlorobenzene5.050.Di-n-butyl phthalate5.019.Naphthalene5.050.51.Fluoranthene5.020.4-Chloroanlline5.054.3,3'-Dichloro5.021.Hexachlorobutadiene5.055.Benz(a)anthracene5.023.2-Methylphenol5.055.Benz(a)anthracene5.024.Hexachlorobutadiene5.055.Benz(a)anthracene5.025.2,4,6-Trichlorophenol50.57.Bis(2-ethylhexyl)5.024.Hexachlorobutadiene5.057.Bis(2-ethylhexyl)5.025. <td< td=""><td>-</td><td></td><td></td><td></td><td></td><td></td></td<>	-							
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10.N-Nitroso-dipropylamine5.042.4,6-Dinitro-2- methylphenol10.011.Hexachloroethane5.043.N-nitrosodiphenyl amine5.012.Nitrobenzene5.044.4-Bromophenyl phenyl ether5.013.Isophorone5.045.Hexachlorobenzene5.014.2-Nitrophenol5.045.Hexachlorophenol10.015.2,4-Dimethylphenol5.047.Phenanthrene5.016.Bis(2-Chloroethoxy) methane5.048.Anthracene5.017.2,4-Dichlorophenol5.050.Di-n-butyl phthalate5.018.1,2,4-Trichlorobenzene5.050.Di-n-butyl phthalate5.020.4-Chloroaniline5.052.Pyrene5.021.Hexachlorobutadiene5.054.3,3-Dichloro5.022.4-Chloro-3-methylphenol5.055.Benzyl phthalate5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.055.Benzo(k)fluoranthene5.025.2,4,6-Trichlorophenol10.058.Di-n-octyl phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(k)fluoranthene5.028.2,4,5-Trichlorophenol10.060.Benzo(k)fluoranthene5.0 <tr< td=""><td>8.</td><td></td><td>5.0</td><td>40.</td><td>Fluorene</td><td>5.0</td></tr<>	8.		5.0	40.	Fluorene	5.0		
10.N-Nitroso-dipropylamine5.042.4,6-Dinitro-2- methylphenol10.011.Hexachloroethane5.043.N-nitrosodiphenyl amine5.012.Nitrobenzene5.044.4-Bromophenyl phenyl ether5.013.Isophorone5.045.Hexachlorobenzene5.014.2-Nitrophenol5.045.Hexachlorophenol10.015.2,4-Dimethylphenol5.047.Phenanthrene5.016.Bis(2-Chloroethoxy) 	9.	4-Methylphenol	5.0	41.	4-Nitroanile	10.0		
12.Nitrobenzene5.044.4-Bromophenyl phenyl ether13.Isophorone5.045.Hexachlorobenzene5.014.2-Nitrophenol5.045.Hexachlorophenol10.015.2,4-Dimethylphenol5.047.Phenanthrene5.016.Bis(2-Chloroethoxy) methane5.048.Anthracene5.017.2,4-Dichlorophenol5.049.Carbazole5.018.1,2,4-Trichlorobenzene5.050.50.50.19.Naphthalene5.051.Fluoranthene5.020.4-Chloroaniline5.052.Pyrene5.021.Hexachlorobutadiene5.053.Butyl benzyl phthalate5.022.4-Chloro-3-methylphenol5.054.3,3-Dichloro benzidine5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.055.Benz(a)anthracene5.025.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol5.059.Benzo(b)fluoranthene5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(b)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.028.2-Nitroananiline10.060. <td>10.</td> <td>N-Nitroso-dipropylamine</td> <td>5.0</td> <td>42.</td> <td>4,6-Dinitro-2-</td> <td>10.0</td>	10.	N-Nitroso-dipropylamine	5.0	42.	4,6-Dinitro-2-	10.0		
12.Nitrobenzene5.044.4-Bromophenyl phenyl ether5.013.Isophorone5.045.Hexachlorobenzene5.014.2-Nitrophenol5.046.Pentachlorophenol10.015.2,4-Dimethylphenol5.047.Phenanthrene5.016.Bis(2-Chloroethoxy) methane5.048.Anthracene5.017.2,4-Dichlorobenzene5.050.50.50.18.1,2,4-Trichlorobenzene5.050.50.50.19.Naphthalene5.051.Fluoranthene5.020.4-Chloroaniline5.052.Pyrene5.021.Hexachlorobutadiene5.053.Butyl benzyl phthalate5.022.4-Chloro-3-methylphenol5.054.3,3'-Dichloro benzidine5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.057.Bis(2-ethylhexyl) phthalate5.025.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.068.Benzo(k)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.062.Indeno(1,2,3-cd) pyrene5.030.Acenapht	11.	Hexachloroethane	5.0	43.		5.0		
13.Isophorone5.045.Hexachlorobenzene5.014.2-Nitrophenol5.046.Pentachlorophenol10.015.2,4-Dimethylphenol5.047.Phenanthrene5.016.Bis(2-Chloroethoxy) methane5.048.Anthracene5.017.2,4-Dichlorophenol5.049.Carbazole5.018.1,2,4-Trichlorobenzene5.050.Di-n-butyl phthalate5.019.Naphthalene5.051.Fluoranthene5.020.4-Chloroaniline5.052.Pyrene5.021.Hexachlorobutadiene5.053.Butyl benzyl phthalate5.022.4-Chloro-3-methylphenol5.054.3,3'-Dichloro benzidine5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.057.Bis(2-ethylhexyl) phthalate5.025.2,4,6-Trichlorophenol10.058.Di-n-octyl phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.061.Benzo(k)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	12.	Nitrobenzene	5.0	44.		5.0		
14.2-Nitrophenol5.046.Pentachlorophenol10.015.2,4-Dimethylphenol5.047.Phenanthrene5.016.Bis(2-Chloroethoxy) methane5.048.Anthracene5.017.2,4-Dichlorophenol5.049.Carbazole5.018.1,2,4-Trichlorobenzene5.050.Di-n-butyl phthalate5.019.Naphthalene5.052.Pyrene5.020.4-Chloroaniline5.052.Pyrene5.021.Hexachlorobutadiene5.054.3,3'-Dichloro benzidine5.022.4-Chloro-3-methylphenol5.055.Benz(a)anthracene5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.057.Bis(2-ethylhexyl) phthalate5.025.2,4,6-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenapthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	13.	Isophorone	5.0	45.	Hexachlorobenzene	5.0		
16.Bis(2-Chloroethoxy) methane5.048.Anthracene5.017.2,4-Dichlorophenol5.049.Carbazole5.018.1,2,4-Trichlorobenzene5.050.Di-n-butyl phthalate5.019.Naphthalene5.051.Fluoranthene5.020.4-Chloroaniline5.052.Pyrene5.021.Hexachlorobutadiene5.053.Butyl benzyl phthalate5.022.4-Chloro-3-methylphenol5.054.3,3'-Dichloro benzidine5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.056.Chrysene5.025.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	14.		5.0	46.	Pentachlorophenol	10.0		
methaneImage: state of the second state	15.	2,4-Dimethylphenol	5.0	47.	Phenanthrene	5.0		
18.1,2,4-Trichlorobenzene5.050.Di-n-butyl phthalate5.019.Naphthalene5.051.Fluoranthene5.020.4-Chloroaniline5.052.Pyrene5.021.Hexachlorobutadiene5.053.Butyl benzyl phthalate5.022.4-Chloro-3-methylphenol5.054.3,3'-Dichloro benzidine5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.056.Chrysene5.025.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	16.		5.0	48.	Anthracene	5.0		
18.1,2,4-Trichlorobenzene5.050.Di-n-butyl phthalate5.019.Naphthalene5.051.Fluoranthene5.020.4-Chloroaniline5.052.Pyrene5.021.Hexachlorobutadiene5.053.Butyl benzyl phthalate5.022.4-Chloro-3-methylphenol5.054.3,3'-Dichloro benzidine5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.056.Chrysene5.025.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	17.	2,4-Dichlorophenol	5.0	49.	Carbazole	5.0		
20.4-Chloroaniline $5.0$ $52.$ Pyrene $5.0$ 21.Hexachlorobutadiene $5.0$ $53.$ Butyl benzyl phthalate $5.0$ 22.4-Chloro-3-methylphenol $5.0$ $54.$ $3,3$ '-Dichloro benzidine $5.0$ 23.2-Methylnaphthalene $5.0$ $55.$ Benz(a)anthracene $5.0$ 24.Hexachlorocyclopentadiene $5.0$ $56.$ Chrysene $5.0$ 25. $2,4,6$ -Trichlorophenol $5.0$ $57.$ Bis(2-ethylhexyl) phthalate $5.0$ 26. $2,4,5$ -Trichlorophenol $10.0$ $58.$ Di-n-octyl phthalate $5.0$ 27. $2$ -Chloronapthalene $5.0$ $59.$ Benzo(b)fluoranthene $5.0$ 28. $2$ -Nitroananiline $10.0$ $60.$ Benzo(k)fluoranthene $5.0$ 30.Acenaphthylene $5.0$ $62.$ Indeno(1,2,3-cd) pyrene $5.0$ 31. $2,6$ -Dinitrotoluene $5.0$ $63.$ Dibenz(a,h) anthracene $5.0$	18.		5.0	50.	Di-n-butyl phthalate	5.0		
21.Hexachlorobutadiene5.053.Butyl benzyl phthalate5.022.4-Chloro-3-methylphenol5.054.3,3'-Dichloro benzidine5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.056.Chrysene5.025.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	19.	Naphthalene	5.0	51.	Fluoranthene	5.0		
22.4-Chloro-3-methylphenol5.054.3,3'-Dichloro benzidine5.023.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.056.Chrysene5.025.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	20.	4-Chloroaniline	5.0	52.		5.0		
23.2-Methylnaphthalene5.055.Benz(a)anthracene5.024.Hexachlorocyclopentadiene5.056.Chrysene5.025.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	21.	Hexachlorobutadiene		53.	Butyl benzyl phthalate			
24.Hexachlorocyclopentadiene $5.0$ $56.$ Chrysene $5.0$ 25. $2,4,6$ -Trichlorophenol $5.0$ $57.$ $Bis(2$ -ethylhexyl) phthalate $5.0$ 26. $2,4,5$ -Trichlorophenol $10.0$ $58.$ $Di$ -n-octyl phthalate $5.0$ 27. $2$ -Chloronapthalene $5.0$ $59.$ $Benzo(b)fluoranthene$ $5.0$ 28. $2$ -Nitroananiline $10.0$ $60.$ $Benzo(k)fluoranthene$ $5.0$ 29.Dimethyl phthalate $5.0$ $61.$ $Benzo(a)pyrene$ $5.0$ 30.Acenaphthylene $5.0$ $62.$ Indeno(1,2,3-cd) pyrene $5.0$ 31. $2,6$ -Dinitrotoluene $5.0$ $63.$ Dibenz(a,h) anthracene $5.0$	22.	4-Chloro-3-methylphenol	5.0	54.	-	5.0		
25.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	23.	2-Methylnaphthalene	5.0	55.	Benz(a)anthracene	5.0		
25.2,4,6-Trichlorophenol5.057.Bis(2-ethylhexyl) phthalate5.026.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	24.	Hexachlorocyclopentadiene		56.	Chrysene			
26.2,4,5-Trichlorophenol10.058.Di-n-octyl phthalate5.027.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0			5.0	57.	Bis(2-ethylhexyl)	5.0		
27.2-Chloronapthalene5.059.Benzo(b)fluoranthene5.028.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	26.	2,4,5-Trichlorophenol	10.0	58.		5.0		
28.2-Nitroananiline10.060.Benzo(k)fluoranthene5.029.Dimethyl phthalate5.061.Benzo(a)pyrene5.030.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0		2-Chloronapthalene	5.0	59.		5.0		
30.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0		2-Nitroananiline	10.0	60.		5.0		
30.Acenaphthylene5.062.Indeno(1,2,3-cd) pyrene5.031.2,6-Dinitrotoluene5.063.Dibenz(a,h) anthracene5.0	29.	Dimethyl phthalate	5.0	61.	Benzo(a)pyrene	5.0		
31.2,6-Dinitrotoluene5.063.Dibenz(a,h)5.0anthracene					Indeno(1,2,3-cd)			
32. 3-Nitroaniline 10.0 64. Benzo(g,h,i)perylene 5.0	31.	2,6-Dinitrotoluene	5.0	63.	Dibenz(a,h)	5.0		
	32.	3-Nitroaniline	10.0	64.	Benzo(g,h,i)perylene	5.0		

	SECTION 3 - ASP ORG	ANICS (PESTICIDE	S/PCI	BS) Method: NYSDEC-A	SP-91-3
PESTICIDE/PCB		CONTRACT- REQUIRED QUANTITATION LIMIT (µg/I)		PESTICIDE/PCB	CONTRACT- REQUIRED QUANTITATION LIMIT (µg/I)
1.	Alpha-BHC	0.05	15.	4,4'-DDT	0.10
2.	Beta-BHC	0.05	16.	Methoxychlor	0.5
3.	Delta-BHC	0.05	17.	Endrin ketone	0.10
4.	Gamma-BHC (lindane)	0.05	18.	Endrin aldehyde	0.10
5.	Heptachlor	0.05	19.	Alpha-Chlordane	0.05
6.	Aldrin	0.05	20.	Gamma-Chlordane	0.05
7.	Heptachlor epoxide	0.05	21.	Toxaphene	5.0
8.	Endosulfan I	0.05	22.	AROCHLOR-1016	1.0
9.	Dieldrin	0.10	23.	AROCHLOR-1221	1.0
10.	4,4'-DDE	0.10	24.	AROCHLOR-1232	1.0
11.	Endrin	0.10	25.	AROCHLOR-1242	1.0
12.	Endosulfan II	0.10	26.	AROCHLOR-1248	1.0
13.	4,4'-DDD	0.10	27.	AROCHLOR-1254	1.0
14.	Endosulfan sulfate	0.10	28.	AROCHLOR-1260	1.0

*Matrix: groundwater. For soil matrix, multiply CRDL by 100. **Quantitation limit for medium-level soil is 1,200 µg/kg (wet weight basis).

MET	HOD: EPA 537/537.1	Method Detection	Method Detection Limit
Perf	luorinated Alkyl Acids by Isotope Dilution	Limit - Soil (ug/kg)	- Groundwater (ug/I)
1	Perfluorobutanoic Acid (PFBA)	0.496	0.002
2	Perfluoropentanoic Acid (PFPeA)	0.496	0.002
3	Perfluorobutanesulfonic Acid (PFBS)	0.496	0.002
4	Perfluorohexanoic Acid (PFHxA)	0.496	0.002
5	Perfluoroheptanoic Acid (PFHpA)	0.496	0.002
6	Perfluorohexanesulfonic Acid (PFHxS)	0.496	0.002
7	Perfluorooctanoic Acid (PFOA)	0.496	0.002
8	1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	0.496	0.002
9	Perfluoroheptanesulfonic Acid (PFHpS)	0.496	0.002
10	Perfluorononanoic Acid (PFNA)	0.496	0.002
11	Perfluorooctanesulfonic Acid (PFOS)	0.496	0.002
12	Perfluorodecanoic Acid (PFDA)	0.496	0.002
13	1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	0.496	0.002
14	N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	0.496	0.002
15	Perfluoroundecanoic Acid (PFUnA)	0.496	0.002
16	Perfluorodecanesulfonic Acid (PFDS)	0.496	0.002
17	Perfluorooctanesulfonamide (FOSA)	0.496	0.002
18	N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.496	0.002
19	Perfluorododecanoic Acid (PFDoA)	0.496	0.002
20	Perfluorotridecanoic Acid (PFTrDA)	0.496	0.002
21	Perfluorotetradecanoic Acid (PFTA)	0.496	0.002

Appendix F: NYSDEC Soil Cleanup Objectives

#### 375-6.8

**Soil cleanup objective tables.** Unrestricted use soil cleanup objectives. (a)

Contaminant	CAS Number	Unrestricted Use
	Metals	
Arsenic	7440-38-2	13 °
Barium	7440-39-3	350 °
Beryllium	7440-41-7	7.2
Cadmium	7440-43-9	2.5 °
Chromium, hexavalent ^e	18540-29-9	1 ^b
Chromium, trivalent ^e	16065-83-1	30 °
Copper	7440-50-8	50
Total Cyanide ^{e, f}		27
Lead	7439-92-1	63 °
Manganese	7439-96-5	1600 °
Total Mercury		0.18 °
Nickel	7440-02-0	30
Selenium	7782-49-2	3.9°
Silver	7440-22-4	2
Zinc	7440-66-6	109 °
	PCBs/Pesticides	
2,4,5-TP Acid (Silvex) ^f	93-72-1	3.8
4,4'-DDE	72-55-9	0.0033 ^b
4,4'-DDT	50-29-3	0.0033 ^b
4,4'-DDD	72-54-8	0.0033 ^b
Aldrin	309-00-2	0.005 °
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.036
Chlordane (alpha)	5103-71-9	0.094

## Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
delta-BHC ^g	319-86-8	0.04
Dibenzofuran ^f	132-64-9	7
Dieldrin	60-57-1	0.005 °
Endosulfan I ^{d, f}	959-98-8	2.4
Endosulfan II ^{d, f}	33213-65-9	2.4
Endosulfan sulfate ^{d, f}	1031-07-8	2.4
Endrin	72-20-8	0.014
Heptachlor	76-44-8	0.042
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	0.1
Semivola	tile organic compo	ounds
Acenaphthene	83-32-9	20
Acenapthylene ^f	208-96-8	100 ^a
Anthracene ^f	120-12-7	100 ^a
Benz(a)anthracene ^f	56-55-3	1°
Benzo(a)pyrene	50-32-8	1°
Benzo(b)fluoranthene ^f	205-99-2	1°
Benzo(g,h,i)perylene ^f	191-24-2	100
Benzo(k)fluoranthene ^f	207-08-9	0.8 °
Chrysene ^f	218-01-9	1°
Dibenz(a,h)anthracene ^f	53-70-3	0.33 ^b
Fluoranthene ^f	206-44-0	100 ^a
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene ^f	193-39-5	0.5 °
m-Cresol ^f	108-39-4	0.33 ^b
Naphthalene ^f	91-20-3	12
o-Cresol ^f	95-48-7	0.33 ^b

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
p-Cresol ^f	106-44-5	0.33 ^b
Pentachlorophenol	87-86-5	0.8 ^b
Phenanthrene ^f	85-01-8	100
Phenol	108-95-2	0.33 ^b
Pyrene ^f	129-00-0	100
Volatil	e organic compour	ıds
1,1,1-Trichloroethane ^f	71-55-6	0.68
1,1-Dichloroethane ^f	75-34-3	0.27
1,1-Dichloroethene ^f	75-35-4	0.33
1,2-Dichlorobenzene ^f	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02 °
cis -1,2-Dichloroethene ^f	156-59-2	0.25
trans-1,2-Dichloroethene ^f	156-60-5	0.19
1,3-Dichlorobenzene ^f	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1 ^b
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene ^f	104-51-8	12
Carbon tetrachloride ^f	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene	100-41-4	1
Hexachlorobenzene ^f	118-74-1	0.33 ^b
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether $^{\rm f}$	1634-04-4	0.93
Methylene chloride	75-09-2	0.05

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
n - Propylbenzene ^f	103-65-1	3.9
sec-Butylbenzene ^f	135-98-8	11
tert-Butylbenzene ^f	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene ^f	95-63-6	3.6
1,3,5-Trimethylbenzene ^f	108-67-8	8.4
Vinyl chloride ^f	75-01-4	0.02
Xylene (mixed)	1330-20-7	0.26

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

All soil cleanup objectives (SCOs) are in parts per million (ppm).

#### Footnotes

^a The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.

^b For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.

^c For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.

^d SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.

^e The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

^f Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD.

# (b) Restricted use soil cleanup objectives.

		-0.8(D): Kest	Protection of ]	Protection	Protection		
Contaminant	CAS Number	Residential	Restricted- Residential	Commercial	Industrial	of Ecological Resources	of Ground- water
Metals							
Arsenic	7440-38-2	16 ^f	16 ^f	16 ^f	16 ^f	13 ^f	16 ^f
Barium	7440-39-3	350 ^f	400	400	10,000 ^d	433	820
Beryllium	7440-41-7	14	72	590	2,700	10	47
Cadmium	7440-43-9	2.5 ^f	4.3	9.3	60	4	7.5
Chromium, hexavalent h	18540-29-9	22	110	400	800	1 ^e	19
Chromium, trivalent ^h	16065-83-1	36	180	1,500	6,800	41	NS
Copper	7440-50-8	270	270	270	10,000 ^d	50	1,720
Total Cyanide ^h		27	27	27	10,000 ^d	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63 ^f	450
Manganese	7439-96-5	2,000 ^f	2,000 ^f	10,000 ^d	10,000 ^d	1600 ^f	2,000 ^f
Total Mercury		0.81 ^j	0.81 ^j	2.8 ^j	5.7 ^j	0.18 ^f	0.73
Nickel	7440-02-0	140	310	310	10,000 ^d	30	130
Selenium	7782-49-2	36	180	1,500	6,800	3.9 ^f	4 ^f
Silver	7440-22-4	36	180	1,500	6,800	2	8.3
Zinc	7440-66-6	2200	10,000 ^d	10,000 ^d	10,000 ^d	109 ^f	2,480
PCBs/Pesticides							
2,4,5-TP Acid (Silvex)	93-72-1	58	100 ^a	500 ^b	1,000°	NS	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 ^e	17
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 ^e	136
4,4'- DDD	72-54-8	2.6	13	92	180	0.0033 ^e	14
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04 ^g	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09
Chlordane (alpha)	5103-71-9	0.91	4.2	24	47	1.3	2.9

# Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of	Protection of
		Residential	Restricted- Residential	Commercial	Industrial	Ecological Resources	Ground- water
delta-BHC	319-86-8	100 ^a	100 ^a	500 ^b	1,000°	0.04 ^g	0.25
Dibenzofuran	132-64-9	14	59	350	1,000°	NS	210
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1
Endosulfan I	959-98-8	4.8 ⁱ	24 ⁱ	200 ⁱ	920 ⁱ	NS	102
Endosulfan II	33213-65-9	4.8 ⁱ	24 ⁱ	200 ⁱ	920 ⁱ	NS	102
Endosulfan sulfate	1031-07-8	4.8 ⁱ	24 ⁱ	200 ⁱ	920 ⁱ	NS	1,000°
Endrin	72-20-8	2.2	11	89	410	0.014	0.06
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2
Semivolatiles							
Acenaphthene	83-32-9	100 ^a	100 ^a	500 ^b	1,000°	20	98
Acenapthylene	208-96-8	100 ^a	100ª	500 ^b	1,000°	NS	107
Anthracene	120-12-7	100 ^a	100 ^a	500 ^b	1,000°	NS	1,000°
Benz(a)anthracene	56-55-3	$1^{\mathrm{f}}$	$1^{\mathrm{f}}$	5.6	11	NS	$1^{\mathrm{f}}$
Benzo(a)pyrene	50-32-8	$1^{\mathrm{f}}$	$1^{\mathrm{f}}$	$1^{\mathrm{f}}$	1.1	2.6	22
Benzo(b)fluoranthene	205-99-2	$1^{\mathrm{f}}$	$1^{\mathrm{f}}$	5.6	11	NS	1.7
Benzo(g,h,i)perylene	191-24-2	100 ^a	100 ^a	500 ^b	1,000°	NS	1,000°
Benzo(k)fluoranthene	207-08-9	1	3.9	56	110	NS	1.7
Chrysene	218-01-9	1 ^f	3.9	56	110	NS	1 ^f
Dibenz(a,h)anthracene	53-70-3	0.33 ^e	0.33 ^e	0.56	1.1	NS	1,000°
Fluoranthene	206-44-0	100 ^a	100 ^a	500 ^b	1,000°	NS	1,000°
Fluorene	86-73-7	100 ^a	100 ^a	500 ^b	1,000°	30	386
Indeno(1,2,3-cd)pyrene	193-39-5	0.5 ^f	0.5 ^f	5.6	11	NS	8.2
m-Cresol	108-39-4	100 ^a	100 ^a	500 ^b	1,000°	NS	0.33 ^e
Naphthalene	91-20-3	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	12

## Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of	Protection of
		Residential	Restricted- Residential	Commercial	Industrial	Ecological Resources	Ground- water
o-Cresol	95-48-7	100ª	100 ^a	500 ^b	1,000°	NS	0.33 ^e
p-Cresol	106-44-5	34	100 ^a	500 ^b	1,000°	NS	0.33 ^e
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8 ^e	0.8 ^e
Phenanthrene	85-01-8	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1,000 ^c
Phenol	108-95-2	100 ^a	100 ^a	500 ^b	1,000 ^c	30	0.33 ^e
Pyrene	129-00-0	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1,000°
Volatiles		•					
1,1,1-Trichloroethane	71-55-6	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27
1,1-Dichloroethene	75-35-4	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.33
1,2-Dichlorobenzene	95-50-1	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	$0.02^{\mathrm{f}}$
cis-1,2-Dichloroethene	156-59-2	59	100 ^a	500 ^b	1,000 ^c	NS	0.25
trans-1,2-Dichloroethene	156-60-5	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1 ^e	0.1 ^e
Acetone	67-64-1	100ª	100 ^b	500 ^b	1,000 ^c	2.2	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06
Butylbenzene	104-51-8	100ª	100 ^a	500 ^b	1,000 ^c	NS	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76
Chlorobenzene	108-90-7	100 ^a	100 ^a	500 ^b	1,000°	40	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1
Hexachlorobenzene	118-74-1	0.33 ^e	1.2	6	12	NS	3.2
Methyl ethyl ketone	78-93-3	100 ^a	100 ^a	500 ^b	1,000 ^c	100 ^a	0.12

#### Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

Contaminant	CAS Number	1	Protection of ]	Protection of	Protection of		
		Residential	Restricted- Residential	Commercial	Industrial	Ecological Resources	Ground- water
Methyl tert-butyl ether	1634-04-4	62	100 ^a	500 ^b	1,000 ^c	NS	0.93
Methylene chloride	75-09-2	51	100 ^a	500 ^b	1,000 ^c	12	0.05
n-Propylbenzene	103-65-1	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	3.9
sec-Butylbenzene	135-98-8	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	11
tert-Butylbenzene	98-06-6	100 ^a	100 ^a	500 ^b	1,000 ^c	NS	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3
Toluene	108-88-3	100 ^a	100 ^a	500 ^b	1,000 ^c	36	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6
1,3,5- Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02
Xylene (mixed)	1330-20-7	100 ^a	100 ^a	500 ^b	1,000 ^c	0.26	1.6

Table 375-6.8(b): Restricted Use Soil Cleanup Objectives

All soil cleanup objectives (SCOs) are in parts per million (ppm).

NS=Not specified. See Technical Support Document (TSD).

#### Footnotes

^a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

^b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

^c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

^d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

^e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

^f For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

^g This SCO is derived from data on mixed isomers of BHC.

^h The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

ⁱ This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

^j This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

# **Appendix G:**

SVE System Conceptual Design

#### Vapor-Phase VOC off-Site Migration Mitigation Plan

The soil vapor evaluation at the Site detected the presence of PHC VOCs (1,2,4trimethylbenzene, 1,3,5-trimethylbenzene, 1,3 butadiene, benzene, ethylbenzene, xylenes, heptane, hexane, and toluene) and CVOCs (PCE, TCE and methylene chloride). The concentrations detected have the potential to cause soil vapor intrusion into the future on-Site buildings and off-site westward migration. Precautionary vapor mitigation measures will be implemented in the form of an SSDS beneath the proposed building footprint and an SVE system on the western side of the Site. The following describes the SVE treatment approach for the Site. Note that no VOCs were detected in the groundwater at concentrations in excess of the AWQS and therefore, the SVE system will principally address vapor phase VOC contamination in the vadose zone.

The theoretical design of the proposed SVE system is based on published design standards such as the May 2004 USEPA document EPA 510-R-04-002. Key parameters such as intrinsic permeability, soil type, depth to groundwater, moisture content and vapor pressure of VOCs were examined.

Intrinsic permeability is a measure of the ability of soils to transmit fluids. Based on soil borings conducted by PVE, CSA and SESI, subsurface geology generally consisted of brown to black fine to coarse sand, mixed with traces of gravel, silt, bricks and crushed concrete (fill) to depths of 2 to 13 feet ft-bgs. Results of CSA's geotechnical study identified that the fill is underlain by dense brown coarse to fine sands, silt, and gravel to depths of 20 to 29 ft bgs. The coarse sands are underlain by weathered schist at depths ranging from 20 to 33 ft-bgs. Weathered bedrock was encountered at depths ranging from 22 to 33 ft-bgs. The SVE wells are expected to be placed in the vadose zone that consists of fine to coarse sand, mixed with traces of gravel, silt, bricks and crushed concrete (fill) to depths of 13 feet ft-bgs. Soils of this type (fine to coarse sand) can be expected to have an intrinsic permeability ranging from 10⁻⁶ cm² to 10⁻⁸ cm². Intrinsic permeability greater than 10⁻⁸ cm² is considered effective for SVE treatment. Bricks and crushed concrete (fill) interspersed in the vadose zone are not expected to restrict vapor flow and should not affect the SVE system effectiveness.

Depth to groundwater is another parameter that can impact the effectiveness of the SVE system because of potential vapor recovery issues associated with a shallow water table and subsequent upwelling of groundwater into well screens. In general, a groundwater depth of 10 feet bgs or greater is desirable. Groundwater at the Site has been gauged at a range of 18 to 22.3 ft-bgs. This depth to groundwater should not cause vapor recovery issues. Elevated moisture content in vadose zone soil can also impact the performance of the SVE system by preventing the movement of soil gas through soil. Site soils in the vadose zone did not appear to be excessively moist and are not expected to restrict flow except during storm events in unpaved areas.

Factors that impact the effectiveness of SVE also include vapor pressures and boiling points of the VOCs. Compound vapor pressures greater than 0.5 mm Hg are considered sufficient to support the use of SVE. All VOCs at the Site (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,3 butadiene, benzene, ethylbenzene, xylenes, heptane, hexane, toluene, PCE, TCE and methylene chloride) have vapor pressures that are greater than 0.5 mm Hg. Therefore, all the VOCs

at this Site are amenable to SVE. Similarly, compounds with boiling points less than 250°C are sufficiently volatile for removal through SVE. All VOCs at the Site (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,3 butadiene, benzene, ethylbenzene, xylenes, heptane, hexane, toluene, PCE, TCE and methylene chloride) have boiling points that are less than 250°C. Therefore, all the VOCs at this Site are amenable to SVE.

Based on the above screening criteria, SVE can be an effective removal mechanism for VOCs in the soil vapor at this Site. A preliminary design of the SVE system is provided below. For the purposes of system design, three critical factors were evaluated: vapor extraction flowrate, wellhead vacuum and radius of influence (ROI).

Vapor extraction flow, the volumetric flowrate of soil gas that is extracted from each extraction well, was estimated. In estimating this flowrate, published graphs that are based on flow per unit length of screen and Darcy values for various types of soil were utilized. Assuming an average intrinsic permeability of 10⁻⁷ cm² (Darcy value of 10), it was estimated that an air flow of 8 cubic feet per minute (cfm) per foot of well screen is adequate air flow. An extraction well design with a 2-ft screen will result in approximately 16 cfm per well. This value is consistent with recommended numbers published by the USEPA, which range between 10 and 100 cfm per well.

Wellhead vacuum pressure is the required pressure at an extraction well necessary to produce the design vapor extraction flowrate. The lines extending from the SVE system main trunk line manifold to the SVE points are expected to be 2" PVC. Total linear feet of the system will be estimated once the design of the SVE system is finalized. Based on the factory pump curve of the selected blower and the estimated design flowrate, the pressure drop over the total length of pipe will be estimated. The expected wellhead vacuum pressure will then be calculated.

The last critical design factor is the ROI, the radial effect an extraction well may have. Typically, ROI can range from approximately 5 feet for fine graded soils such as clayey soils to approximately100 feet for coarse graded soils such as sandy soils. The soils in the vadose zone at the Site are fine to coarse sand. Therefore, the system will be designed conservatively for an expected ROI of 30 feet, although it is likely to be greater.

#### Preliminary SVE System Design

Based on the above evaluation, a preliminary SVE system design is described below. The SVE extraction wells will consist of 2-inch schedule 40 PVC. With an estimated ROI of 30 ft, and a treatment area of approximately 30,000 ft², the total number of SVE wells required was calculated to be 10. A plan depicting the area of soil vapor impacts on the western part of the Site and the location of the SVE wells with ROI's is presented in **Figure G-1**. Each extraction well will be fitted with a 2-ft 0.040-inch slotted well screen through which approximately 16 cfm of soil vapor will be extracted. This will result in a total vapor extraction rate of 160 cfm for the 10 wells. To provide the necessary vacuum for the system, a regenerative blower will be selected. The SVE system will consist of a main 3" schedule 40 PVC trunk line which will be manifolded with the 10 SVE wells through 2" schedule 40 PVC. At each SVE wellpoint, a flow control valve, flow

indicator, sampling port and pressure indicator will be installed below grade within a protective road box. The blower for the system will be housed in an enclosure on grade.

Extracted soil vapors will be passed through a condensation (knockout) tank, and two granulated activated carbon (GAC) towers in series. Vapor levels will be monitored at the release from both towers. Based on the low vapor concentrations expected at this site, changeouts are not expected. Due to the uneven distribution of soil vapor VOCs in the treatment area and the absence of LNAPL or DNAPL, it is not possible to estimate the average total volatile organic vapor (TVOV) concentration within the contaminant vapor stream and removal rate from the GAC treatment. However, it is likely that long-term SVE treatment will not be necessary as the existing contaminated soil vapors are removed and VOC levels in the vapor stream become negligible with no significant rebound. Performance evaluation of the SVE system will be based on influent vapor stream VOC rebound behavior. Compliance monitoring will continue with soil vapor sampling in the treatment area.

